East Grampian Beach Litter Surveys

In 2018 our marine litter project called Turning the Plastic Tide (TTPT), was set-up as a direct result of the volume of litter seen to be accumulating along the East Grampian coastline from Fraserburgh down to St Cyrus.

Sources of beach litter vary depending on area and can be regionally specific with certain items being more prevalent on some beaches more than others. Origins of litter include direct littering by the public, fishing (commercial and recreational), aquaculture, sewage, spills, and agriculture.

Types of litter also vary however an overwhelming trend is that litter composed of plastics is the most prevalent. The presence of plastics in the marine environment is not new and has been documented for over half a century, the rapid increase in the production and use of plastics in modern society, coupled with the inadequate management of the resulting waste means that plastic is now considered a geological marker of the Anthropocene.

In recent years there has been a vast increase in research, media coverage and public interest about the consequences of beach and marine litter, specifically in terms of plastics. A recent study[1] that looked at all entanglement and ingestion records for marine birds, mammals, turtles, fish and inverts showed that ingestion of marine debris had been reported for 701 species and entanglement for 354 species. The number of new records in different species particularly in terms of microplastic ingestion, is continuing to increase.

Some plastics can facilitate chemical transfer as they contain chemicals that leach out following ingestion. Plastic also has the potential to absorb chemical pollutants present in seawater and change ecologies by transporting biota, potentially invasive species attached to floating plastics.

In addition, there are of course also the human and socioeconomic impacts of beach and marine litter too, debris both on the beach and in the water can not only be unsightly and result in a reduction of recreation but also it can be a real public safety issue. Broken glass for example on the beach and in the water, ropes and nets which cause entanglement in marine species can also pose the same risk to swimmers, surfers, paddleboarders etc.

Thus since 2018 TTPT has been working to raise awareness of and take action to combat the harmful impacts of marine litter along the Grampian coastline. To date we have engaged with more than 3600 volunteers, worked with over 2500 young people, facilitated over 150 beach cleans and removed over 50 tonnes of rubbish from our beaches.

This year in order to gain a greater understanding of the types of litter being found on Northeast beaches, surveys have been undertaken prior to organized clean-ups, where numbers of litter items have been counted along a 100m stretch, following a comparable protocol and methodology to that used by OSPAR.

The table below shows the percentages of main litter types found on the surveyed beaches:

Site	Plastic	Rubber	Cloth	Paper	Wood	Metal	Glass	Pottery	Sanitary	Medical
Cruden Bay	94	3	1	0.5	0.2	1	0	0	0.3	0
Newburgh	94	2	0.2	0.1	0.1	3	0.2	0	0.4	0
Torry Battery	74.8	5	0.1	5	0.1	8	4	0	2	1
Craigewan	86.8	6	5	0.1	0.1	2	0	0	0	0
Fittie	98.5	0.1	0	0.3	0	1	0.1	0	0	0
Inverbervie	90.7	3	1	2	1	2	0.1	0.1	0.1	0
Kinnaird Head	73	5	2	10	2	5	3	0	0	0
Whinnyfold	91.9	1	0	0	1	2	2	0.1	2	0
Sandford Bay	90	6	2	0	0	1	0	0	1	0
Forvie NNR	84	7	3	1	0	1	0	0	3	1
Rattray head	83.5	5.5	4	0	2	2	1	0	2	0
Donmouth	82	2	1	4	1	3	2	0	4	1

References

1 Kuhn, S. and van Franeker, J.A. (2020). Quantitative overview of marine debris ingested by marine megafauna. Marine Pollution Bulletin
https://doi.org/10.1016/j.marpolbul.2019.110858