

# Using local ecological knowledge for the risk assessment of the Atlantic blue crab *Callinectes sapidus* (Rathbun 1896) in the Mediterranean Sea

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## INTRODUCTION

In 2023, a project named TROPHYC was launched to increase the knowledge on the biology, trophic ecology, and invasion history of the Atlantic blue crab *Callinectes sapidus* (Rathbun 1896) and its impacts in the Mediterranean Sea. One of the aims of TROPHYC is the definition of the level of invasiveness of *C. sapidus* in different assessment areas of the Mediterranean Sea using a risk screening tool (AS-ISK) integrated with local ecological knowledge (LEK) provided by a network of data contributors: researchers and environmental consultants interested in the management of this invasive species. For this purpose, a survey composed of 24 questions was created and sent to the network to obtain context-specific data on the spatial and temporal occurrence of *C. sapidus* in target areas, assess which environmental, economic, social, and cultural values are perceived to be endangered by its invasion, and to explore mitigation and adaptation options.

## RESULTS



Figure 1. AS-ISK results obtained using LEK provided by the TROPHYC project network. The AS-ISK threshold proposed for brackish invertebrates is 15 (Vilizzi *et al.*, 2021)

According to the results of AS-ISK in the assessed areas, *C. sapidus* was ranked with 'high' level of invasiveness in the entire Mediterranean Sea (fig.1) and the highest impact was obtained in the nuisance traits sector (fig. 2-3). Despite few differences in the impact evaluation obtained from different areas, the general level of invasiveness was also in accordance with the information collected from LEK.

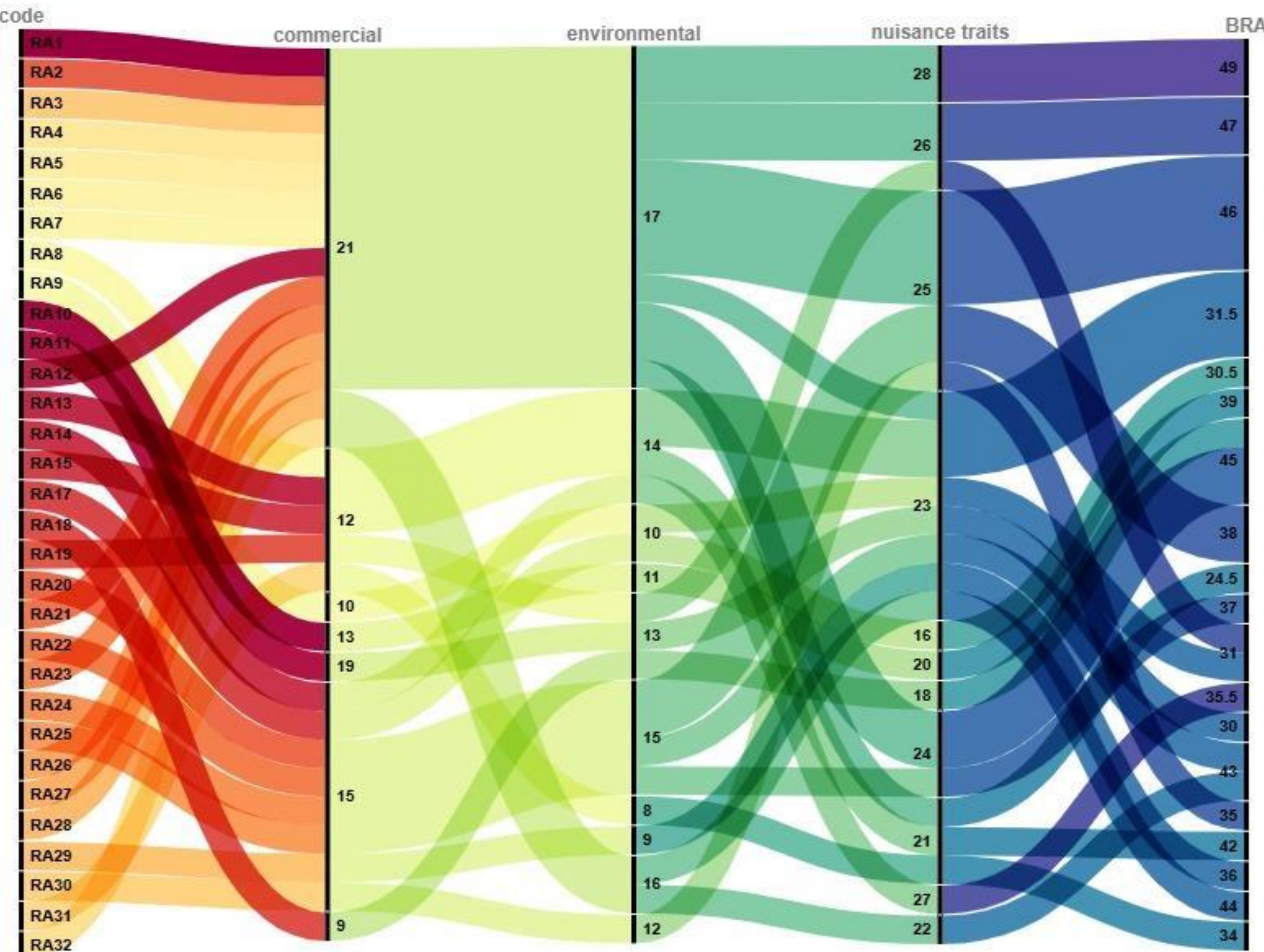


Figure 2. AS-ISK score (BRA) and impacted sectors (commercial, environmental and nuisance traits) in the assessed areas.

## CONCLUSION

The integration between the results obtained using scientific and local knowledge will be useful for an advanced resolution of the ecological and socio-economical complexity of the impacts of *C. sapidus* in the Mediterranean Sea.

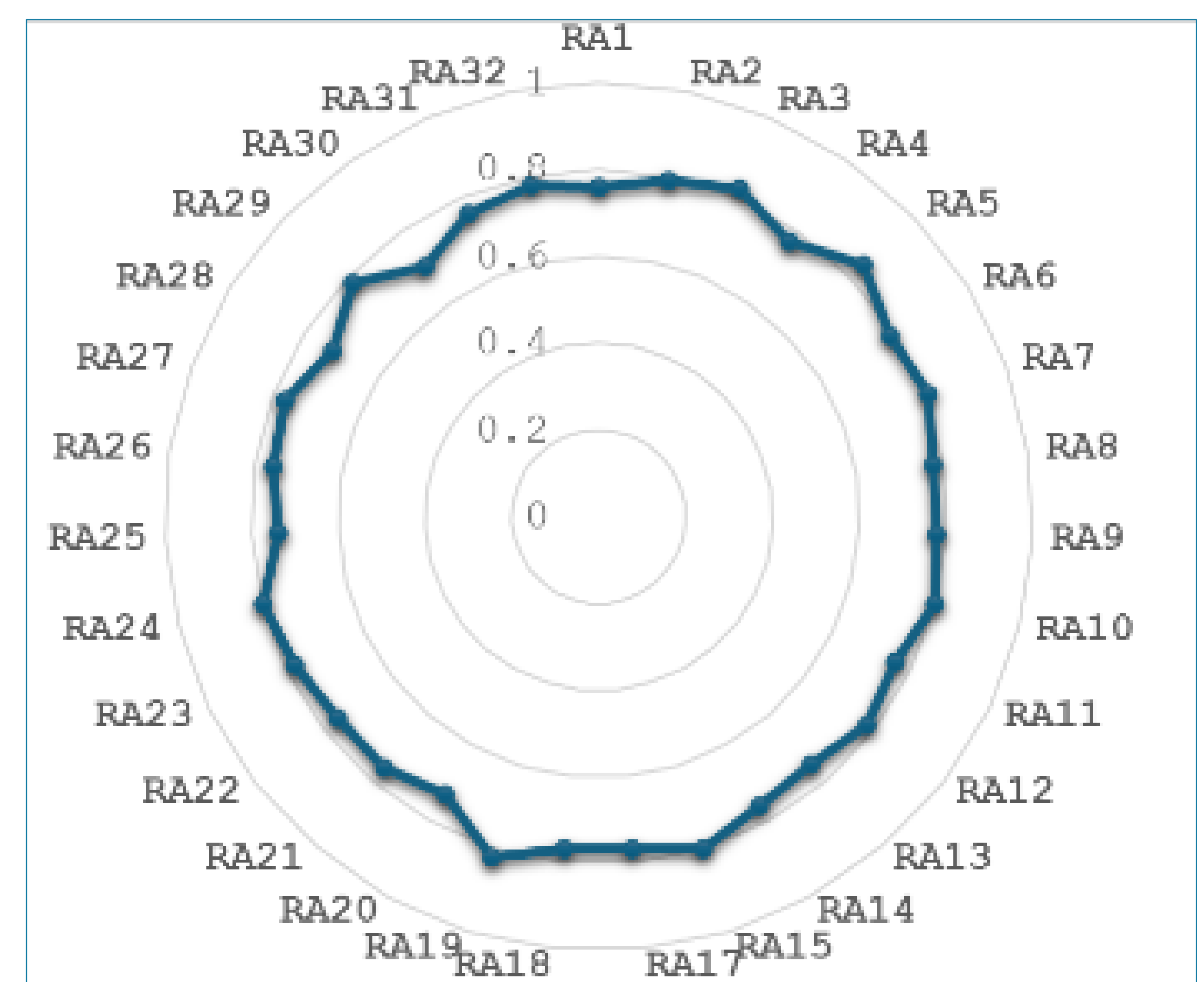


Figure 3. Confidence level of AS-ISK results

## GOALS ACHIEVED

1. The creation of a scientific hub for data crowdsourcing. It is to date acknowledged that strongly collaborative research initiatives are essential to address the global escalation of biological invasions.
2. TROPHYC brings together an international team of researchers and stakeholders sharing data and standardized designs/procedures to target an in-depth knowledge of the blue crab impacts

