{rokbox title=| Sampling localities (circles) in the Cabrera National Park. The habitat layers are represented in ochre for sandbanks (habitat 1110), green for Posidonia (habitat 1120) and magenta for reefs (habitat 1170). Basemap source: Institut Cartogràfic i Geogràfic de les Illes Balears (ICGIB), Base Topogràfica de les Illes Balears (1:5,000) coastline :: Image: Authors|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-new-evidence-early-stages-2026-comas-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-new-evidence-early-stages-2026-comas-et-al.jpg{/rokbox}

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**New evidence of the early stages of establishment of the parrotfish Sparisoma cretense (Teleostei: Labridae) following northward and westward range expansion in the Mediterranean Sea.**

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Abstract:*Sparisoma cretense* is undergoing a range expansion across the Mediterranean Sea, yet its establishment at northern latitudes of the westernmost Mediterranean remains uncertain. During July 2025, patterns consistent with the establishment of *S. cretense* in Cabrera National Park (39º 09’ N; 2º 57’ E) were assessed, and habitat features associated with its occurrence were identified. Underwater visual censuses were conducted, recording abundance, total length, sex, habitat composition, and the hydrodynamic exposure level of each locality. *Sparisoma cretense* was detected in 6 of the 17 surveyed localities (25 individuals), with 22 individuals (88%) detected on reefs, 3 records in *Posidonia* meadows and no detections on the sandbanks. Moreover, principal component analysis (PCA) differentiated rocky habitats from *Posidonia* and sandbanks, and revealed an additional rocky-complexity gradient linked to blocky, rugose bottoms. Regarding demographic data, fish sizes ranged from 14 to 32 cm; sexes overlapped in size, but females were smaller than males on average (mean of 18.83 ± 1.24 and 26.23 ± 1.26 cm respectively), with larger individuals more often recorded in exposed than in protected localities. Furthermore, mixed-sex groups were frequently observed at high-density sites. These demographic results were broadly consistent with patterns reported for populations in the native range, suggesting that

*S. cretense*
may be undergoing an early phase of establishment in the region. In addition, habitat-related signals identified structurally complex reefs as potentially important habitats that may facilitate local persistence and future spread. Overall, these findings clarify processes underlying its ongoing range expansion.

Keywords:*sparisoma cretense*,range expansion,establishment,non-indigenous species,habitat complexity,habitat association.