

FIELD FORM FOR IDENTIFICATION OF HOTSPOTS

I. COLLECTION OF DATA REQUIRED FOR IDENTIFICATION OF HOTSPOTS

(Part I: Collection of data required for identification of hotspots to be completed in the field and used to identify hotspots in Part II)

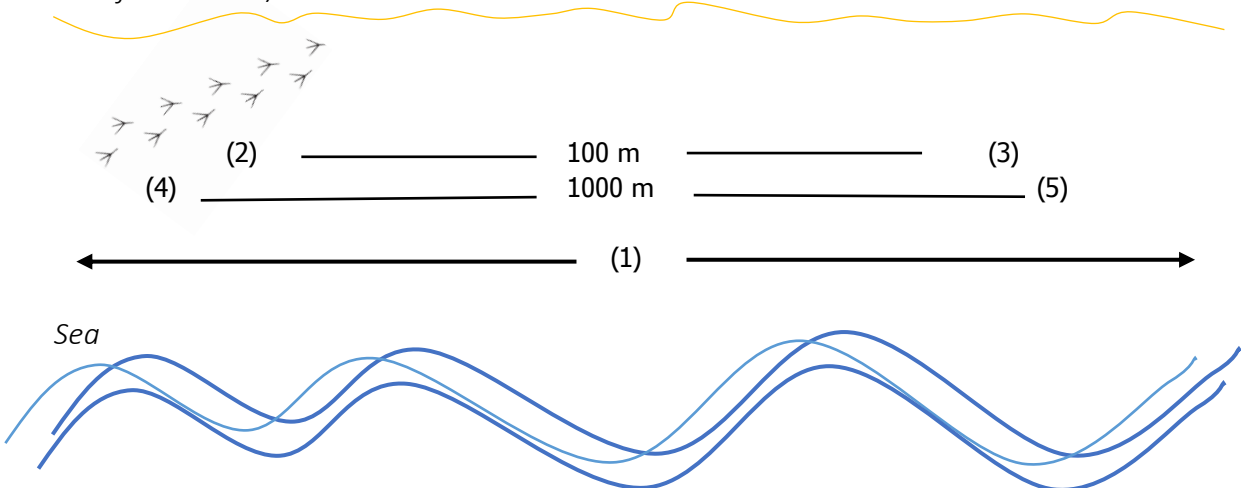
GENERAL INFORMATION

Indicator	Information
Name of the beach / shore	
Country	
Season	
Sequence of monitoring ¹	
Date of survey: (DD/MM/YY)	

DETERMINATION OF STUDY AREA

(Determine a representative study area - a 100-meter section of a 1000-meter section of the sea beach / shore, as shown in the figure. The geographical coordinates of the 100-meter section and a 1000-meter section should be completed in the table: GEOGRAPHICAL DATA FOR THE STUDY AREA).

Back of the beach / shore



The order of the monitoring for the respective season is indicated, as well as whether it was done within the same or a previous monitoring campaign (e.g. 2nd monitoring / previous campaign means that data from a survey conducted in the same season but for a previous year are available; 2nd monitoring / current campaign means that one survey has already been conducted in the same season and the same year)

GEOGRAPHICAL DATA FOR THE STUDY AREA

Indicator	Value
(1) Total length of beach / shore	
(2) GPS coordinates start 100 m:	
(3) GPS coordinates end 100 m:	
(4) GPS coordinates start 1000 m:	
(5) GPS coordinates end 1000 m:	

INFORMATION ABOUT THE BEACH / SHORE, OBJECT OF RESEARCH

(fill in the information)

Area of the beach / shore m²

Beach / shore topography %

(mark with an X or ✓ the correct answer)

Shape of beach / shore	Protrude <input type="checkbox"/>	Rectilinear <input type="checkbox"/>	Bay <input type="checkbox"/>	Other..... <input type="checkbox"/>
Back of beach / shore	Rock cliff <input type="checkbox"/>	Anthropogenic object (s) <input type="checkbox"/>	Dunes <input type="checkbox"/>	
Type of beach material	Fine sea sand <input type="checkbox"/>	Rocks with spaces of sand / small stones <input type="checkbox"/>	Other <input type="checkbox"/>	
	Small stones and gravel <input type="checkbox"/>	Other <input type="checkbox"/>		
Major beach / shore usage	Tourism and recreation <input type="checkbox"/>	Fishing <input type="checkbox"/>	Swimming <input type="checkbox"/>	
	Water sports <input type="checkbox"/>	Camping <input type="checkbox"/>	Other..... <input type="checkbox"/>	
Access to the beach / shore *	Vehicle <input type="checkbox"/>	Boat <input type="checkbox"/>	Pedestrian <input type="checkbox"/>	Other..... <input type="checkbox"/>
Prevailing winds	N <input type="checkbox"/>	NE <input type="checkbox"/>	E <input type="checkbox"/>	SE <input type="checkbox"/>
Prevailing currents off the beach	S <input type="checkbox"/>	SW <input type="checkbox"/>	W <input type="checkbox"/>	NW <input type="checkbox"/>

Notes

(additional information at the discretion of the expert)

*more than one answer is possible

ENVIRONMENTAL FACTORS THAT MAY INFLUENCE THE RESULTS OF THE STUDY

(mark with an X or ✓ the correct answer; more than one answer is possible)

- Wind Rain Snow / Ice
- Fog Sand storm No influencing factors
- Other:.....

POTENTIAL SOURCES OF WASTE THAT MAY AFFECT THE RESULTS OF THE STUDY

(fill in information only on the sources that the expert deems to have a significant impact)

Source	Information		Interpretation
The nearest settlement			Name of the settlement, type, distance (km) to it <i>(fill in information for the nearest settlement)</i>
The nearest commercial sites			Availability of commercial sites - restaurants, shops, cafes - and the distance to them, km <i>(to be filled in if applicable)</i>
The nearest port			Presence of a port and the distance to it, km <i>(to be filled in if applicable)</i>
The nearest river			Name of the nearest river / stream, etc. and the distance to it (km) <i>(to be filled in if applicable)</i>
Availability of river mouth	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Availability at the mouth of a river / stream, etc. <i>(mark with X or ✓ the correct)</i>
Discharge points (pipes or sewer outlets)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Availability of pipes and sewers that have direct contact with the beach / shore and flow into the sea <i>(mark with X or ✓ the correct)</i>
Notes	<i>(additional information at the discretion of the expert, e.g.: a nearby protected area / zone, etc.)</i>		



BEACH / SHORE CLEANING

(mark with X or ✓ the correct)

Is the beach / shore being cleaned? Yes No

(In case the answer is "yes", fill in the following information; (mark with an X or ✓ the correct answer)

Period of beach / shore cleaning Year round Seasonal

Frequency of beach / shore cleaning Daily Weekly Monthly Other.....

Beach / shore cleaning method Manual Mechanical

Date of last cleaning

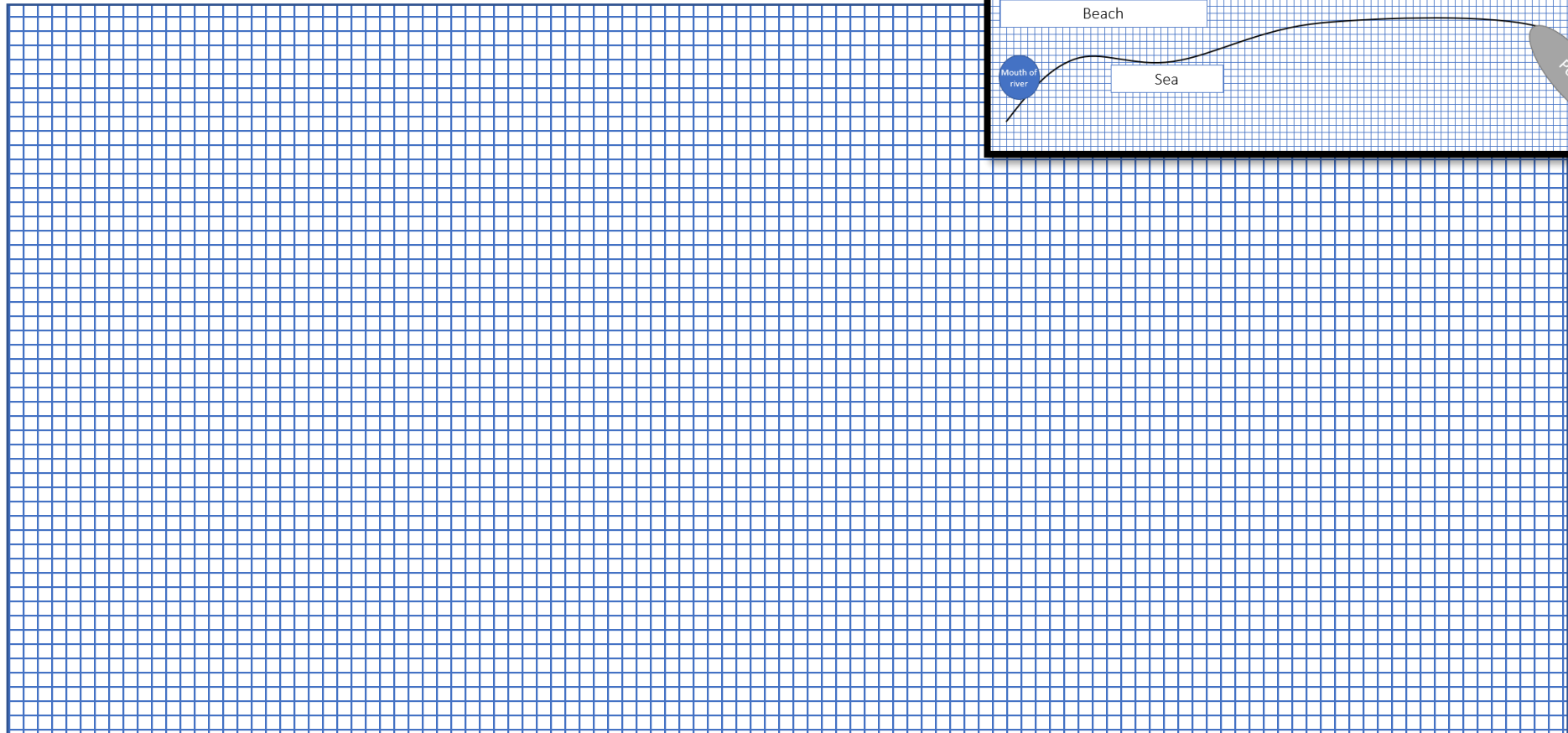
DATA FOR THE ORGANIZATION / EXPERT RESPONSIBLE FOR COLLECTING AND FILLING IN THE DATA IN THE FIELD FORM

Organization		
Expert		
Contacts	phone:	email:



SCHEME OF THE BEACH / SHORE, OBJECT OF STUDY

(The beach / shore scheme is performed at the discretion of the expert performing the survey of the respective beach / shore. The purpose of the scheme is to illustrate the shape of the beach / shore, its area and size, the located anthropogenic sites (restaurants, hotels, shops, etc.), rivers / streams flowing into the sea, etc., points of discharge, available ports, etc. .Exemplary scale for drawing the scheme: 1 square = 10 m)



Common borders. Common Solutions



INFORMATION ON THE QUANTITIES OF MARINE LITTER BY CATEGORIES ²

(mark each marine litter of the given subcategory (e.g. I I I I), then the total number of marine litter from this subcategory is written with a number and finally the total number of litters from all subcategories to each category)

Category Artificial polymer materials					
TSG_ML General	Code		Subcategory	Number of litters (field counting) 	Total
	OSPAR	UNEP			
G1	1	PL05	4/6-pack yokes, six-pack rings		
G2		PL07	bags		
G3	2	PL07	shopping Bags incl. pieces		
G4	3	PL07	small plastic bags, e.g. freezer bags incl. pieces		
G5	112		plastic bag collective role; what remains from rip-off plastic bags		
G6	4	PL02	bottles		
G7	4	PL02	drink bottles ≤0.5l		
G8	4	PL02	drink bottles >0.5l		
G9	5	PL02	cleaner bottles & containers		
G10	6	PL06	food containers incl. fast food containers		
G11	7	PL02	beach use related cosmetic bottles and containers, e.g. sunblocks		
G12	7	PL02	other cosmetics bottles & containers		
G13	12	PL02	other bottles & containers (drums)		
G14	8		engine oil bottles & containers <50 cm		
G15	9	PL03	engine oil bottles & containers >50 cm		
G16	10	PL03	jerry cans (square plastic containers with handle)		
G17	11		injection gun containers		
G18	13	PL13	crates and containers / baskets		
G19	14		car parts		
G20		PL01	plastic caps and lids		
G21	15	PL01	plastic caps/lids drinks		
G22	15	PL01	plastic caps/lids chemicals, detergents (non-food)		
G23	15	PL01	plastic caps/lids unidentified		
G24	15	PL01	plastic rings from bottle caps/lids		

² In case of difficulties in determining the specific category / subcategory of marine litter, it is recommended to use the Photo Guide - Annex to the Methodology for identification of hotspots)



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Category Artificial polymer materials					
TSG_ML General	Code		Subcategory	Number of litters (field counting) /// // //	Total
	OSPAR	UNEP			
G25			tobacco pouches / plastic cigarette box packaging		
G26	16	PL10	cigarette lighters		
G27	64	PL11	cigarette butts and filters		
G28	17		pens and pen lids		
G29	18		combs/hair brushes/sunglasses		
G30	19		crisps packets/sweets wrappers		
G31	19		lolly sticks		
G32	20	PL08	toys and party poppers		
G33	21	PL06	cups and cup lids		
G34	22	PL04	cutlery and trays		
G35	22	PL04	straws and stirrers		
G36	23		fertiliser/animal feed bags		
G37	24	PL15	mesh vegetable bags		
G38			cover / packaging		
G39			gloves		
G40	25	PL09	gloves (washing up)		
G41	113	RB03	gloves (industrial/professional rubber gloves)		
G42	26	PL17	crab/lobster pots and tops		
G43	114		tags (fishing and industry)		
G44	27	PL17	octopus pots		
G45	28	PL15	mussels nets, Oyster nets		
G46	29		oyster trays (round from oyster cultures)		
G47	30		plastic sheeting from mussel culture (Tahitians)		
G48			synthetic rope		
G49	31	PL19	rope (diameter more than 1cm)		
G50	32	PL19	string and cord (diameter less than 1cm)		
G51		PL20	string and cord (diameter less than 1cm)		
G52		PL20	nets and pieces of net		
G53	115	PL20	nets and pieces of net < 50 cm		
G54	116	PL20	nets and pieces of net > 50 cm		
G55		PL20	fishing line (entangled)		
G56	33	PL20	tangled nets / cord		
G57	34	PL17	fish boxes - plastic		
G58	34	PL17	fish boxes - expanded polystyrene		
G59	35	PL18	fishing line/monofilament (angling)		



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Category Artificial polymer materials					
TSG_ML General	Code		Subcategory	Number of litters (field counting) /// // //	Total
	OSPAR	UNEP			
G60	36	PL17	light sticks (tubes with fluid) incl. packaging		
G61			other fishing related		
G62	37	PL14	floats for fishing nets		
G63	37	PL14	buoys		
G64			fenders		
G65	38	PL03	buckets		
G66	39	PL21	strapping bands		
G67	40	PL16	sheets, industrial packaging, plastic sheeting		
G68	41	PL22	fibre glass/fragments		
G69	42		hard hats / Helmets		
G70	43		shotgun cartridges		
G71	44	CL01	shoes / sandals		
G72			traffic cones		
G73	45	FP01	foam sponge		
G74			plastic/polystyrene pieces 0 - 2.5 cm		
G75	117		plastic/polystyrene pieces 2.5 cm > < 50cm		
G76	46		plastic/polystyrene pieces > 50 cm		
G77	47		floats for fishing nets		
G78			plastic pieces 0 - 2.5 cm		
G79			plastic pieces 2.5 cm > < 50cm		
G80			plastic pieces > 50 cm		
G81			polystyrene pieces 0 - 2.5 cm		
G82			polystyrene pieces 2.5 cm > < 50cm		
G83			polystyrene pieces > 50 cm		
G84			CD, CD-box		
G85			salt packaging		
G86			fin trees (from fins for scuba diving)		
G87			masking tape		
G88			telephone (incl. parts)		
G89			plastic construction waste		
G90			plastic flower pots		
G91			biomass holder from sewage treatment plants		
G92			bait containers/packaging		
G93			cable ties		
G94			table cloth		
G95	98	OT02	cotton bud sticks		



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Category Artificial polymer materials					
Code			Subcategory	Number of litters (field counting) /// // //	Total
TSG_ML General	OSPAR	UNEP			
G96	99	OT02	sanitary towels/panty liners/backing strips		
G97	101	OT02	toilet fresheners		
G98		OT02	diapers / nappies		
G99	104	PL12	syringes / needles		
G100	103		medical/Pharmaceuticals containers/tubes		
G101	121		dog faeces bag		
G102		RB02	flip-flops		
G103			plastic fragments rounded <5mm		
G104			plastic fragments subrounded <5mm		
G105			plastic fragments subangular <5mm		
G106			plastic fragments angular <5mm		
G107			cylindrical pellets < 5 mm		
G108			disks pellets < 5 mm		
G109			flat pellets < 5 mm		
G110			ovoid pellets < 5 mm		
G111			spheruloids pellets < 5 mm		
G112			industrial pellets		
G113			filament < 5 mm		
G114			films < 5 mm		
G115			foamed plastic < 5 mm		
G116			granules < 5 mm		
G117			styrofoam < 5 mm		
G118			small industrial spheres (1 mm)		
G119			sheet like user plastic (> 1 mm)		
G120			threadlike user plastic (> 1 mm)		
G121			foamed user plastic (> 1 mm)		
G122			plastic fragments (>1 mm)		
G123			polyurethane granules < 5 mm		
G124	48	PL24	other plastic/polystyrene items (identifiable)		
Total					



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Category Rubber					
Code			Subcategory	Number of litter (field counting) 	Total
TSG_ML General	OSPAR	UNEP			
G125	49	RB01	balloons and balloon sticks		
G126		RB01	balls		
G127	50		rubber boots		
G128	52	RB04	tyres and belts		
G129		RB05	inner-tubes and rubber sheet		
G130			wheels		
G131		RB06	rubber bands (small, for rubber kitchen/household/post use)		
G132			bobbins (fishing)		
G133	97	RB07	condoms (incl. packaging)		
G134	53	RB08	other rubber pieces		
Total					

Category Cloths / textile					
Code			Subcategory	Number of litter (field counting) 	Total
TSG_ML General	OSPAR	UNEP			
G135		CL01	clothing (clothes, shoes)		
G136		CL01	shoes		
G137	54	CL01	clothing / rags (clothing, hats, towels)		
G138	57	CL01	shoes and sandals (e.g. leather, cloth)		
G139		CL02	backpacks & bags		
G140	56	CL03	sacking (hessian)		
G141	55	CL05	carpet & Furnishing		
G142		CL04	rope, string and nets		
G143		CL03	sails, canvas		
G144	100	OT02	tampons and tampon applicators		
G145	59	CL06	other textiles (incl. rags)		
Total					

Category Paper/Cardboard					
Code			Subcategory	Number of litter (field counting) 	Total
TSG_ML General	OSPAR	UNEP			
G146			paper/Cardboard		
G147	60		paper bags		



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Category Paper/Cardboard					
TSG_ML General	Code		Subcategory	Number of litter (field counting) 	Total
	OSPAR	UNEP			
G148	61	PC02	cardboard (boxes & fragments)		
G149		PC03	paper packaging		
G150	118	PC03	cartons/Tetrapack Milk		
G151	62	PC03	cartons/Tetrapack (others)		
G152	63	PC03	cigarette packets		
G153	65	PC03	cups, food trays, food wrappers, drink containers		
G154	66	PC01	newspapers & magazines		
G155		PC04	tubes for fireworks		
G156			paper fragments		
G157			paper		
G158	67	PC05	other paper items		
Total					

Category Processed/worked wood					
TSG_ML General	Code		Subcategory	Number of litter (field counting) 	Total
	OSPAR	UNEP			
G159	68	WD01	corks		
G160	69	WD04	pallets		
G161	69	WD04	processed timber		
G162	70	WD04	crates		
G163	71	WD02	crab/lobster pots		
G164	119		fish boxes		
G165	72	WD03	ice-cream sticks, chip forks, chopsticks, toothpicks		
G166	73		paint brushes		
G167		WD05	matches & fireworks		
G168			wood boards		
G169			beams / Dunnage		
G170			wood (processed)		
G171	74	WD06	other wood < 50 cm		
G172	75	WD06	other wood > 50 cm		
G173		WD06	other (specify)		
Total					



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Category Metal					
Code			Subcategory	Number of litter (field counting) 	Total
TSG_ML General	OSPAR	UNEP			
G174	76		aerosol/Spray cans industry		
G175	78	ME03	cans (beverage)		
G176	82	ME04	cans (food)		
G177	81	ME06	foil wrappers, aluminium foil		
G178	77	ME02	bottle caps, lids & pull tabs		
G179	120		disposable BBQ's		
G180	79	ME10	appliances (refrigerators, washers, etc.)		
G181		ME01	tableware (plates, cups & cutlery)		
G182	80	ME07	fishing related (weights, sinkers, lures, hooks)		
G183	83	ME10	fish hook remains		
G184	87	ME07	lobster/crab pots		
G185			middle size containers		
G186	83	ME10	industrial scrap		
G187	84	ME05	drums, e.g. oil		
G188		ME04	other cans (< 4 L)		
G189		ME05	gas bottles, drums & buckets (> 4 L)		
G190	86	ME05	paint tins		
G191	88	ME09	wire, wire mesh, barbed wire		
G192			barrels		
G193			car parts / batteries		
G194			cables		
G195		OT04	household Batteries		
G196			large metallic objects		
G197			other (metal)		
G198	89	ME10	other metal pieces < 50 cm		
G199	90	ME10	other metal pieces > 50 cm		
Total					

Category Glass/ceramics					
Code			Subcategory	Number of litter (field counting) 	Total
TSG_ML General	OSPAR	UNEP			
G200	91	GC02	bottles incl. pieces		
G201		GC02	jars incl. pieces		
G202	92	GC04	light bulbs		
G203		GC03	tableware (plates & cups)		

Category Glass/ceramics					
Code			Subcategory	Number of litter (field counting) 	Total
TSG_ML General	OSPAR	UNEP			
G204	94	GC01	construction material (brick, cement, pipes)		
G205	92	GC05	fluorescent light tubes		
G206		GC06	glass buoys		
G207	95		octopus pots		
G208		GC07	glass or ceramic fragments >2.5cm		
G209			Large glass objects (specify)		
G210	96	GC08	Other glass items		
Total					

Category Unidentified					
Code			Subcategory	Number of litter (field counting) 	Total
TSG_ML	OSPAR	UNEP			
G211	105	OT05	other medical items (swabs, bandaging, adhesive plaster etc.)		
G212			slack / Coal		
G213	181	OT01	paraffin/Wax (0-1 cm)		
	109		paraffin/Wax (1-10 cm)		
	110		paraffin/Wax (> 10 cm)		
G214			oil/Tar		
G216			various rubbish (worked wood, metal parts)		
G217			other (glass, metal, tar) <5mm		
Total					

Has marine litter been collected?

Yes

No

(mark with an X or ✓ the correct answer)



NOTES

(additional information at the discretion of the expert e.g. presence of dead / distressed animals, accidental events (e.g. shipwreck) that may affect the results of the study, etc.)

II. CATEGORIZATION OF IDENTIFIED HOTSPOTS

(Based on the data collected in Part I of the field form, the identified hotspots are categorized. This part does not have to be completed in the field, but it is recommended that it be completed as soon as possible after data collection).

Marine Litter Density Index - **MLDI** is used to categorize hotspots.

$$MLDI = Dav * K,$$

Where:

Dav - average waste density, [number of waste / m²].

K - coefficient, with accepted value 20 (for the needs of statistics)

To make the calculation of **MLDI** easier, fill in the table below

<i>DAPMav</i> *	<i>DP/Cav</i> *	<i>DPWav</i> *	<i>DMav</i> *	<i>Dav</i> **	MLDI ***
unit / m²					-

Note:

*To calculate the density of the individual waste categories Artificial polymer materials (**DAPMav**), Paper / Cardboard (**DP / Cav**), Processed/worked wood (**DPWav**), Metal (**DMav**) it is necessary to divide the total number of reported waste by the area of the beach / shore.

** To calculate the average density of waste, it is necessary to collect the values for the average density of waste from the categories: Artificial polymeric materials (**DAPMav**), Paper / Cardboard (**DP / Cav**), Processed/worked wood (**DPWav**), Metal (**DMav**).

$$Dav = (DAPMav + DP / Cav + DPWav + DMav).$$

In case the density of the waste from the categories: Clotes / Textile, Rubber, Glass / ceramics and Unidentified exceeds 1 unit / m², then its value should be taken into account when calculating the average density of the waste.

$$*** MLDI = Dav * K,$$

The following scale should be used to estimate the marine litter load after MLDI calculation (Toneva and Simeonova, 2019)

<i>Dav</i> [unit / m ²]	MLDI	Category
<i>Dav</i> = 0 ÷ 0,1	<i>MLDI</i> = 0 ÷ 2	Unloaded area / very clean area
<i>Dav</i> = 0,1 ÷ 0,25	<i>MLDI</i> = 2 ÷ 5	Low loaded area / clean area
<i>Dav</i> = 0,25 ÷ 0,5	<i>MLDI</i> = 5 ÷ 10	Medium loaded area / moderate littered area

<i>Dav</i> [unit / m ²]	MLDI	Category
<i>Dav</i> = 0,5 ÷ 1	MLDI = 10 ÷ 20	Heavily loaded area / very littered area
<i>Dav</i> ≥ 1	MLDI = 20 +	Critically loaded area / extremely littered area

Marine litter loading evaluation scale

(To be marked with an X or ✓ established load category)

- Unloaded area
 Moderate loaded area
 Critically loaded area
- Low loaded area
 Heavily loaded area

With a Marine Waste Density Index above 20, there is a critically loaded area (hotspot). In these cases, the following hotspot rating scale should be used.

<i>Dav</i> [unit/m ²]	MLDI	Category
<i>Dav</i> = 1 ÷ 2	MLDI = 20 ÷ 40	hot spot - first rank
<i>Dav</i> = 2 ÷ 3	MLDI = 40 ÷ 60	hot spot - second rank
<i>Dav</i> = 3 ÷ 4	MLDI = 60 ÷ 80	hot spot - third rank
<i>Dav</i> = 4 ÷ 5	MLDI = 80 ÷ 100	hot spot - fourth rank
<i>Dav</i> ≥ 5	MLDI = 100+	hot spot - fifth rank

Hotspot category

(In case the area is defined as "critically loaded" (hotspot), mark with an X or ✓ the corresponding rank according to the above scale)

- First rank
 Third rank
 Fifth rank
- Second rank
 Fourth rank



I. RESULTS

Marine litter loading evaluation scale

(To be marked with an X or ✓ established load category)

Unloaded area **Moderate loaded area** **Critically loaded area**

Low loaded area **Heavily loaded area**

Hotspot category

(In case the zone is defined as "critically loaded" (hotspot), mark with an X or ✓ the corresponding rank according to the above scale)

First rank **Third rank** **Fifth rank**

Second rank **Fourth rank**

Factors that may be responsible for the results

(mark with an X or ✓ the factors that may have influenced the results, more than one answer is possible)

Nearby settlement **Nearby commercial sites** **Nearby port**

Nearby or flowing river **Available discharge points** **Sea currents**

Others:

Predominant Category of waste on the studied beach / shore

(to be marked with X or ✓ the predominant category of waste)

Artificial polymer materials **Rubber** **Clothes / Textile,**

Paper / Cardboard **Processed/worked wood** **Metal**

Glass / ceramics **Unidentified**



NOTES

(additional information at the discretion of the expert)