

Beach Litter - Abundance, Composition and Trends

MSFD Descriptor: 10 - Beach litter

MSFD Criterion: 10.1 - Characteristics of litter in the marine and coastal environment

Key Message Litter is abundant on beaches in the OSPAR Maritime Area. Plastic fragments, fishing-related litter and packaging are the most common types of litter found. Plastics comprise over 90% of items in some areas. There are no overall trends in the number of beach litter items recorded in the period 2009–2014



Background

OSPAR has a stated aim to ‘substantially reduce marine litter in the OSPAR Maritime Area to levels where the properties and quantities of marine litter do not cause harm to the coastal and marine environment’.

This indicator assessment describes the abundance and composition of beach litter in the OSPAR Maritime Area across 76 beaches in 2014/15, and trends in litter items that have been identified across 19 beaches in the period 2009–2014.

The abundance of marine litter in the OSPAR area provides information on the magnitude of litter pollution in adjacent waters and coastal areas, indicating spatial differences in litter pollution. The litter on a given beach may be generated locally at sea or on land, or may arrive from distant sources transported by rivers or ocean currents.

Beach litter composition gives an indication of the scale and magnitude of the problem, as well as the level of threat to the environment. Spatial differences in litter composition between survey sites indicate regional differences in sources.

Changes in composition and trends in the abundance of beach litter highlight where reduction measures are needed and, when implemented, the extent of their success.

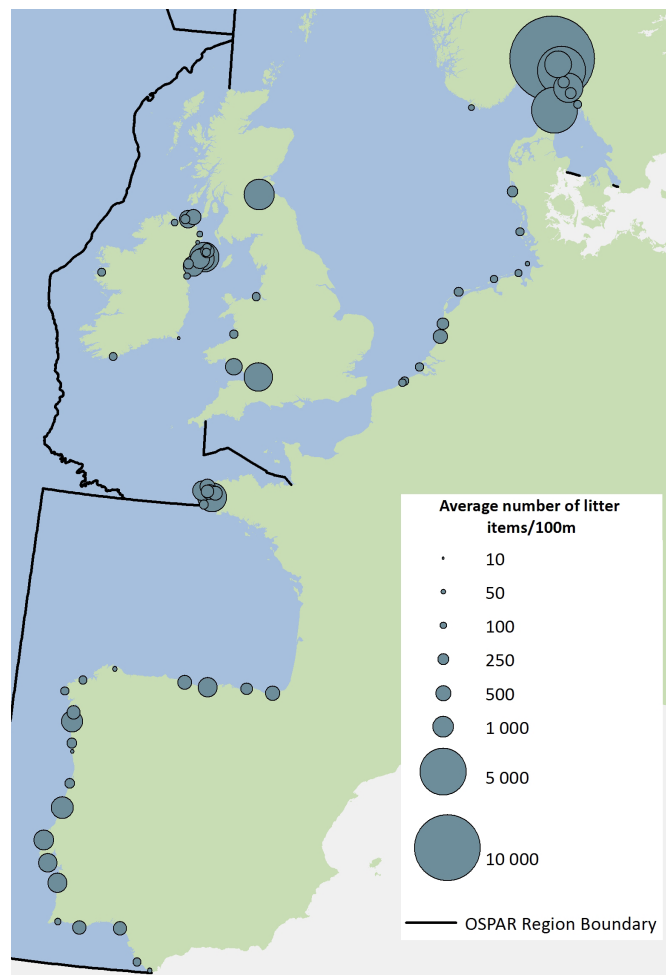


Figure 1: Average number of litter items per 100m for the period 2014-2015

Results

There are no overall trends in the abundance of beach litter items recorded in the OSPAR Maritime Area for the period 2009–2014. However significant decreasing trends, as well as increasing trends, could be identified for individual litter items on individual survey sites (such as on the north-western coast of Spain where the abundance of cotton bud sticks decreased by 12%).

The average total abundance of litter items per 100 m of coast varies widely in the OSPAR Maritime Area and within sub-regions. Values are presented for the period 2014–2015 (**Figure 1**), as longer data series were not available for the whole OSPAR Maritime Area. The averages were similar for survey sites in the southern North Sea (311), Celtic Seas (434) and Bay of Biscay / Iberian Coast (365), but an order of magnitude higher for the northern North Sea (mainly in the Skagerrak; 6090). However there was huge variation in abundance, both between sites and on individual sites, in the northern North Sea.

The majority of litter items were made of plastic or polystyrene (**Figure 2**). Across all OSPAR survey sites, plastic fragments are the most commonly found type of litter item, followed by packaging (food and drink), and fishing-related items (**Figure 3**). Packaging mainly consists of plastic items (including caps and lids, food containers, crisp / sweet packets / lolly sticks and plastic bags). Fishing-related items comprise nets and ropes and tangled nets / cord. Drinks bottles and containers are among the most recorded items at survey sites in all seas except the northern North Sea. All these items are considered harmful to the marine environment, due to their potential for entanglement, ingestion or injury.

Other items are also frequently recorded, especially on survey sites in the following regions:

- Cotton bud sticks in the Celtic Seas, Bay of Biscay / Iberian Coast and northern North Sea
- Cigarette butts in the Bay of Biscay / Iberian Coast
- Rubber balloons in the southern North Sea, northern North Sea, some survey sites in the Celtic Seas and one survey site on the Bay of Biscay / Iberian Coast
- Shotgun cartridges in the southern North Sea, northern North Sea and Celtic Seas

The abundance of these items indicates region-specific issues with wastewater outlets, smoking- and hunting-related litter, and public and private events where balloons are released.

There is moderate confidence in the methodology and data.

Marine litter composition by material

Bay of Biscay and Iberian Coast

Celtic Seas

Southern North Sea

Arctic Waters

Northern North Sea



Conclusion

The amount of litter recorded on survey sites in the OSPAR area shows litter pollution is common on the coastlines of the North-East Atlantic. The main litter types recorded are plastic fragments, packaging, and nets and ropes. There have been some significant changes in the amount of litter recorded on survey sites in the period 2009–2014, but no general trends across all survey sites. This does not yet meet the commitment in the North-East Atlantic Environment Strategy to “substantially reduce marine litter in the OSPAR Maritime Area to levels where properties and quantities of marine litter do not cause harm to the coastal and marine environment”.

The large numbers of litter items considered harmful due to the potential threat of entanglement, ingestion or injury indicate that litter pollution is a problem for the marine environment in the OSPAR Maritime area. This is in addition to the socio-economic harm that all litter items cause through, among others, lost revenue and the costs of beach litter cleaning.

The OSPAR Regional Action Plan identifies actions to reduce marine litter and should consequently lead to a reduction in litter on beaches. The increasing number of survey sites and surveys undertaken over the past few years will also improve knowledge of marine litter on the North-East Atlantic coast with regard to abundance, composition and especially future trends, if the monitoring effort is maintained.

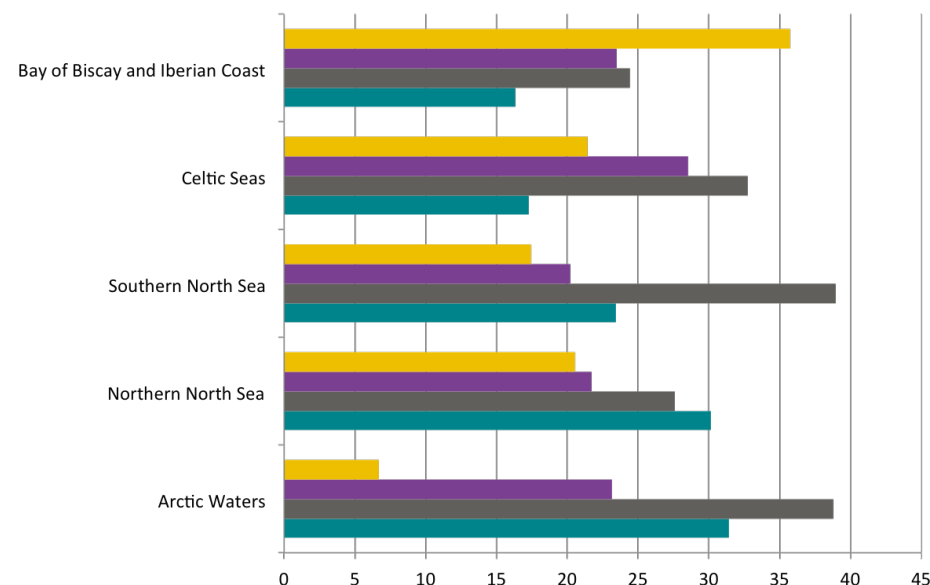


Figure 3: Composition of marine litter according to main litter types for the period 2014–2015 in the OSPAR Maritime Area

Figure 2: Composition of marine litter according to material / use categories for the period 2014–2015 in the OSPAR Maritime Area

Knowledge Gaps

Main sources of litter (e.g. fisheries) are apparent from the data; however a detailed identification of sources will require the allocation of the OSPAR items to sources at a regional level.

While it is well established that some types of litter can cause direct harm in the marine environment due to the threat of entanglement, ingestion or injury, there is still limited understanding of the harm caused by other types of litter which is the subject of ongoing studies and research.

Reference levels and baselines have not been defined for beach litter.