{rokbox title=|Location of experimental macrophyte donor populations in southwestern Mallorca Island (Mediterranean Sea) :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-thermal-tolerance-mediterranean-marine-macrophytes-savva-et-al-2018-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-thermal-tolerance-mediterranean-marine-macrophytes-savva-et-al-2018.jpg{/rokbox}

Ioannis Savva, Scott Bennett, Guillem Roca, **Gabriel Jordà**, Núria Marbà, 2018. **Thermal tolerance of Mediterranean marine macrophytes: Vulnerability to global warming.** Ecology and Evolution. 2018; 1–12. https://doi.org/10.1002/ece3.4663.

Abstract: The Mediterranean Sea is warming at three times the rate of the global ocean raising concerns about the vulnerability of marine organisms to climate change. Macrophytes play a key role in coastal ecosystems, therefore predicting how warming will affect these key species is critical to understand the effects of climate change on Mediterranean coastal ecosystems. We measured the physiological performance of six dominant native Mediterranean macrophytes under ten temperature treatments ranging from 12 to 34°C to examine their thermal niche, and vulnerability to projected warming in the western Mediterranean up until 2100. Among the macrophytes tested, *Cymodocea nodosa* was the species with the highest thermal optima and it was beyond current summer temperature. Therefore, *C. nodosa* may benefit from projected warming over the coming century. The optimal temperature for growth of the other species (*Posidonia oceanica*, *Cystoseira compressa*, *Padina pavonica*, *Caulerpa prolifera*, and *Halimeda tuna*) was lower. Similarly, the species presented different upper lethal limits, spanning at least across 5.1°C between 28.9°C (*P. oceanica*) and >34°C (*C. nodosa*). Our results demonstrate the variable physiological responses of species within the same local community to temperature changes and highlight important potential differences in climate change vulnerability, among species within coastal marine ecosystems.

Keywords: activation energy, climate change, experiment, macroalgae, seagrass, thermal limits, thermal sensitivity