Effect of Atmospheric Heatwaves on Reflectance and Pigment Composition of Intertidal *Nanozostera noltei* – Draft

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Abstract

To be written

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1. Introduction

Intertidal seagrasses play a crucial role in the ecosystem by providing habitats and feeding grounds for various marine species, supporting rich marine biodiversity, and contributing significantly to primary production and carbon sequestration [1, 2]. These seagrasses are essential in maintaining the health of coastal ecosystems by stabilizing sediments, filtering water, and serving as indicators of environmental changes due to their sensitivity to water quality variations [3]. The interactions between seagrass meadows and their associated herbivores further enhance the delivery of ecosystem services, including coastal protection and fisheries support [4, 5, 6]. Understanding and preserving these ecosystems are vital for maintaining the biodiversity and productivity of coastal regions [7, 8].

References

[1] R. K. Unsworth, L. C. Cullen-Unsworth, B. L. Jones, R. J. Lilley, The planetary role of seagrass conservation, Science 377 (6606) (2022) 609–613.

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[2] A. I. Sousa, J. F. da Silva, A. Azevedo, A. I. Lillebø, Blue carbon stock in zostera noltei meadows at ria de aveiro coastal lagoon (portugal) over a decade, Scientific reports 9 (1) (2019) 14387.

[3] M. L. Zoffoli, P. Gernez, L. Godet, S. Peters, S. Oiry, L. Barillé, Decadal increase in the ecological status of a north-atlantic intertidal seagrass meadow observed with multi-mission satellite time-series, Ecological Indicators 130 (2021) 108033.

[4] E. Jankowska, L. N. Michel, G. Lepoint, M. Włodarska-Kowalczuk, Stabilizing effects of seagrass meadows on coastal water benthic food webs, Journal of Experimental Marine Biology and Ecology 510 (2019) 54–63.

[5] M. L. Zoffoli, P. Gernez, S. Oiry, L. Godet, S. Dalloyau, B. F. R. Davies, L. Barillé, Remote sensing in seagrass ecology: coupled dynamics between migratory herbivorous birds and intertidal meadows observed by satellite during four decades, Remote Sensing in Ecology and Conservation 9 (3) (2023) 420–433.

[6] R. C. Gardner, C. Finlayson, Global wetland outlook: state of the world's wetlands and their services to people, in: Ramsar convention secretariat, 2018, pp. 2020–5.

[7] A. L. Scott, P. H. York, C. Duncan, P. I. Macreadie, R. M. Connolly, M. T. Ellis, J. C. Jarvis, K. I. Jinks, H. Marsh, M. A. Rasheed, The role of herbivory in structuring tropical seagrass ecosystem service delivery, Frontiers in Plant Science 9 (2018) 127.

[8] C. Ramesh, R. Mohanraju, Seagrass ecosystems of andaman and nicobar islands: Status and future perspective., Environmental & Earth Sciences Research Journal 7 (4) (2020).