

Insight Article

Plastics floating to the surface - MARPOL Annex V enforcement

Pollution by plastic is earning media and governmental scrutiny.

Published 06 October 2009

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Increasing scrutiny

Over the years, attention has been focused on various areas of MARPOL besides oil pollution. Most recently, marine engine air emissions have occupied centre stage with governmental authorities.

However, a few years ago, the focus was a different one, namely Annex V of MARPOL, covering garbage from vessels, most particularly plastics. It would appear now that plastic is once again starting to earn some media and governmental scrutiny.

Garbage by its very nature is not an especially glamorous topic, but despite its banality, it constitutes a significant and highly visible form of marine pollution, and the regulations surrounding plastics disposal are now enforced around the world.

MARPOL Annex V

At the end of 2006, the implementation of MARPOL Annex V was pressed forward in the US with the Marine Debris Research, Prevention, and Reduction Act. The Act commissioned a report to be based on new research regarding plastics pollution, performed by the National Research Council. That report was issued in September 2008 and stated that its research indicated a widespread phenomenon: that birds, turtles and fish were ingesting small pieces of plastic, which they mistakenly believed to be food, causing digestive failure and eventually death. In fish samples from the northern Pacific area, almost 50 per cent of the stomach contents consisted of small bits of plastic, in what has become an “artificial plankton” of sorts, filling the stomachs of animals but providing no nutritional value whatsoever.

In vast areas of ocean, in zones that are subject to prevailing circular gyre currents over a large area, millions of pieces of floating plastics are trapped, creating huge rotating floating clumps of pieces of plastic. In the Pacific, one such “garbage patch” has been spotted over an area of five million square miles!

The PLASTIKI

In June 2008, science educator Marcus Eriksen and photographer Joel Paschal set sail on a journey from San Francisco on a raft made entirely of plastic bottles, arriving in Hawaii 88 days later, to demonstrate the problem of plastic pollution at sea. A more adventurous journey is planned to begin in 2009 by David de Rothschild, on a catamaran built entirely of plastic drink bottles and garbage sacks, christened the “PLASTIKI”, in an attempt to cross the Pacific Ocean to demonstrate the problem of global plastic pollution. One wonders what Thor Heyerdahl would have thought of such adventures. He would probably have endorsed the project, particularly since it has been announced that his granddaughter, Josian Heyerdahl, will be a member of the crew.

Criminal prosecution

Recently, Gard has experienced at least one case involving criminal prosecution by a US Attorney in California concerning allegations of the falsification of a ship's garbage record book, based on the unrecorded disposal of food scraps. The case involved the same issues faced in criminal prosecution cases concerning the Oil Record Book – in short, same story, just a different MARPOL Annex. Thus ship operators must be vigilant to the proper handling of plastics aboard, and be aware that infractions, even the seemingly low level act of disposing of food scraps in plastic garbage sacks, could possibly lead to criminal prosecution.

The problem of plastic pollution at sea is a serious one, and is capturing more media attention. By its very nature, being a floating and often colourful pollutant, plastic is highly visible and not only ends up in circular masses trapped in current vortices far out at sea, but much of it washes ashore, where it is spotted by the general public and enters the social discussion. The frustrating thing for the shipping community is that, while it is unfortunately true that a lot of the plastic pollution at sea is the flotsam and jetsam from ships, it is also true that most of the plastic pollution has its ultimate source from ashore – the by-product of runoff of coastal communities.¹ Thus while the shipping industry is the target of media and governmental attention, the main culprit may be the very shore-side communities that complain of ship-borne plastic pollution.

Footnotes

¹ The United Nations Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP) has estimated that land-based sources are responsible for up to 80 per cent of marine debris.

Anyone for plastic soup?

In its recent report “Marine Litter: A Global Challenge (2009)”, the United Nations Environment Programme (UNEP) identifies plastic as the most pervasive form of ocean litter, accounting for over 80 per cent of all rubbish collected in several of the regional seas assessed.¹Plastics can be mistaken as food by numerous animals, including marine mammals, birds, fish and turtles. Sea turtles in particular may confuse floating plastic bags with jellyfish, one of their favorite treats. In the North Sea, a survey found 94 per cent of fulmars had plastics in their stomachs – 34 pieces on average. But researchers at Plymouth University have recently uncovered worrying evidence that poisons attached to plastic waste in the sea are making their way up the food chain to reach humans. Consumption of contaminated seafood by humans is believed to cause serious health problems, ranging from infertility to cancer. This is how plastic discarded by humans seems to be getting inside humans:

- Plastic in the sea breaks up into microplastics, tiny particles that absorb oil-based pollutants present in the water, such as PCBs and DDT.
- Ocean-dwelling organisms, such as marine worms, fish and crab ingest these particles and absorb their chemicals.
- Run through your own mental food chain map and you will appreciate that the threat may be real.

Footnotes

1 The report is available online at: [www.unep.org/regionalseas/marinelitter/publications/docs/Marine Litter A Global Challenge.pdf](http://www.unep.org/regionalseas/marinelitter/publications/docs/Marine_Litter_A_Global_Challenge.pdf).

Gard News 195, August/October 2009

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Gard News is published quarterly by Gard AS, Arendal, Norway.

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