




Ocean Pollution, a Global Environmental Crisis Worsened by Covid-19

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Why Micro-Plastics?

A Plastic Bag's Journey

Non-point source pollution stem from the recollection of pollutants and debris in the land through runoff, as a result of everyday human activities.

Although this terminology applies most commonly to soil pollutants and pesticides, pollutants also include plastic products and waste.

According to the National Oceanic and Atmospheric Administration, "Eighty percent of pollution into the marine ecosystems comes from the land, more specifically from Non-point source pollution."



Why Micro-plastics are the worst type of Plastic Pollution

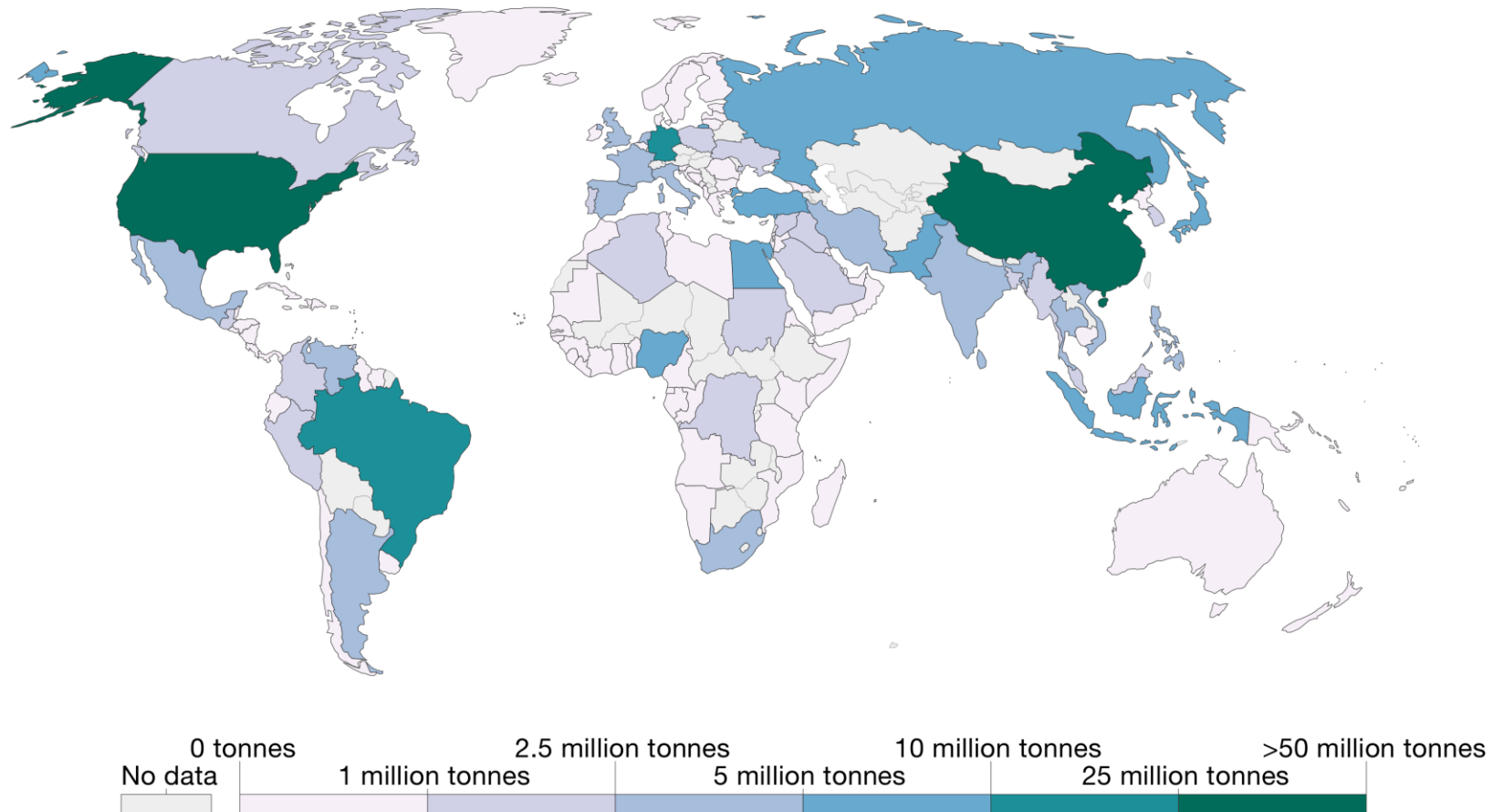
- Microplastics are small particles of plastics that are less than 5mm in diameter.
- Primary sources include micro beads, resin pellets, and fibers
- Secondary sources form by the degradation of larger plastic products such as plastic bags and water bottles

According to the WWF, "The energy required to produce and transport plastic water bottles could fuel an estimated 1.5 million cars for a year, yet approximately 75% of water bottles are not recycled- they end up in landfills, litter roadsides, and pollute waterways and oceans."



Plastic waste generation, 2010

Total plastic waste generation by country, measured in tonnes per year. This measures total plastic waste generation prior to management and therefore does not represent the quantity of plastic at risk of polluting waterways, rivers and the ocean environment. High-income countries typically have well-managed waste streams and therefore low levels of plastic pollution to external environments.



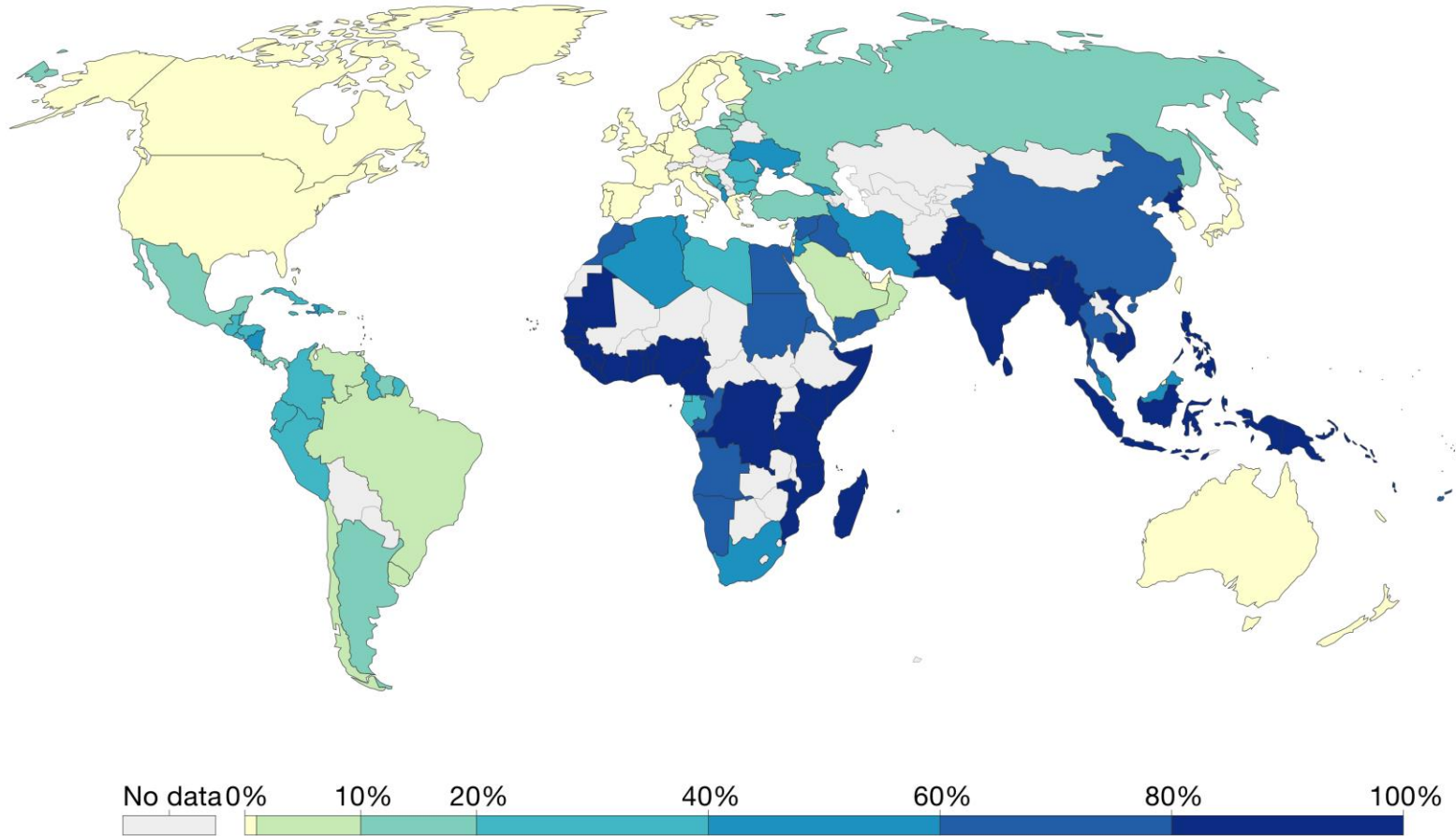
Source: OWID based on Jambeck et al. (2015) & World Bank

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Share of plastic waste that is inadequately managed, 2010

Our World
in Data

Inadequately disposed waste is not formally managed and includes disposal in dumps or open, uncontrolled landfills, where it is not fully contained. Inadequately managed waste has high risk of polluting rivers and oceans.



Source: Jambeck et al. (2015)

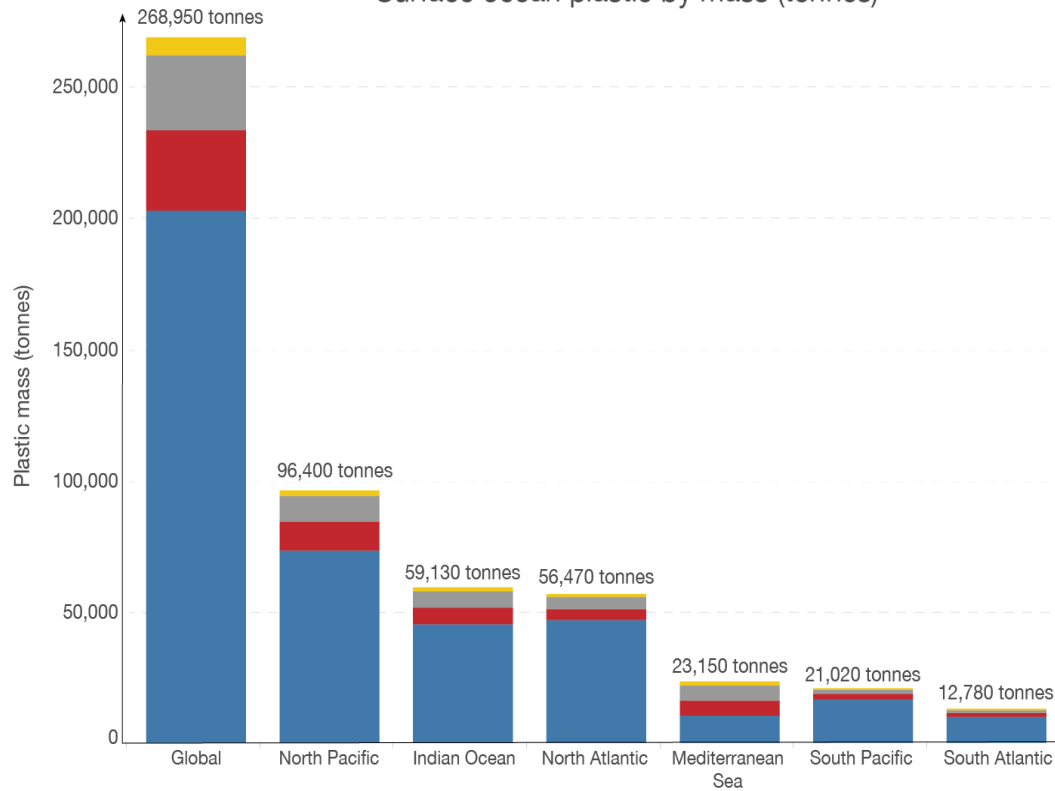
Note: This does not include 'littered' plastic waste, which is approximately 2% of total waste.

OurWorldInData.org/plastic-pollution • CC BY

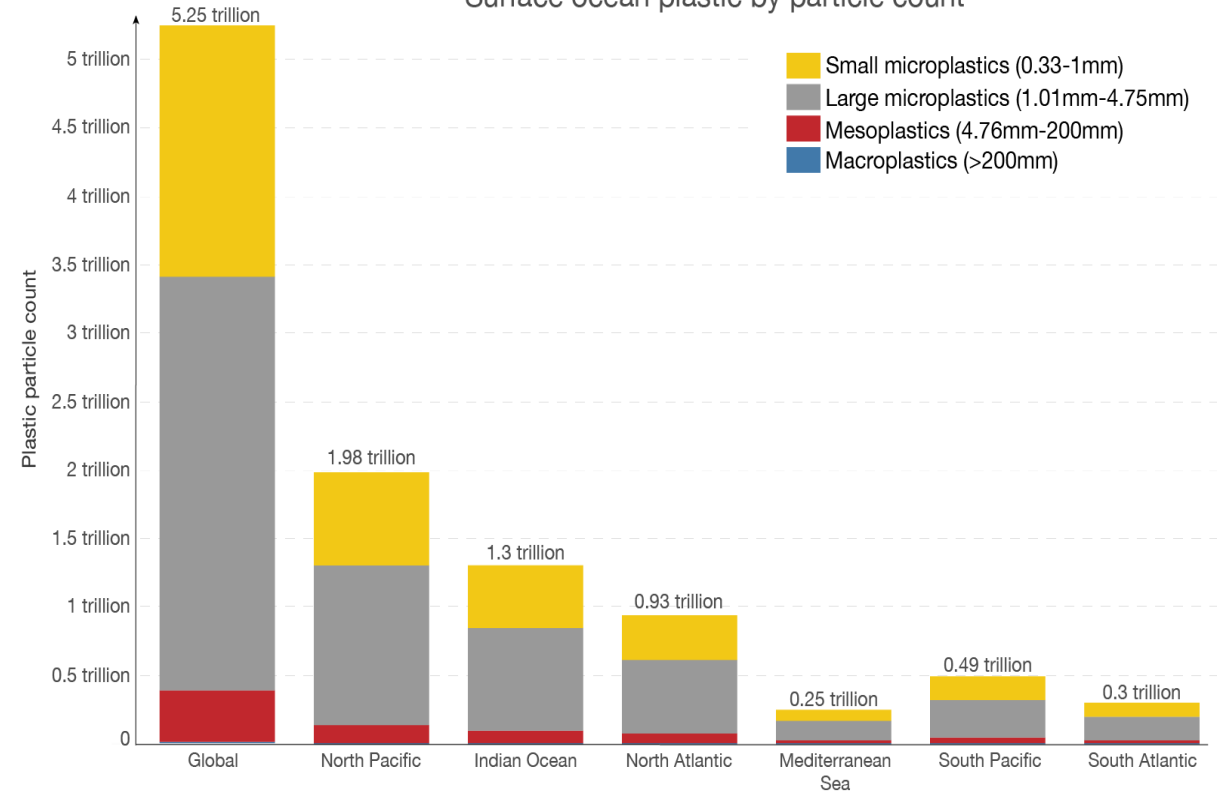
Plastic mass and particles across the world's surface oceans

Estimates of global plastic across the world's surface ocean waters. This is differentiated by ocean basin, with breakdown by ocean particle size. Figures are presented by mass (left) and total particle count (right). Plastic mass in surface ocean waters are dominated by large plastics (macroplastics), but by particle count are dominated by microplastics.

Surface ocean plastic by mass (tonnes)



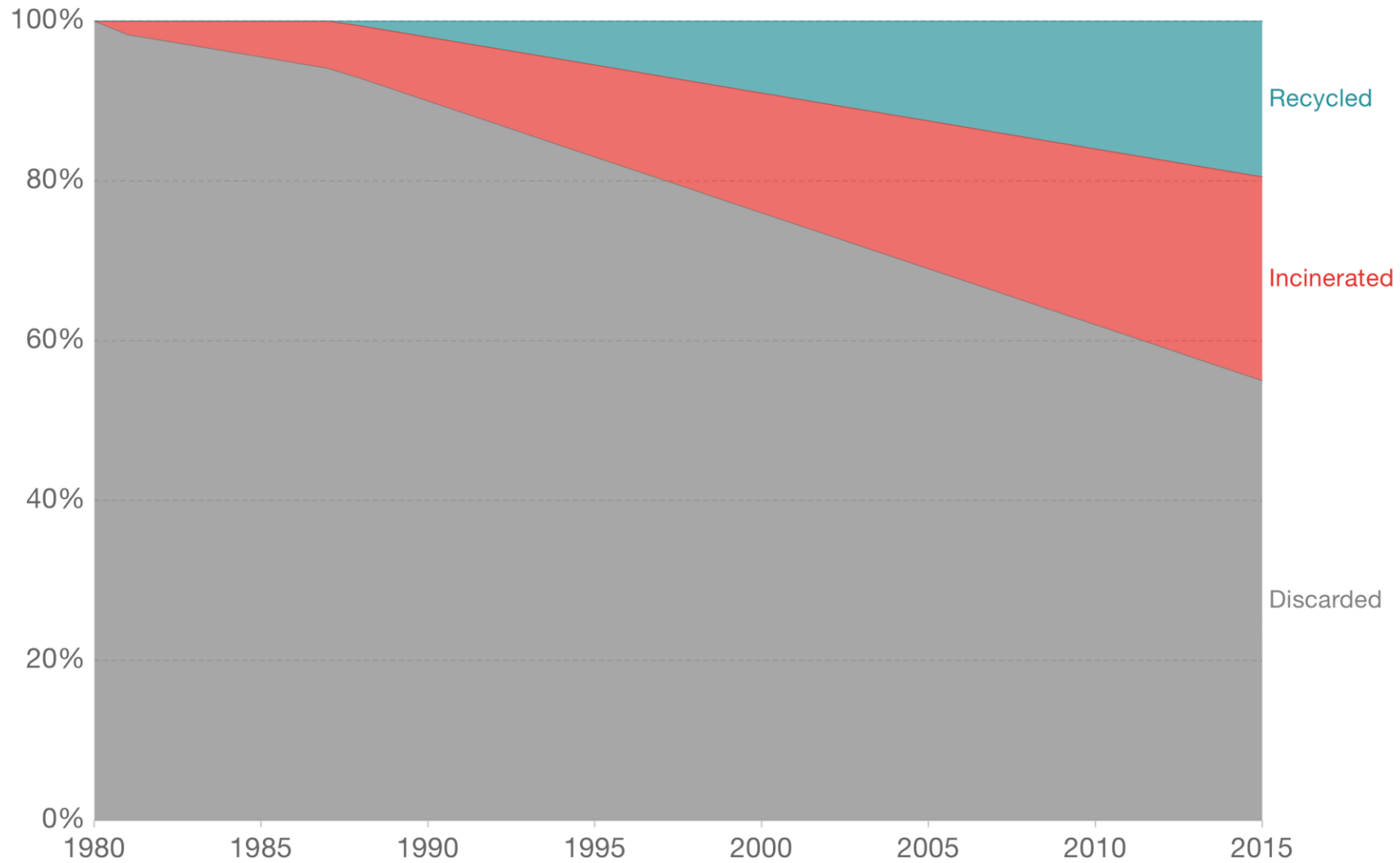
Surface ocean plastic by particle count



Source: based on Eriksen et al. (2014). Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. This is a visualization from [OurWorldinData.org](https://ourworldindata.org), where you find data and research on how the world is changing.

Global plastic waste by disposal, 1980 to 2015

Estimated share of global plastic waste by disposal method.



Source: Geyer et al. (2017)

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How Covid-19 Worsened Plastic Pollution

- With the increase demand for protective gear (PPE) such as face masks and gloves, the progress made to stop plastic pollution is digressing.
- Governments and corporations worldwide have had to sacrifice sustainable practices for the health of the community.
- Funding cuts on recycling and waste-management systems critically impacts the developing world and our waterways as it leads to open dumping.



Doing the same is not an option

ANNUAL REPORT 2018

Global Action

- In 2018, the Puertorican organization, para la Naturaleza reported 2,000 pounds of trash and debris removed by volunteers in a single day.
- Para la Naturaleza joined with the Segarra Boerman Foundation to identify illegal clandestine landfills and develop a proper work plan.
- With eight other local organizations, supported non-profit “Olita”, whom established the first surfing reserve in the Caribbean, in preserving eight kilometers of coastlines on the West side of the island.

para la
Naturaleza

Clandestine
landfills



Puerto Rico's Plastic Problem

- The consumer-driven population in Puerto Rico does not meet the demands needed to alleviate the ongoing plastic problem.
- The neglected San Juan Estuary, beaches, and waterways therefore become a major problem for public and ecologic health.



Action in Greece

First evidence of ingested plastics in stranded loggerhead sea turtles along the Greek coastline, East Mediterranean Sea

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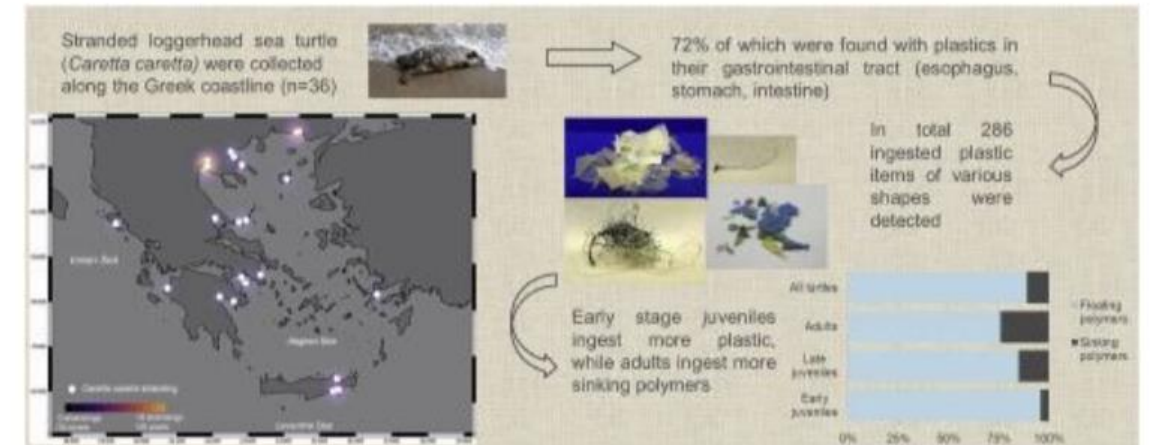
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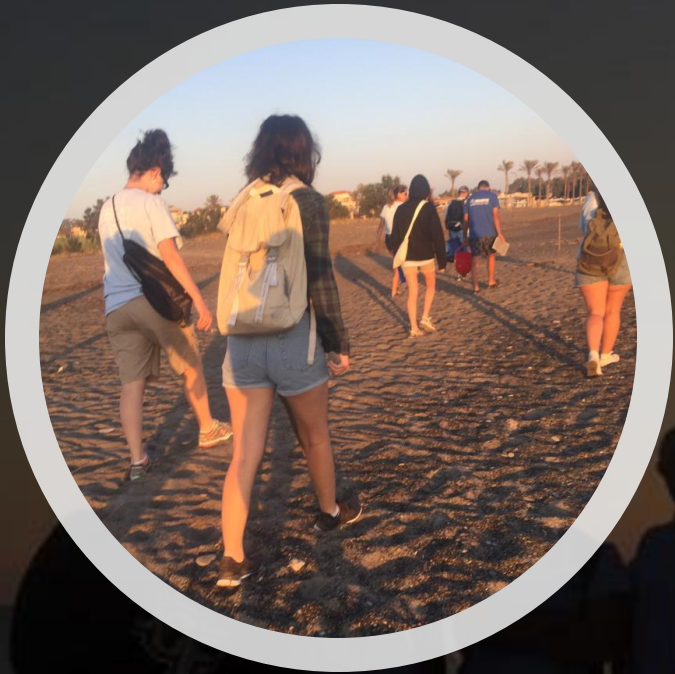
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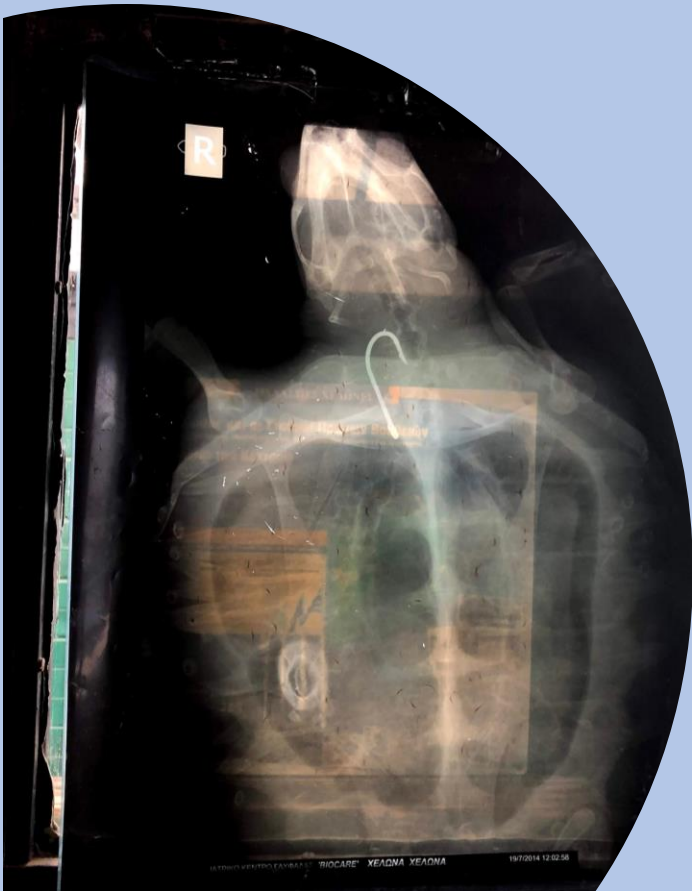
Abstract

Plastic debris has become a major threat for the marine environment and wildlife. Sea turtles in particular suffer from plastic ingestion at global scale; however information in Greek waters is still absent. In this study, 36 dead loggerhead turtles (*Caretta caretta*) were collected from the Greek coastline area and their gastrointestinal content was analysed for ingested plastic. Twenty-six individuals (72%) were found as having ingested plastic, with an average of 7.94 ± 3.85 (SE) plastics per turtle. In total 286 plastic pieces were counted and categorised by size, shape, colour, and polymer type. Fourier Transform Infrared Spectrometry revealed polypropylene and polyethylene as the dominant polymer plastic types. Variation in plastic ingestion among life stages of the loggerhead specimens was shown. The results of this study provide first evidence of plastic pollution in loggerhead turtles in the Greek waters.





- Volunteering with Archelon in Athens and Naxos Greece





Service Learning in Orlando Florida



What you can do to help

- Supporting companies who use recycled materials and work in a waste free environment such as For-Days.
- By eliminating single use plastics, such as straws, take a way containers, plastic cutlery, etc. we can cut down plastic production by 40%.
- Participating in beach cleanups, independently or with an organization.
- Using reusable products whenever possible.
- Be mindful of waste management.
- Support non-profits and organizations such as Wildlife over Waste, Debris Free oceans and the Sea Turtle Preservation Society



1-5 years

80-100 years

500 years to forever

2-6 weeks

Some polystyrene takes 500 years to biodegrade... and some never does.

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