# **Plastic on the Move: How Ocean Currents Spread Pollution Across Ecosystems**

North Paci

gyre

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## A Sea of Microplastics

Most ocean plastic vanishes beneath the surface, with just 5% floating in subtropical gyres [3]; Nicro- and nanoplastics linger in the sea, silently impacting marine life at every level [4]

Microplastics have been found over 3,000 meters deep in the ocean, potentially threatening deepsea species and disrupting vital carbon cycling processes [7]

### **Microorganisms:**

Marine plastics may serve as energy sources for microorganisms that degrade polymers, potentially affecting plastic degradation, buoyancy, and toxicity [5].

### **Transport of marine invasive spiecies:**

- Marine plastics can serve as rafts for invasive marine organisms. Plastics bouyancy makes it possible for organisms to travel long distances, possibly spreading to new areas.
- Over 70 species have been documented of traveling on marine plastic. [9]



214.1

#### "Garbage patches" of macroplastics

Due to gyre systems, floating marine debris could accumulate by wind stress, resulting in such patches. The eastern patch is created due to wind stress curl, by anticyclonic surface currents. Western patch in result of oceanic and wind driven forces [10].

ndian Ocean gyre

Microplastic concentration Kilograms per square kilometre

Surface current

South Pacific

gyre



2 RESPONSIBLE CONSUMPTION

AND PRODUCTION



Accumulates in coastal areas

- Ocean currents carry waste from local and distant sources [1].
- Coastal wildlife at risk of ingesting plastic or becoming entangled [2].
- Fish = key vectors in the vertical and horizontal movement of plastics within marine ecosystems [6].

South Atlantic

North Atlantic



**13** CLIMATE ACTION

BELOW WATER