# Microplastics found in record concentrations deep in Mariana Trench, study reveals



Microplastics have been found in unprecedented locations, including the Mariana Trench, the deepest known part of the ocean, as reported by the Independent. A collaborative study involving researchers from four continents has revealed that these tiny plastic particles, measuring less than five millimetres, are more widespread than previously understood, existing not only at the ocean's surface but throughout all layers of oceanic depths.

The extensive research, published in the journal Nature, was conducted over a decade from 2014 to 2024 and involved data collection from 1,885 stations worldwide. This study confirms that microplastics, which are generated by the breakdown of larger plastic items, have permeated even the most remote areas of the planet.

At depths of approximately 22,000 feet in the Mariana Trench, scientists identified about 13,500 plastic particles per cubic metre. Shiye Zhao, a researcher at the Japan Agency for Marine-Earth Science and Technology, explained to El Pais that “due to their tiny size, small pieces sink very slowly and tend to distribute more evenly in the water column compared to larger macroplastics and microplastics.” This distribution means that microplastics remain suspended in the water for extended periods, heightening the chances of interaction with marine life.

The study not only highlights the alarming presence of microplastics in the ocean but also notes their role in the natural carbon cycles of marine environments. However, it concludes that these particles are "mostly irretrievable and persistent," contributing to long-term pollution challenges.

Prior research from 2020 indicated a steep increase in plastic debris entering the Atlantic Ocean, with estimates suggesting that the volume may be ten times higher than previously assumed. The implications of plastic pollution extend beyond marine ecosystems, as the presence of microplastics has been detected in various environments, including drinking water and even the air.

Increasingly, scientific investigations are linking these microplastic particles to health issues in humans. A study conducted by researchers at Zhejiang Agriculture and Forestry University in China found correlations between the presence of microplastics in human organs and serious health conditions, such as lesions and certain cancers. Although this investigation does not definitively establish causation, it underscores concerns about the health implications associated with microplastic exposure.

Overall, while the research provides critical insights into the ubiquity of microplastics and their potential impact on both environmental and human health, the full consequences of this pollution are yet to be fully understood. As scientists work to grasp the underlying dynamics of this pervasive issue, there remains a pressing need for ongoing research and monitoring.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.nationalgeographic.com/environment/article/microplastic-pollution-is-found-in-deep-sea> - This article discusses a study that found microplastics in large quantities in the deepest parts of the oceans, including the Mariana Trench, confirming their widespread presence beyond the ocean's surface.
* <https://www.reuters.com/business/healthcare-pharmaceuticals/plastic-lodged-arteries-may-be-linked-higher-risk-heart-disease-death-2024-03-06/> - This study found that microscopic plastic particles in human arteries are associated with a higher risk of heart disease, stroke, and death, highlighting the health implications of microplastic exposure.
* <https://www.theguardian.com/environment/2020/aug/17/microplastic-particles-discovered-in-human-organs> - This research detected microplastic particles in human organs, including the lungs, liver, spleen, and kidneys, indicating that these particles have permeated even the most remote areas of the planet.
* <https://www.sciencenews.org/article/microplastics-human-bodies-health-risks> - This article highlights the detection of microplastics in human bodies, including blood, lungs, and placental tissues, underscoring the pervasive nature of microplastic pollution.
* <https://www.ft.com/content/2433de36-778e-4422-9d56-9fc2d4bcd983> - This article discusses the potential health risks associated with microplastics, noting that while studies have found microplastics in human bodies, the full health implications are still being investigated.
* <https://www.nationalgeographic.com/environment/article/microplastic-pollution-is-found-in-deep-sea> - This article discusses a study that found microplastics in large quantities in the deepest parts of the oceans, including the Mariana Trench, confirming their widespread presence beyond the ocean's surface.
* <https://www.independent.co.uk/world/microplastics-mariana-trench-nature-journal-b2743703.html> - Please view link - unable to able to access data