

Influence of an aggregate extraction in remobilizing contaminants from sediments in surface waters of the Bay of Seine (France)

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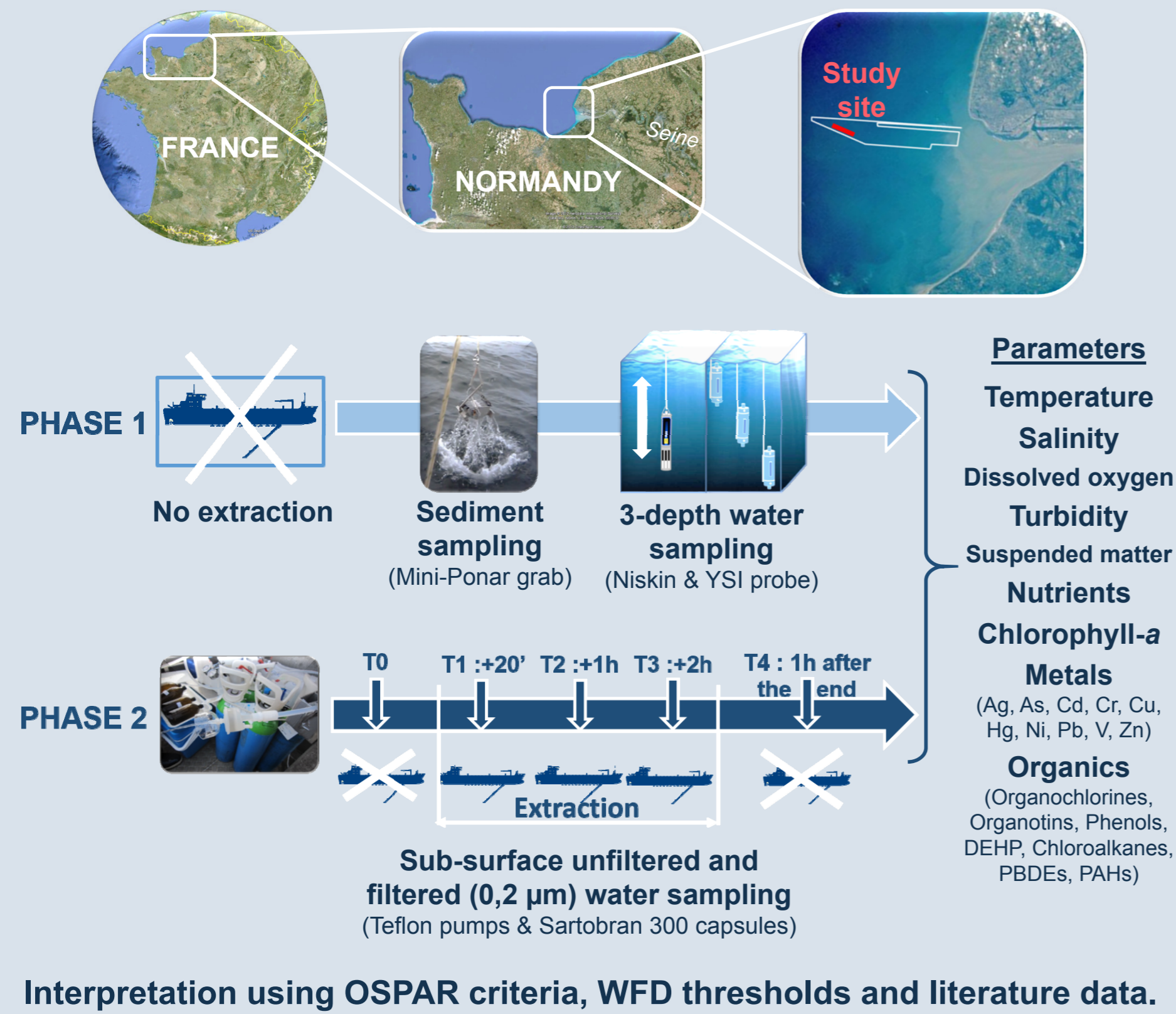
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Context and Objectives

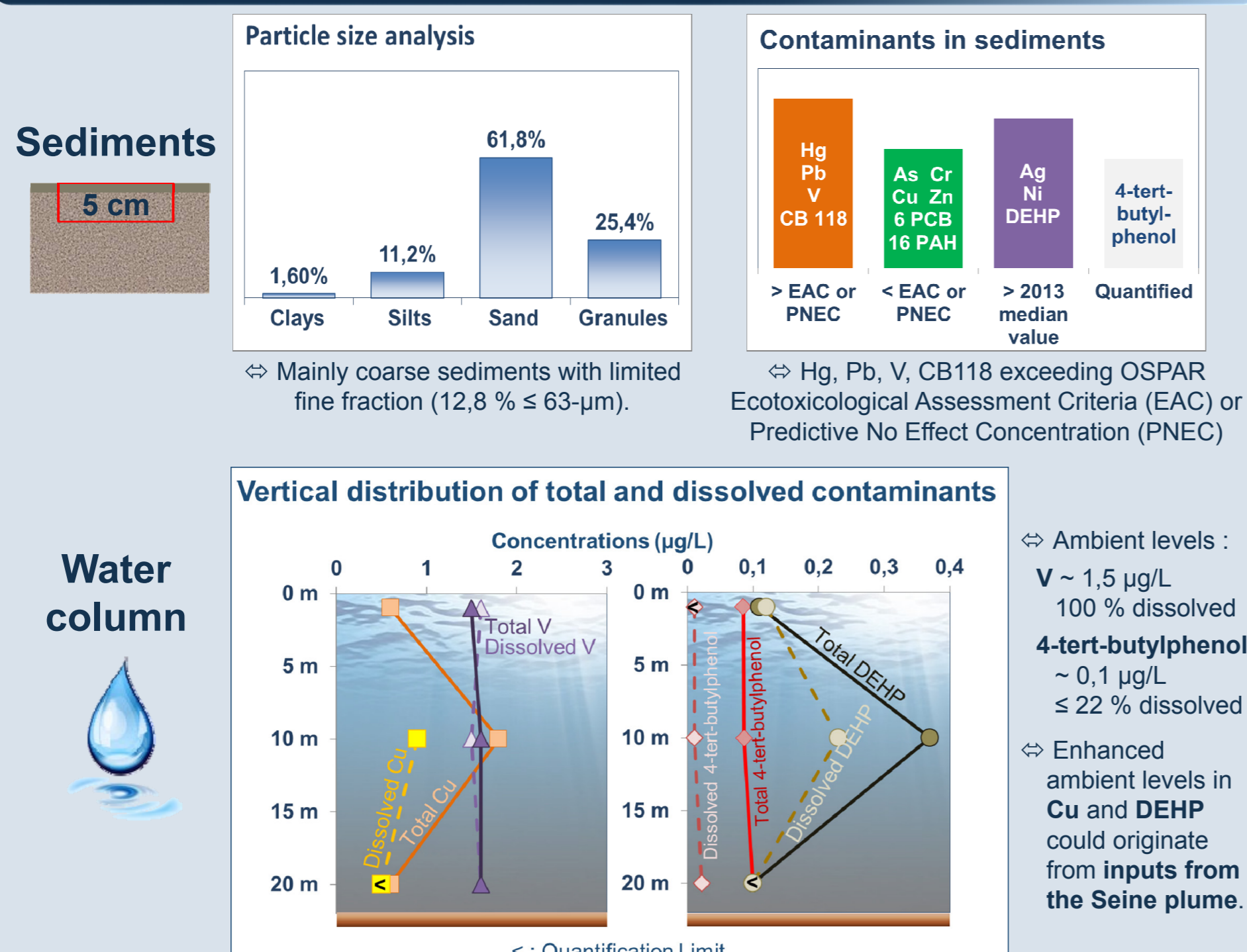
In coastal areas where monitoring data show that fine sediments contain contaminants (heavy metals and organics), remobilization of these materials during aggregate extractions, which create a turbidity plume, might influence water quality. The eastern bay of Seine (France) is under the influence of the Seine plume, one of the most contaminated rivers in Europe. This study aimed at investigating the following questions:

- 1) What are ambient levels of contaminants in the study area ?
- 2) What are the characteristics of the turbidity plume created by aggregate dredging and its extent ?
- 3) How did contaminants behave in the turbidity plume : degree of remobilization from sediments to surface waters, transfer to the dissolved phase, levels in surface waters after dissipation of the turbidity plume ?

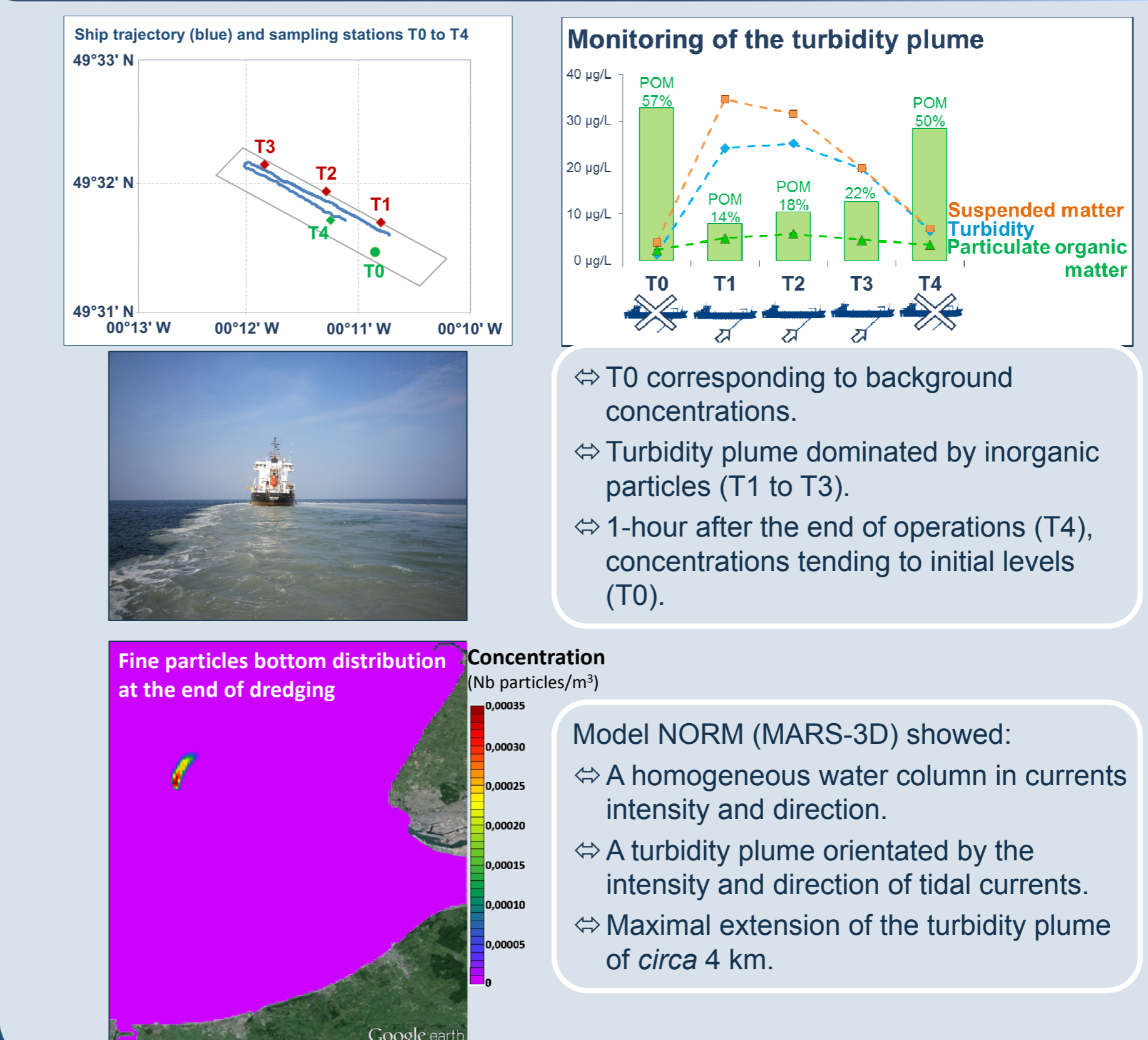
Study area and Methods



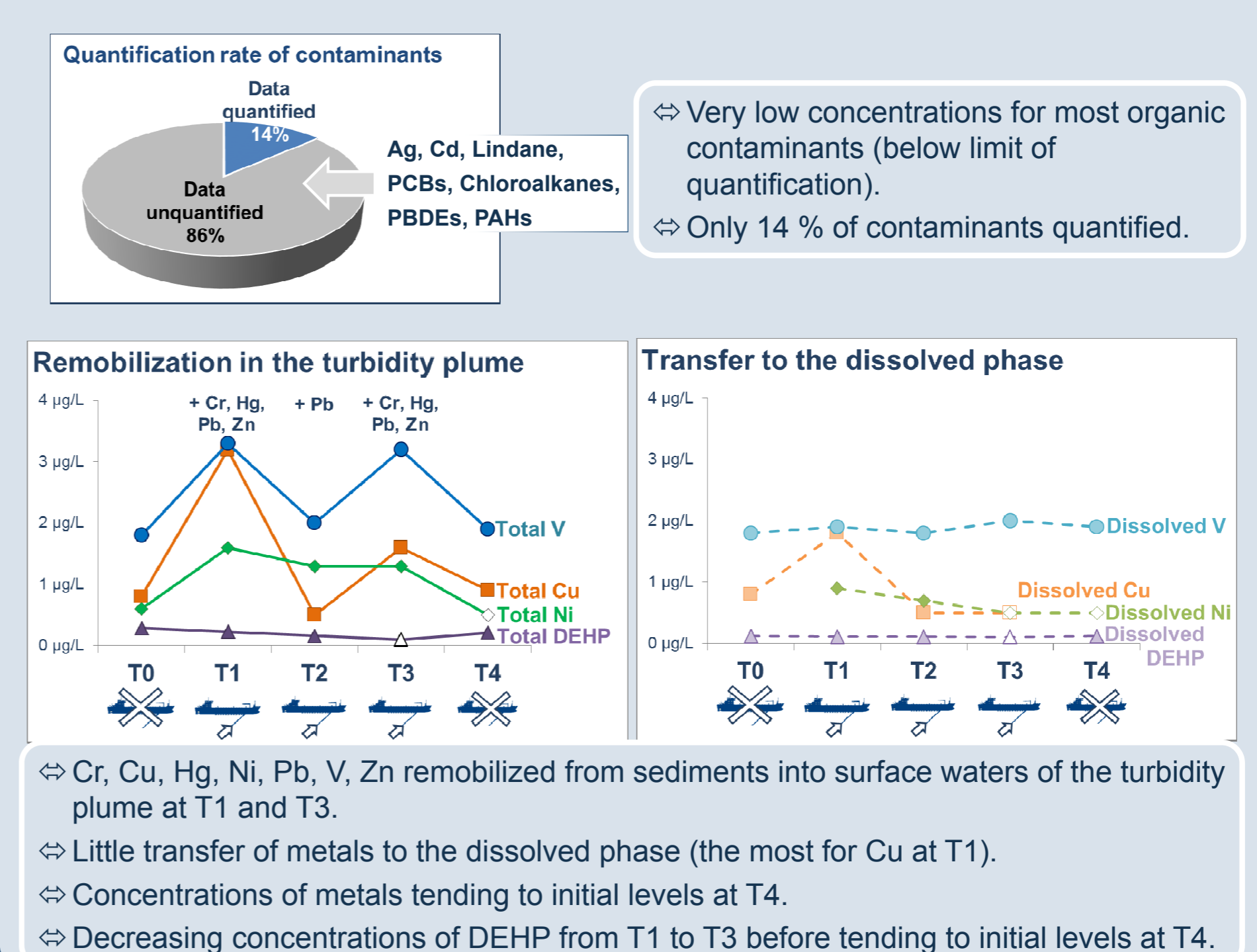
1- Contaminant ambient levels in sediments and water



2- Characteristics of the turbidity plume



3- Behavior of contaminants in the turbidity plume



Conclusion

This work therefore shows:

- Effective remobilization of metals which remained mostly adsorbed onto particles.
- A tendency to returning to initial levels during clearing away of the turbidity plume.
- Schematic modeling of the turbidity plume confirmed its limited extent.

These results represent new data on substances that are of high concern in the bay of Seine, an area subject to multiple anthropogenic pressures.

Acknowledgments

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