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From mechanical to chemical impact of anchoring in seagrasses: The premises of anthropogenic patch generation in *Posidonia oceanica* meadows

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ABSTRACT

Intensive anchoring of leisure boats in seagrass meadows leads to mechanical damages. This anthropogenic impact creates bare mat patches that are not easily recolonized by the plant. Several tools are used to study human impacts on the structure of seagrass meadows but they are not able to assess the indirect and long term implication of mechanical destruction. We chose to investigate the possible changes in the substrate chemistry given contrasted boat impacts. Our observations show that hydrogen sulfide concentrations remain high at 15 and 20 m depth (42.6 μM and 18.8 μM) several months after the highest period of anchoring during the summer. Moreover, our multidisciplinary study reveals that anchoring impacts of large boats at 15 and 20 m depth can potentially change the seascape structure. By taking into account both structural and chemical assessments, different managing strategies must be applied for coastal areas under anthropogenic pressures.

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