{rokbox title=|Map of the native distribution of Pagurus mbizi and Iridonida speciosa :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-tropicalization-induced-by-non-native-species-decapod-crustacean-farre-et-al-2025-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-tropicalization-induced-by-non-native-species-decapod-crustacean-farre-et-al-2025.jpg{/rokbox}

Marc Farré, Antoni Lombarte, Víctor M. Tuset, Francisca Salmerón, Miguel Vivas, Pere Abelló,
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Abstract: Geographic distributional range shifts are a common effect caused by global warming on marine species, usually leading to polewards displacements of their native distribution. These climate-induced distributional expansions can cause the introduction of warmer alien species in higher latitude areas, which leads to the tropicalization of these areas. In decapod crustaceans, the external body shape has been identified as an essential trait to assess the invasive potential of species given its relevance in their biological and ecological performance. The present study analyses the abundance trends of two tropical anomuran decapods that expanded their distribution and established in the western Mediterranean in recent decades (the squat lobster *Iridonida speciosa* and the hermit crab *Pagurus mbizi*) and assess their impacts on the population dynamics of their taxocoenoses along the Iberian Peninsula (western Mediterranean Sea) over 25 years (1994–2018). In addition, external morphology, measured with geometric morphometric methods, was used to characterize the taxocoenoses to evaluate whether it contributes to understanding the invasive ability of allochthonous species. The results showed that the exotic species that achieved dominant levels (
I. speciosa
) presented some particular morphological differences from native species that likely provide it with greater exploitation efficiency or unoccupied niche opportunities to avoid or overcome competition with residents. However, the invader that settled itself apparently favoured by external or environmental variables but failed to establish dense populations (
P. mbizi
) was morphologically similar to native species. This overlap probably implies ecological competition for the available resources, thus reducing the probability of becoming abundant within the taxocoenosis. The findings of the model agree with those obtained in other taxonomic groups, which reinforces the hypothesis that external morphology is an additional element to be considered within the complex combination of factors determining the success of marine invasive processes.

Keywords: Distributional shifts, Invasive crustaceans, Abundance trends, External morphology, Ecological competition, Mediterranean sea