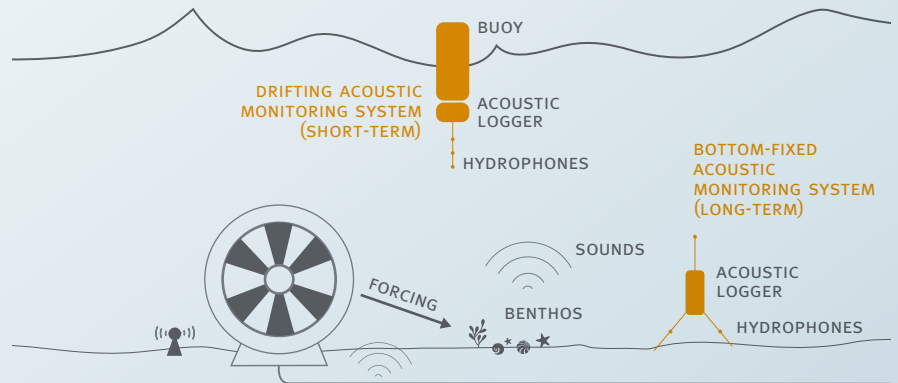


Benthoscope



ACOUSTIC INDEX OF BENTHIC RESOURCES ON HARD SUBSTRATES FOR THE ASSESSMENT OF IMPACTS FROM TIDAL STREAM TURBINES

The BENTHOSCOPE project's objective is to diagnose the state and trends of benthic populations of a rocky marine habitat by listening to the sounds they produce, rather like a stethoscope is used in the field of medicine.



The benthos is the assemblage of organisms living near the seafloor and a vital compartment for the functioning of ecosystems in coastal environments. It also holds economic, heritage and iconic stakes within these environments, which are also the preferred areas for deploying facilities to produce power from marine renewable energies (MRE).

The objective of the BENTHOSCOPE project is to develop methods which are innovative because they provide quantitative environmental monitoring of the potential impacts of stream turbines on the benthic compartment of hard substrates, for which conventional methods are lacking.

the rich biota in the benthos will therefore be described using passive acoustics. There are several

advantages to this monitoring tool, including access to indicators from the living environment (their sound production), its non-intrusive nature, high temporal resolution, affordable cost and the possibility of studying marine ecosystems over the long term.

Thanks to this operational method, the following transfer functions will be measured on the scale of populations:

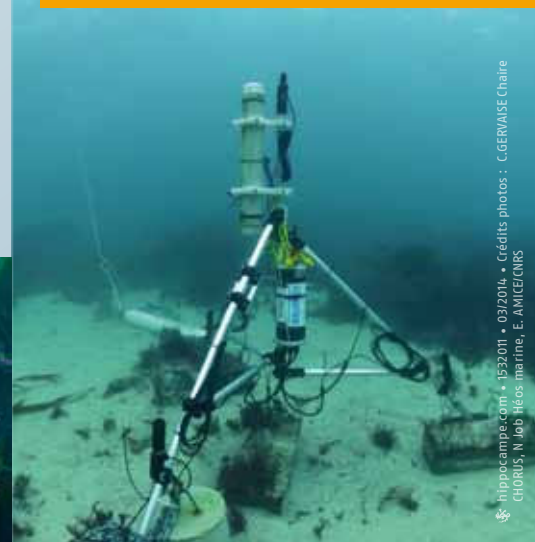
- biological richness (biomass and diversity),
- spatial variability,
- temporal variability.

The project will take on scientific and technical challenges (as the first acoustic description of the benthos on a hard substrate and in a strong current) on one of the first sites where stream turbines are to be deployed in France.

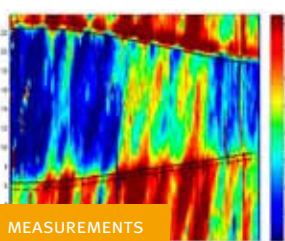
A research project

- Collaborative R&D led by France Énergies Marines, the CHORUS Chair of Excellence of Fondation Grenoble InP, l'UBO/CnRs (IEMAR), Rtsys, Océanopolis, tBM and Quiet Oceans
- A PhD thesis (EDSM): co-funded by France Énergies Marines and the Brittany regional council
- Issues overlapping the fields of signal processing, marine biology and the MRE industry

FIXED ACOUSTIC MONITORING SYSTEM



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POLYSIPHONIA LANOSA

