

# DYNAMICS of PERSISTENT ORGANIC CONTAMINANTS in the THAU MEDITERRANEAN LAGOON (FRANCE): EXPERIMENTAL APPROACH for THRESHOLDS STUDIES

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## APPROACH

Sampling and experimental campaigns are carried out within the Stream 4 framework (thresholds and drivers of contaminants) for supporting the development of thresholds for persistent organic pollutants (POPs). Three families of persistent chemicals have been selected for this purpose: polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDEs). The Thau Lagoon experimental campaign was carried out from 13<sup>th</sup> to 19<sup>th</sup> November 2005. This Lagoon is one of the biggest on the French Mediterranean coast with an approximate surface of 75 km<sup>2</sup> and an average depth of 4.5 m. Its catchments area is about 280 km<sup>2</sup>. Anthropogenic pressure on the Thau lagoon relates to agriculture, industries and urban activities. The Thau and other Mediterranean lagoons present high patrimonial ecological values associated with sizeable economic activities.

## OBJECTIVES

To obtain **distribution and speciation** of contaminants in the water column (dissolved and particulate phases), and in air (particulate and gas phases)  
To appraise **long term variability** of contaminants

Support the development of contaminant thresholds  
Generate data for POPs fate modeling

To estimate **atmospheric loadings** of contaminants  
To study **contaminants exchanges** between environmental compartments : air, water and sediments

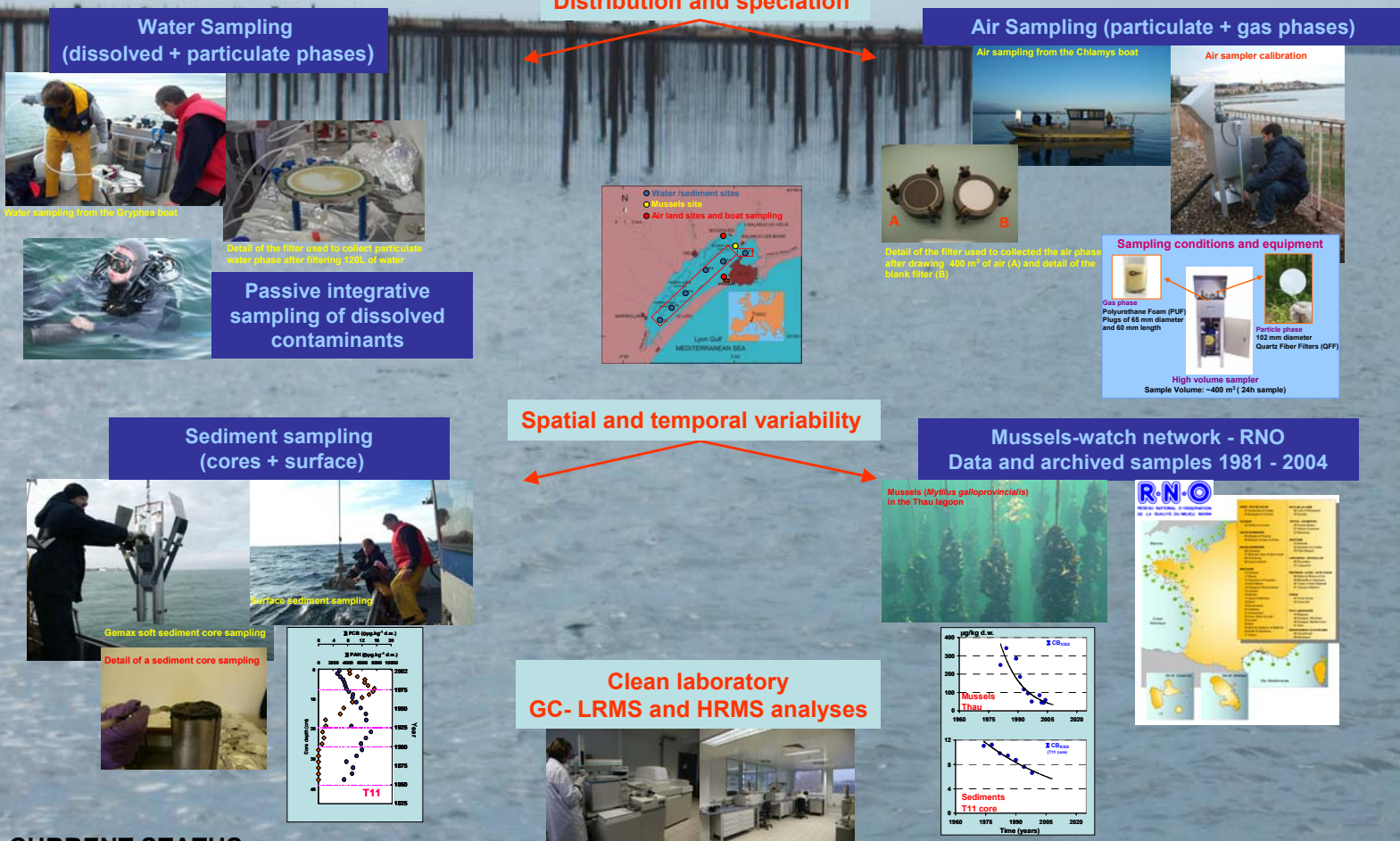
## STRATEGY

Experimental campaign and sampling

Distribution and speciation

Spatial and temporal variability

Clean laboratory  
GC- LRMS and HRMS analyses



## CURRENT STATUS

The samples for studies of contaminants distribution and speciation in water column and in air have been collected. The analyses of these samples are being carried out in 2006. The retrospective analyses for PAHs, PCBs, and PBDEs in the archived mussels samples from the Thau lagoon provide temporal series on contaminants levels between 1981 – 2004. The analyses of samples from dated sediment cores provide long term variability of contaminants loadings in the lagoon going back more than 140 years. Air samples together with meteorological data will provide a better insight into atmospheric inputs of contaminants to the Thau lagoon.