EMODnet
European Marine Observation and Data Network

EMODnet Thematic Lot n°4 – Chemistry

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Guidelines and forms for gathering marine litter data: beach and seafloor trawlings. Version 7.1

Disclaimer

History

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M.D.M Chaves Montero, M. Vinci, M. E. Molina Jack	2018	Updated
M. Vinci, M. E. Molina Jack	13/05/2020	Updated: beach, survey coordinates and distance reporting
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M. E. Molina Jack	27/07/2020	Updated: general revision, update information LTREF
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M. Vinci, M. E. Molina Jack, A. Cociancich	03/05/2022	Updated: tourists visiting the beach definition, litter reference list TSG-ML tag
M. Vinci, M. E. Molina Jack	26/10/2022	Updated: typos, adaptation of links for EMODnet

	Centralisation process

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1 Introduction

Since its third phase (dated 2016), EMODnet Chemistry's scope of attention has been expanded with gathering data and developing access to data and data products for Marine Litter. This document gives background information about EMODnet strategy for marine litter (beach and seafloor) data collection, its synergy with existing information systems and achievements of EMODnet Chemistry so far. Thereafter it gives detailed information on how to deal with marine litter data from beaches and seafloor trawlings and, in particular, the formats to be used for gathering and describing this type of marine litter data sets by EMODnet Chemistry participants on a European scale.

2 Marine Litter

Marine litter is an important subject on the international political agendas such as of G7 and G20. It is very relevant for the MSFD agenda and is managed under the MSFD descriptor D10. This aims to provide instruments to assess, monitor, set targets and finally reach a good environmental status (GES) with regard to marine litter. GES should be achieved only when "properties and quantities of marine litter do not cause harm to the coastal and marine environment".

Up to now, EMODnet Chemistry is focused on gathering data, generating data products on a European scale, and publishing the data and data products for the following marine litter categories:

- **Beach litter (nets, bottles etc.)**
- **Seafloor litter (i.e. litter collected by fish trawl surveys)**
- **Micro-litter (micro plastics)**

For beach litter and seafloor litter there are already a number of ongoing initiatives, such as undertaken or planned by: Technical Support Group – Marine Litter (TSG ML), JRC Project on Marine Litter baselines, Regional Sea Conventions (OSPAR, HELCOM, UNEP/MAP, BSCS), ICES, MEDITS, EU research projects (DeFishGear, PERSEUS, EMBLAS, …) and possible others. Considering this existing European landscape and ongoing discussions with stakeholders, including the chair and vice-chair of TSG ML, EMODnet

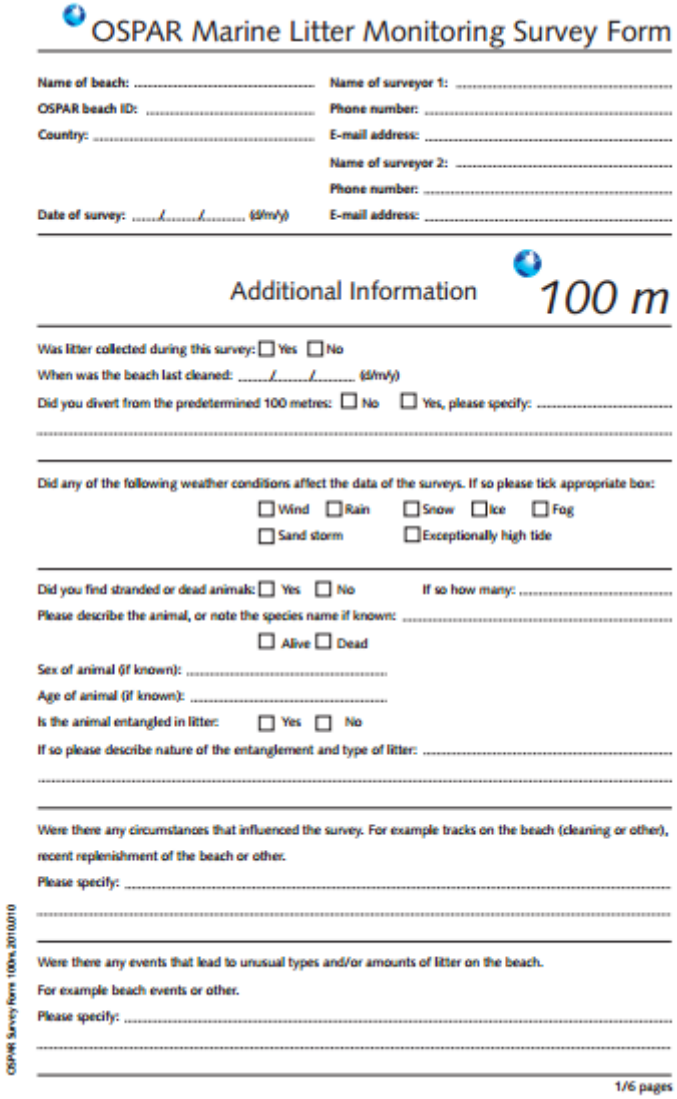
Chemistry has decided to develop two European EMODnet Central ML databases, one for **beach litter**, modeled after the OSPAR-MCS approach, and one for **seafloor litter**, modeled after the ICES-DATRAS approach used for national fish trawl litter. These European databases should be primarily populated by harvesting from relevant regional systems, while **central submission facilities should be operated for covering submissions by organizations in regions that fall outside existing systems**. Discussions are ongoing with the relevant regional systems, their responsible managers and related networks in order to get their support and to arrange formal cooperation and set up of data exchange mechanisms. TSG ML is kept informed about progress of these deliberations.

For **micro-litter** the situation is different and there are not yet coordinated efforts at regional or European scale. Considering this situation EMODnet Chemistry decided to adopt the data gathering and data management approach as generally applied for marine data, i.e. **populating metadata and data in the CDI Data Discovery and Access service**. More information is detailed in the specific guideline for marine micro-litter management (M. Vinci, A. Giorgetti, F. Galgani, G. Moncoiffe, M. Fichaut, M.E. Molina Jack, R. Schlitzer, G. Hanke, D. Schaap, E. Partescano, 2021, Guidelines and formats for gathering and management of micro-litter data sets on a European scale (floating and sediment micro-litter). Version 0, 26/04/2021, 28 pp., DOI: https://doi.org/10.6092/d3e239ec-f790-4ee4-9bb4-c32ef39b426d).

3 Beach litter data

Considering **beach litter**, all data providers will work on gathering and describing their beach litter data for inclusion in the OSPAR/MCS database or in the EMODnet Central beach litter database, following guidelines, formats and forms based on OSPAR/MCS reference.

The EMODnet Central beach litter database is loaded with data entries from data providers and by regular harvesting from the OSPAR database. OSPAR reference is described in 'Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area' (Wenneker *et al.*, 2010)



OSPAR Marine Litter Monitoring Survey Form

Name of beach: .....
OSPAR beach ID: .....
Country: .....
Date of survey: ...../...../..... (d/m/y)

Name of surveyor 1: .....
Phone number: .....
E-mail address: .....
Name of surveyor 2: .....
Phone number: .....
E-mail address: .....

Additional Information 100 m

Was litter collected during this survey: ☐ Yes ☐ No
When was the beach last cleaned: ...../...../..... (d/m/y)
Did you divert from the predetermined 100 metres: ☐ No ☐ Yes, please specify: .....
.....

Did any of the following weather conditions affect the data of the surveys. If so please tick appropriate box:
☐ Wind ☐ Rain ☐ Snow ☐ Ice ☐ Fog
☐ Sand storm ☐ Exceptionally high tide

Did you find stranded or dead animals: ☐ Yes ☐ No If so how many: .....
Please describe the animal, or note the species name if known: .....
☐ Alive ☐ Dead
Sex of animal (if known): .....
Age of animal (if known): .....
Is the animal entangled in litter: ☐ Yes ☐ No
If so please describe nature of the entanglement and type of litter: .....
.....

Were there any circumstances that influenced the survey. For example tracks on the beach (cleaning or other), recent replenishment of the beach or other.
Please specify: .....
.....

Were there any events that lead to unusual types and/or amounts of litter on the beach.
For example beach events or other.
Please specify: .....
.....

OSPAR Survey form 100m 2010/010

1/6 pages

Figure 1: Example of OSPAR Monitoring Survey Form

There are different reference lists of possible items to be recorded for beach litter (Litter Categories). The information regarding litter reference lists for beach litter can be found at point 4.1 of these guidelines.

3.1 General indications regarding EMODnet data format

Data collection for beach litter includes information related to:

- Beach metadata
- Survey metadata
- Litter data
- Stranded or dead animals' data

This collection is divided in four tables associated to the previously mentioned issues.

Some important indications regarding the format are:

- Admitted file format for beach litter data submission is **spreadsheet**
- For data type: **enum** the unique admitted values for the field are listed in the field "admitted values"
- For data type: **boolean** only "yes" or "no" is admitted
- In case of **multiple values** admitted, different values must be separated with ";" (semicolon)
- **Decimal numbers** must be expressed with "." (dot) to separate the integer part from the decimal part

3.2 Data format for beach information

Each reference beach regularly monitored is described with a series of metadata. These data regard to physical and geographical characteristics of the beach but also to the use and factors that can condition the presence of the litter on the beach. This information is specified in the following table. **The same set of information should be recorded for the monitored beaches in the European seas.**

Please check the map (https://nodc.ogs.it/marinelitter/beachesmap) to identify beaches (and their codes) already surveyed and avoid duplicates during the beach litter data ingestion

Table 1: Data recorded for beach metadata

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
BeachCode[1]	Code for the beach referring Beach_metadata sheet. In case you don't have a code, it has to be created with the country code and a number code (6 digits). Size must be between 2 and 16). A unique code for each beach has to be used.	alphanumeric sequences + "/" (slash), "-" (hyphen) , "_" (underscore)	no	**yes**	character	FR0006
BeachName	Name of the beach		no	**yes**	character	Sein
Country	Identifier for the country that performed the survey from ISO countries reference code list	http://vocab.nerc.ac.uk/collection/C32/current/	no	**yes**	character	FR
BeachInfoAmendment	Is this an amendment to an existing beach info questionnaire?	{yes, no}	no	**yes**	boolean	no
FillingDate	Date when the questionnaire was filled in. Date format ISO 8601 (YYYY-MM-DD)		no	**yes**	date	2012-06-05
FillingName	Name of the person who filled the questionnaire		no	no	character	Helen Smith
FillingPhone	Phone number of the person who filled the questionnaire		no	no	character	331-705-960

[1] Please check our beaches map to identify beaches (and their codes) already surveyed and avoid duplicates during the beach litter data ingestion (https://nodc.ogs.it/marinelitter/beachesmap)

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
FillingMail	E-mail of the person who filled the questionnaire		no	no	character	h.smith@gmail.com
FillingInstitute	Institution in charge of filling the questionnaire		no	no	character	Cedre
Urbanization Degree	Degree of urbanization of the beach area (Urban: Densely populated area, 500 inhabitants/km2 and total population at least 50,000 inhabitants. Periurban: Intermediate area,100 inhabitants/km2 and at least 50,000 inhabitants or adjacent to a densely-populated area. Rural: Thinly-populated area)	https://nodc.ogs.it/marinelitter/vocab	no	no	enum	Rural
ReferenceBeach	Indicate if the beach is considered a sampling unit within any litter survey programme	{yes, no}	no	no	boolean	yes
BeachWidthLow	Beach width in metres at mean low spring tide		no	no	integer	450
BeachWidthHigh	Beach width in metres at mean high spring tide		no	no	integer	10
BeachLength	Total length of the beach in metres		no	no	integer	500
BeachLatitude	Latitude of the beach position (Degree.Decimal Degree of latitude), WGS84 reference system preferred	[-90.0, +90.0]	no	no	decimal	48.039
BeachLongitude	Longitude of the beach position	[-180.0, +180.0]	no	no	decimal	-4.85

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
	(Degree.Decimal Degree of longitude) WGS84 reference system preferred					
CoordinateSystem	Coordinate reference system used: if not differently specified WGS84 (EPSG:4326) reference system is assumed. Please specify the "Identifier"	http://vocab.nerc.ac.uk/collection/L10/current/	no	no	integer	4326
BeachBack	Elements on the back of the beach	https://nodc.ogs.it/marinelitter/vocab	yes	no	enum	Dunes
BeachBackOther	If the beach back category cannot be selected from the dropdown list ("BeachBack" field) it should be listed here.		yes	no	character	Promenade
BeachBackDevelopment	Is there any development behind the beach?	{yes, no}	no	no	boolean	No
Development Description	Description of the development behind the beach		no	no	character	
PositionMeasurementDate	Date when the position of the beach was measured. Date format ISO 8601 (YYYY-MM-DD)		no	no	date	2014-12-01
CurrentsDirection	Prevailing currents off the beach	{N, NE, E, SE, S, SW, W, NW}[1]	yes	no	enum	W
WindsDirection	Prevailing winds	{N, NE, E, SE, S, SW, W, NW}[1]	yes	no	enum	SW

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
BeachOrientation	In which direction the beach is facing when looking from the beach to the sea?	{N, NE, E, SE, S, SW, W, NW}[1]	no	no	enum	SW
BeachMaterial	Define beach sediment as in EMODnet Geology five class sediment categorization (Modified from Folk Triangle)	https://nodc.ogs.it/marinelitter/vocab	no	no	character	MixedSediment
BeachTopography	Short description of the beach topography		no	no	character	slope 20%
Obstacles	Objects in the sea that influence the currents		yes	no	character	pier; reef
Usage1	Usage of the beach		no	no	character	Coastal walking
Usage1Seasonality	Is the usage seasonal?	{yes, no}	no	no	boolean	yes
Usage2	Usage of the beach		no	no	character	Wildlife watching
Usage2Seasonality	Is the usage seasonal?	{yes, no}	no	no	boolean	no
Usage3	Usage of the beach		no	no	character	
Usage3Seasonality	Is the usage seasonal?	{yes, no}	no	no	boolean	
BeachAccess	Possibilities of access to the beach	https://nodc.ogs.it/marinelitter/vocab	yes	no	enum	Vehicle; Pedestrian
BeachCleaningSeasonality	Is the beach cleaning seasonal?	{yes, no}	no	no	boolean	no
SeasonalityMonths	List the number of the months in which the	[1,12]	yes	no	int	2; 5; 8; 11

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
	cleaning is accomplished					
CleaningFrequency	Indicate the frequency of beach cleaning	https://nodc.ogs.it/marinelitter/vocab	no	no	enum	Other
OtherDescription	If frequency is “Other”, please describe it		no	no	character	4 times/year
CleaningMethod	Cleaning method used	https://nodc.ogs.it/marinelitter/vocab	yes	no	enum	Manual
CleaningResponsible	Responsible for cleaning		no	no	character	Natural marine Parc of Iroise - PNMI (Parc naturel marin d'Iroise) agents, also in charge of the OSPAR survey
Notes	Additional comments and observations about the beach		no	no	character	

3.3 Data format for survey metadata

This table includes metadata regarding the survey.

Table 2: Data recorded for survey metadata

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
BeachCode[2]	Code for the beach referring Beach metadata sheet. In case you don't have a national code, it has to be created with the country code and a number code (6 digits). A unique code for each beach has to be used.	alphanumeric sequences + "/" (slash), "-" (hyphen) , "_" (underscore)	no	**yes**	character	FR0006
SurveyCode	Number code that must be unique within the whole file		no	**yes**	integer	1
SurveyType	Type of survey	https://nodc.ogs.it/marinelitter/vocab	no	**yes**	enum	Monitoring
DataPolicy	Survey data policy	**CB** = CC-BY-4.0 ; **RS** = By negotiation from L08 Data Access Restrictions(http://vocab.nerc.ac.uk/collection/L08/current/)	no	**yes**	character	UN
SurveyDate	Date of the survey. Date format ISO 8601 (YYYY-MM-DD)		no	**yes**	date	2015-01-19

[2] Please check our beaches map to identify beaches (and their codes) already surveyed and avoid duplicates during the beach litter data ingestion (https://nodc.ogs.it/marinelitter/beachesmap)

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
Originator	EDMO code for data originator organization	http://seadatanet.maris2.nl/v_edmo/welcome.asp	no	**yes**	integer	1887
Collator	EDMO code for data collator organization	http://seadatanet.maris2.nl/v_edmo/welcome.asp	no	**yes**	integer	2688
ProjectCode	Project code from EDMERP (European Directory of Marine Environmental Research Projects)	http://seadatanet.maris2.nl/v_edmerp/browse.asp	no	no	integer	12038
SurveyStartLatitude	Latitude of the survey starting point (Degree.Decimal Degree of latitude) WGS84 reference system preferred	[-90.0, +90.0]	no	**yes**[3]	decimal	
SurveyStartLongitude	Longitude of the survey starting point (Degree.Decimal Degree of longitude) WGS84 reference system preferred	[-180.0, +180.0]	no	**yes**[3]	decimal	
SurveyEndLatitude	Latitude of the survey ending point (Degree.Decimal Degree of latitude)WGS84 reference system preferred	[-90.0, +90.0]	no	**yes**[3]	decimal	
SurveyEndLongitude	Longitude of the survey ending point (Degree.Decimal Degree of longitude) WGS84 reference system preferred	[-180.0, +180.0]	no	**yes**[3]	decimal	

[3] Either both survey coordinates (start and end) or one coordinate (start or end) and the survey length must be filled

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
CoordinateSystem	Coordinate reference system used: if not differently specified WGS84 (EPSG:4326) reference system is assumed. Please specify the "Identifier"	http://vocab.nerc.ac.uk/collection/L10/current/	no	**yes**	integer	4326
SurveyLength	Length of the survey in metres		no	**yes**[4]	integer	100
SurveyWidth	Width of the survey in metres		no	no	integer	10
Surveyor1Name	Name of the surveyor 1		no	no	character	
Surveyor1Phone	Phone number of the surveyor 1		no	no	character	
Surveyor1Mail	E-mail of the surveyor 1		no	no	character	
Surveyor2Name	Name of the surveyor 2		no	no	character	
Surveyor2Phone	Phone number of the surveyor 2		no	no	character	
Surveyor2Mail	E-mail of the surveyor 2		no	no	character	
TownName	Name of the nearest town		no	no	character	Sein
TownDistance	Distance to the nearest town in kilometres		no	no	Decimal	0.3
TownPosition	Position of the town in relation to survey area	{N, NE, E, SE, S, SW, W, NW}	no	no	enum	SE

[4]Either both survey coordinates (start and end) or one coordinate (start or end) and the survey length must be filled

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
TownPopulation	Residential population of the nearest town		no	no	integer	200
WinterTourists	Number of tourists visiting the beach during winter		no	no	integer	
SpringTourists	Number of tourists tourists visiting the beach during spring		no	no	integer	150
SummerTourists	Number of tourists tourists visiting the beach during summer		no	no	integer	
AutumnTourists	Number of tourists tourists visiting the beach during autumn		no	no	integer	
FoodOutlets	Are there food and/or drink outlets on the beach?	{yes, no}	no	no	boolean	no
FoodOutletsDistance	Distance of the nearest food/drink outlet in kilometres in relation to survey area		no	no	decimal	0.05
FoodOutletsSeasonality	Is the opening seasonal?	{yes, no}	no	no	boolean	yes
SeasonalityMonths	List the number of the months in which the outlets are present	[1,12]	yes	no	integer	6;7;8
FoodOutletsPosition	Position of the nearest food outlet in relation to survey area	{N, NE, E, SE, S, SW, W, NW}	no	no	enum	N
ShippingLaneDistance	Distance from the beach to the nearest shipping lane in kilometres		no	no	decimal	30.0
ShippingLaneTraffic	Estimated traffic of the shipping lane (number of ships/year)		no	no	integer	450
ShippingLaneTypes	Type of ships that navigate along this lane	https://nodc.ogs.it/marinelitter/vocab	yes	no	enum	Merchant; Passengers

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
ShippingLanePosition	Position of the nearest shipping lane in relation to survey area	{N, NE, E, SE, S, SW, W, NW}	no	no	enum	E
HarbourName	Name of the nearest harbour		no	no	character	
HarbourDistance	Distance from the beach to the nearest harbour in kilometres		no	no	decimal	50.0
HarbourPosition	Position of harbour in relation to survey area	{N, NE, E, SE, S, SW, W, NW}	no	no	enum	N
HarbourType	Type of Harbour	https://nodc.ogs.it/marinelitter/vocab	yes	no	enum	Fishing
HarbourSize	Total number of ships		no	no	integer	100
RiverName	Name of the nearest river		no	no	character	Le Goyen
RiverDistance	Distance from the beach to the nearest river mouth in kilometres		no	no	decimal	30.0
RiverPosition	Position of river mouth in relation to survey area	{N, NE, E, SE, S, SW, W, NW}	no	no	enum	E
WasteWaterDischarges	Is the beach located near wastewater discharges?	{yes, no}	no	no	boolean	no
WasteWaterDistance	Distance from the beach to the nearest discharge point in kilometres		no	no	decimal	3.0
WasteWaterPosition	Position of the nearest discharge point in relation to survey area	{N, NE, E, SE, S, SW, W, NW}	no	no	enum	N
LitterPresence	Was litter collected during this survey?	{yes, no}	no	no	boolean	yes

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
LastCleaning	When was the beach last cleaned. Date format ISO 8601 (YYYY-MM-DD)		no	no	date	2014-11-20
WeatherConditions	Did any weather conditions affect the data of the surveys?	https://nodc.ogs.it/marinelitter/vocab	yes	no	enum	Rain
WeatherConditionsOther	If any other weather conditions affected the survey, describe it		yes	no	character	
AnimalsFound	Did you find stranded or dead animals?	{yes, no}	no	no	boolean	yes
AnimalsNumber	If so, how many?		no	no	integer	2
SurveyCircumstances	Any circumstances influencing the survey (e.g. tracks on the beach…)		no	no	character	
SpecialEvents	Events that lead to unusual types and/or amounts of litter on the beach		no	no	character	New Year Eve party
Notes	Additional comments and observations about the survey		no	no	character	

Each survey must be filled in one row. In case that different items are measured over different lengths, then each length must have a survey record. For example, in the UNEP protocol adapted for Baltic Sea (UNEP-MARLIN, Final report of Baltic marine Litter project Marlin - litter monitoring and Raising awareness, 2011-2013), each of the three areas would have a survey record.

3.4 Format for stranded or dead animals' data

This table includes data regarding stranded or dead animals found during the survey.

Table 3: Data recorded for stranded/dead animals

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
SurveyCode	Number code referring Survey metadata sheet that must be unique in the whole file		no	**yes**	integer	1
Animal	Please describe the animal, or note the species name if known		no	**yes**	character	seagull
State	Is it alive or dead?	https://nodc.ogs.it/marinelitter/vocab	no	no	enum	Dead
Sex	Please specify sex of the animal if known	https://nodc.ogs.it/marinelitter/vocab	no	no	enum	Female
Age	Please specify the age of the animal if known		no	no	integer	
Entanglement	Is the animal entangled in litter?	{yes, no}	no	no	boolean	no
EntanglementNature	If so, please describe nature of the entanglement and type of litter		no	no	character	

3.5 Format for litter data

This table includes litter data found on the survey.

Table 4: Data recorded for litter

Field	Description	Admitted values	Multiple values	Mandatory	Data type	Example
SurveyCode	Number code referring Survey metadata sheet that must be unique in the whole file		no	**yes**	integer	1
LitterReferenceList	Name of the Litter reference list used. It is strongly recommended the use of MSFD TGML J-List	https://nodc.ogs.it/marinelitter/vocab	no	**yes**	enum	TSG-ML
ItemCode	Litter parameter code of the Litter Reference list used	Codes from the used list	no	**yes**	character	G1
ItemName	Litter parameter name of the Litter Reference list used	Names from the list used	no	no	character	4/6-pack yokes, six-pack rings
ParameterOriginalName	Litter parameter name as reported by the surveyor (can be also in national original language)		no	no	character	4/6 pack yokes
NoItems	Number of items; for "other Pollutants" frequency (estimated number/m); for Pellets Y/N)		no	**yes**	integer/ decimal/ boolean	4
Notes	Special observations		no	no	character	

A complete example of beach litter data in EMODnet format is available here: Beach data format template (https://doi.org/10.6092/a75ba101-ebb9-4bad-9b7f-423a1327c76f).

4 Seafloor litter data from trawlings

Seafloor litter data refers to litter data collected by trawling fishing nets:

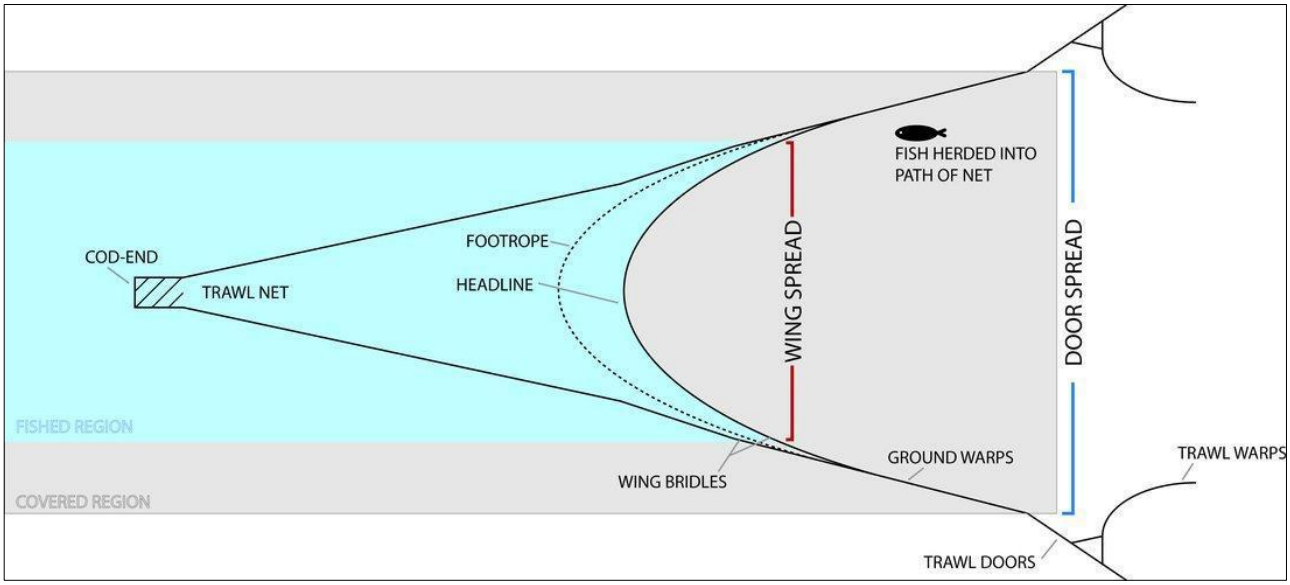


Figure 4: Parts of a trawl (Source: OSPAR. Composition and Spatial Distribution of Litter on the Seafloor *https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/pressures-human-activities/marine-litter/composition-and-spatial-distribution-litter-seafloor/*)

Considering **seafloor litter** data, there are already two different consolidated data description protocols adopted in North/Western part of Europe and in Mediterranean area since several years. Accordingly, there will be three possible submission cases depending on the data provider if:

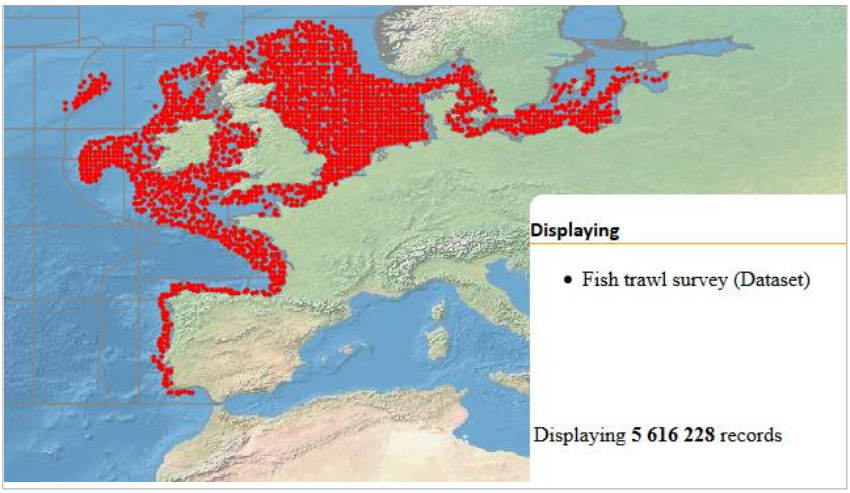
- it delivers its seafloor litter data in DATRAS – ICES Database of trawl surveys-
- it delivers its seafloor litter data in MEDITS Format
- it is falling outside the above-mentioned areas

In fact, for **seafloor litter** all data providers will work either on continuing gathering and describing their benthic marine litter data for inclusion in the ICES Database, in MEDITS format or either they will submit their data to EMODnet Central seafloor litter database, following guidelines, formats and forms based on ICES experience.

4.1 ICES data format

In the framework of OSPAR Convention, North and Western European countries have been involved in Fish Trawl Surveys date back to 45 years of continuous data collection, standardized formats and product calculations used for stock assessment and fish community studies. The majority of surveys started collecting litter data from 2012-2013, while some countries have started data collection only in 2016. Litter data cover the Baltic Sea, Kattegat, Skagerrak, North Sea, English Channel, Celtic seas, Irish Sea, Bay of Biscay and the eastern Atlantic from the Shetlands to Gibraltar.

Figure 5: Fish trawl datasets in DATRAS



The collection of Litter data from trawl surveys in OSPAR areas is described in Appendix 15 of the ***Manual for the International Bottom Trawl Surveys (2012)***. It was the first trawling survey protocol to include litter collection. The "Data sheet for collection of marine litter" is in Annex A of this document. Other survey protocols and reporting formats can be found on ICES Library of Survey Protocols and DATRAS Documents.

Regarding item types and materials, ICES protocols use C-TS and C-TS-REV lists for seafloor litter data reporting. The information related to the lists can be found in point 4.2 of the guidelines.

ICES is storing marine litter data from **fish trawl surveys** combining DATRAS exchange format for meta-data haul (HH records) with a DATRAS litter data format with the data litter information (LT records). The litter records are linked to the parent haul via a key. They are a simple comma separated text format.

For litter assessment purposes there is a DATRAS bottom trawl survey litter data product based on litter data submissions, haul information, and includes some calculated area-related fields. The specifications about format and units in Datras data products can be found in annex B and at: https://www.ices.dk/data/Documents/DATRAS/DATRAS_dataproducts_units.pdf

An example of a "Litter assessment output exchange data" csv file downloaded on ICES website can be found in annex C and at: https://datras.ices.dk/Data_products/Download/Download_Data_public.aspx.

ICES Datras litter assessment output is available through a web service (https://datras.ices.dk/WebServices/DATRASWebService.asmx/getLitterAssessmentOutputByUpdateDate?dateofcalculation=). **EMODnet Central seafloor litter database regularly harvests the data from the DATRAS database.** EMODnet Chemistry uses ICES controlled vocabularies to manage the seafloor litter data.

4.2 MEDITS data format

The MEDITS survey programme (Mediterranean International Trawl Survey) is implemented in MEDPOL convention.

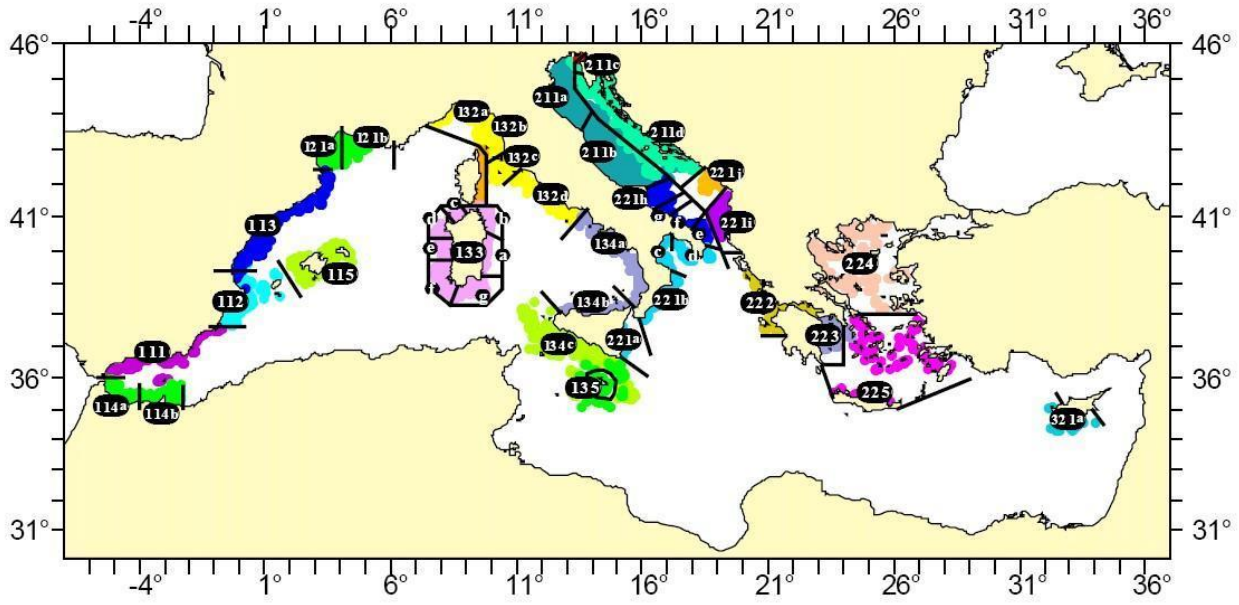


Figure 6: Areas covered by the MEDITS Programme *(Source: MEDITS. MEDITS-Handbook. Version n. 9, 2017, MEDITS Working Group)*

A common protocol for the voluntary collection of data on marine litter, in agreement with the requirements of the Marine Strategy Directive Framework (Directive 2008/56/EC) was agreed at the MEDITS Coordination Meeting of 2013 (Heraklion,

Greece, March 12-14, 2013). This protocol is described in Annex XVII of the MEDITS-Handbook. Version n. 7, 2013. The list of the litter typology was revised in 2017.

Standard formats are defined for the storage and to facilitate the exchange of the data produced by the MEDITS surveys. The exchange files are in .csv format, using semicolon as field separator. An example of the working sheet, the specifications of the format, and examples can be found on annexes D, E, F of these guidelines and in MEDITS-Handbook. Version n. 9, 2017, MEDITS Working Group: 106 pp.

The network of national nodes that collects and manages these data was approached with a request of collaboration. If this request is reached, partners who are already reporting their data in MEDITS format could continue to store and exchange their datasets in the framework of this program. **EMODnet Central seafloor litter database would be loaded by regular input provided by the MEDITS program survey.**

Comparison between ICES and MEDITS data format can be found in Annex G.

4.3 EMODnet data format

For partners which are not using neither ICES nor MEDITS format, EMODnet Central Seafloor Litter Database will follow an adapted structure from DATRAS format.

Some important indications regarding the format are:

- Admitted file format for seafloor litter data submission is **csv**
- The field separator must be **tab**
- In case of **multiple values** admitted, different values must be separated with ";" (semicolon)
- **Decimal numbers** must be expressed with "." (dot) to separate the integer part from de decimal part
- If the value is missing please leave the field **empty**

Table 13: EMODnet seafloor litter data format

Field	Description	Admitted values	Multiple values	Mandatory	Data type
SurveyName	Survey name. If it doesn't exist, it will be provided by the ingestion system following this key: Country code, EDMO Code (4-digit length), year, six-digit number code for each survey (ex. IT22762012000001)	alphanumeric sequences + "/" (slash), "-" (hyphen) , "_" (underscore)	no	no	character
ProjectCode	Project code from EDMERP (European Directory of Marine Environmental Research Projects)	http://seadatanet.maris2.nl/v_edmerp/browse.asp	no	**yes**	integer
DataPolicy	Survey data policy	**CB** = CC-BY-4.0 ; **RS** = By negotiation from L08 Data Access Restrictions (http://vocab.nerc.ac.uk/collection/L08/current/)	no	**yes**	character
Date	Date of the cruise. Format ISO 8601 (**YYYY-MM-DD**)		no	**yes**	date
Ship	Last four-character code from the identifier in ICES Platform reference code	http://vocab.nerc.ac.uk/collection/C17/current/	no	**yes**	character
Gear	Gear type code from Sampler Type "SMTYP" ICES vocab list	http://vocab.ices.dk/?ref=152	no	**yes**	character
Country	Identifier for the country that performed the survey from ISO countries reference code list	http://vocab.nerc.ac.uk/collection/C32/current/	no	**yes**	character
Originator	EDMO code for data originator organization	http://seadatanet.maris2.nl/v_edmo/welcome.asp	no	**yes**	integer

Collator	EDMO code for data collator organization	http://seadatanet.maris2.nl/v_edmo/welcome.asp	no	**yes**	integer
StNo	Station code.	alphanumeric sequences + "/" (slash), "-" (hyphen) , "_" (underscore)	no	**yes**	character
HaulNo	Sequential numbering of hauls during cruise.		no	**yes**	integer
CoordRefSys	Coordinate reference system used: if not differently specified WGS84 (EPSG:4326) reference system is assumed. Please specify the "Identifier"	http://vocab.nerc.ac.uk/collection/L10/current/	no	no	character
ShootLat	Haul Start Latitude (**Degree.Decimal Degree**) - when the net is launched	[-90.0, +90.0]	no	**yes**	decimal
ShootLong	Haul Start Longitude (**Degree.Decimal Degree**) - when the net is launched	[-180.0, +180.0]	no	**yes**	decimal
HaulLat	Haul End Latitude (**Degree.Decimal Degree**) - when the net is floated back	[-90.0, +90.0]	no	**yes**	decimal
HaulLong	Haul End Longitude (**Degree.Decimal Degree**) when the net is floated back	[-180.0, +180.0]	no	**yes**	decimal
Depth	Trawling measure depth in **metres**		no	**yes**	decimal
Distance	Distance in **metres** between haul start and haul end point		no	**yes**	integer

GroundSpeed	Ground speed of towing in **knots**		no	**no**	decimal
WingSpread	Linear distance in **metres** of wingspread		no	**yes**[5]	decimal
DoorSpread	Mean value in **metres** of door spread measurements		no	**yes**[4]	decimal
WarpLength	Length of warp in **metres**		no	**yes**[4]	integer
LTREF	Litter reference list. Reference code of the list used for categorizing litter. It is strongly recommended the use of MSFD TGML J-List	http://vocab.ices.dk/?ref=1381	no	**yes**	character
PARAM	Litter parameter code from the chosen litter reference list		no	**yes**	character
LTSZC	Litter size code. If multiple objects of same type were counted had different sizes, group by size category.	http://vocab.ices.dk/?ref=1380	no	no	character
LTSRC	Litter source. If the source of litter origin is possible to identify, the appropriate option should be reported here.	http://vocab.ices.dk/?ref=1382	no	no	character
TYPPL	Type of polymer. If litter is a recognizable polymer (by e.g. a recycling stamp or a lab analysis), enter the respective code for the polymer type	http://vocab.ices.dk/?ref=1385	no	no	character

LTPRP	Litter properties that may be deemed important for reporting	http://vocab.ices.dk/?ref=1403	yes	no	character
UnitWgt	Weight units	http://vocab.ices.dk/?ref=1421	no	**yes**[6]	character
LT_Weight	Weight of the litter category (by type, size, and additional parameters) in units specified by the previous field		no	**yes**[5]	decimal
UnitItem	Units used to report the amount of items in trawl survey litter	http://vocab.ices.dk/?ref=1422	no	**yes**[5]	character
LT_Items	Number of items within the given litter category (by type, size, and additional parameters) in units specified by the previous field		no	**yes**[5]	integer
Shot_Timestamp	Start UTC timestamp of haul. Format ISO 8610(**YYYY-MM-DDThh:mm:ssZ**)		no	**yes**	timestamp
HaulDur	Haul duration in **minutes**. Start time is the moment when the gear settles at the bottom at the stated towing speed. Stop is defined as the start of hauling of the gear.		no	**yes**	integer

[5] The reporting of wingspread value is desirable. If not present, either door spread or warp length must be provided

[6] Either weight and its unit or number of items and its unit must be specified

Regarding item types and materials, there are different associated litter reference list arising from the seafloor litter data collection protocols. The information related to these lists can be found on point 4.2 of these guidelines.

A complete example of seafloor litter data in EMODnet format is available here: Seafloor data format template (https://doi.org/10.6092/9593a449-37c1-4fd9-84bb-e91978ac8c40).

5 Output formats

The output formats are very similar to the input ones. The only differences are:

-The unique survey id codes from the database have been included to uniquely identify each survey.

-The localCDIs are provided to link the data with the corresponding metadata from the CDI Data Discovery and Access Service.

6 Litter Categories

The value of the results of monitoring programs implemented to assess litter in the different regional seas and in the various compartments of the marine environment (beach, seafloor, sea-surface etc.) can be enhanced if a standard list of litter items is used as a basis for preparing assessment protocols.

The use of standard lists and definitions of items will enable the comparison of results between regions and environmental compartments. If the list is detailed enough it will be possible, to a certain degree, to infer about potential or/and most likely sources (e.g. fisheries, shipping), type of item (e.g. packaging, user item) or even related potential harm that items can cause (e.g. risk of entanglement, ingestion, etc.).

This is a crucial step in helping to identify key priorities to tackle, design a programme of measures and support the monitoring of their effectiveness.

In 2013, a **Master List** of litter categories was published in the 'Guidance on Monitoring of Marine Litter in European Seas' (Galgani *et al*., 2013). This list was developed based on the categories of items used in a series of other programmes:

- For beach litter: UNEP, OSPAR, MCS, Slovenia, ICC.
- For floating litter: HELMEPA, NOAA, ECOOCEAN and Hinojosa/Thiel (2009).
- For seabed litter: OSPAR/ICES list (IBTS) and HELMEPA.
- For micro-litter: CEFAS.

The full Master List is included in Annex H of this document.

In 2021, all this work has been updated with the publication of A Joint List of Litter Categories for Marine Macrolitter Monitoring (Fleet et al, 2021). The whole document is available at: https://doi.org/10.2760/127473

However, in the awareness that the litter protocols developed by different institutions contain distinct litter reference lists, EMODnet Chemistry litter databases can manage all main litter reference lists used in Europe.

6.1 Beach Litter Categories

Regarding beach litter, the updated inventory of the litter reference lists that can be manage by EMODnet Chemistry beach litter database can be found at: https://nodc.ogs.it/marinelitter/vocab

It is important to notice that there are wide differences between the different lists, and this reduces the comparability between surveys. The differences between OSPAR, UNEP/IOC and TSG-ML can be seen on annex H.

6.2 Seafloor Litter Categories

Regarding seafloor litter, EMODnet Chemistry database considers the litter reference lists defined by the two different protocols in the OSPAR area and MEDPOL area.

Litter categories from the OSPAR/ICES/IBTS for North East Atlantic and Baltic are specified by C-TS (with 7 categories) and its update, C-TS-REV (where category "Sanitary waste" has been eliminated); additionally, a term to manage zero litter hauls, which is RECO-LT. The complete list can be found in annex K. The updated vocabularies can be found at: http://vocab.ices.dk/?ref=1381.

For the MEDPOL area, the list has been defined by MEDITS initiative (MEDITS-Handbook. Version n. 9, 2017, MEDITS Working Group: 106 pp.) and contains 10 categories, including also one to manage zero litter hauls. The complete list can be found in annex L (Medits Working Sheet).

In the framework of EMODnet Chemistry, a comparative analysis of ICES, TSGML and MEDITS litter reference lists has been done and can be found on annex M. The comparison between the three lists shows that ICES and MEDITS lists are more specific and less extended than the Master List. In the framework of the TSGML, there is an ongoing work to provide a tool for the interconversion of codes between litter reference lists.

7 References

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Wenneker B., Oosterbaan L. and the Intersessional Correspondence Group on Marine Litter (ICGML). 2010. Guideline for Monitoring Marine Litter on the Beaches in the OSPAR Maritime Area. *OSPAR Publications*, Edition 1.0, 84 pp., ISBN 90 3631 973 9.

8 Annexes

Annex A: IBTS data sheet

Litter Record Sheet						
Cruise:	Station:				Date:	
Litter type **(A1;B2;C4;…)**	Description (Label/Brand)	Size category **(A;B;C;…)**	Weight (Kg)	Picture (number)	attached organisms (yes/no), Taxonomy info	Comments (item description if other under litter type)

Annex B: Format of ICES Litter Assessment Data Product

Field	description	vocab	width	datatype	mandatory Y/N
Survey	Survey name	http://vocab.ices.dk/?ref=102	20	char	y
Quarter	Report the actual quarter for the haul. In case the cruise was made in several quarters, data for each quarter should be reported separately.	http://vocab.ices.dk/?ref=12	1	int	y
Year	Year of cruise.		4	char	y
Ship	DATRAS ship reference code.	http://vocab.ices.dk/?ref=3	4	char	y
Gear	Gear type code	http://vocab.ices.dk/?ref=2	6	char	y
Country	Cfor the country that performed the survey.cter	http://vocab.ices.dk/?ref=4	3	char	y
StNo	Station number. National coding system, not defined by ICES.		6	char	y
HaulNo	"Sequential numbering of hauls during cruise. In CA-records: HaulNo=-9 for Area-based ALK HaulNo<>-9 and >0 for Haul-based ALK"		6	int	y
ShootLat	Shooting position: Degree.Decimal Degree of latitude		8	decimal 4	y
ShootLong	Shooting position: Degree.Decimal Degree of longitude.		9	decimal 4	y
HaulLat	Hauling position: Degree.Decimal Degree of latitude		8	decimal 4	y
HaulLong	Hauling position: Degree.Decimal Degree of longitude.		9	decimal 4	y
OSPARArea	OSPAR Region	http://vocab.ices.dk/?ref=349		char	
MSFDarea	MSFD area reference			char	
BottomDepth	Depth based on bathymetric measurements of the shooting position				?
Distance	Distance in metres between haul start and haul end point.		5	int	
DoorSpread	Mean value in metres of door spread measurements. For more details see the manual.		5	decimal 1	
WingSpread	Mean value in metres of wing spread measurements. For more details see the manual.		4	decimal 1	

LTREF	Litter reference list. Reference code of the list used for categorizing litter.	http://vocab.ices.dk/?ref=1381	10	char	y
PARAM	Litter parameter code from the litter reference list as in LTREF		20	char	y
LTSZC	Litter size code. If multiple objects of same type were counted in different sizes, group by size category.	http://vocab.ices.dk/?ref=1380	4	char	
UnitWgt	Units used to report litter weight. Restricted units: g/haul, kg/haul, kg/km2	http://vocab.ices.dk/?ref=1421	15	char	
LT_Weight	Weight of the litter category in units specified by the previous field		10	decimal 4	
UnitItem	Units used to repot amount of items in trawl survey litter. Restricted units: items/haul, items/km2	http://vocab.ices.dk/?ref=1422	15	char	
LT_Items	Number of items within the given litter category (by type, size, and additional parameters) in units specified by the previous field		10	int	
LTSRC	Litter source. If the source of litter origin is possible to identify, the appropriate option should be reported here.	http://vocab.ices.dk/?ref=1382	5	char	
TYPPL	Litter polymer. If litter is a recognizable polymer (by f. ex. a recycling stamp or a lab analysis), enter the respective code for the polymer type	http://vocab.ices.dk/?ref=1385	5	char	
LTPRP	Litter properties. Litter properties that may be deemed important for reporting. Reporting of multiple codes in this field is allowed.	http://vocab.ices.dk/?ref=1403	20	char	
SweepLngt	Length of sweep in metres. Recommended: at 1st quarter=60m (incl. backstorps) if depth<70m, or =110m if depth >70m. In other quarters=60m (see the manual for more info)		3	int	
GearExp	Gear exceptions. Gear-related field	http://vocab.ices.dk/?ref=97	2	char	
DoorType	Door type. Gear-related field	http://vocab.ices.dk/?CodeTypeRelID=98&CodeID=33966	2	char	
Month	Month of the haul (MM). Quarter-related numeric value.		2	int	y
Day	Calendar date of the haul (DD). Year and Month-related.		2	int	y
TimeShot	Start time (GMT) of haul (HHMM), where 0001= 00:01. Must be reported as 4 digits. Daytime is recommended for trawling.		4	char	y

HaulDur	Haul duration in minutes, target value - 30. 0 is used for non-valid hauls. In valid hauls 15-90. For more info - see the manual.		3	int	y
StatRec	ICES statistical area rectangle. See the manual for the map. Shooting-position sensitive.		4	char	
Depth	Depth from the surface in metres.		4	int	y
HaulVal	Haul validity code. Related with SpecVal from HL. F.ex. if HaulVal is I, SpecVal should be 0.	http://vocab.ices.dk/?CodeTypeRelID=1&CodeID=33966	1	char	y
DataType	"Code that specifies the data type in HL-record. C - category catch weight is adjusted per hour; R - weight of the category catch in the haul; S - weight of the category catch in the subsample of the total catch. Note: if subsampling was performed per species, but the whole catch was not sub-sampled, R should be reported."	http://vocab.ices.dk/?ref=9	2	char	y
Netopening	Net opening. Mean value in metres of vertical net opening measurements.		4	decimal 1	
Rigging	In the datafile for this survey should be set to -9		2	char	n/a
Tickler	In the datafile for this survey should be set to -9		2	int	n/a
WarpIngt	Length of warp in metres. Recommended - at least 150m. Defined by fishing depth.		4	int	
Warpdia	Warp diameter in millimetres.		2	int	
WarpDen	Warp weight in kg per linear meter of warp.		2	int	
DoorSurface	Door surface area in square metres.		4	decimal 1	
DoorWgt	Door weight in kilograms.		4	int	
TowDir	Direction of towing in degrees. 360=direction from south to north.		3	int	
GroundSpeed	Ground speed of towing in knots. Target - 3.0.		3	decimal 1	
SpeedWater	Trawl speed on water in knots.		3	decimal 1	
WindDir	Direction of wind in degrees. Calm=0, 360=direction from north to south. -1 = varying direction		3	int	
WindSpeed	Speed of wind in metres/sec.		3	int	

SwellDir	Direction of swell in degrees. No movement=0, 360=direction from south to north.(long wavelength ocean surface waves defined as swell.)		3	int	
SwellHeight	Height in metres of the formation of long wavelength ocean surface waves defined as swell.		4	decimal 1	
EEZ	Exclusive Economic Zone reference			char	
NMArea	12 nautical miles territorial waters reference			char	
Date of calculation					

Annex C: ICES format example

Survey	Quarter	Year	Ship	Gear	Country	StNo	HaulNo	ShootLat	ShootLong	HaulLat	HaulLong	OSPARArea	MSFDArea	BottomDepth	Distance	DoorSpread	WingSpread	LTREF	PARAM	LTSZC	UnitWgt	LT_Weight	UnitItem	LT_Items	LTSRC	TYPPL	LTPRP
BITS	1	2016	BAL	TVL	POL	25001	9	54.336	15.085	54.355	15.111		Baltic Sea	-18.256	2677	50	27	C-TS-REV	A6	-9	kg/haul	0.006	items/haul	1	SBF	-9	CL5
BITS	1	2016	BAL	TVL	POL	25002	5	54.751	17.003	54.776	17.013		Baltic Sea	-18.890	2856	50	27	C-TS-REV	A2	C	kg/haul	0.005	items/haul	1	-9	-9	CL4
BITS	1	2016	BAL	TVL	POL	25002	5	54.751	17.003	54.776	17.013		Baltic Sea	-18.890	2856	50	27	C-TS-REV	A6	-9	kg/haul	0.001	items/haul	1	SBF	-9	CL7

SweepLngt	GearExp	DoorType	Month	Day	TimeShot	HaulDur	StatRec	Depth	HaulVal	DataType	Netopening	Rigging	Tickler	Warp-lngt	Warp-dia	WarpDen	DoorSurface	DoorWgt	TowDir	Grou-ndSpe-ed	SpeedWater	WindDir	WindSpeed	SwellDir	SwellHeight	EEZ	NMArea	Dateof Calculation
75	S	T	2	13	631	30	37G5	19	V	C	7	-9		70	18	12	4.3	520	41	2.9						Polish Exclusive Economic Zone		20170908
75	S	T	2	12	655	30	38G7	19	V	C	7	-9		70	18	12	4.3	520	12	3.1						Polish Exclusive	Polish 12	20170908

																										Economic Zone	NM	
75	S	T	2	12	655	30	38G7	19	V	C	7	-9		70	18	12	4.3	520	12	3.1						Polish Exclusive Economic Zone	Polish 12 NM	20170908

Annex D: MEDITS working sheet

CRUISE/CAMPAIGN:	DATE:	HAUL:	RESPONSIBLE:
LITTER_CATEGORY	**Number**	**Weight**	**OBSERVATIONS**
L0 No litter			
L1a. Plastic Bags			
L1b. Plastic Bottles			
L1c. Plastic Food wrappers			
L1d. Plastic sheets			
L1e. Hard plastic objects			
L1f. Fishing nets (polymers)			
L1g. Fishing lines (polymers)			
L1h. Other synthetic fishing related			
L1i. Synthetic ropes/strapping bands L1j Others plastic			
L1j. Others plastic			
L1 TOTAL PLASTIC			
L2a. Tyres			
L2b. Other rubber (gloves, floats, etc.)			
L2 TOTAL RUBBER			
L3a. Beverage cans (metal)			
L3b. Other food cans/wrappers			

L3c. Middle size containers (paint, etc.)			
L3d. Large metallic objects			
L3e. Cables			
L3f. Fishing related (hooks, spears, etc.) L3g. remnant from the war			
L3g. Remnant from the war			
L3 TOTAL METAL			
L4a. Glass/ceramic Bottles			
L4b. Pieces of glass			
L4c. Ceramic jars			
L4d. Large objects			
L4 TOTAL GLASS/ CERAMIC			
L5a. Clothing (other than polymers)			
L5b. Large pieces (carpets, etc.)			
L5c. Natural fishing ropes			
L5d. Sanitaries (non polymers)			
L5 TOTAL TEXTILS / NATURAL FIBERS			
L6 TOTAL Wood processed			
L7 TOTAL Paper and cardboard			
L8 TOTAL Other			
L9 TOTAL UNSPECIFIED			
TOTAL LITTER			

TOTAL FISHING GEARS (L1 f to i; L3f, L5c)			
START POSITIONS:			
END POSITIONS			

Annex E: MEDITS format: Format of the type A files (Data on the haul)

Name	Type	Position	Range	Comments
TYPE_OF_FILE	2A	1 - 2	TA	Fixed value
COUNTRY	3A	3 - 5	See Annex I	ISO Code
AREA	2N	6 - 7	See Annex III	GFCM Code
VESSEL	3A	8 - 10	See Annex I	MEDITS Code
GEAR	5AN	11 - 15	See Annex I	MEDITS Code
RIGGING	4AN	16 - 19	See Annex I	MEDITS Code
DOORS	4AN	20 - 23	See Annex I	MEDITS Code
YEAR	4N	24 - 27		e.g. 2000
MONTH	2N	28 - 29	1 to 12	
DAY	2N	30 - 31	1 to 28/29/30/31	
HAUL_NUMBER	3N	32 - 34	1 to 999	One series by vessel/year
CODEND_CLOSING	1A	35 - 35	S, C	S: without; C: controlled
PART_OF_THE_CODEND	1A	36 - 36	A, M, P, S	Mandatory if codend closing = C; A: anterior, M: middle; P: posterior; S sum of the 3 parts
SHOOTING_TIME	4N	37 - 40	0 to 2400	In UT Ex: 7 h 25 min > 725
SHOOTING_QUADRANT	1N	41 - 41	1, 3, 5, 7	See Annex IV
SHOOTING_LATITUDE	7N	42 - 48	3400 to 4600	Ex: 36° 40,22' > 3640,22.
SHOOTING_LONGITUDE	7N	49 - 55	0 to 3500	Ex: 4° 19,84' > 419,84
SHOOTING_DEPTH	3N	56 - 58	0, 10 to 800	At the trawl position, in metres; unknown: 0
HAULING_TIME	4N	59 - 62	0 to 2400	In UT Ex: 7 h 25 min > 725
HAULING_QUADRANT	1N	63 - 63	1, 3, 5, 7	See Annex IV
HAULING_LATITUDE	7N	64 - 70	3400 to 4600	Ex: 36° 40,22' > 3640,22.
HAULING_LONGITUDE	7N	71 - 77	0 to 2900	Ex: 4° 19,84' > 419,84
HAULING_DEPTH	3N	78 - 80	0, 10 to 800	At the trawl position, in metres; unknown: 0
HAUL_DURATION	2N	81 - 82	5 to 90	In minutes

VALIDITY	1A	83 - 83	V, I	V: valid; I: invalid.
COURSE	1A	84 - 84	R, N	R: rectilinear; N: not rectilinear
RECORDED_SPECIES	2N	85 - 86	See Annex IV	MEDITS code
DISTANCE	4N	87 - 90	1000 to 9999	Distance over ground in metres
VERTICAL_OPENING	3N	91 - 93	10 to 100	In decimetres
WING_OPENING	3N	94 - 96	50 to 250	In decimetres
GEOMETRICAL_PRECISION	1A	97 - 97	M, E	M: measured; E: estimated.
BRIDLES_LENGTH	3N	98 - 100	100, 150 or 200	In metres
WARP_LENGTH	4N	101 - 104	100 to 2200	In metres
WARP_DIAMETER	2N	105 - 106	10 to 30	In millimetres
HYDROLOGICAL_STATION	5A or 2A	107 - 111		National coding or NA if not available
OBSERVATIONS	1N	112 - 112	0 to 9	MEDITS code (Annex IV)
BOTTOM_TEMPERATURE_BEGINNING	5N or 2A	113 - 117	0 to 30	in °C with two decimals; NA if not available
BOTTOM_TEMPERATURE_END	5N or 2A	118 - 122	0 to 30	in °C with two decimals; NA if not available
MEASURING_SYSTEM	2A	123 - 124	see Annex X.a	see Annex X.a; NA if not available
NUMBER_OF_THE_STRATUM	6AN	125 - 130	see Annex II	
BOTTOM_SALINITY_BEGINNING	5N or 2A	131- 135	0 to 50	in ppt with two decimals; NA if not available
BOTTOM_SALINITY_END	5N or 2A	136- 140	0 to 50	in ppt with two decimals; NA if not available
MEASURING_SYSTEM	2A	141- 142	see Annex X.a	see Annex X.a; NA if not available

Legend
A: alphabetic field; N: numerical field; AN alpha-numeric field
Before the type of the field there is the number of digit allowed for the field (e.g. 2N: numeric field with length 2)
(1) For the invalid hauls (I), no information on species

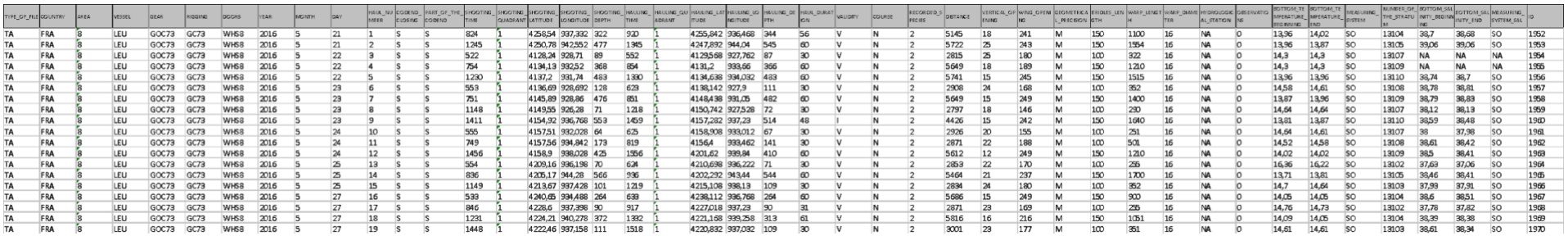
MEDITS format: Format of type L files (litter recording)

Name	Type	Position	Range	Comments
TYPE_OF_FILE	2A	1-2	TL	Fixed value
COUNTRY	3A	3-5	See Annex I	ISO Code
AREA	2N	6-7	See Annex III	GFCM Code
VESSEL	3A	8-10	See Annex I	MEDITS Code
YEAR	4N	11-14		e.g. 2000
MONTH	2N	15-16	1 to 12	
DAY	2N	17-18	1 to 28/29/30/31	
HAUL_NUMBER	3N	19-21	1 to 999	One series by vessel/year
LITTER_CATEGORY	2AN	22-23	from L1 to L9 and L0 (no litter)	See Annexe XVII
LITTER_SUB-CATEGORY	1A or 1N or 2A	24	from a to j or 0	See Annexe XVII or NA
TOTAL_WEIGHT_IN_THE_ CATEGORY_HAUL	7N or 2A	25-31	0 to 9999999	For the given category, in grams (facultative) or NA
TOTAL_NUMBER_IN_THE_CATEGORY_HAUL_	7N	32-38	1 to 9999999	For the given category
TOTAL_WEIGHT_IN_ THE_SUB-CATEGORY_ HAUL	7N or 2A	39-45	0 to 9999999	For the given sub-category, in grams (facultative) or NA
TOTAL_NUMBER_IN_ THE_SUB-CATEGORY_ HAUL	7N or 2A	46-52	0 to 9999999	For the given sub-category (facultative) or NA

Pale grey fields are not needed to be submitted, given that it is possible that the data have not been collected with the same year and subcategory resolution among the Geographical Sub-Areas.

Annex F: MEDITS format example

Example of Format of the type A files (Data on the Haul): "MEDITS TA_GSA7_8_2016" example



TYPE_OF_FILE	COUNTRY	AREA	VESSEL	GEAR	RIGGING	DOORS	YEAR	MONTH	DAY	HAUL_NUMBER	ICCSEND_CLOSING	PART_OF_THE_ICCSEND	SHOOTING_TIME	SHOOTING_QUADRANT	SHOOTING_LATITUDE	SHOOTING_LONGITUDE	SHOOTING_DEPTH	HAULING_TIME	HAULING_QUADRANT	HAULING_LATITUDE	HAULING_LONGITUDE	HAULING_DEPTH	HAUL_DURATION	VELOCITY	COURSE	RECORDED_SPECIES	DISTANCE	VERTICAL_OPENING	WING_OPENING	GEOMETRICAL_PRECISION	BRIDLES_LENGTH	WARP_LENGTH	WARP_DIAMETER	HYDROLOGICAL_STATION	OBSERVATIONS	BOTTOM_TEMPERATURE_BEGINNING	BOTTOM_TEMPERATURE_END	MEASURING_SYSTEM	NUMBER_OF_THE_STRATUM	BOTTOM_SALINITY_BEGINNING	BOTTOM_SALINITY_END	MEASURING_SYSTEM_SAL	ID
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	21	1	S	S	824	1	4258,54	397,332	322	920	1	4255,842	396,468	344	56	V	N	2	5145	18	241	M	150	1100	16	NA	0	13,96	14,02	SO	13104	38,7	38,68	SO	1952
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	21	2	S	S	1245	1	4250,78	942,552	477	1345	1	4247,892	944,04	545	60	V	N	2	5722	25	243	M	150	1554	16	NA	0	13,96	13,87	SO	13105	39,06	39,06	SO	1953
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	22	3	S	S	522	1	4128,24	928,71	89	552	1	4129,568	927,762	87	30	V	N	2	2815	25	180	M	100	322	16	NA	0	14,3	14,3	SO	13107	NA	NA	NA	1954
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	22	4	S	S	754	1	4134,13	932,52	368	854	1	4131,2	933,66	366	60	V	N	2	5649	18	189	M	150	1210	16	NA	0	14,3	14,3	SO	13109	NA	NA	NA	1955
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	22	5	S	S	1230	1	4137,2	931,74	483	1330	1	4134,638	934,032	483	60	V	N	2	5741	15	245	M	150	1515	16	NA	0	13,96	13,96	SO	13110	38,74	38,7	SO	1956
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	23	6	S	S	553	1	4136,69	928,692	128	629	1	4138,142	927,9	111	30	V	N	2	2908	24	168	M	100	852	16	NA	0	14,58	14,61	SO	13108	38,78	38,81	SO	1957
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	23	7	S	S	751	1	4145,89	928,86	476	851	1	4148,438	931,05	482	60	V	N	2	5649	15	249	M	150	1400	16	NA	0	13,87	13,96	SO	13109	38,79	38,83	SO	1958
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	23	8	S	S	1148	1	4149,55	926,28	71	1218	1	4150,742	927,528	72	30	V	N	2	2797	18	146	M	100	230	16	NA	0	14,64	14,64	SO	13107	38,12	38,13	SO	1959
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	23	9	S	S	1411	1	4154,92	936,768	553	1459	1	4157,282	937,23	514	48	I	N	2	4426	15	242	M	150	1640	16	NA	0	13,81	13,87	SO	13110	38,59	38,48	SO	1960
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	24	10	S	S	555	1	4157,51	932,028	64	625	1	4158,908	933,012	67	30	V	N	2	2926	20	155	M	100	251	16	NA	0	14,64	14,61	SO	13107	38	37,98	SO	1961
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	24	11	S	S	749	1	4157,56	934,842	173	819	1	4156,4	933,462	141	30	V	N	2	2871	22	188	M	100	501	16	NA	0	14,52	14,58	SO	13108	38,61	38,42	SO	1962
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	24	12	S	S	1456	1	4158,9	936,028	425	1556	1	4201,62	939,84	410	60	V	N	2	5612	12	249	M	150	1210	16	NA	0	14,02	14,02	SO	13109	38,5	38,41	SO	1963
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	25	13	S	S	554	1	4209,16	936,198	70	624	1	4210,698	936,222	71	30	V	N	2	2853	22	170	M	100	255	16	NA	0	16,36	16,22	SO	13102	37,63	37,06	SO	1964
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	25	14	S	S	836	1	4205,17	944,28	566	936	1	4202,292	943,44	544	60	V	N	2	5464	21	237	M	150	1700	16	NA	0	13,71	13,81	SO	13105	38,46	38,41	SO	1965
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	25	15	S	S	1149	1	4213,67	937,428	101	1219	1	4215,108	938,13	109	30	V	N	2	2894	24	180	M	100	352	16	NA	0	14,7	14,64	SO	13103	37,93	37,91	SO	1966
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	27	16	S	S	539	1	4240,65	934,488	264	639	1	4238,112	936,768	264	60	V	N	2	5686	15	249	M	150	900	16	NA	0	14,05	14,05	SO	13104	38,6	38,51	SO	1967
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	27	17	S	S	846	1	4228,6	937,398	90	917	1	4227,018	937,23	90	31	V	N	2	2871	23	169	M	100	255	16	NA	0	14,76	14,73	SO	13102	37,78	37,82	SO	1968
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	27	18	S	S	1231	1	4224,21	940,278	372	1332	1	4221,168	939,258	313	61	V	N	2	5816	16	216	M	150	1051	16	NA	0	14,09	14,05	SO	13104	38,39	38,38	SO	1969
TA	FRA	8	LEU	GOC73	GC73	WHS8	2016	5	27	19	S	S	1448	1	4222,46	937,158	111	1518	1	4220,832	937,092	109	30	V	N	2	3001	23	177	M	100	861	16	NA	0	14,61	14,61	SO	13103	38,61	38,34	SO	1970

Example of the associated Format of type L files (litter recording): "MEDITS_TL_GSA7_8_2016" example

TYPE_OF_FILE	COUNTRY	AREA	VESSEL	YEAR	MONTH	DAY	HAUL_NUMBER	LITTER_CATEGORY	LITTER_SUB-CATEGORY	TOTAL_WEIGHT_IN_THE_CATEGORY_HAUL	TOTAL_NUMBER_IN_THE_CATEGORY_HAUL	TOTAL_WEIGHT_IN_THE_SUB_CATEGORY_HAUL	TOTAL_NUMBER_IN_THE_SUB_CATEGORY_HAUL
TL	FRA	8	LEU	2016	5	21	1	L1	a	305	6	240	3
TL	FRA	8	LEU	2016	5	21	1	L1	b	305	6	57	1
TL	FRA	8	LEU	2016	5	21	1	L1	g	305	6	1	1

TL	FRA	8	LEU	2016	5	21	1	L1	h	305	6	7	1
TL	FRA	8	LEU	2016	5	21	1	L3	a	2274	3	34	2
TL	FRA	8	LEU	2016	5	21	1	L3	e	2274	3	2240	1

Annex G: ICES versus MEDITS data

	description	vocab	datatype	mandatory Y/N	MEDITS_Field Type A files (Data on the haul) Type TL files (Litter recording)	Type	Position	Range	Description	mandatory Y/N
Survey	survey name			?						
Quarter	Report the actual quarter for the haul. In case the cruise was made in several quarters, data for each quarter should be reported separately.	http://vocab.ices.dk/?ref=12	int	y	AREA	2N	6 - 7	See Annex III	GFCM Code	y
Year	Year of cruise.		char	y	YEAR	4N	24-27		e.g. 2000	y
Ship	DATRAS ship reference code.	http://vocab.ices.dk/?ref=3	char	y	VESSEL	3A	8 - 10	See Annex I	MEDITS Code	y
Gear	Gear type code	http://vocab.ices.dk/?ref=2	char	y	GEAR	5AN	11 - 15	See Annex I	MEDITS Code	y
Country	DATRAS 3-character code for the country that performed the survey.	http://vocab.ices.dk/?ref=4	char	y	COUNTRY	3A	3 - 5	See Annex I	ISO Code	y
StNo	Station number. National coding system, not defined by ICES.		char	y						
HaulNo	Sequential numbering of hauls during cruise. In CA-records: HaulNo=-9 for Area-based ALK HaulNo<>-9 and >0 for Haul-based ALK		int	y	HAUL_NUMBER	3N	32 - 34	1 to 999	One series by vessel/year	y
ShootLat	Haul Start Latitude (Degree.Decimal Degree of latitude) - when the net is launched		decimal4	y	SHOOTING_LATITUDE	7N	42 - 48	3400 to 4600	Ex: 36° 40,22' > 3640,22	y
ShootLong	Haul Start Longitude (Degree.Decimal Degree of longitude) - when the net is launched		decimal4	y	SHOOTING_LONGITUDE	7N	49 - 55	0 to 3500	Ex: 4° 19,84' > 419,84	y
HaulLat	Haul End Latitude (Degree.Decimal Degree of latitude) - when the net is floated back		decimal4	y	HAULING_LATITUDE	7N	64 - 70	3400 to 4600	Ex: 36° 40,22' > 3640,22.	y
HaulLong	Haul End Longitude (Degree.Decimal Degree of longitude) when the net is floated back		decimal4	y	HAULING_LONGITUDE	7N	71 - 77	0 to 2900	Ex: 4° 19,84' > 419,84	y
MSFDsubregion	MSFD subregion									
BottomDepth	BottomDepth									
Distance	Distance in metres between haul start and haul end point.		int		DISTANCE	4N	87 - 90	1000 to 9999	Distance over ground in meters	y
WingSpread	Mean value in metres of wing spread measurements. For more details see the manual.		decimal1		WING_OPENING	3N	94 - 96	50 to 250	In decimeters	y
LTREF	Litter reference list	http://vocab.ices.dk/?ref=1381								
PARAM	Parameter				LITTER_CATEGORY	2AN	22 - 23	from L1 to L9 and L0 (no litter)	See Annexe XVII (MEDPOL List)	y
					LITTER_SUB-CATEGORY	1A or 1N or 2A	24	from a to j or 0	See Annexe XVII (MEDPOL List) or NA	y
LTSZC	Litter size	http://vocab.ices.dk/?ref=1380								
UnitWgt	Weight units	Restricted units: g/haul, kg/haul, kg/km²								
LT_Weight	Weight value									
UnitItem	Item units	Restricted units: items/haul, items/km²								
LT_Items	Number of items									
LTSRC	Litter source	http://vocab.ices.dk/?ref=1382								
TYPPL	Type of polymer	http://vocab.ices.dk/?ref=1385								
LTPRP	Litter properties	http://vocab.ices.dk/?ref=1403								
					TOTAL_WEIGHT_IN_THE_CATEGORY_HAUL	**7N or 2A**	**25-31**	**0 to 9999999**	**For the given category, in grams (facultative) or NA**	n
					TOTAL_NUMBER_IN_THE_CATEGORY_HAUL	**7N**	**32-38**	**1 to 9999999**	**For the given category**	**y**
					TOTAL_WEIGHT_IN_THE_SUB-CATEGORY_HAUL	7N or 2A	39-45	0 to 9999999	For the given sub-category, in grams (facultative) or NA	n
					TOTAL_NUMBER_IN_THE_SUB-CATEGORY_HAUL	7N or 2A	46-52	0 to 9999999	For the given sub-category (facultative) or NA	n
Month	Month		int	y	MONTH	2N	28 -29	1 to 12		y
Day	Day		int	y	DAY	2N	30 - 31	1 to 28 / 29 / 30 / 31		y
TimeShot	Start time (GMT) of haul, where 0001= 00:01 ! Must be reported as 4 digits! Daytime is recommended for trawling.		char	y	SHOOTING_TIME	4N		0 to 2400	In UT Ex: 7 h 25 min > 725	y
HaulDur	Haul duration in minutes, Target value - 30. Start time - the moment when the gear settles at the bottom at the stated towing speed. Stop is defined as the start of hauling of the gear.		int	y	HAUL_DURATION	2N		5 to 90	in minutes	y
Depth	Depth from the surface in metres.		int	y	HAULING_DEPTH	3N		0, 10 to 800	At the trawl position, in meters; unknown: 0	y

Legend
A: alphabetic field; N: numerical field; AN alpha-numeric field
Before the type of the field there is the number of digit allowed for the field (e.g. 2N: numeric field with length 2)

Annex H: Master list of litter items (TSGML)

Note: OSPAR and UNEP codes are also included in this table

TSG-ML General code	OSPAR-Code	UNEP-Code	General Name	Level1 – Materials	Core	Beach	Seafloor	Floating	Biota	Micro
G1	1	PL05	4/6-pack yokes, six-pack rings	Artificial polymer material	x	x				
G2		PL07	Bags	Artificial polymer material	x		x	x		
G3	2	PL07	Shopping Bags incl. pieces	Artificial polymer material		x				
G4	3	PL07	Small plastic bags, e.g. freezer bags in pieces	Artificial polymer material		x				
G5	112		Plastic bag collective role; what remain from rip-off plastic bags	Artificial polymer material		x				
G6	4	PL02	Bottles	Artificial polymer material	x		x	x		
G7	4	PL02	Drink bottles <=0.5l	Artificial polymer material		x				
G8	4	PL02	Drink bottles >0.5l	Artificial polymer material		x				
G9	5	PL02	Cleaner bottles & containers	Artificial polymer material	x	x				
G10	6	PL06	Food containers incl. fast food containers	Artificial polymer material	x	x	x			
G11	7	PL02	Beach use related cosmetic bottles and containers, e.g. Sunblocks	Artificial polymer material		x				
G12	7	PL02	Other cosmetics bottles & containers	Artificial polymer material	x	x				
G13	12	PL02	Other bottles & containers (drums)	Artificial polymer material	x	x				
G14	8		Engine oil bottles & containers <50 cm	Artificial polymer material		x				
G15	9	PL03	Engine oil bottles & containers >50 cm	Artificial polymer material		x				

G16	10	PL03	Jerry cans (square plastic containers with handle)	Artificial polymer material		x				
G17	11		Injection gun containers	Artificial polymer material		x				
G18	13	PL13	Crates and containers / baskets	Artificial polymer material		x	x	x		
G19	14		Car parts	Artificial polymer material		x				
G20		PL01	Plastic caps and lids	Artificial polymer material			x			
G21	15	PL01	Plastic caps/lids drinks	Artificial polymer material		x				
G22	15	PL01	Plastic caps/lids chemicals, detergents (non-food)	Artificial polymer material	x	x				
G23	15	PL01	Plastic caps/lids unidentified	Artificial polymer material		x				
G24	15	PL01	Plastic rings from bottle caps/lids	Artificial polymer material		x				
G25			Tobacco pouches / plastic cigarette box packaging	Artificial polymer material		x				
G26	16	PL10	Cigarette lighters	Artificial polymer material	x	x				
G27	64	PL11	Cigarette butts and filters	Artificial polymer material		x	x			
G28	17		Pens and pen lids	Artificial polymer material		x				
G29	18		Combs/hair brushes/sunglasses	Artificial polymer material		x				
G30	19		Crisps packets/sweets wrappers	Artificial polymer material		x				
G31	19		Lolly sticks	Artificial polymer materials		x				
G32	20	PL08	Toys and party poppers	Artificial polymer materials	x	x				

G33	21	PL06	Cups and cup lids	Artificial polymer materials	x	x				
G34	22	PL04	Cutlery and trays	Artificial polymer materials		x				
G35	22	PL04	Straws and stirrers	Artificial polymer materials		x				
G36	23		Fertiliser/animal feed bags	Artificial polymer materials		x				
G37	24	PL15	Mesh vegetable bags	Artificial polymer materials		x				
G38			Cover / packaging	Artificial polymer materials				x		
G39		PL09	Gloves	Artificial polymer materials			x	x		
G40	25	PL09	Gloves (washing up)	Artificial polymer materials	x	x				
G41	113	3	Gloves (industrial/professional rubber gloves)	Artificial polymer materials	x	x				
G42	26	PL17	Crab/lobster pots and tops	Artificial polymer materials		x				
G43	114		Tags (fishing and industry)	Artificial polymer materials		x				
G44	27	PL17	Octopus pots	Artificial polymer materials		x				
G45	28	PL15	Mussels nets, Oyster nets	Artificial polymer materials		x				
G46	29		Oyster trays (round from oyster cultures)	Artificial polymer materials		x				
G47	30		Plastic sheeting from mussel culture (Tahitians)	Artificial polymer materials		x				
G48			Synthetic rope	Artificial polymer materials			x	x		
G49	31	PL19	Rope (diameter more than 1cm)	Artificial polymer materials	x	x				

G50	32	PL19	String and cord (diameter less than 1cm)	Artificial polymer materials	x	x				
G51		PL20	Fishing net	Artificial polymer materials			x	x		
G52		PL20	Nets and pieces of net	Artificial polymer materials	x	x				
G53	115	20	Nets and pieces of net < 50 cm	Artificial polymer materials		x				
G54	116	20	Nets and pieces of net > 50 cm	Artificial polymer materials		x				
G55		PL18	Fishing line (entangled)	Artificial polymer materials			x			
G56	33	PL20	Tangled nets/cord	Artificial polymer materials		x				
G57	34	PL17	Fish boxes - plastic	Artificial polymer materials		x		x		
G58	34	PL17	Fish boxes - expanded polystyrene	Artificial polymer materials		x		x		
G59	35	PL18	Fishing line/monofilament (angling)	Artificial polymer materials	x	x	x			
G60	36	PL17	Light sticks (tubes with fluid) incl. packaging	Artificial polymer materials		x				
G61			Other fishing related	Artificial polymer materials			x			
G62	37	PL14	Floats for fishing nets	Artificial polymer materials	x	x				
G63	37	PL14	Buoys	Artificial polymer materials		x		x		
G64			Fenders	Artificial polymer materials		x				
G65	38	PL03	Buckets	Artificial polymer materials		x				
G66	39	PL21	Strapping bands	Artificial polymer materials	x	x	x			

G67	40	PL16	Sheets, industrial packaging, plastic sheeting	Artificial polymer materials		x	x	x		
G68	41	PL22	Fibre glass/fragments	Artificial polymer materials		x				
G69	42		Hard hats/Helmets	Artificial polymer materials		x				
G70	43		Shotgun cartridges	Artificial polymer materials		x				
G71	44	CL01	Shoes/sandals	Artificial polymer materials		x				
G72			Traffic cones	Artificial polymer materials		x				
G73	45	FP01	Foam sponge	Artificial polymer materials		x				
G74			Foam packaging/insulation/polyurethane	Artificial polymer materials				x		
G75	117		Plastic/polystyrene pieces 0 - 2.5 cm	Artificial polymer materials		x				
G76	46		Plastic/polystyrene pieces 2.5 cm > < 50cm	Artificial polymer materials		x				
G77	47		Plastic/polystyrene pieces > 50 cm	Artificial polymer materials		x				
G78			Plastic pieces 0 - 2.5 cm	Artificial polymer materials		x				
G79			Plastic pieces 2.5 cm > < 50cm	Artificial polymer materials		x		x		
G80			Plastic pieces > 50 cm	Artificial polymer materials		x		x		
G81			Polystyrene pieces 0 - 2.5 cm	Artificial polymer materials		x				
G82			Polystyrene pieces 2.5 cm > < 50cm	Artificial polymer materials		x		x		
G83			Polystyrene pieces > 50 cm	Artificial polymer materials		x		x		

G84			CD, CD-box	Artificial polymer materials		x				
G85			Salt packaging	Artificial polymer materials		x				
G86			Fin trees (from fins for scuba diving)	Artificial polymer materials		x				
G87			Masking tape	Artificial polymer materials		x				
G88			Telephone (incl. parts)	Artificial polymer materials		x				
G89			Plastic construction waste	Artificial polymer materials		x				
G90			Plastic flower pots	Artificial polymer materials		x				
G91			Biomass holder from sewage treatment plants	Artificial polymer materials		x				
G92			Bait containers/packaging	Artificial polymer materials		x				
G93			Cable ties	Artificial polymer materials		x	x			
G94			Table cloth	Artificial polymer materials				x		
G95	98	OT02	Cotton bud sticks	Artificial polymer materials	x	x	x			
G96	99	OT02	Sanitary towels/panty liners/backing strips	Artificial polymer materials		x	x			
G97	101	OT02	Toilet fresheners	Artificial polymer materials		x				
G98		OT02	Diapers/nappies	Artificial polymer materials		x	x			
G99	104	PL12	Syringes/needles	Artificial polymer materials		x	x			
G100	103		Medical/Pharmaceuticals containers/tubes	Artificial polymer materials		x				

G101	121		Dog faeces bag	Artificial polymer materials	x	x				
G102		RB02	Flip-flops	Artificial polymer materials		x				
G103			Plastic fragments rounded <5mm	Artificial polymer materials						x
G104			Plastic fragments subrounded <5mm	Artificial polymer materials						x
G105			Plastic fragments subangular <5mm	Artificial polymer materials						x
G106			Plastic fragments angular <5mm	Artificial polymer materials						x
G107			cylindrical pellets <5mm	Artificial polymer materials						x
G108			disks pellets <5mm	Artificial polymer materials						x
G109			flat pellets <5mm	Artificial polymer materials						x
G110			ovoid pellets <5mm	Artificial polymer materials						x
G111			spheruloids pellets <5mm	Artificial polymer materials						x
G112		PL23	Industrial pellets	Artificial polymer materials	x				x	
G113			Filament <5mm	Artificial polymer materials						x
G114			Films <5mm	Artificial polymer materials						x
G115			Foamed plastic <5mm	Artificial polymer materials						x
G116			Granules <5mm	Artificial polymer materials						x
G117			Styrofoam <5mm	Artificial polymer materials						x

G118			Small industrial spheres (<5mm)	Artificial polymer materials					x	
G119			Sheet like user plastic (>1mm)	Artificial polymer materials					x	
G120			Threadlike user plastic (>1mm)	Artificial polymer materials					x	
G121			Foamed user plastic (>1mm)	Artificial polymer materials					x	
G122			Plastic fragments (>1mm)	Artificial polymer materials					x	
G123			Polyurethane granules <5mm	Artificial polymer materials				x		
G124	48	PL24	Other plastic/polystyrene items (identifiable)	Artificial polymer materials		x	x	x		
G125	49	RB01	Balloons and balloon sticks	Rubber	x	x	x	x		
G126		RB01	Balls	Rubber		x		x		
G127	50		Rubber boots	Rubber		x	x	x		
G128	52	RB04	Tyres and belts	Rubber	x	x	x	x		
G129		RB05	Inner-tubes and rubber sheet	Rubber		x				
G130			Wheels	Rubber	x	x				
G131		RB06	Rubber bands (small, for	Rubber		x				
G132			Bobbins (fishing)	Rubber		x	x			
G133	97	RB07	Condoms (incl. packaging)	Rubber		x	x			
G134	53	RB08	Other rubber pieces	Rubber		x	x	x		
G135		CL01	Clothing (clothes, shoes)	Cloth/textile				x		
G136		CL01	Shoes	Cloth/textile			x			
G137	54	CL01	Clothing / rags (clothing, hats, towel	Cloth/textile	x	x	x			
G138	57	CL01	Shoes and sandals (e.g. Leather, cloth	Cloth/textile		x				
G139		CL02	Backpacks & bags	Cloth/textile		x				
G140	56	CL03	Sacking (hessian)	Cloth/textile		x				
G141	55	CL05	Carpet & Furnishing	Cloth/textile		x	x	x		
G142		CL04	Rope, string and nets	Cloth/textile		x	x	x		

G143		CL03	Sails, canvas	Cloth/textile		x		x		
G144	100	OT02	Tampons and tampon applicators	Cloth/textile	x	x				
G145	59	CL06	Other textiles (incl. rags)	Cloth/textile		x	x	x		
G146			Paper/Cardboard	Paper/Cardboard			x			
G147	60		Paper bags	Paper/Cardboard		x				
G148	61	PC02	Cardboard (boxes & fragments)	Paper/Cardboard	x	x	x	x		
G149		PC03	Paper packaging	Paper/Cardboard				x		
G150	118	PC03	Cartons/Tetrapack Milk	Paper/Cardboard	x	x				
G151	62	PC03	Cartons/Tetrapack (others)	Paper/Cardboard	x	x				
G152	63	PC03	Cigarette packets	Paper/Cardboard		x				
G153	65	PC03	Cups, food trays, food wrappers, drink containers	Paper/Cardboard	x	x				
G154	66	PC01	Newspapers & magazines	Paper/Cardboard		x		x		
G155		PC04	Tubes for fireworks	Paper/Cardboard		x				
G156			Paper fragments	Paper/Cardboard		x				
G157			Paper	Paper/Cardboard					x	
G158	67	PC05	Other paper items	Paper/Cardboard		x	x	x		
G159	68	WD01	Corks	Processed/worked wood		x				
G160	69	WD04	Pallets	Processed/worked wood	x	x	x	x		
G161	69	WD04	Processed timber	Processed/worked wood		x				
G162	70	WD04	Crates	Processed/worked wood	x	x		x		
G163	71	WD02	Crab/lobster pots	Processed/worked wood		x				
G164	119		Fish boxes	Processed/worked wood	x	x				
G165	72	WD03	Ice-cream sticks, chip forks, chopstic toothpicks	Processed/worked wood	x	x				
G166	73		Paint brushes	Processed/worked wood		x				

G167		WD05	Matches & fireworks	Processed/worked wood		x				
G168			Wood boards	Processed/worked wood				x		
G169			Beams / Dunnage	Processed/worked wood				x		
G170			Wood (processed)	Processed/worked wood			x			
G171	74	WD06	Other wood < 50 cm	Processed/worked wood		x				
G172	75	WD06	Other wood > 50 cm	Processed/worked wood		x				
G173		WD06	Other (specify)	Processed/worked wood	x		x	x		
G174	76		Aerosol/Spray cans industry	Metal	x	x				
G175	78	ME03	Cans (beverage)	Metal	x	x	x	x		
G176	82	ME04	Cans (food)	Metal	x	x	x			
G177	81	ME06	Foil wrappers, aluminium foil	Metal		x				
G178	77	ME02	Bottle caps, lids & pull tabs	Metal	x	x				
G179	120		Disposable BBQ's	Metal		x				
G180	79	ME10	Appliances (refrigerators, washers, etc.	Metal		x	x			
G181		ME01	Tableware (plates, cups & cutlery)	Metal		x				
G182	80	ME07	Fishing related (weights, sinkers, lurhooks)	Metal		x	x	x		
G183		ME07	Fish hook remains	Metal					x	
G184	87	ME07	Lobster/crab pots	Metal	x	x				
G185			Middle size containers	Metal			x			
G186	83	ME10	Industrial scrap	Metal		x				
G187	84	ME05	Drums, e.g. oil	Metal		x	x			
G188		ME04	Other cans (< 4 L)	Metal		x				
G189		ME05	Gas bottles, drums & buckets (> 4 L)	Metal		x				
G190	86	ME05	Paint tins	Metal		x				
G191	88	ME09	Wire, wire mesh, barbed wire	Metal		x		x		

G192		ME05	Barrels	Metal				x		
G193			Car parts / batteries	Metal		x	x			
G194			Cables	Metal		x	x			
G195		OT04	Household Batteries	Metal		x				
G196			Large metallic objects	Metal			x			
G197			Other (metal)	Metal			x	x		
G198	89	ME10	Other metal pieces < 50 cm	Metal		x				
G199	90	ME10	Other metal pieces > 50 cm	Metal		x				
G200	91	GC02	Bottles incl. pieces	Glass/ceramics	x	x	x			
G201		GC02	Jars incl. pieces	Glass/ceramics		x	x			
G202	92	GC04	Light bulbs	Glass/ceramics	x	x				
G203		GC03	Tableware (plates & cups)	Glass/ceramics		x				
G204	94	GC01	Construction material (brick, cement, pipes)	Glass/ceramics		x				
G205	92	GC05	Fluorescent light tubes	Glass/ceramics	x	x				
G206		GC06	Glass buoys	Glass/ceramics		x				
G207	95		Octopus pots	Glass/ceramics		x				
G208		GC07	Glass or ceramic fragments >2.5cm	Glass/ceramics		x	x			
G209			Large glass objects (specify)	Glass/ceramics			x			
G210	96	GC08	Other glass items	Glass/ceramics	x	x	x			
G211	10	OT05	Other medical items (swabs, bandaging, adhesive plaster etc.)	unidentified		x				
G212			Slack / Coal						x	
G213	181 ,109, 110	OT01	Paraffin/Wax	Chemicals		x			x	
G214			Oil/Tar	Chemicals					x	
G215			Food waste (galley waste)	Food waste					x	
G216			various rubbish (worked wood, metal parts)	undefined					x	
G217			Other (glass, metal, tar) <5mm	unidentified						x

Annex I: UNEP reference list adapted by MARLIN project

Clothing	CL01	Clothing, shoes, hats & towels
	CL02	Backpacks & bags
	CL03	Canvas, sailcloth & sacking (hessian)
	CL04	Rope & string
	CL05	Carpet & furnishing
	CL06	Other cloth (including rags)
Foamed plastic	FP01	Foam sponge
	FP02	Cups & food packs
	FP03	Foam buoys
	FP04	Foam (insulation & packaging)
	FP05	Other (specify)
Glass & Ceramic	GC01	Construction material (brick, cement, pipes)
	GC02	Bottles & jars
	GC03	Tableware (plates & cups)
	GC04	Light globes/bulbs
	GC05	Fluorescent light tubes
	GC06	Glass buoys
	GC07	Glass or ceramic fragments
	GC08	Other (specify)
Metal	ME01	Tableware (plates, cups & cutlery)
	ME02	Bottle caps, lids & pull tabs
	ME03	Aluminium drink cans
	ME04	Other cans (< 4 L)
	ME05	Gas bottles, drums & buckets (> 4 L)
	ME06	Foil wrappers
	ME07	Fishing related (sinkers, lures, hooks, traps & pots)
	ME08	Fragments
	ME09	Wire, wire mesh & barbed wire
	ME10	Other (specify), including appliances
	ME11	Dispensable grill
Organic waste	OR01	Snuff, swedish snus
	OR02	Feces (excrement)
	OR03	Fruit, food, pastry, candy and ice cream
	OR04	Other (specify)
Other	OT01	Paraffin or wax
	OT02	Sanitary (nappies, cotton buds, tampon applicators, toothbrushes)
	OT03	Appliances & Electronics
	OT04	Batteries (torch type)
	OT05	Other (specify)
Paper and cardboard	PC01	Paper (including newspapers & magazines)
	PC02	Cardboard boxes & fragments
	PC03	Cups, food trays, food wrappers, cigarette packs, drink containers
	PC04	Tubes for fireworks
	PC05	Other (specify)
Plastic	PL01	Bottle caps & lids
	PL02	Bottles < 2 L

	PL03	Bottles, drums, jerrycans & buckets > 2 L
	PL04	Knives, forks, spoons, straws, stirrers, (cutlery)
	PL05	Drink package rings, six-pack rings, ring carriers
	PL06	Food containers (fast food, cups, lunch boxes & similar)
	PL07	Plastic bags (opaque & clear)
	PL08	Toys & party poppers
	PL09	Gloves
	PL10	Cigarette lighters
	PL11	Cigarettes, butts & filters
	PL12	Syringes
	PL13	Baskets, crates & trays
	PL14	Plastic buoys
	PL15	Mesh bags (vegetable, oyster nets & mussel bags)
	PL16	Sheeting (tarpaulin or other woven plastic bags, palette wrap)
	PL17	Fishing gear (lures, traps & pots)
	PL18	Monofilament line
	PL19	Rope
	PL20	Fishing net
	PL21	Strapping
	PL22	Fibreglass fragments
	PL23	Resin pellets
	PL24	Other (specify)
Rubber	RB01	Balloons, balls & toys
	RB02	Footwear (flip-flops)
	RB03	Gloves
	RB04	Tyres
	RB05	Inner-tubes and rubber sheet
	RB06	Rubber bands
	RB07	Condoms
	RB08	Other (specify)
Wood	WD01	Corks
	WD02	Fishing traps and pots
	WD03	Ice-cream sticks, chip forks, chopsticks & toothpicks
	WD04	Processed timber and pallet crates
	WD05	Matches & fireworks
	WD06	Other (specify)

Annex J: ITALIAN reference list according to the monitoring program for the marine strategy of the Italian Ministry of Environment

Plastic and Polystyrene	IT3	Bottles and containers of engine oil
Plastic and Polystyrene	IT12	Synthetic sponge / helmets / hardhat / glass fibers / industrial packaging, plastic sheeting / mesh bags for vegetables (eg potatoes, oranges) / fertilizer bags / animal feed
Plastic and Polystyrene	IT1	Envelopes, shoppers, garbage bags / small plastic bags, eg, freezer bags / central part tear-off roll of plastic bags
Plastic and Polystyrene	IT2	Bottles and containers of cosmetic products (sunscreens) / bottles and containers of detergents and detergents
Plastic and Polystyrene	IT4	Parts of cars and motorcycles
Plastic and Polystyrene	IT5	Lighters
Plastic and Polystyrene	IT6	Pens and / or pen lids
Plastic and Polystyrene	IT7	Straws and stirrers(bars)/plastic cutlery/plates/plastic cups and crisp lids/bags, plastic sweets/rings of bottle caps/caps and lids/food containers(eg hamburgers)/beverage bottles and containers/packaging for cans of 4/6 rings/lolly sticks
Plastic and Polystyrene	IT8	Gloves (industrial / professional rubber gloves) / household gloves
Plastic and Polystyrene	IT9	Fenders / floats / buoys
Plastic and Polystyrene	IT10	Plastic ties for gardening / nurseries / bands and plastic packaging bands
Plastic and Polystyrene	IT11	Shoes / sandals / glasses / sunglasses / combs / hair brushes
Plastic and Polystyrene	IT13	CD / CD casing / luminous phosphorescent tubes (tubes with liquid) / toys or parts of them
Plastic and Polystyrene	IT14	Plastic jars / buckets / crates and baskets / jerrycans (plastic containers with handles)
Plastic and Polystyrene	IT15	Boxes and boxes for fish in polystyrene
Plastic and Polystyrene	IT16	Plastic containers for lures / fishing lines and fishing line in nylon (fishing) / plastic boxes and boxes for fish / nets and network pieces / ropes and tops
Plastic and Polystyrene	IT17	Baskets for the cultivation of oysters / nets or bags for mussels or oysters (socks) / plastic plates used in aquaculture or fishing / lobster pots
Plastic and Polystyrene	IT18	Other polystyrene objects
Plastic and Polystyrene	IT19	Other plastic objects
Rubber	IT20	Inflatable balloons, including valves, ribbons, lanyards / balloons
Rubber	IT21	Rubber boots and overshoes
Rubber	IT22	Tires / inner tubes
Rubber	IT23	Rubber bands (domestic / postal use)
Rubber	IT24	Other pieces of rubber
Textile	IT25	Upholstery / carpet / jute bags / canvas bags
Textile	IT26	Backpacks and bags / shoes and sandals / clothing (clothing / hats / towel)
Textile	IT27	Other textile products
Paper/cardboard	IT28	Envelopes / paper bags
Paper/cardboard	IT29	Cartons / newspapers and magazines / fragments of paper
Paper/cardboard	IT30	Tetrapack containers / paper cups / cups, food trays
Paper/cardboard	IT31	Packets of cigarettes or parts
Paper/cardboard	IT32	Cigarette butts and filters
Paper/cardboard	IT33	Other paper articles
Wood	IT34	Corks
Wood	IT35	Boxes
Wood	IT36	Ice-cream sticks
Wood	IT37	Other worked / processed wood / pallets / manufactured goods
Metal	IT38	Spray cans
Metal	IT39	Bottle caps / lids / beverage cans / jars or food cans / Aluminum trays and paper (aluminum foil)
Metal	IT40	Electrical appliances / appliances / car battery / motorcycle / truck / cables
Metal	IT41	Leads / fishing weights / hooks
Metal	IT42	Scrap / industrial waste
Metal	IT43	Drums, cylinders, barrels, drums, oil cans
Metal	IT44	Drums, cylinders, barrels, drums, oil cans

Metal	IT45	Wire, wire mesh, barbed wire
Metal	IT46	Household batteries
Metal	IT47	Other pieces of metal
Glass/ceramics	IT48	Bottles / plates and cups / jars
Glass/ceramics	IT49	Fluorescent tubes light bulbs
Glass/ceramics	IT50	Construction material (debris, bricks)
Glass/ceramics	IT51	Other glass / ceramic items
Sanitary	IT52	Condoms
Sanitary	IT53	Cotton bud sticks
Sanitary	IT54	Sanitary napkins slip / linings / support strips / diapers / tampons and tampon applicators
Sanitary	IT55	Other sanitary items
Medical	IT56	Medicinal containers / tubes / blisters
Medical	IT57	Syringes / needles
Medical	IT58	Other medical articles (tampons, bandages, etc.)
Excrements	IT59	Dog excrement in bag

Annex K: C-TS and C-TS-REV lists

C-TS
Litter reference list: CEFAS Trawl litter survey parameters (IBTS)
in ICES Database

A : Plastic	B : Sanitary waste	C : Metals	Related Size Category
A1. Bottle	B1. diapers	C1. Cans (Food)	A: < 5*5cm = 25cm²
A2. Sheet	B2. cotton buds	C2. Cans (Beverage)	B: < 10*10 cm = 100 cm²
A3. Bag	B3. cigarette butts	C3. Fishing related	C:< 20*20 cm = 400 cm²
A4. Caps/lids	B4. condoms	C4. Drums	D:< 50*50 cm = 2500 cm²
A5. Fishing line (monofilament)	B5. syringes	C5. Appliances	E: < 100*100 cm = 10 000 cm² = 1 m²
A6. Fishing line (entangled)	B6. sanitary towels/tar	C6. Car parts	F:> 100*100 cm = 10 000 cm² = 1 m²
A7. Synthetic rope	B7. other	C7. Cables	
A8. Fishing net		C8. Other	
A9. Cable ties			
A10. Strapping band			
A11. Crates and containers			
A12. Other			
D : Rubber	E : Glass / Ceramics	F : Natural products	G : Miscellaneous
D1. Boots	E1. Jar	F1. Wood (processed)	G1. Clothing / rags
D2. Balloons	E2. Bottle	F2. Rope	G2. Shoes
D3. Bobbins (fishing)	E3. Piece	F3. Paper/cardboard	G3. Other
D4. Tyre	E4. Other	F4. Pallets	
D5. Gloves		F5. Other	
D6. Other			

C-TS-REV
Litter reference list: Revised CEFAS Trawl litter survey parameters (2013)
in ICES Database

A : Plastic	B : Metals	C : Rubber	Related Size Category
A1 . Bottle	B1. Cans (Food)	C1. Boots	A: < 5*5cm = 25cm²
A2 .Sheet	B2. Cans (Beverage)	C2. Balloons	B: < 10*10 cm = 100 cm²
A3 . Bag	B3. Fishing related	C3. Bobbins (fishing)	C:< 20*20 cm = 400 cm²
A4 . Caps/lids	B4. Drums	C4. Tyre	D:< 50*50 cm = 2500 cm²
A5 . Fishing line (monofilament)	B5. Appliances	C5. Gloves	E: < 100*100 cm = 10 000 cm² = 1 m²
A6 . Fishing line (entangled)	B6. Car parts	C6. Other	F:> 100*100 cm = 10 000 cm² = 1 m²
A7 . Synthetic rope	B7. Cables		
A8 . Fishing net	B8. Other		
A9 . Cable ties			
A10 . Strapping band			
A11 . Crates and containers			
A12 . Diapers			
A13 . Sanitary towel / Tampon			
A14 . Other			
D : Glass / Ceramics	E : Natural products	F : Miscellaneous	
D1. Jar	E1. Wood (processed)	F1. Clothing / rags	
D2. Bottle	E2. Rope	F2. Shoes	
D3. Piece	E3. Paper/cardboard	F3. Other	
D4. Other	E4. Pallets		
	E5. Other		

Annex L: MEDITS litter categories

L0 No litter
L1a. Plastic Bags
L1b. Plastic Bottles
L1c. Plastic Food wrappers
L1d. Plastic sheets
L1e. Hard plastic objects
L1f. Fishing nets (polymers)
L1g. Fishing lines (polymers)
L1h. Other synthetic fishing related
L1i. Synthetic ropes/strapping bands
L1j. Others plastic
L1 TOTAL PLASTIC
L2a. Tyres
L2b. Other rubber (gloves, floats, etc.)
L2 TOTAL RUBBER
L3a. Beverage cans (metal)
L3b. Other food cans/wrappers
L3c. Middle size containers (paint, etc.)
L3d. Large metalic objects
L3e. Cables
L3f. Fishing related (hooks, spears, etc.)

L3g. remnant from the war
L3g. Remnant from the war
L3 TOTAL METAL
L4a. Glass/ceramic Bottles
L4b. Pieces of glass
L4c. Ceramic jars
L4d. Large objects
L4 TOTAL GLASS/ CERAMIC
L5a. Clothing (other than polymers)
L5b. Large pieces (carpets, etc.)
L5c. Natural fishing ropes
L5d. Sanitaries (non polymers)
L5 TOTAL TEXTILS / NATURAL FIBERS
L6 TOTAL Wood processed
L7 TOTAL Paper and cardboard
L8 TOTAL Other
L9 TOTAL UNSPECIFIED

Annex M: Comparison seafloor litter categories

Master List of Categories of Litter Items - Seafloor

TSG_ML	OSPAR- Code	UNEP- Code	General Name	Level 1 - Materials	Seafloor	Master List vs "C-TS" CEFAS List in ICES Database (before 2016)	Master List vs "C-TS-REV" CEFAS List in ICES Database (reviewed in 2016)	MSFD vs MEDITS List 2017
G2		PL07	Bags	Artificial polymer materials	x	A3	A3	L1a
G6	4	PL02	Bottles	Artificial polymer materials	x	A1	A1	L1b
G10	6	PL06	Food containers incl. fast food containers	Artificial polymer materials	x			L1c
G18	13	PL13	Crates and containers / baskets	Artificial polymer materials	x	A11	A11	L1e
G20		PL01	Plastic caps and lids	Artificial polymer materials	x	A4	A4	L1e
G27	64	PL11	Cigarette butts and filters	Artificial polymer materials	x			
G39		PL09	Gloves	Artificial polymer materials	x			
G48			Synthetic rope	Artificial polymer materials	x	A7	A7	L1i
G51		PL20	Fishing net	Artificial polymer materials	x	A8	A8	L1f
G55		PL18	Fishing line (entangled)	Artificial polymer materials	x	A6	A6	L1g
G59	35	PL18	Fishing line/monofilament (angling)	Artificial polymer materials	x	A5	A5	L1g
G61			Other fishing related	Artificial polymer materials	x			L1h
G66	39	PL21	Strapping bands	Artificial polymer materials	x	A10	A10	L1i
G67	40	PL16	Sheets, industrial packaging, plastic sheeting	Artificial polymer materials	x	A2	A2	L1d
G93			Cable ties	Artificial polymer materials	x	A9	A9	
G95	98	OT02	Cotton bud sticks	Artificial polymer materials	x			
G96	99	OT02	Sanitary towels/panty liners/backing strips	Artificial polymer materials	x		A13	L5d
G98		OT02	Diapers/nappies	Artificial polymer materials	x		A12	L5d
G99	104	PL12	Syringes/needles	Artificial polymer materials	x			L5d
G134	48	PL24	Other plastic/polystyrene items (identifiable)	Artificial polymer materials	x	A12	A14	L1j
G125	49	RB01	Balloons and balloon sticks	Rubber	x	D2	C2	
G127	50		Rubber boots	Rubber	x	D1	C1	
G128	52	RB04	Tyres and belts	Rubber	x	D4	C4	L2a
G132			Bobbins (fishing)	Rubber	x	D3	C3	
G133	97	RB07	Condoms (incl. packaging)	Rubber	x			
G134	53	RB08	Other rubber pieces	Rubber	x	D5+D6	C5+C6	L2b
G136		CL01	Shoes	Cloth/textile	x	G2	F2	L5a
G137	54	CL01	Clothing / rags (clothing, hats, towels)	Cloth/textile	x	G1	F1	L5a
G141	55	CL05	Carpet & Furnishing	Cloth/textile	x			
G142		CL04	Rope, string and nets	Cloth/textile	x	F2	E2	L5c
G145	59	CL06	Other textiles (incl. rags)	Cloth/textile	x			
G146			Papery/Cardboard	Papery/Cardboard	x	F3	E3	L7
G148	61	PC02	Cardboard (boxes & fragments)	Papery/Cardboard	x			L7
G158	67	PC05	Other paper items	Papery/Cardboard	x			L7
G160	69	WD04	Pallets	Processed/worked wood	x	F4	E4	
G170			Wood (processed)	Processed/worked wood	x	F1	E1	L6
G173		WD06	Other (specify)	Processed/worked wood	x	F5?	E5 ?	
G175	78	MI03	Cans (beverage)	Metal	x	C2	B2	L3a
G176	82	MI04	Cans (food)	Metal	x	C1	B1	L3b
G180	79	MI10	Appliances (refrigerators, washers, etc.)	Metal	x	C5	B5	
G182	80	MI07	Fishing related (weights, sinkers, lures, hooks)	Metal	x	C3	B3	L3f
G185			Middle size containers	Metal	x			L3c
G187	84	MI05	Drums, e.g. oil	Metal	x	C4	B4	
G193			Carparts / batteries	Metal	x	C5	B6	
G194			Cables	Metal	x	C7	B7	L3e
G196			Large metallic objects	Metal	x			L3d
G197			Other (metal)	Metal	x	C8	B8	
G200	91	GC02	Bottles incl. pieces	Glass/ceramics	x	E2	D2	L4a
G201		GC02	Jars incl. pieces	Glass/ceramics	x	E1	D1	L4c
G208		GC07	Glass or ceramic fragments > 2.5cm	Glass/ceramics	x	E3	D3	L4b
G209			Large glass objects (specify)	Glass/ceramics	x	E3	D3	L4d
G210	96	GC08	Other glass items	Glass/ceramics	x	E4	D4	
				Other (specify)	x			L8
				Unspecified	x		F3	L9
				No Litter	x			L0
			Remnant from the war	metal	x			L3g
			Diapers	Sanitary waste	x	B1		
			Cotton bud	Sanitary waste	x	B2		
			cigarette butts	Sanitary waste	x	B3		
			condoms	Sanitary waste	x	B4		
			syringes	Sanitary waste	x	B5		
			sanitary towels/tampon	Sanitary waste	x	B6		
			other	Sanitary waste	x	B7		