Marine Strategy Framework Directive

Common Implementation Strategy

Technical Group on Marine Litter (MSFD TG Litter)

Larnaca, Cyprus

Document:	12th meeting of the MSFD Technical Group on Marine Litter (MSFD TG Litter) (26th – 27th June 2018, Larnaca, Cyprus), back-to-back with the two workshops on Marine Litter Baselines and Thresholds (28th June 2018, Larnaca, Cyprus)
Title	Minutes of the 12th MSFD TG Litter meeting Minutes of the Workshops on Litter Baselines and Thresholds
Date prepared:	08-08-2018, revised 17-09-2018
Prepared by:	Support Contractors: ARCADIS and EUCC

12th Meeting of the MSFD Technical Group on Marine Litter
(MSFD TG Litter, TG ML)

26th – 27th June 2018, Larnaca, Cyprus

FINAL MINUTES

DAY 1 – 26th of June

Item 26-00 Welcome and approval of the agenda

Marina Argyrou, on behalf of the Minister of Agriculture, Development and Environment, Cyprus welcomed the TG Litter group. She highlighted the problem of marine litter and its potential impact on socio-economic activities (such as tourism) for Cyprus. She emphasized the importance of MSFD to help reducing this problem and the need to speed up the transition to a circular economy. This will demand sustainable commitments at all regional levels.

Georg Hanke (JRC) welcomed the participants and opened the 12th TG ML meeting. The meeting was co-chaired with Stefanie Werner (UBA) and Francois Galgani (IFREMER). They welcomed all MSs delegates and the desk officer for TG ML, Michail Papadoyannakis from the European Commission, Marine Environment and Water Industry Unit at DG Environment, as well as the other EC representatives, Valentina Bertato (DG ENV) and Marco Weydert (DG R&I).

The TG ML chairs presented the agenda and aim of the meeting. The participants approved the Draft Agenda of the meeting, followed by a round-table introduction of participants. 37 participants attended the meeting (Annex 1). The background documents and presentations are available on the TG ML WIKI (Organisation_Meetings_Larnaca Folder).

Item 26-01 Presentation of MSFD D10 & Plastics Strategy

Michail Papadoyannakis (DG ENV) presented the plastics strategy and its relevance towards D10 of MSFD. He focused on the new policy developments relevant for marine litter: new waste legislation, proposals on Single Use Plastics (SUP), Abandoned, Lost or otherwise Discarded Fishing Gear (ADLFG) and Port Reception Facilities (PRF) progress under MSFD and evaluation of the urban waste water Directive. The EC thanked the TG ML group for its contributions regarding the establishment of the EU top litter items list of high relevance for the impact assessment of the Commission proposal on single use plastic products and fishing gear. He further mentioned the potential role of the TG ML group may have in supporting the implementation of the measures aiming to reduce the top 10 items on the beaches, also by including them in the monitoring programmes of the Member States. A further overview was given on (planned) actions/measures regarding microplastics from products, fishing gear, aquaculture and shipping.

Valentina Bertato (DG ENV) further highlighted the relevance of the REACH restrictions for the work on marine litter and especially primary microplastics. The aim is to address unacceptable EU wide risks to human health or the environment from microplastics with a REACH restriction. The restriction would address microplastics intentionally added in products and it would be wider than current national legislations and voluntary initiatives (mainly referring to microbeads in wash-off cosmetics). In addition to cosmetics, the restriction would address uses in detergents, paints, agriculture, healthcare, oil and gas, industrial abrasives. The timeline and process were presented: ECHA stakeholder workshop (took place in May), preparation of the restriction dossier (2018), discussion in ECHA committees (2019), COM decision (2020).

Item 26-02 Workplan 2016-2019 – Progress update

Georg Hanke (JRC) stressed the important development of the EU plastics strategy and key developments on marine litter: increasing awareness, monitoring data becoming available (link to

EMODNET), research, upcoming MSFD reporting 2018, litter attention growing beyond the marine realm, global activities increasing.

He reminded the TG ML group of its mandate (2016-2019) and the related work items (2017-2018).

Item 26-03 MSFD D10 Implementation in Cyprus

Konstantinos Antoniadis (MOA) presented the state of play in Cyprus of the MSFD implementation related to D10 (marine litter). Due to the damming of rivers (overall water shortage in Cyprus), almost no riverine input of ML to the sea occurs, except during heavy rainfall or spill-overs. GES, targets and indicators exist for beach, seabed, entanglement *Caretta caretta*, linked to both EU MSFD and UNEP/MAP (Barcelona convention / IMAP). They are linked to 3 subprograms on ML monitoring, further supported by the following projects/programmes: MELTEMI (beach), MEDITS (seabed), DFMR (entanglement), EURO turtles (entanglement), Whales & dolphins of Cyprus. An overview was also given on the MSFD measures implemented by Cyprus on D10 incl. NAP, clean-up/adopt-a-beach/awareness, fishing for litter, informing fishermen.

Item 26-04 International collaboration on marine litter

Michail Papadoyannakis (DG ENV) presented an overview of the international developments (G7, G20, UNEA) on marine litter. Mr. Papadoyannakis informed the EU MS experts that UNEA-3, decided to set up an ad-hoc group aiming to present options to UNEA-4 for better international governance against plastic litter and microplastics. The EU and its MS take an active role in this ad hoc group (second meeting planned for November 2018) and TG ML delegates were encouraged to contribute to their respective national positions in this group, so that these positions are supportive of MSFD concepts and work on marine litter (for example opportunity to broaden scope to all sources, to include microplastics, on harmonized monitoring and assessment protocols, etc.). He concluded that 2 new international projects will be launched this year, and 2 more are envisaged in the near future.

The TG ML group added some additional information on new national and international initiatives: PAME (Arctic), EMBLAS II (Ukraine, Russia, Georgia), Common Wealth Cleaning (UK), project on ALDFG (OSPAR), project on pellet loss (OSPAR), IUCN projects on increased knowledge and control of ML (Africa, India), etc. Georg Hanke concluded that these initiatives show the world-wide attention for marine litter, and that it will be important to profit from synergies and to harmonize where necessary.

Item 26-O5/08 Regional assessments and implementation/development of regional action plans

Item 26-05 OSPAR/ NE Atlantic

Stefanie Werner (UBA) represented OSPAR and shared information on the progress for the ML indicators used as basis for the Intermediate Assessment on the state of the marine environment (2017). Results (abundance, composition, distribution, trends) were presented for the three ML common indicators (2019 reporting): beach litter, plastic particles in fulmar stomachs and seabed litter (IBTS Programme). The two candidate indicators may be applicable by 2021: ingested litter in turtle stomachs and microparticles in sediments. Further indicators under development are microplastics in other biota and entanglement. Further, she presented existing and planned actions implemented through the OSPAR Marine Litter Regional Action Plan (RAP) for prevention and management of marine litter in the NE Atlantic. Planned actions include: for fisheries & shipping (green deals for fishing sector, development hotspots floating litter / ALDFG)), for waste & sewage/stormwater management & riverine inputs (e.g. workshop on role waste management (Crete, autumn 2018) background document on improved waste management), primary microplastics (e.g. stakeholder dialogue on pellets & background doc/rec EIHA 2019, follow up on EU approach to tackle PMP through chemical regulation), single use items, product design and packaging (e.g. Interreg OceanWise (ongoing), further work on national strategies for single use items (e.g. plastic bags) & its potential added value for EU strategies, study on eco-innovative solutions). More info to be found at https://oap.ospar.org.

Item 26-06 HELCOM/Baltic Sea

Marta Ruiz (HELCOM secretariat) started with the announcement that the State of Baltic Sea report has been agreed by HOD (June 2018). The regional assessment (2012-2016) includes results (abundance, composition, distribution) on beach litter and seafloor litter. Further work on microlitter is planned. She presented the agreed actions of the HELCOM Marine Litter Regional Action Plan (RAP) and highlighted on-going activities related to waste & stormwater management, to microplastics, to upstream waste flows, prevalence and sources of EPS, plastic bags, deposit refund systems, landfills/dumpsites, pleasure boats, shipping, fisheries, awareness, etc. Amongst the list of on-going activities several projects were mentioned of high relevance towards the topic including Blastic (plastic pathways from land to sea), Iwater (improvement of stormwater management), MARBLE (MicroplAstics Research in the Baltic marine Environment), MARELITT Baltic.

Some examples of other on-going activities include a CCB guidance on concrete ways to reduce MP inputs from municipal & waste water discharge, a questionnaire addressing loopholes of waste (similar as to OSPAR), national round tables on ML (overpackaging), several (national) studies on sources of MP, actions on EPS, several dialogue networks, LCA of plastic carrier bags, national ecolabel 'Blue Angel', recycling of pleasure boats and end-of-life boats, study on LFG from a circular economy perspective, etc..

Item 26/07 Barcelona Convention/Mediterranean Sea

Jelena Knezevic (UNEP/MAP) gave an update of the Integrated Monitoring and Assessment Programme (IMAP) for the Mediterranean Sea and Coast. Regarding marine litter, 3 common indicators (CI) are agreed: CI 22 (litter washed ashore and/or deposited), CI 23 (water column incl. MP and on the seafloor), CI (24) (ingested/entanglement). The Mediterranean 2017 Quality Status Report may be found on https://www.medqsr.org, including data templates and results for the common indicators 22 and 23. Further work needs to be done on common indicator 24. Jelena Kezevic presented further the progress achieved in the EU-funded Marine Litter MED project on FFL and 'adopt-a-beach' pilots, the development of the guidelines for implementation of the 5 most common reduction and prevention measures on ML, work on reducing the impact of ML and microlitter in biota (focus endangered species), regulatory framework (single-use plastic bags, EPR), PRF, enhanced cooperation with the Black Sea Commission Permanent Secretariat (BSC PS). Further information was given on the bilateral cooperation agreement with Italy, the regional cooperation platform on ML in the MED and on the MED Node on ML (to enhance awareness, info exchange, etc.). She concluded with the actions planned in the UNEP/MAP 2018-2019 Programme of Work incl. support design national monitoring on ML, further development common indicator 24, update baseline values if possible at sub-regional level, regional meeting on IMAP implementation (10-12 July 2018, Rome (IT)) capacity building and sharing best practices (October 2018, Izmir (Turkey), etc.

Item 26-08 Bucharest Convention/ Black Sea

The progress and challenges of the Black Sea Commission in management of ML on the regional level were presented by Elena Stoica (NIMRD), on behalf of the Black Sea Commission Permanent Secretariat (BSC-PS). The Black Sea Integrated Monitoring and Assessment Program (BSIMAP) for 2017-2022 was adopted in October 2016, in which ML was only mentioned as one of the descriptors under Ecological Quality Objective 4. Therefore, necessary annexes should be added. The draft Regional Action Plan on ML management in the Black Sea and Guidelines on monitoring of ML in the Black Sea were finalized in 2016 but are not yet adopted by the Black Sea Commission (expected autumn 2018). Meanwhile the BSC PS implements a number of activities under the EU-funded Marine Litter MED project to strengthen bilateral collaboration between UNEP/MAP and BSC-PS on issues related to the management of ML, such as to finalize the draft RAP ML and the ML monitoring programme for the Black Sea, to organize annual joint meetings and drafting a joint work plan (on monitoring MPAs and selected measures, identification of ML hot spots, introduction of FFL and adopt-a-beach, share best practices, etc.). She concluded stating that plastics are not yes addressed in legally binding documents of the BSC, but that efforts to coordinate the Plastic Strategy and to implement the UNEA-3 resolution on plastic litter and microplastics pollutions are made through the abovementioned activities. More info may be found at www.blacksea-commission.org.

Feedback from the TG ML group and next steps

TG ML chairs were impressed on contributions made in Europe over the last years, including alignment of monitoring. The overview of measures shows the complexity of ML, as actions need to be taken at different geographical scales as well as by different sectors. Information exchange and collaboration between RSCs and the MSFD implementation are crucial and should be maintained on all topics. Potential specific topics for exchange knowledge/experience on measures mentioned by the TG ML experts (see paragraph on Measures):

- Guidelines on excessive packaging developed by OSPAR/the Netherlands (Willem van Loon)
- Information exchange on ongoing educational activities within OSPAR (Marijke Erkeling)
- Information exchange on the eco-design meetings done by HELCOM (Marta Ruiz)
- Information exchange on activities with regard to single-use items within OSPAR (Stefanie Werner)

Item 26-09 Research projects on marine litter – An update

A brief note was given by Georg Hanke (JRC) on the listing of research projects (currently 71 relevant projects have been identified) that is organised through the WIKI-platform, complementing the work done by STAGES and COLUMBUS project. A revision of the template will be done, and new projects should continuously be added.

Feedback from the TG ML group and next steps

In order to further update the project list, the scope of the list and how to facilitate input available from other sources were discussed in the TG ML group. It was agreed that the scope of the project list should be limited to research projects, i.e. for now not listing projects related to the implementation of measures. Next steps agreed:

- Revision of template research projects (JRC upload, July 2018)
- Cross check with lists from other efforts (Thomie Vlachogianni)
- TG ML invited to continue providing project (incl. national) input (following template review) via wiki
- The updated list will be posted and after discussion further disseminated

Item 26-10 The contribution of research and innovation for plastic free oceans and seas

Marco Weydert (DG R&I) gave an overview of the different funding programmes that support the work on marine litter, such as Horizon 2020, LIFE programme, JPI, Interreg. Some examples of relevant projects financed by these sources were given: BONUS (Baltic Sea), STAGES, COLUMBUS, oceans observations studies, Seachange, etc. An important project requirement to keep in mind is that the public should be informed on the results during the project execution and not only once the project has been finalised. The EC proposal for a new research programme 'Horizon Europe' was further presented (roadmap still to be developed), based on 3 pillars: 1) Open science (includes projects on pathways), 2) Global challenges (includes activities related to sustainability agenda, climate change, etc.), 3) open innovation (includes innovations by industries).

Item 26-11 EMODNET- Marine Litter State of Work

On behalf of the EMODNET chemistry module consortium, Alessandra Giorgetti (OGS) presented the progress on marine litter data (www.emodnet.eu). Data are gathered and further processed at EU scale for beach litter, seafloor litter and microlitter (microplastics). Currently two central databases are being developed: one for beach litter (modelled after OSPAR-MCS approach) and one for seafloor litter (modelled after the ICES-DATRAS approach). The structure, data input & interaction and reference lists used for both databases were presented. The EMODnet database consists of 4 tables: beach metadata, survey metadata, animal's data and litter data. Description of format and templates can be found at the EMODNET Portal (http://www.emodnet.eu/emodnet-chemistry-litter-data-maps-first-release) and will be posted on the WIKI. The first results, the advantages and issues to further clarify have been discussed. Beach litter data has been collected in interaction with JRC (data

collected from MS to develop ML baselines, 2012-2016). Requests for data have also been sent to EEA and DeFishGear, but not integrated yet. For beach litter item identification 3 reference lists (master list TG ML 2013, OSPAR beach litter list, UNEP list for ML) have been considered, maintaining the original data categories in the database. It was highlighted that consistency of items description is crucial, and that additional information (single use, fishing related, etc.) would help further analysis. Seabed litter data has been collected from ICES-Datras, and through contacts with MEDITS and DeFishGear. For seabed litter 3 reference lists (Master list TG ML 2013, ICES, MEDITS) have been considered. The proposed approach for microlitter to adopt and adapt SeaDataNet infrastructure and data formats already presented to the last TG ML annual meeting, was further reviewed based on feedback by Germany, TG ML, HELCOM, JPI Ocean – BASEMAN. QA/QC within EMODNET occurs through and MSFD board of experts. A next online workshop on marine litter is planned for mid-2018.

Feedback from the TG ML group and next steps

Georg Hanke thanked A. Giorgetti for the close collaboration between JRC (Anna Addamo) and EMODNET on baselines in order to profit from synergetic effects and make data 2012 – 2016 accessible. It is important to indicate data sources and data quality metadata when using and citing data. No objections exist by TG ML to use data originally collected for baseline exercise to be processed and presented by EMODNET.

Based on the input of TG ML experts, following next work steps with EMODNET were defined:

- Further integration of available ML data: data collected by France (Francois Galgani), background documents produced by ICES (metadata info) (Thomas Maes)
- Further validation of data sources used in the EEA database (Stefan Trdan)
- Further collaboration for updating the master list based on baseline data experience (David Fleet).
- Alessandra Giorgetti (EMODNET), invited TG ML experts to participate to the next online workshop on marine litter, planned for mid-2018.
- Need to discuss and confirm ingestion of further datasets (2017 and beyond)

Item 26-12 Monitoring Guidance Review – workplan discussion

Georg Hanke (JRC) stated that the Guidance on Monitoring of Marine Litter in the European Seas, published in 2013, needs an update by the TG ML group, as planned during the 2017 TG annual meeting. Work on guidance update will identify relevant projects, activities and experts outside TG ML, then involve them, utilizing also resources foreseen for MSFD support within projects. Active collaboration of TG ML Members will be needed and supported by GES (March 2018) meeting outcome. Dedicated technical meetings might need to be organized.

Item 26-13 Beach litter – guidance review

Challenges regarding beach litter monitoring raised by the TG ML group are: To which extent the data availability matches the policy needs (e.g. Plastics Strategy)? To which extent the national MS and Regional Sea Convention will use the guidance document? These challenges will need to be addressed in the upcoming revision process of the guidance on beach litter.

Feedback from the TG ML group and next steps

The TG ML guidance documents are used – to a certain extent- by most of the EU MS but are not generally applied yet. The TG ML group highlights the status of the guidance document, not being legally binding. Close collaboration with RSCs is important to ensure compatibility and avoid double work. It will further be important that the EU MS take an exemplary role in using the guidance document, the templates, etc. to drive the acceptance process within the RSC.

Roadmap review of beach litter guidance

- LEAD: David Fleet
- Contributions: Sue Kinsey (NE Atlantic), Jakob Strand (Baltic), Elena Stoica (Black Sea), Thomie Vlachogianni (MED), Stefan Trdan (EEA)

- Way forward: identify the main topics of discussion/change; consider input from baseline and top item work; identify the progress made already on these topics; revisions; consider alternative/new approaches

Item 26-14 Floating macro litter – guidance review

Georg Hanke (JRC) started with the rational and challenges of monitoring floating macro litter (FMML) monitoring, and the need of agreed protocols. Several events (FMML workshop (Barcelona, Oct 2016), 6IMDC targeted FMML session (San Diego, March 2018)), publications and on-going projects provide contributions to the progress on FFML monitoring development. The MEDSEALITTER project is developing and testing methodologies for FMML monitoring (MED) and EMBLAS II tests FMML monitoring in the Black Sea (Ukraine/Georgia/Russia). Reference was made of the JRC Floating Litter App (for rivers + sea, new version planned to be available by the end of 2018) and image catalogue (new version planned to be available by the end of 2018). An initial master list for FMML has been drafted based on input from MEDSEALITTER, but there might be a need to expand the list, ensuring compatibility.

Feedback from the TG ML group and next steps

Floating macro marine litter (FMML) will be reported by some EU MS in 2018 (incl. FR, SL, GE), but not by all. Additional information on ongoing FMML activities/projects were given by the TG ML experts including CleanAtlantic project (using drones for FMML, mapping hot spots), FFML projects in the UK, monitoring of FFML in the MED (based on TG ML protocol), Slovenian project on FFML observations using camera's, etc. Francois Galgani further explained efforts done at global level, within the GESAMP research project, in which a protocol on FMML is being developed, but probably less advanced than the TG ML guidance. He further mentioned OCEANOBS, being a forum to discuss different monitoring protocols at global level (http://www.oceanobs19.net/).

Roadmap review of floating macro litter guidance

- LEAD: Georg Hanke
- Activities and projects have been identified (2016 Barcelona Workshop, 6IMDC, MEDSEALITTER, SCOR, etc.), collaborations are ongoing, further info from TG ML on additional available input will be requested (triggered by post on wiki, July 2018)
- Potential organisation of joint MEDSEALITTER / MSFD TG ML workshop (end 2018/start 2019) for protocol drafting

Item 26-15 Microlitter – TG Marine litter position paper/guidance review

Georg Hanke (JRC) presented the microlitter position paper identifying the scope, the critical issues to be discussed, analytical methods & issues, QA/QC, needs, etc. A draft outline was posted in June 2018, commented by TG ML chairs, DG ENV, JPI Ocean project leads. The increasing number of stakeholders and involved interest groups was mentioned, as the attention on microlitter is including food safety and other potential pathways for impacting human health.

Feedback from the TG ML group and next steps

The TG ML group proposes to consider/integrate the work done by RSC and ICES working group on micro litter. It was noted that the strategy for microlitter needs to be discussed, as there are different approaches and monitoring scopes, e.g. by considering water versus sediment sampling.

Roadmap microlitter position paper

- LEAD: Georg Hanke
- Draft position paper structure (by TG ML chairs and JPI Oceans project leads) has been posted, comments and contribution requested (by 24.7.2018)
- New draft outline by TG ML chairs (end of July)
- Drafting the document (end September, online WIKI)
- Draft final microlitter position paper (October)

- Intention to further discuss the draft final during MICRO2018 conference (20/11/2018) with JPI Ocean project experts to finalise the position paper. TG ML experts to confirm their potential interest to participate to MICRO2018 (workshop session JPI + TG ML)

Item 26-16 Microlitter – Overview on JPI Oceans projects

Paula Sobral (FCT-NOVA) gave an update of the 4 JPI Oceans projects on microlitter: 1) BASEMAN - Defining baselines and standards for microplastics analyses in EU waters (coord. G. Gerdts; Alfred-Wegener-Institute); 2) WEATHER-MIC – How microplastic weathering changes its transport, fate and toxicity (coord. A. Jahnke, Helmholtz – Centre for environmental research) looking to the effects of weathering on the spatial and temporal distribution of plastic debris, incl. microplastic particles, the adverse effects on biological systems (so far, no issues of concern observed, except some stress), the role of biofilms; 3) PLASTOX – Direct and indirect ecotoxicological impacts of microplastics on marine organisms (coord. A. Booth, SINTEF Ocean), using a.o. an experimental approach (in vivo and in vitro) (e.g. mussels, plankton, etc.); 4) EPHEMARE – Ecotoxicological effects of microplastics in marine ecosystems (coord. R. Beiras, University Vigo). Outputs from these projects that might be of high relevance for the TG ML work include: Baseline for microplastics, Standardization of methodologies, Models for prediction of distribution and size (weathermic), Monitoring challenges if you go to practical implementation (need for focus), harmonized units of monitoring microplastics, Effect levels for MP – harm, etc. The protocols and draft results will become available soon.

Feedback from the TG ML group

Elements further discussed within the TG ML group included the toxicity of UVA polymers due to surface changes, the information available on additives used by industries (lists exist; ongoing project mentioned by the EC mapping and prioritizing plastic additives).

DAY 2 – 27th of June

Item 27-01 Development of ISO/CEN Standardization for Plastics in the Environment

A presentation was given by Claus-Gerhard Bannick (UBA) on the efforts made by Germany on microplastics analytical work, highlighting the complexity of methodological work at different levels (international, EU, national), based on different standardisation works and specifications. Their involvement in relevant working groups within ISO and CEN was further explained. At ISO-level, a new subcomittee 'Plastics and environment' was established pooling existing and new working groups, in which WG 4 is dealing with microplastics and WG 5 (in planning) on recycling. At CEN-level a working group of 'Plastics' exists with close connection to ISO, enabling potential exchange of standards (formalized in Vienna Agreement). An ISO-report 'Plastics in the Environment – Current state of knowledge and methodologies' was published in 2017. A second document 'Cornerstones for MP-investigations' will be drafted. 12 projects on microplastics (of total 18 on plastics) are ongoing in Germany (2017-2021). A short presentation was given on the development of fast MP analysis method (sampling via fractional filtration, detection via Thermal Desorption-GC-MS).

Feedback from the TG ML group and next steps

Elements further discussed within the TG ML group included the applicability of these standards in existing laboratories, for more complex plastic groups, for larger scale plastic samples. All existing methods have their advantages/disadvantages, but according to CG Bannick the added value of the method presented here is that because of the close collaboration with the industries the method meets the expectations of the industries (e.g. results obtained within one week). This collaboration also contributed to the acceptance of the method by the industries. However, this method needs to prove its value first as well.

The direct added value of the work presented for the TG ML work was further discussed. Claus-Gerhard Bannick stated that 2-3 years will be needed to finalise the methodological standards within ISO / CEN.

- TG ML should be involved in relevant standardization efforts on micro, meso and macro litter and will express the need and recommendations related to MSFD implementation through its Micro Litter Position Paper and the ongoing work on monitoring guidance.
- TG ML had given input to CEN/SABE (CEN Strategic Advisory Body on Environment) meeting on 17.10.2017. Based on discussion in Larnaca, further input will be provided to next CEN/SABE meeting (17.10.2018), then also connecting to other CEN relevant bodies (e.g. CEN Technical Bureau).

Item 27-02 Seafloor macro litter – guidance review

Francois Galgani (Ifremer, group chair) presented the different methods for sea floor monitoring and highlights that currently seafloor monitoring is done on an opportunistic basis. Datasets are currently only available from seafloor trawling. The efforts done by the ICES, IBTS and IBS surveys in the North Atlantic and North Sea as well as for the MEDITS group (12 institutions, 7 countries) in the Mediterranean Sea for seafloor trawling were presented. An international workshop on seafloor litter monitoring was organized by JRC and AWI on 30-31/05/2018 in Bremerhaven, Germany in order to discuss needs and options. Limitations of seafloor litter monitoring by trawling and potential of image-based approaches were discussed, focusing on the data needed and the technicalities of monitoring in different compartments. Follow up of these discussions needs to include finding synergies with other activities to continue seafloor monitoring.

EMODNET is collecting seafloor data at EU level that will be further processed and published soon. At global level, a GESAMP report will be published by end 2018, including a chapter on seafloor litter. Suggestions were given for the harmonisation of categorisation for sea floor monitoring (less categories, common top items, etc.) that may be further discussed in TG ML group, linking to the update of the Litter Category Masterlist.

Finally, further work by France (IFREMER, MNHN) and Italy (ISPRA) on descriptor 10DC4 (entanglement/smothering of benthic fauna with marine debris) was highlighted, including the development of protocols (RAC/SPA, MNHN/France and IFREMER). Testing of the protocols is planned. All are invited to identify projects where the testing may occur.

Feedback from the TG ML group and next steps

It was recognized that the expertise on seafloor macro litter within the TG ML group is limited, and that there is a need to reach out to experts outside the group, as has been done through ICES and the Bremerhaven workshop. Stefanie Werner (UBA) mentioned potential synergies for monitoring with the MARELITT-Baltic project. Within TG ML there should be feedback from these activities, enabling issues such as defining the master list for seafloor litter to be further discussed within the group.

Based on ICES experience, it was noted that the quality of seafloor data may be still insufficient to set baselines as protocols have been used in different ways. Georg Hanke (DG JRC, group co-chair) stressed that one main aim is to develop a methodology enabling to show trends in seafloor macro litter, to verify needs and success of policy action. It was concluded that this should be feasible in the near future, but that some improvements on monitoring are needed e.g. to increase its efficiency towards plastics and to cover angling gear/recreational fishing. The added value of video monitoring was briefly discussed (protocols exist; more relevant for hard substrates).

Roadmap review of seafloor macro litter guidance

- LEAD: Francois Galgani
- Contributing partners: Thomas Maes (CEFAS), Per Nilsson (if involved by Sweden), Georg Hanke (JRC)
- Harmonization of the seafloor trawling item list between OSPAR (IBTS), HELCOM (BITS) and UN ENV/MAP-BSC (2018), link with MSFD Litter Category Masterlist
- Consideration of the output from the JRC/AWI Bremerhaven workshop on sea floor litter held in May 2018 and the GESAMP report to be published in December 2018
- A new chapter will be added on the use of seafloor data for evaluation the criteria 10DC4, including entanglement, linking with the chapter on "impacts".

Item 27-03 Litter category master list – review process

David Fleet (LKN) reminded of the aim and limitations of the Litter Category Master List, the list of macro litter types categories for harmonized identification of litter items, highlighting the finalisation of the Master List as fundamental for the further work within TG ML. It is a hierarchical system with different levels i.e. material, general types, specific types, size classes, etc. which should allow for comparison of data between different projects using the different levels. A new version of the Master List has been posted on Wiki, to be further revised, to address some remaining problems e.g. typology, clear definitions of litter types for field workers, need to delete certain litter types because they are rarely if ever recorded, allocation to material types, identification of new litter types and the process required to add them to the list, need for database structure for analysis of litter, manual to use the Master List, etc..

Feedback from the TG ML group and next steps

Within the TG ML group, the following issues were discussed to be considered in the review process:

- Master List should allow efficient monitoring of relevant policy measures by considering litter types identified in recent policy documents (e.g. including proposed single use items)
- Clear descriptions of litter types will be crucial as in practice still different ways of classifying a litter type in different regional seas. Example is given of plastic sheeting.
- The master list should be structured in such a way that new litter types can be added.
- The MSFD Master list of litter types (name change to be considered) should act as a unifying/translation tool that allows the identification of macro litter types across all European regions and potentially beyond.
- Potential involvement of more MS and RSC experts to finalise the Master List (webex could be a means to communicate).

Roadmap review of master list

- LEAD: David Fleet
- Commenting on 2nd revised draft Master List by TG ML (including also potentially external experts, e.g. UNEP/MAP experts) (posted on wiki soon) (by mid-Aug)
- Drafting 3rd draft Master List by David Fleet (by end Aug)
- Interaction between EMODNET and David Fleet on issues to discuss (end Sept)
- Proposal for webex/online meeting on Master list with all experts (October 2018) (organisation of WEBEX by Thomie Vlachogianni)
- Finalisation of Master List proposal by end 2018

Item 27-04 Entanglement & Ingestion – review process

Stefanie Werner (UBA) noted that most expertise on entanglement & ingestion has left the TG ML group, and that there is a need for new contributors. She presented the basis for review and discussed per item which actions are needed (see further roadmap). The importance of the project INDICIT planned to provide direct support to these indicators was highlighted, but exact deliverables and timeline need to be confirmed.

Feedback from the TG ML group and next steps

Additional information was provided by the TG ML group on databases (e.g. on ingestion sea turtles – OSPAR compatible) and on existing protocols (e.g. protocols within CleanAtlantic and JPI Oceans on entanglement & ingestion, national protocols on indicator species, ICES protocols on fish). Although promising, protocols on fish are considered not mature enough; analytical methods can be cost and time consuming. It will be important to consider the interactions between monitoring of seabed and marine biota.

Roadmap review of entanglement & ingestion

- LEAD: Stefanie Werner
- Double check of outcomes and planning INDICIT I/II

- Ingested litter by seabirds: mature protocol, used in OSPAR (not in other RSC) – contact will be taken by Stefanie Werner with Jan van Franeker & other experts– no further actions needed from TG ML group
- Ingested litter sea turtles: mature protocol INDICIT I, contact will be taken by Stefanie Werner– no further actions needed from TG ML group
- Litter ingested by fish: protocols to immature for the moment / hard to harmonize methods for the time being – start with compilation on protocols/projects ingestion/entanglement (see also actions Item 26.09); further waiting on the results of JPI Oceans (Paula Sobral) on microplastics before further action by TG ML group
- Litter ingested by invertebrates: similar approach as for 'Litter ingested by fish'
- Litter as nesting material in seabird breeding colonies and associated mortality rates due to entanglements: methodology developed and used in Germany – further work (revision of TG ML protocol with involvement of relevant experts) by Stefanie Werner together with relevant external experts – no further action needed from TG ML group
- Entanglement in floating litter/litter on the seafloor: on hold – potential deliverable by INDICIT II and protocols for diver applied in MARELIT (to be followed up by Francois Galgani and Stefanie Werner)
- Master list for entanglement & ingestion: macro list will be developed; master lists for micro and meso fraction will be developed once more information on protocols is available – no further action needed at this point
- A chapter on entanglement of sea floor organisms will be considered within the chapter sea floor; the associated master list and template will be part of the Impact/entanglement "chapter" (Francois Galgani)
- Additional expertise: workshop planned in Corsica (November 2018) on monitoring of ingestion/entanglement. Francois Galgani (also part of organisation) and Stefanie Werner will participate on behalf of TG ML group. Possibility will be checked for back-to-back meeting.

Item 27-05 Riverine litter – data tools, activities and outlook

Daniel Gonzalez (UCA) briefed the participants on recent data on riverine litter in EU (projects, publications (to be found in TG ML WIKI). Increased attention for riverine litter monitoring can be observed at several levels (EU incl. WFD, RSC, national, international conferences/workshops, research projects, NGOs). TG ML group is invited to provide additional information on riverine litter (please upload to Wiki). Daniel Gonzalez is currently involved in two new projects: PLASTREND and MIDAS and gives advice in the Life LEMA project.

Daniel Gonzalez further presented the results from the JRC RIMMEL project developing and testing approaches for macrolitter monitoring in rivers (through river surface observation). A FMML app was developed by JRC to support monitoring. Data were obtained from 15 countries, by scientific experts (no citizen science). On average 18 items/h/observation; extrapolated to total river width this gives an average of 30 items/h/river. Results of litter flux vs river flow were given for two rivers: Llobregat river (Barcelona) and Rhone River (France). A top item list for riverine input was produced; TOP 20 are 97% of all items. An image-based approach uses a high-resolution camera system, linked to image recognition analysis. Strengths and weaknesses of the JRC 'Littercam' were shortly presented. Further steps include QA/QC framework, discuss and agree on BAT, set up pilot-test-scenario's, etc.

Feedback from the TG ML group and next steps
Attention on rivers as litter source to the marine environment has increased. TG ML (Riverine Litter Monitoring report) has provided some input and is the only group providing an overview.

- TG ML has currently no resources to work on riverine litter
- Need to harmonise approaches for riverine litter monitoring across Europe and in neighbouring countries in order to provide comparable results for prioritization purposes
- Important to align with TG ML recommendations and guidance in order to maintain possibility to link riverine input with marine litter assessments

Item 27-06 Top litter identification

Based on a request by DG ENV during the TG ML annual meeting 2017 and in collaboration with the TG ML, JRC has drafted a report on Top Marine Beach Litter Items in Europe (Top Marine Beach Litter Items in Europe, Addamo, Laroche, Hanke, 2017). Being a follow up of an ad hoc report provided in 2016 and limited by non-harmonized data collection and different assessment approaches, the draft report provided a valuable basis for the EC impact assessment and proposal for the Plastics Strategy.

The report is still in a draft status and needs to be published asap. Besides referring to existing ranking lists, which did not provide comparable listings, a listing of top items at EU level was based on data collected through TG ML baseline work. Georg Hanke also mentioned work by EEA Litterwatch and RIMMEL. The report timing did not allow to integrate these data in the first analysis by JRC (2016). Important message is that the top item list rankings should be interpreted as indicating items that consistently rank high.

Feedback from the TG ML group and next steps

Issues discussed within TG ML regarding the top litter list to further consider include: comparability of top 20 items list from urban versus natural beaches and its policy relevance, distortion effects due to spills, underrepresentation of Black Sea litter data, transparency of analysis approach.

Roadmap review top litter identification

- LEAD: Georg Hanke
- Short term: Finalisation of the 2017 Top Litter Item report (to be considered as a review document) asap.
    - Highlighting existing RSCs reports (some had not been available at data ingestion closure in 2017), adding some 2018 references
    - Revision of introduction with clear limited scope, highlighting weaknesses of data compilation and limitations of performed data analysis
    - Focusing report on providing basis information for the Plastics Strategy, separating additional information, e.g. testing methods on data set for a potential future more in-depth publication
    - Provide additional information on beach types based on contributions by Alessandra Giorgetti (to send data information on beach types) and Thomie Vlachogianni (compilation of extra information on differences between beach types)
    - Presentation of the regional data needs additional attention
    - Correction of shortcomings in data aggregation for analysis
- Longer term: Agreement on a follow-up analysis based on new data input and comparison of calculation methods.

Item 27-07 Discussion on measures against litter

Georg Hanke (DG JRC, group co-chair) asked the TG ML group on the need for extra activities on measures against litter. This could include a database on measures (conf. national database in Germany), or how to measure the efficiency of ML measures.

Feedback from the TG ML group and next steps

Currently the discussion about measures on marine litter is not in the mandate of the TG Marine Litter. Broadening the scope to measures will demand a reconsideration of the set-up of the meetings and the composition of the group.

Although some participants expressed the added value of working on measures, especially in terms of knowledge exchange on the potential effectiveness of measures taken, the TG ML group is invited to take home this question to discuss with relevant colleagues to see the needs regarding PoMs. Based on the feedback (expected latest by mid-September 2018) discussions will be held and the issue be forwarded to the MSFD GES group meeting (October 2018).

Item 27-08 Work progress on Baselines and Thresholds

The progress of the work on marine beach litter baselines and on litter thresholds was reported and discussed during two dedicated workshops on 28.6.2018. Therefore, only a very short overview was given during this agenda point.

Item 27-09 TG ML way forward and next steps

A list of actions agreed will be posted by beginning of July. The minutes will be produced by the end of July, open for revision by the TG ML experts until end of August 2018.

Points of attention for the TG ML way forward include:

- Need to identify new experts for TG ML as there is a lack of expertise for some of the domains
- Wiki platform should be used more actively/frequently
- Attention for timely delivery of background/preparatory documents to be better prepared for meetings (e.g. 2 weeks in advance)
- More balanced input / efforts needed by all group members

Deadline summary:

The agreed actions have been summarized in a separate document. Please refer to full text above for work details.

Item 27-10 Closure of the meeting

The chairs thanked the hosts from the Cyprus Ministry of Agriculture, Development and Environment for their kind hospitality, and thanked all participants, for their presence and contributions and closed the meeting at 18.00h on 27th June.

MSFD Technical Group on Marine Litter (MSFD TG Litter)
Workshops on Litter Baselines and Thresholds

28th June 2018, Larnaca, Cyprus

WORKSHOP REPORT

Context

The Marine Strategy Framework Directive (MSFD) requires European Member States (MS) to develop strategies for their marine waters leading to programmes of measures to achieve or maintain Good Environmental Status (GES) in European Seas. As a first essential step in reaching good environmental status, MS have established monitoring programmes enabling the state of the marine waters concerned to be assessed on a regular basis. Over recent years, significant progress has been made with establishing joint monitoring programmes for marine litter.

The quantification of litter (and its impacts) is needed to assess the state of the environment and to prioritize actions, including the monitoring of successful reduction measures. The setting of **baseline values** is therefore needed in order to provide a reference for trend analysis. Deriving baselines on different spatial scales requires the availability of data with sufficient spatial and temporal coverage and a data quality that is fit for the purpose. TG ML has been tasked to derive an approach for setting baselines by discussing approaches and collecting beach litter data for the application of different scenarios on that dataset.

The Commission Decision of May 2017 requires EU Member States **to establish threshold** values to ensure that levels of marine litter do not cause harm to the coastal and marine environment. Member States should establish threshold values through cooperation at Union level for Criteria D10C1 and D10C2 (but taking into account regional or subregional specificities) and through regional and Subregional cooperation for Criteria D10C3 and D10C4. In the CIS Work Programme (2016-2019) TG ML was tasked to provide further advice to EU Member States on the development of thresholds.

To contribute to this process and to provide sufficient time for discussion, TG Litter organised two workshops on Marine Litter Baselines and Thresholds. The workshops were organized back-to-back with the MSFD TG Litter annual meeting (26.-27.6.2018) and took place on the 28th of June in Larnaca, Cyprus, hosted by the Cyprian Ministry of Agriculture, Development and Environment.
The Baselines workshop was chaired by Georg Hanke (DG JRC) and the Thresholds workshop by Stefanie Werner (UBA). The workshops were attended by 36 participants (Annex 1) including members of the research community, government experts, and representatives from NGOs.

Workshop - Baselines of marine litter

Scope

Georg Hanke (DG JRC) presented briefly the underlying policy processes, the available experience and relevant stakeholders for baseline setting. He gave an overview of the work done and the proposed next steps. The work started in June 2015, a dedicated workshop was held on 14.+15.3.2017 in Brussels, Belgium, further discussion occurred during the 2017 annual meeting in Gdansk, Poland on 8.+9.6.2017 and the approach development should be finalised by end of 2018. Main efforts had to be put in data gathering and compilation of beach litter data, due to the incompatibility of data formats. Important elements to consider in the baseline discussion are the data availability, quality and accessibility, as well as the temporal and spatial scale.

Beach Baselines Work progress

On behalf of Anna Addamo (DG JRC), Georg Hanke presented the work progress made on beach baselines. He explained briefly the approach, including the definitions used, the data sources, the spatial and temporal scales. It had been decided to consider the period 2012-2016 for data collection. The data collection process was rather challenging, due to the different data sources (regional, NGOs, national, etc.), sometimes with different approaches and data formats. Traceability and quality control of the metadata will be key in the (further) process for baseline setting. Main bottlenecks observed during the data aggregation were mentioned such as spatio-temporal heterogeneity, inconsistencies in the different litter identification lists, etc. While data collation is being finalized, the authorisation for the use of all data by MS for use in the baseline scenario analysis will be needed. The further work will then include the selection of items and item groups, spatial aggregation scales and types of scenarios.

Beach litter baseline database

There was a close collaboration between JRC (Anna Addamo) and the EMODNET chemistry module consortium. Alessandra Giorgetti (OGS), coordinator for the EMODNET chemistry work on litter, explained the set-up of the EMODNET beach litter database based on different data sources and data formats. The baseline beach litter dataset will then be a subset (2012-2016, only EU countries) of the overall EMODNET litter database. Main issues in compiling the database were due to heterogeneity relate to sampling methods (e.g. variable survey length), coding/reporting (e.g. language issues, ad-hoc coding), spatio-temporal distribution (e.g. no references, yearly/seasonal data). The database structure, data validation process and potential outputs were presented and need to be further discussed within the TG ML group before wider distribution. Some technical hindrances in the process were highlighted and will be presented in a JRC technical report. An example was given on mapping and merging of ML items between different category lists according to a hierarchical level.

Presentation on baseline calculation methods for beach litter using LitteR software

Willem van Loon (MinIWM NL) presented the methodology for baseline setting and reduction analysis for beach litter used for OSPAR, including basic elements to consider: beach specificity, litter types, stability/precision of calculated baselines, use fixed baselines for MSFD assessment, length of baseline period and starting year of the baseline period. The OSPAR analysis is based on the top-80% litter items and only use the OSPAR 100 m monitoring data (1000 m data and beach clean-up data are excluded). The OSPAR analysis concluded that it is important to use a period (multi-year) data average as baseline value to guarantee a useful stability/precision of data (e.g. a Coefficient of Variation (CV, = standard deviation/mean) of 10 to 20%). A moving window method within a 6 years period is proposed to optimize the necessary length of a baseline period to obtain a specified baseline precision.

Results were presented for several OSPAR beaches. In addition, power results were presented about how many surveys are approximately needed to identify e.g. a 30% reduction of specific beach litter types compared to respective beach specific baseline values. These methods and OSPAR results are currently prepared in a manuscript for publication. It was offered to use that tool, after modification for the specific scope, for the calculation of baseline scenarios.

Template baseline information
Francois Galgani (IFREMER) presented a template to summarize the baseline information, differentiating in geographical scale (RS, EU, national) and in items.

Discussion and outcomes on beach baseline approach:
The ambition of baseline activity is to have an approved dataset and baseline approach resulting in baseline values. While the approach will be derived based on scenario testing and should lead to an agreement within TG ML, the baseline values themselves depend also on the availability of data that is fit for that purpose.

Following elements were discussed and need to be addressed:
- Need of a consolidated litter item category list for MSFD reporting:
    - Hindrances in compiling a single dataset have been identified and solution are being proposed. Many of these hindrances relate to litter item descriptions as provided by litter item lists from RSCs and TG ML monitoring guidance.
    - While, as far as possible, litter item categories will be harmonized or aggregated for the use of the current 2012-2016 database, the process gives also input to the revision of the MSFD Litter Category Item/Type List (the so-called Master List of litter categories).
- Finalization of 2012-2016 beach litter database:
    - Not all of the beach litter data have been acquired through a MS driven official monitoring process, but some through NGO activities (some of those on behalf of MS), or "citizen science" approaches. Therefore, as the baseline discussion is a process driven by MS in the MSFD implementation process, there is need to agree on datasets to be used for the baseline scenario testing exercise. While the entire dataset is a very useful resource, only data agreed by MS will be used for the baseline scenario testing.
    - The Italian beach litter dataset is still missing. A beach litter dataset from Italian beaches, acquired by the NGO Legambiente, is available.
- Data sources to be used for the baseline setting:
    - Main criteria: data collection should be based on clear quality standards/protocols and training sessions to guarantee data quality, irrespective of the monitoring operators (e.g. NGO, authority, research institutes, etc.). This concerns e.g. the differences in data deriving from monitoring campaigns versus campaigns for clean-up which may not fulfil data quality requirements. .
    - Harmonisation of monitoring sites to a 100m stretch of beach or coast.
    - EEA Litterwatch data: should be included if data quality criteria are met. Mechanisms should enable the avoiding of double counting as e.g. EEA litterwatch already includes data from different sources (incl. sources reported by MS).
    - EMODNET should include beach metadata information (as e.g. on the type of beach and its use) and data quality metadata that allows to evaluate the dataset.
- Baseline scenario selection and testing:

o Different scenarios, as discussed (TG ML Baseline concept paper) will be listed and tested. This will include different time and spatial scales. Power-analysis may be used to estimate the number of surveys needed to detect a certain reduction percentage in ML. Seasonal influences will be tested. Selected priority items as well as groups, taking into account needs deriving from the Plastics Strategy will be considered.

Roadmap baselines of marine litter
LEAD: Georg Hanke (JRC)
Data collection and data format harmonization have been performed in close collaboration with EMODNET.

Baselines next steps
- Overview report of data collection, compilation and hindrances to be provided by JRC + EMODNET (technical report, September, some content anticipated)
- Agreement on solving main hindrances by the TG ML group (date tbc)
- MS authorisation for data sources to be used for the baseline scenario testing
- Finalisation of databases (with EMODNET)
- Scenario selection, calculation and testing
- Report on approaches for litter baseline setting (end December 2018)

Discussion and confirmation needed on how to proceed with ingestion of new data, starting from 2017, in EMODNET as a means to assess the effectiveness of ML measures and to provide a future continuous process.

Workshop - Thresholds for Marine Litter

Stefanie Werner (UBA) introduced the TG ML litter Threshold discussion paper. The main issues per chapter were discussed within the TG ML group and will be considered for further revision.

Although the document will be further developed with considerations for all criteria, there was agreement that the actual recommendation for approaches to derive thresholds will be developed for beach macro litter / sea floor macro litter /ingestion by marine biota at this stage. For the aspects of floating macro litter / microlitter/ entanglement, approaches and the way ahead will be derived.

Michail Papadoyannakis (DG ENV) highlighted the importance of this work as part of the CIS programme and the high attention at policy level as D10 being the first MSFD descriptor for which thresholds will be developed. The progress on thresholds will be presented at the next WG GES meeting (16-17/10/2018 tbc). A final report will be prepared by the end of 2018.

Comments by TG ML group on Threshold discussion paper

The main issues per chapter were discussed within TG ML group, and are summarized below:

- Terminology: transparency needed on concept like "acceptable", "not observable", "lowest observable", 'absolute threshold', 'achievable'
- Background: restrict to 'thresholds' as concept (1st paragraph), need for selection of ML items for setting thresholds (reference to harm report versus top list of items), agreement to be made to set item-specific operational thresholds, which can be linked to existing RSCs ML Action Plans, etc.
- Scope: threshold value definition within revised COMDEC (art. 4) to be included, relation to reference condition/baseline to be made clear
- Knowledge on threshold for contaminants available for MSFD Descriptor 8, the WFD priority substance process and within OSPAR, to be checked for its relevance for microlitter (less relevant for macrolitter)
- General concepts of threshold setting: concept of 'disturbance' to be used in a general way, socio-economic elements to be considered (integrated in human health and disturbance of human activities (e.g. aesthetic)) – all put under headline socio-economic implications, examples of litter reduction targets to be given
- New chapter on transboundary impact to be drafted (key word disappropriate costs)
- Safety margins to be considered (traffic light system)
- Threshold values to be set in a way that they are achievable, keeping in mind that it will probably never be possible to achieve zero background concentrations
- Options for setting threshold values:
  - Agreement to keep all options open, but to add an initial statement on the feasibility of the different options in the position paper (e.g. zero/tipping point options: not feasible/recommended)
  - Point of non-return: to be explained why not considered appropriate
  - Precautionary principle: reformulation needed (e.g. careful with wordings 'acceptable')
  - Cut-off values (the term to be revised in the further discussion): Compared to harm-based thresholds, cut-off values are based on other criteria such as expert judgement. By taking into account all available relevant data they describe points of no-return.
  - Public acceptance: to be considered as well

- Lowest endpoint/one-out all out: reformulation needed; one-out-all-out is to be a principle/approach within this lowest endpoint
- Calculation of reduction: refers to a trend reduction (as currently done by MS); can be used as basis to set a target value to achieve a given threshold (e.g. if aim is 30% reduction and baseline is known, you may calculate your threshold) – consider including it as a back-up option if the setting of threshold values is not successful using one of the other options
- Thresholds of individual MSFD COM DEC criteria:
  - Beach/coastline (compulsory):
    - Single use items to be specifically mentioned (as linked to legislative EU proposal)
    - Important to underpin the thresholds with detailed statistical data analysis to determine cut-off values
    - Threshold values versus percentiles (trend reduction targets: depend on starting point (baseline), as a 30% reduction is easily achievable for beaches with less litter, while absolute reduction targets (e.g. reduction with 100 items) might be more difficult for beaches with less litter
    - Focus should be on using absolute numbers for thresholds (% values only as back up option)
    - Potential conflict between 'based on expert judgement' and 'near-to-pristine' (as this intrinsically may involve expert judgement); reformulation needed regarding 'near-to-pristine' (link to harm? Link to GES? Link to achievable?)
    - Way forward could be to differentiate between harmful and non-harmful items; concept 'harmful item' to be defined in position paper.
  - Surface layer (monitoring not compulsory according to rev COMDEC)
    - Lack of data on floating litter to set thresholds; reformulation: Threshold values MUST be set at larger scale (basin) or locally (on specific sources/hot spots); Threshold for ingestion of litter in turtles (feeding on the surface) in development (conf. Fulmars)
    - ALFGD needs to be considered as well
  - Seabed litter
    - To consider if reference to fishing for litter (passive) is to be made; it was stated by the TG ML group that the contribution of fishermen through FFL was below expectations also due to technical difficulties to remove ML; progress still possible when new removal methods will be developed.
    - Reformulation: GES is achieved, if findings are not being increasing, however this also depends how bad the current situation is (hotspots, accumulations zones)
    - Include 'lost fishing gear' as example on particular items
  - Microlitter
    - Agreement that due to lack of data especially with regard to toxicity of microplastics, thresholds could potentially only be set based on precautionary principle
    - Agreement that main source of microplastics is defragmentation/degradation of macroplastics; link between macroplastics (& related GES / targets / thresholds) and microplastics should be made more clear

- Although increased publications on ecological impact on biota (e.g. worms, etc.), no clear evidence yet on eco-toxicological impact on marine biota; but information available on mechanical/physical impact; literature review on latest developments needed (done as part of on-going projects (ECHA/JPI)) to be used for position paper and threshold doc
- Shortlist of prerequisites needed for setting threshold to be included in position paper
- Degradation: hard to set TV for secondary microplastics
  - o Ingestion
    - For some species (also discussed in harm report) it could be feasible to set thresholds (in some areas around 40% of individuals interact with marine litter); outputs of Indicit project to be considered for its relevance
    - No information available within TG ML group that MS have indicator species available for ingestion (besides seabirds and turtles)/ entanglement (besides seabirds)
  - o Entanglement:
    - Link between seafloor litter and entanglement to be further discussed (e.g. rate of interaction)

Roadmap for thresholds ML
LEAD: Stefanie Werner

Threshold discussion paper next steps:
- Revised version to be circulated for comments by September 10 (WIKI)
- Chapter on transboundary impacts to be delivered 3rd week of September (by Thomie Vlachogianni)
- Shortlist of prerequisites needed for setting thresholds for microlitter to be provided by Elke Fischer in 3rd week of September
- Georg Hanke to provide a new wording/reformulation for cut-off values within next two weeks (delivered 13.8.2018)
- Comments to be provided by TG ML group by September 28, 2018 at the latest
- Discussion paper for WG GES to be uploaded at the latest by 5th of October 2018
- Presentation of approach to WG GES (16th October 2018)
- Final paper to be prepared by end 2018

Annex 1 – Attendance List

Representative		Affiliation	Country
Papadoyannakis	Michail	DG ENV	
Bertato	Valentina	DG ENV	
Weydert	Marco	DG R&I	
Hanke	Georg	DG JRC	
Gonzalez	Daniel	UCA	
Volckaert	Annemie	ARCADIS	
de Zwart	Ellen	SPF Environment	Belgium
Slabakova	Violeta	IO-BAS	Bulgaria
Antoniadis	Konstantinos	DFMR	Cyprus
Rousou	Maria	DFMR	Cyprus
Strand	Jakob	Aarhus University	Denmark
Setälä	Outi	Finnish Environmental Institute (SYKE)	Finland
Galgani	Francois	IFREMER	France
Werner	Stefanie	UBA	Germany
Fischer	Elke	University of Hamburg	Germany
Fleet	David	LKN-SH	Germany
Babbini	Lorenza	IMELS/ISPRA	Italy
Lauciute	Laura	Environmental Protection Agency	Lithuania
Erfeling	Mareike	Ministry of Infrastructure and Water management	Netherlands
van Loon	Willem	Ministry of Infrastructure and Water management	Netherlands
Moura	Isabel	APA - Portugese Environment Agency	Portugal
Stoica	Elena	NIMRD	Romania
Palatinus	Andrea	Slovenian Water Agency/Ministry for Environment	Slovenia
Zorzo Gallego	Pilar	CEDEX	Spain
Bredal Nerdal	Lisa	Agency for marine & water management	Sweden
Ytreberg	Agnes	Agency for marine & water management	Sweden
Maes	Thomas	CEFAS	UK
Trdan	Stefan	EEA/ETC/IWRS	
Giorgetti	Alessandra	OGS	
Ruiz	Marta	HELCOM	
Orestis	Karghotis	EBCD/IUCN	
Sobral	Paula	FCT-NOVA	
Knezevic	Jelena	UN Environment/MAP	
Kinsey	Sue	MCS	
Vlachogianni	Thomais	MIO-ECSDE	
Bruge	Antoine	Surfrider Foundation Europe	
Bannick	Claus-Gerhard	UBA	