

Species Delimitation and Assessment of Biodiversity: With Emphasis on Some Mediterranean *Silene* L. (Caryophyllaceae) Species

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Aim of the study: Species is often referred as fundamental units in relation to the assessment and organization of the biodiversity. Species delimitation is the identification of the boundaries of such units, and the correct identification of the boundaries of species may have critical impacts on any fields from conservation biology to studies of macroevolutionary dynamics such that rely on the species as unit of analysis. In this study, we assessed the species limits in some groups of Mediterranean *Silene* species, belonging to the family Caryophyllaceae.

Material and Methods: With the increasing possibility of collecting genome wide data for many individuals, the Multispecies Coalescent Model (MSC) has almost become standard for many approaches used for species delimitation based on genetic data. MSC model provides considerable power in identifying boundaries of recently diverged taxa. However, there are also limitations associated with implementation of the model. Here, under a Bayesian framework, we used programmes DISSECT/STACEY implementing MSC model, to estimate the species tree for corresponding *Silene* groups, using data from multiple, low copy number loci.

Results: Our results indicate that, the species diversity in two of the investigated groups is underestimated, and their existing taxonomic classifications are incongruent with those observed from genetic data, while in one of the groups, the results were largely compatible with the current taxonomic circumstance of the group.

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