Aurelia spp. Ecology in the Mediterranean Sea

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Aurelia spp. are cosmopolitan scyphozoan species and probably the most studied jellyfish in the world. They inhabit nearshore waters, especially closed basins, such as coastal embayments, fjords and estuaries, occupying a great variety of habitats worldwide. Recent studies have addressed the biogeography of the genus *Aurelia* and reported that it constitutes a species-complex embracing numerous locally adapted species.
The Mediterranean Sea is a hotspot of biodiversity threatened by climate change, which is expected to have a significant influence on the biodiversity and biogeography of marine populations. Here we compiled a comprehensive data set on *Aurelia* spp. occurrence in the Mediterranean Sea and assessed the thermal niches as well as the phenology of the various populations.
Our results indicate that the species biogeography is restricted to temperate areas of the Mediterranean basin, whereas the seasonal pattern generally displayed an unimodal peak that occurs earlier in warmer systems. Our results highlight that the thermal niche of the species, where the bulk of the population (90%) is present, shows a temperature window from 12 to 20°C, although it is further constrained when accounting only for the northern populations of the western and Adriatic basins. Hence, while global warming has been claimed as one of the most important triggers for jellyfish outbreaks, the projected temperature increase of the Mediterranean Sea warns on the shrinking of favorable environmental conditions for the species with the concomitant risk of its potential decline and perhaps extinction in the Mediterranean Sea.

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