

## Large Communal Roost of “Wintering” Purple-backed Starlings *Sturnus (Agropsar) sturninus* in Yogyakarta, Central Java

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**Ringkasan:** Jalak Cina merupakan burung migran, berbiak di Himalaya dan Cina. Bermigrasi pada musim tidak berbiak ke Asia Tenggara dan Sunda Besar. Burung Jalak Cina singgah di Pohon Beringin *Ficus benjamina* Malioboro Yogyakarta selama musim tidak berbiak yaitu November – Maret. Pada bulan Desember jumlah burung Jalak Cina yang singgah mencapai 2339 individu dan merupakan jumlah yang terbesar yang pernah diketahui di Indonesia. Lokasi berada di ujung tenggara dari rentang daerah tidak berbiaknya. Berdasarkan perhitungan yang dilakukan 24 kali pada pagi hari yang berbeda, sebagian besar burung singgah sedikitnya selama tiga bulan, dan beberapa individu mungkin lebih dari lima bulan. Sebagian besar burung telah pergi pada pertengahan Maret.

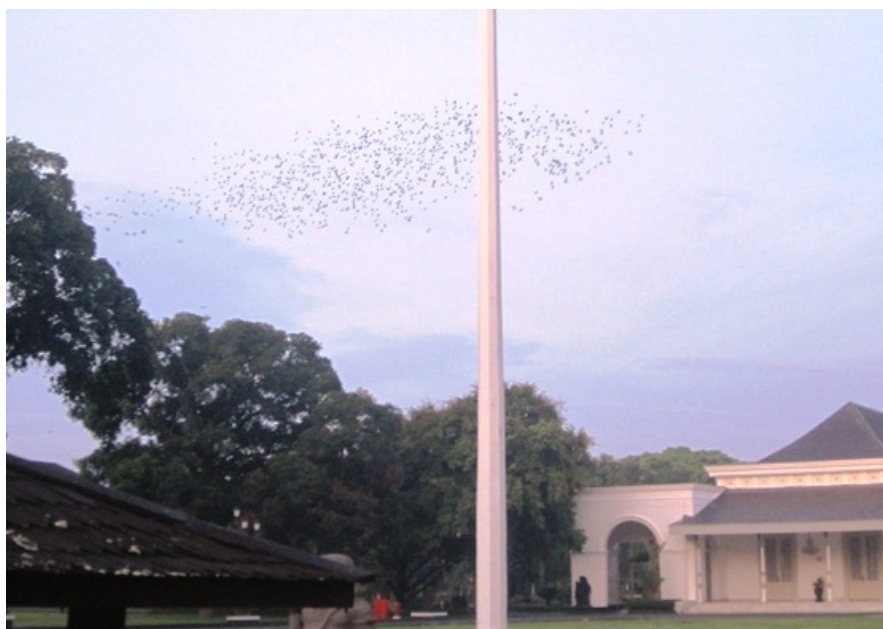
### Introduction

The Purple-backed Starling or Daurian Starling *Sturnus (Agropsar) sturninus* breeds from East Mongolia through Northeast and Central China to North Korea, and migrates to mainland Southeast Asia and Greater Sundas (Craig & Feare 2009). It is a scarce to uncommon passage migrant in Myanmar, Tenasserim, Cambodia, Northern Laos, North Annam and Cochincinna, as well as Thailand, Peninsular Malaysia and Singapore, where it also “over-winters” (Robson 2008). In Indonesia, it is regarded as an uncommon non-breeding visitor to Sumatra and West Java, mostly to coastal areas, but up to 1,100 m asl (MacKinnon *et al.* 2010). In Sumatra it has been recorded from the provinces of Aceh, North Sumatra, Jambi, South Sumatra, as well as the Mentawai Islands, from October to early April (Marle & Voous 1988). There are few records for Central and East Java (Setiawan *et al.* 2008; Taufiqurrahman pers. obs), and none for Bali (MacKinnon *et al.* 2010; Mason 2011). There is only one historic record from Borneo (Mann 2008; Phillips & Phillips 2009).

During the non-breeding season the species is gregarious, forming flocks of 10-30 individuals, but sometimes hundreds, during the day, and by night, roosting communally in hundreds or even thousands in reedbeds or trees, often with other species of starling and mynas (Wells 2007; Craig & Feare 2009). In September 1998 a communal roost of Purple-backed Starlings was discovered by Lim Wen Sin at the Presidential Palace in Malioboro, Yogyakarta, Central Java. Here we report the results of our monitoring of this roost site from November 2011 to March 2012.

## Methods

The Starlings roosted in a Weeping Fig *Ficus benjamina*, about 15 m from the Palace building (Plate1). To determine the number of birds using the site we counted them 1-3 times each week from 11 November 2011 to 9 February 2012, after which we visited the site only twice, on 17 and 20 March 2012. We made observations early in the morning from 04:00 to 06:30 hrs as the birds awoke and left the roost to forage, rather than in the evening when they flew into the roost trees from many directions, making counting of birds difficult. Counting was done from a point northeast of the Weeping Fig where there were clear views in all directions, with no obstructions such as buildings or tall trees. We counted birds flying northwards from the roost tree as they crossed an imaginary line passing through a flagpole in front of the palace; birds flying eastwards were counted as they crossed another imaginary line along the fence of the palace. In the following season we monitored the site each week from 9 September to 16 October 2012 to determine the date of arrival of the species.



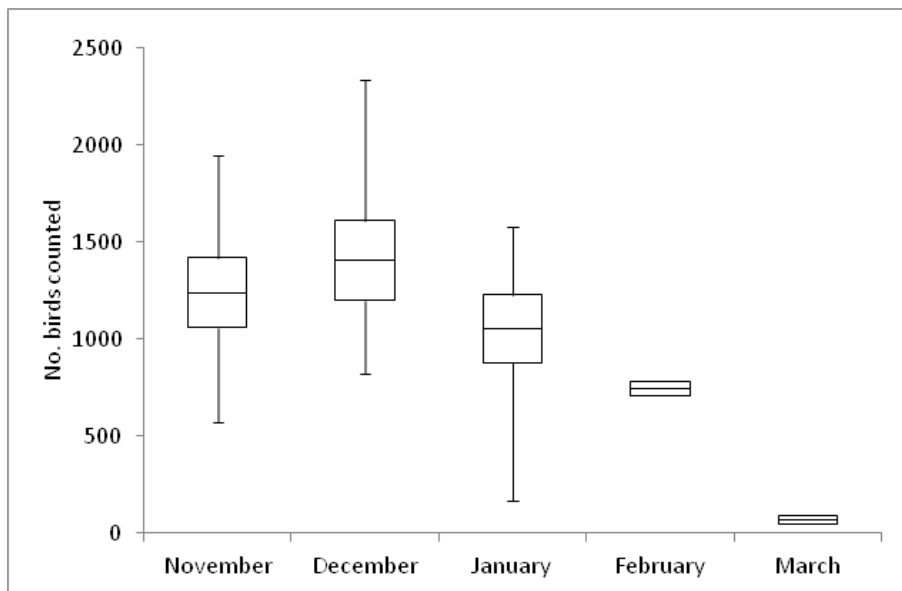
**Plate 1:** Flock of Purple-backed Starlings flying from the roost tree (at far left of photo), Presidential Palace, Yogyakarta.

## Results

Starlings were counted on 24 mornings, but due to a large variation in their numbers from week to week, it is not possible to analyse the statistical significance of monthly trends. Mean numbers for the first three months varied from 1,053 to 1,404 (Fig. 1), but the latter count was inflated by one count of 2,339 birds on 14 December 2011. The lowest number counted during this period (570) was on 11 November 2011, the first morning sampled. From this first sample date to 31 January, the number using the roost site was less than 1,000 individuals on only five occasions. Numbers declined during February and March, but sample sizes in these

months were small ( $n=2$  each). The birds vacated the site between 20 March and 8 April as none was observed on the latter date or on subsequent visits.

In the following season no starlings were seen at the roost site between 9 September and 12 October 2012, but on 16 October 2012 several birds were seen by FM.



**Fig 1:** Number of Purple-backed Starlings counted at roost in Malioboro, Yogyakarta, from November 2011 until March 2012. Boxes, one standard error above/below mean; vertical bars, minimum and maximum counts. Sample days ( $n$ ): Nov (6), Dec (7), Jan (7), Feb (2), Mar (2).

## Discussion

The Purple-backed Starling is said to leave its breeding grounds in Russia during late July and Korea during September-October (Craig & Feare 2009). Counts of birds on passage in southern Thailand peaked in early October, dropped to below 20 by November and ten or fewer by December, with the return passage peaking in mid-March (Wells 2007). At Fraser's Hill in Peninsular Malaysia, birds on their southward passage were recorded between late September and late October (Wells 2007). In Singapore, counts of thousands mainly occurred in September and October (Wells 2007; Seng 2009), indicating some birds disperse further south afterwards. In Sumatra, historically at least, extreme dates were 6 October and 3 April (Marle & Voous 1988; Holmes 1996). In the Padang-Sugihan Wildlife Reserve, South Sumatra, the species was recorded from October to December and in March (Nash & Nash 1985), indicating that it was scarce or absent during January and February, but that there was a return passage in March, possibly from further east. In Nagan Raya, Aceh Province, Sumatra, van Balen (*in litt.*) sighted flocks of twelve to over 50 birds, sometimes with Asian Glossy Starlings *Aplonis panayensis*, in the third week of October 2008 and second week of November 2010.

The decline in numbers of Purple-backed Starlings on the Thai-Malaysia Peninsula after the September-October peak, and their arrival in Sumatra in October, suggests a slow passage southwards. This may be why the species was not noticed until mid-October 2012 at our study site in Central Java, although the first record for the roost site was in September 1998. No published data are available on their arrival and departure dates in Java, but Bartels (1915-1931) reported extreme dates for western Java as 26 October and 23 February, with two records only for the former month and 27 for the latter month ( $n = 41$ ). Our observations at the roost site in Yogyakarta show that numbers dropped sharply in February, and by 20 March, the last date on which we counted birds, only 92 birds were seen. By early April, all birds had departed. Thus the majority of birds probably began their northward migration during February. This is consistent with Bartels' notes, as well as the start of the spring passage in southern Thailand in late February.

In Peninsular Malaysia, Wells (2007) noted that communal roosts were occupied by hundreds to sometimes thousands of individuals, but that such roosts were rarely maintained for more than a few weeks. The whole population then moved to one or more new sites, possibly in response to the availability of fruiting figs. We do not know when the Starlings first started to use the Malioboro roost site in 2011 because our monitoring started in November. Nevertheless our observations show that the roost site was occupied for at least three months by a large number of birds, and possibly for five or more months by some individuals. This is clearly longer than the period of occupancy in Peninsular Malaysia, suggesting that there was an abundance of figs and other fruit-bearing trees in the Yogyakarta region.

Whilst Wells (2007) mentions roosts of up to 5,000 Purple-backed Starlings in Selangor, Peninsular Malaysia, the roost at Malioboro must surely be among the largest non-breeding roosts known, despite being on the eastern edge of the species' range. During the months of November through January, the mean number of birds was 1,231 birds ( $SE$ , 108.6). This indicates that Malioboro is an important roosting site for this species in Java. Moreover the site has been occupied for at least 13 years. Thus despite the paucity of records for the species from Central Java it is possible that it is a regular, but previously overlooked, visitor to this part of Java. Further monitoring of the Malioboro site, and surveys of the surrounding region are needed to clarify its status on the island.

## Acknowledgments

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