

Depth of plastic pollution in oceans revealed

February 27 2015, by David Stacey

Wind and waves can mix buoyant ocean plastics throughout the water column, but most of their mass remains at the sea surface, according to research led by The University of Western Australia.

PhD candidate Julia Reisser and her international team published the study in the journal *Biogeosciences*, reporting the first ever high-resolution vertical profiles of [plastic pollution](#) in the so-called "ocean garbage patches".

Most of the submerged plastics were very small - less than 1 mm across. Previous studies noticed that tiny plastics were missing from the oceans.

"We have shown that at least a fraction of this missing plastic is still adrift at sea, but at depths greater than the [surface](#) layer that is usually sampled by scientists," Ms Reisser said.

When the wind was stronger than 10 knots, more than half of the 0.5-1mm particles were underwater. But even when there was no wind, about 20 per cent of these little plastics were still below the surface.

By using a new measuring device called a Multi-level Trawl, the researchers were able to measure plastic concentrations in ten layers simultaneously, down to a depth of 5 meters.

While taking measurements in the North Atlantic Garbage Patch, the team demonstrated that the mass concentration of millimetre-sized plastics drops exponentially from the [sea surface](#) to deeper waters.

Boyan Slat, founder of the Ocean Cleanup Foundation and co-author of the study, said the results of the study are good news to those developing technologies to extract plastic from oceanic garbage patches.

"Almost all [plastic](#) was on or very close to the surface, meaning it's within reachable distances for a cleanup operation," Mr Slat said.

Provided by University of Western Australia

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