The Norwegian approach to environmental monitoring and early warnings. Suspect screening, method, results and suggestions for a future watchlist. How do you choose which contaminants to monitor for?

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Norwegian monitoring programs for environmental contaminants

Photo: Øyvind Heen/fjords.com



Substances that are

Persistent Toxic Bioaccumulating Mobile





Strategy for environmental monitoring



Use and release of substances on the Norwegian priority list must be stopped





Norwegian priority list of substances

Same strategy for chemical legislation as EU – REACH
Over 600 individual substances



EU Chemicals Strategy for Sustainability

Towards a toxic-free environment New substances and products should be produced and used in a way to reduce impact on human health and environment – today and in the future

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#ChemicalsStrategy #EUGreenDeal

What should we look for?





Phtalates EBF – emerging brominated flame retardants UV-chemicals **Dechloranes** PFAS **Organic phosphorous** flame retardants QAC – quaternary ammonium Pesticides compounds Musk Siloxanes **Phenols**

Benzothiazoles

Establishing the «Early warning system»

? 2 Where should we look? 60

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Norwegian monitoring programs for environmental contaminants





AIR

COASTAL AREAS



Seeing the whole picture









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Target or screening for unknown substances

- Expensive: time consuming
- Concentrations higher closer to the source
 - Indoor dust
 - Sewage sludge
- Dilution will occur in environmental samples such as:
 - Biota
 - Surface water
 - Sediments

• Higher LOD in complex biological samples

How do we choose which compounds to look for in the future?

Non-target and suspect screening in Arctic air. From: Röhler et al., 2020.



Norwegian research project PIKme

WP1: Prioritizing as categorization of suspect list



Future watchlist

Compounds

- PFAS: incl. Total Fluor
- Plastic additives
- UV-chemicals
- Phenols
- Quaternary ammonium compounds

Sample media

Close to source
Biota:

Entire food chains









Archive of samples from the Norwegian environment

Biological samples Abiotic samples



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