

## HABITAT SUITABILITY & COMPETITION: HOW IMPORTANT ARE THE BIOTIC INTERACTIONS AT GLOBAL SCALE?

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**Abstract:** Recognizing where and when the inclusion of species interactions will improve predictions on non-indigenous species (NIS) establishment would be critical to assess bio invasions and accurate prediction of geographic range shifts in the face of climate change and anthropogenic impacts on species interactions. We used different species of invasive crabs (*Callinectes sapidus*, *Charybdis hellerii*, *Cronius ruber*, *Percnon gibbesi* and *Portunus segnis*) with different invasion histories to understand in which scenarios the interaction between species could be a driver in the success of the non-indigenous species establishment even if environmental conditions are adequate, using the Mediterranean Sea as a study case. We built different correlative spatial distribution models based on Maximum Entropy and then we compared invasion histories and habitat suitability predictions. Finally, if species interactions are important in some scenarios of a species realised niche but not in others, we discuss different mechanistic approximations that could be adaptive to include these effects when formulating predictions around invasion success.

**Key words:** habitat suitability; invasive crabs; NIS; invasion success; ecological niche modelling; species distribution models.

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