



*Tools And Constraints In Monitoring Interactions Between Litter And Megafauna*

**“Which marine debris do the Mediterranean megafauna prefer?”**

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**ABSTRACT**

Marine debris can harm biodiversity in different ways, ingestion is one of the most noxious impact on marine organisms and it has been documented in highly polluted areas such as the Mediterranean Sea. However, the published data are not collected homogeneously and this makes it difficult to make a comparison among different species and studies. The objective of this study is to implement and apply a standardized protocol for the quantification and characterization of marine debris in five Mediterranean megafauna species to properly evaluate the rate of marine debris ingestion and to obtain information about the sources of ingested debris. Gastro intestinal content of 85 bluefin tunas (*Thynnus thynnus*), 84 swordfishs (*Xiphias gladius*), 95 blue sharks (*Prionace glauca*), 76 loggerhead sea turtles (*Caretta caretta*) and 13 sperm whales (*Physeter microcephalus*) were sampled along the Italian coast. GI tract were examined for the analysis of ingested marine debris following the MSFD Descriptor 10 standard protocol developed for sea turtles. An additional analysis was performed to better understand the composition and origin of the debris ingested, using Fourier transform infrared (FT-IR) spectroscopy technique. Marine debris was found in all the five species with a percentage of occurrence ranging from 9.5% in swordfish to 76.9% in sperm whale. The characterization and the polymers analysis provide useful information about the sources of marine debris. The polyethylene and polypropylene sheet like user plastics, widely used as packaging material, are the most ingested debris in all species investigated. The results achieved constitutes an important advancement in the knowledge of this issue in the Mediterranean Sea and provide the background information for future mitigation measures.