

**SCHLOSS
BENRATH**

Sonderausstellung

From 28 August 2026 in the Museum of Natural History

MICROPLASTICS IN THE RHINE

THE LONG JOURNEY OF
TINY PLASTIC PARTICLES



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Dive into the world of microplastics! Through six virtual reality journeys, we make visible how plastic is omnipresent in our daily lives: we clean with it, wear it as clothing, eat from it, and even apply it to our skin. But what happens to plastic when we throw it away or wash it down the drain?

In this new thematic exhibition, you can follow the journey of these tiny plastic particles virtually – from your home all the way to the Rhine, where a large portion of them eventually ends up.

The exhibition is a collaboration with De Bastei Museum in Nijmegen, the Netherlands. It is funded in part by the EU Interreg project “*The Rhine Connects*”.

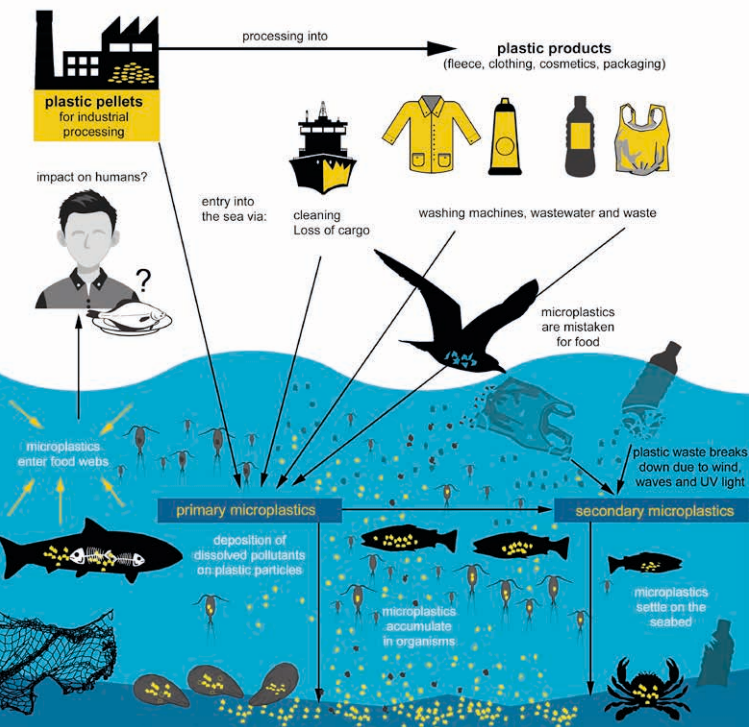
PLASTIC POLLUTION IN THE RHINE

Plastic entering the sea via rivers like the Rhine is a major environmental problem. It ultimately reaches the North Sea and contributes to the formation of so-called “plastic carpets.”

A new dimension of this problem is microplastic: all plastic particles smaller than 5 millimetres. Many of these particles are so tiny that they are invisible to us. They float in the air, drift in the water, and are thus ingested by animals and humans. Inside our bodies, they accumulate in organs, can even be detected in the bloodstream, and thus pose a risk to human health.

The microplastics found in rivers like the Rhine come from many different sources: tire abrasion, the decomposition of plastic waste, and synthetic fibers, for example.

Microplastics – and how they end up in our waters





Within the framework of the “The Rhine Connects” project, various investigations on microplastic pollution in the Rhine were carried out between 2023 and 2025. Wet wipes proved to be a particular problem and source of microplastic, as they consist not of biodegradable cellulose but of plastic-based fleece. While cellulose wipes decompose completely after ten weeks in the river, wet wipes remain fully intact even after 42 weeks.

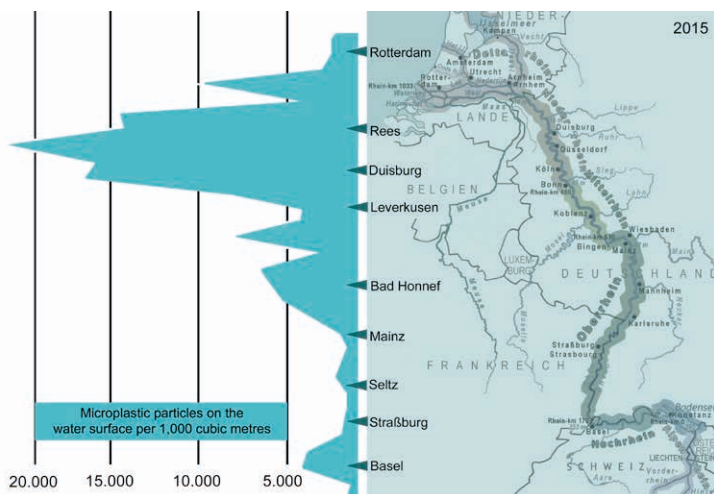
Field studies conducted in the Rhine and during regular “clean-up days,” when large amounts of plastic waste are collected, showed the following results:

- Foil and packaging from snacks, sweets, chips, and cigarettes are the most common types of plastic waste.
- In Germany, plastic debris tends to be larger on average than in the Netherlands.
- Some of the plastic found in the Netherlands originates in Germany, but there is also significant domestic pollution.
- More plastic washes up on the left bank of the Rhine due to the current.
- High water levels and heavy rainfall significantly increase the amount of plastic in the river. The most frequently found material is “unidentifiable plastic,” followed by packaging from food and cigarettes.
- The main source of plastics is litter from streets that enters the river through the sewer system. There are also indications that a considerable amount of plastic waste is discharged from ships.

WHY STUDY PLASTIC WASTE?

The findings from these investigations help us better understand where the Rhine's plastic pollution originates, how it spreads, and which measures could effectively reduce it in the future.

Concentration of microplastics in the Rhine



EVERYONE CAN HELP STOP THE PLASTIC TIDE!

During *Rhine Clean Ups*—large-scale clean-up campaigns—the river is regularly cleared of plastic waste and litter. Volunteers, school classes, and company teams join forces from the river's source to its mouth to remove waste, preventing it from reaching the Rhine and the North Sea. Many of these actions are organized and supported by the “The Rhine Connects” project.



THE RHINE CONNECTS

Within “The Rhine Connects” project, ten German and Dutch partners have been working together for four years to make the Rhine a healthy, green, and vibrant river. This exhibition is part of the subproject “Living Rhine”, which aims to strengthen the connection between the river, nature, and people through information, communication, education, and participation.

Another subproject, “The Healthy Rhine,” contributes to solving various challenges: reducing environmental pollution caused by plastic waste, decreasing fish injuries caused by shipping, and reintroducing migratory fish.

Microplastics polluting the Rhine

Plastic entering the sea via rivers is only a fraction of the problem. The largest amount of plastic in the sea comes directly from the coasts.

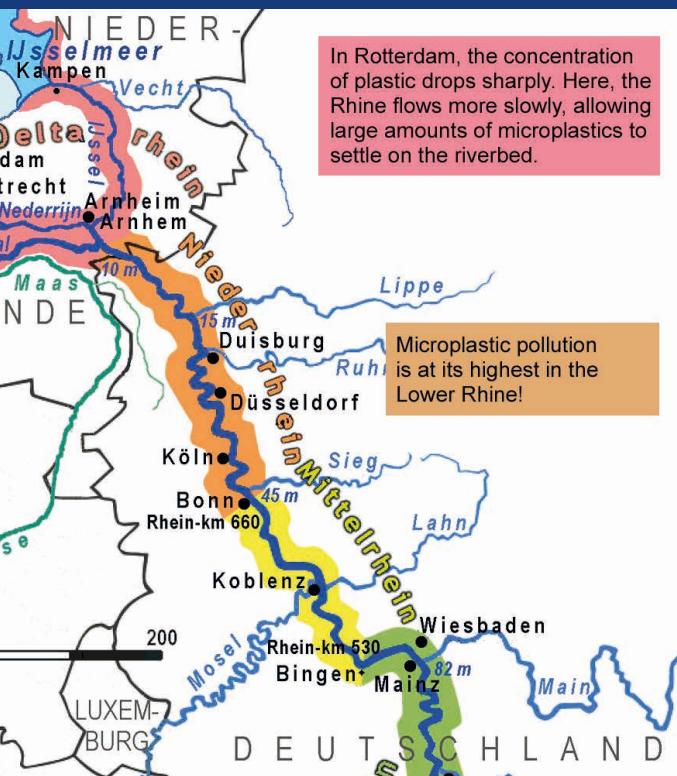
The amount of plastic entering the North Sea from the Rhine varies and depends on rainfall and flooding.

In the densely populated Ruhr region, large amounts of microplastics end up in the river. An average of 2.9 million particles per cubic metre.

Between **4.8** and **12.7 million** tonnes of plastic waste are washed into the seas via rivers every year.



Plastic pollution in the Rhine is a growing and alarming problem that affects not only the river and its ecosystems but also the surrounding environment and human health. Through this subproject, we are gaining new insights into the sources of plastic waste in the Rhine and identifying potential solutions. The results are shared with politicians, administrators, recreational providers, ship operators, fishers, residents, and other stakeholders—and incorporated into the development of innovative strategies to protect the river.



THE INTERREG PROJECT

Through Interreg, the EU funds specific projects to strengthen border regions. In the project “The Rhine Connects,” German and Dutch organizations are collaborating from 2022 to 2026 to promote a healthy Rhine. The subproject “The Healthy Rhine” addresses plastic waste, fish injuries caused by shipping, and the reintroduction of migratory fish.

MORE FISH IN THE RHINE

The Rhine is an important habitat for migratory fish. The “The Healthy Rhine” project aims to increase the number of migratory fish. To this end, migration routes are being studied and juvenile fish are being released. With the exception of the European Sturgeon, all migratory fish species have returned to the Rhine. Juvenile Sturgeons are being released with transmitters to establish a new population.

Adresse

Stiftung Schloss und Park Benrath
Benrather Schloßallee 100-108
40597 Düsseldorf

Tickets

Online und im
Museumsshop
*Online and in the
Museum Shop*

www.schloss-benrath.de

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In cooperation with:



De Rijn Verbindt
Der Rhein Verbindet

Ministerium für Wirtschaft,
Industrie, Klimaschutz und Energie
des Landes Nordrhein-Westfalen



Further information on the project:
www.derrheinverbindet.de

