

Chapter 5

Dung beetles of the Kwamalasamutu region, Suriname (Coleoptera: Scarabaeidae: Scarabaeinae)

Trond H. Larsen

SUMMARY

Dung beetles are among the most cost-effective of all animal taxa for assessing biodiversity patterns, but relatively little is known about the dung beetle fauna of Suriname. I sampled dung beetles using baited pitfall traps and flight intercept traps in the Kwamalasamutu Region of southern Suriname. I collected 4,554 individuals represented by 94 species. Species composition and abundance varied quite strongly among sites. Dung beetle diversity correlated positively with large mammal species richness, and was highest at the most isolated site (Kutari), suggesting a possible cascading influence of hunting on dung beetles. Small-scale habitat disturbance also caused local dung beetle extinctions.

The dung beetle fauna of the Kwamala region is very rich relative to other lowland forests of Suriname and the Guianas, and contains a mix of range restricted endemics, Guiana Shield endemics, and Amazonian species. I estimate that about 10–15% of the dung beetle species collected here are undescribed. While most species were coprophagous, 26 species were never attracted to dung; 4 of these were attracted exclusively to carrion or dead invertebrates and the other 22 were only captured in flight intercept traps. The abundance of several large-bodied dung beetle species in the region is indicative of the intact wilderness that remains. These species support healthy ecosystems through seed dispersal, parasite regulation and other processes. Maintaining continuous primary forest and regulating hunting (such as through hunting-restricted reserves) in the region will be essential for conserving dung beetle communities and the ecological processes they sustain.

INTRODUCTION

Dung beetles (Coleoptera: Scarabaeidae: Scarabaeinae) are an ecologically important group of insects. By burying dung as a food and nesting resource, dung beetles contribute to several ecological processes and ecosystem services that include: reduction of parasite infections of mammals, including people; secondary dispersal of seeds and increased plant recruitment; recycling of nutrients into the soil; and decomposition of dung as well as carrion, fruit and fungus (Nichols et al. 2008). Dung beetles are among the most cost-effective of all animal taxa for assessing and monitoring biodiversity (Gardner et al. 2008a), and consequently are frequently used as a model group for understanding general biodiversity trends (Spector 2006). Dung beetles show high habitat specificity and respond rapidly to environmental change. Since dung beetles primarily depend on dung from large mammals, they are excellent indicators of mammal biomass and hunting intensity. Dung beetle community structure and abundance can be rapidly measured using standardized transects of baited traps, facilitating quantitative comparisons among sites and studies (Larsen and Forsyth 2005).