

ONE-BLUE Project: Integrated Assessment of Contaminants of Emerging Concern (CECs) and their Impacts in Marine Ecosystems: Mediterranean case study



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State of the art

Despite covering less than 1 percent of the world's ocean surface, the Mediterranean harbours 10 percent of all known marine biodiversity, making it an ecosystem of exceptional ecological significance. However, it is also among the most populated, as well as polluted and threatened marine areas in Europe, facing pressures from coastal urbanization, intense maritime traffic, plastic pollution, emerging contaminants, and climate change.

Aim of the study

This initiative seeks to close critical knowledge gaps on the presence, behaviour, and impacts of CECs in the marine environment through a multidisciplinary approach that integrates targeted and non-targeted chemical analyses, bioassays, and microbial assessments. The findings will contribute to a comprehensive understanding of how these contaminants move through and affect marine ecosystems.

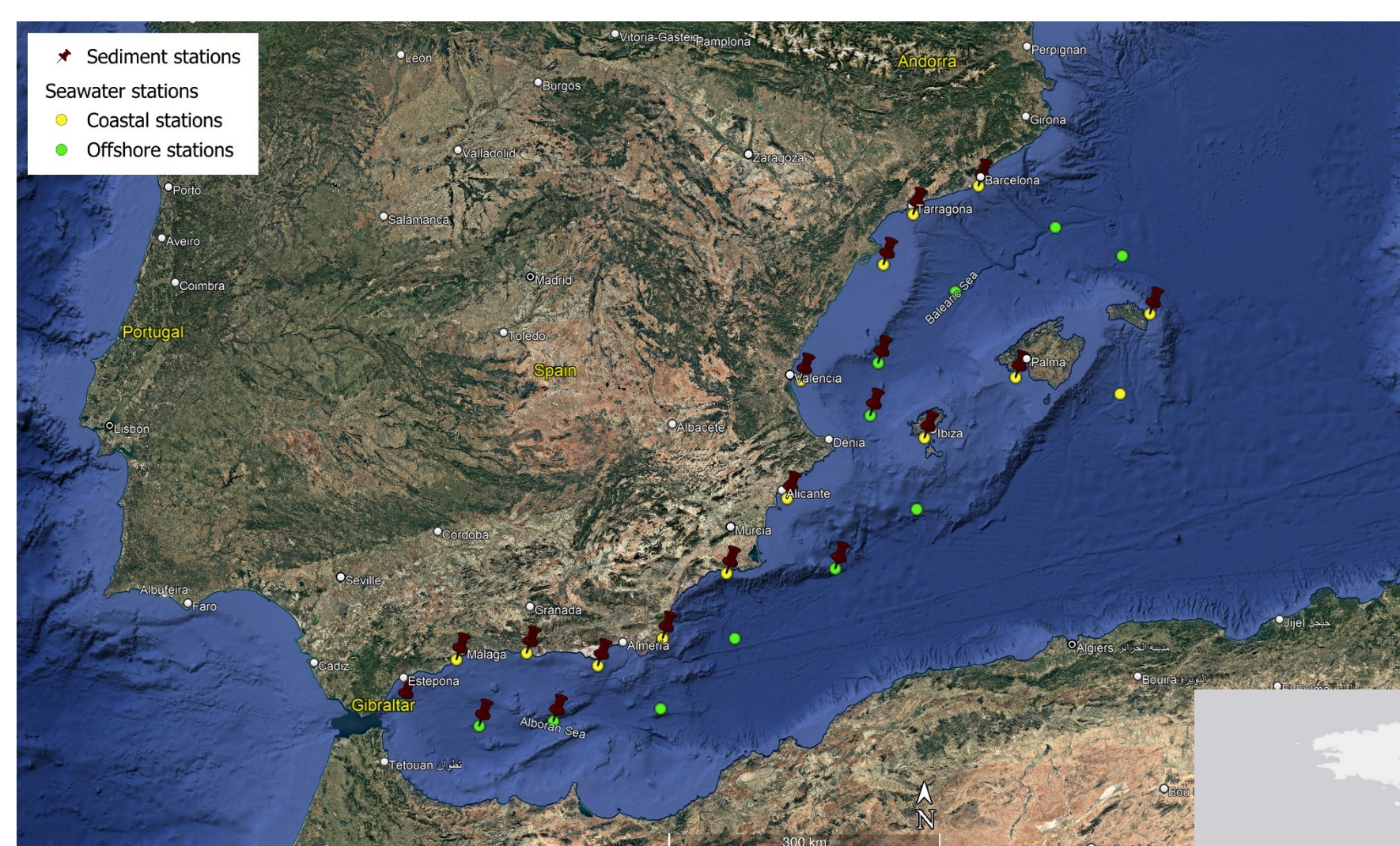
Study areas

8 Partners: CNR-IRSA, IDAEA-CSIC, ICM-CSIC, HCMR, UNIPD, UNIDU, UMIL, ARPAT

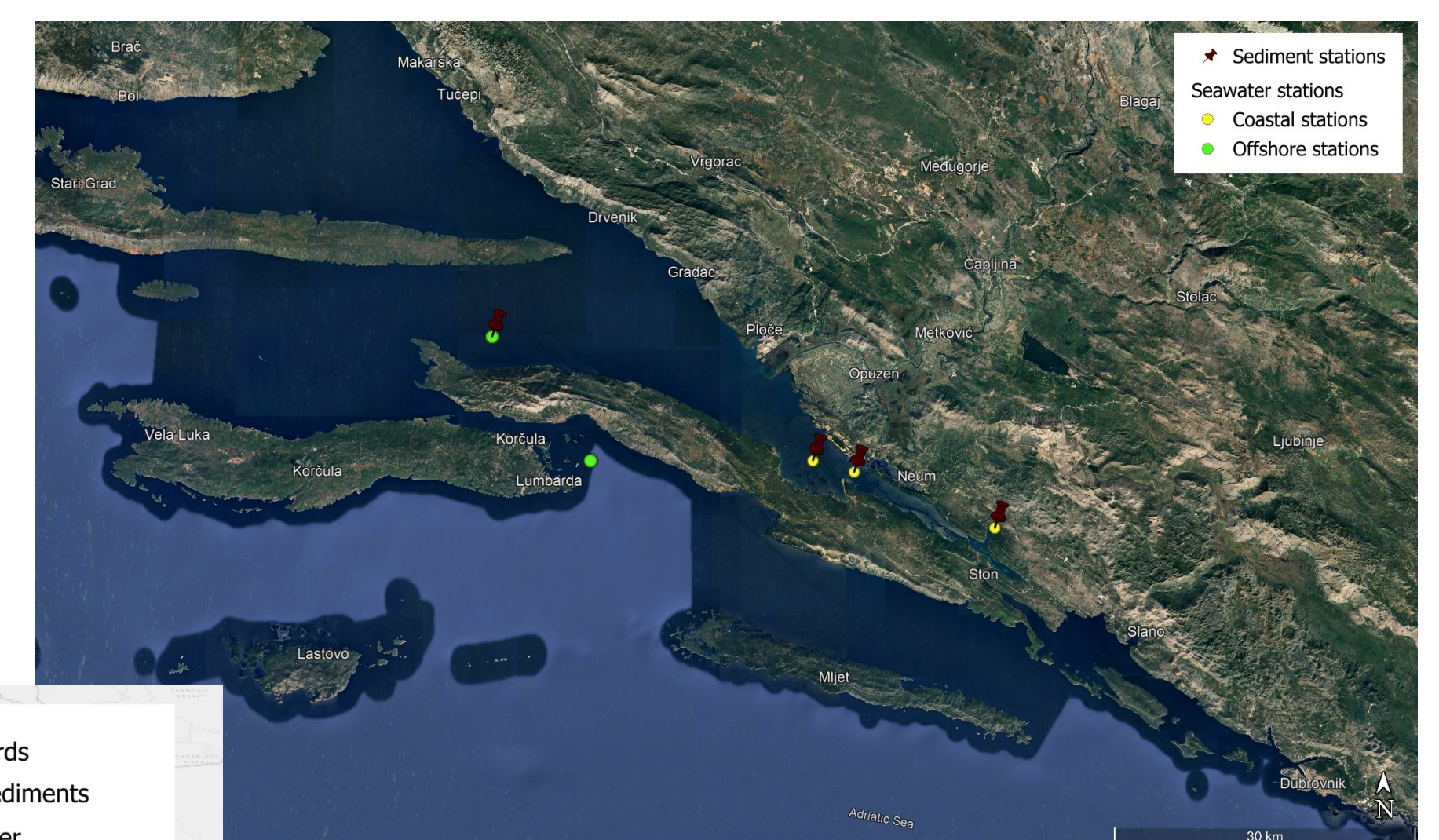
Multiple sampling

- Field data
- Sea water (superficial, column, bottom)
- Bottom sediment
- Microplastics
- Biota (invertebrates, fish)
- Marine Mammals
- Wild bird blood and feather

5 study areas
77 sampling stations

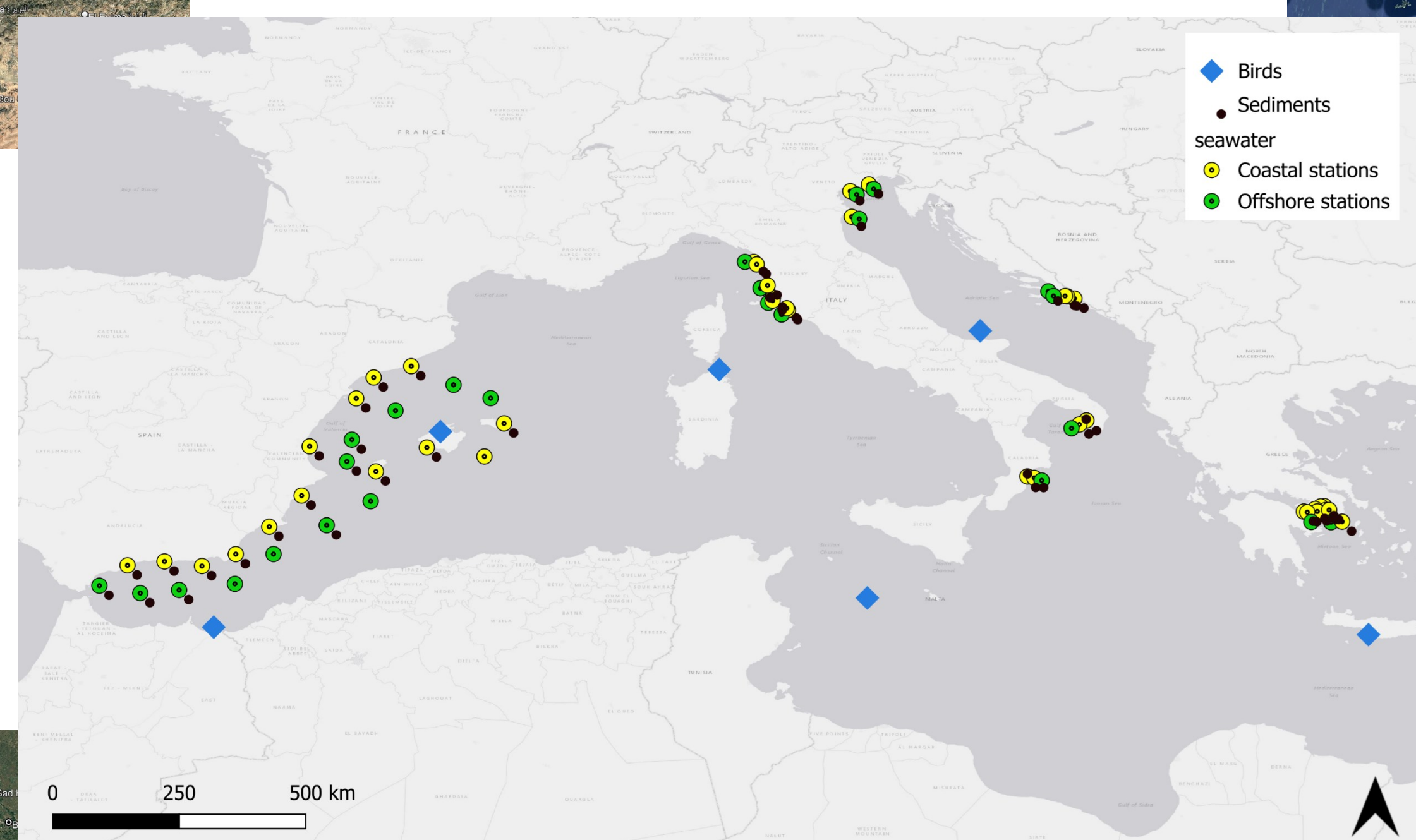


5 seawater stations
3 coastal stations
2 offshore stations
4 sediment stations

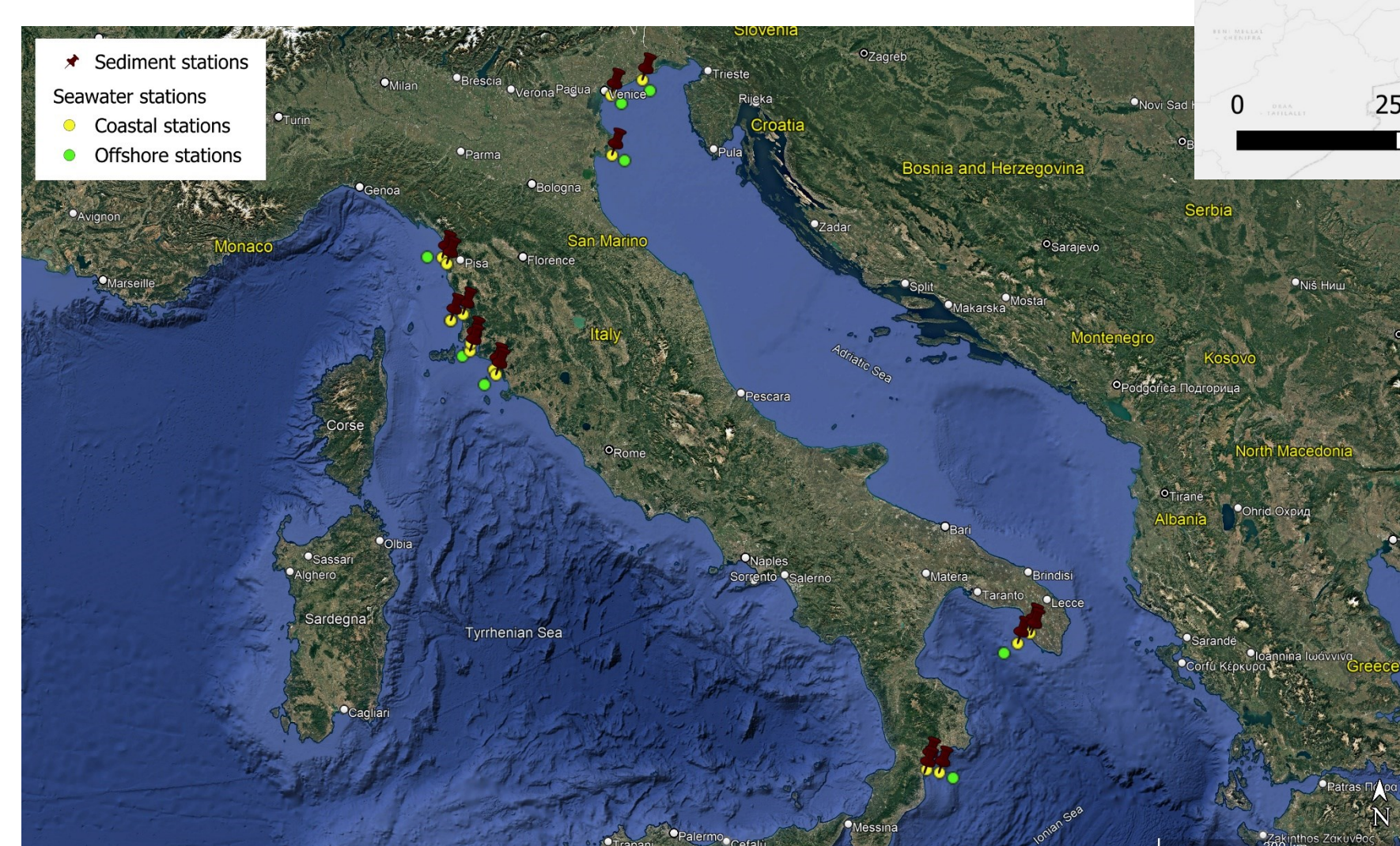


8 seawater stations
6 coastal stations
2 offshore stations
9 sediment stations

26 seawater stations
14 coastal stations
12 offshore stations
19 sediment stations



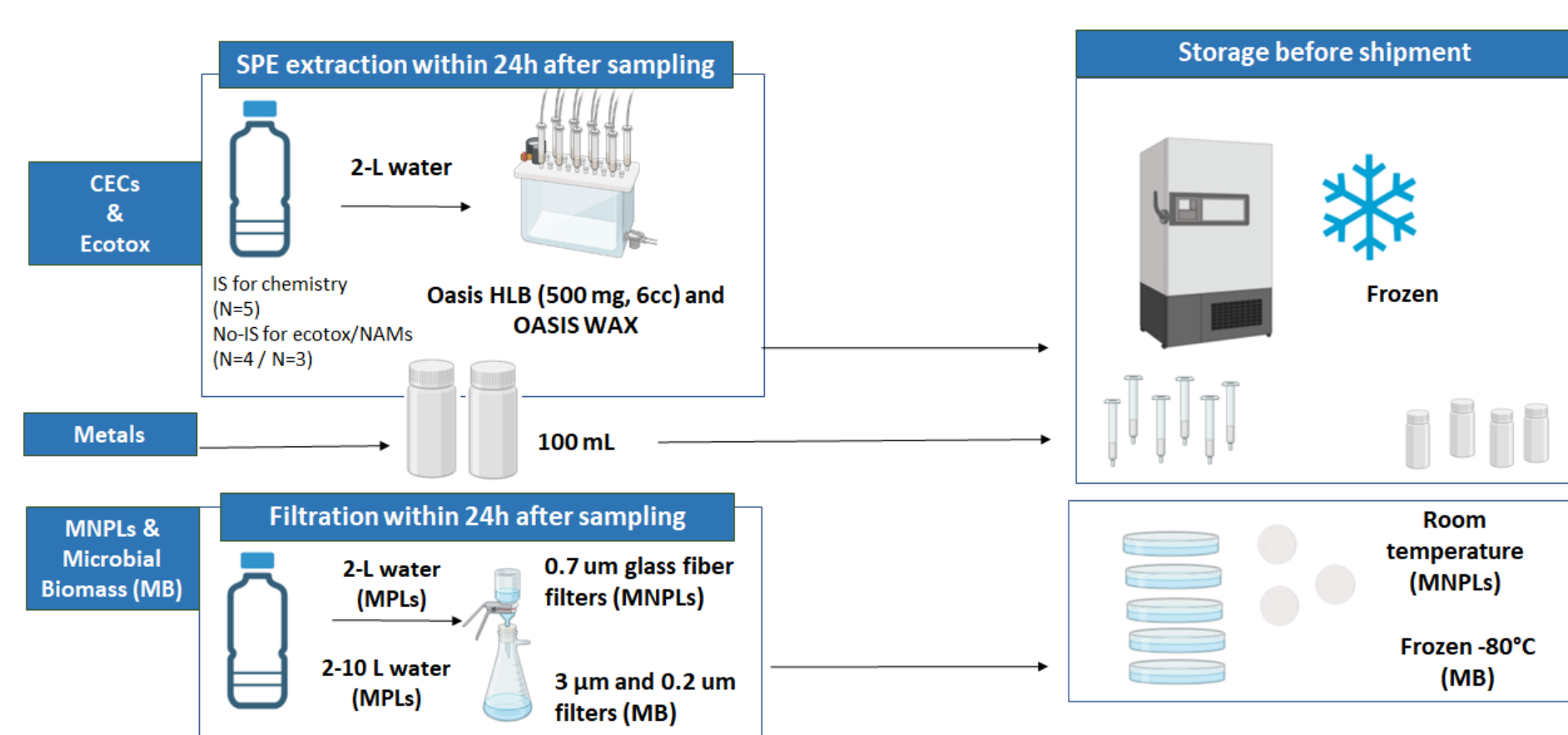
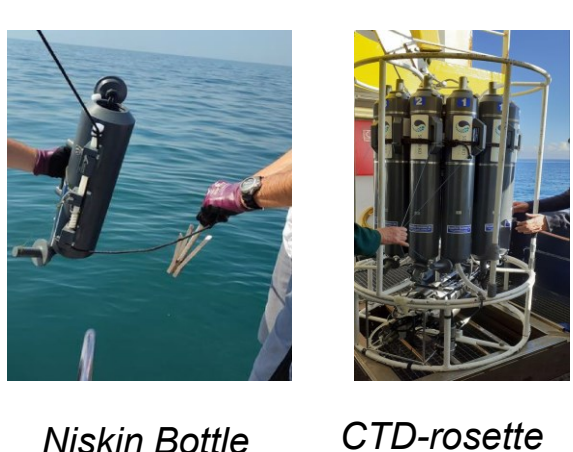
3 study areas
24 seawater stations
15 coastal stations
9 offshore stations
15 sediment stations



Sample collection and treatment

Sea water sampling

- Sampled at different depths:
- Coastal stations: surface and bottom
 - Offshore stations: surface, medium and bottom



Sediment sampling:

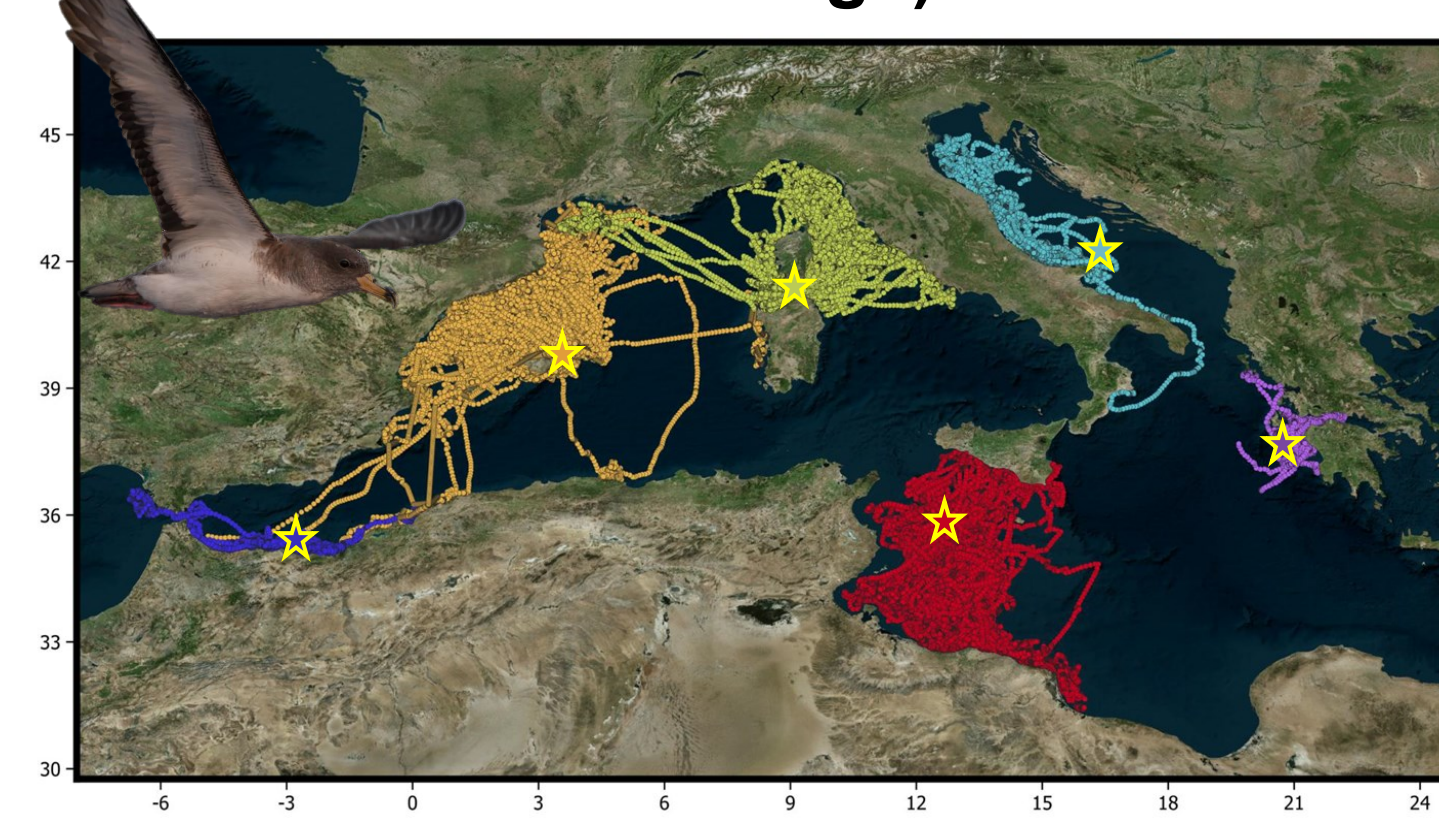
- Ekman dredge
- Box corer

Biota from local fishermen or local angling club at 3 trophic levels



Marine Mammal Tissue Bank

Wild bird blood sampling (Scopoli's shearwater nestlings)



Analytical strategy overview

