

# **Integrative responses of *Posidonia oceanica* to multiple stressors: a new prospective for future global changes**

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Seagrasses are marine clonal plants with limited dispersal abilities that give rise to a sedentary habitat particularly susceptible to environmental changes. *Posidonia oceanica* (L.) Delile (1813) is an endemic species of the Mediterranean Sea, extremely vulnerable to the intensification of warming and eutrophication events that characterized this semi-enclosed sea. In this study, we explored for the first time in seagrasses, different responses degree of *P. oceanica* plants collected from two environments with different nutrient loads history to multiple stressors. For this purpose, collected shoots were exposed to temperature and nutrient enrichment in a multi-factorial experiment performed in a mesocosm system. Morphological and physiological performances of both plants were highly affected by the exposure to high nutrient concentrations alone, which induced higher effects in comparison to temperature treatment. The combination of high nutrients and temperature levels showed antagonist effects, promoting less negative impacts at structural and physiological levels. Local environmental conditions seemed to influence plant responses to nutrients, especially for seagrasses experiencing chronic exposure to eutrophication in natural environments that appeared more sensitive than nutrient-limited plants. These results provide new evidence in seagrass physiological responses to multiple stressors that should be taken into consideration to manage nutrient inputs into coastal marine ecosystems and to preserve seagrasses under a global changes scenario.

- Full talk (10+5 minutes)
- Flash talk (3+2 minutes), max 2 slides

Mark the session where you intend to present

- S1 - Biodiversity and Ecosystem Functioning
- S2 - Ecosystems: Resistance and Resilience
- S3 - Microbiology
- S4 - Oceanography
- S5 - Transitional and coastal waters ecology
- S6 - Ecotoxicology
- S7- Open Session