{rokbox title=|:: Image: Authors|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-highly-diverse-epifaunal-baena-2025-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-highly-diverse-epifaunal-baena-2025-et-al.jpg{/rokbox}

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Signs of northward expansion of the fireworm Hermodice carunculata in the Spanish Western Mediterranean Sea
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Abstract: The bearded fireworm Hermodice carunculata is a thermophilic polychaeta typically inhabiting the warmer waters of the Atlantic Ocean and the southern Mediterranean Sea. Over the past few years, sightings of this species have become more frequent at higher latitudes along the western Mediterranean (WM) basin, raising concerns about the potential expansion of its distribution range. Here, we present new records of H. carunculata obtained from the combination of benthos monitoring programmes, local ecological knowledge, and publicly available information. Furthermore, we investigated whether a northward shift in H. carunculata distribution has occurred, based on a temporal comparison of occurrence records before and after the record-breaking marine heat wave of 2022 2023. The present study improves the picture of the geographical distribution of this polychaete in the WM: we report a total of 257 new records of H. carunculata along the Mediterranean Spanish coast. The spatial and temporal distribution of these records suggests a northward expansion of the species, according to all data sources. The mean latitude of observations increased by nearly one degree, and the northernmost sightings extended up to 2.2° beyond the previously reported limits. These findings indicate the possible expansion of H. carunculata distribution in the Spanish WM and highlight the effectiveness of combining traditional monitoring methods and local ecological knowledge for detecting changes in species distribution.

Keywords:thermophilic species, distribution range expansion, monitoring marine heatwave, local ecological, knowledge.