PA20

Update and implementation of metadata of marine amphipods to better assess biodiversity

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Introduction:

This project focuses on assessing the biodiversity of amphipods (Fig. 1-2), a key crustacean group in all types of marine and semi-terrestrial habitats, extending from the supralittoral to the deepest waters. Amphipods represent an ecologically important group that contributes to nutrient cycling.

Fig. 1. Specimen of *Parhyale plumicornis.*

Fig. 2. Specimen of *Corophium orientale.*

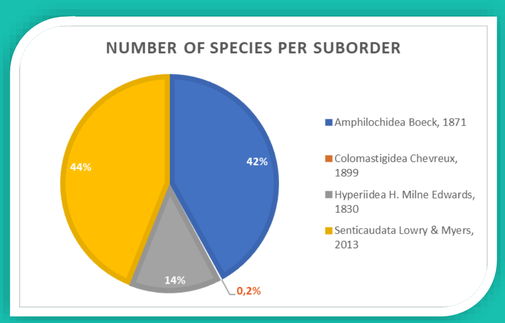

Fig. 3. Representation of the percentage of the number of species per Suborder in Italy.

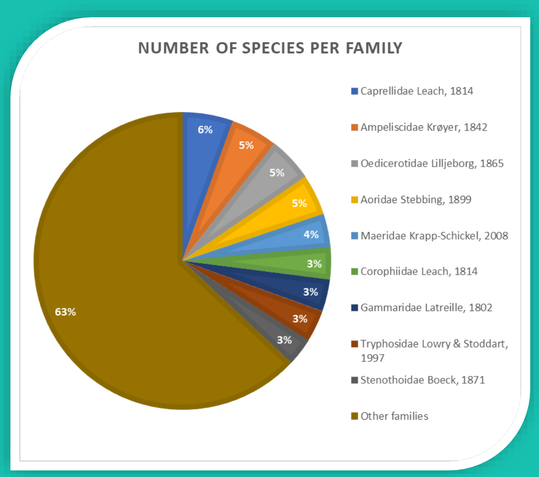

Fig. 4. Representation of the percentage of the number of species per Family in Italy. The families with a percentage of less than 2% of the total (63%) have been grouped into a single category (Other families) to simplify data visualization.

Results:

In Italy there are 4 suborders (Fig. 3), 85 families (Fig. 4) and 225 genera. The project has involved several institutions and obtained preliminary results which updated the Italian checklist to 500 species, of which seven were found to be non-indigenous species (NIS), thus bringing the number of NIS present in Italy to 11. As Italy is located at the centre of the Mediterranean basin, with its almost 8000 km of coastline, it is expected to be representative of the basin. To date, the total number of amphipods in the Mediterranean is 647 species. The division of the Italian waters into nine biogeographical sectors was applied (Fig. 5), while the Mediterranean was divided into two basins (Western and Eastern)(Fig. 6). Regarding Italy, 352 records reported species in sectors for which they were previously absent. At the same time, all over the Mediterranean new records, with the exception of the Italian ones, for the Western Basin (20) and for the Eastern Basin (164) reported species never detected before (Fig. 6).

Conclusions:

In conclusion, the species present in the checklist of Italian seas which represent 76.7% of the species present in the Mediterranean Sea, suggest that Italy has a central role in the biodiversity of the Mediterranean. The present work aims to produce a reference dataset to implement online platforms (e.g. GBIF), to carry out the digitization of museum collections and to provide more taxonomic information, including through DNA barcoding analysis.

Main project goals :

- Update the state of the marine amphipod biodiversity in Italy and Mediterranean through checklists. Collect data and samples (also provided by collaborators) and determine which species are actually present in the Italian maritime zones.
- Digitize the species present in the checklist of amphipods of Italian seas. For the digitization of the "Historical Database", the specimens belonging to the collection of the Natural History Museum of Verona will be considered.
- DNA barcoding analyses will be carried out on some species.
- Assessment of the state and changes in amphipod biodiversity and dissemination of the data obtained, following the protocol of the Fauna d'Italia. Upload the results obtained in online platforms such as: Global Biodiversity Information Facility – GBIF and Ocean Biodiversity Information System – OBIS.

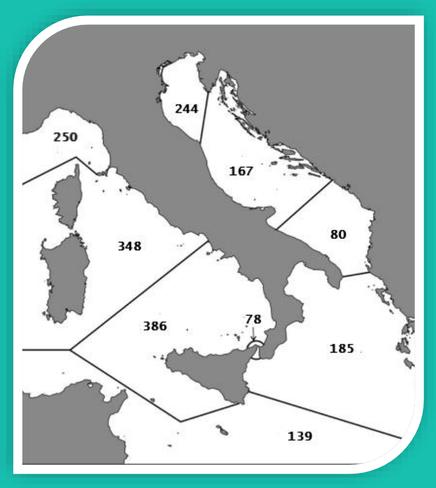

Fig. 5. Map of Italy representing the division of the Italian seas into nine biogeographic sectors (numbers indicate species richness in the various sectors).

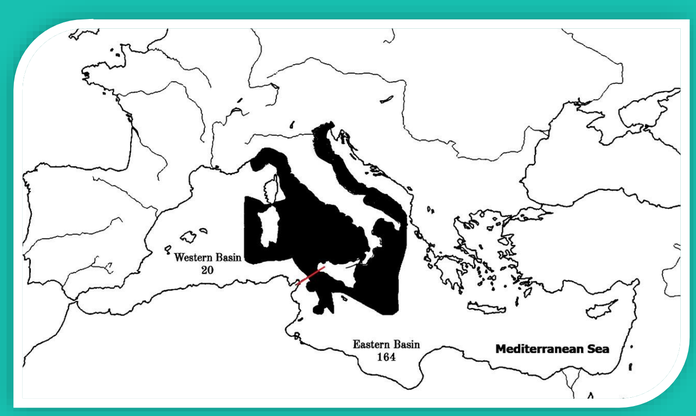

Fig. 6. Map representing the Mediterranean Sea divided into two basins (Western and Eastern). Excluding Italian records, 20 new records in the western basin and 164 in the eastern basin were reported .