

The exceptions to the rule? Metal bioaccumulation in macroinvertebrates from metal polluted sites with a good ecological status

Oceans and Lakes: OORI alumni event

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Introduction

Flanders Environment Agency

- Monitoring of waterways

VLAAMSE
MILIEUMAATSCHAPPIJ

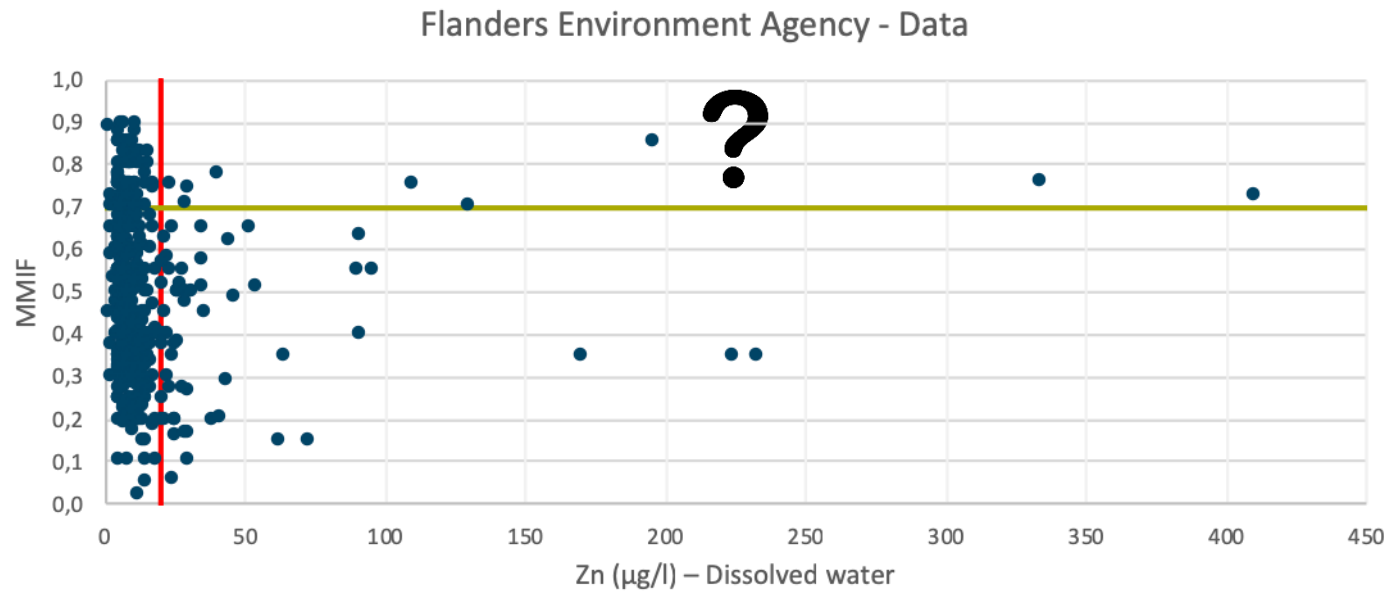


Multimetric Macroinvertebrate Index Flanders

- Taxa richness
- # EPT-taxa
- # Sensitive taxa
- Shannon-Wiener diversity
- Mean tolerance



Research question



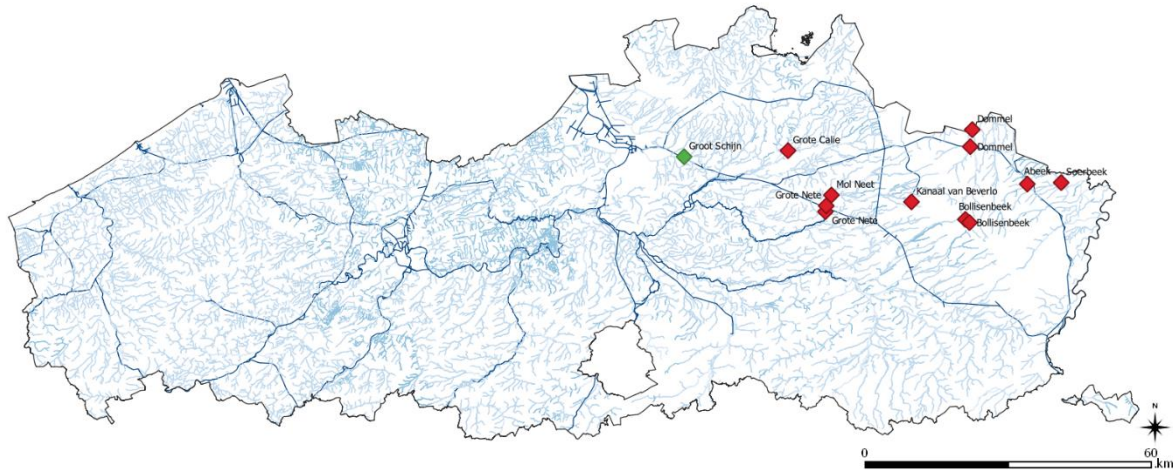
Hypothesis:

- Adaptation
- Water chemistry (DOC,...)
- Combination

Material and methods

VMM files 2010 – 2015

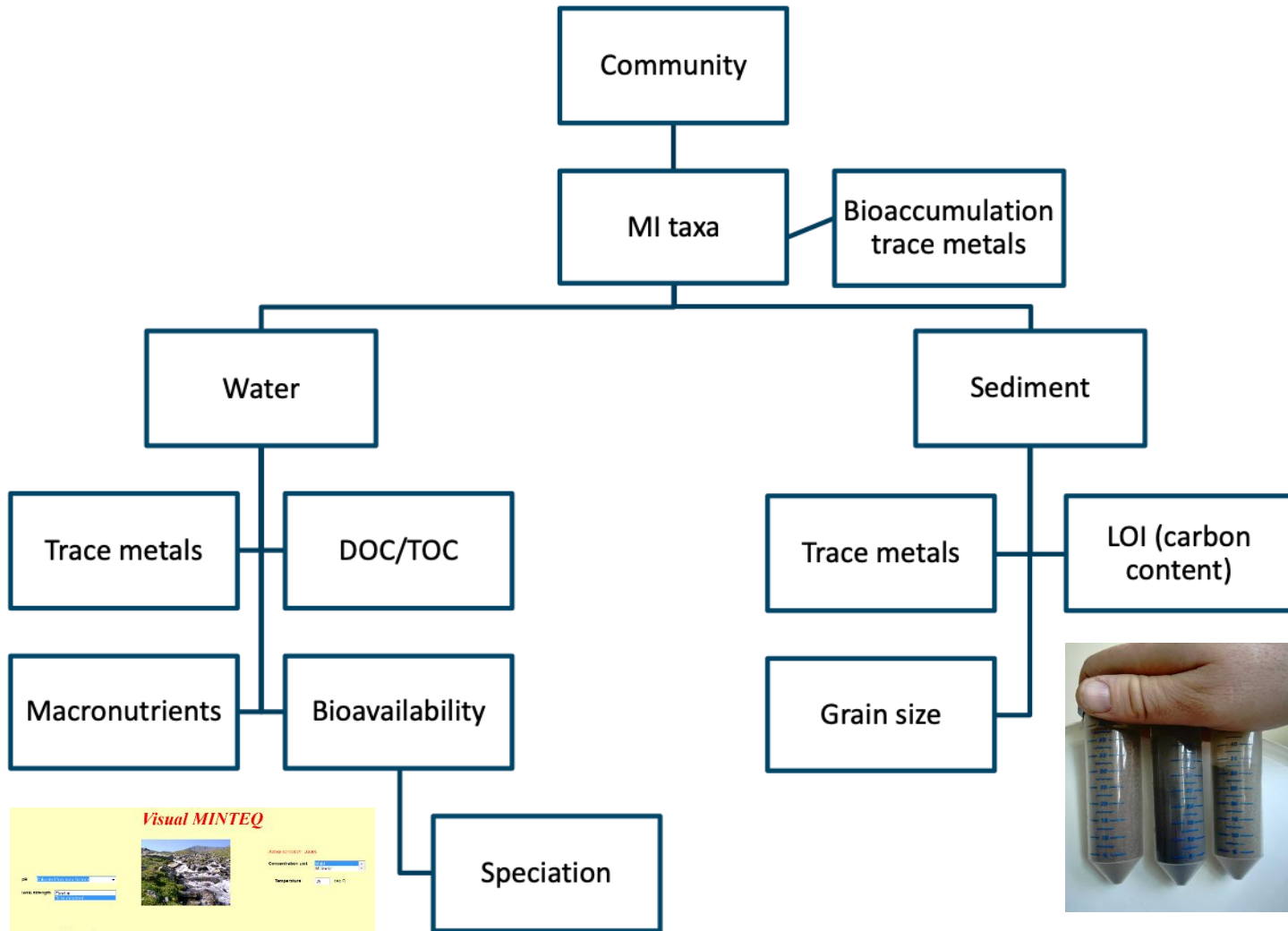
- Selection of locations
 - > EQS (diss)
 - MMIF $\geq 0,7$ (90 d)
 - 12 (incl. 1 ref)



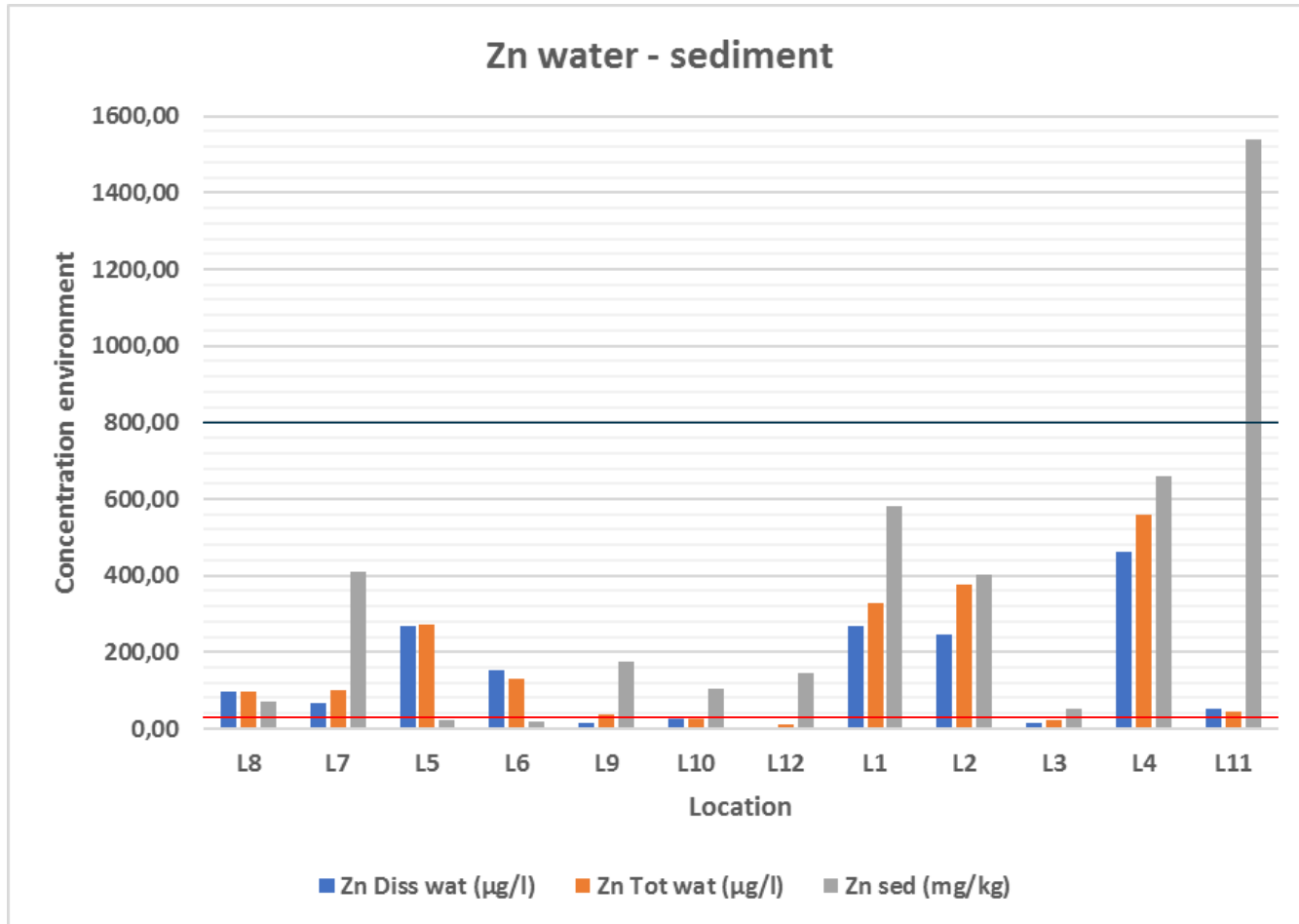
Collected macroinvertebrates

- Handnet or artificial substrate
- Sorting & identification
- MMIF

Material and methods



Results – Water / Sediment

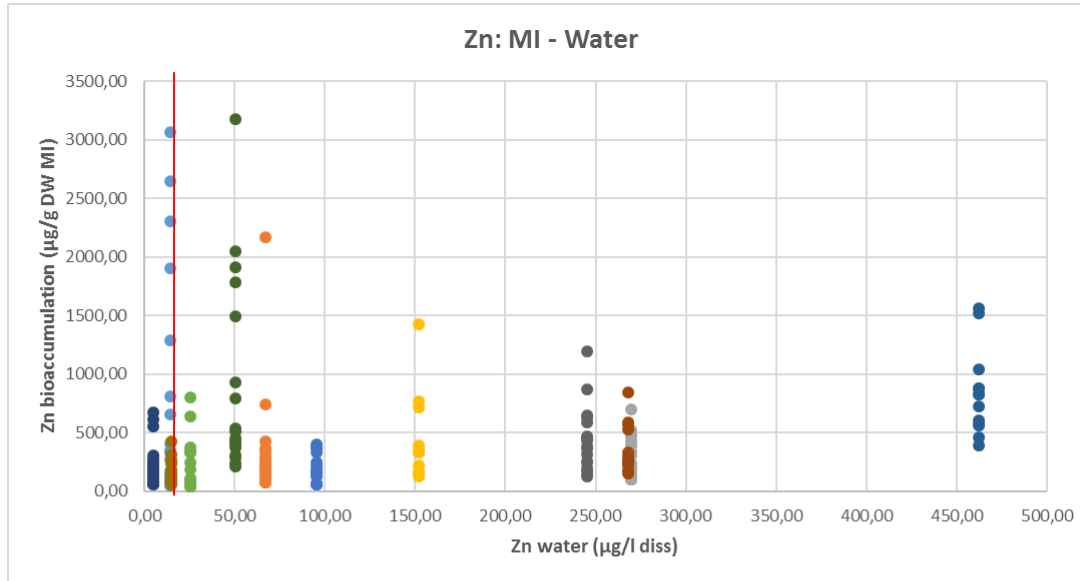


EQS water ———

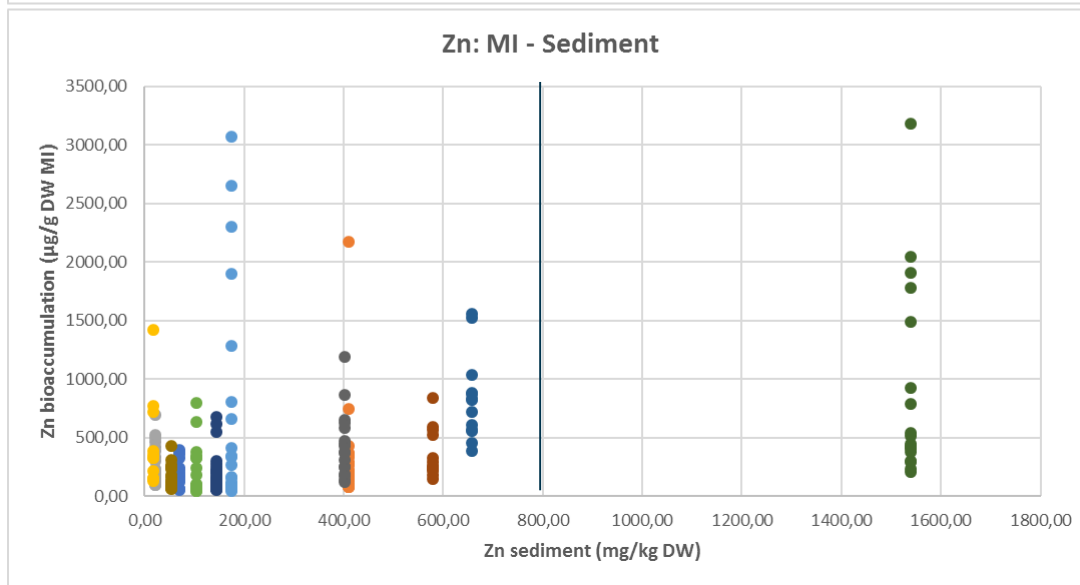
EQS sediment ———

Results – MI bioaccumulation

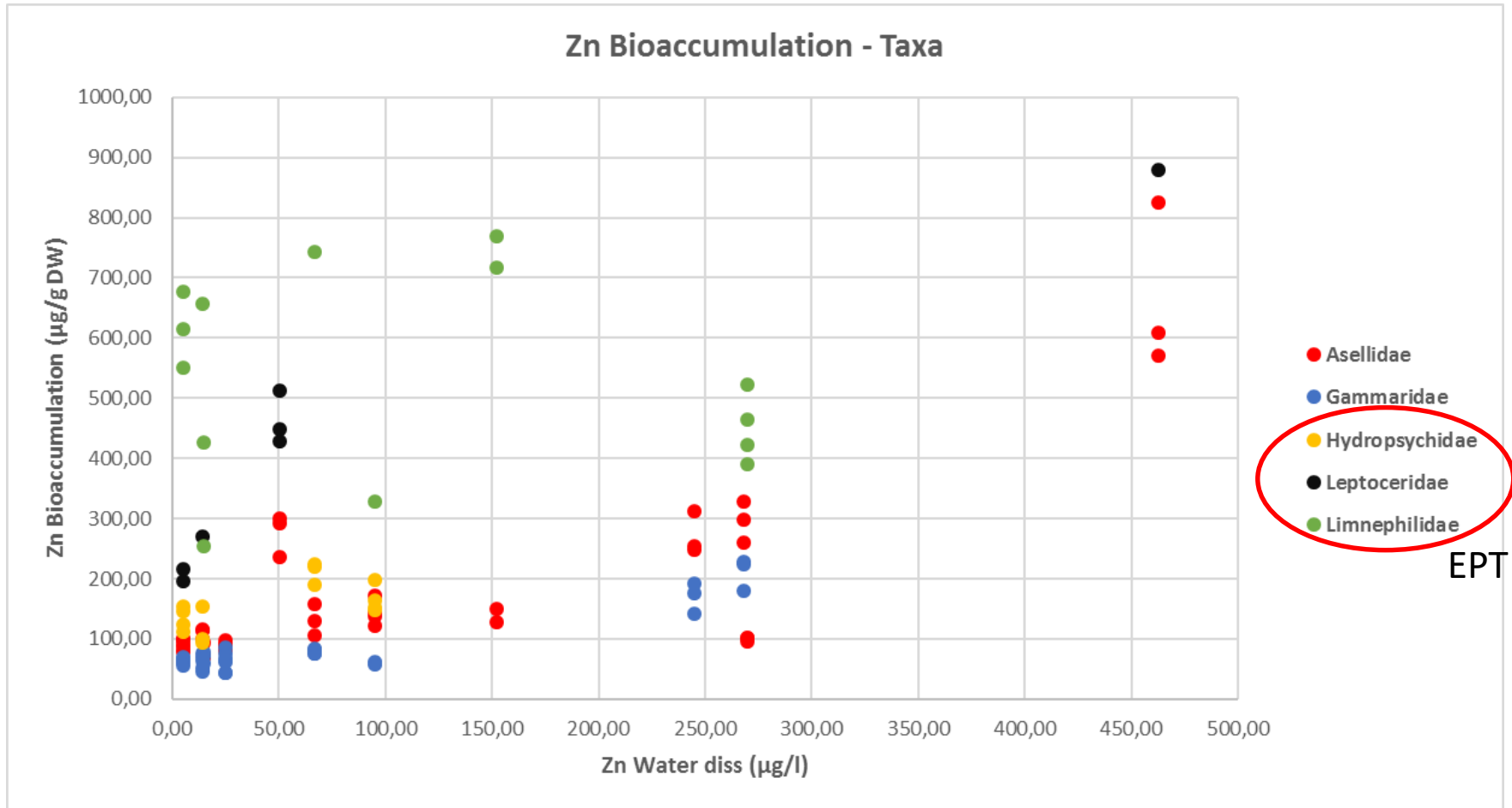
EQS water



EQS sediment



Dissolved Zn vs taxa



Preliminary conclusions

Taxa are quite different in their accumulation

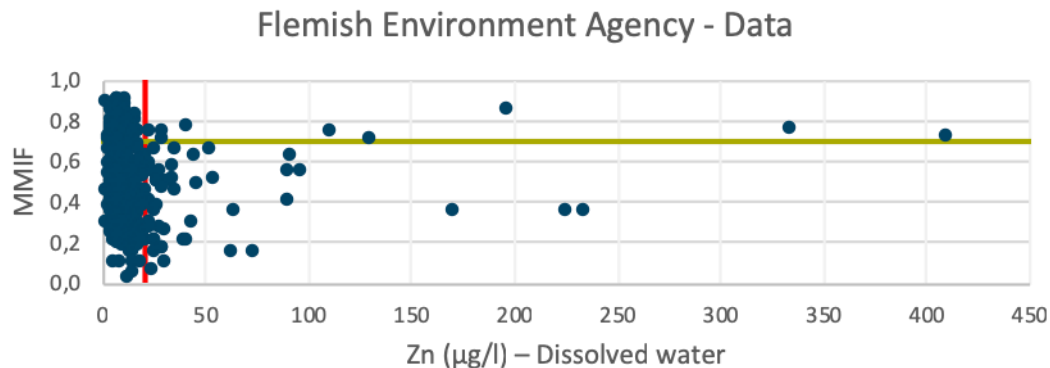
- Biological reasons
- Water/sediment association

Expectations

- Community => bioavailability logical reason
- Adaptation seems to be more likely (for now)



Next step:



+ Risk assessment

Policy



Understanding?



Transparency

- Science - EQS for priority substances WFD
- Policy - unstraightforward and complex research results

Larger frameworks and Joint-Research

- Incorporation into legislation
- O&L → International masters
 - Impact



Thank you for your attention!

Questions?

