The French water pollution challenge

FRANCE

Anna Besse - Emma Engelvin - Geoffrey Lesguillier - Juliette Lesné

"By 2050, there will be more plastic than fish in the oceans," according to a UN report.
France, the biggest polluter of plastic waste around the Mediterranean, is particularly affected by this issue. Indeed, the country owns the second largest exclusive economic zone due to its numerous overseas territories and the mainland is bordered by four different seas : the Atlantic Ocean, the Mediterranean , the North Sea and the English Channel. Besides, mass tourism on the coasts and poor waste management are also explanations for France's low ranking.
This is why public authorities and associations are exerting themselves to try and find solutions to counter this scourge.

The French waters represent

3,2%

of the Earth surface

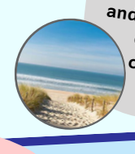
The effect of marine pollution on French waters

The English Channel

On the coastline of Trélévern and Trévou-Tréguignec, in the **Côtes-d'Armor** region of Brittany, plastic balls are regularly found in the sea. These are **paraffin balls** used by ships to clean chemical tanks. The paraffin dilutes and becomes entangled in the marine fauna, **endangering** birds and other animals.

Atlantic ocean

In Anglet (Pyrénées-Atlantiques), on the beach of La **Barre**, **plastic** and **polystyrene** represent **94.5%** of the 10,884 waste items collected during sampling.



Metropolitan territory

Mediterranean

One of the **most polluted seas** in the world. It is a semi-enclosed sea, which creates a very dangerous level of plastic concentration : there is 4 times more plastic than in the Pacific plastic continent. It is nicknamed the **"plastic sea"** : plastic makes up 95% of the waste on the beaches and surface of the Mediterranean Sea. Although France accounts for only 1% of marine waters, it produces **7% of the world's microplastic waste**.

Rivers and lakes

Waste is originally transported by rivers. Thus the **Lake of Geneva** between France and Switzerland is reportedly **as much polluted as the Mediterranean**. Researchers found that the number of microplastics in the rivers was close to that found in the sediments of ocean beaches.

Clipperton

For a few years, the landscape of Clipperton Island has turned into a **nightmare**. Beaches have been massively covered by plastic pollution thrown by **marine stream**. Clipperton is situated not far from the **North Pacific ocean gyre** indeed. Pollution is greatly disturbing ecosystems and bird species such as the ***fou brun*** and the ***fou masqué*** which are reportedly **nesting with plastic**.

French Polynesia

The Polynesian atolls are facing marine plastic pollution to a great extent. According to a study conducted by the **French Research Institute for the Sea Exploitation**, 21% of a fish sample of Moorea Island had ingested microplastics. **Pearl oyster** is particularly threatened as it may filter **up to 25 liters of water per hour**. In three studied lagoons, between **0.3 and 21.5 microplastics per gram of wet oyster flesh** was found, whereas these lagoons did not bear many human activities.

French West Indies

Since 2011, the **Sargasso seaweed** has piled up every year on the French Caribbean Islands (Martinique, Guadeloupe, Saint-Martin, Saint-Barthélémy). Depending on the time of exposure, the gas emitted by the seaweed may be **harmful for human beings**. Even though we have not enough hindsight yet, **deforestation** and **fertilizer** thrown in American continental rivers are likely to be among the factors thought to be driving the growth.

French Guiana

French Guiana is home to an important **illegal gold panning** which pollutes the Amazonian rivers. Actually, pollution is most precisely due to **mercury** used by miners to extract gold. Polluted waters flow into the Atlantic Ocean and damage the habitat of the fragile **Guiana dolphin**. This species is now on the **IUCN red list**, and nor is it the single one.

New Caledonia

New Caledonia **seabirds** such as the ***sterne huppée*** are particularly affected by plastic pollution. These birds usually **mistake** plastic debris for prey. Sometimes, they may even suffer from strangulation. Scientists estimate that the New Caledonian seabird population **fell by figures between 2% and 4%** .

Why is waste so harmful?

Waste takes a long time to disappear...

Plastic bottle : **480 years** to photodegrade

Disposable nappy : **500 years**

...then it is ingested by aquatic animals...

Plastics end up **in the stomachs** of marine birds and animals like turtles and seals that chance to **eat it**. For example, **seabirds** bite floating pieces of plastic which they mistake for food.

As for the **turtles**, they unfortunately confuse plastics with the jellyfish they usually feed on. This affects about **660 species.**

Plastic turns into a real **chemical "bomb"** that is **deadly** for the animals that ingest it. For example, plastic waste clogs the intestines of birds until they can no longer feed themselves. A recent survey found that **more than a quarter of seabird deaths** were linked to **plastic consumption.**

This affects the following generations : a significant amount of micro-plastics gets caught in the **algae** that are the main food source for baby turtles.

Plastic releases **endocrine disruptors** into the sea water which cause **fertility problems** in animals and thus contribute to **the disappearance** of many species.

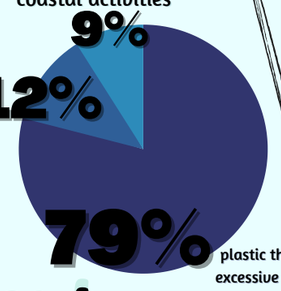
...and it ends up on our plates

This has negative consequences for human health :

- We throw away the microplastics in **our cosmetics and plastic bottles**. They are eaten by fish. Then, if we continue **the food chain**, we eat what they eat : **plastic** !
- We also ingest plastic **directly from our products and packaging.**

Microplastics are **carcinogenic** and act as **highly toxic endocrine disruptors**

Where does pollution come from ?



- **Bad waste management :** leakage from landfills, illegal dumping or improper waste disposal and improper disposal of apparently harmless cosmetics
- **Mass tourism :** the use of beaches by **tourists** increases the amount of plastic waste on the coast and in the oceans. In France, 200 plastic bottles are sold every second, especially during the holidays. This means that almost **9 billion litres of bottled water** are consumed every year. This places France among the top 5 countries in terms of plastic bottle consumption, behind countries such as Mexico and Thailand which do not have access to drinking water.

The French action to address the issue of pollution

legislation by the government

THE END OF SINGLE-USE PLASTIC

The October 2017 law sets a goal of **ending the marketing of single-use plastic packaging by 2040.** Since 2020, plastic bags have been banned so are straws, cotton buds and there is a growing limitation of plastic water bottles.

NATIONAL STRATEGY: THE 3 Rs REDUCTION REUSE RECYCLING

France aims to achieve a reduction target, a reuse target and a recycling target which are set by decree for the 2021-2025 period by finding **alternatives to plastic**. If this is not possible, plastic must be **recyclable** or **reusable**.

BEGINNING OF A CIRCULAR ECONOMY

To reduce the use of plastic, France requires supermarkets of more than 400m² to offer 20% of their sales in **reusable containers** by 2030. This is called the development of **bulk buying** in supermarkets.

civic commitment

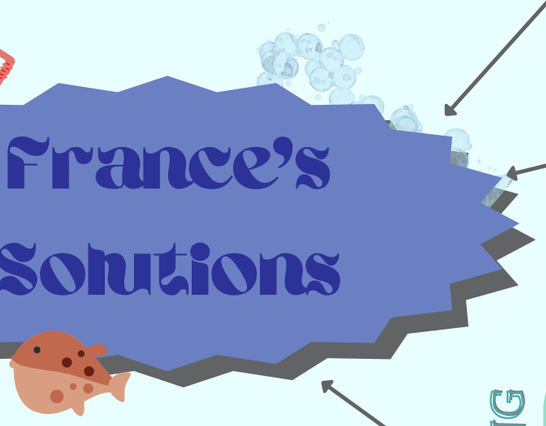
RAISING AWARENESS

WHAT? *"Dieux du sale", a bold and ecological calendar.* The French association, Wings of the Ocean has reappropriated the codes of the charming calendar by featuring **naked activists** in the middle of marine plastic waste.
HOW? By using art and nudity to raise the awareness about marine plastic pollution. The aim is to popularize their messages to **make people aware** of the need to act.
WHERE? In the Bassin de Berre to the West of **Marseille.**

CLEANING

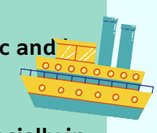
WHAT ? *Cleanwalk, a concrete action.* On your own or with others, **pick up waste** on the beaches, while enjoying the walk, you will understand directly the need to use plastic sensibly. You don't have to be a politician or an expert to prevent plastic pollution, everyone can get involved, and these cleanwalks are proof of that. The eponymous association has counted nearly **2130 such events** in France since 2019, a testimony to citizens' lively commitment to this issue.
HOW? By collecting waste accumulated on the shore.
WHERE? Everywhere.

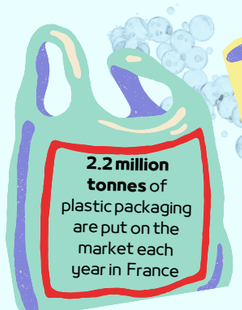
France's Solutions



RECYCLING

WHAT? *Plastic Odyssey, an ecological and social development project.* A **three-year maritime expedition** to tackle plastic pollution. Instead of cleaning up the oceans directly, their odyssey aims to reduce plastic pollution at its source by working upstream with local populations on solutions to prevent land-based waste from ending up in the sea.
HOW? 1) By **raising public awareness** of the need to reduce the use of plastic and supporting the emergence of sustainable local recycling initiatives
2) By **transforming non-recyclable plastics into energy** for ship.
WHERE? A French boat that will travel to the least developed countries especially in coastal cities in Africa, South America and Asia.





2.2 million tonnes of plastic packaging are put on the market each year in France

Every minute, 19 tons of plastic are dumped into the ocean, the equivalent of a **garbage truck**

APHG · fneg · CNFG Comité National Français de Géographie · Royal Geographical Society with IBG · iGeo PARIS 2022