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[No recruits for an ageing population: First signs of probable population extinction in one of the last reservoirs of the Critically Endangered species *Pinna nobilis*](#)

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Abstract: Monitoring threatened species is essential for setting conservation priorities and measures to prevent species extinction. The endemic species *Pinna nobilis* is now classified on the IUCN Red List as a critically endangered species, with the only possibility to observe entire populations in very specific coastal areas, and a few resistant individuals in open waters. Thus, monitoring and management of these populations are crucial to avoid global species extinction. The present study aims to monitor

P. nobilis

Mar Menor's coastal lagoon population and to evaluate its possible resilience to recuperate from several environmental catastrophes and human mediated impacts that drastically decimated the population between 2016 and 2019. To do so, between 2019 and 2022, we assessed its population maintenance and its reproductive success. First, we monitored changes in overall densities and shell growth, and we installed between 23 and 45 larvae collectors to assess reproductive success. We observed stabilization of population densities and positive shell growth of individuals. However, no incorporation of recruits into this ageing population was observed. Our results highlighted the lack of species recovery and the first signs of probable local population extinction. Therefore, urgent management and conservation actions focused on restoring the ecosystem and protecting *P. nobilis* individuals are needed to avoid this population extinction and loss of one of the last reservoirs of this emblematic species.

Keywords: Bivalve, Pen shell, Conservation, Vulnerable ecosystem, Pinnidae, Monitoring