

## An overview of the microbenthic loop in *Posidonia oceanica* meadows: the good, the bad and the ugly

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**Abstract.** *Posidonia oceanica* is an endemic seagrass of the Mediterranean Sea. The ecosystem based on this plant is essential from an ecological and economical point of view (commercial species, touristic activities, oxygen production), though very sensitive to environmental perturbations. To detect those perturbations, scientists are trying to find more efficient ecological indicators. Most of the time, those indicators are based on the plant itself. Unfortunately, this seagrass does not react very quickly to perturbations so, when a reaction is noticed, it is often too late to prevent irremediable damages to the ecosystem. The sedimentary compartment of *P. oceanica* meadows has been less studied than the canopy level. However, it could be a good source of ecological indicators because it is the final container of all the pollution. In this framework, the microbenthic loop has been studied. It is a major subsystem of those meadows and encompasses organic matter, bacteria, microphytobenthos and meiofauna. As those organisms have a rapid turnover and stay almost all their life inside the sediment, they seemed good potential indicators. This presentation will show what is useful or not inside the sediment and more specifically inside the microbenthic loop. Results of a comparison between a fish farm and a reference location will be used, as well as *in situ* experiments (shading and sediment loading) and small spatial scale variations. At the end of this presentation, you will know what are the good, the bad and the ugly in the sedimentary compartment of a *P. oceanica* meadow.

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