

Monitoring Marine Litter in Europe

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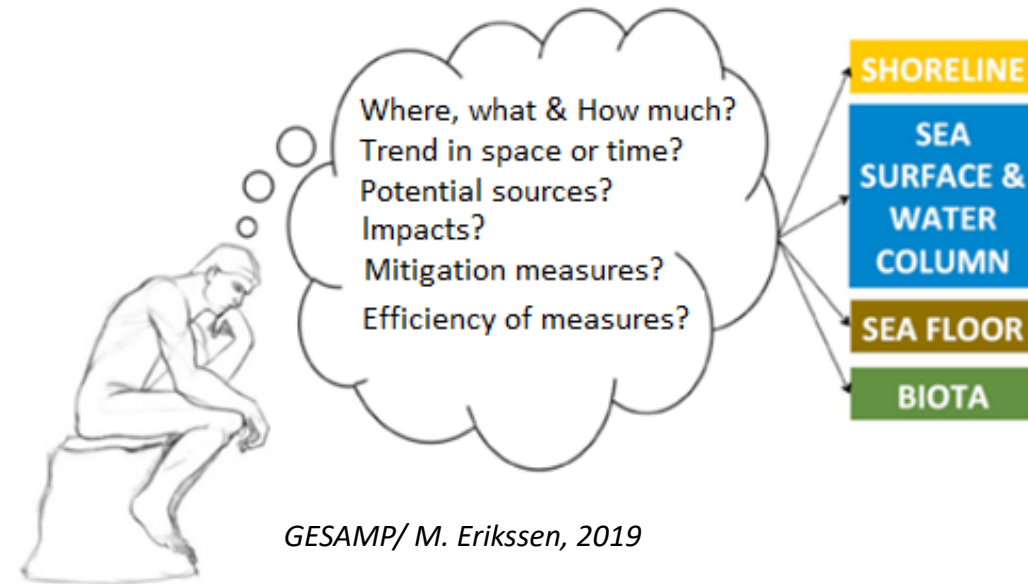
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What do you want to know?

Where do you look ?



The purpose of monitoring includes:

- The assessment of trends in Good Environmental Status (GES),
- The possible impact of marine litter and its extent, facilitating the selection of mitigation measures
- The assessment of the effectiveness of reduction measures.
- A support to the definition of baselines and thresholds

Monitoring of marine litter initially started as small-scale activities (CEFAS, IFREMER, IMARES, etc.) in the 1990s

The first large-scale marine litter monitoring programmes in Europe refer to **beach litter monitoring within the international OSPAR Commission** (NE Atlantic) in 2001

Gradually, several national and international institutions have implemented regular monitoring programmes (Beach, floating, seafloor and ingested litter).

In Europe, the **Marine Strategy Framework Directive** (MSFD, 2008/56/EC) support regular monitoring of marine litter in the European region (2010).

The four Regional Sea Conventions (RSCs, OSPAR, HELCOM, BSC, UNEP MAP) **are now providing frameworks for monitoring** marine litter through their Regional Action Plans (started in 2013 in the Mediterranean Sea).

The Arctic Council (2017), crossing over Nordic EU waters, initiated the AMAP (Arctic Monitoring and Assessment Programme) Litter and Microplastics Monitoring Plan, since 2021 (AMAP, 2021).

The Monitoring of Marine litter in Europe in 2023

MARINE LITTER PROGRAMMES												
NAME	DESCRIPTION	ACTIVITIES					INDICATORS					
GPML	Unep/ Worldwide											
GOOS	Global Ocedan Observing System											
MSFD/ TGML	EU Technical group Marine litter/ European waters	*										
Sea datanet	Pan european infrastructure for ocean and data management											
UNEP /MAP	Regional sea convention, Mediteranean Action Plan											
OSPAR	Regional sea convention, UNEP related, North East Atlantic											
HELCOM												
ICES	International council for the exploration of the sea (North Atlantic)											
EEA	European Environmental Agency											
AMAP	Arcti Monitoring Action Plan											
DATA COLLECTION FRAMEWOKS DATABASES												
Litterbase	Marine litter references and maps, Worldwide											
Tide	Trash Information and data for dEductaion & Solutions											
GGGI	Global Ghost Gear Initiative											
ODIMS	OSPAR data repository											
ICES/DATRAS	ICES database for sea floor litter											
DOME	ICES database for microplastics											
MEDITS	Mediterranean International Trawl Survey											
INFO RAC	UNEP MAP database											
AWARE	Dive Against Debris program (NGO)											
COASTS	Coastal Observations & Seabirds Surveys Teams											
EMODNET	EU marine litter data reporitory											
* EU member states												

ACTIVITIES	
coordination	compilation
analysis	data aquisition

INDICATORS	
beach/shoreline	Surface
seafloor	microplastics/
Harm	Riverine inpts
Atmospheric inputs	

A Dedicated International Context

- 1) Sustainable Development with Goal 14, Target 14.1 recognizes the consistent need for monitoring and reporting of marine litter: *“by 2025, prevent and significantly reduce marine pollution of all kinds (...)”, a deadline for SDG indicator 14.1.1b, “plastic debris.”*
- 2) UN Environment is proposing four core sub-indicators for SDG 14.1.1b (beach, floating, seafloor and ingested litter)
- 2) UNEA / plastic treaty needs a reliable figure for the volume of plastics entering the ocean, the accumulated volume of plastics in the marine environment, mapping of the source and sink location of plastics, and basic data on microplastics are currently lacking.
- 4) Regional (EMODNET, NOAA) and global platforms (G20/ ministry of environment Japan, GOOS), have been launched to collect data and provide support to regional and global monitoring

Most relevant and harmonized protocols have been selected, maybe improved in the future

(GESAMP, 2019)

protocol	date	compartments								link
		shoreline		seafloor		biota		Sea surface		
name		Mic	Mac	Mic	Mac	Mic	Mac	Mi	Mac	
OSPAR	2010		x							https://www.ospar.org/ospar-data/10-02e_beachlitter%20guideline_english%20only.pdf
PERSGA	2014		x							http://www.persga.org/publications.html
NOAA	2012		x							https://marinedebris.noaa.gov/sites/default/files/ShorelineFieldGuide2012.pdf
NOAA	2015	x		x				x		https://marinedebris.noaa.gov/sites/default/files/publications-files/noaa_microplastics_methods_manual.pdf
EU-MSFD	2023	x	x	x	x		x	x	x	http://mcc.jrc.ec.europa.eu/documents/201702074014.pdf
FAO (ALDFG)	2016		X		x				x	http://www.fao.org/3/a-i5051e.pdf
FAO	2016					x				http://www.fao.org/3/a-i7677e.pdf
NOWPAP	2007		x							http://www.cearac-project.org/RAP_MALI/monitoring%20guidelines.pdf
NOWPAP	2007				x					http://dinrac.nowpap.org:8080/documents/NOWPAP_MERRAC_Marine_Litter_Monitoring_Seabed.pdf
UNEP	2009		x		x		x		x	http://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/13604/rsrs186.pdf?sequence=1&isAllowed=y
DeFishGear INDICIT	2016	x	x		x		x	x	x	http://www.defishgear.net/media-items/publications
INDICIT	2017						X/Turtle			https://indicit-europa.eu/protocols/
CSIRO	2017		x							
5 gyres Institute										

Comment

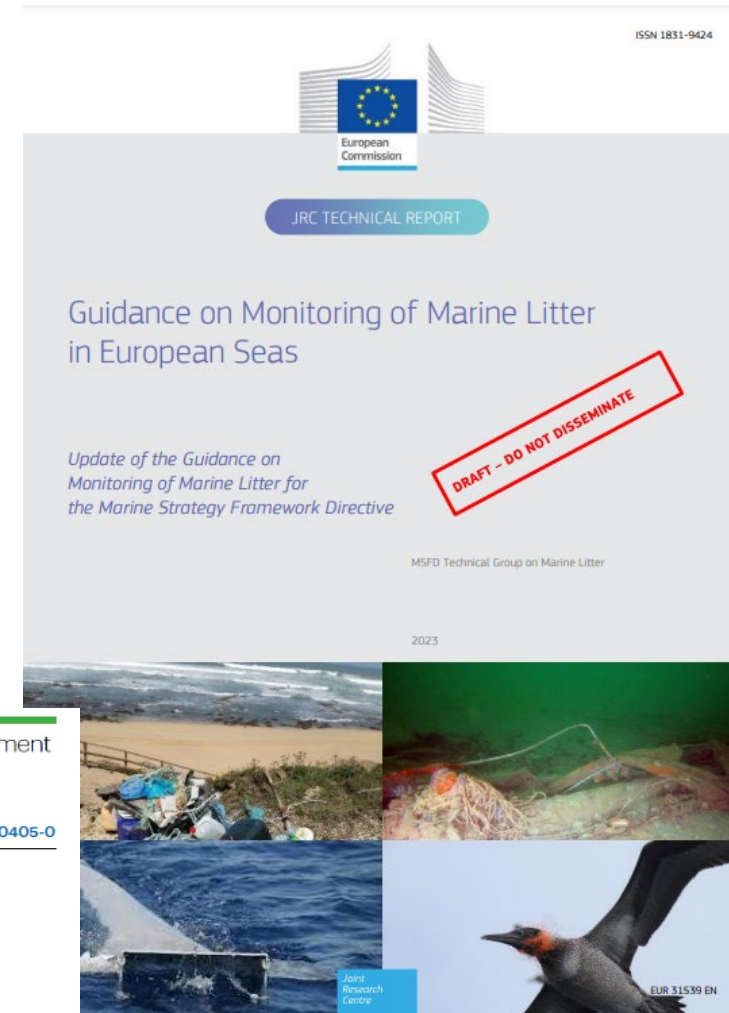
nature reviews earth & environment

<https://doi.org/10.1038/s43017-023-00405-0>

Reproducible pipelines and readiness levels in plastic monitoring

Stefano Aliani, Amy Lusher, Francois Galgani, Dorte Herzke, Vladimir Nikiforov, Sebastian Primpke, Lisa Roscher, Vitor Hugo da Silva, Jakob Strand, Giuseppe Suaria, David Vanavermaete, Katrien Verlé, Bavo De Witte & Bert van Bavel

Check for updates





The next steps

- Identification of Gaps
- New and possible future approaches
- Priorities
- Recommendations



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Thank you