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Valorização integral dos recursos marinhos

Título	**Variation on the standing stock of *Gracilaria sp.* in a temperate estuary under single-stressor and multiple-stressor climate change scenarios**
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Abstract (EN)	The seaweed *Gracilaria* is not only relevant to the functioning of coastal ecosystems as it also has an important economic value particularly linked to agar extraction. Climate change is expected to affect the production of marine macrophytes and hence their related processes. Baring this in mind, our aim was to develop a numerical model capable of predicting variations on *Gracilaria* sp. growth and standing stock under climate change scenarios, including temperature rise (RCP2.6 and RCP8.5), hypersalinity and enhanced nitrogen (N) runoff. Single-and multiple-stressor simulations were run to check for possible interactions among different stressors and the resulting impacts on *Gracilaria sp.* growth. Results indicate that the effects of isolated and combined stressors on *Gracilaria sp.* standing stock differ. The tested temperature rise scenarios induced decreases of 29% (RCP2.6) and 57% (RCP8.5) on the red algae biomass, with more severe effects under the highest emission scenario (RCP8.5), which were related to enhanced algal respiration, decomposition and grazing pressure. Seasonal hypersalinity caused a reduction of 35% on the net productivity of *Gracilaria sp.*, while the simulated N runoff increase (25%) had no effect on the annual biomass of *Gracilaria sp.* Contrarily to the moderate effects of single-stressors, multiple-stressor scenarios had severe impacts on *Gracilaria sp.* annual standing stock with reductions > 90%, pointing out to the occurrence of synergistic effects of temperature and salinity on the production of *Gracilaria sp.* Overall, these results indicate that within the next decades, the interaction of different environmental stressors will pose significant constraints to the production of *Gracilaria sp.* on natural systems with subsequent effects to therein associated ecological services
Abstract (PT)	-
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