ARE FEEDING TRAITS AND HABITAT RESPONSIBLE OF MICROPLASTICS INGESTION IN FISH, CRUSTACEANS AND ELASMOBRANCHS AT THE WESTERN MEDITERRANEAN?

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Abstract
Marine litter loads are increasing worldwide and impacts and effects on marine ecosystems and their inhabitants are still unknown [1,2]. Whereas interaction effects of macrolitter, especially on species as sea turtles and marine mammals has been more investigated, the microscopic fraction has been less addressed. Therefore, several key species of fish, crustaceans and elasmobranches have been studied to assess microplastics ingestion in the Western Mediterranean. Mean ingested microplastics (MPs) ranged up to 2.3 MPs/ind indicating a threat of this man made contaminant on species which are commercialised.

Keywords: South-Western Mediterranean, Plastics, Pollution

Introduction
The small size of MPs facilitates organisms' intake compared to macroplastics and widespread ecological impacts are expected from MPs. Quantities of MPs have already been reported in shallow marine coastal areas of the Balearic Islands [3].Therefore, MPs loads in the marine environment are available for organisms with different feeding strategies which can ingest them randomly or selectively having implications along the food web.

Material and Methods
Fishes, crustaceans and elasmobranchs exhibiting different trophic strategies and trophic levels have been taken as case study species to evaluate microplastics ingestion (<5mm plastic fragments). Stomach contents analyses of the selected species have been conducted to quantify mean number of MPs/ind [4,5]. Species have been classified into several feeding habits: browsing on substrate, hunting for macrofauna (predators), selective plankton feeding and variable, and analysed according to their environment: bathydemersal, bathypelagic, benthopelagic, demersal and pelagic-neritic.

Results and Discussion
Different results reveal MPs ingestion of commercial fish and crustacean species *Boops boops, Mullus surmuletus, Aristeus antennatus,* among others (Fig 1). Most species ingested less than 0.5 MPs/ind. However, *B. boops* is the most affected species exhibiting ingestion rates up to 2.3 MPs/ind. being mainly filament type MPs. Results indicate that combined functional traits: biology, autoecology, ethology could be responsible of microplastics ingestion at the studied species. Microplastics are menacing functional diversity through differential ingestion linked to organisms' trophic strategies.

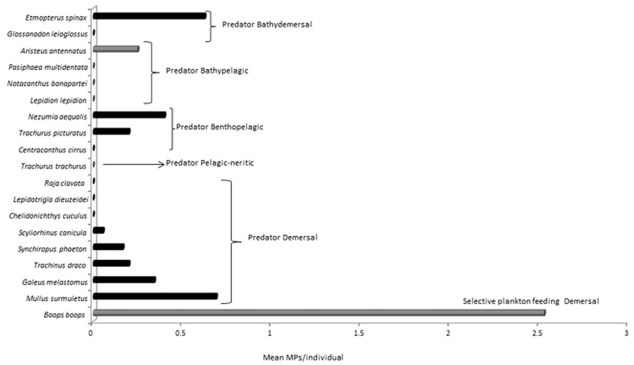

Fig. 1. Mean microplastics (MPs) per individual according to inhabiting environment.

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