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SHORT-COMMUNICATION

# Roost of Leaftossers (genus *Sclerurus*) in the Brazilian Amazon: hints of the low density in fragmented environments

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**ABSTRACT:** Leaftossers are characteristic of primary forest, but have a low density or are absent from fragmented environments. We found leaftossers to use buttress roots of large trees as dormitories. In fragmented forests, these large trees are scarce, due to high mortality and logging. I suggest that the absence of these large trees may explain the low density of *Sclerurus* populations in anthropogenically altered environments.

**KEY-WORDS**: Roosting behavior; BDFFP; buttress roots; fragmentation.

The genus *Sclerurus* comprises a group of specialist birds that capture insects and other small animals in rainforest leaf-litter (Skutch 1969, Ridgely & Tudor 1994). Six species with similar ecology and behavior are described for the genus, which occurs from Mexico and Central America to Brazil (Ridgely & Tudor 1994). They live close to the ground and build their nest in banks or among the roots of fallen trees (Sick 1997).

Leaftossers occupy mainly primary forest (Aleixo 1999) and are considered sensitive to anthropic changes (Remsen 2003). These birds are rare in forest fragments, secondary forests, and logged areas (Ribon *et al*. 2003, Silva *et al*. 2012). Many species of birds are poorly adapted to fragmented environments, and they occur in low abundance or are absent altogether in these landscapes (Remsen 2003). Nevertheless, the subtleties of this inability to survive in altered areas are poorly known.

Here, I report five sightings of *Sclerurus* individuals roosting between buttress roots of large trees (Figure 1). These records were obtained at three locations in Amazonian Brazil during 2009: 1) areas of the Biological Dynamics of Forest Fragments Project (BDFFP; 02°24'17"S; 59°54'08"W) located 70 km north of Manaus; 2) Adolpho Ducke Reserve (03°00'00"S; 59°52'40"W) located 10 km from the city of Manaus, and 3) Island of Maraca Ecological Station (ESEC Maraca), located in northern Roraima (03°39'69"N; 61°47'34"W). All observations were obtained in primary lowland forests.

In just two cases was it possible to identify the *Sclerurus* species involved with these sightings, respectively adults of *Sclerurus mexicanus* and *Sclerurus rufigularis*. Because *Sclerurus caudacutus* is also known to occur at these study sites, it is possible that this species may have been involved with encounters of unidentified birds. In all instances, birds were seen at heights ranging from 1.6 to 2.0 meters (Figure 2) among buttress roots of trees that exceeded 70 cm in diameter at breast height (dbh). One of the birds was observed during three consecutive nights as it slept between the buttresses roots of the same tree.

This type of roosting behavior was recently described for *Sclerurus* by Van Els & Whitney (2011). Leaftossers have a unique, stiff tail structure, presumably as an adaptation to vertical perches; however, this adaptation is not well understood because these birds do not have the habit of foraging on vertical perches (Remsen 2003). Therefore, one possible explanation for their characteristic tail structure may be related to a behavior of these birds to sleep on roots in a climbing position, as do woodcreepers (Van Els & Whitney 2011).

Observations from Ecuador, Bolivia (Van Els & Whitney 2011) and now from the Brazilian Amazon, suggest that vertical roosting may be a common behavior in *Sclerurus*. Leaftossers may exhibit some degree of fidelity to dormitory trees, since in one case we found an individual using the same tree for three consecutive nights.

**FIGURE 1.** *Sclerurus mexicanus* sleeping between the buttress roots of a large tree.

**FIGURE 2.** Large tree with buttress roots where *Sclerurus mexicanus* was found sleeping.

I found leaftossers roosting exclusively between buttress roots of large trees (>70 cm DBH). These roots provide support for many genera of large trees. In the Amazon, these trees occur naturally at low densities across the forest, however, fragmentation increases mortality rates of large trees in particular (Laurance *et al*. 2000), so that they are uncommonly encountered in anthropogenically influenced areas. In unprotected forest remnants, large trees with buttress roots are also rare because of their commercial value as timber.

In the BDFFP reserves, between 2007 and 2009, censuses revealed 5962 individual trees with buttresses at the base of their trunks in a total of 70 ha sampled. These trees belong to 184 genera, with the 10 most common genera making up 64.6% of all individuals sampled. Many of these were economically important species, such as *Protium* and *Puteria* (accounting for 38% of the sample), commonly used in the timber industry for construction, and by local communities (Silva 1977, Ribeiro *et al*. 1999, Lorenzi 2002). In this dataset, when only trees greater than 70 cm DBH are considered, all individuals belong to genera commonly used for timber in construction, naval, and the furniture industries, such as *Dinizia*, *Caryocar*, and *Swartzia* (Silva 1977, Ribeiro *et al*. 1999).

Tall trees with large buttress roots, similar to those we found leaftossers using, are uncommon in forest fragments, reaching their highest abundance in continuous forest (A. Andrade *pers. comm*.). The absence of these large trees may be an important factor explaining the low densities of leaftossers in fragmented and degraded environments, from which they often disappear (Stouffer & Bierregaard 1995, Ferraz *et al*. 2003), especially in unprotected areas where illegal logging exists.

Knowledge of the natural history of tropical species is fundamental for understanding their vulnerability under the processes of habitat degradation. Additional studies may test the relationship between *Sclerurus* population parameters and the presence of large trees with exposed buttress roots. Large-scale logging and changes to the physical forces, microclimate, and disease acting on large trees in fragmented forests decrease their abundance, which may be a limiting factor for the presence of leaftossers in fragmented environments.

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