

Green Enough

Module 1.4 Marine Litter

Green Enough: Educational program to raise ecological behaviour through an inclusive methodology using Augmented Reality Technology

2022-1-EL01-KA220-ADU-000086368

Module 1.4 Learning Objectives

By the end of this module trainees will be able to:

- Demonstrate the ability to understand the main sources of marine litter (L07)
- Demonstrate the ability to understand the main impacts of marine litter (L08)

Learning Outcomes	Knowledge	Skills	Competences
L07: Demonstrate the ability to understand the main sources of marine litter	List products that could contribute to the issue of marine litter	Identify the main sources of marine litter	Explain how different streams of litter can end up in the marine environment
L08: Demonstrate the ability to understand the main impacts of marine litter	Define the main issues caused by marine litter	Identify incidents where marine litter is a threat to marine life	Assess the impacts of marine litter on human and marine life

1.4.1 What is Marine Litter?



**SOLID WASTE
PRODUCED BY HUMAN
ACTIVITY**



ON SEA OR LAND



**DISCARDED ON PURPOSE
OR ACCIDENTALLY**



**ENDS UP IN THE MARINE
ENVIRONMENT**



Pescara Coast, Italy (after a storm)



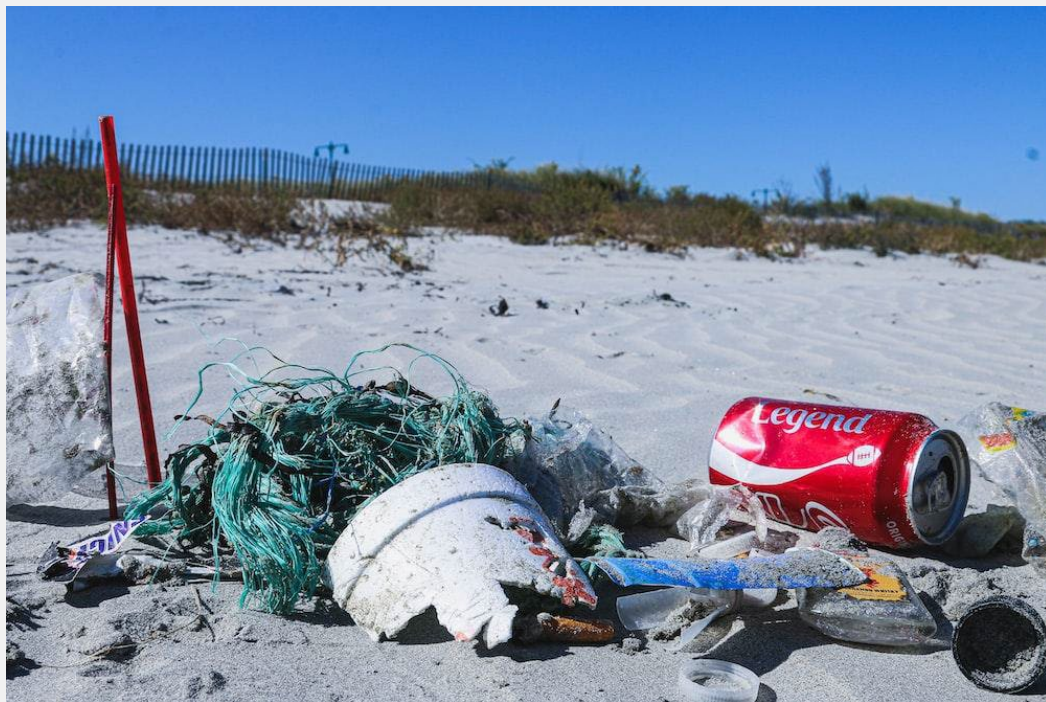
Saida Landfill, Lebanon

3 main types of Marine Litter



1. Floating marine litter

- highly visible
- made up of more buoyant items



2. Marine litter on beaches

Usually left by visitors or
washed up from the sea



3. Seabed Marine Litter

- cannot see them easily
- heavier objects that sink to the bottom

1.4.2 What are the main sources of marine litter?

Where does marine litter come from?

80%

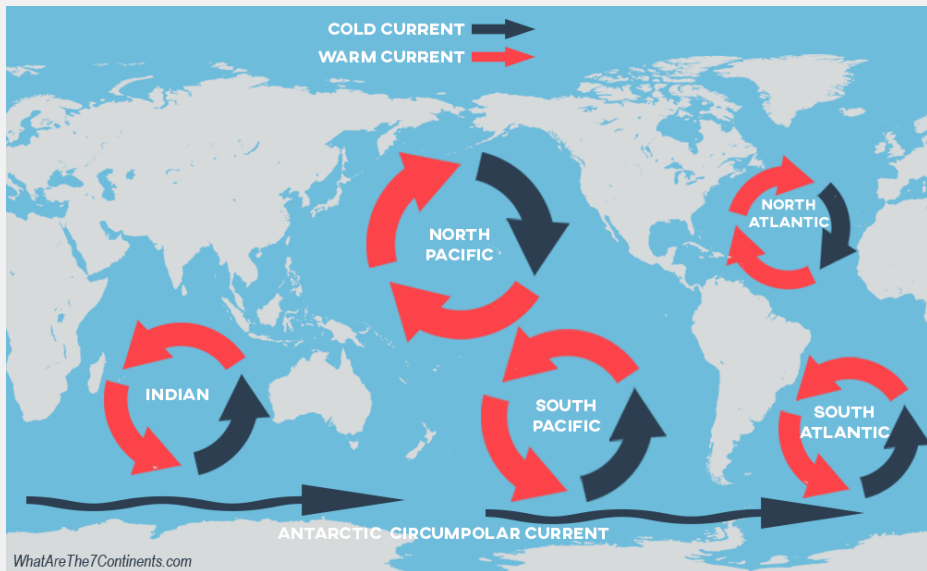
of all marine litter
originates from
land-based sources



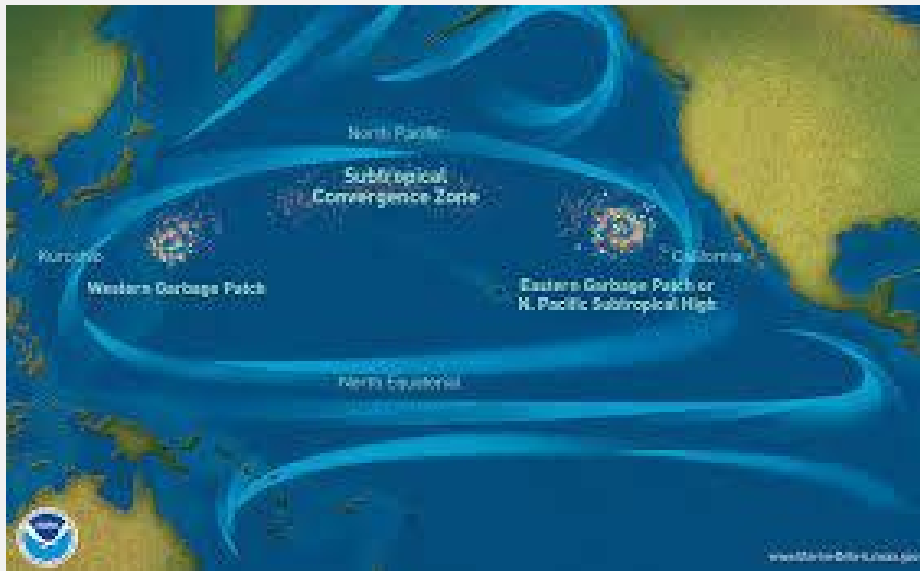


What does each
number show?

Once litter ends up in the ocean it can get moved along by currents



The 5 gyres (circular ocean currents)



Areas of litter collection

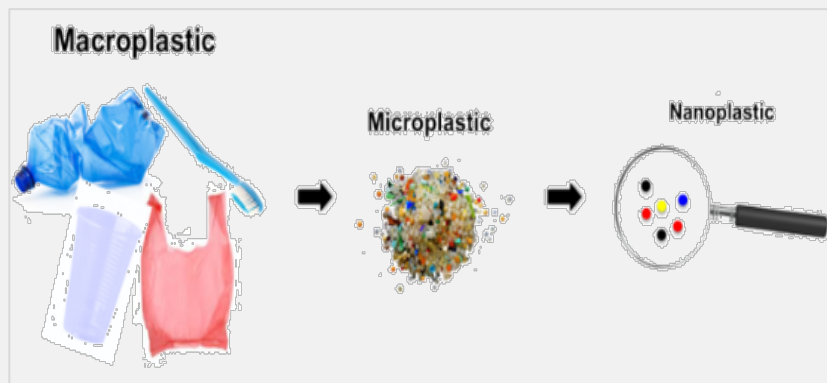
How long does it take for plastic to decompose in the sea?



Macroplastics & Microplastics

Macroplastics > 0.5 cm in their largest dimension

Microplastics < 0.5 cm in their largest dimension



How are Microplastics produced?

- **Primary:** released in the environment as small particulates
- **Secondary:** generated from degradation of plastic items into smaller fragments

1.4.3 What are the impacts of marine litter?

Financial Impact

* Annual damage cost estimated at 229 bn US, by 2030.

- loss of fish stock
- beach cleanup costs (coastal municipalities)
- damages to fishing vessels

Impact on Human Health

Microplastics and accumulation of pollutants

Various substances added to plastics during production.



Plastics attract pollutants found in water.



Microplastics are ingested by marine wildlife.



Humans at the top of the food chain.



WHAT GOES IN THE OCEAN GOES IN YOU.

RECENT STUDIES ESTIMATE THAT FISH OFF THE WEST COAST INGEST
OVER 12,000 TONS OF PLASTIC A YEAR. FIND OUT HOW YOU CAN HELP
TURN THE TIDE ON PLASTIC POLLUTION AT WWW.SURFRIDER.ORG/RAP



SURFRIDER and the SURFRIDER LOGO are registered service marks of Surfrider Foundation.
Copyright © 2011 Surfrider Foundation. All rights reserved.
"Rise Above Plastics" is a trademark of Rise Above Plastics. All rights reserved.
Surfrider Foundation, 400 West Street, San Francisco, CA 94111-4209
Surfrider.org | 415.774.6339

What we put in the ocean
can end up coming back
to us!



Ingestion

Plastic pellets
look like fish
eggs

Suffocation

Floating plastic
bags and
balloons look
like jelly fish

Starvation

To put this into perspective...



scaled to
human size
60 g

Fulmar
0.6 g

Entrapment



Ghost Fishing*

* when fishing items such as nets are lost/ discarded



Invasive species



Habitat damage



2022-1-EL01-KA220-
ADU-000086368



1.4.4 What can you do about it?

- Use a trash can with a **lid**.
- Opt for a **reusable water bottle**.
- Participate/organise **beach clean-ups**.
- Use an **ashtray**.
- Sort and **recycle** your waste.
- Always carry a **reusable shopping bag** with you.
- Participate/organise an **awareness-raising** campaign for clean beaches.
- **Voice your concerns!** (e.g., to legislators, packaging companies)

References

- Jambeck et al., 2015
- Clean Coasts, 'Ocean Plastics: What's the Problem', <https://cleancoasts.org/marine-litter/#sources>

Thank you!