

Marine Litter Education at the beach

Marine litter is a global topic. Because most litter is carried into the sea by rivers, it's as much an inland problem as it is a coastal problem. The topic "marine litter" is easily visualisable and comprehensible - so use it as good topic for environmental education with kids, youths and students. The following handout presents you three easy to use examples of such work. It also gives you information about how such work can be carried out and the materials to do so.

1. OSPAR Beach Monitoring

The OSPAR method has been developed to record and categorize litter in the drift line.

How it works: Select a 100m long beach section and mark it with poles or other means. Collect every piece of litter found in this section and sort it, using the OSPAR protocol.

The protocol has a cover where you can write down general information about where and when the monitoring took place as well as fields to mention unusual things. The protocol itself is a comprehensive list of items that can be found at the beach, presorted by material, in form of a check list.

A commented and explained version of the OSPAR protocol can be found in appendix 1.



OSPAR Marine Litter Monitoring Survey Form

Name of beach: _____ Name of surveyor 1: _____
 OSPAR beach ID: _____ Phone number: _____
 Country: _____ E-mail address: _____
 Name of surveyor 2: _____
 Phone number: _____
 Date of survey: ____/____/____ (d/m/y) E-mail address: _____

Additional Information

89		Other metal pieces < 50 cm (please specify in other item box*)	
90		Other metal pieces > 50 cm (please specify in other item box*)	
Glass			
91		Bottles	
92		Light bulbs/tubes	
93		Other glass items (please specify in other item box*)	
Pottery • Ceramics			
94		Construction material e.g. tiles	
95		Octopus pots	
96		Other ceramic/pottery items (please specify in other item box*)	
Sanitary waste			
97		Condoms	
98		Cotton bud sticks	

There is also a 83 page manual available, which gives additional information about the surveying process, including a 40 page photo manual showing a photo for every point in the protocol along with translations into seven different languages (along with two blank boxes for filling in your own translations).

You can download the manual here:
http://www.ospar.org/documents/dbase/decrecs/agreements/10-02e_beachlitter%20guideline_english%20only.pdf

We would be very glad if you could help us gathering data by sending your results to

eucc@eucc-d.de

It's fine if you could just give us your counts, e.g.
 93: 4x (shards)
 95: 1x

and the geo-information of the monitored beach (preferably GPS coordinates, but at least the name of the country and region).

2. Litter Source Map

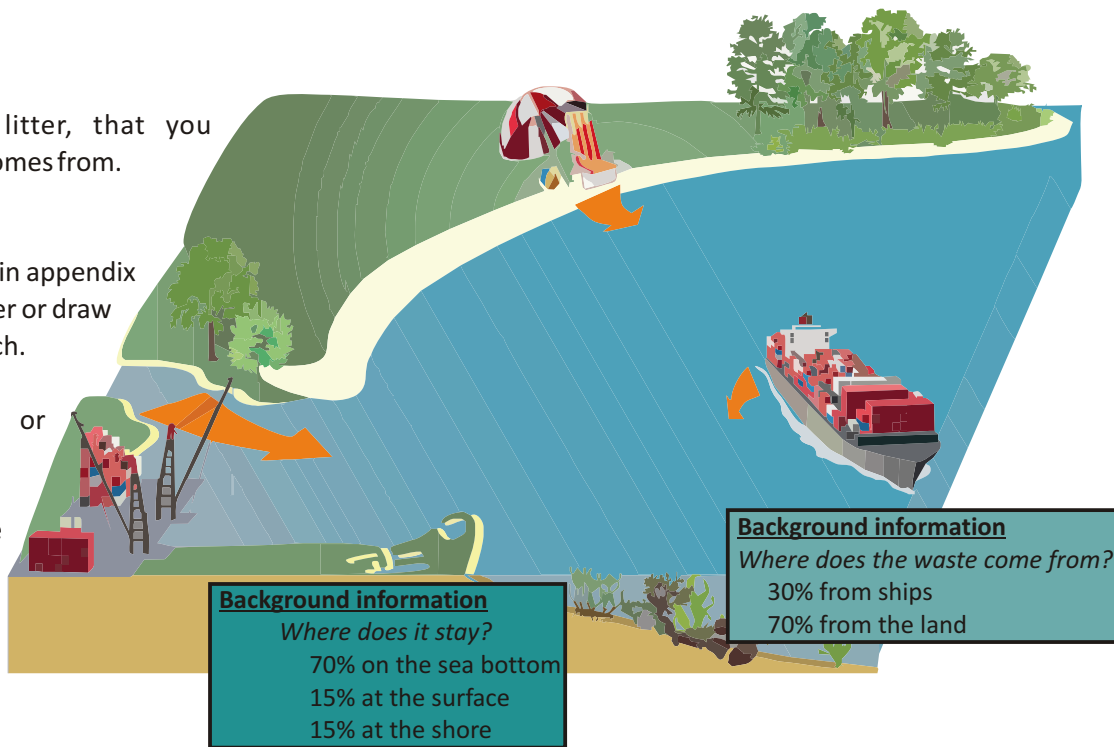
Visualise where the litter, that you collected at the beach, comes from.

How it works:

Print out the map found in appendix 2 on a large sheet of paper or draw a similar map on the beach.

Then let your youths or students place the collected pieces of litter on the map where they think it originates from and where it stays.

Correct and discuss the outcomes.



3. Time bar

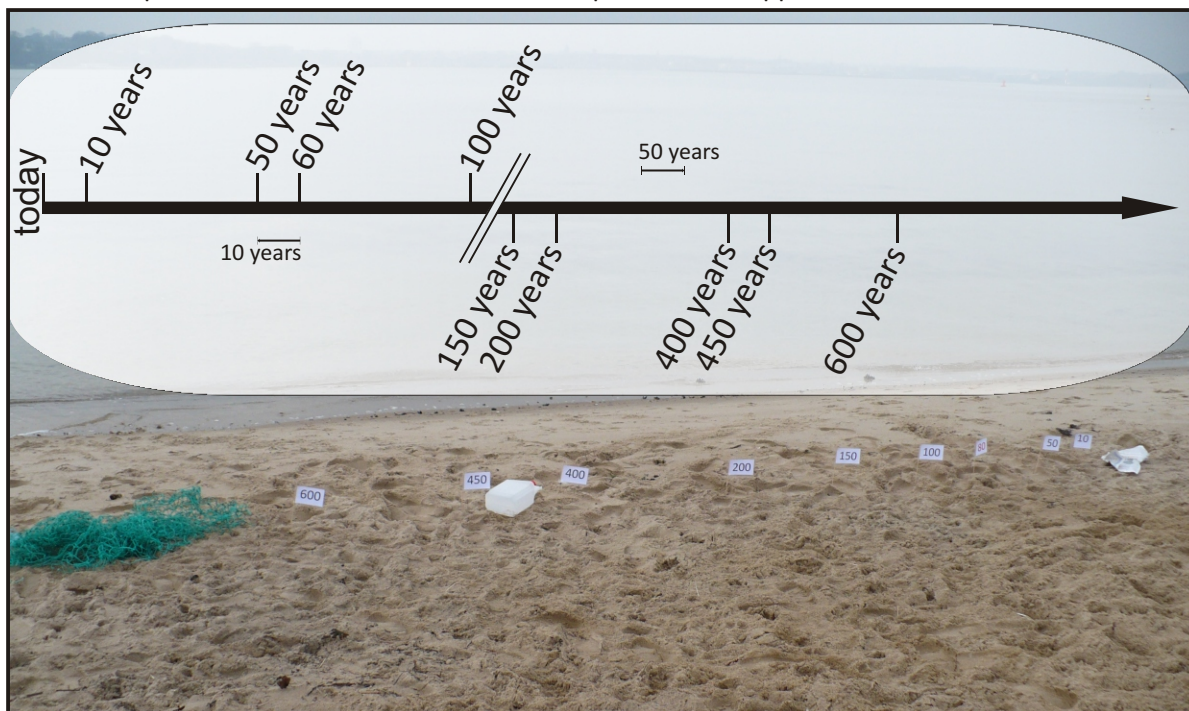
Visualise how long it takes for the various types of litter to degrade.

How it works:

Draw a line on the beach and mark intervals for 10, 50, 100, 150, 200, 400, 450 and 600 years. Add another mark for the average life expectancy in your country.

Let your youths or students sort the collected litter according to the time they think it takes the piece to disintegrate.

Correct the placement on the time bar with the help of the list in appendix 3.



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Appendix: Marine Litter Education

This is the appendix to the Handout “Marine Litter Education”. It contains the following materials for use with the presented methods:

Appendix 1: **OSPAR 100m Survey Protocol** (6 pages)
for monitoring marine litter on beaches.

Appendix 2: **Marine Litter Origin Map** (1 page)
for visualising the input paths and accumulation areas of marine litter.

Appendix 3: **Degradation Time Bar** (1 page)
of selected items, for correcting their placement on a time bar for visualising.



OSPAR Marine Litter Monitoring Survey Form

Name of beach: Name of surveyor 1:

OSPAR beach ID: Phone number:

Country: E-mail address:

..... Name of surveyor 2:

..... Phone number:

Date of survey:/...../..... (d/m/y) 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 ID	Unep ID	Items	Total
<i>Plastic • Polystyrene</i>			
1		4/6-pack yokes	
2		Bags (e.g. shopping)	
3		Small plastic bags, e.g., freezer bags	
112		Plastic bag ends	
4		Drinks (bottles, containers and drums)	
5		Cleaner (bottles, containers and drums)	
6		Food containers incl. fast food containers	
7		Cosmetics (bottles & containers e.g. sun lotion, shampoo, shower gel, deodorant)	
8		Engine oil containers and drums <50 cm	
9		Engine oil containers and drums > 50 cm	
10		Jerry cans (square plastic containers with handle)	
11		Injection gun containers	
12		Other bottles, containers and drums	
13		Crates	
14		Car parts	
15		Caps/lids	
16		Cigarette lighters	
17		Pens	
18		Combs/hair brushes	
19		Crisp/sweet packets and lolly sticks	
20		Toys & party poppers	
21		Cups	
22		Cutlery/trays/straws	
23		Fertiliser/animal feed bags	
24		Mesh vegetable bags	
25		Gloves (typical washing up gloves)	
113		Gloves (industrial/professional gloves)	
26		Crab/lobster pots	
114		Lobster and fish tags	
27		Octopus pots	
28		Oyster nets or mussel bags including plastic stoppers	



OSPAR ID	Unep ID	Items	Total
29		Oyster trays (round from oyster cultures)	
30		Plastic sheeting from mussel culture (Tahitians)	
31		Rope (diameter more than 1 cm)	
32		String and cord (diameter less than 1 cm)	
115		Nets and pieces of net < 50 cm	
116		Nets and pieces of net > 50 cm	
33		Tangled nets/cord/rope and string	
34		Fish boxes	
35		Fishing line (angling)	
36		Light sticks (tubes with fluid)	
37		Floats/Buoys	
38		Buckets	
39		Strapping bands	
40		Industrial packaging, plastic sheeting	
41		Fibre glass	
42		Hard hats	
43		Shotgun cartridges	
44		Shoes/sandals	
45		Foam sponge	
117		Plastic/polystyrene pieces 0 - 2,5 cm	
46		Plastic/polystyrene pieces 2,5 cm > < 50 cm	
47		Plastic/polystyrene pieces > 50 cm	
48		Other plastic/polystyrene items (<i>please specify in other item box*</i>)	
Rubber			
49		Balloons, including plastic valves, ribbons, strings etc.	
50		Boots	
52		Tyres and belts	
53		Other rubber pieces (<i>please specify in other item box*</i>)	
Cloth			
54		Clothing	



OSPAR ID	Unep ID	Items	Total
55		Furnishing	
56		Sacking	
57		Shoes (leather)	
59		Other textiles <i>(please specify in other item box*)</i>	
Paper • Cardboard			
60		Bags	
61		Cardboard	
118		Cartons e.g. tetrapak (milk)	
62		Cartons e.g. tetrapak (other)	
63		Cigarette packets	
64		Cigarette butts	
65		Cups	
66		Newspapers & magazines	
67		Other paper items <i>(please specify in other item box*)</i>	
Wood (machined)			
68		Corks	
69		Pallets	
70		Crates	
71		Crab/lobster pots	
119		Fish boxes	
72		Ice lolly sticks / chip forks	
73		Paint brushes	
74		Other wood < 50 cm <i>(please specify in other item box*)</i>	
75		Other wood > 50 cm <i>(please specify in other item box*)</i>	
Metal			
76		Aerosol/Spray cans	
77		Bottle caps	
78		Drink cans	
120		Disposable BBQ's	
79		Electric appliances	
80		Fishing weights	



OSPAR ID	Unep ID	Items	Total
81		Foil wrappers	
82		Food cans	
83		Industrial scrap	
84		Oil drums	
86		Paint tins	
87		Lobster/crab pots and tops	
88		Wire, wire mesh, barbed wire	
89		Other metal pieces < 50 cm <i>(please specify in other item box*)</i>	
90		Other metal pieces > 50 cm <i>(please specify in other item box*)</i>	
Glass			
91		Bottles	
92		Light bulbs/tubes	
93		Other glass items <i>(please specify in other item box*)</i>	
Pottery • Ceramics			
94		Construction material e.g. tiles	
95		Octopus pots	
96		Other ceramic/pottery items <i>(please specify in other item box*)</i>	
Sanitary waste			
97		Condoms	
98		Cotton bud sticks	
99		Sanitary towels/panty liners/backing strips	
100		Tampons and tampon applicators	
101		Toilet fresheners	
102		Other sanitary items <i>(please specify in other item box*)</i>	
Medical waste			
103		Containers / tubes	
104		Syringes	
105		Other medical items (swabs, bandaging etc.) <i>(please specify in other item box*)</i>	
Faeces			
121		Bagged dog faeces	



Presence of other pollutants		
Pollutant	Size of pieces or lumps <i>(estimates)</i>	Frequency <i>(estimated number per metre of strandline)</i>
Paraffin or wax pieces		
	<i>Size range</i>	
108	0 - 1 cm	
109	1 - 10 cm	
110	> 10 cm	
Other <i>(please specify in other item box*)</i>		
111		

Pellets* (nurdles): Yes No

**(photo in field guide)*

100 m

*Special observations and notes (please refer to number!)

Other Item Box

Appendix 2: Litter Origin Map

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Appendix 3: Degradation Time Bar

Paper towel
~ 2-4 Weeks



Newspaper
~ 6 Weeks



Cardboard
~ 2 Months



Milk carton
~ 3 Months



Cotton T-Shirt
~ 1-5 Years



Cigarette butt
~ 10 Years



Plastic bag
~ 10-20 Years



Plastic Sandal
~ 50 Years



Rubber glove
~ 50 Years



Average life expectancy
in your country
~ 60-80 Years



Drink can
~ 200 Years



Spraying can
~ 200 Years



Plastic fish box
~ 400 Years



Plastic jerrycan
~ 400 Years



Plastic rope
~ 450 Years



Single use diaper
~ 450 Years



Plastic bottle
~ 450 Years



Fishing line
~ 600 Years



Fishing net
~ 650 Years



Glass bottle
undetermined,
probably >1000 Years