

80% OF MARINE DEBRIS IN THE MEDITERRANEAN CAUSED BY TOURISM



An international study by the Autonomous University of Barcelona warns that tourism is responsible for 80% of marine debris found on the beaches of the Mediterranean islands during the summer.

Researchers from the Institute of Environmental Science and Technology of the Autonomous University of Barcelona (ICTA-UAB) warn of the impact of the current tourism model on the Mediterranean islands and the human-created waste on the beaches. **Experts recommend taking advantage of the current situation caused by the COVID-19 pandemic to redesign a new and more sustainable model.**

The research, published in the journal *Scientific Reports*, shows that the recreational use of Mediterranean island beaches in summer is responsible for up to 80% of the marine debris. This problem generates large amounts of microplastics due to fragmentation of larger items.

The study analyzed the effects of waste created by tourism on eight islands in the Mediterranean during the last four years. Marine debris, including microplastics, can be defined as any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environments. It is the result of human activity and can be found in all oceans and seas of the world.

“This environmental problem is threatening the health of marine ecosystems and can lead to the loss of biodiversity. It can also have huge economic impacts for coastal towns that depend on ecosystem services by increasing spending on beach cleaning, public health and waste disposal,” says Michaël Grelaud, ICTA-UAB researcher and co-author of the publication.

Each year, the Mediterranean region welcomes about a third of world tourism and is particularly affected by environmental pollution caused by this activity. Due to their attractiveness, the Mediterranean islands can even see twenty times their population during the high season. This represents a challenge for coastal towns that rely on this industry, having to adapt and cope with the increase in waste, especially on the beaches, due to the seasonal influx of tourists. In fact, coastal tourism is expected to be one of the main land-based sources of marine debris.

The researchers distinguished the amount and type of waste collected in 147 studies conducted during the high and low tourist season of 2017 on 24 beaches of 8 different Mediterranean islands. The results show that the vast majority of the waste is made of plastic, accounting for more than 94% of marine debris.

During the summer, the most visited beaches accumulate on average 330 items for every 1,000 square meters of beach a day, 5.7 times more than in low season. This represents waste per every three steps with 65% of the marine debris on the beaches being made up of cigarette stubs, plastic straws, and beverage cans.

This data can increase up to 80% if larger microplastics are included, as disposed of plastic items fragment under the combined effects of solar radiation and friction with sand, and it is accelerated by the high number of visitors.

Taking into account all the islands in the Mediterranean, the results show that **the current tourism model could be responsible for more than 40 million waste items per day during the peak of July and August.**

In 2019, and after the implementation of various public awareness campaigns, the results showed a decrease of more than 50% in waste caused by visitors.

“These encouraging results are likely to benefit from increased public attention to plastic pollution in the oceans or from measures taken by the European Commission to reduce marine trash, such as the single-use plastic ban,” says Patrizia Ziveri, ICREA research professor at ICTA-UAB and co-author of the publication.

In addition, the researchers remind that the COVID-19 confinement measures and the drastic but temporary slowdown in tourism “offer an opportunity to rethink the fundamental importance of sustainable tourism to guarantee a healthy future for the environment and, therefore, for people as well”, says Ziveri.

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