

Impact of urban effluents on subtidal and intertidal rocky biocenosis along the Basque coast

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Context:

In compliance with the Water Framework Directive (WFD), the good ecological status assessment for Channel-Atlantic coastal water bodies is currently carried out in the intertidal and subtidal zones using a biological indicator based on macroalgae on the rocky coasts. The second step of this Directive (2016-2021) deals with the workings of the marine ecosystem. Therefore, macrofauna has also to be taken into account in the both zones.

Current works about the WFD indicator of pressure-impact interactions show deficiencies on how the biological indicators respond to each pressure regarding magnitude and type. Therefore, the implementation of a monitoring program on the southern rocky coast is essential to understand and assess the proper ecological condition of the whole marine subregion.

Objectives:

This PhD project aims to study the impact of urban effluent on benthic communities (macrofauna and macroalgae). This work will be achieved in cooperation with the UPV/EHU. The objectives are then to define relevant indicators at the scale of the south of the bay of Biscay rocky shore.

Methodology: Field studies from March to June 2017/2018/2019



Fig.1: Water Treatment Plant (WTP)

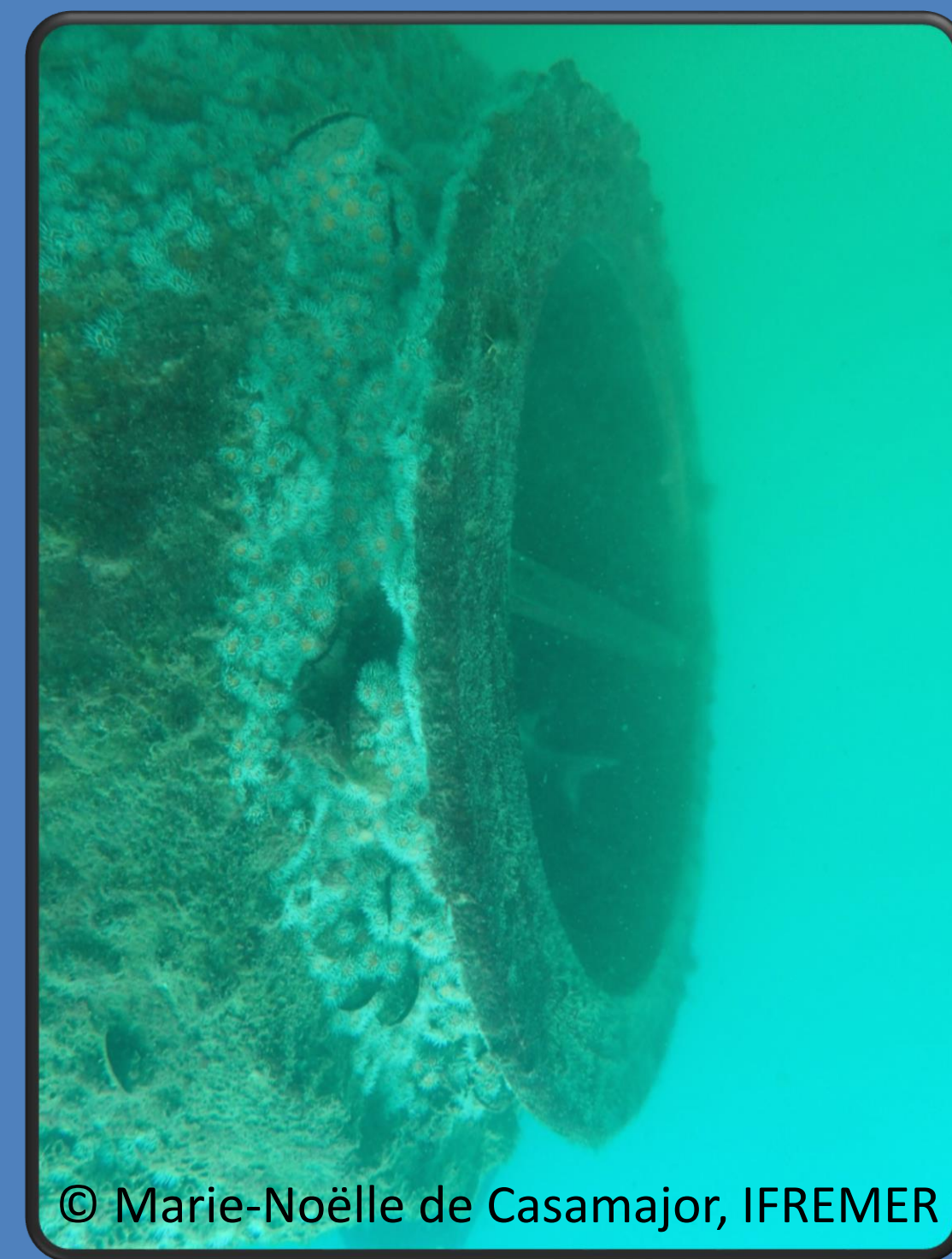


Fig.2: Subtidal outfall

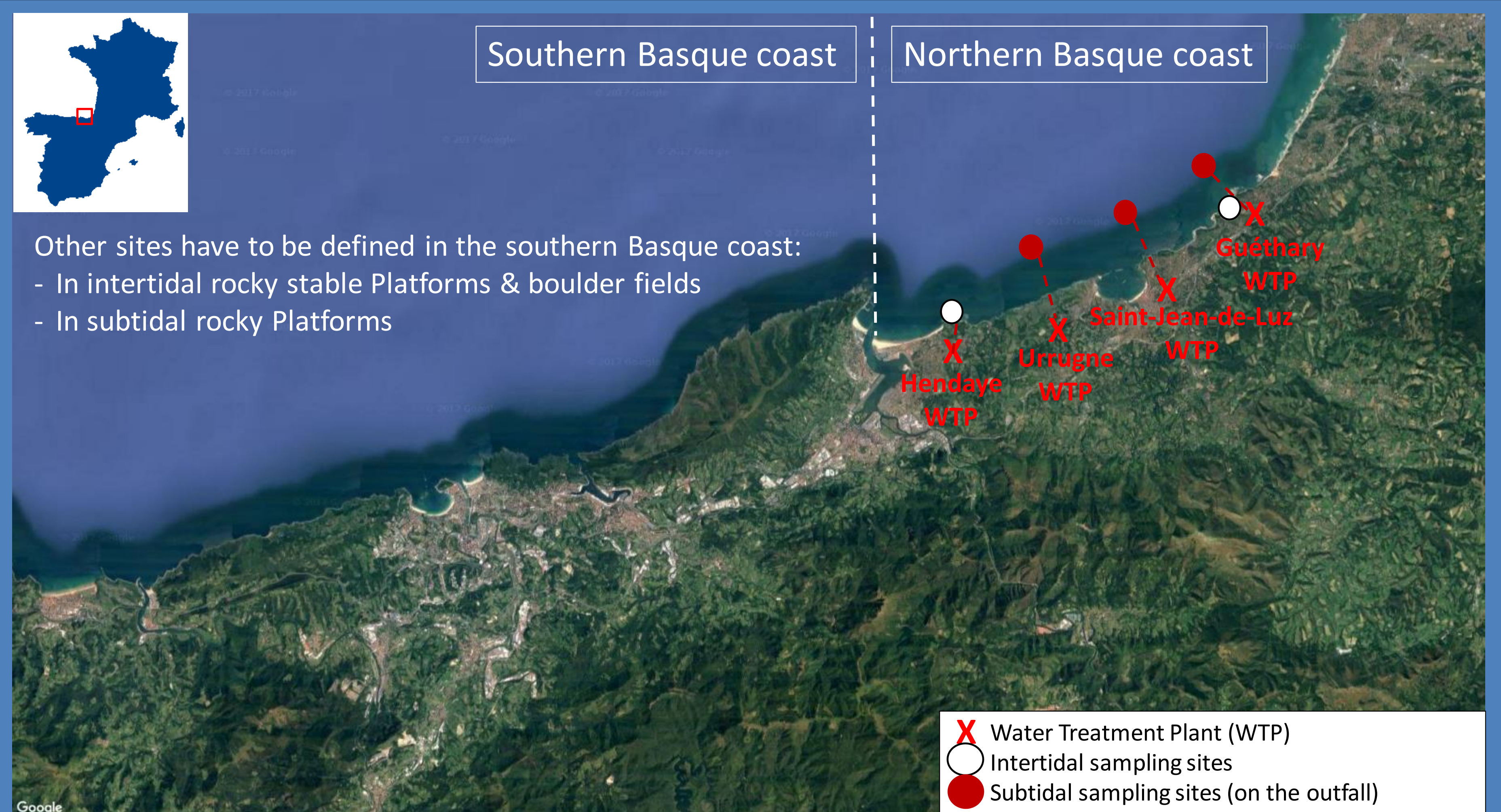
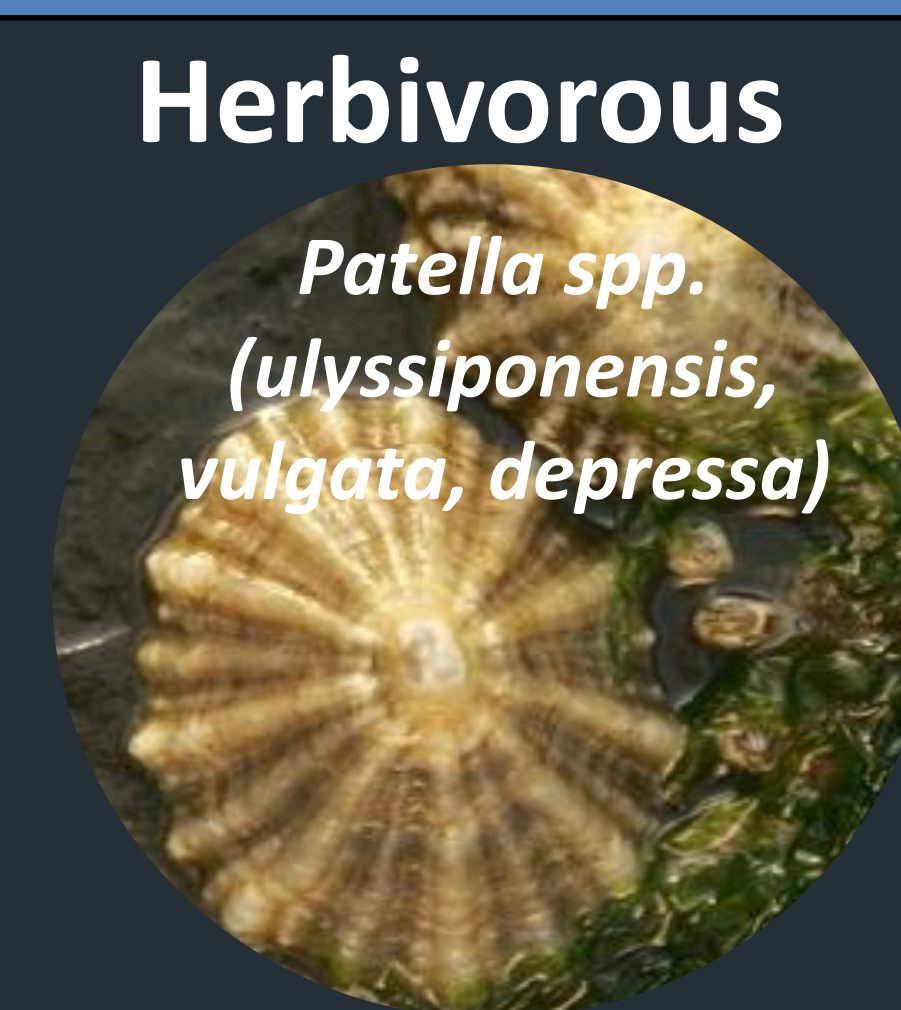
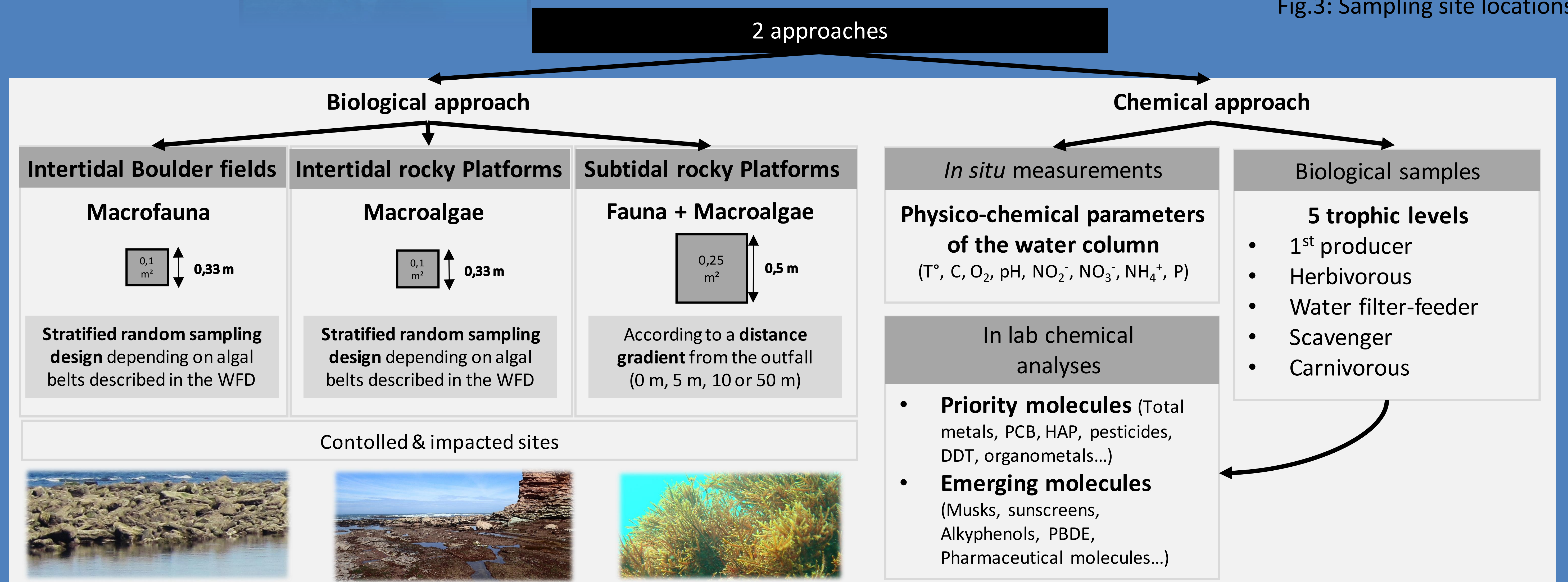


Fig.3: Sampling site locations



Perspectives:

- Improve knowledge about the impact of urban effluents on benthic communities living along the rocky Basque coast,
- Evaluate the anthropogenic pressure versus global change,
- Collect information and support the several Marine Strategy Framework Directive (MSFD) descriptors as the D1 "Biodiversity", D2 "Non-indigenous species", D5 "Eutrophication", D6 "Sea-floor integrity" and D8 "Contaminants".