Chapter 2

Plant diversity and composition of the forests in the surroundings of Kwamalasamutu

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SUMMARY

During a rapid assessment of the plant diversity and composition of the forests in the surroundings of Kwamalasamutu we made 401 plant collections belonging to 62 families, 132 genera, and approximately 240 species. These collections were made in the nine vegetation types we distinguished. We found eight species previously unrecorded in Suriname, of which six were tree species, and two were herbaceous species. We also found a substantial number of rare plant species for Suriname, including six tree species listed on the IUCN Red List and three tree species protected under Surinamese law. The forests in the surroundings of Kwamalasamutu are heterogeneous, and different forest types can be found in close proximity to one another. The forests at the three sampling sites each had a distinct species composition. The forests along the Kutari River had one of the highest tree alpha diversity values ever recorded for Suriname. At the same time, the forests at Werehpai had relatively low tree alpha diversity values. Comparison of our results with data from forests in northern Suriname showed that forests in the Kwamalasamutu surroundings have to some extent a distinct species composition. Based on these results we argue that the forests in the surroundings of Kwamalasamutu have a high natural value, one that warrants appropriate conservation measures.

INTRODUCTION

Most of our knowledge of the diversity and species composition of different forest types is based on studies from the northern regions of Suriname, whereas the forests in the southern regions of Suriname (as well as Guyana and French Guiana) are relatively unexplored. We know very little about the diversity and species composition of these forests. This lack of knowledge of plant diversity and composition hampers the assessment of the natural value of forests in southern Suriname. This knowledge is very much needed for sound decision-making concerning the sustainable management of the forest in Suriname.

Very often the tropical lowland forests of the central and southern regions of the Guianas are considered as one uniform forest type. However, an analysis of 156 1-ha plots across the Guianas has demonstrated that tree diversity and composition of forests mostly follow geological formations (Bánki 2010). The northern regions of Suriname are mostly made up of new and old coastal plains with their specific vegetation and plant species composition (Lindeman and Moolenaar 1959). The Zanderij or Coesewijne formation, with its white and brown sands, separates the northern regions from the Guiana Shield basement complex that extends over the central and southern parts of Suriname. This change in geological formation is also (partly) reflected in a change in species composition and diversity, especially concerning the white sands (Bánki 2010). Extrapolations suggest that tree alpha diversity could be higher in southern Suriname compared to the northern regions of Suriname (ter Steege et al. 2006). Although results from niche modeling based on herbarium collections do suggest similar patterns, the findings also suggest that forests in the Kwamalasamutu region could be less diverse