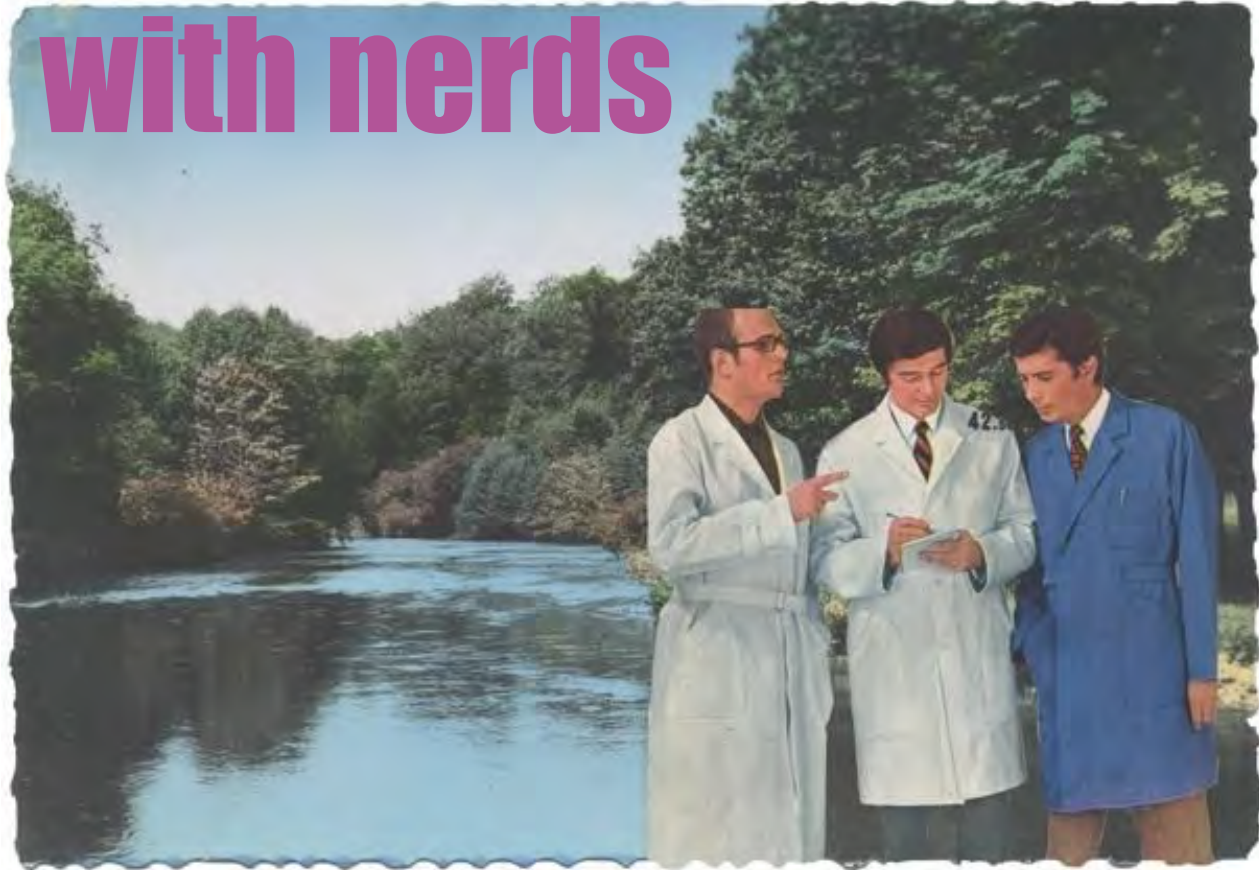


How to save the planet (and its people) with nerds

Stéphane Horel
Leopold Salzenstein
Elisabetta Tola
19.05.2026



**Expert-
Reviewed
Journalism**



Who are the nerds? Us or them?



Stéphane Horel

Le Monde



Léopold Salzenstein



Elisabetta Tola

[FACTA.EU]

“Expert-reviewed journalism” (XRJ) in practice



2023-2025

Green to Grey

2025-ongoing



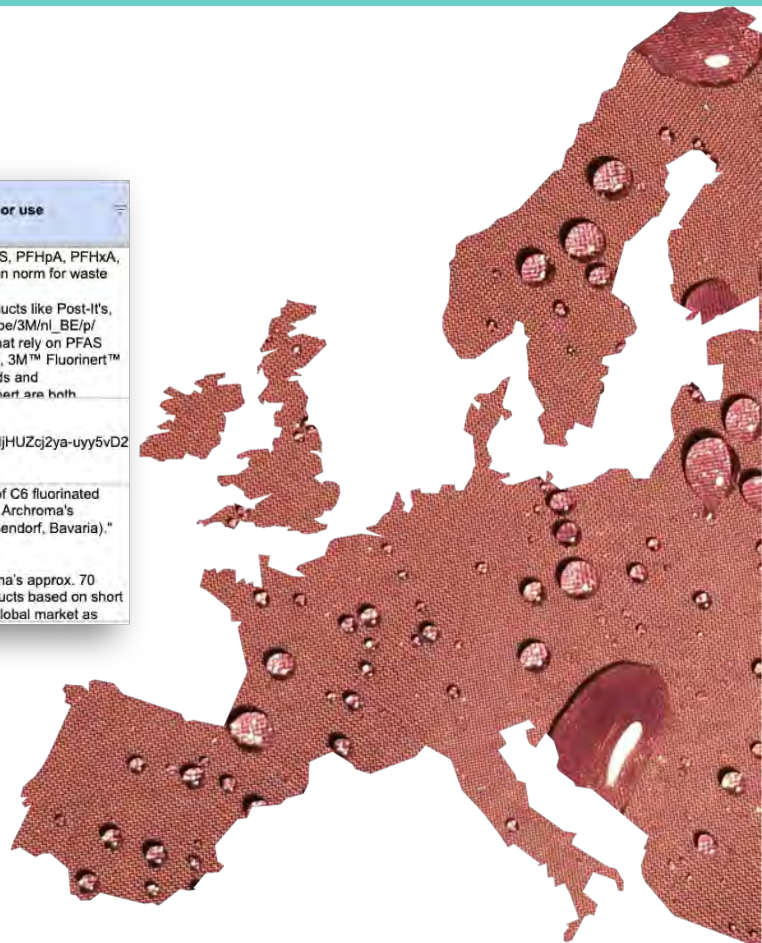
2023-ongoing

How “Expert-reviewed journalism” (XRJ) was born

Company Name	Country	Location (town)	Type	HQ	Latitude	Longitude
3M	BE	Zwijndrecht	Producer	USA	51.234273497	4.334542406
AGC (Asahi Glass Company)	UK	Thornton-Cleveleys	Producer	UK	53.87914403	-2.99966481
Archroma	DE	Gendorf	Producer			
Arkema	FR	Pierre-Bénite	Producer			
Arkema	ES	Zaramillo	Legacy Producer			
Chemours	NL	Dordrecht	Producer			
Chemours	FR	Villers-Saint-Paul	Producer			
Daikin Chemicals	FR	Pierre-Bénite	Producer	JP	45.71048255	4.823902453
Daikin Refrigerants	DE	Frankfurt am Main	Producer	JP	50.09553245	8.539740480
Dyneon	DE	Gendorf	Producer	DE	48.17901798	12.72414746
F2	UK	Preston	Producer	UK	53.77558699	-2.797008529
W. L. Gore	DE	Gendorf	Producer	US	48.17893425	12.72195162

Trade name	PFAS produced	Evidence/notes on production or use
Novec™ Fluorinert™		Emitted PFOS until 2004, now PFOA, PFBS, PFHpA, PFHxA, PFHxS, PFOSA, PFPA and PFBA (emission norm for waste water in the river Scheldt 0,1 µg/l). 3M Belgium produces a wide range of products like Post-It's, glue, coatings. See: https://www.3mbelgie.be/3M/nl_BE/p/3M itself writes: 'M's innovative solutions that rely on PFAS include 3M's™ Novec™ Engineered Fluids, 3M™ Fluorinert™ Electronic Liquids, 3M™ Performance Fluids and fluoropolymer products.' Nuvac and Fluorinert are both Fluon ® PTFE/ETFE Fluoropolymers Confirmed by email: https://drive.google.com/drive/folders/1CcNjHUZcj2ya-uyy5vD2xx29Of0a5P85
Fluon®	PTFE, ETFE	
Nuva®	C6	Archroma is the "only European producer of C6 fluorinated telomer products, a sub-category of PFAS. Archroma's production facility is located in Germany (Gendorf, Bavaria)." [FOI DG GROW document] "At the GENDORF Chemical Park, Archroma's approx. 70 employees produce and develop new products based on short chain fluorotelomers, which are sold to the global market as

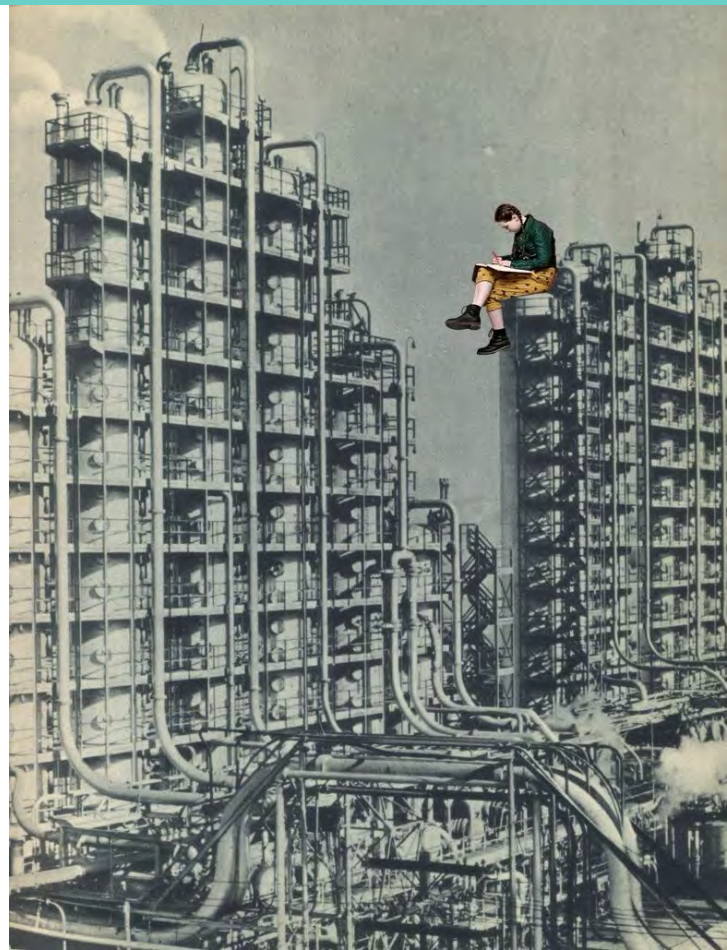
the forever
pollution
project



Foreword

- This is all experimental.
- There is no perfect recipe
- We don't have all the answers
- Case by case

It's about human & collective intelligence

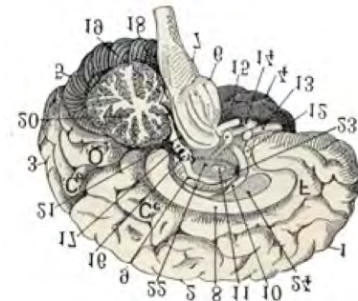
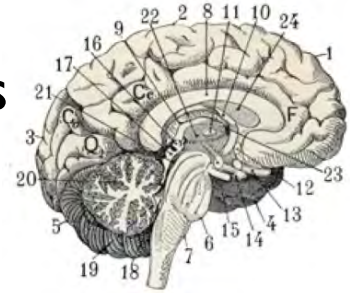


WHY “Expert-reviewed journalism”



XRJ in theory

- Specific method of collaboration between journalists and experts within the context of investigative projects.
- Experts are not merely sources; they are fully integrated into the investigation as team members, working collaboratively to help journalists refine their methodology.
- Various possible levels of participation and involvement .



Journalism meets Academia



Win

- Science based journalism
= High quality journalism
- The end of sloppy methodology
- Defend facts & science
- Credibility

Homework

- High level of expertise
- Good understanding of the scientific community and its practices
= avoid wasted time, misunderstandings and errors
= create trust

(and vice versa)

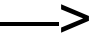


Top reason for collaborating* :

- broad impact / contribute to meaningful change

Least important reasons for collaborating :

- being credited for their contributions
- writing an academic paper



**According to a survey with five scientists*

(and vice versa)

nature communications

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Article | [Open access](#) | Published: 13 April 2026

Europe's land take and the loss of nature and cropland to artificial surfaces

[Zander Samuel Venter](#) , [Bálint Czúcz](#), [Anne Linn Kumano-Ensby](#), [Léopold Salzenstein](#), [Trond Simensen](#), [Ruben Solvang](#) & [Mads Nyborg Støstad](#)

[Nature Communications](#) | Article number: (2026) | [Cite this article](#)

2080 Accesses

This is a preprint and has not been peer reviewed. Data may be preliminary.

WORKING PAPER |  | 22 JANUARY 2026 |  LATEST VERSION

PFAS Remediation Across Europe: Costs and Limited Impacts

Authors: [Alison L. Ling](#) , [Raphaëlle Aubert](#), [Eurydice Bersi](#), [Stéphane Horel](#), and [Hans Peter H. Arp](#) 

Affiliations

<https://doi.org/10.26434/chemrxiv-10001503/v1>



PFAS DATA HUB

cnrs

<https://pdh.cnrs.fr>

Environmental
Science & Technology

pubs.acs.org/est

Article

PFAS Contamination in Europe: Generating Knowledge and Mapping Known and Likely Contamination with “Expert-Reviewed” Journalism

Alissa Cordner, Phil Brown, Ian T. Cousins, Martin Scheringer, Luc Martinon, Gary Dagorn, Robert, Leana Hosea, Rachel Salvidge, Catharina Felke, Nadja Tausche, Daniel Drepper, Ana Tudela, Antonio Delgado, Derrick Salvatore, Sarah Pilz, and Stéphane Horel*

<https://doi.org/10.1021/acs.est.3c09746>

 Read Online

 Metrics & More

 Article Recommendations

 Supporting Information

While the extent of environmental contamination by perfluoroalkyl substances (PFAS) has mobilized efforts around the globe in recent years, publicly available data on PFAS in Europe were very limited. In an experiment of “expert-reviewed journalism” involving 17 journalists and seven scientific advisers, a cross-border project, the “Forever Pollution Project” (FPP), drew on open data, methods and investigative journalism techniques (including source intelligence (OSINT) and freedom of information requests) to map contamination across Europe, revealing contamination that previously had existed as “unseen science”. The project identified 22,934 known contamination sites, including manufacturing facilities, and 21,426 “presumptive contamination sites”, including 13,745 sites presumably contaminated by aqueous film-forming foam (AFFF) discharge, 2911 industrial facilities, and 4752 sites related to PFAS-containing



But not only – cross pollination

Other reasons for collaborating with journalists*:

- intellectual challenge and curiosity
- access new, original data
- improve the public's scientific literacy
- develop new ideas and methodologies
- learn about creative thinking and science communication
- being challenged to communicate scientific methods using accessible language

**According to a survey with five scientists*

What they say about it

“I feel I was lucky to have this opportunity to collaborate with journalists.”

“Both [journalists and scientists] need patience and the willingness to learn about the other side's needs and constraints.”

“There are advantages [of this approach] both on the side of data gathering/sharing and in dissemination and communication.”

“In such investigative projects, our skills have to be complementary.”

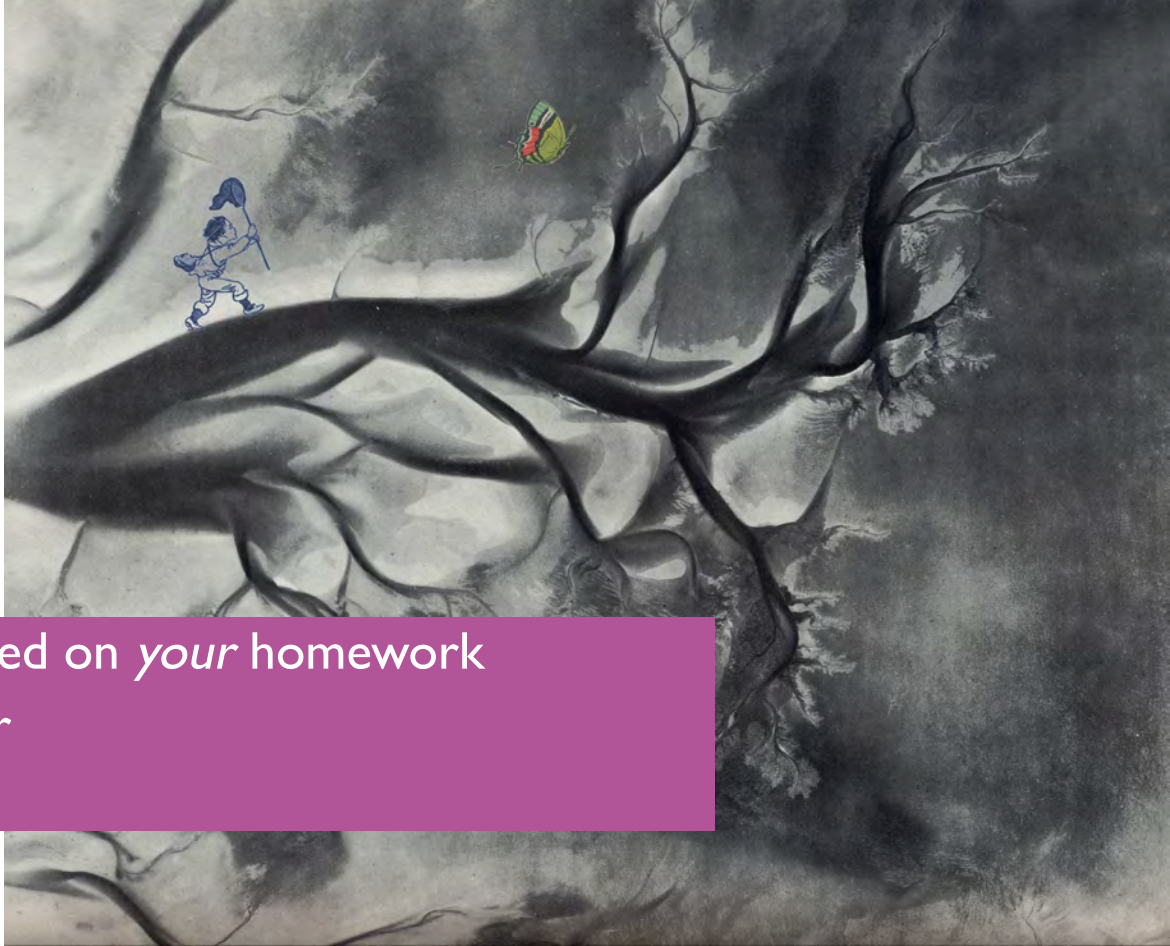
“Happy to continue the collaboration!”



HOW “Expert-reviewed journalism”



Specie: expert



- Choose “your” experts based on *your* homework
- Public/not public researcher
- Civil society experts

The expert's status

- Pay or not pay ? The example of the [Unwetlands project](#)

The Unwetlands. A Satellite-Based Investigation into Italy's Lost Wetlands



Journalism Science Alliance

- Formalize the collaboration?
- MoU, contract, partnership... nothing?
- Conflict of interest vs. opportunity (see the Italian bureaucratic framework)

Eg | MoU with Corporate Europe Observatory



66 Freedom of information requests
Agreement = exchange of memos

Industry Documents Library
Toxic Docs

From: [REDACTED]
Sent: Tuesday, July 14, 2023 11:34 AM
To: [REDACTED] (GROW) [REDACTED]
Cc: [REDACTED] (GROW) [REDACTED]
(ENV) [REDACTED]@ec.europa.eu>
Subject: RE: Meeting with [REDACTED] on PFAS



How to spot conflict of interest

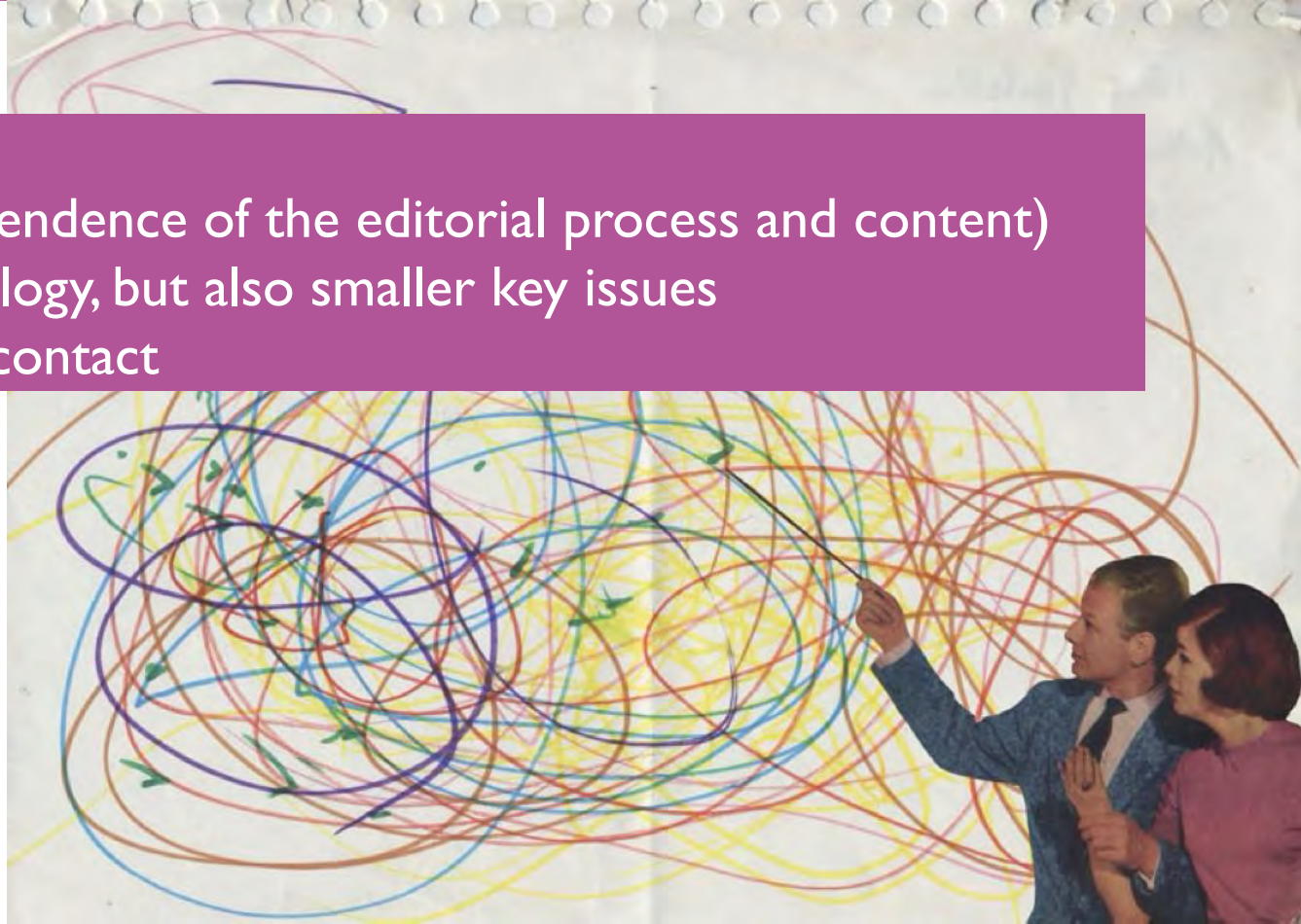
- Ask the other experts
- Ask specialised civil society organisations
- Disclosures in scientific papers
- Declarations of interest to public agencies



This review has been conducted with funding support from several sponsors: American Chemistry Council (ACC), CropLife America (CLA), CropLife Canada (CLS), CropLife International (CLI), European Chemical Industry Council (Cefic), and European Crop Protection Association (ECPA). These sponsors were provided an opportunity to review a draft of the paper and offer comments for consideration by the authors.

Organise the workflow

- Avoid harassment
- Swim lanes (independence of the editorial process and content)
- Develop methodology, but also smaller key issues
- Frequency of the contact



Organise the workflow

Allocate specific times along the investigation work to give them the opportunity to explain their work, process and language

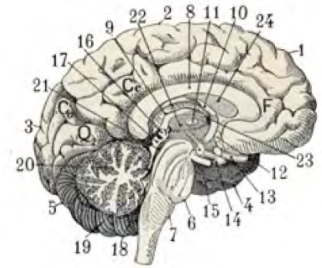
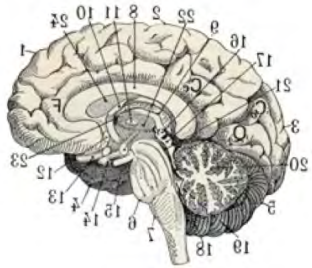


What they expect from us

Connect them with other experts who might integrate the analysis and work needed to complete the project.

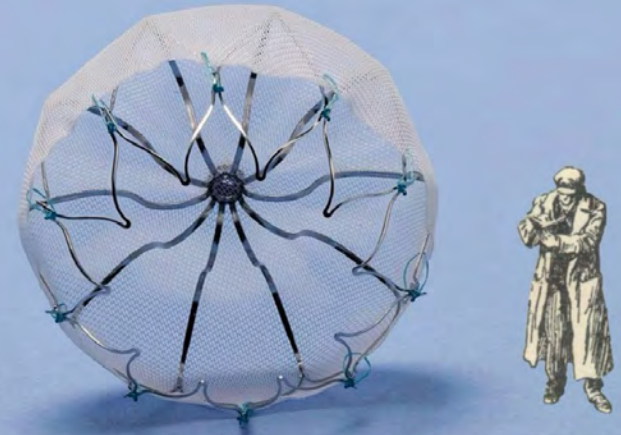
*“It’s clear from your profile that you have exactly **the kind of expertise that we need** for this project – being astroparticle physicists/cosmologists, we are used to looking up, rather than down”*

The Unwetlands ML expert and astrophysicist
talking to an environmental engineer specialised on wetlands analysis
we engaged in the project



What they expect from us

- Knowledge of the topic, willingness to learn and ask questions
- Open mindedness and willingness to co-develop methodologies
- Time & capacity to engage in exchanges
- Clear vision of the (division of) tasks
- Enthusiasm



Their identified challenges



- Communicating scientific findings (& uncertainty!)
- Open Data Principles
- Focus of the analysis
- Deadlines

Eg: Methodology | Adaptation of Salvatore 2022



pubs.acs.org/journal/estclu



Letter

Presumptive Contamination: A New Approach to PFAS Contamination Based on Likely Sources

Derrick Salvatore, Kira Mok, Kimberly K. Garrett, Grace Poudrier, Phil Brown, Linda S. Birnbaum, Gretta Goldenman, Mark F. Miller, Sharyle Patton, Maddy Poehlein, Julia Varshavsky, and Alissa Cordner*



Cite This: *Environ. Sci. Technol. Lett.* 2022, 9, 983–990



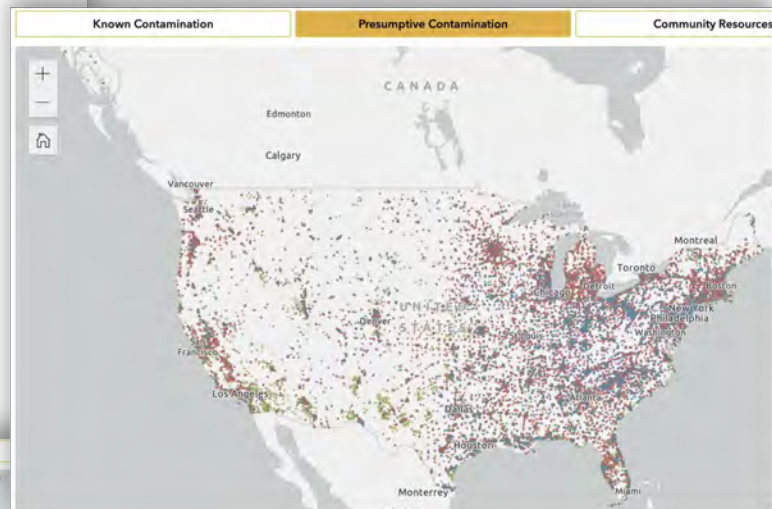
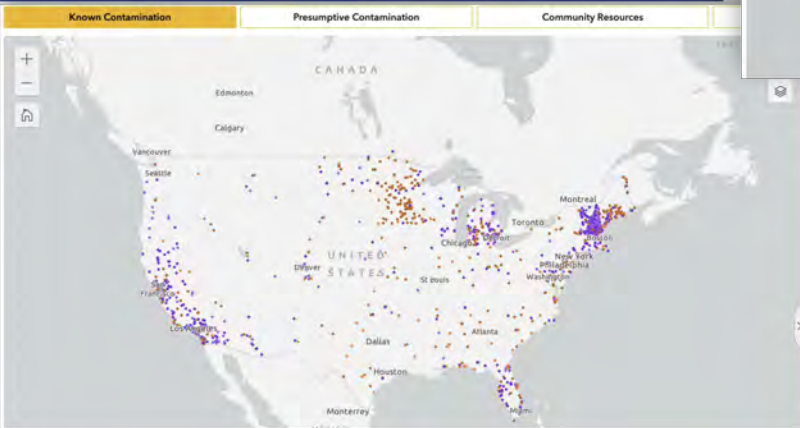
Read Online

ACCESS |

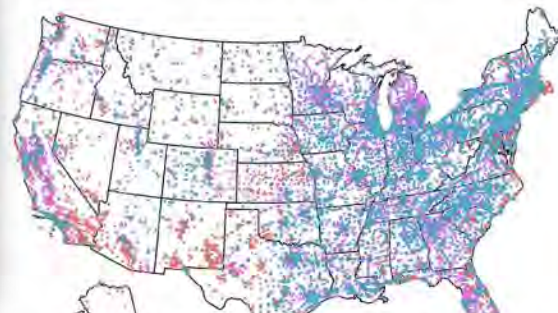
Metric

ABSTRACT: While research on PFAS contamination has increased, data are incomplete about the scale, scope, and location of PFAS contamination in the United States. To address this, we integrated available geocoded, national contamination data with PFAS quality testing data, PFAS contamination facilities: (1) fluorinated aqueous phase extraction (FQAP) sites, (2) certain industrial facilities, and (3) are incomplete on all three types of data. We integrate available geocoded, national contamination data with PFAS quality testing data, PFAS contamination facilities: (1) fluorinated aqueous phase extraction (FQAP) sites, (2) certain industrial facilities, and (3) are incomplete on all three types of data. We integrate available geocoded, national contamination data with PFAS quality testing data, PFAS contamination facilities: (1) fluorinated aqueous phase extraction (FQAP) sites, (2) certain industrial facilities, and (3) are incomplete on all three types of data.

KEYWORDS: per- and polyfluorinated compounds (PFAS) waste and disposal



Presumptive Contamination Sites (n=57,412)



Eg. Key Point | What is a PFAS hotspot?

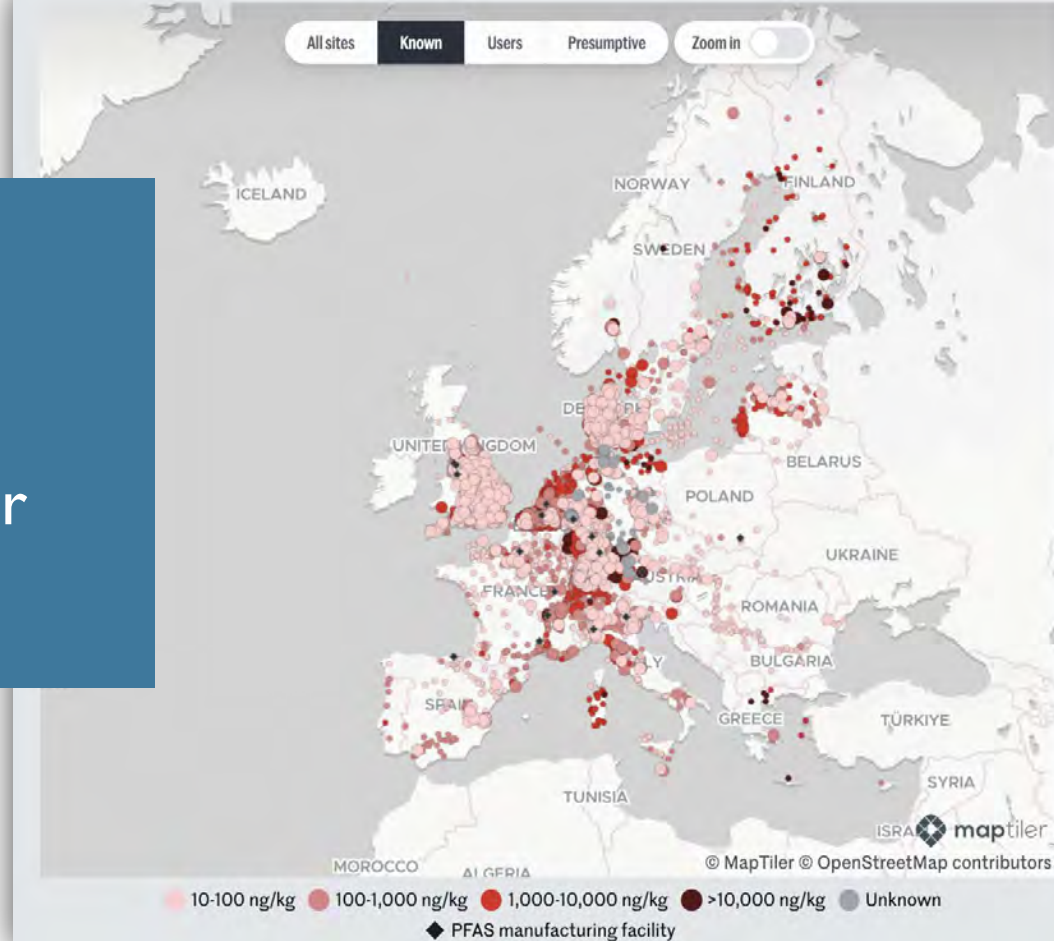
EU limit value

= 100 ng/l (20 PFAS)

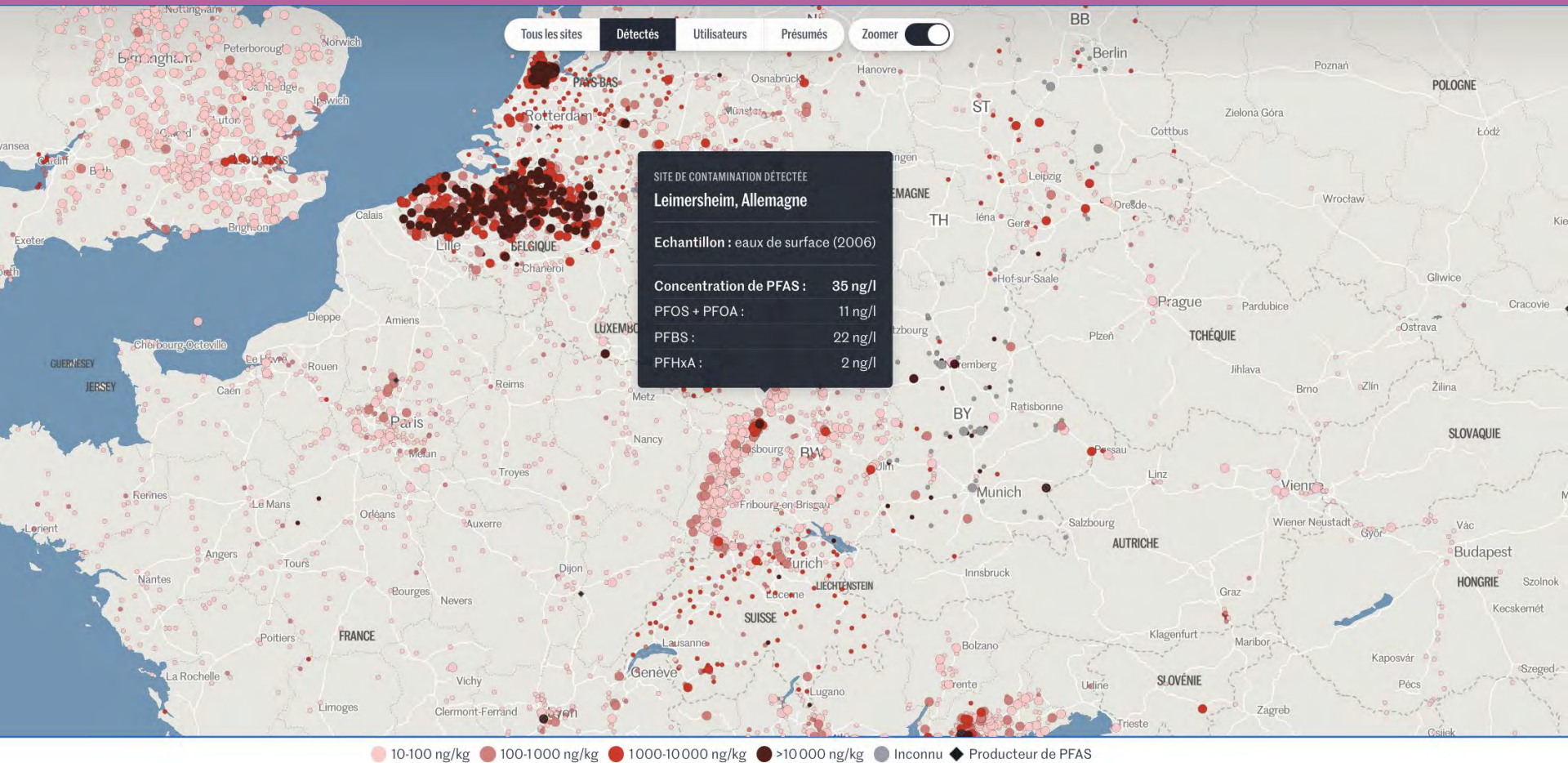
= 500 ng/l (sum PFAS)

Hotspot according to Forever
Pollution Project's Experts

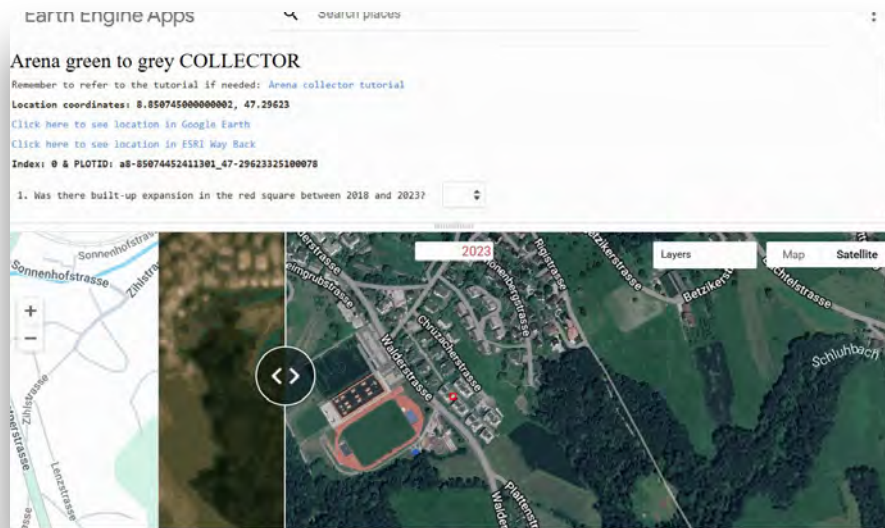
= 100 ng/l



Eg. Key Point | PFAS concentrations display

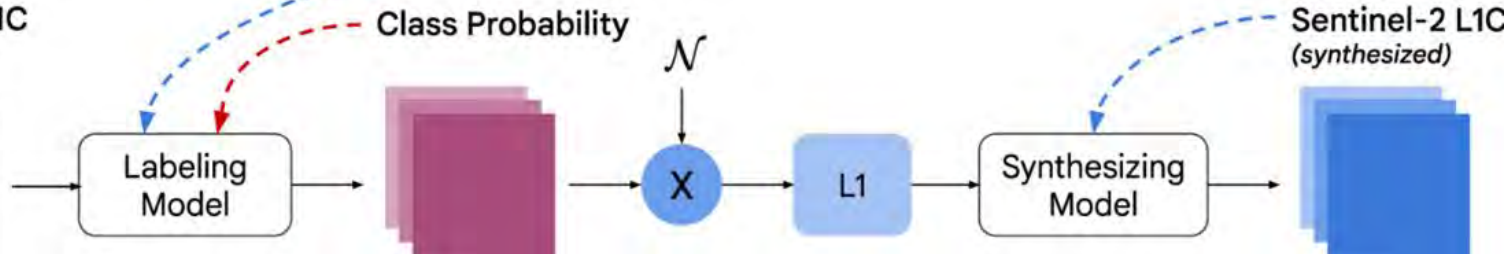


Eg. Key Point | Scientists results $\neq$ Journalists results

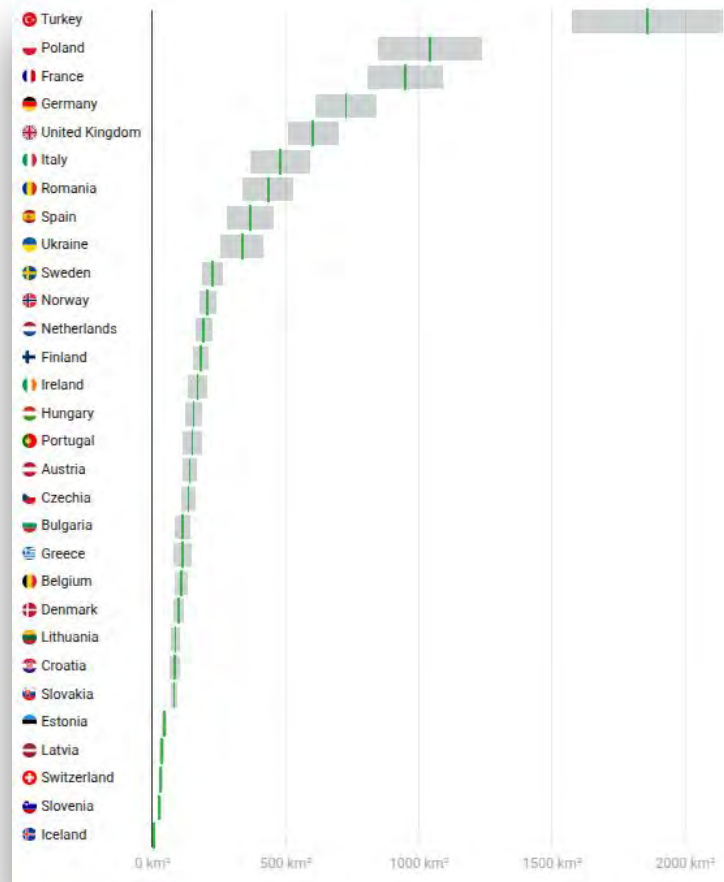
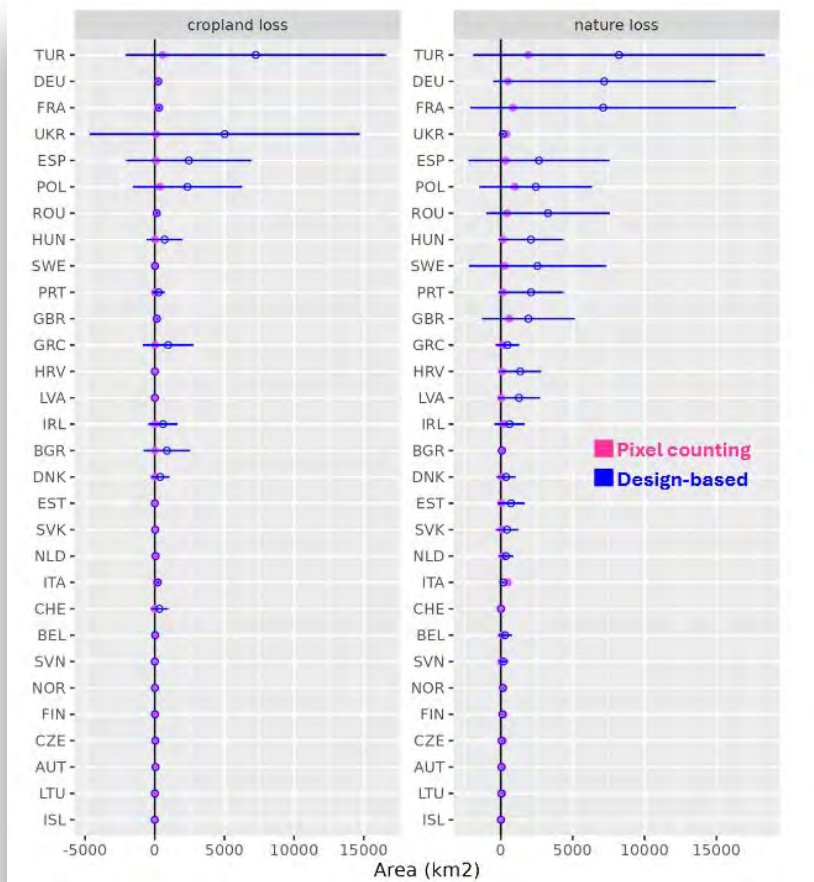


---> Labeling Model gradient
---> Synthesis Model gradient

Normalized
Sentinel-2 L1C



Eg. Key Point | Scientists results $\neq$ Journalists results



“Expert-reviewed journalism” GOES LIVE



Publication / Communication

Transparency. Eg: Forever experts group



Rob Bilott

Attorney, Taft Stettinius & Hollister LLP /
United States

Bio



Ian Cousins

Stockholm University / Sweden

Bio



Joost Dalmijn

Stockholm University / Sweden

Bio



Jamie De Witt

Oregon State University / United States

Bio



Romain Figuière

Stockholm University / Sweden

Bio



Gretta Goldenman

Global PFAS Science Panel / Belgium

Bio



Philippe Grandjean

University of Southern Denmark /
Denmark

Bio



Dorte Herzke

Norwegian Institute for Air Research /
Norway

Bio



Marcel Riegel

German Water Center / Germany

Bio

Credit your experts

- Credit contribution
- Byline? eg. G2G

Data Methodology

by Léopold Salzenstein and Zander Venter (Norwegian Institute for Nature Research), and edited by Hazel Sheffield.

Contributions by Anne Linn Kumano-Ensby (NRK), Mads Nyborg Støstad (NRK), Ruben Solvang (NRK), Bálint Czúcz (NINA), Trond Simensen (NINA), Zeynep Sentek (Arena), Jelena Prtoric (Arena), Hazel Sheffield (Arena), Raphaëlle Aubert (Le Monde), Pamela Duncan (The Guardian), Lotta Närhi (Long Play), Eurydice Bersi (Reporters United).

Quote your experts

- Eg Zander Venter – you don't comment your own work
- Gary Fooks

"The scale of corporate lobbying around the proposed PFAS restriction is extraordinary. It makes the work of other politically active industries, like Big Tobacco, look small-time in comparison".



The Forever Lobbying Project exposes the real cost of PFAS pollution on the environment, science, and politics

** EMBARGOED UNTIL TUESDAY 14 JANUARY 1AM CET | DO NOT PUBLISH BEFORE **

Involve your experts

They might open possibilities to enhance dissemination. Eg: Ian Cousins interview.

 **Stockholm University** | Department of Environmental Science

PFAS contamination in Europe far more widespread than previously reported

[Start](#) < News

This morning, on Thursday 23 February, a number of European newspapers published the findings of the cross-border monthslong investigation Forever Pollution Project that focuses on the “forever chemicals,” a popular term for approximately 10,000 substances collectively known as PFAS. The Project charts the 17,000 European locations that are contaminated with PFAS on a map, and reveals an additional 22,000 locations that are also likely to be contaminated with PFAS due to current or past industrial activity.

What's your involvement with The Forever Pollution Project?



Ian Cousins, Professor Stockholm University

I was first contacted by the French journalist, Stéphane Horel, who works for the French newspaper Le Monde in early June 2022. Stéphane told me of her ambitions to make a European map of PFAS contamination and I agreed to help out. I provided her with what I knew about PFAS sources including some detailed information on the locations of fluoropolymer manufacturing plants in Europe. According to Stéphane herself, this was the starting point for her work.

Involve your experts

Eg: a workshop in Trieste TOMORROW organised by FACTA and SISSA



The poster features a blue background with a complex, abstract pattern of dots and lines on the left side. The right side has a yellow rectangular area containing text and logos.

WORKSHOP
From data and satellites to stories:
intersections between journalism, science and art

20-21 May 2026
Scuola Internazionale Superiore di Studi Avanzati, SISSA

Logos in the top right corner: SISSA (Scuola Internazionale Superiore di Studi Avanzati), ILAS (International Laboratory for Advanced Studies), and [FACTA.EU].

Logos in the bottom left corner: European Union flag, "Finanziato dall'Unione europea NextGenerationEU", MUR (Ministero dell'Università e della Ricerca), Italiadomani (Piano Nazionale di Ripresa e Resilienza), and a stylized logo with the letters "EFC".

Thank you!



Kobayashi Midori at an exhibition of Tarjei Leer-Salvesen FOI artwork in January 2025 (Photo: Marta Frigerio).