

Ecological affinities and potential distribution of *Podarcis* lizards in north Africa: effects of modelling techniques and data precision

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Modelling of species distributions and evaluation of potential occurrence areas highly depends on the resolution of the environmental data used, as well as on the precision of species' records. Here we investigate ecological affinities of the lizards of the genus *Podarcis* in North Africa, trying to evaluate the efficacy of different modelling techniques. The lizards *Podarcis* of North Africa belong to the Iberian/Maghrebian species complex; the members of the group found in Morocco were recently recognised as *P. vaucheri*, while the forms found in North Algeria and Tunisia still wait for taxonomical clarification. To examine the effect of data precision we used two different sources of records: records collected directly by the authors, for which the exact locality was marked with GPS, and data from Atlases and other publications, at a 10x10km² scale. Additionally, we investigated the performance of presence-only vs presence-absence modelling by applying Maximum Entropy and Logistic Regression Modelling respectively. Finally, to analyse the effects of Spatial Autocorrelation on the models, we analysed two datasets: one including all the observations available and another in which points with high spatial autocorrelation were eliminated. All techniques gave concordant results concerning the environmental variables that mostly explained the distribution of *Podarcis* in North Africa. These lizards are dependent on relatively high humidity and temperatures moderate considering the study area, which also seem to be related with a preference for localities of either a high altitude or a proximity to the Mediterranean coast. The potential distribution areas predicted by different models highly overlapped, with a higher geographic resolution of high- over low-precision data.