Interreg
Baltic Sea Region

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SUSTAINABLE WATERS
EMPEREST

PFAS introduction

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interreg-baltic.eu/project/emperest

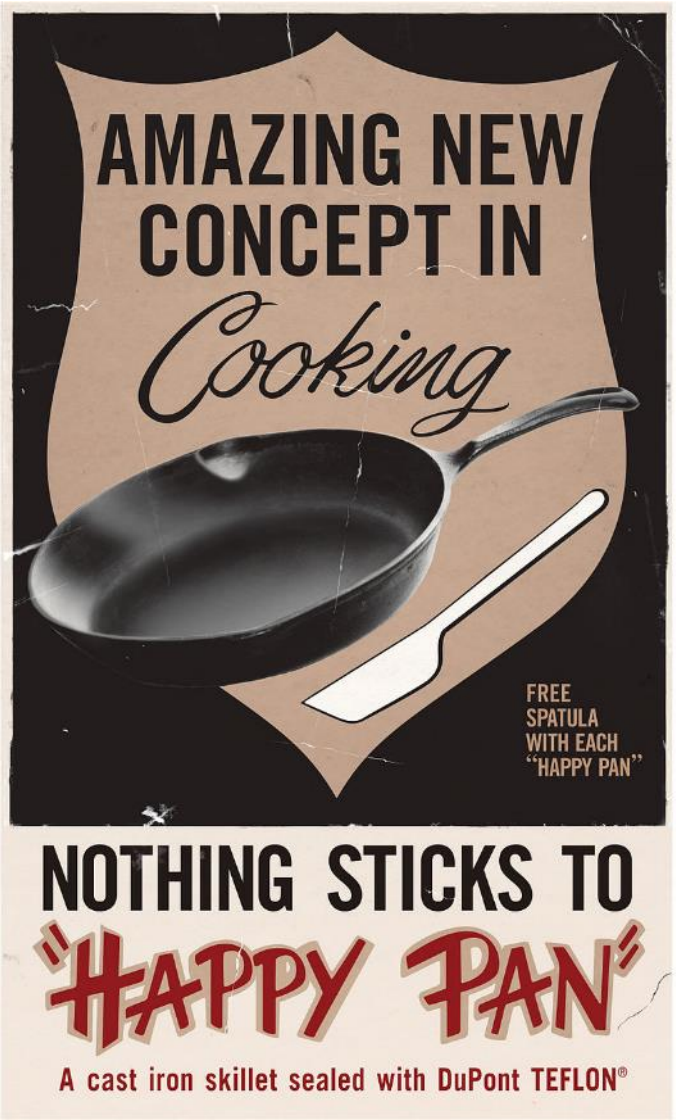


What are PFAS?

History in brief:

In **1938 Roy J. Plunkett** a young research chemist who worked at the DuPont's Laboratory, was working with gases related to DuPont's Freon refrigerants, when an experiment he was conducting produced an unexpected new product. He had accidentally invented polytetrafluorethylene (PTFE),—the "first compound in the family of Perfluorinated compounds (PFCs), "to be marketed commercially."(Lyons 2007).

10 years later it was introduced under its trade name **Teflon**, where it became known for being ‘’extremely heat-tolerant and stick-resistant’’.



https://en.wikipedia.org/wiki/Polytetrafluoroethylene#/media/File:Happy_Pan_Poster.jpg

Per- and polyfluoroalkyl substances (PFAS)

More than 10 000 substances

Many commercial and consumer uses

Textile, upholstery, leather, apparel and carpets

Metal products

Paper production

Food packaging

Medical devices

Lubricants

Ski wax

Electronics and semiconductors

Construction products

Cosmetics

Energy sector

Petroleum and mining

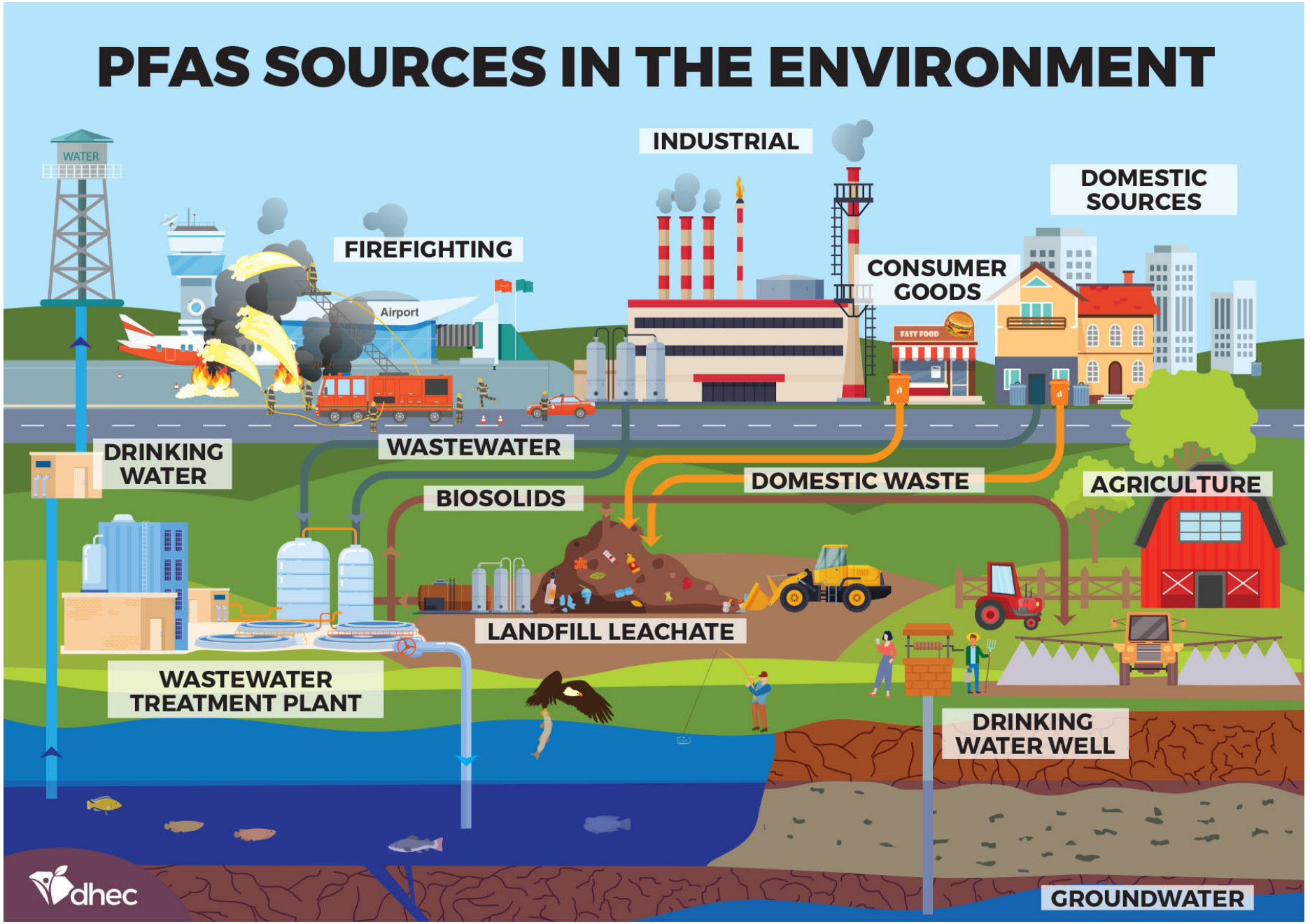
Refrigerators/air conditioners

Airports and aviation

Sounds good, right?

Problems?

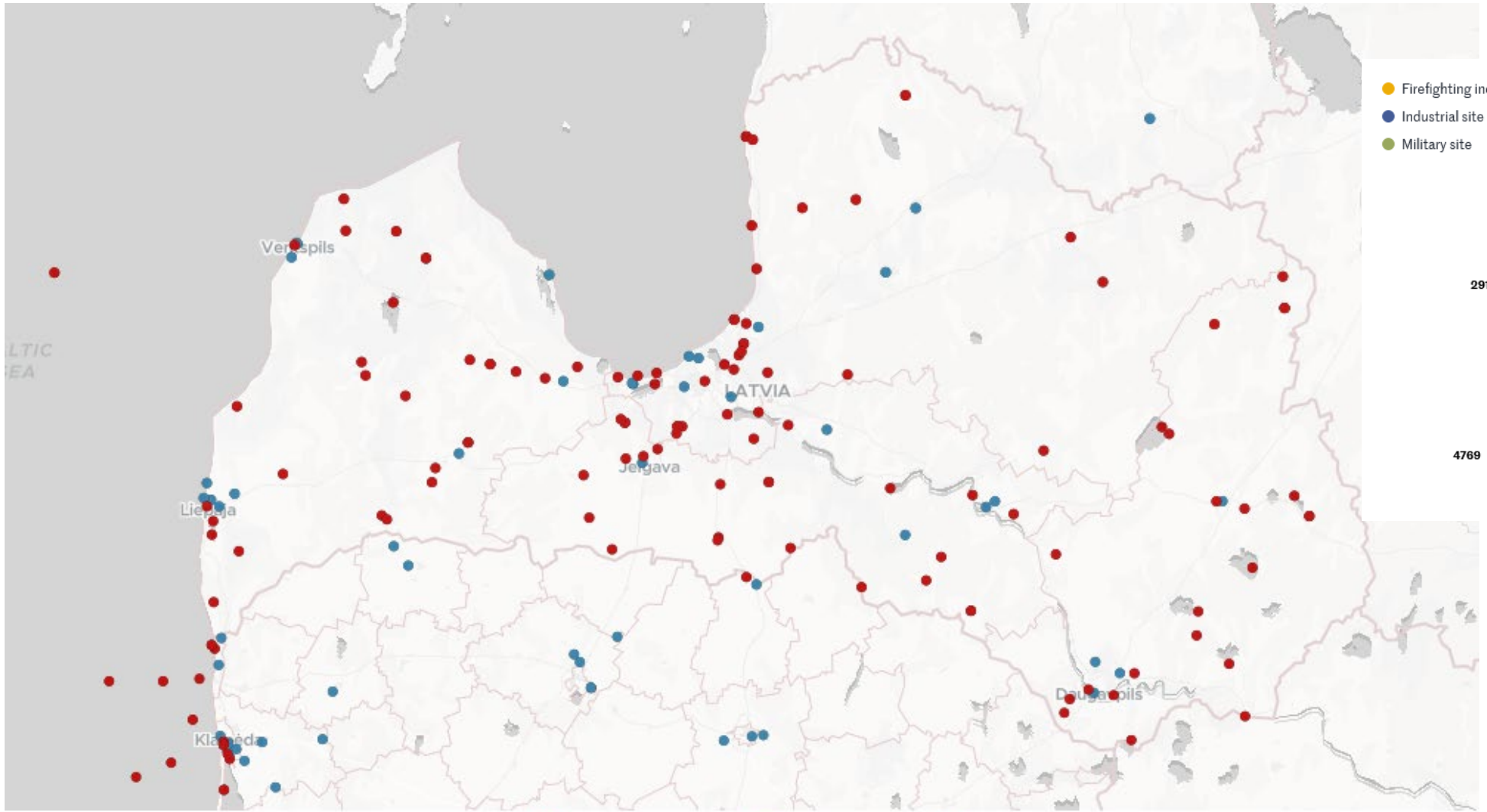
- **Extremely persistent and not bio-degradable in the environment**
- **Accumulate in the environment**

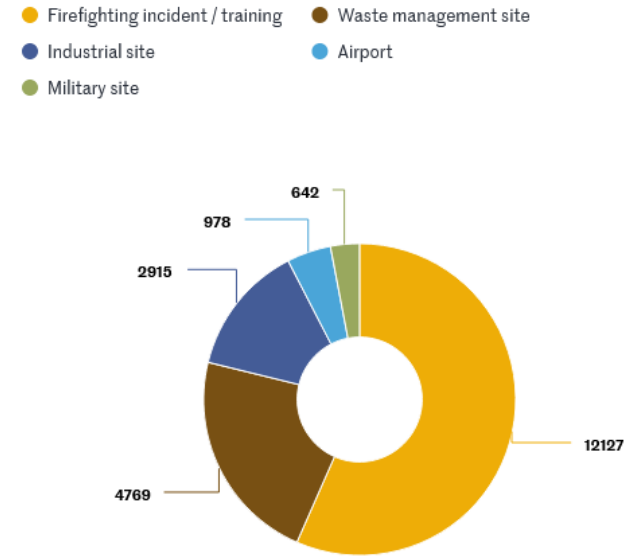

PFAS SOURCES IN THE ENVIRONMENT
WATER
INDUSTRIAL
DOMESTIC SOURCES
FIREFIGHTING
Airport
CONSUMER GOODS
FAST FOOD
DRINKING WATER
WASTEWATER
DOMESTIC WASTE
AGRICULTURE
BIOSOLIDS
LANDFILL LEACHATE
WASTEWATER TREATMENT PLANT
DRINKING WATER WELL
dhec
GROUNDWATER

PFAS detected:

- Groundwater;
- Freshwater;
- Seawater;
- Rainwater;
- Soil;
- Sediment;
- Wastewater treatment plant (WWTP) sludge and effluent;
- Biota and food.

Am I safe in Latvia?





What do we do in EMPEREST?

- **Study PFAS;**
- **Make framework for risk analysis;**
- **Perform risk analysis;**
- **Analyze PFAS at WWTPs;**
- **Use pilots to remove PFAS.**

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