

Chapter 7

A rapid assessment of the ants of the Grensgebergte and Kasikasima regions of Southeastern Suriname

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SUMMARY

A total of 149 ant species from 35 genera and 10 subfamilies have been identified from the collections made during the 2012 RAP survey of Southeastern Suriname. Additional work is ongoing to process and identify the remaining samples, which will undoubtedly raise the total number of species, possibly to over 200 species. The results indicate a healthy and diverse ant fauna reflective of pristine rainforest. Ants play important roles as predators, scavengers, and seed-dispersers in tropical forests. The ant data from Southeastern Suriname will add to a growing dataset on the ant fauna of the Guiana Shield, which is still poorly documented, to help identify areas of high diversity and endemism that are important to conserve within the region. Data on ants and other invertebrates are important since these groups may be able to illustrate differences between habitats within the Guiana Shield that larger animals with wide geographical ranges do not discern.

INTRODUCTION

With over 12,000 described species of ants in the world (see AntWeb), and their social lifestyle consisting of colonies ranging in size from just a few to millions of workers, ants are a dominant force in all terrestrial ecosystems, especially tropical rainforests. They are important members of the ecosystem, with high biomass and population size, and provide key ecological functions such as aerating and turning soil, dispersing plant seeds, consuming dead animals, and controlling pest insects. In addition to their ecological importance, ants have several features that make them especially useful for conservation planning, including: 1) they are dominant members of most terrestrial environments, 2) they are easily sampled in sufficiently high numbers for statistical analysis in short periods of time (Agosti et al. 2000), 3) they are sensitive to environmental change (Kaspari and Majer 2000), and 4) they are indicators of ecosystem health and

of the presence of other organisms, due to their numerous symbioses with plants and animals (Alonso 2000).

Ants have been poorly surveyed in Suriname. After the 2005 RAP survey of the Lely and Nassau Mountains (Sosa Calvo 2007) and the 2010 RAP survey in the Kwamalasamutu region of SW Suriname (Alonso 2011), a conservative estimate of about 370 ant species had been recorded in Suriname. However, given the low effort of ant sampling in Suriname and the few localities sampled, there are likely many more ant species in the country.

METHODS

Ants were surveyed at RAP Site 1 (Upper Palumeu River), RAP Site 2 (Grensgebergte), and RAP Site 4 (Kasikasima). Ants were surveyed using hand search-collecting methods and the Winkler method (Agosti et al. 2000). In the search-collecting method, the ants nesting under stones, under or inside decayed wood and those foraging on ground, litter, tree trunk and plants were searched for and collected. This method was employed at all three camps around the camp and in the forest along the principal trails.

The second sifting method used was the Ants of the Leaf Litter (ALL) protocol (Agosti et al. 2000). Along each transect, a 1×1-m quadrat was set up every 10 m (for a total of 10 quadrats per transect). The leaf-litter, rotten twigs, and first layer of soil present in the quadrat were collected into a cloth sifter and shaken for about a minute. Within the sifter was a wire sieve of 1-cm² mesh size, which allowed small debris and invertebrates such as ants to fall through the mesh into the bottom of the sifting sack. The sifted leaf litter was then placed in a full-sized Winkler sack, which is a cotton bag into which four small mesh bags containing the leaf litter are placed. Due to their high level of activity, ants run out of the litter and the mesh bag and fall to the bottom of the sack into a collecting cup of 95% ethanol. The Winkler sacks were hung in the field lab for 48 hours.