The blue & red invasion: invasiveness level of *Callinectes sapidus* and *Procambarus clarkii* in three Italian lagoons

Daniele Paganelli[1*], Lucrezia Cilenti[2], Giorgio Mancinelli[3], Salvatrice Vizzini[4], Agnese Marchini[1]

[1]Department of Earth and Environmental Sciences, University of Pavia, Via Sant'Epifanio 14, 27100, Pavia; [2]Institute of Sciences of food Production (ISPA), Via Michele Protano, 71121 Foggia; [3]Department of Biological and Environmental Sciences and Technologies (DiSTeBA), University of Salento, Lecce; [4]Department of Earth and Marine Sciences, University of Palermo, CoNISMa, Via Archirafi 18, 90123 Palermo *daniele.paganelli@unipv.it

INTRODUCTION & METHODS

The risk screening toolkit Aquatic Species Invasiveness Screening Kit (AS-ISK), integrated with local experts' ecological knowledge (LEK), was used to evaluate the level of invasiveness of two decapod species, namely *Callinectes sapidus* and *Procambarus clarkii* in three assessment areas in Southern Italy: Lesina lagoon, Acquatina lagoon (Apulia) and Stagnone di Marsala (Sicily). These target lagoons were identified in the PRIN - TROPHYC project as specific areas to investigate the biology, trophic ecology, invasion history and impacts of *C. sapidus* in the Mediterranean Sea. Thus, to quantify the level of invasiveness (Basic Risk Assessment: BRA score) of these species in all the three areas, the same information on local ecological context was used, and both species were assessed according to their specific biological and ecological traits and classified by specific threshold values provided by AS-ISK.

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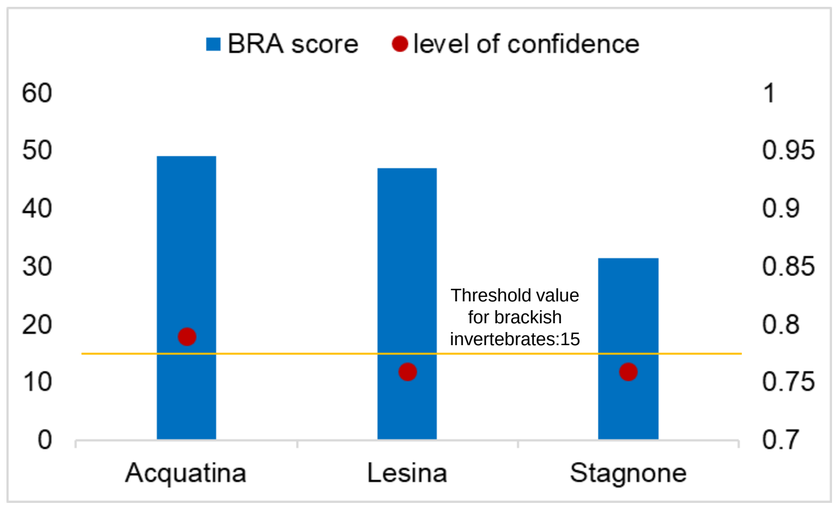
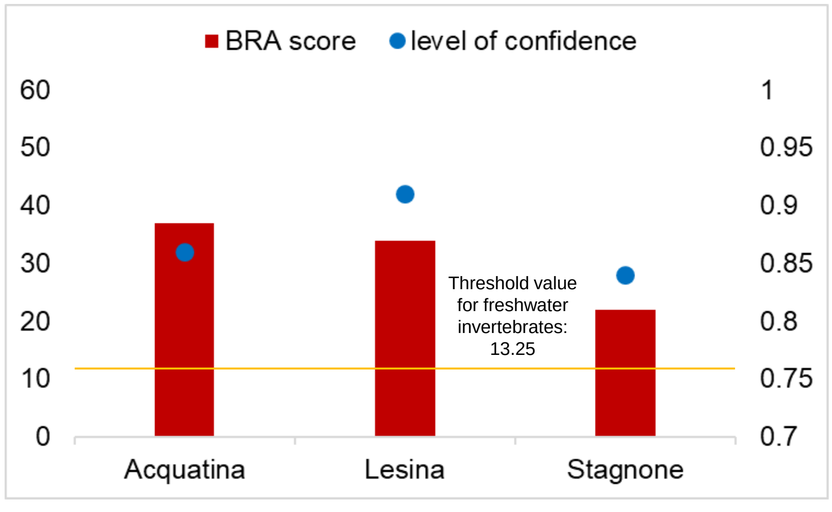
RESULTS & DISCUSSION

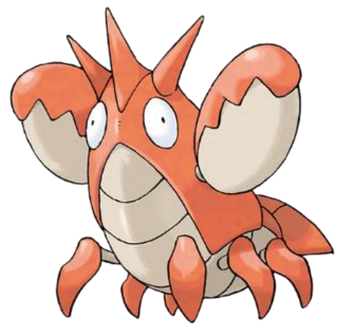
The blue crab currently occurs in all the three areas, while the red swamp crayfish only in one of them (Lesina) but, despite the not ideal environmental conditions for a proper establishment of this species, a future colonisation of the other two target areas cannot be totally excluded considering the high bio-ecological plasticity of the crayfish. For example, in the freshwater courses around Acquatina lagoon, *P. clarkii* is already quite abundant while, in Stagnone di Marsala, it is not reported yet.

Callinectes sapidus



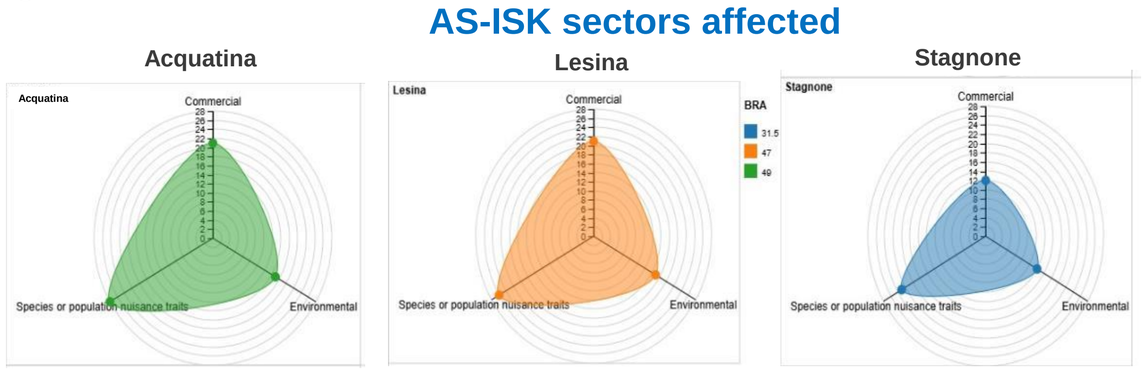
Procambarus clarkii



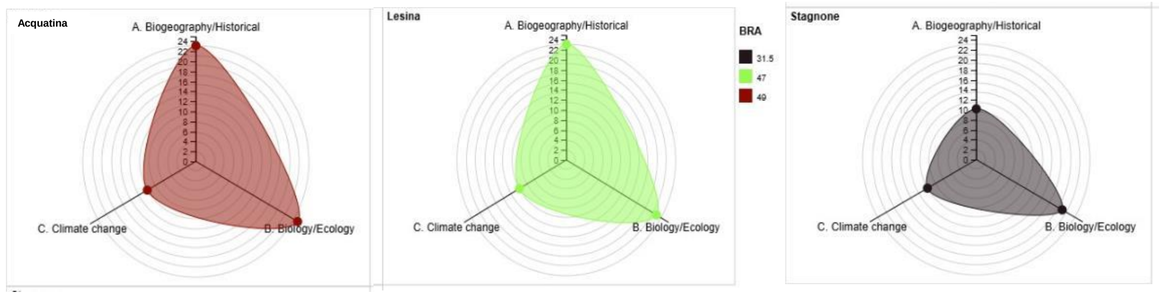


Results indicate high level of invasiveness for both species, providing similar scores for the environmental impacts and species nuisance traits in all the three lagoons, with *C. sapidus* displaying higher scores than *P. clarkii*. The main difference between the two species is due to the impacts on the commercial sector, which is notably higher in *C. sapidus*, particularly in Lesina and Acquatina lagoons.

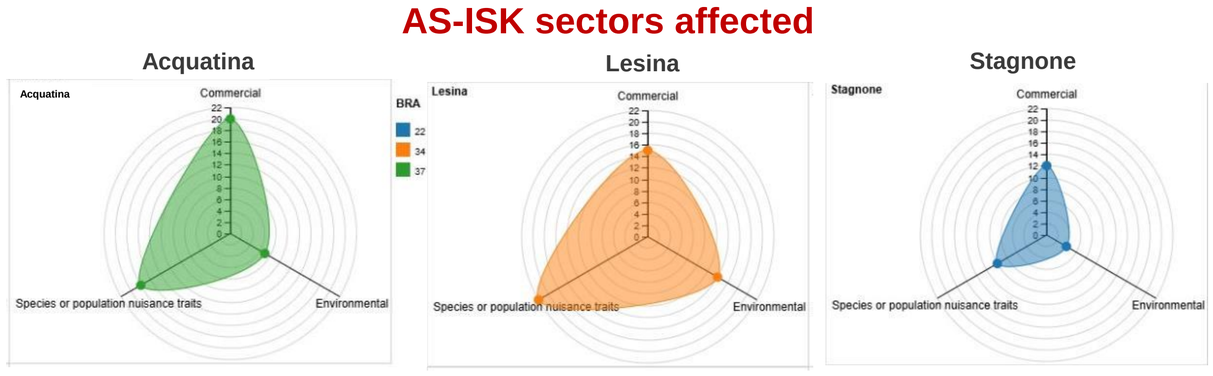
AS-ISK sectors affected



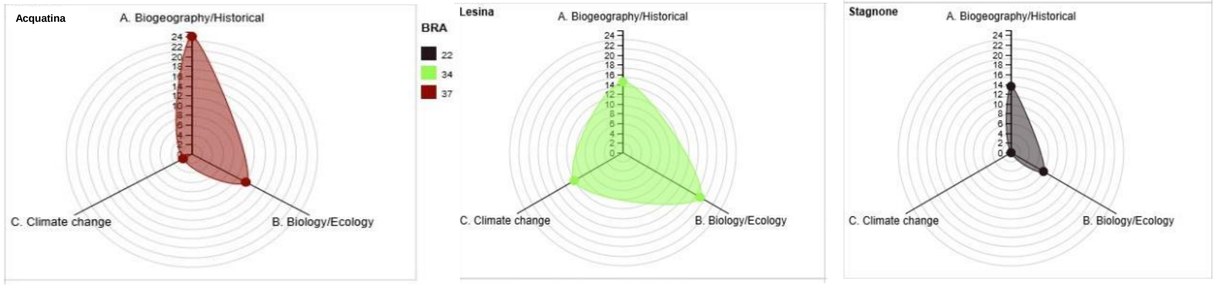
AS-ISK score partition



AS-ISK sectors affected



AS-ISK score partition



CONCLUSIONS

Both decapods have the potential to be invasive, but their impacts are mainly related to the local environmental and socio-economic characteristics of the assessment areas.