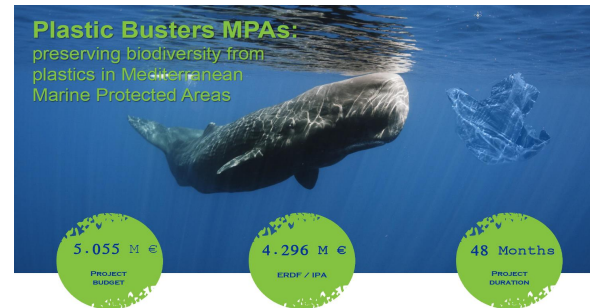




# PLASTIC BUSTERS INITIATIVE AT MEDITERRANEAN SCALE



## Women and Research The case of Marine Litter Study



# Whales and Microplastics



**Fin Whale**

Up to 25 m and 74 tonnes



< 5 mm

Are the largest filter feeder marine organisms affected by any of the smallest human debris?

How can 5 mm plastic debris affect 25 m long marine mammals and 7 m long sharks?

**Can microplastics pose a threat to these species?**





# THE MEGAFAUNA AND MPs TALE: the beginning of the story



The emerging issue of the microplastics in the Mediterranean sea:  
the potential impact on the Mediterranean fin whale

M.C. Fossi

University of Siena, Department of Environmental Biology, Siena, Italy

Fossi@unisi.it

## Objective

The main objective of this multi-steps project is to investigate, for the first time in cetaceans, the potential impact and effect of microplastics in the Mediterranean key species fin whale.



2011



# 2012: Microplastics impact on fin whale

Baleen whales, during their filtrating activity for feeding, potentially undergo the ingestion of micro-litter. Fin whale with each mouthful it can trap each time about **70,000 litres of water** and could undergo the risk of the ingestion of microplastics and related contaminants such as plastic additives and PBTs.



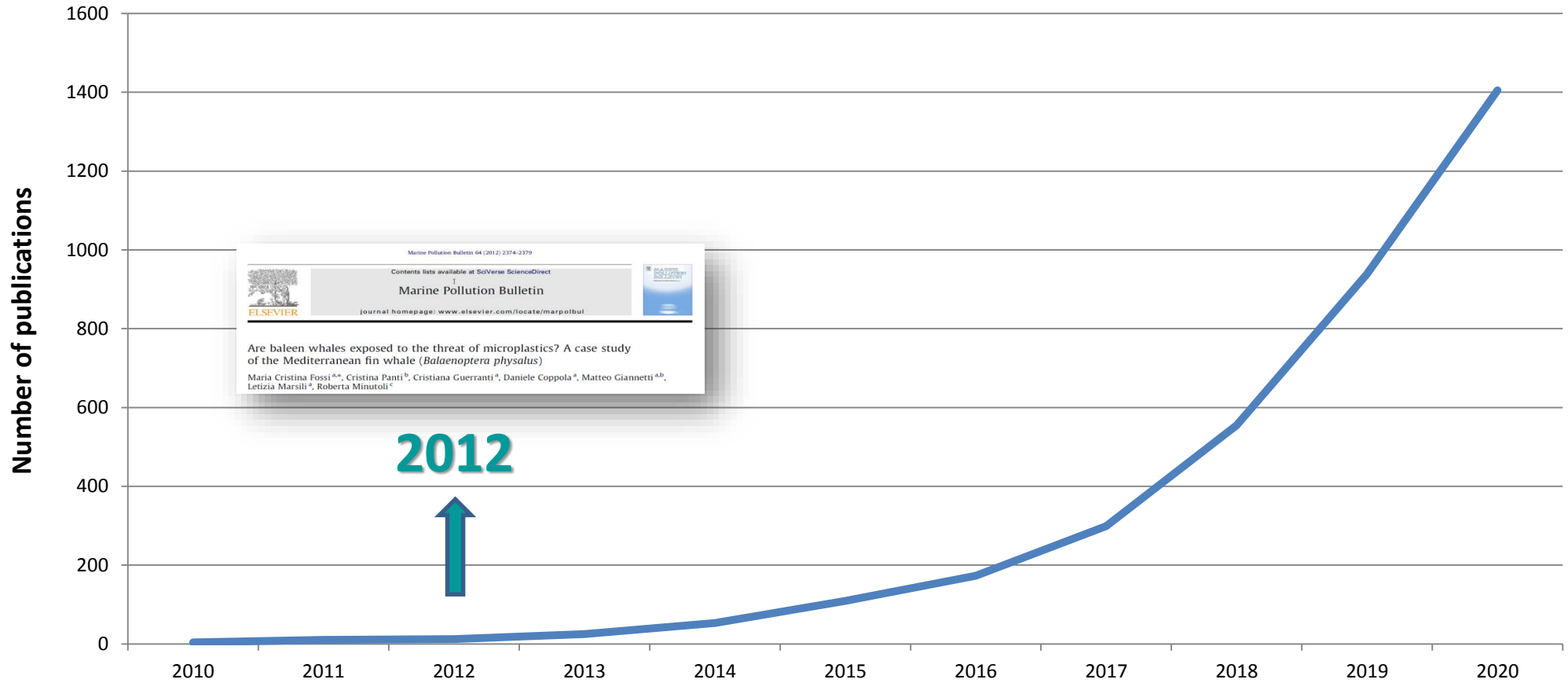
**300 liters of water daily**



**70,000 liters of water**  
with each mouthful



# Microplastics publications in the last 10 years



Document results (Scopus) from 2010 to 2020





# THE MEGAFaUNA AND MPs STORY



2019



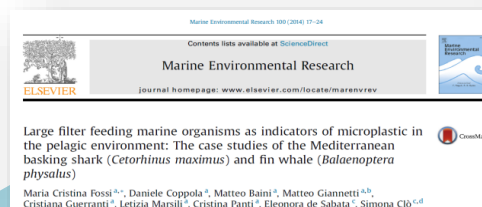
2018



2012



2014



## Whale and shark species at increasing risk from microplastic pollution - study

Large filter feeders, such as baleen whales and basking sharks, could be particularly at risk from ingesting the tiny plastic particles, say scientists



2016



2017

## Plastic Debris Occurrence, Convergence Areas and Fin Whales Feeding Ground in the Mediterranean Marine Protected Area Pelagos Sanctuary: A Modeling Approach

Maria Cristina Fossi<sup>1</sup>, Teresa Romeo<sup>2</sup>, Matteo Bani<sup>1</sup>, Cristina Panti<sup>1\*</sup>, Letizia Marsili<sup>1</sup>, Tommaso Campan<sup>1</sup>, Simone Pietro Canese<sup>3</sup>, François Galgani<sup>3</sup>, Jean-Noël Druon<sup>4</sup>, Sabina Airoldi<sup>5</sup>, Stefano Taddei<sup>6</sup>, Maria Fattorini<sup>6,7</sup>, Carlo Brandini<sup>6,7</sup> and Chiara Lapucci<sup>6,7</sup>

2017





# Why Plastic Busters initiative?



## Plastic Busters on basin scale

A crucial aspect of the marine litter issue, underlined by the **Barcelona Convention within the Regional Plan for Marine Litter** (Istanbul 2013) is that: "Marine pollution knows no border; pollution in one country affects all other 21 countries, hence there is a need for a regional approach".

**Plastic Busters is the first project at basin scale that binds the Southern and Northern Mediterranean countries** on the issue of Marine Litter under the umbrella of UNEP/MAP and UfM, with 10 countries already involved in the project and 12 countries endorsing the project.



### Diagnosis of the problem to identified specific solutions

- Impact on Biodiversity?
- Impact on Fisheries?
- Identification of Hot spot areas?
- Impact on Human?

Project coordinator

**Maria Cristina Fossi**

*Biomarker Laboratory, University of Siena, Italy*



UNIVERSITÀ  
DI SIENA  
1240



**Mediterranean**

## SDSN-MED Flagship project



2013

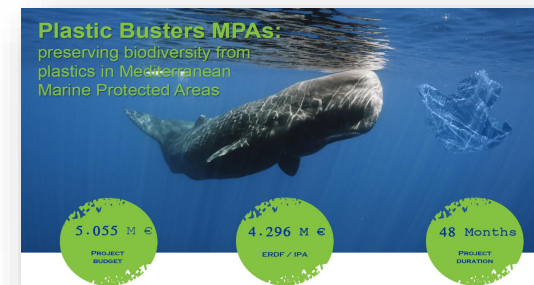
## UfM Labelling



Union for the Mediterranean  
Union pour la Méditerranée  
الإتحاد من أجل المتوسط

2016

## MED-Interreg



2018

## ENI -CBC



2019 - 20



# Plastic Busters MPAs:

preserving biodiversity from  
plastics in Mediterranean  
Marine Protected Areas

5.055 M €

PROJECT  
BUDGET

4.296 M €

ERDF / IPA

48 Months

PROJECT  
DURATION



MINISTERO DELL'AMBIENTE  
E DELLA TUTELA DEL TERRITORIO E DEL MARE

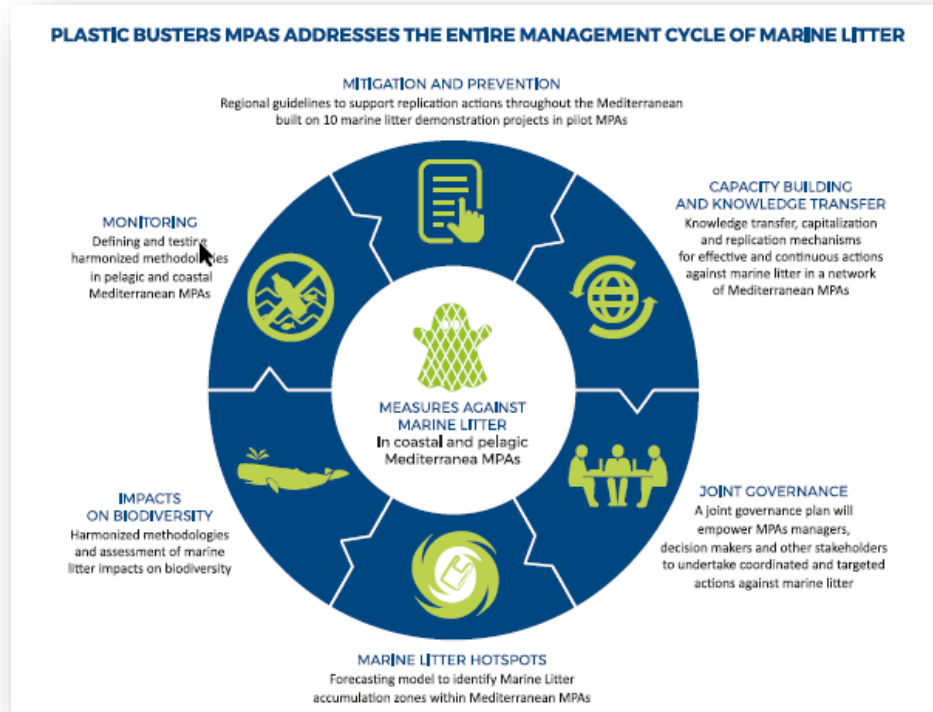


Interreg  
Mediterranean  
PLASTIC BUSTERS  
MPAs

Project co-financed by the European  
Regional Development Fund

# Plastic Busters MPAs general objectives

## *Novelty - Whole Management Cycle Of Marine Litter*



- **PlasticBusters MPAs**, is a 4-year-long project Interreg Mediterranean funded project aiming to contribute to **maintaining biodiversity and preserving natural ecosystems** in pelagic and coastal **marine protected areas (MPAs)**, by defining and implementing a **harmonized approach against marine litter**.
- The project entails actions that address the **WHOLE MANAGEMENT CYCLE OF MARINE LITTER**, from **monitoring and assessment** to **prevention and mitigation**, as well as actions to **strengthen networking** between and among pelagic and coastal MPAs located in Italy, France, Spain, Croatia, Albania and Greece.
- The project will support the **implementation** of the **MSFD** and the **Barcelona Convention Regional Plan on Marine Litter Management** in the Med.



# Plastic Busters MPAs:

Joint strategy for monitoring marine litter and its impact on biodiversity

**SYNERGY BETWEEN MPAS MANAGER AND RESEARCHERS**



Synergy

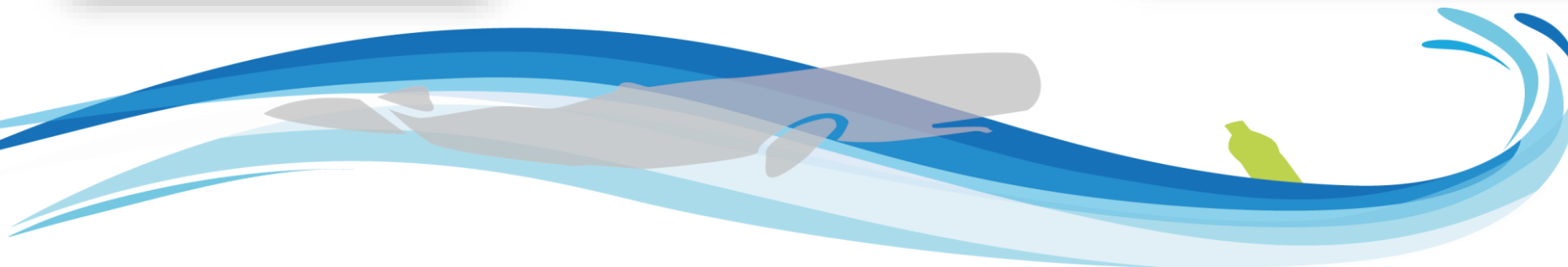


Interreg  
Mediterranean  
PLASTIC BUSTERS  
MPAs

Project co-financed by the European  
Regional Development Fund



# Monitoring activities in Large pelagic and coastal areas: SPAMI - Pelagos Sanctuary

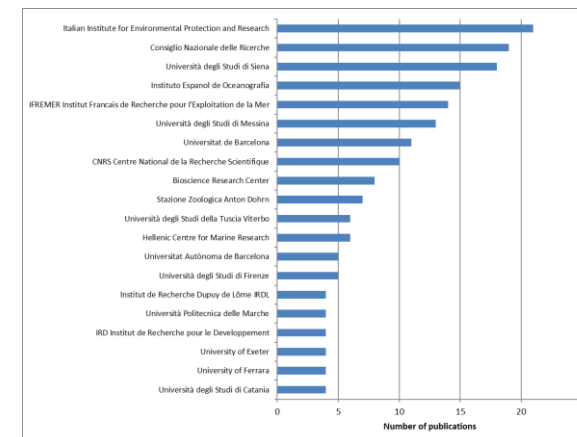
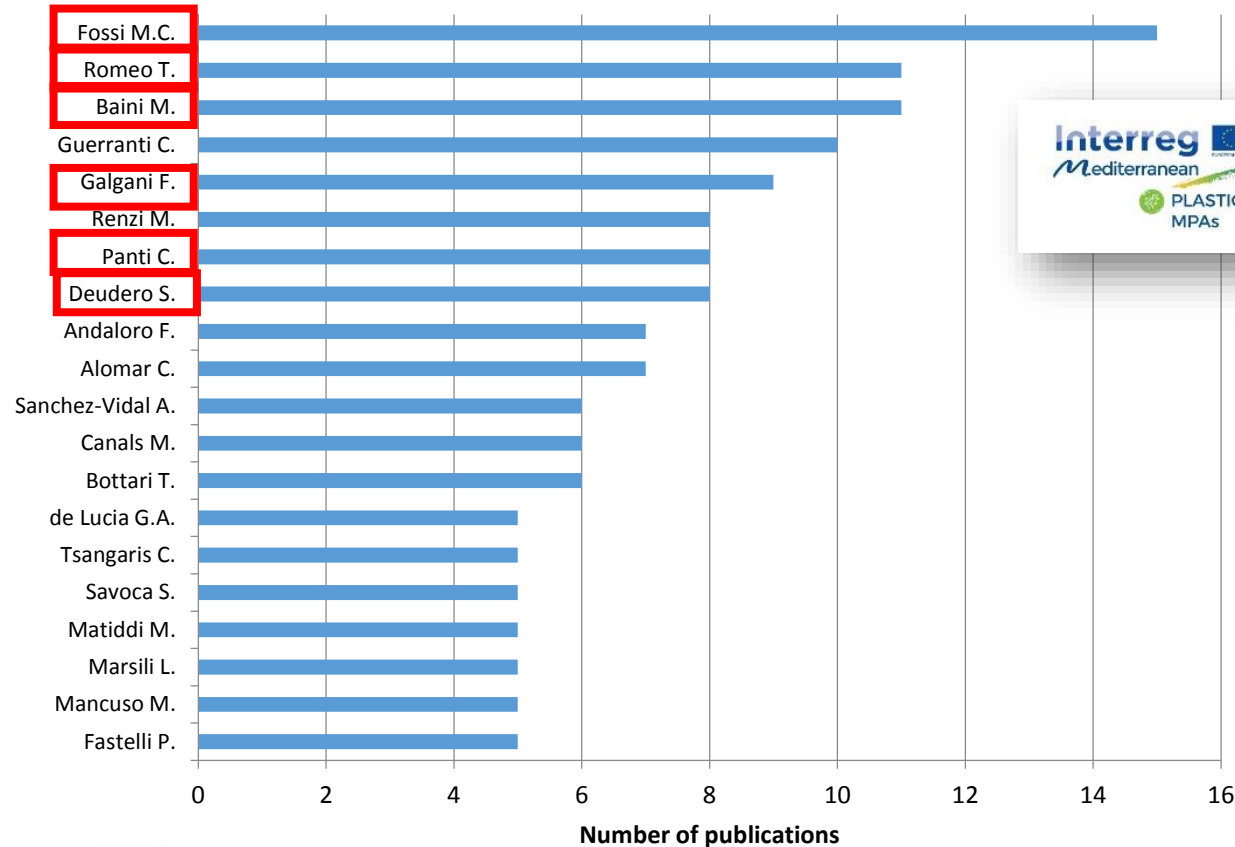


# Dissemination and communicating awareness:

## *a) scientific papers*

Analyzed by author name 2000-2020

Kw: "microplastics" AND "Mediterranean Sea" Scopus



21<sup>st</sup> Meeting to the Contracting Parties to the Barcelona Convention

"A Collective Multi-Stakeholder Driven Mediterranean Response to Marine Litter"

Monday, 2 December 2019, 13:00 – 15:00, Sala Sirena



# Dissemination and communicating awareness :

## *b) science policy interface*

- ✓ Good communication between policy makers and scientists is a crucial requirement for developing policies that cost-effectively achieve measurable outcomes in conservation.



Union for the Mediterranean  
Union pour la Méditerranée  
الإتحاد من أجل المتوسط



MINISTERO DELL'AMBIENTE  
E DELLA TUTELA DEL TERRITORIO E DEL MARE



ISPRA  
Istituto Superiore per la Protezione  
e la Ricerca Ambientale





# Dissemination and communicating awareness :

## *b) science policy interface*



21<sup>st</sup> Meeting to the Contracting Parties to the Barcelona Convention

"A Collective Multi-Stakeholder Driven Mediterranean Response to Marine Litter"

Monday, 2 December 2019, 13:00 – 15:00, Sala Sirena



Union for the Mediterranean  
Union pour la Méditerranée  
الإتحاد من أجل المتوسط

Joint Plastic Busters workshop on creating synergies for consolidating the fight against marine litter in the Mediterranean Region

November 14<sup>th</sup>, 2019

Palau de Pedralbe  
Barcelona (Spain)



Audizione  
Senato della Repubblica

**Il tema del Marine Litter: progettualità  
e Legge «SalvaMare»**

Maria Cristina Fossi

Università degli Studi di Siena  
Dipartimento di Scienze Fisiche della Terra e dell'Ambiente



Senato della Repubblica

Settembre 2020



# Dissemination and communicating awareness:

## *c) Media and Film*



Inchiesta sull'ambiente  
**Indovina chi viene a cena**





# Dissemination and communicating awareness:

## *d) New generations*





# PLASTIC BUSTERS TEAM



Union for the Mediterranean  
Union pour la Méditerranée  
الإتحاد من أجل المتوسط



**Thanks !**