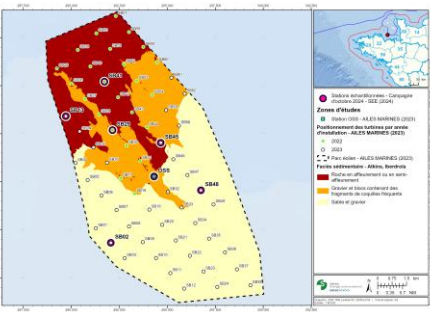


Bio-colonisation monitoring of Saint Briec wind farm

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Any submerged support is subject to bio-colonization through a multi-step process, starting from the development of a biofilm to the establishment of structured communities. Once colonized by bio-fouling, these submerged supports will, in turn, attract mobile species (fish, crustaceans, mollusks) that will come to feed there at least part of the year. This is referred to as temporary aggregation.



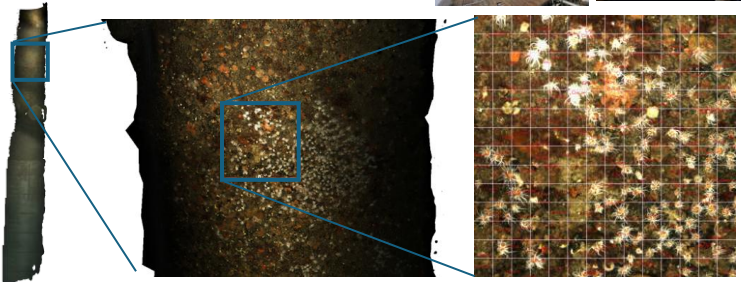
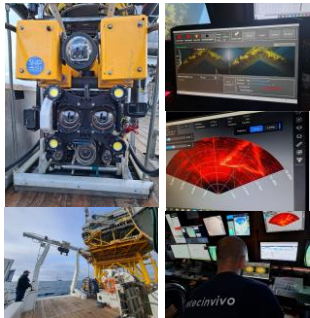
Inaugurated in 2024, the Saint-Briec wind farm (Northern Brittany) consists of 62 turbines installed on 3 different substrate (sand, pebble and rock) . Ailes Marines (Iberdrola), the park manager, has launched a monitoring of the bio-colonization of the park's foundations for a minimum duration of 3 years (first campaign carried out in 2024).

- The objectives are to study :
- The distribution of species according to depth and substrate
 - The succession of species until Climax

For this study, the photogrammetry technique was used via an HYDRO 300 system deployed by ROV (Remotely Operated Vehicle) from the MINIBEX vessel.

The monitoring consist in the study of :

- 7 foundations monitored (6 turbines and the electrical substation)
- 3 pillars orientation by foundation
- 7 depths by pillars
- 2 quadrats (25 x 25 cm) at each depth x pilar x foundation
- 196 stratified random point identifications (0.32 points.cm⁻²).

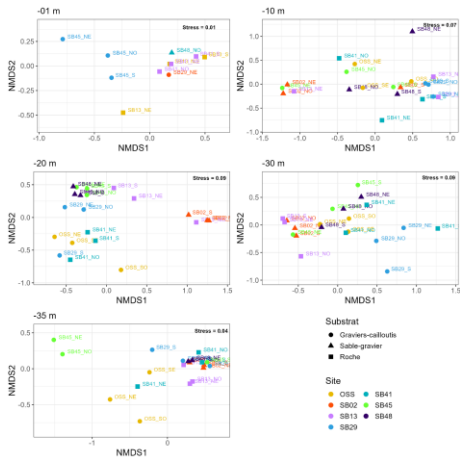


Initials results :

- Biofouling follows a stratification distribution along depth
- An influence of the orientation of the pillars on the depth of algae development (deeper colonization on south oriented pillars).
- The nature of the substrate on which the foundations are installed does not influence the specific composition of the biofouling
- An influence of the age factor of the installations only at intermediate depths (-30 to -20m). The older foundations (2 years versus 1 year) are characterized by more balanced communities, with a higher abundance of bryozoans and ascidians, and the presence of bivalve mollusks (mainly Pectinidae) and cnidarians (*Actinothoe sphyrodetata* anemones).
- Observation of several mobile species of fish or crustaceans around the foundations



Detailed composition of the biofouling by pilar



Non metric multidimensional analysis based on the abundance data for each bathymetry



Schematic illustration of biofouling distribution

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