{rokbox title=| (a) Sardina pilchardus juveniles (in green) and adults (in blue) gravity centre based on data collected in the 2010-2023 MEDIAS acoustic survey. :: Image: Authors|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-spatial-resilence-recruitment-success-ventero-2026-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-spatial-resilence-recruitment-success-ventero-2026-et-al.jpg{/rokbox}

Ana Ventero, **Magdalena Iglesias**, 2026. **Spatial resilience and recruitment success: Sardina pilchardus recovery in the NW Mediterranean.**
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Abstract:In 2023, following several years of marked decline, the *Sardina pilchardus* population in the north-western Mediterranean Sea showed a pronounced increase in abundance. We investigated temporal changes in abundance, age structure and spatial distribution using georeferenced data from July MEDIAS acoustic surveys conducted between 2010 and 2023, with no survey in 2021. The population was dominated by age-0 to age-2 individuals, whereas older age classes were scarce. Mean length declined significantly for ages 2 and 3, while no temporal trend was detected for ages 0 and 1. Sardine occurrence was strongly associated with depth, with no detections beyond approximately 120 m. Age-specific distributions also differed markedly, with age-0 individuals concentrated in nearshore areas and older fish occupying a broader portion of the continental shelf. Occupied area varied substantially among years, reaching 67% in 2023, but was not significantly related to total abundance. Nevertheless, sardines maintained a relatively broad spatial distribution during several periods of low abundance, potentially limiting population concentration and exposure to local fishing pressure. The pronounced increase in abundance in 2023 was primarily driven by exceptionally strong age-0 recruitment. Overall, the results indicate that recent recovery was closely associated with recruitment success, while the maintenance of a broad spatial distribution may have provided an additional component of population resilience. These findings highlight the value of long-term, spatially resolved acoustic surveys for understanding sardine population dynamics and supporting adaptive management.

Keywords:*sardina pilchardus*,recovery,nw mediterranean,demographic structure,spatial segregation.