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| <b>Document title</b>  | Draft HELCOM monitoring sub-programme on beach litter              |
| <b>Code</b>            | 3-14-Rev.1   |
| <b>Category</b>        | DEC  |
| <b>Agenda Item</b>     | 3 - Matters arising from the HELCOM Groups                         |
| <b>Submission date</b> | 14.06.2019   |
| <b>Submitted by</b>    | EU   |
| <b>Reference</b>       | Outcome of STATE&CONSERVATION 10-2019 Rev. 1 para. 3MA.29 - 3MA.31 |

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*This document is a revised proposal by EU where Tables c.4c, c.4d, c.4e and c.4f have been redone (headings highlighted in yellow) to be aligned with the Commission Directive (EU) 2017/845 of 17 May 2017.*

## Background

STATE & CONSERVATION 5-2016 considered and agreed on the proposed procedure for reviewing and updating the HELCOM Monitoring Manual and the engagement of HELCOM expert groups, network and projects (document 2MA-3, table 1), and agreed that exhaustive reviews and revisions of the Manual should be carried out every six years, next time being in 2019. Intermittent revisions to the manual can be proposed by, or requested from, expert bodies, as needed ([Outcome of STATE & CONSERVATION 5-2016](#), para. 2MA.3).

In such a procedure the EN-Marine Litter is a responsible expert body of the review of the litter monitoring programme. Also the [Terms of Reference of the EN-Marine Litter \(2019-2021\)](#), as approved by HOD 55-2018, requires the network to “Develop a regionally coordinated monitoring sub-programme on macrolitter characteristics and abundance/volume”.

HELCOM litter monitoring programme has two sub-programmes: macrolitter characteristics and abundance/volume and microlitter particle abundance and characteristics.

The HELCOM EN-Marine Litter took note that the sub-programme on macrolitter combines beach, water surface, seafloor and biota. The network discussed further work on this sub-programme, and agreed to approach each of these compartments separately, starting with the drafting of a monitoring sub-programme for the beach compartment where HELCOM work is more advanced. The network agreed to submit a proposal for a monitoring sub-programme on beach litter to STATE & CONSERVATION 10-2019 for consideration ([Memo of the meeting of the HELCOM EN-Marine Litter](#), 17 January 2019).

STATE & CONSERVATION 10-2019 took note of draft HELCOM monitoring sub-programme (document 3MA-4), elaborated using information as contained in the pre-core indicator report on beach litter, the beach litter monitoring guidelines, and the section on marine litter contained in the State of the Baltic Sea report. The meeting further noted that Denmark, Finland, Germany and Sweden have provided input to the document prior to the meeting. The meeting took note of comments from Germany and Denmark to the document and further revised the subprogram (document 3MA-4 rev.1. 3 to STATE & CONSERVATION 10-2019). The meeting agreed on the regional monitoring sub-program on beach litter and on the amendments of the Monitoring Manual accordingly, and agreed to send it to HOD-56 2019 for approval.

This document contains the revised draft HELCOM monitoring sub-programme to address the input provided by State and Conservation.

The Meeting agreed on the regional monitoring sub-program on beach litter and on the amendments of the Monitoring Manual accordingly and agreed to send it to HOD-56 2019 for approval.

### Action requested

The Meeting is invited to consider and approve the regional monitoring sub-program on beach litter.

## Annex II

# HELCOM Monitoring Programme topic

## Litter

## Contents

|   |    |
|---|----|
| Annex II.....   | 1  |
| a. General information on programme topic and sub-programmes.....                       | 2  |
| b. Responsible HELCOM subsidiary body .....   | 2  |
| Sub-programme 1 – Macrolitter characteristics and abundance/volume – Beach litter ..... | 2  |
| c. Purpose of monitoring.....   | 2  |
| c.1 Monitoring programmes.....  | 2  |
| c.2 BSAP segments.....  | 3  |
| c.3 Other legislation.....  | 3  |
| c.4 Purpose of monitoring .....   | 3  |
| d. Monitoring and assessment requirements.....  | 10 |
| e. Monitoring concept(s).....   | 11 |
| f. Gaps in monitoring .....   | 18 |
| g. Data providers and access .....  | 18 |
| h. Literature .....   | 22 |

## a. General information on programme topic and sub-programmes

### Programme topic: Litter

This program monitors the amount and composition of marine litter in different compartments. Macrolitter is monitored on the beach and seafloor, whereas microlitter is monitored in the water column and/or in sediments.

### Sub-programme 1: Macrolitter characteristics and abundance/volume – Beach litter

The monitoring of the number of litter items per 100 m beach segment in the Baltic Sea sub-regions is done by each Contracting Party although coordinated by EN-Marine Litter.

## b. Responsible HELCOM subsidiary body

Subsidiary body: Pressure WG, supported by the Expert Network (EN-Marine Litter).

## Sub-programme 1 – Macrolitter characteristics and abundance/volume – Beach litter

The monitoring of this sub-programme is:

- Fully coordinated
- Partly coordinated. Indicate missing component(s):
- Coordinated monitoring is under development. Indicate by which group/project and by when a recommendation on coordinated monitoring can be expected.

The coordinated regional monitoring program can begin after necessary decisions on the proposal submitted by the EN-Marine Litter to STATE & CONSERVATION 10-2019.

## c. Purpose of monitoring

### c.1 Monitoring programmes

The sub-programme supports the following obligatory MSFD Monitoring Programmes. Tick one or more relevant boxes.

- D10** Litter

## c.2 BSAP segments

The sub-programme serves the following BSAP segments. Tick one or more relevant boxes.

- Eutrophication
- Hazardous substances
- Biodiversity
- Maritime activities

## c.3 Other legislation

The sub-programme links with the following other international legislation (Q8a). Tick one or more relevant boxes.

- Bathing Water Directive
- Common Fisheries Policy – Data Collection Framework
- Habitats Directive
- Birds Directive
- Nitrates Directive
- Urban Waste Water Treatment Directive
- Water Framework Directive
- OSPAR Convention
- Trilateral Wadden Sea Convention
- Other, Specify: MSFD D10C1

## c.4 Purpose of monitoring

### *c.4a Assessment purpose in general*

The sub-programme supports the assessment of:

Tick the relevant box.

| Temporal trends                     | Spatial distribution                | State classification                |
|-------------------------------------|-------------------------------------|-------------------------------------|
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

The **sub-programme** supports the assessment of: (Q4k).

Note that the answer to this question will be decisive for whether to answer upcoming questions e.g. upcoming questions on pressures should only be answered if the monitoring is defined as supporting the assessment of pressures.

Tick the relevant boxes.

|               |           |                  |                  |
|---------------|-----------|------------------|------------------|
| State/Impacts | Pressures | Human activities | Effectiveness of |
|---------------|-----------|------------------|------------------|

|  |  | causing the pressures                                | measures   |
|--|--|--|--|
| <input checked="" type="checkbox"/>                  | <input checked="" type="checkbox"/>                  | <input type="checkbox"/>                             | <input checked="" type="checkbox"/>                  |
| If this is selected fill in the following questions: | If this is selected fill in the following questions: | If this is selected fill in the following questions: | If this is selected fill in the following questions: |
| c.4b, c, d   | c.4b, c, e, f  | c.4b, c, e, f  | c.4b, c, e, f  |

Give any other monitoring purpose e.g. if the sub-programmes include supporting parameters for other monitoring programmes

Beach litter monitoring will be used to measure the effectiveness of measures when sufficient data (spatial as well as temporal) is available.

For questions 4b-4f, select when applicable for the sub-programme, the link to:

- BSAP ecological objectives, MSFD GES criteria (Q5a)
- characteristics, pressures and impacts from MSFD Annex III (Q5c)
- activities (Q7a,7b)

#### *c.4b BSAP Ecological objectives*

Choose only the most relevant option(s). Tick one or more boxes below.

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#### **Eutrophication**

- Concentrations of nutrients close to natural levels
- Clear water
- Natural level of algal blooms
- Natural distribution and occurrence of plants and animals
- Natural oxygen levels

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#### **Hazardous substances**

- Concentrations of hazardous substances close to natural levels
- All fish safe to eat
- Healthy wildlife
- Radioactivity at pre-Chernobyl levels

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#### **Biodiversity**

- Natural landscapes and seascapes
- Thriving and balanced communities of plants and animals
- Viable populations of species

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#### **Maritime activities**

- No illegal pollution
  - Safe maritime traffic without accidental pollution
  - Efficient response capability
  - No introductions of alien species from ships
-

- 
- Minimum air pollution from ships
  - Zero discharges from offshore platforms
- 

**c.4c MSFD GES Criteria (Q5a)**

Choose only the most relevant option(s). Tick one or more boxes below.

Descriptor 10     D10C1 – Primary:

The composition, amount and spatial distribution of litter on the coastline, in the surface layer of the water column, and on the seabed, are at levels that do not cause harm to the coastal and marine environment.

Member States shall establish threshold values for these levels through cooperation at Union level, taking into account regional or subregional specificities.

D10C2 – Primary:

The composition, amount and spatial distribution of micro-litter on the coastline, in the surface layer of the water column, and in seabed sediment, are at levels that do not cause harm to the coastal and marine environment.

Member States shall establish threshold values for these levels through cooperation at Union level, taking into account regional or subregional specificities.

D10C3 – Secondary:

The amount of litter and micro-litter ingested by marine animals is at a level that does not adversely affect the health of the species concerned. Member States shall establish threshold values for these levels through regional or subregional cooperation.

D10C4 – Secondary:

The number of individuals of each species which are adversely affected due to litter, such as by entanglement, other types of injury or mortality, or health effects. Member States shall establish threshold values for the adverse effects of litter, through regional or subregional cooperation.

**c.4d Structure, functions and processes of marine ecosystems from Commission Directive (EU) 2017/845 of 17 May 2017 Table 1**

Choose only the most relevant option(s). Tick one or more boxes below.

| Theme   | Ecosystem elements  | Possible parameters and characteristics (Note 1)   | Relevant qualitative descriptors laid down in Annex I (Notes 2 and 3) |
|---------|---|--|---|
| Species | <input type="checkbox"/> Species groups (Note 4) of marine birds, mammals, reptiles, fish and cephalopods of the marine region or subregion | <input type="checkbox"/> Spatial and temporal variation per species or population: <ul style="list-style-type: none"> <li><input type="checkbox"/> distribution, abundance and/or biomass</li> <li><input type="checkbox"/> size, age and sex structure</li> </ul> | (1); (3)  |

|                                 |  |   |          |
|---------------------------------|--|---|----------|
|                                 |  | <input type="checkbox"/> fecundity, survival and mortality/injury rates<br><input type="checkbox"/> behaviour including movement and migration<br><input type="checkbox"/> habitat for the species (extent, suitability)<br><input type="checkbox"/> Species composition of the group   |          |
| Habitats                        | <input type="checkbox"/> Broad habitat types of the water column (pelagic) and seabed (benthic) (Note 5), or other habitat types, including their associated biological communities throughout the marine region or subregion  | Per habitat type:<br><input type="checkbox"/> habitat distribution and extent (and volume, if appropriate)<br><input type="checkbox"/> species composition, abundance and/ or biomass (spatial and temporal variation)<br><input type="checkbox"/> size and age structure of species (if appropriate)<br><input type="checkbox"/> physical, hydrological and chemical characteristics<br>Additionally for pelagic habitats:<br><input type="checkbox"/> chlorophyll a concentration<br><input type="checkbox"/> plankton bloom frequencies and spatial extent | (1); (6) |
| Ecosystems, including food webs | <input type="checkbox"/> Ecosystem structure, functions and processes, comprising:<br><input type="checkbox"/> physical and hydrological characteristics<br><input type="checkbox"/> chemical characteristics<br><input type="checkbox"/> biological characteristics<br><input type="checkbox"/> functions and processes | Spatial and temporal variation in:<br><input type="checkbox"/> temperature and ice<br><input type="checkbox"/> hydrology (wave and current regimes; upwelling, mixing, residence time, freshwater input; sea level)<br><input type="checkbox"/> bathymetry<br><input type="checkbox"/> turbidity (silt/sediment loads), transparency, sound<br><input type="checkbox"/> seabed substrate and morphology<br><input type="checkbox"/> salinity, nutrients (N, P), organic carbon, dissolved gases (pCO <sub>2</sub> , O <sub>2</sub> ) and pH                   | (1); (4) |

- links between habitats and species of marine birds, mammals, reptiles, fish and cephalopods
- pelagic-benthic community structure
- productivity

Notes related to Table 1

Note 1: An indicative list of relevant parameters and characteristics for species, habitats and ecosystems is given, reflecting parameters affected by the pressures of Table 2 of this Annex and of relevance to criteria laid down in accordance with Article 9(3). The particular parameters and characteristics to be used for monitoring and assessment should be determined in accordance with the requirements of this Directive, including those of its Articles 8 to 11.

Note 2: The numbers in this column refer to the respective numbered points in Annex I.

Note 3: Only the state-based qualitative descriptors (1), (3), (4) and (6) which have criteria laid down in accordance with Article 9(3) are listed in Table 1. All other, pressure-based, qualitative descriptors under Annex I may be relevant for each theme.

Note 4: These species groups are further specified in Part II of the Annex to Commission Decision (EU) 2017/848 of 17 May 2017 laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU (see page 43 of this Official Journal).

Note 5: These broad habitat types are further specified in Part II of the Annex to Decision (EU) 2017/848.

***c.4e Anthropogenic pressures, uses and human activities in or affecting the marine environment from Commission Directive (EU) 2017/845 of 17 May 2017 Table 2b (Q5c)***

Choose only the most relevant option(s). Tick one or more boxes below.

| Theme      | Pressure (Note 1)  | Possible parameters   | Relevant qualitative descriptors laid down in Annex I (Notes 2 and 3) |
|------------|--|---|---|
| Biological | <input type="checkbox"/> Input or spread of non-indigenous species   | <input type="checkbox"/> Intensity of, and spatial and temporal variation in, the pressure in the marine environment and, where relevant, at source | (2)   |
|            | <input type="checkbox"/> Input of microbial pathogens  |   |   |
|            | <input type="checkbox"/> Input of genetically modified species and translocation of native species                           | For assessment of environmental impacts of the pressure, select relevant ecosystem elements and parameters from Table 1                             |   |
|            | <input type="checkbox"/> Loss of, or change to, natural biological communities due to cultivation of animal or plant species |   |   |
|            | <input type="checkbox"/> Disturbance of species (e.g. where  |   |   |

|                               |  |          |
|-------------------------------|--|----------|
|                               | <p>they breed, rest and feed) due to human presence</p> <p><input type="checkbox"/> Extraction of, or mortality/injury to, wild species (by commercial and recreational fishing and other activities)</p>  | (3)      |
| Physical                      | <p><input type="checkbox"/> Physical disturbance to seabed (temporary or reversible)</p> <p><input type="checkbox"/> Physical loss (due to permanent change of seabed substrate or morphology and to extraction of seabed substrate)</p> <p><input type="checkbox"/> Changes to hydrological conditions</p>  | (6); (7) |
| Substances, litter and energy | <p><input type="checkbox"/> Input of nutrients — diffuse sources, point sources, atmospheric deposition</p> <p><input type="checkbox"/> Input of organic matter — diffuse sources and point sources</p> <p><input type="checkbox"/> Input of other substances (e.g. synthetic substances, non-synthetic substances, radionuclides) — diffuse sources, point sources, atmospheric deposition, acute events</p> <p><input checked="" type="checkbox"/> Input of litter (solid waste matter, including micro-sized litter)</p> <p><input type="checkbox"/> Input of anthropogenic sound (impulsive, continuous)</p> <p><input type="checkbox"/> Input of other forms of energy (including</p> | (5)      |
|                               |  | (8); (9) |
|                               |  | (10)     |
|                               |  | (11)     |

electromagnetic fields,  
light and heat)

Input of water —  
point sources (e.g.  
brine)

Notes related to Table 2

Note 1: Assessments of pressures should address their levels in the marine environment and, if appropriate, the rates of input (from land-based or atmospheric sources) to the marine environment.

Note 2: The numbers in this column refer to the respective numbered points in Annex I.

Note 3: Only pressure-based qualitative descriptors (2), (3), (5), (6), (7), (8), (9), (10) and (11), which have criteria laid down in accordance with Article 9(3), are listed in Table 2a. All other, state-based, qualitative descriptors under Annex I may be relevant for each theme.'

***c.4f Uses and human activities in or affecting the marine environment from Commission Directive (EU) 2017/845 of 17 May 2017 Table 2b (Q5c)***

Choose only the most relevant option(s). Tick one or more boxes below.

| Theme  | Activity   |
|--|--|
| Physical restructuring of rivers, coastline or seabed (water management) | <input type="checkbox"/> Land claim  |
|  | <input type="checkbox"/> Canalisation and other watercourse modifications                                    |
|  | <input type="checkbox"/> Coastal defence and flood protection*   |
|  | <input type="checkbox"/> Offshore structures (other than for oil/gas/renewables)*                            |
|  | <input type="checkbox"/> Restructuring of seabed morphology, including dredging and depositing of materials* |
| Extraction of non-living resources                                       | <input type="checkbox"/> Extraction of minerals (rock, metal ores, gravel, sand, shell)*                     |
|  | <input type="checkbox"/> Extraction of oil and gas, including infrastructure*                                |
|  | <input type="checkbox"/> Extraction of salt*   |
|  | <input type="checkbox"/> Extraction of water*  |
| Production of energy   | <input type="checkbox"/> Renewable energy generation (wind, wave and tidal power), including infrastructure* |
|  | <input type="checkbox"/> Non-renewable energy generation   |
|  | <input type="checkbox"/> Transmission of electricity and communications (cables)*                            |
| Extraction of living resources   | <input checked="" type="checkbox"/> Fish and shellfish harvesting (professional, recreational)*              |
|  | <input type="checkbox"/> Fish and shellfish processing*  |
|  | <input type="checkbox"/> Marine plant harvesting*  |
|  | <input type="checkbox"/> Hunting and collecting for other purposes*  |
| Cultivation of   | <input checked="" type="checkbox"/> Aquaculture — marine, including infrastructure*                          |

|                           |  |
|---------------------------|--|
| living resources          | <input type="checkbox"/> Aquaculture — freshwater                      |
|                           | <input type="checkbox"/> Agriculture                                   |
|                           | <input type="checkbox"/> Forestry                                      |
| Transport                 | <input type="checkbox"/> Transport infrastructure*                     |
|                           | <input checked="" type="checkbox"/> Transport — shipping*              |
|                           | <input type="checkbox"/> Transport — air                               |
|                           | <input type="checkbox"/> Transport — land                              |
| Urban and industrial uses | <input type="checkbox"/> Urban uses                                    |
|                           | <input type="checkbox"/> Industrial uses                               |
|                           | <input checked="" type="checkbox"/> Waste treatment and disposal*      |
| Tourism and leisure       | <input type="checkbox"/> Tourism and leisure infrastructure*           |
|                           | <input checked="" type="checkbox"/> Tourism and leisure activities*    |
| Security/defence          | <input type="checkbox"/> Military operations (subject to Article 2(2)) |
| Education and research    | <input type="checkbox"/> Research, survey and educational activities*  |

Uses and human activities in or affecting the marine environment with particular relevance for points (b) and (c) of Article 8(1) (only activities marked \* are relevant for point (c) of Article 8(1)), and Articles 10 and 13.

## d. Monitoring and assessment requirements

In order to assess the pre-core indicator ‘Beach litter’ (STATE & CONSERVATION 5-2016, [document 4J-27](#)), three sampling campaigns during the year have to be organised; preferably during the same survey periods used in other international established monitoring programmes. If it is possible, according to national climatological conditions, a fourth campaign is to be conducted during winter time. Information from this fourth campaign, when available, will be included separately in the assessment (i.e. different colours on map representations).

Beach litter is to be monitored by all HELCOM Contracting Parties, covering all coastal areas of the Baltic Sea. The number of beaches to monitor per country is to be determined nationally, but needs to ensure a representative coverage of their respective coastal area as well as, if feasible, an equally well representation of all beach categories. Beaches are to be classified as “urban”, “rural” and “peri-urban”. Choosing a mix of urban, rural and peri-urban beaches will provide knowledge on different types of sources of litter. Litter on rural beaches is more likely to indicate sea based sources and the litter situation at sea (background values for litter pollution level) - since very little littering is expected from visitors. Urban and peri-urban beaches would more reflect the contribution of land-based activities on and nearby the beach. Criteria to follow to select beaches to sample are specified in the [HELCOM guidelines for monitoring beach litter](#) (section 2.4.2).

Data from national monitoring should be analysed aiming at identifying the number of litter items per type of material and most frequent litter items (top beach litter items) standardized to a 100m stretch of beach.

Types of material to consider are: “artificial polymer materials”, “rubber”, “cloth/textile”, “paper/cardboard”, “processed/worked wood”, “metal”, “glass/ceramics” and “undefined”.

Top beach litter items are to be determined for the different types of beaches (urban, peri-urban and rural beaches) following the rank method. Top 10-20 item lists of marine litter items occurring on beaches should preferably be derived so data from each survey are weighted equally within one station and also weighted equally between stations instead of only making top 10 lists of total sum of all litter items. Thereby will the weight of surveys/seasons and stations which most litter items registered be reduced.

The HELCOM EN-Marine Litter considered the assessment unit to be used for the assessment of the beach litter indicator, and considered the appropriateness of using Scale 2 or Scale 3 of the HELCOM sub-divisions of the Baltic Sea for regional monitoring and assessment purposes (see attachment 4 of the HELCOM Monitoring and Assessment Strategy). The Scale 3 may be used even if the indicator is not applicable to off-shore areas due to lack of data as the monitoring is based on beach sampling. The data is primarily representative of beaches located in a certain Scale 2 or scale 3 sub-division. The experts of HELCOM EN-Marine Litter agreed to postpone the decision on the scale of the assessment pending on further discussion to take place as part of the finalisation of the pre-core indicator report.

Given the variability of litter data, which is influenced greatly by season, weather conditions and water currents, a 6-year running mean in line with the requirements of the Marine Strategy Framework Directive (MSFD, 2008) is considered appropriate to provide a baseline predict for trends in terms of an average level of pollution. Once the baseline is set, operational targets for the reduction of relevant (top) findings on beaches need to be defined in order to be judged against the baseline. As a midterm target, a downward trend in input of plastics should be achieved.

## **e. Monitoring concept(s)**

## Monitoring concept(s)

| Current means of coordination | Elements     | Parameter                         | Method <sup>1</sup>          | QA/QC    | Frequency <sup>2</sup>   | Spatial resolution (density) of sampling | Link to HELCOM core indicators <sup>3</sup> | Link to GES characteristics   | Spatial scope | Monitoring started (year) | CPs monitoring <sup>4</sup> |
|-------------------------------|--------------|-----------------------------------|------------------------------|----------|--|--|---|---|---------------|---------------------------|-----------------------------|
|                               | Q9a (Q5c)    | Q9b                               | Q9c, Q9d                     | Q9e, 9f  | Q9h, 9i  | Q 9g, 9i                                 |   | Q5b   | Q4i           | Q4h                       |                             |
| National                      | Beach litter | Quantity and type of litter items | OSPAR beach litter guideline | OSPAR    | Other (specify)<br>3 surveys a year (April, June/July, September/October). | 3 beaches                                |   | Properties and quantities of ML do not cause harm to the coastal and marine environment | EEZ           | 2015                      | Denmark                     |
| National                      | Beach litter | Quantity and type of litter items | UNEP/IOC (MARLIN)            | National | Other (specify)<br>3 surveys a year (spring, summer, autumn)               | 10 beaches                               |   | Properties and quantities of ML do not cause harm to the coastal and marine environment | EEZ           | 2012                      | Estonia                     |

<sup>1</sup> Reference to a published or publicly available document or URL link (Q 9c) if different from published (Q 9d)

<sup>2</sup> The option "Different for each country - see MORE overview" refers to the [overview](#) carried out in 2013

<sup>3</sup> Give the name of HELCOM core indicators that are based on the monitoring parameter.

<sup>4</sup> Provide information on the Contracting Partie(s) that are monitoring the parameter.

| Current means of coordination | Elements     | Parameter                         | Method <sup>1</sup> | QA/QC    | Frequency <sup>2</sup>  | Spatial resolution (density) of sampling | Link to HELCOM core indicators <sup>3</sup> | Link to GES characteristics   | Spatial scope | Monitoring started (year) | CPs monitoring <sup>4</sup> |
|-------------------------------|--------------|-----------------------------------|---------------------|----------|---|--|---|---|---------------|---------------------------|-----------------------------|
| National                      | Beach litter | Quantity and type of litter items | UNEP-methodology    | National | Other (specify)<br>3 surveys a year (April-May; July-August; October-November)                            | 13 beaches                               |   | Properties and quantities of ML do not cause harm to the coastal and marine environment | EEZ           | 2012                      | Finland                     |
| National                      | Beach litter | Quantity and type of litter items | OSPAR Guidelines    | National | Other (specify)<br>4 surveys a year (Apr., mid Jun. - mid Jul., mid Sep. - mid Oct., mid Dec. – mid Jan.) | 32 beaches                               |   | Properties and quantities of ML do not cause harm to the coastal and marine environment | EEZ           | 2012                      | Germany                     |
| National                      | Beach litter | Quantity and type of litter items | MARLIN/UNEP         | National | Yearly<br>Summer  | 42 beaches                               |   | Properties and quantities of ML do not cause harm to the coastal and marine environment | EEZ           | 2012                      | Latvia                      |

| Current means of coordination | Elements     | Parameter                         | Method <sup>1</sup>  | QA/QC    | Frequency <sup>2</sup>  | Spatial resolution (density) of sampling | Link to HELCOM core indicators <sup>3</sup> | Link to GES characteristics   | Spatial scope | Monitoring started (year) | CPs monitoring <sup>4</sup> |
|-------------------------------|--------------|-----------------------------------|----------------------|----------|---|--|---|---|---------------|---------------------------|-----------------------------|
| National                      | Beach litter | Quantity and type of litter items | OSPAR Guidelines     | National | Other (specify)<br>4 surveys a year   | 4 beaches                                |   | Properties and quantities of ML do not cause harm to the coastal and marine environment | EEZ           | 2012                      | Lithuania                   |
| National                      | Beach litter | Quantity and type of litter items | National methodology | National | Other (specify)<br>4 surveys a year (Apr., mid Jun. - mid Jul., mid Sep. - mid Oct., mid Dec. - mid Jan.) | 15 beaches                               |   | Properties and quantities of ML do not cause harm to the coastal and marine environment | EEZ           | 2015                      | Poland                      |
| National                      | Beach litter | Quantity and type of litter items | MARLIN methodology   | National | Other (specify)<br>3 surveys a year (Spring, Summer, Autumn)  | 10 beaches                               |   | Properties and quantities of ML do not cause harm to the coastal and marine environment | EEZ           | 2012                      | Sweden                      |

## PARAMETER

|  |
|--|
| <b>Element/Parameter pair</b>                  |
| Beach litter/Quantity and type of litter items |

## METHOD

|   |
|---|
| <b>Element/parameter</b>  |
| <b>Beach litter/Quantity and type of litter items</b>   |
| <p>The length of the segment of the coastline to be sampled should be 100 m with the possibility of conducting subsampling for cigarette butts and snuff, paraffin, pellets, all visible fragments, as well as other items if needed. If such subsampling is conducted 10 m stretch is to be monitored (see MARLIN, 2013). Before data analysis, all data must be standardized to a 100m stretch of beach. This means that the results for sub-samples of beach (i.e. 10m) must be extrapolated and, with the results of surveys on more than 100m of beach, the average number of items for 100m should be calculated and used for analysis (i.e. number of items recorded on 300 m of beach should be divided by 3 to give the average number of items per 100m).</p> <p>The width of the beach (from the waterline to back of the beach, e.g. the foot of dunes or high vegetation behind) is also to be reported. The area should preferably also include the highest waterline with litter deposited also under more extreme high water conditions.</p> <p>Litter items, visible to the naked eye (lower size limit at about 0.5cm), are to be counted and recorded by type of material (“artificial polymer materials”, “rubber”, “cloth/textile”, “paper/cardboard”, “processed/worked wood”, “metal”, “glass/ceramics” and “undefined”). The amount of litter per type of material in number of items is to be determined.</p> <p>Litter items should be identified using different coding list (the updated JRC 2013, OSPAR 2010 or MARLIN 2013).</p> <p>For further specifications see <a href="#">HELCOM Guidelines for beach litter monitoring</a>.</p> |

## QA/QC

|   |
|---|
| <b>Element/Parameter pair</b>                         |
| <b>Beach litter/Quantity and type of litter items</b> |
| DE, DK, EE, FI, LT, LV, PL and SE: National           |

## FREQUENCY

### Frequency

|   |
|---|
| <b>Element/Parameter pair</b>   |
| <b>Beach litter/Quantity and type of litter items</b>   |
| Three or four times a year if sampling in winter is possible, depending on the country. One country conducts monitoring yearly. |

## SPATIAL SCOPE

### Spatial Scope

|   |
|---|
| <b>Element/Parameter pair</b>   |
| <b>Beach litter/Quantity and type of litter items</b>                                     |
| Monitoring is performed by HELCOM countries covering all coastal areas of the Baltic Sea. |

## SPATIAL RESOLUTION (DENSITY) OF SAMPLING

### Spatial resolution

|  |
|--|
| <b>Element/Parameter pair</b>  |
| <b>Beach litter/Quantity and type of litter items</b>  |
| The number of beaches monitored depends on the country: DK: 3, EE: 10, FI: 13, DE: 32, LV: 42, LI: 4, PL: 15 and SE: 10. |

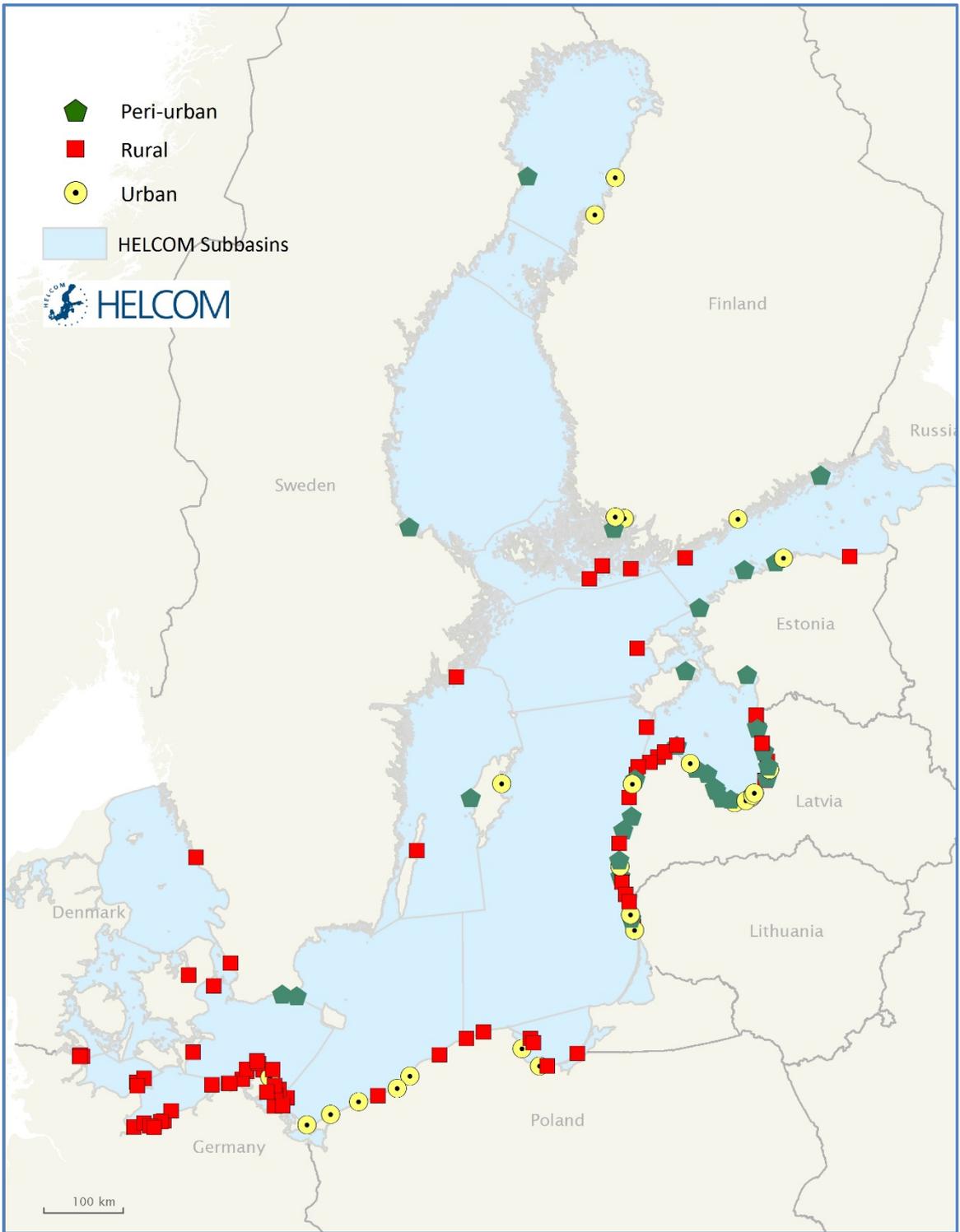


Figure 1 - Map containing beach litter monitoring stations by type of beaches.

**Provide considerations for the scale of aggregation of data for an indicator-based assessment (Q10a),** Tick one or more relevant boxes below:

- HELCOM assessment unit Level 4: Subbasins with coastal WFD division
- HELCOM assessment unit Level 3: Subbasins with coastal and offshore division
- HELCOM assessment unit Level 2: Subbasin

- HELCOM assessment unit Level 1: Baltic Sea
- MSFD Region
- EU
- Other (specify)
- Unknown

## f. Gaps in monitoring

The monitoring of beach litter started for most HELCOM countries in 2012, and has continued regularly since then. However, monitoring is not nationally coordinated in one country and is only seasonally conducted in another one. The network of monitoring stations has expanded since 2015, which together with the suggested coordinated monitoring program will provide a more complete and coherent image of the extent of beach litter items found in the different sub-regions. The monitoring program will also allow for a reliable input of monitoring data resulting in scientific conclusions based on a solid knowledgebase and as a consequence, the assessment of the pressure will be done with more certainty.

## g. Data providers and access

From which database the data can be made available? Tick the relevant boxes below:

- HELCOM
- HELCOM PLC
- HELCOM MORS
- COMBINE

Other:

If the previous answer is "Other" please fill in the next questions (In case the answer is a HELCOM database, the HELCOM Secretariat will do it)

**Data type (Q10c)** Tick the relevant boxes below:

- Unprocessed/raw Data
- Processed Data sets
- Data Products
- Modelled data

**What method/mechanism will be used to make the data available? (Q10c)** Tick the relevant boxes below and provide location:

- Providing URL to view data: [Click here to enter text.](#)
- Providing URL to download data: [Click here to enter text.](#)

Provide location of data in national data centre: Raw data are stored nationally and it is foreseen that processed data is available in a regional database or international data centre (e.g. OSPAR beach litter database, MARLINN, EMODnet).

Provide location of data in international data centre (e.g. RSC, ICES, EEA, EMODnet): [Click here to enter text.](#)

**Will the EC/EEA have use rights? (Q10c)** Tick the relevant box below:

- Open access
- Moratorium
- Restricted by general licence
- Restricted by specific licence
- Data will not be available

**Which INSPIRE standard is/will be used? (Q10c)** Tick the relevant box below:

- Hydrography
- Protected sites
- Agriculture and aquaculture facilities
- Area management/restriction/regulation zones and reporting units
- Environmental monitoring facilities
- Geology
- Habitats and biotopes
- Land cover
- Land use
- Oceanographic geographical features
- Sea regions
- Species distribution

**When will the data first become available? (Q10c)**

Enter the date of reporting, or even a past date if desired (MM/YYYY):

To be decided.

**How frequently are the data expected to be updated thereafter? (Q10c)** Tick the relevant box below:

- Every 6 years
- Weekly
- Every 3 years
- Daily

- |  |  |
|--|--|
| <input type="checkbox"/> Every 2 years     | <input type="checkbox"/> Hourly  |
| <input checked="" type="checkbox"/> Yearly | <input type="checkbox"/> Continually   |
| <input type="checkbox"/> 6-monthly         | <input type="checkbox"/> One-off   |
| <input type="checkbox"/> 3-monthly         | <input type="checkbox"/> As needed   |
| <input type="checkbox"/> Monthly           | <input type="checkbox"/> Other (specify) <a href="#">Click here to enter text.</a> |
| <input type="checkbox"/> 2-weekly          | <input type="checkbox"/> Unknown   |

**Describe how the data and information from the programme will be made accessible to the EC/EEA, indicating whether this is in place already or under development. (Q10d)**

Processed data will be available. Danish data is reported to EEAs database Marine Litter Watch and thereby available to EEA.

**List providing contact points in the Contracting Parties**

HELCOM EN-Marine Litter, in particular in (i) Denmark, the Danish Centre for Environment and Energy (DCE); (ii) Finland for beach litter: Sanna Suikkanen (SYKE) and Hanna Haaksi (KAT) and for microlitter: Outi Setälä (SYKE); and (iii) Sweden: Eva Blidberg, Keep Sweden Tidy (eva.blidberg@hsr.se).

**Has the data been used or is it planned to be used in HELCOM assessments?** Tick the relevant box below:

- Yes       No

**Select if data is used in the following Baltic Sea Environment Fact Sheets (BSEF)** Tick the relevant boxes below:

**Biodiversity**

- Abundance and distribution of marenzelleria species
- Abundance and distribution of Round goby
- Abundance and distribution of the Zebra mussel
- Biopollution level index
- Observed non-indigenous and cryptogenic species in the Baltic Sea
- Population development of Great Cormorant
- Population development of Sandwich Tern
- Population development of Southern Dunlin
- Population Development of White-tailed Sea Eagle
- Temporal development of Baltic coastal fish communities and key species

**Eutrophication**

- Bacterioplankton growth

- Chlorophyll-a concentrations, temporal variations and regional differences from satellite remote sensing
- Cyanobacteria biomass
- Cyanobacterial blooms in the Baltic Sea
- Cyanobacteria bloom index
- Impacts of invasive phytoplankton species on the Baltic Sea ecosystem in 1980-2008
- Nitrogen atmospheric deposition to the Baltic Sea
- Nitrogen emissions to the air in the Baltic Sea area
- Phytoplankton biomass and species succession
- Shifts in the Baltic Sea summer phytoplankton communities in 1992-2006
- Spatial distribution of the winter nutrient pool
- Unusual phytoplankton event

### **Hazardous substances**

- Atmospheric deposition of heavy metals on the Baltic Sea
- Atmospheric deposition of PCDD/Fs on the Baltic Sea
- Atmospheric emissions of heavy metals in the Baltic Sea region
- Atmospheric emissions of PCDD/Fs in the Baltic Sea region
- Cesium-137 in Baltic Sea sediments
- Temporal trends in contaminants in Herring in the Baltic Sea in the period 1980-2010
- Emissions from Baltic Sea shipping
- Illegal discharges of oil in the Baltic Sea
- Liquid discharges of Cs-137, Sr-90 and Co-60 into the Baltic Sea
- Trace metal concentrations and trends in Baltic surface and deep waters

### **Hydrography**

- Development of Sea Surface Temperature in the Baltic Sea
- Hydrography and Oxygen in the Deep Basins
- Ice season
- Total and regional runoff to the Baltic Sea
- Water Exchange between the Baltic Sea and the North Sea, and conditions in the Deep Basins
- Wave climate in the Baltic Sea

## h. Literature

Make a list of cited references and literature for further supportive information.

(1) HELCOM (2018) HELCOM Guidelines for monitoring beach litter. <http://www.helcom.fi/Documents/Action%20areas/Monitoring%20and%20assessment/Manuals%20and%20Guidelines/Guidelines%20for%20monitoring%20beach%20litter.pdf>. Accessed 6 March 2019. (2) HELCOM (2016) HELCOM Pre-core indicator on 'Beach litter', document 4J-27 to STATE & CONSERVATION 5-2016 <https://portal.helcom.fi/meetings/STATE%20-%20CONSERVATION%205-2016-363/MeetingDocuments/4J-27%20Pre-core%20indicator%20on%20%E2%80%98Beach%20litter%E2%80%99%20-%20proposed%20shift%20in%20status%20to%20core%20indicator.pdf> and [https://portal.helcom.fi/meetings/STATE%20-%20CONSERVATION%205-2016-363/MeetingDocuments/4J-27%20Annex\\_HELCOM%20pre-core%20indicator%20on%20Beach%20litter.xlsx?Web=1](https://portal.helcom.fi/meetings/STATE%20-%20CONSERVATION%205-2016-363/MeetingDocuments/4J-27%20Annex_HELCOM%20pre-core%20indicator%20on%20Beach%20litter.xlsx?Web=1) (Annex to the report). Accessed 6 March 2019. (3) HELCOM (2018) SPICE report: Task 2.1.3 Development of baselines of marine litter – Report on the analysis of compiled data on microlitter in the Baltic Sea [http://www.helcom.fi/Documents/HELCOM%20at%20work/Projects/Completed%20projects/SPICE/Theme%202\\_Deliverable%202.1.3.pdf](http://www.helcom.fi/Documents/HELCOM%20at%20work/Projects/Completed%20projects/SPICE/Theme%202_Deliverable%202.1.3.pdf). Accessed 6 March 2019. (4) HELCOM (2018) State of the Baltic Sea – Second HELCOM holistic assessment 2011-2016. Baltic Sea Environment Proceedings 155 <http://stateofthebalticsea.helcom.fi/>. Accessed 6 March 2019. (5) HELCOM (2018) SPICE report: Task 2.1.1 Development of baselines of marine litter – Identification of top litter items in the Baltic Sea region [http://www.helcom.fi/Documents/HELCOM%20at%20work/Projects/Completed%20projects/SPICE/Theme%202\\_Deliverable%202.1.1.b.pdf](http://www.helcom.fi/Documents/HELCOM%20at%20work/Projects/Completed%20projects/SPICE/Theme%202_Deliverable%202.1.1.b.pdf). Accessed 6 March 2019. (6) Commission Decision (EU) 2017/848 of 17 May 2017 laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU. (7) Addamo, A. M., Laroche, P., Hanke, G. (2017): Top Marine Beach Litter Items in Europe. - EUR 29249 EN, Publications Office of the European Union, Luxembourg.