



## Category: Short Communication

# The Population Trends and Distribution of White Browed Fantail (*Rhipidura aureola*) in Sri Lanka

<sup>1</sup>Bopitiya Gamage PTS & <sup>2</sup>Wijeweera WPSN

<sup>1</sup>Meemanage Wattha, Godagama, Matara, Sri Lanka

<sup>2</sup>Department of Zoology, University of Ruhuna, Matara, Sri Lanka

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#### \*Corresponding Author

Email:

[surendi87nisha@gmail.com](mailto:surendi87nisha@gmail.com)

### ABSTRACT

White Browed Fantail (WBF) is a small bird with a characteristic fan-like tail. They inhabit both wet and dry zones of Sri Lanka covering coastal and inland regions. However, there are no studies related to its distribution within the island. Therefore, our study was aimed at its distribution in Sri Lanka along with its seasonal variation and specific behavioral patterns in Kirala Kele Sanctuary. We extracted 5403 occurrence records of WBF from eBird from 1975 to 2020 and plotted distribution maps. To study the seasonal variation of the bird, 336 field visits were conducted from 2018 January to 2021 July in Kirala Kele sanctuary (5.9790 N, 80.5130 E). The occurrence records show, the bird gradually spread within the island over the past 45 years. They were less abundant in the Northern and Eastern parts of the country. The occurrence records (n=88) revealed that WBF inhabited the Kirala Kele sanctuary throughout the year except for December. They use Kirala kele as a breeding and feeding ground. At present, their temporal variations show they appear in higher abundance for longer periods of the year in Kirala Kele. They show mixed flock foraging with Oriental Magpie Robin, White-bellied Drongo, Yellow-billed Babbler, and Common Tailorbird. In addition to flying insects, they highly prefer ants.

## 1. Introduction

White Browed Fantail (WBF) is a small passerine bird that belongs to Family Rhipiduridae. Their dorsal body parts are dull in color with long broad white eyebrows. It spreads its tail, like a fan as it got the name "fantail" [1, 2]. It is a native resident of Bangladesh, Burma, China as well as Sri Lanka [2]. They expand their habitats from dry, open woods along the deciduous forest to agricultural lands as well as home gardens [2-5]. As behavioral studies are closely linked with conservation biology [6], there are few research studies on the behavioral ecology of WBF [1,6]. However, studies on related to its current status or population trends in Sri Lanka are lacking. As the population trend plays a key role in species risk assessment and conservation planning, the studies related to the species status/ population trend is important [7]. Therefore, our study aimed to understand the historical and present status of WBF in Sri Lanka and provide incidentally observed behavioral notes, and their seasonal variation in Kirala Kele Sanctuary of Sri Lanka.

## 2. Material and Methods

The status of WBF in Sri Lanka was analyzed from 5403 occurrence records obtained from eBird over a period of 45 years and distribution graphs were plotted (Figure 1). To observe seasonal variation and behaviors of WBF, a study was conducted in Kirala Kele Sanctuary (5.9790 N, 80.5130 E) in Southern Province of Sri Lanka. The field visits were conducted over 3.5 years (2018 January-2021 July) and obtained 88 occurrence records of WBF by covering 336 field visits. Random field visits were conducted on both weekends and weekdays in the morning (6.00 am-8.00 am) or evening (4.00 pm-6.00 pm) sessions. Point counts were done in four (5.59 N, 80.3131 E / 5.5839 N, 80.3151 E / 5.5806 N, 80.3119 E / 5.5816 N, 80.3220 E) observation centers.

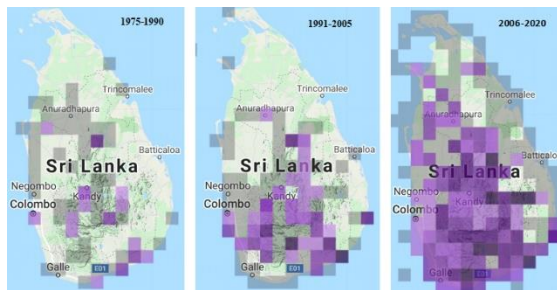
Continuing sightings in the same point counts over consecutive or recent days were considered as a single sighting to avoid possibly repeat counting the same individuals. Also, in the absence of systematic census data, maximum numbers of WBF seen for each month were used to estimate the population [8]. During field visits, their behavior was observed using binoculars and visually.

### 3. Results and Discussion

#### 3.1 Historical and current status

According to previous records, the bird is more common in the Uva province of Sri Lanka [9]. They were abundant in jungles between the Haputhale mountains and the southeast coast and eastern part of the low country while rare in Hambantota and Galle districts of the southern province of Sri Lanka [9]. In 1931, the bird was common in the Hambantota district, and the scattered populations were in Galle and Matara districts [10]. In the 1970s, the bird was widespread in uva, eastern, western, central, sabaragamuwa, and southern provinces of the country [11].

Within the last forty-five years (1975-2020), WBF gradually spread throughout the island. They were more abundant in central and southern regions and less abundant in northern and eastern parts of the country (Figure 1). This observation might occur due to the prevailing war condition in the past decade where birders were unable to visit the northern and eastern land of the island.

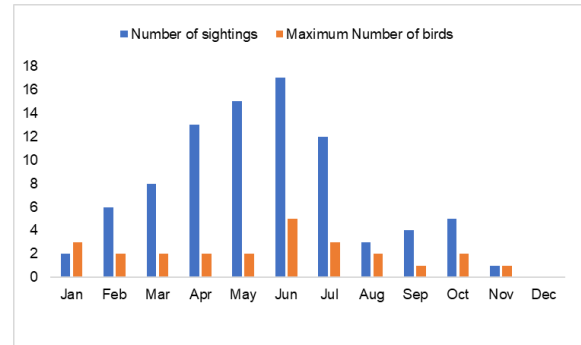


**Figure 1: White Browed Fantail progression the past 45 years (1975-2020) within Sri Lanka. Image provided from eBird (www.eBird.org) and generated on 24 July 2021.**

Out of 336 field visits of Kirala Kele sanctuary, the White Broad Fantail only recorded 88 field visits representing only 25.9% sightings. An avifaunal study in Kirala kele revealed that WBF was very common during 2002-2003 and that status was shifted to uncommon category during 2018-2021 [12]. However, in most of the sightings (88.5%), the species appeared as a single bird or a pair.

#### 3.2 Residential status

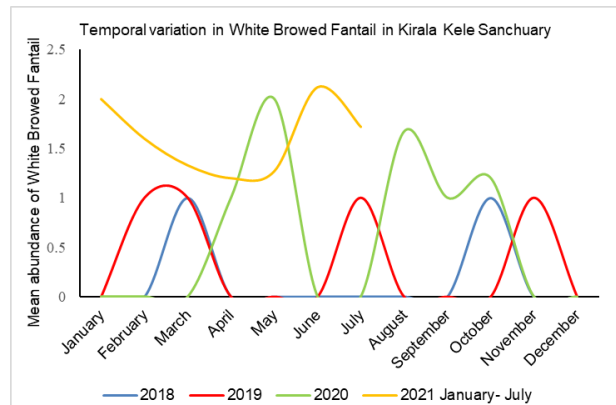
WBF was recorded in Kirala Kele sanctuary every month except December. Their peak abundance was in June. They were rarely observed in November and disappeared in December (Figure 2), and maybe they moved to another habitat during December.



**Figure 2: Temporal distribution of White Browed Fantail sight records and maximum number of White Browed Fantail observed per month in Kirala Kele Sanctuary (2018-2021)**

#### 3.3 Seasonal variation of WBF in Kirala Kele Sanctuary

In 2018, the bird was recorded only in two months; February and October. In 2019 and 2020, the sightings of WBF were 3 -4 months per year. From January to July 2021, the bird was recorded in higher abundance continuously throughout the study period (Figure 3).



**Figure 3: Mean abundance of White Browed Fantail over a period of forty three month (January 2018- July 2021) in Kirala Kele sanctuary**

#### 3.4 Behavior

White-browed Fantail usually observed as a single bird or pair-wise, a female and a male. As they are territorial birds, mating pairs do not allow any other individuals of its own species to enter into their territory. Even they show territorial behavior on inter species also. Chasing movements upon the inter and intra species is well observed. It is a very active bird with high vocalization. They have a unique song having 4-7 melodious whistling notes [13]. Male birds perch on open grounds or a branch without leaves and sing during the mornings and the

evenings. It produces a unique harsh call, “switch-wich” which is easy to identify the bird’s presence even without seeing it.

Their breeding season is in between January to July. They build a nest approximately 8-10 feet above the ground. It is a very neatly finished cup-shaped nest with fine fibers, rootlets, and cobwebs. Both male and female birds engage in nest building that lasts 9-13 days. Peak egg-laying period is from April to May, and females lay 2-3 oval-shaped eggs. Same breeding pair reuse the nest (if the nest remain in good condition) in next breeding season also. The nest failure rate of WBF is higher due to domestic cats, crows, coucals, lizards, tree snakes, predatory birds, and heavy rains [5,10]. In addition, they showed aggression towards interspecies as well as intraspecies during the breeding season. Their Nests were visible and located 3-4 meters above the ground.

WBF appears as a mixed flock during foraging. Such a flock consists of oriental Magpie Robin, White-bellied Drongo, Yellow-billed Babbler, and Common Tailorbird. Similarly, the mixed flocks of WBF in Myanmar consist of Beavan’s Prinia, Common Prinia, Common Tailorbird, Chestnut-bellied Nuthatches, and Radders’ Warbler [14]. The study further explains that they show a commensal relationship with Warblers and Nuthatches. However, if the insects are scarce, WBF steals the prey from Nuthatches, shifting their relationship from commensal to kleptoparasitism [14]. In addition to insects, we observed that they highly preferred ants. They spread their tail like a fan, flapped, and jumped to flush away the ants that hide under the leaf litter and eat them.

In summary, our records and eBird data indicate that they are now more widespread in all nine provinces of Sri Lanka. Also, they are observed in Kirala kele sanctuary throughout the year except in December. From January- June 2021, the species was continuously observed within the sanctuary.

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