Monitoring of organic contaminants by passive samplers in Southern Europe coastal areas: MONICOAST Project

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INTRODUCTION

Contamination of surface waters is one of the most important current environmental problems. Regulatory monitoring, to comply with European Directives, consists in spot water sampling and the measurement of the contaminants in the laboratory. This approach presents several drawbacks, such as low temporal representativeness (especially in dynamic systems) and the high uncertainty associated to compounds present at low concentrations (i.e. below the detection limit of analytical techniques). Passive samplers have been suggested as an alternative to spot sampling, as accumulate contaminants continuously during the deployment time, integrating their temporal variability and enabling their measurement at very low concentrations.

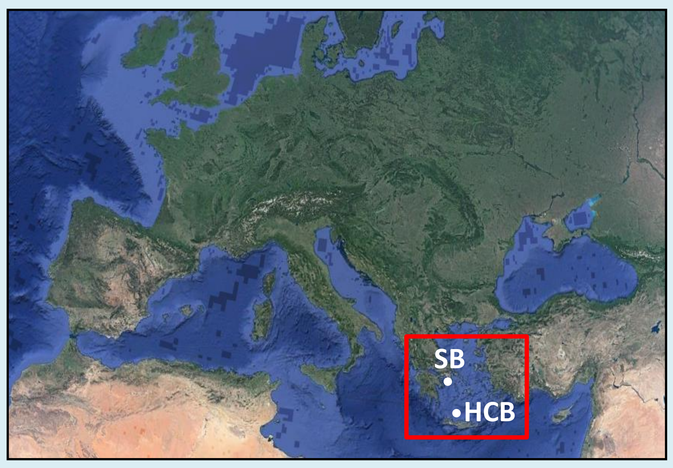
OBJECTIVE

MONICOAST is a collaborative project between the University of Cagliari (UNICA, Italy), AZTI (Spain) and the Hellenic Centre for Marine Research (HCMR, Greece).

The overall aim of MONICOAST is to evaluate the presence and distribution of organic pollutants (PAHs, PCBs, OCPs) in Southern European coastal areas by means of passive samplers.

MATERIAL & METHODS: SAMPLING & ANALYSIS

In the framework of the Jerico-Next Transnational Access (TNA) Call, silicon rubber (SR) passive samplers will be deployed, for 3-4 months for two consecutive periods (June-October & October-January), at two buoys located in the Mediterranean Sea (Greece) and affected by various sources of contamination. After retrieval, SR will be extracted in the laboratory following standardized procedures and the chemicals of interest will be analysed by GC/MS.



SARONIKOS BUOY (SB)

HERAKLION COASTAL BUOY (HCB)

RESULTS

The long-term deployment of passive samplers in these buoys will ensure that organic contaminant concentrations are measurable (over the detection limit) and representative of the contamination in the study area.

The environmental data (e.g. temperature profiles, salinity, currents data) provided by the oceanographic buoys will be used for the interpretation of the results.

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