

{rokbox title=| The relationship between local annual temperature (°C) (average 5 years before plant experiment/observation) and reported upper thermal limits (°C) of seagrass species with temperate (squares) and tropical (circles) affinity :: Image:

Authors|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-sea-grass-thermal-limits-jorda-2022-thumb-et-al.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-seagrass-thermal-limits-jorda-2022-et-al.jpg{/rokbox}

Núria Marbà, **Gabriel Jordà**, Scott Bennett, Carlos M. Duarte, 2022. [Seagrass Thermal Limits and Vulnerability to Future Warming](#).

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Abstract:A mass mortality event (MME) affecting the fan mussel *Pinna nobilis* was first detected in Spain in autumn 2016 and spread north- and eastward through the Mediterranean Sea.

Various pathogens have been blamed for contributing to the MME, with emphasis in

Haplosporidium pinnae

, *Mycobacterium* sp. and *Vibrio* spp. In this study, samples from 762 fan mussels (necropsies from 263 individuals, mantle biopsies from 499) of various health conditions, with wide geographic and age range, taken before and during the MME spread from various environments along Mediterranean Sea, were used to assess the role of pathogens in the MME. The number of samples processed by both histological and molecular methods was 83. The most important factor playing a main role on the onset of the mass mortality of

P. nobilis

throughout the Mediterranean Sea was the infection by

H. pinnae

. It was the only non-detected pathogen before the MME while, during MME spreading, its prevalence was higher in sick and dead individuals than in asymptomatic ones, in MME-affected areas than in non-affected sites, and it was not associated with host size, infecting both juveniles and adults. Conversely, infection with mycobacteria was independent from the period (before or during MME), from the affection of the area by MME and from the host health condition, and it was associated with host size. Gram (-) bacteria neither appeared associated with MME.

Keywords:*Pinna nobilis*, *Haplosporidium pinnae*, *Mycobacterium* sp, Gram negative bacteria, molecular biology, histology.