

Project brief

The GPML Risk & Warning System for Macroplastic Litter



Lack of data on plastic pollution in rivers is a major challenge when designing interventions to tackle marine litter. The Global Partnership for Marine Litter (GPML) early warning system combines field-site data on plastic load with a state-of-the-art plastic flow model to help map where the plastic problem is, where it originates, and how it will change in the upcoming 9 months.

BACKGROUND

An estimated 70-80 percent of marine plastic originates on land. Despite this, most marine pollution reduction initiatives are restricted to the marine environment. With research showing that most land-based plastic reaches the ocean via 1,000 rivers, river interventions will be indispensable to achieving a significant reduction of marine litter.



PROJECT APPROACH

The GPML early risk and warning system builds on DHI's state-of-the-art Global Hydrological Model, coupled with data on mismanaged waste. This plastic transport model accounts for plastic transported from land into a river, and from rivers into the ocean. Plastic load and transport in rivers can be forecast 9 months into the future, and the results are calculated for 870,00 locations worldwide.

PARTNERS

- UNEP Freshwater Ecosystems Unit
- Global Partnership for Marine Litter

OBJECTIVES

Understanding, monitoring, and forecasting river macroplastic flows.

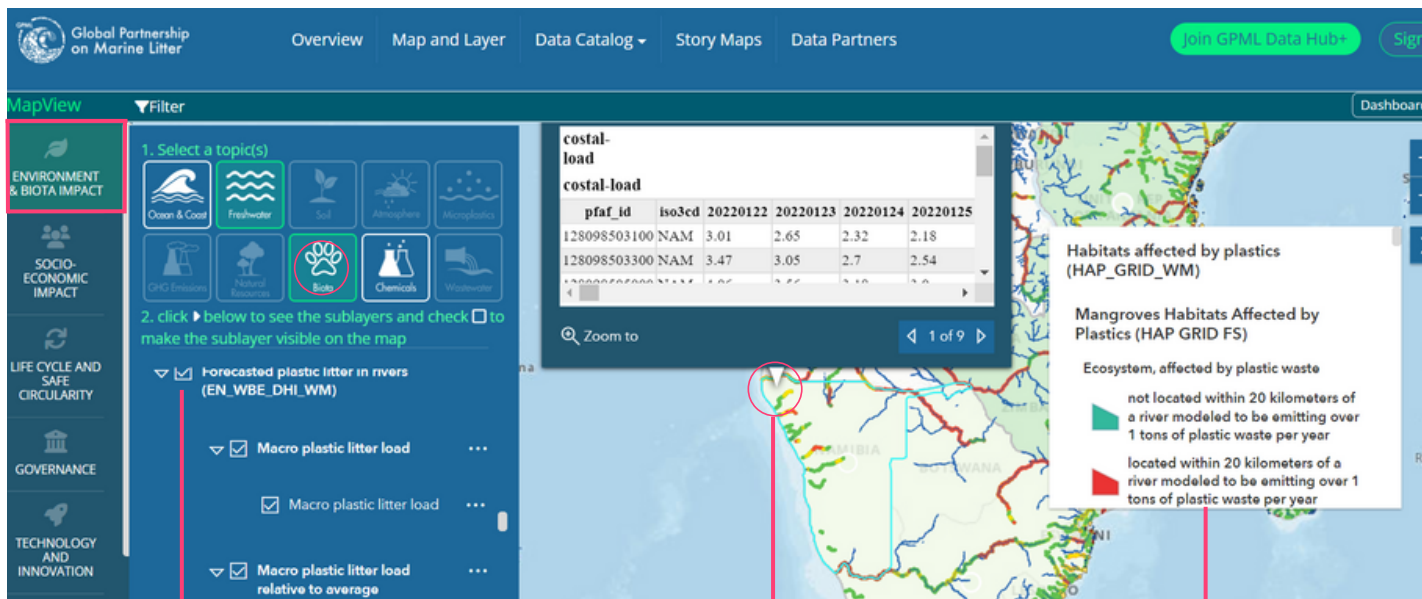
APPLICATIONS

The spacial visualization of macroplastic litter provided by the model and its unique forecasting capabilities allow you to plan interventions at the right time and place to capture plastic before it reaches the ocean.

SDG ACTION



HOW IT WORKS



1. Plastic load can be visualized in tonnes per day, or relative to the average load at a specific point.

2. Simply click on a point to view a 9 month plastic load forecast for it.

3. Analyze and compare the plastic load with any other data layer on the Data Hub Platform, in this case with mangrove habitats affected by plastics.

DATASETS

Estimates of mismanaged plastic waste are provided by leading research organizations in the field, including UN-Habitat, the University of Leeds, and the University of Florida. Field site data on plastic load are provided by The Ocean Cleanup.



KEY RESOURCES

[UNEP GPML Warning for plastic litter in rivers](#)

[GPML Data Hub](#)

[Global Hydrological Model](#)

[Video tour of the GPML Risk & Warning System](#)

CONTACT

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