EEB
European
Environmental
Bureau

Mapping PFAS in fish across 7 Member States

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Who are we?

The EEB is **Europe's largest network of environmental citizens' organisations** – and the only one to work on such a broad range of issues.

Our over **180 members** from **41 countries** have more than 30 million individual supporters.

We have **50 years of EU environmental policy expertise**.

Our work areas

- Climate
- Circular Economy
- Nature
- Economic Transition
- European Institutions and Governance
- Global and Regional Policies
- Health and Environment
- Environmental Law and Justice

Introduction

Mapping PFAS in fish

Overview

- PFOS concentrations in inland and coastal fish reported by seven EU Member States was obtained

- **Geographical scope**: Austria, France, Germany, Italy, Poland, Spain and Sweden

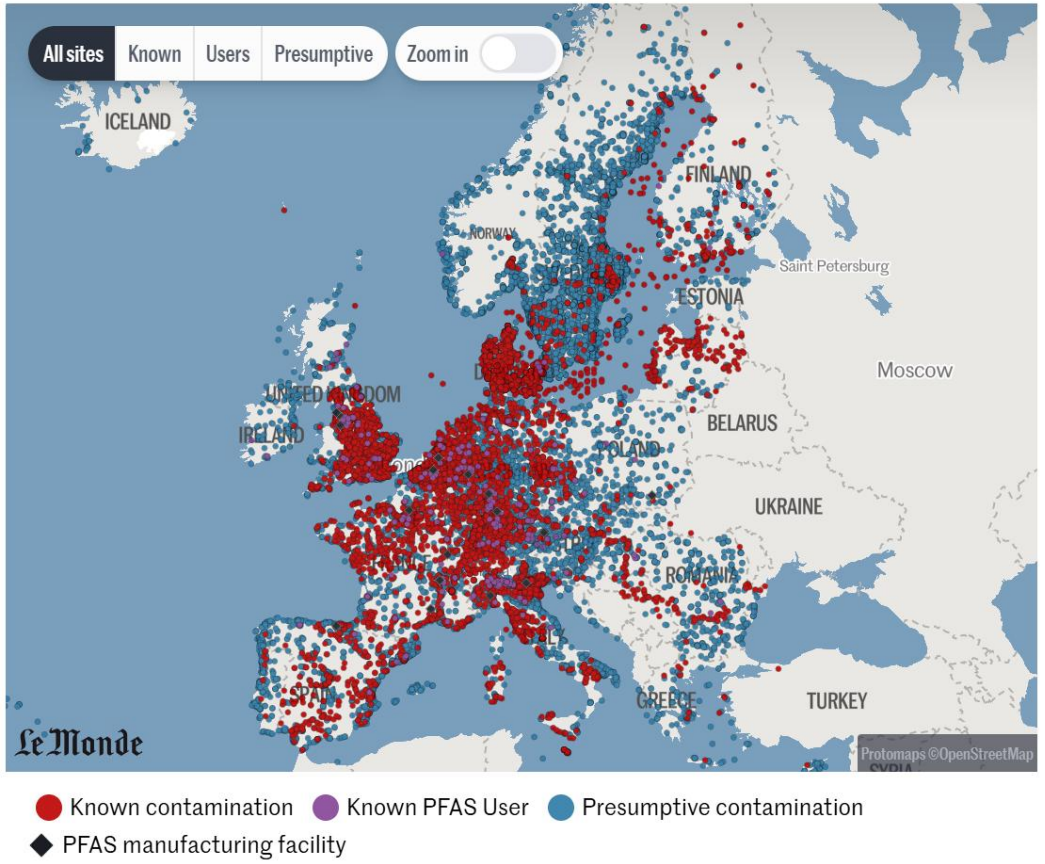
- Concentrations were compared to existing and proposed new quality standards for PFAS for inland water and coastal fish

What is PFAS?

PFAS - family of chemicals characterised by their carbon-fluorine bond, one of the strongest chemical bonds there is in organic chemistry -> **persistent**

This chemical group could be as large as 10,000 substances

- **~100,000 sites** in Europe are potentially emitting PFAS
- **> 2,100 PFAS hotspots** in Europe (places where contamination levels are considered harmful)
- EU production of PFAS: **120,000 to 400,000 tonnes per year**
- Almost 1 million tons of PFAS estimated to be used and placed on the market yearly, with a growing trend → **accumulating**



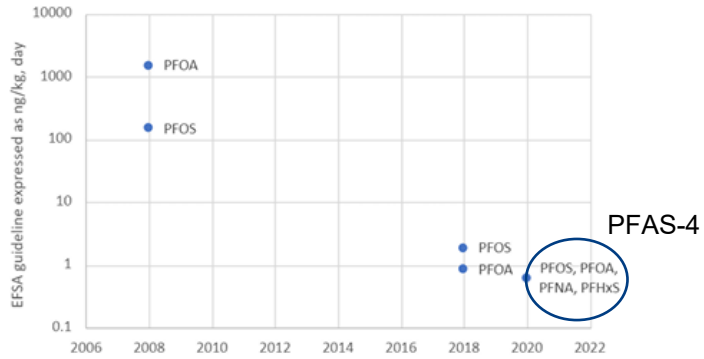
Public health risks

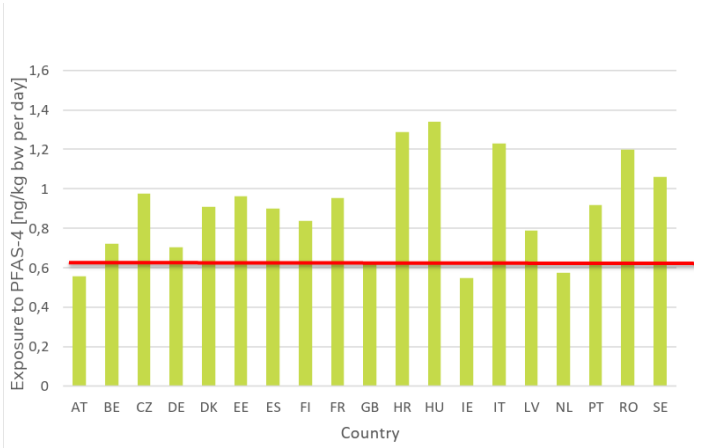
- **PFAS exposure is linked to a range of negative impacts on human health**, including reduced response to vaccines, thyroid disease, kidney and testicular cancer and increased cholesterol levels

- **Guidelines on PFAS exposure continuously revised down**
  - **2020:** The European Food Safety Authority (**EFSA**) sets a **new safety threshold for four PFAS** that accumulate in the body
  - The Tolerable Weekly Intake for PFAS-4 is 4.4 ng/kg of body weight

- **People in Europe are already exposed to too much PFAS**
  - Exposure levels for adults are **up to five times the recommended maximum weekly intake**.
  - For children and infants, the exposure is even higher.

- **Public health costs**
  - **€52-84 billion annually** - Estimated health-related costs linked to PFAS in the EEA (Nordic Council of Ministers, 2019)





Source: EEB policy brief Toxic Tide Rising (2023)

Economic risks for the fisheries sector

The serious pollution from the **3M factory in Antwerp** resulted in PFAS concentrations in fish and seafood from **Western Scheldt** found to be exceeding the Dutch standards by 800 times.

→ **the Dutch Fishermen's Association** called on its members to **stop fishing** in the eastern part of the Western Scheldt

December 2024: The Dutch Fishermen's Association filed a lawsuit in hope to get financial compensation for the economic losses.

Role of fish consumption

- Humans are exposed to PFAS through in multiple ways, consumption of food and drinks is a main route

- **Fish and seafood a particularly important source**
  - Fish consumption can account for almost 90% of the total dietary PFOS exposure (the German Federal Institute for Risk Assessment)

- **Limiting further PFAS pollution is key** to limit human exposure via fish and seafood consumption as well as protecting drinking water

Findings

Data used

Data sources and dates of acquisition

Country	Source of data
Spain	Environment Spanish Ministry and URA (Basque Country Water Agency)
Germany	National authorities at the Federal States
Sweden	National platform Vatteninformationsystem Sverige
France	National platform: Naïades
Italy	WISE 6 - 2023
Poland	WISE 6 - 2023
Austria	WISE 6 - 2023

- Member States reported monitoring data on a voluntary basis to the EEA in 2021
- At the time of request (2024) little or no data was found in the EEA database (WISE) for ES, DE, SE and FR
- Data was therefore sought from
  - Public national databases (FR, SE)
  - Requested from the authorities (DE, ES)

Authorities showed varying willingness in providing data

Key results

- **Exceedances of the current quality standard for PFOS**
  - Around 40% of the cases in Sweden and Austria
  - >30% of the cases in France
  - >20% of the cases in Spain and Germany
  - <10% of cases in Italy and Poland

- In line with EEA data on PFOS in surface water:
  - over half of rivers,
  - up to a third of lakes and
  - **up to 100% of transitional and coastal waters**

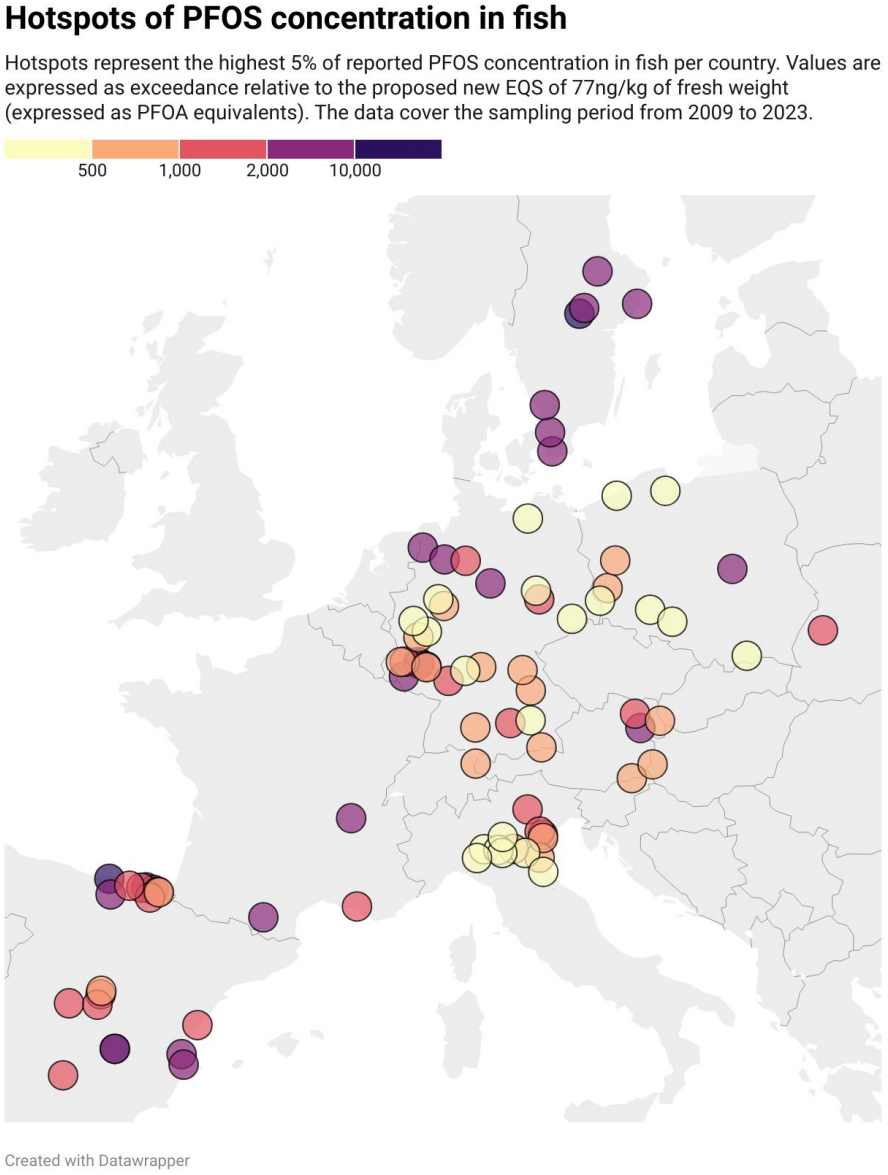
exceeded the EU quality standard for PFOS

- **However, this EQS is outdated and restricted,** as it only concerns one PFAS and is not based on the latest EFSA guidelines on adverse effects of PFAS

Key results

Comparing reported concentrations to the proposed new EQS reveals another picture

- Nearly all reported data exceed proposed new safety levels for fish
- Nearly a quarter of data points from Sweden and at least **15% of samples** from France, Austria and Spain **exceed the proposed new biota EQS by more than 500 times!**
- **The highest reported values** from Sweden (750 µg/kg), Germany (720 µg/kg) and Spain (612 µg/kg and 473 µg/kg) **exceed the new EQS between 12,300 and 19,500 times**



Source: EEB, ‘Forever chemicals’ poisoning Europe’s waters and fish (2025)

Key results

Annex 4 - Top reported concentrations of PFOS in fish (between 2009 and 2024)

Austria	Germany	France	Italy	Poland	Spain	Sweden
Danube, Absdorf River 47 µg/kg Close to Vienna Waste management site in Stockerau (25km away)	**Hitzelbach, Zell/ Rheinland** River 720 µg/kg Airport, US army base	**Le Touvre, Lagarde** River 100 µg/kg Textile industry, treatment and disposal of hazardous waste	**Unknown, Ospedaletto** River 69.1 µg/kg Know contamination (Forever Pollution Project)	**Jeziórka, Wólka Kozodawska** River 108 µg/kg Manufactures close by	**Water body: Pozón de la Dolores, Station: Camargo, State: COCC CANTABRICO** Laguna 612 µg/kg Industrial sites, waste management sites and airport all around	**Frommestabäcken**, Hallsberg/Kumla River 750 µg/kg Waste facility: leaching and use of fire-fighting foam
Mur-Straenbrücke, Spielfeld River 38 µg/kg Waste management site	**Elbe, Schnackenburg/ Niedersachsen** River 149µg/kg Airport	**La Saône, Lyon** River 87.2 µg/kg Valley of the Chemistry and PFAS manufactures (Arkema, etc.)	**Fiumazzo, Campagna Lupia** River 68.5 µg/kg Known contamination of surface waters	**Biała, Kaclowa** River 54.6 µg/kg Waste management site beside	**Léa-A, Oleta (lea) Amoroto, COR-CANTABRICO ORIENTAL INTRA** River 473 µg/kg Know contamination (Forever Pollution Project)	**Ybbarpsån: Rönne å-Östra Sorrödssjön in**, Klippan/Svalöv River 290 µg/kg Fire training site by Herrevad kloster and Perstorp industrial area
Dornbirner Ach, Lauterach River 37 µg/kg 3 waste management sites around	**Grundbach, Sohren/Rheinland** River 130 µg/kg Airport, US army base	**La Cadière, Marignane** River 72.1 µg/kg Airport, PFAS manufactures	**Tergola, Vigonza** River 41.6 µg/kg Several waste management facilities	**Jezioro Mały Szarcz, Szarcz** Lake 32.2 µg/kg Unknown	**Lagunas Bajas de Ruidera, LAGUNA DE CUEVA MORENILLA, GUADIANA** Laguna 427µg/kg Know contamination (Forever Pollution Project)	**Fjällfotasjön**, Svedala Lake 202 µg/kg Skurup airport (fire training site)

Hotspots are typically located near waste facilities, airports, army bases and industrial areas

Comments

Hard to compare results between countries due to different monitoring, analytical and reporting approaches

Yet, even with these limitations, it's clear that PFAS pollution is omnipresent and underreported

Our results are conservative as they are based on the reporting of one single PFAS (soon to be adopted rules will require monitoring of 24 PFAS)

Policy context

EU regulation: food

EU foodstuff regulation (Regulation 2023/915/EU)

- 2022 update: new **2 µg/kg ww** limit for PFAS-4 in fish muscle
  - Allows for roughly 1 serving of fish per week, in clash with national dietary recommendations

- However, for some fish species, and when not intended for consumption by young children and infants, higher thresholds (**8[1] and 45[2] µg/kg ww**) are allowed.

- **Those higher limit only allow the consumption of 39 g and 7g of fish per week respectively** to not exceed the EFSA recommendations

1) Baltic herring, bonito, burbot, European sprat, flounder, grey mullet, horse mackerel, pike, plaice, sardine and pilchard, seabass, sea catfish, sea lamprey, tench, vendace, silverly lightfish, wild salmon and trout and wolf fish
2) Anchovy, babel, bream, char, eel, pike-perch, perch, roach, smelt and some species of whitefish

Country	Quantitative recommendation
AUSTRIA	-1-2 portions/week
GERMANY	- Fish once or twice a week. - Eat weekly 1 portion (80-150 g) low-fat seafish (prepared) AND 1 serving (70 g) of fatty fish (prepared)
FRANCE	-Fish and seafood 2 times per week, of which one time should be fatty fish
ITALY	-At least 2-3 times fresh fish a week and up to 1 time per week preserved fish
POLAND	-At least 2 times a week
SPAIN	-At least 3 servings weekly
SWEDEN	-Eat fish and shellfish 2-3 times a week

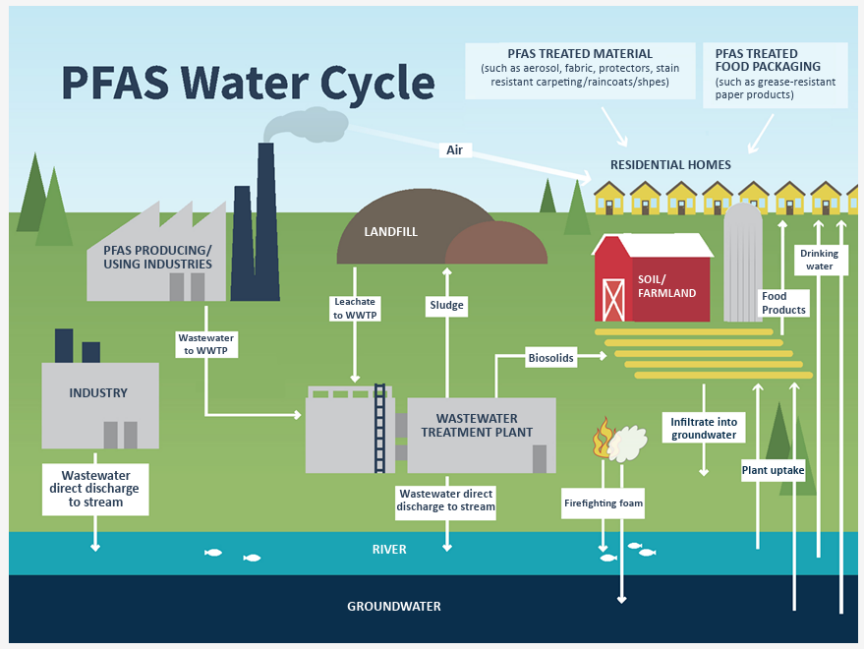
National seafood consumption recommendations, adapted from EC Knowledge for Policy

EU regulation: water

Water Framework Directive

- Mandates Member States to monitor a list of ‘priority substances’ in inland and coastal waters and take measures to ensure the associated quality standards (EQS) are not surpassed.

- Environmental Quality Standards (EQS) for surface water include quality standards for biota (fish)
  - **Current threshold** (adopted in 2013): **9.1 µg/kg ww** for PFOS
  - **New threshold** (proposed in 2022, yet to be adopted): **77 ng[1]/kg ww** for 24 PFAS



Source: US EPA

1) expressed as PFOA equivalents

Environment under threat

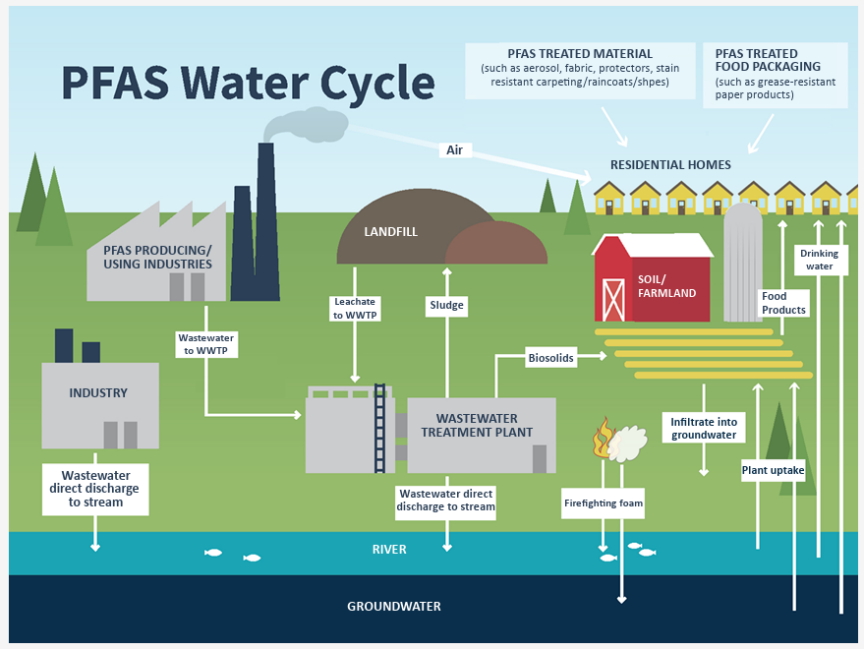
The WFD provides a robust framework to tackle point source and diffuse pollution

It requires Member States to take measures to ensure quality standards are not exceeded, this can include

- Banning the use of problematic substances
- Putting in place stricter industrial discharge limits
- Introducing fees, levies or taxes on polluted discharges

WFD under threat

- Member States has managed to introduce **new exemptions** that allow deterioration of water status e.g. pumping PFAS-contaminated groundwater to a river
- The European Commission has announced a **revision of the WFD** in Q2 to “to promote circularity and access to critical raw materials in the EU”



Source: US EPA

Way forward

- **Swift adoption of a broad EU-wide PFAS restriction** with as few exemptions as possible to close the tap of ongoing PFAS pollution.

- **Safeguard the WFD and avoid any further weakening** in the name of competitiveness, simplification

- **Swift adoption of the updated quality standards for surface and groundwater** to improve monitoring, reporting and to provide legal pressure on Member States to take measures

- **Improved implementation and enforcement of the WFD** to ensure protection of the EU's waters

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Thanks for listening!

Keep in touch

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