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PRESENCE-ONLY MODELING METHOD FOR PREDICTING SPECIES DISTRIBUTION AND SPECIES RICHNESS: AN EXAMPLE WITH THE WIDESPREAD RUBIACEAE GENUS *COCCOCYPSELUM*

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Predictive habitat modeling, i.e. the use of a statistical model to predict the locations of suitable habitat for a given species has become very popular in recent years. Predictive models represent an important tool to better understand the factors that control species distributions. Many of these models have been developed in temperate areas. However, it is poorly sampled in tropical regions, where the highest biodiversity areas remain and models would be of major value. In the best of cases, primary inventory data exist as georeferenced coordinates from localities where specimens have been collected. There is rarely data indicating absence or abundance of species. However, most of the current modeling approaches need the existence of both presence and absence data, and many of them are based only on biological tolerance to climate. The botanical collections are difficult to use for the assessment of plant diversity, first because they are geographically biased, favoring more easily accessed areas, and second because of the taxonomic correctness of the names of the specimens. The information present at the taxonomic studies, made always by a specialist during a long period, can carry sufficient collections to estimate species distributions. Also, the specialist can guarantee the taxonomic information in the database. This work presents a contribution of the taxonomic revision of the neotropical genus *Coccocypselum* P. Br. (Rubiaceae) for the species distribution modeling purpose, focusing on richness pattern and conservation status of the group. Using the Genetic Algorithm for Rule-Set Prediction (GARP) inside a spatial distribution modeling library (openModeller) nine Brazilian species of *Coccocypselum* were modeled. Climate and topographical data defined the potential niche, and together with the *Coccocypselum* data occurrence were manipulated in Terraview, a GIS database structure. To produce the *Coccocypselum*'s species-richness map for the Brazilian territory all the known locality collections were used to calculate the most significant sites. The final modeled distributions were then used to improve the species-richness map summarizing the contents of modeling process throughout an analysis of average of occurrences. These modeled distribution maps for all species evidenced the sites with higher *Coccocypselum* richness, compensating the geographically biased limitations, usually presented in the traditional approach. Superposing the official conservation unities, the conservation status of *Coccocypselum* was discussed. The current approach can be used to explore the options and demonstrate the role that botanical collection data can play in building richness and distribution maps. With additional data, these methods could contribute to select priority biodiversity sites for possible conservation.

Palavras-Chave: spatial distribution modeling, OpenModeller, GIS, *Coccocypselum*