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Pre- and post-breeding roost flights of the Noisy Friarbird *Philemon corniculatus*: Observations from Canberra, Australian Capital Territory

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Abstract. Noisy Friarbirds *Philemon corniculatus* in Canberra, Australian Capital Territory, use communal roosts before and after the breeding season. It seems to be a basic trait of at least part of the population in south-eastern Australia. The flightpath of Friarbirds from a population in northern Canberra and the behaviour of the birds while travelling to and from the roost are described. Noisy Friarbirds may travel twice a day up to 30 km. Counts of Noisy Friarbirds over several years from different points along their route are presented. The Friarbirds cease to use a roost once breeding starts but resume the visits with their young when these are mobile enough to travel. Compared with other local bird species using communal roosts, Noisy Friarbirds arrived at the roost early, and movement was largely completed around 2 hours before sunset. The behaviour of the species can explain why there are few records of roost flight previously. Noisy Friarbirds tend to fly within tree cover and survey their surroundings carefully before crossing wider open spaces. They travel quickly and rather quietly as singles or in small groups. Small numbers of birds on the move several hours (up to five) before sunset would not be associated with being already on their way to a roost. Detecting such movement requires the observer to be stationary for long periods at a point where birds have to cross a gap and can be counted.

Introduction

The Noisy Friarbird *Philemon corniculatus* has the status of "common, breeding summer migrant" in the Canberra region, Australian Capital Territory (ACT) (Canberra Ornithologists Group 2020, p. 53). It is frequently encountered in woodlands and suburbia (Taylor & Canberra Ornithologists Group 1992; Veerman 2003). The species migrates within south-eastern Australia (Cooper *et al*. 2020). A few birds overwinter in the Canberra region (Taylor & Canberra Ornithologists Group 1992).

While living in the northern Canberra suburb of Ainslie, I noticed during spring and late summer that Noisy Friarbirds passed through in the mornings from north-east to south-west and in the afternoon in the opposite direction. Birds seemed to come from, and move towards, Mt Majura. Later, I noted similar movements of Noisy Friarbirds in North Lyneham, towards or from Mt Majura (east/west). The consistent directional movement suggested that the Noisy Friarbirds' movements were not part of any migration; rather, it seemed that the birds were flying to a communal roost in the afternoon, and from it in the morning to their daytime feeding areas.

Honeyeaters are diurnal and roost at night in trees or taller shrubs. Higgins *et al.* (2008, p. 536) stated "The roosting behaviour of the Meliphagidae is not well known" and relevant observations have been recorded for only a few species. Little is known about roosting behaviour in the Noisy Friarbird. However, Baldwin (1989) described movement of overwintering Noisy Friarbirds between feeding and roosting areas in Gilgai, Northern Tablelands of New South Wales (NSW). Little Friarbirds *P. citreogularis* have been observed roosting in flocks in small trees (Higgins *et al.* 2001), and movement between roost site and feeding area has been recorded for that species (Collins 1995 in Higgins *et al.* 2008).

I investigated Noisy Friarbird roost flight movements in Canberra from 2011 to 2023 as opportunities arose.

Methods

Records of Noisy Friarbirds passing through the Canberra suburb Ainslie (Figure 1, Point 1) were captured in the Canberra Ornithologists Group's Garden Bird Survey (GBS) (Veerman 2003) over a 28-year period. In the GBS, the maximum number of birds of any species noted in a week is recorded. The data were used to calculate the seasonal changes in the weekly average number of Noisy Friarbirds for the GBS site.

Based on the observations from Ainslie and North Lyneham, I positioned myself at various points along the flightpath (Figure 1) in mornings and afternoons until a major section of the route was progressively identified.

Noisy Friarbirds crossed the Mt Majura (890 m)/Mt Ainslie (839 m) range at its lowest point, the Mt Majura 'saddle' (627 m) (Figure 1, Point 2; Figure 2). On the lower western side of Mt Majura, a powerline corridor, cleared largely of any tall and midstorey vegetation, runs roughly north–south. When Friarbirds flew across this corridor on their way to or from the roost they could be counted. Of a total of 18 afternoon counts at this location, conducted over 6 years (2011–2016), four were in spring (6 September–1 October) and 14 after the breeding season (20 January–7 April). Birds were recorded in 15-minute periods, and the timing logged in hours and minutes to sunset.

Between 2017 and 2023, 58 counts were made at North Lyneham Ridge (Figure 1, Point 4) from sunrise for a 2-hour period during spring. Only a few birds passed later in the morning. The topography of the North Lyneham Ridge site made it difficult to count birds on their return flight in the afternoon. Hence, at an open area in the Majura Valley,

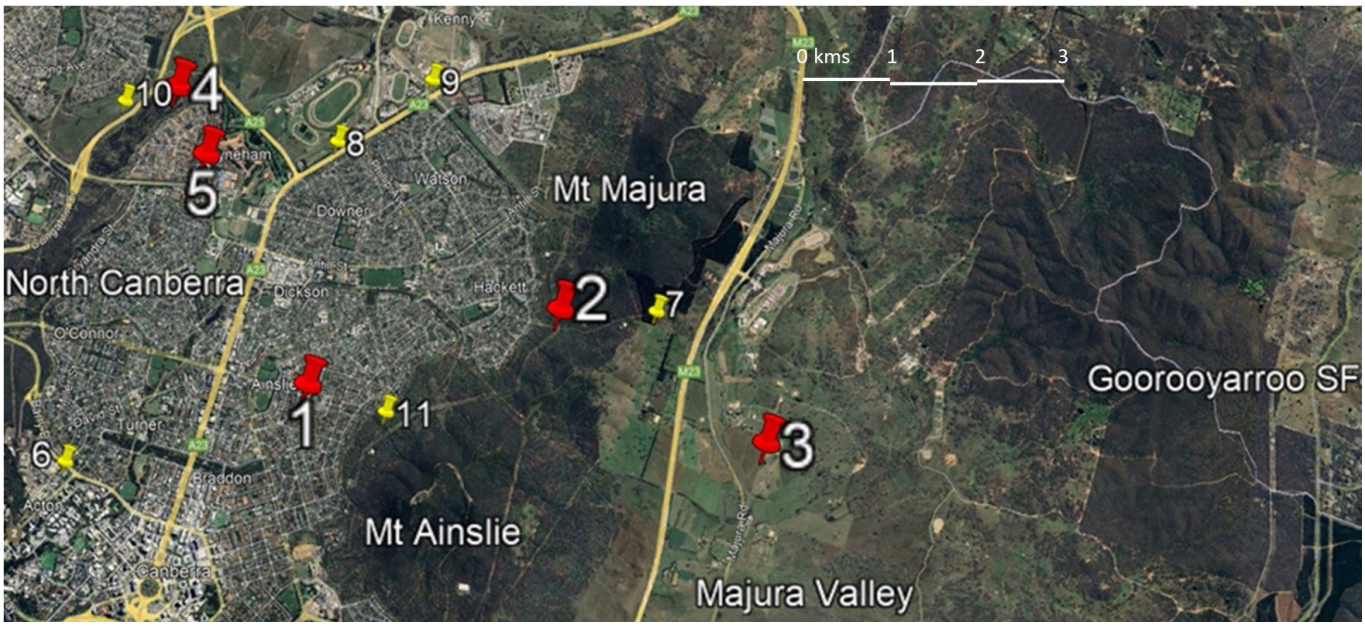

Figure 1. Points where Noisy Friarbird roost flights were monitored. Main points: (1) Ainslie Garden Bird Survey Site 15; (2) Powerline corridor at Mt Majura saddle; (3) Majura Road (Avonley Road); (4) north-eastern side of North Lyneham Ridge; (5) Hamilton Park, North Lyneham. Minor points: (6) Barry Drive/Clunies Ross Street; (7) Mt Majura, southern end of pine forest; (8), (9) points along Northbourne Avenue; (10) western side of North Lyneham Ridge; (11) lower western slopes of Mt Ainslie. Image: Google Earth, 22 February 2024

relatively close to the assumed roost site, 10 counts were carried out between 2017 and 2022 during afternoons in spring (Figure 1, Point 3) and two in March. The number of passing Friarbirds was recorded at 10-minute intervals, with the timing logged in hours and minutes to sunset.

Noisy Friarbirds were also recorded in 2021, once in the morning and once in the afternoon, at Hamilton Park in North Lyneham (Figure 1, Point 5), 0.8 km south-south-east of the North Lyneham Ridge site (Figure 1, Point 4), as they gathered around flowering eucalypts before moving on. Birds had to cross a large car park and a main road and were easily detected.

Results

Early observations from Canberra (Ainslie)

Weekly average of Noisy Friarbird seasonal abundance at the suburban Ainslie GBS site over the period 1981–2009 (Figure 3) showed a build-up of numbers from late August to a peak in October, with a trough between late October and January, when birds are breeding in the woodlands, although some pairs also nest in suburbia, including in Ainslie (Lenz 1990). Numbers reached a second peak in late January/early February and declined steadily thereafter. Few birds were recorded in May and June and none in July. The spring and summer peaks are more pronounced than the averages in the GBS show (Veerman 2003) because the GBS site was on the roost flightpath.

Behaviour of passing Noisy Friarbirds, Ainslie

Noisy Friarbirds passed through Suttor Street (Figure 1, Point 1) following the line of mature oak *Quercus* sp. trees on both sides. Birds flew below treetop height. They were mostly observed while crossing an open small oval opposite our house and a vacant block next to it. Passing birds were quiet, except for contact calls, when they were in a group.

The only exception noted was a bird one spring (date not recorded). It could be heard singing loudly in the morning from the top end of Suttor Street. It gradually moved along, stopping every now and then to sing for a few minutes. This behaviour pattern meant that this bird could be followed and kept in sight to learn where it was heading. It did not move in a straight line but seemed to be guided by rows of mature trees. It preferred to have some tree cover, rather than cross open spaces, over longer distances. It was followed for ~4.5 km (3 km in a direct line). Once it had entered the Black Mountain Nature Reserve (Figure 1, Point 6), circumstances no longer allowed continued observation.

Roost flightpath of Noisy Friarbirds in North Canberra

Noisy Friarbirds arrived from westerly directions and crossed the Mt Majura/Mt Ainslie Range at its lowest point, the Majura Saddle (Figure 2). They arrived at the powerline corridor and usually landed in trees and scanned their surroundings for a while, sometimes calling, before crossing the corridor. Irrespective of where they arrived, all converged to the lowest point of the saddle and entered the woodland from there. They flew below treetop height across the range and through the pine plantation on the eastern slope of Mt Majura. Birds emerged from the eastern end of the pine plantation and flew to scattered trees close to Majura Parkway to scan their surroundings again, before crossing the wide-open space of the Majura Valley (Figure 1).

Once over the Majura Parkway and Majura Road, they encountered paddocks with mature eucalypts that offer

Figure 2. The western side of the Mt Majura/Mt Ainslie Range as viewed from North Lyneham Ridge. Photo: Michael Lenz

Figure 3. Seasonal distribution of average weekly Canberra Garden Bird Survey records over a 28-year period (1981–2009) for the Noisy Friarbird in Ainslie (Garden Bird Survey Site 15).

stopping and foraging points (Figure 4a). The route then followed the southern edge of the Majura Field Range, heading towards the former NSW Goorooyarroo State Forest (now comprised of the Majura Military Training Area and the NSW Goorooyaroo Nature Reserve), the destination for roosting (Figure 4b).

Monitoring Noisy Friarbirds to the east of Point 3 (Figure 1) was not possible. The paddocks are on private land and the former Goorooyarroo State Forest (Figures 1 and 4) is not accessible to the public, much of it under control of the Department of Defence. The remainder forms the NSW Goorooyarroo Nature Reserve, which is closed to public access because of the possible presence of unexploded ordnance (NSW NPWS 2013).

The end point (i.e. the roost site) is a timbered area with stands of eucalypts (NSW NPWS 2013) offering foraging opportunities (Figure 4b). The area is largely free from human disturbance. This combination of factors makes it a favourable roost site for Noisy Friarbirds.

It is unlikely that the birds travelled further than the Goorooyarroo Range as the land to the east is comprised of only small remnants of forest and loosely settled farming country.

Source area for the Noisy Friarbirds using the Goorooyaroo roost

Taylor & Canberra Ornithologists Group (1992) identified woodlands east of the Murrumbidgee River (Figure 5) as the area where the species is common, with the highest concentration in the southern parts of the ACT. Taking trajectories from the observed flight directions from birds coming from the roost into account, birds originate from the northern part of the ACT (Figure 5). The maximum distance that birds would travel from the Murrumbidgee River to the Goorooyaroo Range is ~30 km.

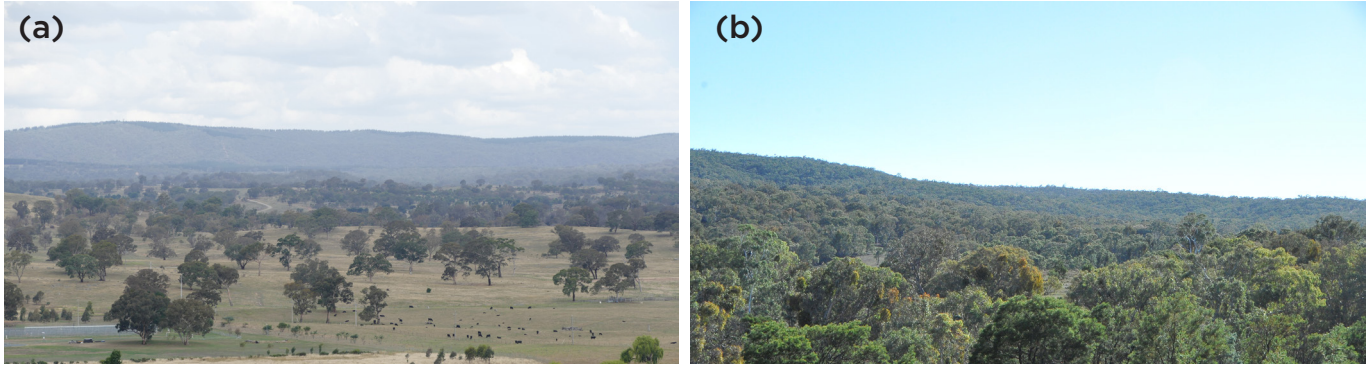

Figure 4. (a) The paddocks with mature eucalypts in the Majura Valley, to the east of Majura Road, the final section before Noisy Friarbirds reach the former NSW Goorooyarroo State Forest. (b) The assumed roost site. Photos: Michael Lenz

Figure 5. Observed roost flight directions of Noisy Friarbirds (solid white arrows) and the assumed catchment area (rectangle with white dotted line) of the birds for Roost R1 [former Goorooyarroo State Forest (SF)] and the location of a second roost (R2) (McArthur Hill/Fadden Pines) and the assumed flight path (arrows with dotted line) and the assumed source area (white question mark). Image: Google Earth, 22 February 2024

A roost site in South Canberra

It is likely that Noisy Friarbirds in the ACT use more than one roost, although only one other roost has been identified. In October 2017, ~50 birds roosted in trees at McArthur Hill in South Canberra (Archer Callaway pers. comm.). On 19 October 2021, a check of the site revealed that at least 50 birds were spending the night in the Fadden Pines, opposite McArthur Hill (Archer Callaway pers. comm.). The known and assumed flightpaths, roost sites and source areas are summarised in Figure 5.

Roost flight counts

1. Mt Majura

Spring counts were higher than those after the breeding season (Table 1). Overall, afternoon arrivals at Mt Majura stretched over several hours and numbers peaked *c.* 2 hours and 15 minutes before sunset (Figure 6). During unrelated afternoon surveys at Mt Majura, Crimson Rosellas *Platycercus elegans*, Australian King-Parrots *Alisterus scapularis* and Pied Currawongs *Strepera graculina* were observed also crossing the Mt Majura/Mt

Table 1. Examples of high counts of Noisy Friarbirds at Mt Majura.

Date	*Observation period (h, min; endpoint sunset)*	*No. Friarbirds*	*Comments*
Pre-breeding			
6 Sep. 2013	3, 45	73	Resident bird chased passing birds.
25 Sep. 2015	4, 15	92	
Post-breeding			
20 Jan. 2014	3, 45	25	1 adult with 1 dependent young, waited at western side of corridor before crossing to roost site.
7 Feb. 2015	3, 30	37	Pair with 3 dependent young, spent 30 min. on western side of corridor before crossing to eastern side, pausing there before moving further east.
20 Feb. 2015	3, 30	31	

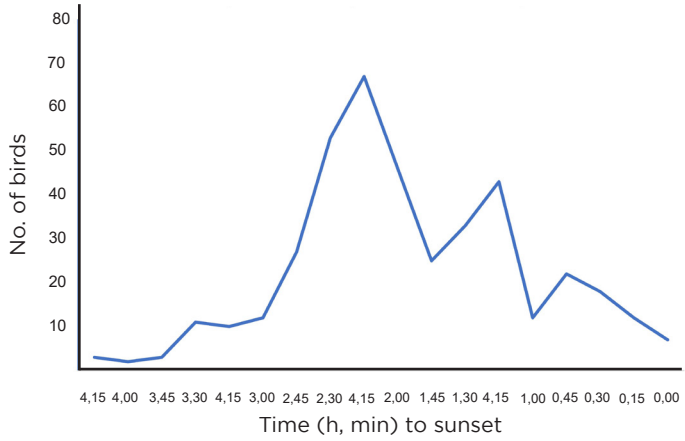

Figure 6. Pattern of arrival of Noisy Friarbirds at the Mt Majura powerline corridor relative to sunset (combined observations from 18 counts).

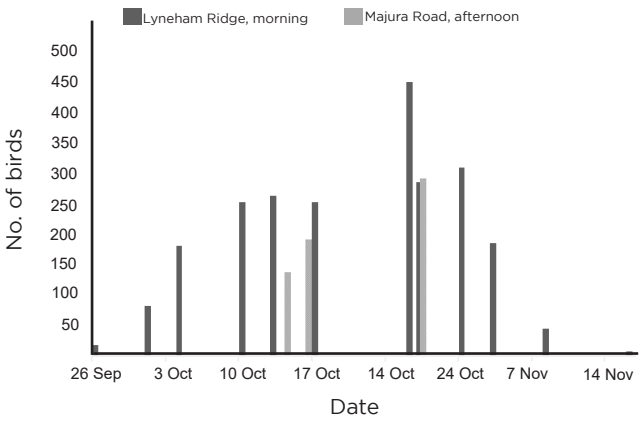

Figure 7. Counts of Noisy Friarbirds crossing North Lyneham Ridge (mornings, 2-hour period) and Majura Road (afternoon; see text for details) in 2017.

Ainslie Range at its lowest point, the Mt Majura saddle (Figure 2), from west to east to their roost in the pine plantation on the eastern side of the mountain. These species arrived in highest numbers only 30 minutes to 1 hour before sunset.

On one occasion, five Noisy Friarbirds arrived at the corridor at sunset. They sat for *c*. 5 minutes in a tree, but did not cross. It was likely too late to fly safely across open country to the roost. Finally, they moved south along the timbered edge of the corridor, finding an alternative site to roost.

Twice, adult Noisy Friarbirds arrived with their dependent young (see Table 1). Begging calls indicated that they spent up to 30 minutes on the western side of the corridor, before crossing it and continuing on their journey, feeding the young while moving towards the roost.

2. North Lyneham Ridge and Majura Road

(a) Counts in 2017

Movement from and to the roost was recorded between late September and mid November, with a peak of 448 birds in late October (Figure 7, Table 2). Birds started to arrive around sunrise at North Lyneham Ridge from the direction of Mt Majura. The distribution of arrivals over time at the site was variable as the two examples in Figure 8 indicate. Most birds (e.g. 65% of all birds in the example from 26 October 2017) arrived in small groups of one to five birds. The largest group comprised 21 individuals (Figure 9).

Figure 10 provides examples of return flights at Majura Road on 16 and 27 October 2017. As at North Lyneham Ridge, there was no pattern in the afternoon arrivals. At Majura Road, Noisy Friarbirds started their return movement to the roost early; when observations were commenced *c*. 4 hours before sunset, birds were already passing through.

(b) Counts 2018 to 2023

After 2017, fewer opportunities were available to monitor Noisy Friarbird roost movement, although I conducted surveys in the period between September and early November. Table 2 gives the maximum number of Noisy Friarbirds recorded during spring roost flights and the

Table 2. Maximum number of Noisy Friarbirds recorded in spring from 2017 to 2023; a.m. = morning, p.m. = afternoon.

Monitoring period	*No. counts*	*Site*	*Time*	*Max. no.*	*Date*
26 Sep.–16 Nov. 2017	13	North Lyneham Ridge	a.m.	448	26 Oct.
	2	Majura Road	p.m.	289	27 Oct.
11 Sep.–6 Nov. 2018	12	North Lyneham Ridge	a.m.	79	23 Oct.
	3	Majura Road	p.m.	61	14 Oct.
29 Sep.–10 Nov. 2019	9	North Lyneham Ridge	a.m.	110	5 Oct.
	1	Majura Road	p.m.	4	29 Sep.
17 Sep.–4 Oct. 2020	4	North Lyneham Ridge	a.m.	9	24 Sep.
11 Aug.–17 Oct. 2021	8	North Lyneham Ridge	a.m.	65	27 Sep.
	2	North Lyneham, Hamilton Park	a.m./p.m.	226	14 Oct.
	3	Majura Road	p.m.	140	9 Oct.
3–29 Oct. 2022	4	North Lyneham Ridge	a.m.	3	27 Oct.
18 Sep.–22 Oct. 2023	6	North Lyneham Ridge	a.m.	28	28 Sep.

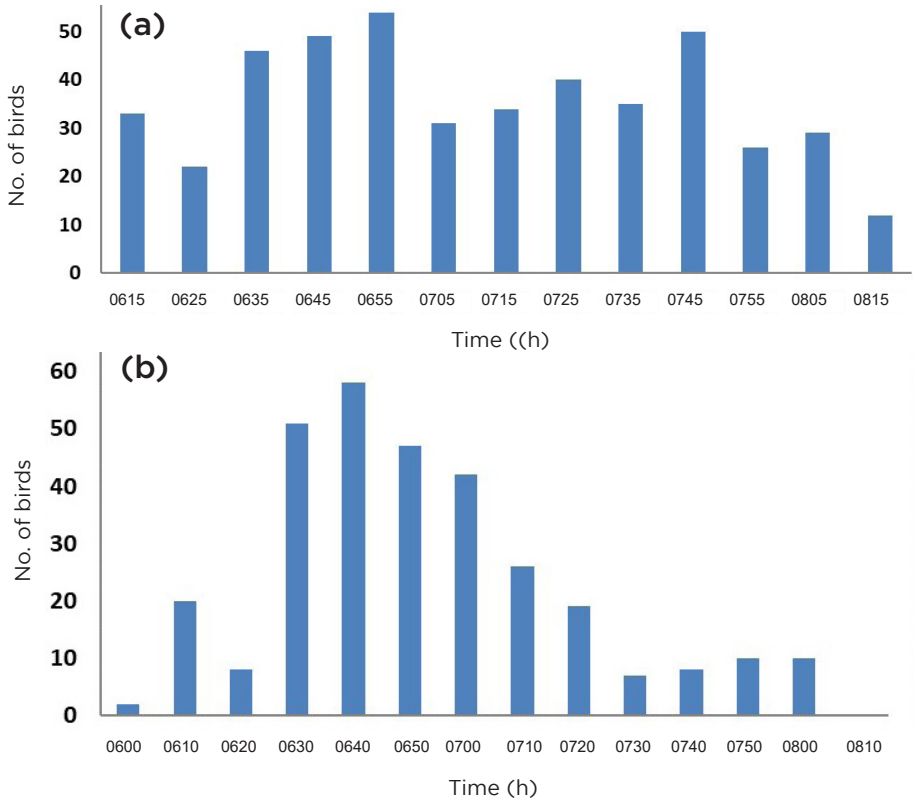

Figure 8. Pattern of arrival of Noisy Friarbirds passing North Lyneham Ridge in the morning (2-hour periods). (a) 26 October 2017, sunrise 0609 h, first bird arrived at 0616 h; *n* = 448 birds. (b) 31 October 2017, sunrise 0602 h; *n* = 308.

period over which counts were conducted from 2017 to 2023. In 2020, only a few surveys early in the season were possible; hence these are unlikely to be representative of the movement pattern for that year.

The number of Noisy Friarbirds recorded during spring roost flights was highest in 2017; numbers were lower in subsequent years and especially low in 2022 and 2023. Relatively high numbers were also noted in 2019 and 2021 (Table 2).

Factors that may influence variations in number of Noisy Friarbirds using the roost site

For the interpretation of the variation in numbers of Noisy Friarbirds observed, weather patterns (i.e. rainfall: Figure 11) and, for 2021, the largest eucalypt flowering event in Canberra for many years have to be considered.

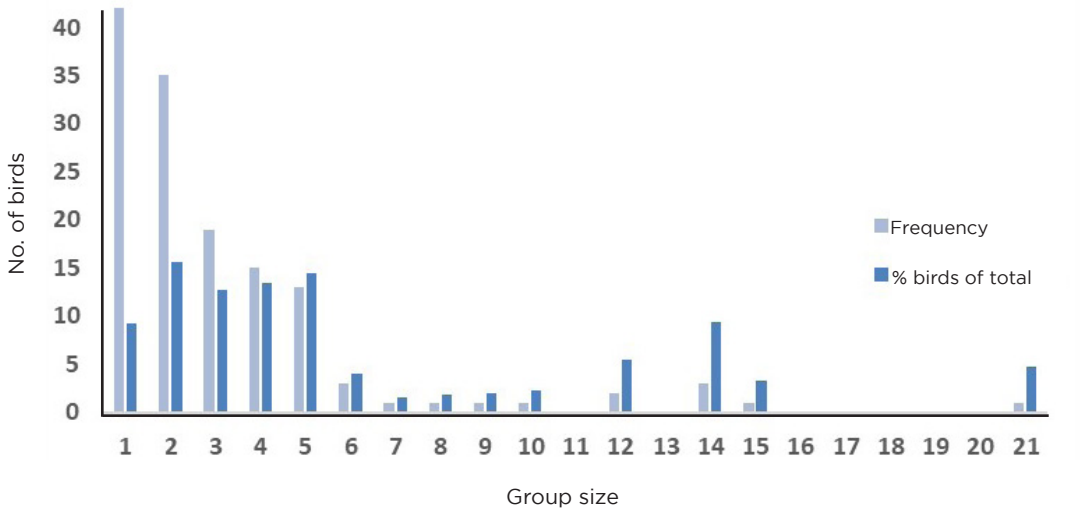

Figure 9. Frequency of group sizes and percentage of total number of Noisy Friarbirds for each size class (*n* = 448 birds) passing North Lyneham Ridge on 26 October 2017.

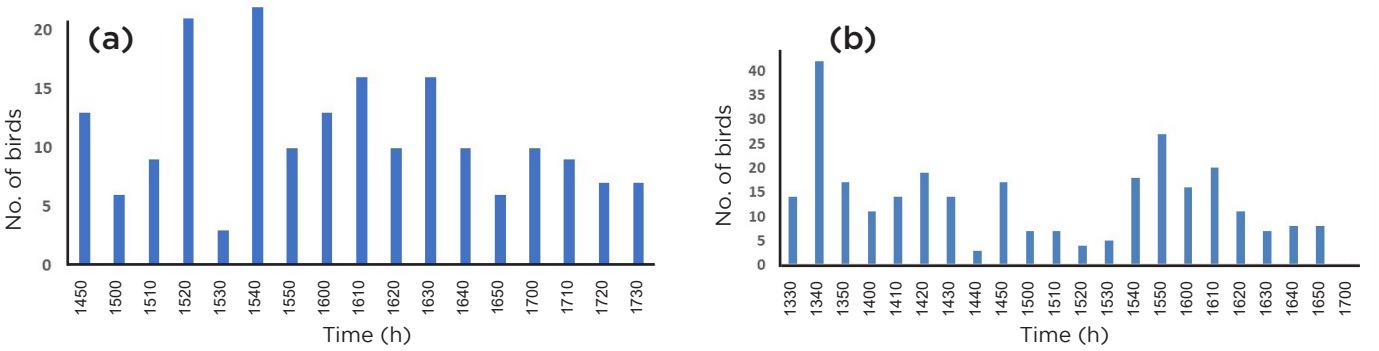

Figure 10. Pattern of arrival of Noisy Friarbirds at Majura Road in the afternoon. (a) 16 October 2017, sunset 1918 h, observation period 1450–1750 h (*n* = 188 birds). (b) 27 October 2017, sunset 1927 h, observation period: 1330–1700 h (*n* = 289).

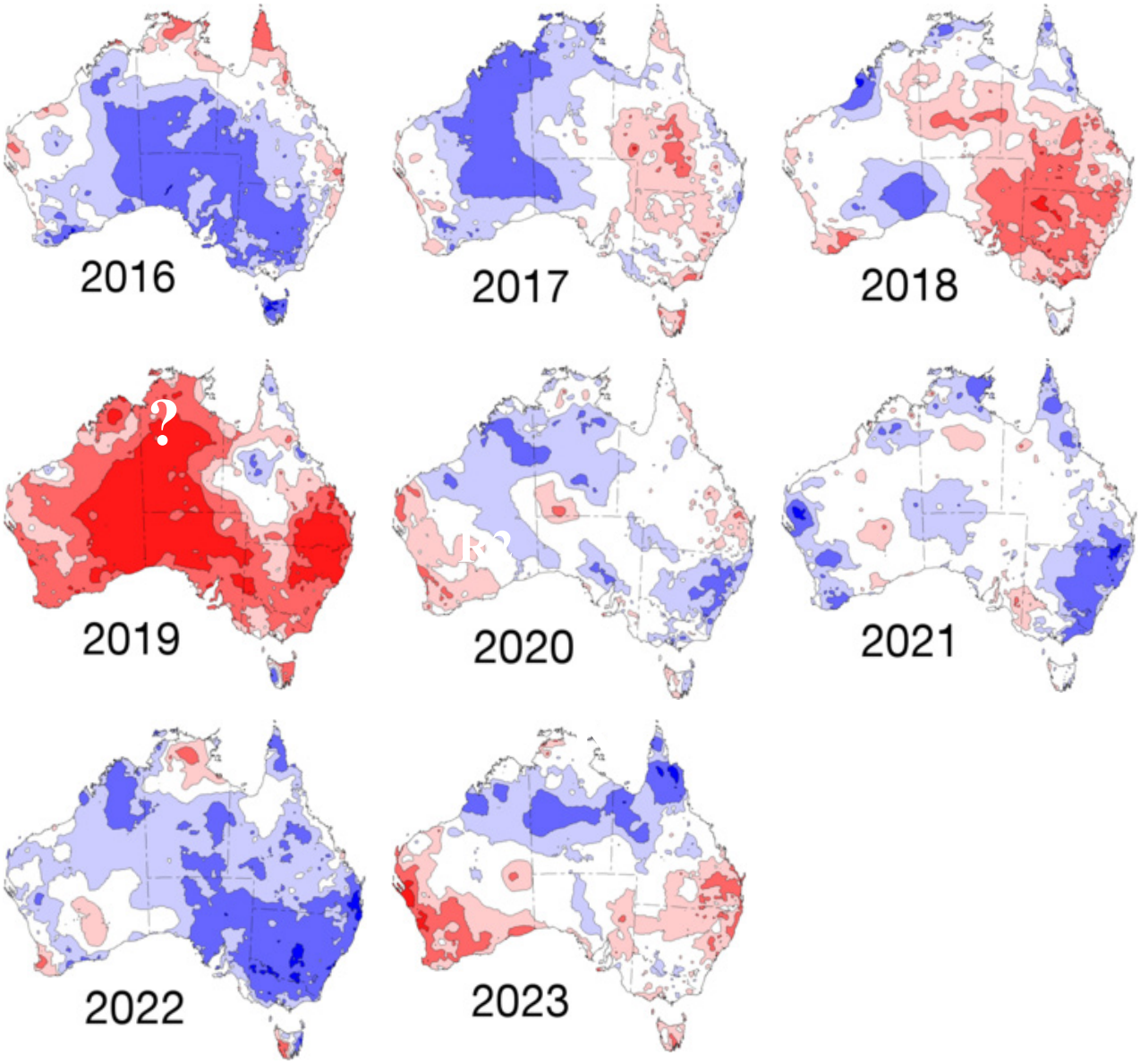

Figure 11. Rainfall deciles for the years 2016–2023 (BOM 2024). In the maps, the darker the blue, the more rainfall above the average; in white, areas with average rainfall; the darker the red, the less rainfall below the average.

In 2016, the Canberra region experienced above-average rainfall (Figure 11), although the overall number of Noisy Friarbird records in the GBS was low (Canberra Ornithologists Group 2018). Noisy Friarbirds possibly had good breeding success. However, the higher number of records and birds in the drought year 2017 (see Figure 10) (Canberra Ornithologists Group 2019) could also be the result of more birds moving into the area from elsewhere. Spring arrivals might have found conditions for breeding less favourable and therefore delayed the start of the breeding season. Hence, the local population would have visited the communal roost for a longer period and in larger numbers than was typical. Eventually birds either commenced nesting later in the woodlands and suburbia or dispersed if not breeding.

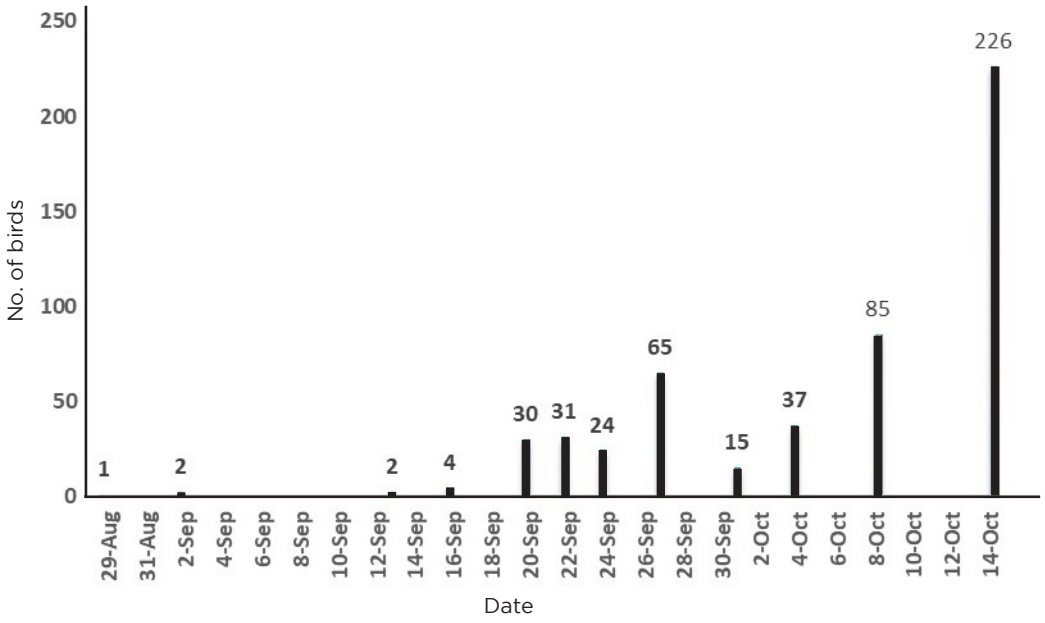

Figure 12. Counts of Noisy Friarbirds (2-hour periods) in spring 2021 passing North Lyneham Ridge during mornings and at Hamilton Park, North Lyneham, 8 October (morning) and 14 October (afternoon).

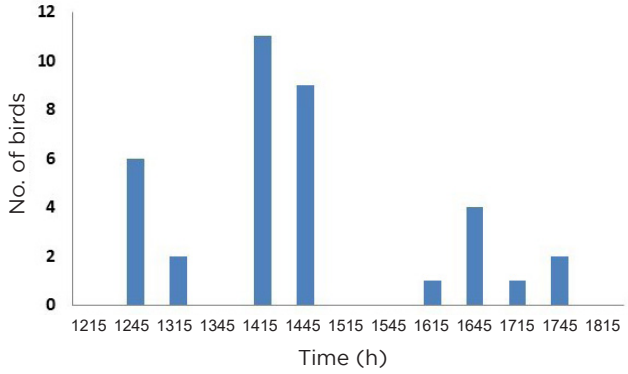

Figure 13. Count of Noisy Friarbirds arriving at Majura Road, close to the roost site, on 13 March 2018. Sunset 1923 h; observation period 1215–1800 h (*n* = 36 birds).

In 2018 and 2019, drought worsened (Figure 11), and it is likely that it affected breeding success of Friarbirds. GBS and general data (Canberra Ornithologists Group 2019) indicated lower numbers of birds and fewer breeding records for 2018 (Canberra Ornithologists Group 2020). That trend continued in 2019. Relatively high numbers in spring 2019 led to the same situation as in 2017: ongoing drought created unfavourable conditions for breeding, causing birds to delay breeding and use the roost for longer. Many birds might have dispersed without breeding.

2020 to 2022 were La Niña years with high rainfall in the Canberra region (Figure 11). Insufficient data are available for 2020 on Noisy Friarbird numbers using the roost in spring. In general, high rainfall during the breeding season can adversely affect breeding success in birds (Öberg *et al.* 2015; Mainwaring *et al*. 2021), especially in species where only the female incubates, such as Australian Reed-Warbler *Acrocephalus australis* (Lenz 2021) and Noisy Friarbird (Higgins *et al.* 2020).

Spring 2021, the second La Niña year, saw mass flowering of eucalypts around Canberra, including in the remnant and planted eucalypts in the suburbs of Lyneham and adjoining Kaleen. Many Yellow Boxes *Eucalyptus melliodora*, Red Boxes *E. polyanthemos*, ironbarks *Eucalyptus* spp. and other eucalypts flowered, and Noisy Friarbirds were present throughout the area.

At North Lyneham Ridge, the first passing birds were recorded early in the season, in late August, and more frequently in mid to late September, with the peak in late September and lower numbers in early October (Figure 12). In other years, numbers built up from early October (e.g. Figure 7). However, it was noticeable that most Friarbirds used a different route across North Lyneham, focusing on flowering eucalypts at Hamilton Park in the north-eastern corner of North Lyneham and along an adjoining road, ~0.8 km south-east of my count site on North Lyneham Ridge. Over a period of 2 h on the morning of 8 October 2021, 85 Friarbirds arrived from the direction of Mt Majura, feeding in the park and gradually continuing on their route. A few birds crossed further to the west, but changed their route and joined a noisy congregation of other Friarbirds in the park.

On 14 October 2021, Noisy Friarbirds were counted on their way to their roost from Kaleen/North Lyneham via Hamilton Park. A total of 226 birds was recorded (between 1430 and 1620 h) (Figure 12). The last bird left at 1615 h, 3 hours before sunset (1917 h). Combining the counts from both sites (Figure 12), the seasonal distribution of birds using the roost in 2021 was similar to earlier years.

In spring 2022 and 2023, numbers of Noisy Friarbirds passing over North Lyneham Ridge were low (Table 2). The last of the La Niña years was 2022, but rainfall in 2023 in the Canberra region remained above average. Conditions for breeding seemed favourable. It is assumed that nesting started early in both 2022 and 2023. The few observations do not allow more general conclusions.

Only one autumn count is available. In March 2018, it was reported on the Canberra Ornithologists Group's chatline that, after a long absence, small flocks of Noisy Friarbirds were present in Watson, a suburb bordering Mt Majura. During a visit to Majura Road on 13 March 2018,

it was confirmed that these birds were using the former Goorooyaroo State Forest as a roost. As Figure 13 shows, the first Friarbirds arrived nearly 6 hours before sunset. Birds spent varying lengths of time feeding in the large paddock trees (see Figure 4a) before moving on to the roost area, as indicated by their frequent calling. The last Friarbird had left the paddocks at 1735 h, almost 2 hours before sunset.

Discussion

Pre- and post-breeding roost flights – an integral trait of Noisy Friarbird biology?

The Noisy Friarbird is widespread throughout eastern Australia and is commonly encountered in woodlands and in urban environments with native vegetation. Yet, the only published reference to communal roosting is from Baldwin (1989) in a wintering area. However, my observations from Canberra show that the species visits communal roosts routinely before and after the breeding season. The known Canberra roost sites have been used over several years. Noisy Friarbirds show faithfulness to breeding sites (Ford 1998). The same seems to apply to roost sites that they visit while present in their breeding area. The young learn about the location of the roost site as the adults take them there before the young are independent.

In spring, numbers build up during September to a maximum by mid to late October, and decline thereafter (e.g. Figure 7, Table 2). It is likely that during the day birds spend their time in potential breeding areas. Conditions in the breeding grounds (food supply, weather etc.) then determine how early or late in spring Noisy Friarbirds start to build a nest and cease to use a communal roost.

How long the birds adhere to their local roost post-breeding is unknown. Many birds disperse and move out of the Canberra region in late summer and autumn, but some use the roost in early autumn, as the GBS figures from the Ainslie site (Figure 3) and the example from March 2018 (Figure 13) illustrate. Baldwin's (1989) observations from a wintering area indicate that communal roosting continues at overwintering sites. These observations confirm that visits to a communal roost are a feature of the Noisy Friarbird's pre- and post-breeding biology.

A notable observation was that Noisy Friarbirds arrive early at their roost site compared with other communally roosting species. For example, Crimson Rosella, Australian King-Parrot and Pied Currawong (ML unpubl. data), Torresian Crow *Corvus orru* (Everding & Jones 2006) and Welcome Swallow *Hirundo neoxena* (Lenz 2018) usually reach their roost within 1 hour or less of sunset and, in the case of Torresian Crow and Welcome Swallow, some of the birds even arrive after sunset. One reason for the earlier arrival of Noisy Friarbirds may be that they can meet their food requirements quite early in the day, especially if feeding on nectar.

Several reasons have been advanced concerning the benefits that birds derive from roosting in groups. Among those relevant to the Noisy Friarbird are reduced risk of predation, travel companions, and an increase in foraging efficiency via inadvertent information transfer. Birds that arrive early at the roost have been successful in foraging, late arrivals requiring more time to find food. Hence, the late arrivals may benefit by associating with the earlier arrivals the following morning at departure time (Beauchamp 1999; Bijleveld *et al.* 2010).

Why has communal roosting by Noisy Friarbirds gone largely unnoticed?

The behaviour of the birds while moving to and from the roost provides clues:

1. Generally, they move singly or only in small groups.
2. They move quietly and quickly.
3. Wherever possible they move under cover of vegetation (from tree to tree, below canopy height). Hence, over long stretches of their flightpath they are not conspicuous.
4. They interrupt their flight to preen, feed and spend time scanning their surroundings before crossing wider open spaces, and when doing so would not be associated with movements to or from a roost.
5. Movement to the roost can be spread over several hours (in contrast with many other communally roosting species that visit a roost site in the evening and arrive closer to sunset, and within a relatively short period); hence a Noisy Friarbird encountered early in the afternoon would not be thought to be travelling to its roost.
6. The arrival at the roost is generally completed almost 2 hours before sunset, i.e. earlier than in other bird species. Observations in early afternoon are less likely to be associated with movement to a roost.

Many of the passing Noisy Friarbirds may be judged to be birds on migration or involved in local movement to feeding sites, since numbers at any one time will be small unless they are gathering around a rich food source.

From the above points of Noisy Friarbirds' behaviour, it is clear that, in order to detect and monitor roost flights, an observer has to be stationary for periods at a site where the birds have to cross an open space, where they become visible and can be counted. That was also the circumstance enabling Baldwin (1989) to record winter roost flights of Noisy Friarbirds from his home: he watched birds flying over open space.

Conclusions

This article posits that communal roosting pre- and post-breeding is a basic trait of Noisy Friarbirds, at least for the population in south-eastern Australia. The behaviour of the birds while visiting and leaving the roost may explain why previous knowledge of roosting in Noisy Friarbirds is so scant.

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