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### Application of species modeling to improve dendroclimatological studies in the tropics

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Dendroclimatological studies with tropical trees are becoming a demand, as many studies concerning climate changes depend on historical climate series, with big gaps in those regions. However, it is frequent to find reports of dendrochronological studies where there is no strong correlation between growth rings and climate variables. Specieslink-CRIA databases and experimental data from *Handroanthus impetiginosus* (n=78), *Anadenanthera colubrina* var. *cebil* (n=72) and *Handroanthus heptaphyllus* (n=56) native trees were processed in OpenModeller, testing the environment distance algorithm. Brazilian elevation and climatic data used were taken from Worldclim (resolution of 30'). The models were evaluated and the probabilities of species occurrence at the studying area were obtained. The rings sensitivities recorded for the three species at the same site in Pantanal region, Brazil were compared to the occurrence probabilities results. Binomial test was significant for all models. The model for *A. colubrina* var. *cebil* and *H. heptaphyllus* presented excellent performance, with area under the receiver operating characteristic above 0.9, and for *H. impetiginosus* (=0.85) was acceptable, indicating that the models prediction were not random. Although the studying region presents climate seasonality, with a defined rainy season, differences in growth ring correlation were previously observed among species: *H. impetiginosus* presented low correlation and presented the higher occurrence probability among the three species (80-90%) and *A. colubrina* var. *cebil* presented medium correlation, and 70-80% of occurrence. *H. heptaphyllus* has very sensitive rings to annual precipitation, and presented the lowest probability of occurrence prediction by environmental distance algorithm (60-70%) in the studied site, reflecting the importance to select more restrictive sites to establish samples collection to obtain better climate signals in growth rings. Species modeling was shown as a potential tool to highlight potential areas and species to dendroclimatological studies, although site evaluation and previews knowledge of the species must never be disregarded.