

{rokbox title=| Heatmap showing annual recruit abundance of *P. radiata* at sites with ≥ 3 years of monitoring and where the species was recorded in at least one year :: Image:

Authors|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-larval-collectors-network-documents-2026-alvarez-thumb-et-al.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-larval-collectors-network-documents-2026-alvarez-et-al.jpg{/rokbox}

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[Larval collectors network documents the spread of the invasive bivalve *Pinctada radiata* in the Mediterranean Sea.](#)

Marine Environmental Research September 2026.108284. Volume 221.

<https://doi.org/10.1016/j.marenvres.2026.108284>

Abstract: *Pinctada radiata*, the first recorded Lessepsian migrant, has been present in the Mediterranean Sea since the late 19th century, initially confined to the eastern and southern-central basin. Since then, it has gradually expanded westward and northward, with its spread accelerating over the last decades. This study combines information on historical records with interannual data collected by a basin-wide network of larval collectors deployed across the Mediterranean Sea to analyse the spatial and temporal patterns of

P. radiata

's expansion. Larval collectors confirm the establishment of populations and detect up to 13 multiannual colonisation events, providing strong evidence of the species' ongoing spread, while uninvaded locations suggest that environmental barriers, particularly lower temperatures, may still limit its distribution. The integration of larval collector data demonstrates not only the continued expansion of

P. radiata

but also the utility of this approach as an early warning system for anticipating new colonisation by invasive species. In addition, larval collectors offer a valuable tool for long-term monitoring of recruitment success, providing insights into population dynamics over time. These findings highlight regions at risk of future invasion and provide a foundation for proactive monitoring and management strategies to mitigate ecological impacts on native communities and coastal ecosystems.

Keywords:biological invasions,invasion dynamics,lessepsian migration,rayed pearl oyster,recruitment.