

Project Update: November 2015

At the moment, approximately 75% of the fieldwork has been completed (the collected material processed, identified, data analysed and manuscripts are being elaborated upon them). Simultaneously, specimen vouchers for each species (and gender in the case of sexually dimorphic species) are being photographed for both a field guide to Dung Beetles of the Calakmul Biosphere Reserve and such a book for the entire Yucatán Peninsula. Furthermore, high resolution satellite imagery has been acquired for the study area, which I am processing and analysing in order to be able to classify the different types of forests. Remaining fieldwork, related to the study of the vertical stratification of dung beetle species, is scheduled for the next rainy season (June - August, 2016).



Abstract from RSG Recipients Conference, Mexico 2015



Contiguous natural forest landscapes, though not as comprehensively examined as human-modified landscapes, have served as uniform background conditions to evaluate anthropogenic land use change. Considering ecological systems heterogeneous nature is necessary to disentangle human-driven species declines from naturally occurring variation and to evaluate precisely how much managed landscapes have diverged from their original state. Otherwise, the influence of habitat heterogeneity or complexity on biodiversity patterns might be confounded with (anthropogenic) disturbance.

A semi-random sampling of the Calakmul Biosphere Reserve was proposed, to analyse Scarabaeinae beetles diversity in relation to structural and spatial heterogeneity, through a hierarchical nested design.



So far, 48 species of dung beetles distributed in 16 genera have been identified. Most elements coincide with those found in the Lacandona forest (Montes Azules BR and Palenque), with some additional elements from dry habitats characteristic from the Yucatán Peninsula. Preliminary analysis show how assemblages' dominance patterns can change when comparing counts of individuals and biomass as measures of abundance.



Results will shed light on how natural environmental variability influences species diversity and distribution patterns, and provide a basis for comparison to examine biodiversity response to forest transformation in adjacent communal lands. Moreover, novel insights on dung beetle ecology in tropical forests canopy will be brought about. Finally, an accessible field identification guide to dung beetles of the Calakmul Region is being elaborated.

