

A MARINE LITTER STRATEGY FOR SCOTLAND'S SEAS

marinescotland

Dr Marie Russell and David Mallon
Marine Scotland, Victoria Quay, Edinburgh, EH6 6QQ



BEACH LITTER - POLYSTYRENE AT ENTRANCE TO ABERDEEN HARBOUR



CONSUMER LITTER - COLLECTION OF DRINKS CANS 'CAUGHT' IN THE FIRTH OF CLYDE



FISHING LITTER - LOBSTER CREEL 'CAUGHT' IN THE MINCHES



ENTANGLEMENT - CRAB CAUGHT IN MONOFILAMENT LINE

Marine litter is defined as 'any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environments (UNEP, 2005).

Where does it come from?

When people think of marine litter, they tend to think of the litter that ends up on our beaches. It is a global problem, with ocean currents carrying litter across national boundaries. Around 20% comes from sea related activities and 80% is land-based. Most of the monitoring that has been done has been on beach litter and it is estimated that over 40% of beach litter can be attributed to litter discarded by the public.

What is it made of?

Marine litter can be classified as either plastics, glass, metal, wood, textiles, rubber or paper and cardboard. Beach and offshore litter surveys have shown that the dominant litter type is plastic.

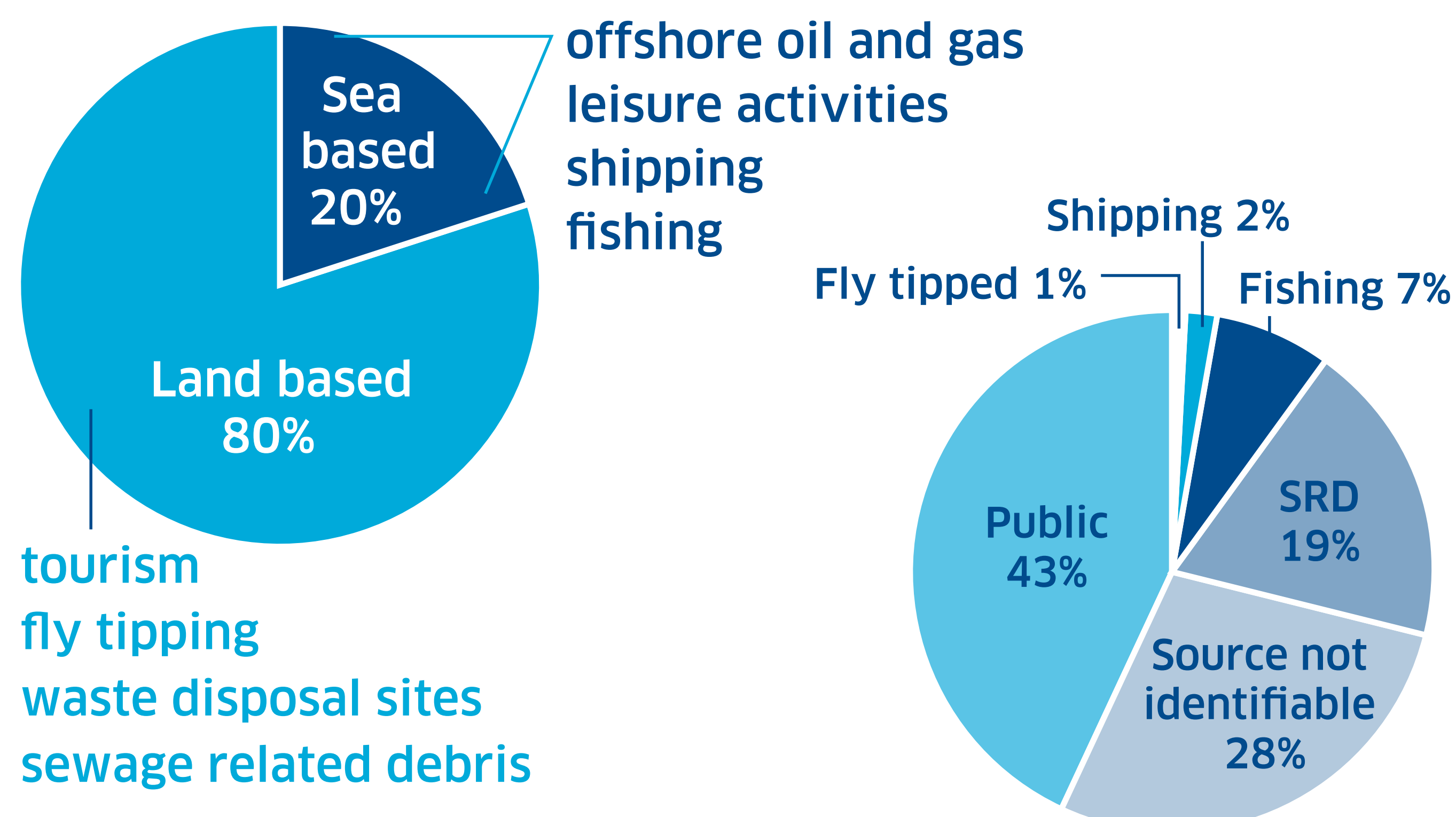
Why is it a problem?

Marine litter affects coastlines (see later), the water column and the seabed and poses a risk to a wide range of marine organisms, including seabirds, marine mammals and fish. Marine litter is found everywhere in the world's oceans, close to densely populated areas but also in remote areas, far from obvious sources (UNEP, 2005). A large proportion of marine litter is comprised of material that degrades very slowly, if at all. Plastics and polystyrene may take hundreds or thousands of years to degrade. It can cause harm:

- to wildlife through entanglement or ingestion
- to habitats through smothering of the seabed
- by acting as platform to invasive species by helping them to be transported around the globe

Sewage related debris can also be a health hazard. Lastly, there is an economic cost - cleaning beaches, freeing fouled propellers, cleaning power station intakes to name but a few.

SOURCES OF LITTER IN THE NORTH EAST ATLANTIC (OSPAR, 2009)



SOURCES OF LITTER ON SCOTLAND'S BEACHES (MCS)

Plastic and micro-plastic litter

The lifetime of a piece of plastic litter can range from 100s to 1000s of years. Plastic floats and therefore it can travel long distances in the ocean and is easily washed onto beaches. It's very possible that much of the plastic in our seas may not have originated from a Scottish source.

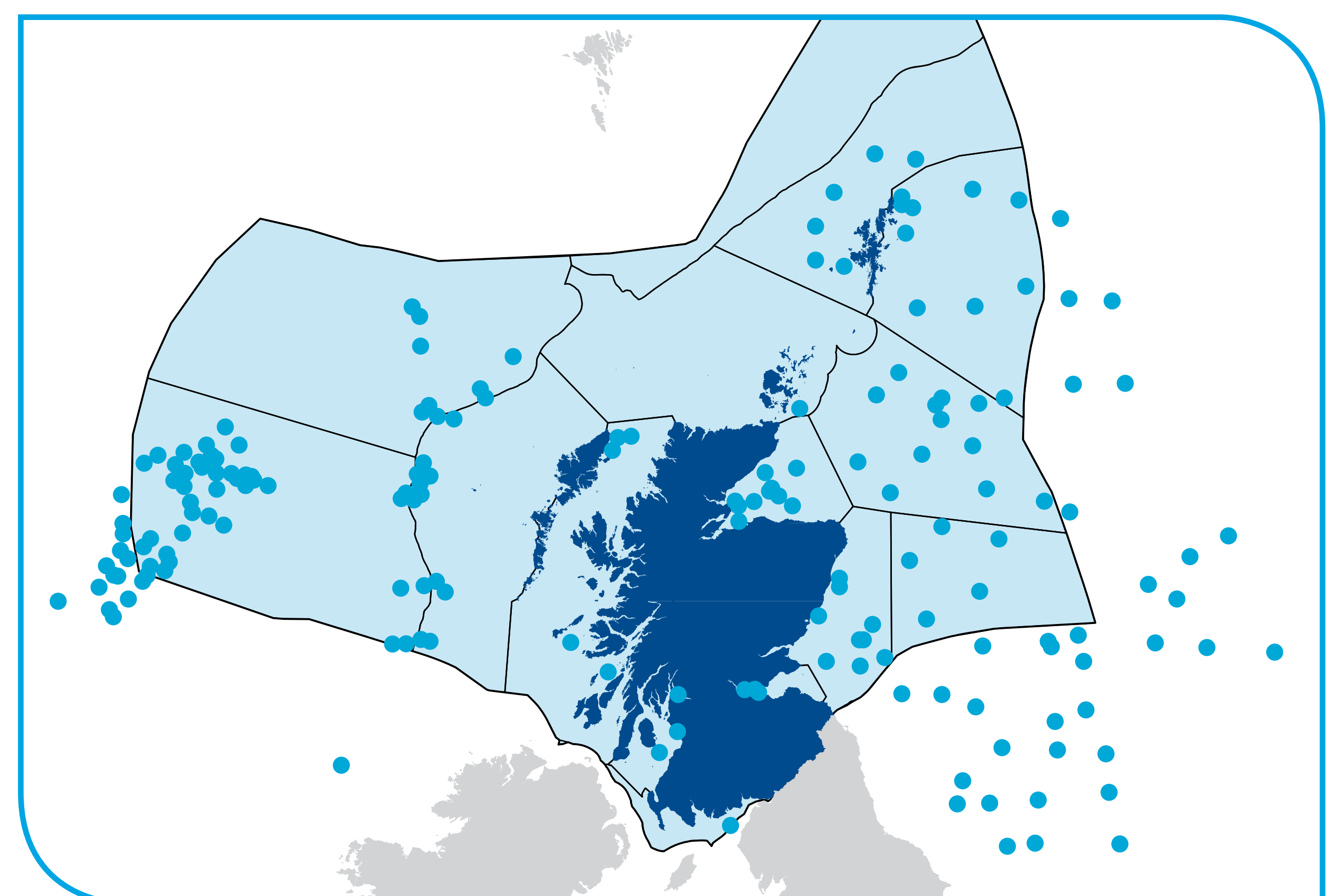
On average approximately 80% of beach litter is made up of plastics compared to around 32% on the seabed. Plastics are resistant to being degraded by chemicals but can be mechanically degraded by wave action. Microplastic litter (<5 mm in size and usually much smaller) is on the increase due to this mechanical degradation and it has the capacity to absorb, transport and release pollutants.

Marine Strategy Framework Directive - Descriptor 10 Marine Litter

The European Marine Strategy Framework Directive requires Member States to ensure that 'Properties and quantities of marine litter do not cause harm to the coastal and marine environments'. Marine Scotland is working towards this, with the development of Scotland's Marine Litter Strategy and monitoring of marine litter using Marine Scotland vessels and other initiatives.

MSS monitoring of litter

All litter brought on board Marine Scotland Science vessels (*Scotia* and *Alba na Mara*) is recorded and the litter is retained on board for disposal on return to port.



SITES MONITORED ON MSS CRUISES SINCE 2009

Fishing for litter Scotland

Fishing for litter is a simple idea which aims to reduce litter in the marine environment. Fishing vessels which have registered with the scheme are given bags to collect any litter from their normal trawling activities. KIMO (*Kommunenes Internasjonale Miljøorganisasjon* - who manage the scheme) arrange for full bags to be collected and weighed. 17 harbours and 162 vessels took part between 2008 and 2011, landing over 240 tonnes of litter.