

FACTSHEET 2

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Source of marine litter

Litter may have travelled great distances from inland before it is transported to the coast and into oceans by wind, rivers and canals. On a global scale, 80 per cent of discharges are from land-based sources. Information on sources and pathways of marine litter is essential to identify operative, efficient and cost-effective measures to prevent and reduce inputs of litter to the marine environment.



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The following sources are considered the most common (Ökoinstitut 2011):

Sea (ocean)-based sources of marine litter (SSL)	Land-based sources of marine litter (LSL)
Waste from vessels <ul style="list-style-type: none"> • Merchant shipping (cargo, equipment, etc.) • Naval and research vessels • Private vessels (pleasure) • Public vessels (cruise liners, ferries) 	Individual actions <ul style="list-style-type: none"> • Littering in general (inland and coastal) • Littering caused by tourism (recreational visitors to the coast) • Events (e.g. charity, fly balloons)
Fishing activities <ul style="list-style-type: none"> • Fishing vessels • Abandoned, lost or otherwise discarded fishing gear (fishing nets, ropes and light sticks) • Aquaculture installations 	Facilities and construction <ul style="list-style-type: none"> • Industrial or manufacturing outfalls (e.g. by-products, plastic resin pellets) • Construction and demolition sites • Harbours (Seaport, commercial port, fishing port, ferry port etc.) • Ship-breaking yard • Agriculture activities
Other structures <ul style="list-style-type: none"> • Legal and illegal dumping at sea; • Offshore oil and gas platforms, and drilling rigs 	Municipalities <ul style="list-style-type: none"> • Litter and waste generated in coastal and inland zones from improper waste management • Wastes from dumpsites located on the coast or riverbanks • Untreated municipal sewerage
Transport of litter and waste <ul style="list-style-type: none"> • Natural events.(tsunamis, storm, strong sea) 	Transport of litter and waste (on land or on waterways) <ul style="list-style-type: none"> • Rivers and floodwaters; • Discharge from storm water drains / sewer; • Natural storm related events (e.g. mistral, tornadoes, hurricanes)

Source: Ökoinstitut 2012

Current data from the European Commission indicate that the following sources in particular are responsible for the discharge of plastic waste: rain water run-off, sewage system overflow especially after heavy rains, tourism, illegal deposition of waste into the landscape, industrial activity, improper transport of plastic pellets, cosmetic agents, plastic blasting agents used for cleaning ship hulls at shipyards, and polyacrylic fibres washed from clothing (COM(2013) 123 final). Findings are not consistent across Europe, however, and vary greatly depending on region.

Sources of marine litter in different marine regions:

- **North-East Atlantic:** Maritime activities - fishing, commercial shipping, ferries and cruise shipping, leisure boat traffic, offshore installations and aquaculture facilities - and land-based tourism account for about 40 per cent of waste input. Other sources include discharges from municipal waste through rivers and canals, and solid waste from industrial facilities, dumpsites or sewage systems near the coast.
- **Baltic Sea:** The majority of the finds can be traced to consumer waste, with a high share of household goods and equipment associated with tourism (including toiletries). Its input path is rivers and coastlines. The greatest sea-based source of input is the fishing industry.
- **Mediterranean Sea:** Land-based sources account for the majority: about 40-50 per cent of litter input owes to tourism, with volumes rising significantly during the holiday season. An estimated additional 40 per cent consists of household items (including toiletries). In addition to inputs from the fishing industry, cigarette butts are also present on a substantial scale along the Mediterranean.
- **Black Sea:** Relatively little data is available, and the results of investigations differ both regionally and locally. Some data points to municipal waste which is discharged in sewage, e.g. from poorly managed dumpsites, as a dominant factor. Next are inputs from maritime transport, ports and coastal tourism. Investigations at beaches near **Constanța** in Romania, however, indicate that the main local source of input is tourism (inland and coastal), followed by part-time fisheries. Many household items (including toiletries) are also found. Illegal fishing activities are also identified repeatedly as a major source.

Further literature

- *Issue Paper* of the Conference: <http://www.marine-litter-conference-berlin.info/downloads.php>
- ARCADIS (2013). Final report. Pilot project 4 seas: Case studies on the plastic cycle and its loopholes in the four European Regional seas areas. European Commission project. See also http://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/index_en.htm
- Bipro (2012): Pilot Project 'Study of the largest loopholes within the flow of packaging material'. Available at: <http://euccnews.wordpress.com/2013/02/19/improved-insight-on-marine-litter-in-the-europe-ec-releases-three-studies/>
- European Commission (COM(2013) 123 final). Green Paper on a European Strategy on Plastic Waste in the Environment: http://ec.europa.eu/environment/consultations/plastic_waste_en.htm
- JRC IES (eds.) (2011). Marine Litter - Technical Recommendations for the Implementation of MSFD Requirements. MSFD GES Technical Subgroup on Marine Litter: <http://publications.jrc.ec.europa.eu/repository/handle/111111111/22826>
- RPA (2013): Feasibility Study of Introducing Instruments to Prevent Littering. Available at: http://www.rpaltd.co.uk/documents/J767_DGEnvMarineLittering_FR_Publ_001.pdf
- Ökoinstitut (ed.) (2012). Study on Land-Sourced Litter in the Marine Environment - Review of sources and literature.

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