Foliage roosting in the Australian Swiftlet (*Aerodramus terraereginae*) in the Wet Tropics bioregion of Queensland

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Abstract

The Australian Swiftlet (*Aerodramus terraereginae*) forages on the wing in daylight and roosts in colonies in inland and coastal boulder piles and in inland limestone caves at night. There are no previous records of foliage roosting by this species, or by any member of the Collocaliini. Here, we report five observations of foliage roosting by the Australian Swiftlet.

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The Australian Swiftlet (*Aerodramus terraereginae*) is an aerial insectivorous member of the Collocaliini tribe in the Swift family Apodidae. Distribution is limited to North Queensland, with populations situated as far north as Iron Range and as far south as the Mackay area (Pecotich 1974; Smyth *et al.* 1980; Tarburton 1988, 2009). Two geographically separated subspecies are recognised. The north and central Queensland coastal and island ssp. *terraereginae* and the inland north Queensland ssp. *chillagoensis* (Tarburton 1988, 2009).

Coastal and island colonies of ssp. *terraereginae* nest and roost in granite boulder-roofed caves, abandoned mines or cracks and fissures in rocks. Inland populations roost and nest in limestone caves including in the Chillagoe-Mungana and Mitchell-Palmer Karst districts (Smyth *et al.* 1980; Tarburton 2009). Breeding primarily occurs between September and March (Busst 1956; Smyth *et al.* 1980; Tarburton 1988), though it can start as early as July and extend to April in both subspecies (Smyth *et al.* 1980; Tarburton 1988; Tarburton *et al.* 2023). Foraging is apparently done during the daytime only and has been observed as far as 30 km away from roosts (Tarburton 1988). Echolocation is used to navigate the sometimes completely dark caves and chambers in boulder piles, but not to forage at night (Roberts *et al*. 1976; Tarburton 2009).

The roosts and nesting sites described above are used for roosting throughout the year if not flooded or otherwise damaged (Smyth *et al.* 1980; Tarburton 2011; Tarburton & Tarburton 2013). The birds, when using the roosts outside the breeding season, leave around dawn only to return near dusk, having spent the whole day on the wing. Birds roost singularly or in pairs in large clusters on rock and cave walls, or on nests when empty (Pecotitch 1974; Smyth *et al*. 1980; Tarburton 1988).

Pizzey & Knight (2012) noted that Australian Swiftlets rest occasionally on tree trunks. Porter (1983) mentions that they never roost in trees, but when stranded on the ground, they climb up a rock or tree to gain height for take-off. Foliage roosting in Apodidae has been reported for the tribes Chaeturini and Apodini (Tarburton 1993; Holmgren 2004; Vanderduys *et al.* 2024). We are not aware of previous reports of Australian Swiftlets or any other members of the Collocaliini roosting in foliage, be it vines, shrubs or trees.

Here, we describe five observations of foliage roosting by the Australian Swiftlet in upland rainforest of the Wet Tropics bioregion of Queensland (Table 1). All observations were incidental and recorded in the wet season of 2020-2021. Four were made when guiding nocturnal tours (De Geest and guests) or when out exploring (De Geest). One observation was shared by a guest (Isaac Clarey). The five singly-roosting birds were found with the use of thermal imaging scopes (Pulsar Quantum Lite XQ23V and Pulsar Helion XP28) and photographed with digital single lens reflex cameras with telephoto lenses and speedlights. Birds were roosting 2.5-4.5 m off the ground, hanging off foliage of trees or vines above a rainforest road or track. The first roosting swiftlet (Fig. 1) was photographed by De Geest in Danbulla National Park. The second bird (Fig. 2) was found by De Geest at Longlands Gap, Atherton Tablelands. Images were obtained and shared by tour guest Isaac Clarey.

Table 1. Observations of Australian Swiftlet (*Aerodramus terraereginae*) roosting in trees or vines. Observer: PDG = Patrick De Geest; IC = Isaac Clarey. Sites: 1 = Danbulla; 2 = Longlands Gap; 3 = Mt Lewis.

Date (dd/mm/yyyy)	**Time** (hrs)	**Observer**	**Site**	**GPS location** (S/E)	**Altitude** (m ± 20)	**Roost height** (m)
19/12/2022	20.47	PDG	1	17.1114/ 145.5668	1210	4.5
25/01/2021	23.30	PDG/IC	2	17.4543/ 145.4765	1160	3
16/02/2021	22.20	IC	3	16.5880/ 145.2719	970	2.5
13/03/2021	19.55	PDG	3	16.5895/ 145.2710	960	4
13/03/2021	22.15	PDG	3	16.5933/ 145.2775	1000	3.5

Figure 1. Foliage-roosting swiftlet, Danbulla NP – 19/12/2020. Photo by Patrick De Geest.

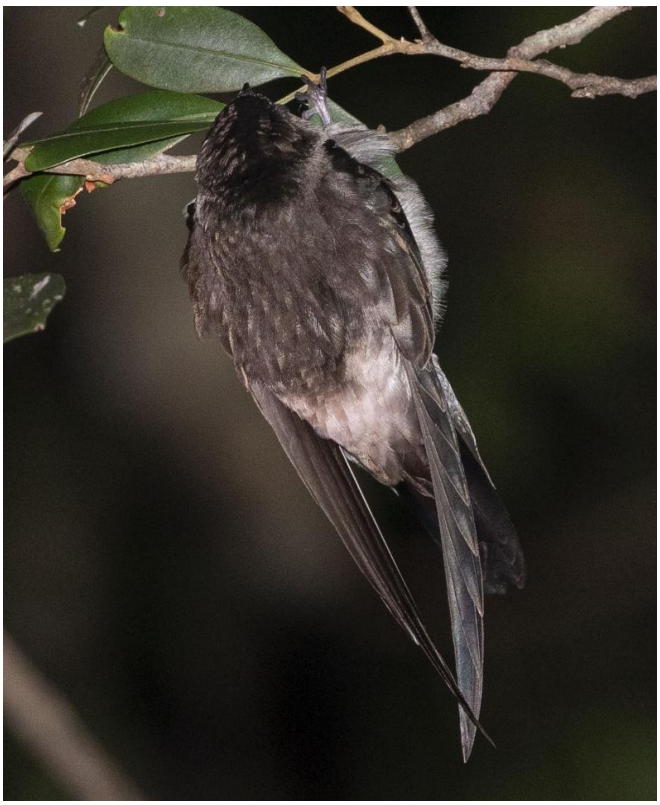

Figure 2. Foliage-roosting swiftlet, Longlands Gap – 25/01/2021. Photo by Isaac Clarey.

Mr Clarey also provided images of a third individual from Mt Lewis, Julatten (Fig. 3). Birds 4 and 5 were found by De Geest in one night and photographed by Chris Lester on Mt Lewis (Figs 4,5).

Tarburton (2012) notes that nestlings that are about to fledge have pale edges to their primaries and retain these until their first moult. Four of the individuals found foliage roosting had these pale edges (Figs 1,3,4,5). The bird roosting among leaves at Longlands Gap (Fig. 2) seems to have very little pale edging to its primaries, which could indicate it was an adult. Taking into consideration that the images might not capture the extent of the pale edging accurately, it is plausible that at least the birds in Figs 1, 3, 4 & 5 were recently-fledged birds.

All five individuals were roosting relatively close to the ground since the canopy of the rainforest was 20–30 m above ground – where birds would be more exposed to the elements. There could be several possible reasons why these birds did not return to their colony roost. In the case of recently fledged individuals, they may not have had the physical endurance to cover the distance back.

The foliage roosting described and illustrated here may occur regularly, and possibly more frequently during the breeding season when the colonies have more recently fledged birds.

Figure 3. Foliage-roosting swiftlet, Mt Lewis – 16/02/2021. Photo by Isaac Clarey

Figure 4. Foliage-roosting swiftlet, Mt Lewis – 13/03/2021 (1). Photo by Chris Lester.

Figure 5. Foliage-roosting swiftlet– Mt Lewis – 13/03/2021 (2). Photo by Chris Lester.

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