

**Template for the review of Decision 2010/477/EU  
concerning MSFD criteria for assessing good environmental status  
according to the review technical manual**

**Descriptor 10**

<b>Document history</b>				
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*Descriptor 10: Properties and quantities of marine litter do not cause harm to the coastal and marine environment*

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## Report Descriptor 10

The review of MSFD Commission Decision 2010/477/EU, Descriptor 10 has been performed by the MSFD Technical Group on Marine Litter, led by JRC. The review process has been kicked-off during the TG ML meeting on 11.-13.6.2014 in Riga, Latvia. Based on the exchanges there a discussion document has been prepared and circulated. 7 Member States have provided direct contributions. While a number of the identified issues had already been taken up previously in the groups mandate, further exchanges on additional issues and a possible revision of the Commission Decision 2010/477/EU have been made. The current state of these discussions, work in progress, is reflected in this document.

<b>Title of Descriptor</b>
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*Descriptor 10: Properties and quantities of marine litter do not cause harm to the coastal and marine environment*

## PART I: COMPILATION OF INFORMATION

<b>1. Approach</b>
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### General guiding principles for the review

The review of the Com Dec 2010/477/EU for D10 is facilitated, as the MSFD Technical Group on Marine Litter TG ML has been established in order to identify and close gaps. The MSFD Competence Centre, is therefore performing the review through the TG ML. EC JRC is responsible for coordinating the review process.

The review process should identify and analyse eventual shortcomings, inconsistencies and gaps and then recommend the way forward. In the first phase, up to October 2014, it is planned to compile all necessary information for the review process, discuss and prepare recommendations. The second phase, up to March 2015, will then allow the finalization of the recommendations (which can include proposals for dedicated work items for better harmonization, need for additional guidance and eventually proposals for amendments to the COM Decision (2010/477/EU).

There are some keywords and concepts which should be considered to perform the review. As recommended during the MSFD cross-cutting issues workshop (21.-22.1.2015, Copenhagen, Denmark), the MSFD Commission Decision should be:

- Simpler
- Clearer
- Introducing minimum standards (to be enhanced by regions and MS, if necessary)
- Self-explanatory
- Coherent with other EU legislation
- Coherent with regional assessment methods (where EU methods do not exist)
- Include a clear and minimum list of elements and/or parameters per descriptor

Furthermore the development of additional common understanding within the MSFD Drafting Group GES during the review can lead to an adaptation of terms and concepts, aiming at an enhanced harmonization of the MSFD implementation in general. The focus of the TG ML work is therefore on technical scientific items and discussions. Ideally, the text of the Commission Decision should provide specific technical details of the parameters to be considered in order to avoid incoherence by individual interpretations or the use of less comparable methodologies for monitoring and assessment.

## **Glossary/Definitions**

Marine litter is any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment. Marine litter consists of items that have been made or used by people and deliberately discarded or unintentionally lost into the sea and on beaches including such materials transported into the marine environment from land by rivers, draining or sewage systems or winds. For example, marine litter consists of: plastics, wood, metals, glass, rubber, clothing, paper etc. This definition does not include semi-solid remains of for example mineral and vegetable oils, paraffin and chemicals that sometime litter sea and shores (JRC 2010).

“Harm” can be divided into three general categories: Social (reduction in aesthetic value and public safety), economic (e.g. cost to tourism, damage to vessels, fishing gear and facilities, losses to fishery operations, cleaning costs) and ecological (mortality or sublethal effects on plants and animals through entanglements, captures and entanglement from ghost nets, physical damage and ingestion including uptake of microparticles (mainly microplastics) and the release of associated chemicals, facilitating the invasion of alien species, altering benthic community structure). (JRC 2010).

Marine litter originates from different sea- and land-based sources and is largely based on the prevailing production and consumption pattern.

Although the relative proportions of these materials vary regionally, there is clear evidence that plastic litter is by far the most abundant type. In some locations plastics make up 90 % of marine litter of shorelines. A similar predominance of plastics is reported from sampling at the sea surface and on the seabed. Most plastics are extremely durable materials and persist in the marine environment for a considerable period, possibly as much as hundreds of years. However, plastics also deteriorate and fragment in the environment as a consequence of exposure to sunlight (photo-degradation) in addition to physical and chemical deterioration. This breakdown of larger items results in numerous tiny plastic fragments, which, when smaller than 5mm are called secondary micro plastics. Other micro plastics that can be found in the marine environment are categorized as primary micro plastics due to the fact that they are produced either for direct use, such as for industrial abrasives or cosmetics or for indirect use, such as pre-production pellets or nurdles.

## **Links with other Descriptors**

The accumulation of persistent organic pollutants, the potential release of toxic compounds, the transportation of non-indigenous species to new locations, the alteration/damage of seafloor habitats and the ingestion by and entanglement of organisms link descriptor 10 to descriptors 1, 2, 4, 6 and 8, 9.

The Commission Decision identifies two criteria for Descriptor 10:

(10.1) Characteristics of litter in the marine and coastal environment and

(10.2) Impacts of litter on marine life

### **Linkages with existing relevant EU legal requirements, standards and limit values**

EU legislation related to waste is relevant for marine litter. This includes:

- Directive 1994/62 as amended 2004/12/EC on packaging and packaging waste to encourage packaging re-use and recycling;
- Directive 2008/98/EC repealing Directive 2006/12/EC, Waste Framework Directive;
- Directive 91/271/EEC on Urban Wastewater Treatment
- Directive 2000/ 59/EC on port reception facilities for ship-generated waste and cargo residues focuses on ship operations in Community ports and addresses in detail the responsibilities of the different operators involved in delivery of waste and residues in ports;
- Directive 1999/31/EC on the landfill of waste to prevent negative effects on the environment from the landfilling of waste, including the pollution of surface water.

### **Linkages with international and Regional Sea Conventions (RSCs) assessment criteria and standards**

At the international level, the most relevant agreements to address marine litter are the 1978 MARPOL Convention (International Convention for the Prevention of Pollution from Ships) and the 1972 London Convention on the Prevention of Maritime Pollution by Dumping of Wastes and Other Matter and the 1996 Protocol thereto aiming to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping at sea of wastes and other matter generated on land. The 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is also relevant. In July 2011, IMO adopted the revised MARPOL Annex V which prohibits, in principle, the disposal of garbage at sea and which entered into force on 1 January 2013.

Plus:

- the United Nations Convention on the Law of the Sea and its obligations for States to protect and preserve the marine environment (Art 192) including to take measures to prevent, reduce and control pollution (Art 194) and related United Nations General Assembly Resolutions on Oceans and the Law of the Sea, recently Resolution A/RES/68/71 (2013) and earlier submissions;
- the Rio +20 commitment to take action to achieve significant reductions in marine debris by 2025 and the achievement of the goals and strategy objectives of the Honolulu strategy, as outlined in Resolution A/RES/66/288 (2012)

- marine litter to be one of the eight contaminant categories of UNEP's Global Programme of Action for the Protection of the Marine Environment from Land-Based Sources (GPA) as well as one of the key issues of the Regional Seas Programme (RSP) of UNEP

As part of the development of the Ecological Quality Objectives (EcoQO) approach within **OSPAR**, in order to consider how ecosystem health could be assessed to determine the extent of human impacts, a EcoQO on plastic particles in Fulmars' stomachs was proposed in 2001. Many of the Contracting Parties within the natural range of the Northern Fulmar have also adopted it as an indicator for MSFD purposes. OSPAR has also started the process of implementing measures to reduce marine litter with the adoption of Recommendation 2010/19 on the reduction of marine litter through the implementation of fishing for litter initiatives in 2010. Finally on 27.6.2014, the OSPAR Regional Action Plan against marine litter was agreed and adopted.

The **HELCOM** marine litter project, co-funded by UNEP, (HELCOM 2007) was the first effort to study the scale of the problem in the region as a whole, assess the availability of information, and determine the actions needed in order to develop and implement a regional strategy for addressing marine litter. Two HELCOM projects, CORESET II and HELCOM MORE, are dealing with indicators for the determination of GES in the marine environment (CORESET II) and the revision of the HELCOM monitoring strategy and gap analysis (HELCOM MORE), respectively. An action plan for marine litter has been developed, it was approved in March 2015 (HELCOM 36-2015) and Annex 1 is being implemented, aiming at reducing significantly marine litter pollution by 2025.

**The Barcelona Convention** adopted its action plan on marine litter in December 2013. The Action plan aims at reducing marine litter pollution, removing as much as possible existing marine litter pollution and enhancing knowledge on marine litter.

The UNEP MAP Integrated Monitoring Correspondence Group CORMON is progressing through an informal online working group on Marine Litter.

Within the **Black Sea Convention** there are no legal instruments dedicated specifically to the management of marine litter. The Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea (the BS SAP 2009) seems to be the most appropriate framework for addressing marine litter issues of regional significance.

[Analysis of whether the criteria and/or indicators and/or methodological standards for the particular descriptor are likely to be common across the EU or need aspects to be specific at region or other scales](#)

Measures against marine litter are being developed by EU Member States collaboratively within Regional Action Plans through the Regional Sea Conventions. The MSFD TG ML as a platform at EU level allows exchange and collaboration across regions.

It needs to be identified which issues require harmonization at regional level and which at EU level. For marine litter generally, the strategic approaches, concepts and methodologies should be agreed at EU level, while technical specificities, such as the selection of species for biota monitoring or lists of litter items to be monitored should be agreed at a regional level. This is particularly important as D10

parameters are often operationally defined and an alteration in the methodology would give results which are not comparable.

## Definition of GES

Commission Decision currently sets out four indicators for marine litter:

- Trends in the amount of litter washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and, where possible, source
- Trends in the amount of litter in the water column (including floating at the surface) and deposited on the sea- floor, including analysis of its composition, spatial distribution and, where possible, source
- Trends in the amount, distribution and, where possible, composition of micro-particles (in particular micro- plastics)
- Trends in the amount and composition of litter ingested by marine animals (e.g. stomach analysis)

## Climate sensitivity

D10 will be affected indirectly. The expected increasing occurrence of extreme meteorological events, as heavy rainfalls, storms, dry periods followed by strong precipitation and flooding of inland drainage basins as well as coastal areas will lead to increased inland surface run-off. This will transport litter present in the terrestrial environment, into streams, rivers and coastal areas, thus leading to an increase in marine litter occurrence. Additionally climate change and related changes in marine foodchains (e.g. microbe presence) may lead to an alteration in pathways of (micro)plastic in the marine environment and plastic degradation.

## 2. Analysis of the implementation process

### Art. 12 assessment

Sixteen out of twenty one assessed Member States defined GES for Descriptor 10. The GES definitions in most cases were at the descriptor level. Only three Member States have defined GES at Commission Decision criteria level although their approach to defining these criteria varies significantly. Nine of the sixteen Member States that defined GES required a reduction of marine litter in the environment and one requires a reduction of the input of litter into the marine environment. Additionally, despite the lack of detail, some Member States have provided additional elements in their GES definitions that are not covered by Decision 2010/477/EU. Three Member States referred to marine litter as a pathway for the proliferation of invasive non-indigenous species. Three Member States have referred to the impacts of marine litter on the fecundity of marine organisms and from the aspect of bioaccumulation of contaminants. Five Member States reported that marine litter should not have adverse economic consequences for the maritime economic sectors (including shipping and fisheries) and coastal

communities. Two Member States further specified that marine litter should not pose a risk for human health. Lastly two Member States reported that in the long term, the marine environment should be free of marine litter.

#### Criteria 10.1. Characteristics of litter in the marine and coastal environment

Three Member States have defined criterion 10.1 specifically, two of these then refer to trends of marine litter in the marine environment. Both of these Member States refer to reducing trends on their coastlines and one also on the seabed, while the other Member State also refers to litter in the water column. However, other Member States have also stated at the descriptor level that marine litter on the coasts and in the marine environment, in general, should be reduced over time.

#### Criteria 10.2. Impacts of litter on marine life

Three Member States have defined criterion 10.2 specifically although in one case this definition deviates significantly from the Commission Decision Criterion. One Member State has defined GES for criterion 10.2 by stating that litter that adversely affects marine organisms must decrease (specified in a corresponding environmental target to take also other impacts such as entanglement into account) while the other refers to trends of waste ingested by marine animals. The plastic particle content in the stomachs of washed up Fulmars (*Fulmarus glacialis*) (OSPAR EcoQO) is the only specific indicator provided under this criterion.

#### Regional coherence descriptor

Member States from all regions except the Black Sea have defined GES for Descriptor 10. In the North East Atlantic and the Mediterranean regions, all Member States have defined Descriptor 10 while in the Baltic 4 out of 7 Member States defined Descriptor 10. The level of coherence is high in the North East Atlantic, moderate in the Mediterranean and low in the Baltic. There are no clear specific differences between regions.

#### MS good practices

Four Member States (DE, DK, FR, SI) report that marine litter should not have adverse economic consequences for the maritime economic sectors and coastal communities. Three Member States (DE, DK, FR) also refer to marine litter as a pathway for the proliferation of invasive non-indigenous species.

#### **In-depth assessment of Art 8,9,10 reporting**

An analysis of the Art. 8, 9 and 10 reporting by MS has been provided by the “in-depth assessment” report (JRC 2014). The MSFD Technical Group on Marine Litter analysed the gaps and shortcomings related to Litter under the MSFD since its start and provides recommendations and guidance for a stepwise improvement of MSFD D10 implementation (JRC 2011, Marine Litter Technical Recommendations for the Implementation of MSFD Requirements, EUR 25009 EN and JRC 2013, Guidance on Monitoring of Marine Litter in the European Seas, EUR 26113 EN).

### **3. Analysis of the current text of the Decision**



Please find here the extracted elements of the Descriptor 10 Com Dec, which have been reviewed in terms of their properties and compatibility with the desired improvement in the implementation process. Suggestions have been derived from different, sometimes controversial contributions. Please note that there has been no agreement yet on the final recommendations and controversial technical discussions are ongoing. Final recommendations will be provided after the next step of the review process:

- *“Properties and quantities of marine litter”*

No change proposed, text appears appropriate.

- *“do not cause harm”*

No change proposed, as the mentioning of e.g. “direct and indirect harm” would appear redundant and not bring additional clarity.

- *“the coastal and marine environment”*

Unchanged, considering that coast includes the shoreline

*“The distribution of litter is highly variable, which needs to be taken into consideration for monitoring programmes”*

Can be eliminated as it does not contribute to clarity. There could be a clearer expression regarding the scale issue instead.

- *“It is necessary to identify the activity to which it is linked including, where possible, its origin.”*

Suggested change to: “It is necessary to identify sources and pathways, where technically feasible”

- *“There is still a need for further development of several indicators, notably those relating to biological impacts and to micro-particles, as well as for the enhanced assessment of their potential toxicity ( 21 ).”*

Still valid, no text change proposed.

- *“10.1. Characteristics of litter in the marine and coastal environment”*

Suggestion to change to: “Properties and quantities of litter in the marine and coastal environment”

- *“Trends in the amount of litter washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and, where possible, source (10.1.1)”*

Suggestion change to: “Trends in the amount of litter washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and sources (10.1.1)”

- *“Trends in the amount of litter in the water column (including floating at the surface) and deposited on the sea-floor, including analysis of its composition, spatial distribution and, where possible, source (10.1.2)”*

Suggestion change to: “Trends in the amount of litter floating in the seas surface layer and deposited on the sea-floor, including analysis of its composition, spatial distribution and sources (10.1.2)”

- *“Trends in the amount, distribution and, where possible, composition of micro-particles (in particular micro-plastics) (10.1.3)”*

Micro-particles might be included as a size class to be considered in the indicators for the environmental matrices, beach, surface water, seafloor and biota.

This is a controversial question as the importance of micro litter is being recognized and is shown by a dedicated indicator. On the other hand this holds the risk that it is treated as a separate issue while measures to combat marine litter need to be formulated covering all size classes (at least to prevent secondary micro particles). In the part two of the review therefore a tentative version with the combination of different litter types is presented. This would support the simplification of the ComDec. Arguments against an inclusion are mainly the highlighting of this previously less considered part of the litter issue.

- *“10.2. Impacts of litter on marine life “*

Impacts other than ingestion, such as entanglement should be considered.

- *“Trends in the amount and composition of litter ingested by marine animals (e.g. stomach analysis) (10.2.1)”*

The Northern Fulmar (long-established OSPAR EcoQO) and the Turtle (*Caretta caretta*), proposed for the Mediterranean Sea, are species which are used for the litter ingestion indicator. Other species (other birds, fish, mussels) might be added on the basis of research results.

Therefore the listing of individual species might not be appropriate, although it could promote harmonization, at least within regions.

It is suggested to include here the consideration of impact other than ingestion, as e.g. entanglement. This could be under the same indicator or as a new indicator.

- *“This indicator needs to be developed further, based on the experience in some sub-regions (e.g. North Sea), to be adapted in other regions”*

Suggested to delete as this does not further specify the above text.

Additional discussions on the D10 Commission Decision content:

#### Simplicity and clarity

There are some options, see text above, to simplify and increase the clarity of the Commission Decision text for D10.

#### Detailed technical provisions

There is agreement that the introduction of clear detailed technical provisions, such as e.g. methodological standards, the prescription of reporting units, methodologies for sampling strategy set-up and for aggregation of data would be possible. While the TG ML has already addressed these aspects through its guidance documents, the introduction of these specifications in a legally binding document would require additional work.

#### Minimum requirements

Minimum requirements for the different descriptors should ensure that a basic and comparable assessments are done across Europe with a core set of assessment parameters. These parameters should be available as a list for consideration by Member States. Specifically for D10 the list is the category list of litter items, available through the Guidance of Monitoring for Marine Litter (JRC 2013).

<b>4. Identification of issues</b>
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Here is a list of recurring main issues for discussion under D10. The list is non-exhaustive and might require further update in the implementation process.

- Sources and pathways  
The issues of litter sources and pathways of introduction into the marine environment are important for D10 implementation and for deriving measures and Regional Action Plans.

The MSFD TG Marine Litter is therefore drafting a guidance report on that topic. In a first phase an approach for attributing litter items recorded in the marine environment to possible sources will be developed. Then modelling approaches to assess physical redistribution of litter and importance of different sources of litter pollution will be considered. This activity will be important in order to develop measures targeted at given sources and update them regularly depending on their effectiveness.

- **Riverine Litter**

The quantification and identification of riverine litter, as source for marine litter is of importance as it is expected to be a major source of litter to the marine environment. The development and implementation of harmonized monitoring methodologies for the assessment of litter entering the marine environment via rivers across Europe is needed in order to develop measures and priority areas for their implementation.

- **Harm**

The concept of harm has been discussed and is currently being treated in a dedicated document of the TG ML. It will contain considerations for the identification and quantification of harm. The harm report includes case studies for the different impacts on biota and habitats as well as for socioeconomic impacts taking into account the outcomes of current research projects.

- **Methodological Standards**

There is need to further develop methodological standards and to implement them through harmonized monitoring programmes. This should include practical activities for dissemination of protocols and training of field personnel. The MSFD TG Marine Litter has proposed a number of protocols, some of which are still under development, which need to be tested and if necessary refined.

- **Micro-plastic**

One of the challenges is to develop reliable and standardized extraction and instrumental analysis methods for microplastic (weight and number) in sediment and biota (compartments of main interest for accumulation). Accurate, precise and reliable extraction and analysis methods are an absolute prerequisite to collect reliable data on microplastic, and consequently derive appropriate measures.

- **Scales and Aggregation**

Some details on scales of assessments and procedures for data aggregation and treatment are available but need further discussion, agreement and implementation at regional and EU scales.

- **Minimum operational requirements**

EU wide operational parameters should be introduced in order to ensure a harmonized implementation. For Descriptor 10 this is provided by the list of litter categories, agreed upon at EU level (MSFD Technical Group on Marine Litter). This list needs to be updated based on feedback from monitoring data, e.g. by adding new categories or by removing obsolete ones.

## PART II: CONCLUSIONS AND RECOMMENDATIONS

This part of the review is compiling the outcome from previous discussions and providing recommendations for eventual changes in the text of Commission Decision 2010/477/EU, necessary short term work and items for future work.

### 5. GES criteria (in accordance with Art. 9.3)

The Commission Decision review for D10 should consider the review/revision timescales in comparison to the development of scientific knowledge. This is a particularity for D10, as much research progress has been made recently.

#### Current text of Commission Decision 2010/477/EU

##### **Descriptor 10: Properties and quantities of marine litter do not cause harm to the coastal and marine environment.**

The distribution of litter is highly variable, which needs to be taken into consideration for monitoring programmes. It is necessary to identify the activity to which it is linked including, where possible, its origin. There is still a need for further development of several indicators, notably those relating to biological impacts and to micro-particles, as well as for the enhanced assessment of their potential toxicity.

##### 10.1. Characteristics of litter in the marine and coastal environment

- Trends in the amount of litter washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and, where possible, source (10.1.1)
- Trends in the amount of litter in the water column (including floating at the surface) and deposited on the sea- floor, including analysis of its composition, spatial distribution and, where possible, source (10.1.2)
- Trends in the amount, distribution and, where possible, composition of micro-particles (in particular micro- plastics) (10.1.3)

##### 10.2. Impacts of litter on marine life

- Trends in the amount and composition of litter ingested by marine animals (e.g. stomach analysis) (10.2.1).

This indicator needs to be developed further, based on the experience in some sub-regions (e.g. North Sea), to be adapted in other regions.

The proposed changes aim at making the ComDec simpler and clearer. They remove some text related to further development needs, as this has been recognized and does not need to be part of a legislative document. The changes reduce the number of indicators and propose to treat micro-litter along with other litter types.

Recommendations regarding criteria and indicators:

#### *10.1 Characteristics of litter in the marine and coastal environment*

Keep notification of need for further development

#### 10.1.1

Substitute “possible” by “feasible” regarding the identification of sources for beach litter

Introduce micro-litter (see also below)

#### 10.1.2

Substitute “possible” by “feasible” regarding the identification of sources for beach litter

Remove mid water retaining the surface (and directly underlying water layer) and the seafloor

#### 10.1.3

Integrate micro-litter as size fraction along with other litter fractions in the matrix related indicators

Note: While there is generally support to the inclusion of micro litter along with macro/meso litter, not all experts support this view. Some experts argue that micro litter is different from other litter types (meso/macro) and should be stated in a specific indicator. Arguments for this are that microlitter causes specific effects, a separate indicator makes it easier to link to specific primary sources and it might be easier to determine a target for macro/meso litter when separate.

### *10.2 Impacts of litter on marine life*

Add beside the ingestion also entanglement as an indicator for impact on wildlife.

**Tentative text of a revised ComDec D10, for illustrative purposes:**

**Descriptor 10:** Properties and quantities of marine litter do not cause harm to the coastal and marine environment. There is still a need for further development of several indicators, notably those relating to biological impacts and to micro-litter, as well as for the enhanced assessment of potential harm.

10.1. Properties and quantities of litter in the marine and coastal environment

10.1.1 Trends in the amount of litter, including micro-litter, washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and, if feasible, pathway and source

10.1.2 Trends in the amount of litter, including micro-litter, floating in the surface layer and deposited on the sea- floor, including analysis of its composition, spatial distribution and, if feasible, pathway and source

10.2. Impacts of litter on marine life

10.2.1 Trends in the amount of litter ingested and/or number of entanglement incidents by marine animals

## **6. GES methodological standards (in accordance with Art. 9.3)**

Discussions confirmed the TG ML position that currently quantitative thresholds can only be formulated for some parameters (e.g. Litter in Fulmar stomachs). At the moment assessments will have to be based on trends in most cases. Trend assessment will need common approaches and guidance for data treatment.

The setting of quantitative thresholds for marine litter should be a long-term target (of the TG-ML).

## **7. Standardised methods for monitoring for comparability (in accordance with Art. 11.4)**

Monitoring protocols, which have been developed and adopted by the TG Marine Litter, are available in a MSFD Guidance document on Monitoring of Marine Litter in European Seas:

(<http://mcc.jrc.ec.europa.eu/document.py?Num=0&mot=201&classement=D10&code=201406241434> )

The maturity of the different methodologies has been evaluated and is reviewed in the guidance document (Maturity of Protocols - General Overview, Page 18, Summary of monitoring protocols, page 30). The TG-MS is currently working on the further development and testing of the protocols.

Quality assurance and control measures are needed in order to provide comparable results. The MSFD document "Guidance on Monitoring of Marine Litter in European Seas" includes proposals for QA/QC measures.

The sampling and analysis of micro litter needs to consider recent and future findings of dedicated research. There are different methodological approaches, which provide operationally defined parameters and therefore need harmonization for comparability. A network of laboratories for the analysis of micro litter appears useful and there is need for proficiency testing schemes.

## **8. Standardised methods for assessment for comparability (in accordance with Art. 11.4 GES)**

Agreed units for reporting of data and common assessment procedures for national and RSCs assessments, should be referred to in the MSFD reporting mechanism.

The reporting units should be based on scientific knowledge and be of practical use in assessing litter quantities and potential harm.

As the assessment of trends for the evaluation of the environment status is an integral part of the D10 implementation, the calculation of these trends must be comparable and be based on appropriate methodologies<sup>1</sup>.

Aggregation of data at different levels of integration should be based on common approaches<sup>2</sup> and using the same reporting units

## **9. Rational and technical background for proposed revision**

The focus of the MSFD TG ML work is on technical scientific items and discussions and it acts as a platform at EU level allows exchange and collaboration across regions.

The background for the ComDec review was provided by the ongoing work of the MSFD Technical group on Marine Litter and the work in RSCs, amended after discussions and exchanges in the TG ML.

## **10. Other related products (e.g. technical guidance, reference in common understanding document)**

The implementation of MSFD Descriptor 10 needs further support. D10 Com. MSFD D10 provisions are presently being implemented by Member States. This will provide further experience and knowledge, which should be fed back into the implementation process. The Com. Decision should provide the framework for this, while updated guidance ensures the harmonization within and between regional approaches. Dedicated research project should provide knowledge in support to the MSFD process. Uptake of the research outcome should be ensured through a functional science – policy interface.

The MSFD TG Marine Litter has identified number of topics, on which work is progressing:

- Harm
- Sources identification (identification of litter origin)
- Sources identification (modelling of litter transportation at sea)
- Riverine litter monitoring

Items to be considered for future work until 2018:

- Protocol development (for less mature protocols, as identified in the ML Monitoring Guidance) including identification of units
- Trend assessments and target setting (Guidance for assessment and implementation)
- QA/QC development and implementation
- Harmonization among European Regions and beyond
- Support for monitoring implementation
- Updating of Marine Litter category list

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<sup>1</sup> For indicators containing many subindicators, such as beach litter which contains about 100 different items, OSPAR is currently developing dedicated state and trend analysis software (Litter Analyst). This is necessary to obtain standardized and efficient assessment of beach litter.

<sup>2</sup> For example, in view of large temporal variations, a five (e.g OSPAR Fulmar) or six year average (e.g. OSPAR beach litter) could be used.



## 11. Reference Documents

MSFD Common implementation strategy related documents are available through the MSFD Competence Centre website: <http://mcc.jrc.ec.europa.eu/>

- JRC, 2010, MARINE STRATEGY FRAMEWORK DIRECTIVE Task Group 10 Report Marine Litter, EUR 24340
- JRC, 2011. Marine Litter Technical Recommendations for the Implementation of MSFD Requirements, EUR 25009 EN
- JRC, 2013. In-Depth Assessment of the EU Member States' Submissions for the Marine Strategy Framework Directive under articles 8, 9 and 10, EUR 26473
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