



International Workshop

“MONITORING MARINE LITTER IN ENVIRONMENT AND BIODIVERSITY”

COMMON and Plastic Busters CAP projects - Manfredonia (Italy), 13th - 14th July 2022

The PB-MPAs Toolkit on marine litter monitoring: Sea-surface macrolitter and microlitter

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Site selection

Simultaneous monitoring of Floating Macro- and Microlitter

The methodologies for monitoring floating macro- and micro-litter have been developed both to be **tailor-made** according to the **size and the ecological value of the investigated areas**

Sampling strategies will be taking into account:

an adequate number of transects for a representative spatial coverage of the area based on the **morphology** (shape, presence of inlets and gulfs, etc.), **habitat** and **distance to coast and potential sources of contamination** (harbours, riverine inputs, coastal density population).

daily sea surface currents forecast should be taken into consideration for the exact positioning of the transects and in order to include hotpost/coldspot areas

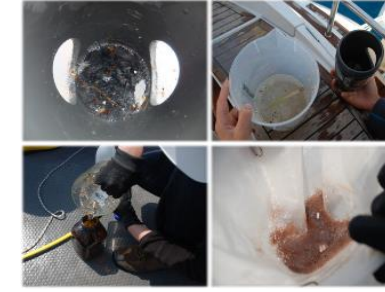
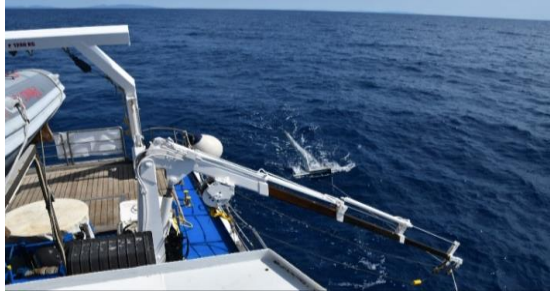
At least two surveys, one in autumn and one in early spring should be carried out.

The proposed survey periods are: **Autumn** (mid-September to mid-October) and **Spring** (March-April)



Monitoring of Floating Micro-Litter

COMMON Plastic Busters CAP



Manta trawl equipped with a flowmeter

Mouth opening: **60 x 15 cm**

Mesh size: **330 µm**

Time: **30 minutes** (1.5 - 2 knots)

Sampling carried out using small vessels at low wind conditions (0-2 Beauforts) should be recorded by a portable anemometer or by ship's instruments.

Both start and end position should be recorded with GPS as well as the track.



Floating MICROLITTER

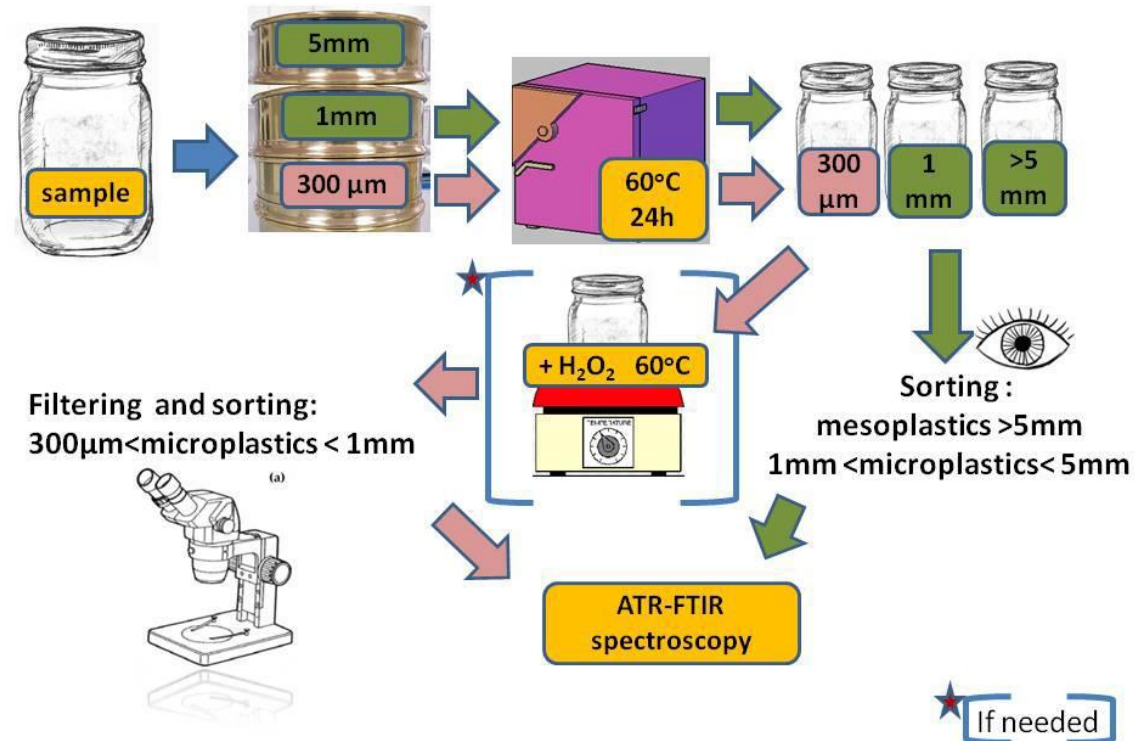
ID code:		Floating MACROLITTER code:		
Sampling date:				
<input type="checkbox"/> Surface waters (s)(Manta trawl)		<input type="checkbox"/> Water column (wc) (WP2 net)		
Sampling site:		Latitude	Longitude	Time
	Start			
	End			
Vessel speed:				
Duration of the trawl:				
Weather condition	Sea:	Sky:		
	Water temp.:	Wind:		
Bathymetry (m):				
Flowmeter	Start:	End:		
Depth reached (wc):				
Frozen sample	Contaminants			
Fixed sample	Ethanol _____ %			
	Volume			
Biota/Neuston	ID code :	N°. ind. pool:		

Processing and size classification

The **sample** collected in the cod-end should then be rinsed with seawater on a **300 µm metallic sieve** and transferred in glass jars with seawater. Any natural debris items, such as leaves, twigs, seaweed etc., should be rinsed separately above the sieve and removed from the sample.

Microlitter is classified in three size classes:

- Mesolitter (5 mm-25 mm)
- Large Microlitter LML (1mm-5mm)
- Small Microlitter SML (300µm – 1mm)



Adapted from Adamopoulou et al., 2015



Expression of the results

Macrolitter

The unit in which macrolitter will be assessed on the sea surface will be 'number of items' and it will be expressed as counts of litter items per square kilometer (**litter items/km²**).

In order to compute the exact surveyed area, GPS coordinates must be recorded regularly (every min) to obtain an accurate measurement of the travelled transect. A handheld GPS unit might be handy in this respect.

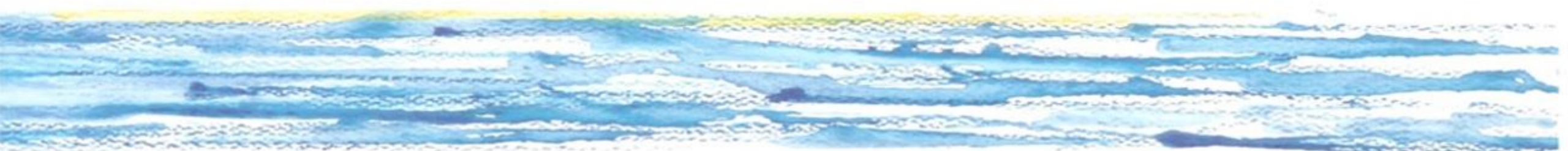
Microlitter

Microlitter counts (N) are reported as follows:

- N per km² or N per m², based on the start - end transect coordinates and the dimensions of the manta net mouth.
- N per Km³ or N per m³, based on flow meter indication and relevant formula.

Microlitter mass is reported as follows:

- g per km² or g per m²
- g per Km³ or g per m³





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Thank you!

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