



HONDURAS DISSERTATION/THESIS PROJECT

MA50 - Ecology of Leaf litter ants

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Ants are a globally distributed group of social insects, and in the Mariarano tropical dry forest they comprise a large share of animal biomass and carry out many ecosystem functions. Ants are also an important indicator group for monitoring and evaluating environmental conditions and biodiversity.

Ant taxonomy is stable and excellent reference materials are available for species identification. Around 30 species are known from Mariarano. We monitor ants in Mariarano using the Ants of the Leaf Litter Protocol (Agosti 2000). This involves pitfall trapping and extraction of ants from leaf litter from sets of 20 sub-sample locations along a 200m line within each segment of the forest sample routes. These routes were designed as a stratified sample of forests of different configurations (patch size and edge distance) and levels of disturbance. You would also measure environmental variables (air temperature, relative humidity, leaf litter depth, canopy cover) at each sample location. Point centered quadrats are used to sample and identify the four trees nearest each sub-sample location. In camp, specimens are sorted under the microscope in Mariarano to morphospecies, and where possible identified using our reference collections and Fisher (2016) *Ants of Africa and Madagascar*. It is also possible to confirm identifications by barcoding. Projects could use these rich datasets to test for the landscape configuration sensitivity of ant species; investigate ecological interactions between ants and trees; look at the assembly of ant communities; test for congruence between ants and other taxonomic groups to evaluate the complementary value of monitoring ants in addition to plants and vertebrates.

Suggested reading

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Bishop, Tom R, et al. (2015), 'Contrasting species and functional beta diversity in montane ant assemblages', *J. Biogeogr.*, 42 (9), 1776-86.

Blaimer, Bonnie B and Brian L Fisher (2013), 'How Much Variation Can One Ant Species Hold? Species Delimitation in the *Crematogaster kelleri*-Group in Madagascar', *PLoS One*, 8 (7),

Garcia, Francisco Hita and Brian L Fisher (2014), 'The hyper-diverse ant genus *Tetramorium* Mayr (Hymenoptera, Formicidae) in the Malagasy region - taxonomic revision of the *T. naganum*, *T. plesiarum*, *T. schaufussii*, and *T. severini* species groups', *ZooKeys*, 1-170.

Joseph, Grant S, et al. (2019), 'Stability of Afromontane ant diversity decreases across an elevation gradient', *Glob. Ecol. Conserv.*, 17

Lampasona, Timothy Peter (2015), 'Malagasy Ant *Pheidole longispinosa* (Forel, 1891) Behavior as Regionally Dominant Ant Predator in Rainforest Environment (Hymenoptera: Formicidae)', *J. Insect Behav.*, 28 (4), 359-68.

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Wetterer, James K (2017), 'Geographic distribution of the weaver ant *Oecophylla smaragdina*', *Asian Myrmecol.*,