{rokbox title=| Map of the area included in the Ecopath with Ecosim model of Mallorca and Menorca (Balearic Islands, western Mediterranean). :: Image: Authors|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-assessing-effects-climate-change-ordines-2027-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-assessing-effects-climate-change-ordines-2027-et-al.jpg{/rokbox}

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**Assessing the effects of climate change and fishing management on demersal stocks in the western Mediterranean: Rethinking WestMed-MAP effort reductions in the Balearic Islands.**
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Abstract:Bottom trawl fishing effort in the Balearic Islands has decreased considerably in recent decades due to a progressive fleet reduction and the implementation, since 2020, of the effort regime under the multiannual plan for demersal fisheries in the western Mediterranean (WestMed-MAP). By 2024, this regime had reduced the average annual fishing days by 40% compared to the 2015–2017 baseline period. Concurrently, seawater temperature is increasing. We used the Ecosim model to explore the long-term effects of several WestMed-MAP and climate change scenarios on key demersal resources and vulnerable fish species in the Balearic Islands. Management effects were stock-dependent. Some stocks (deep-water rose shrimp, mullets and rays) reached biomass and catch levels comparable to those expected at maximum sustainable yield (MSY) under fishing effort levels prior to the WestMed-MAP, or following its early (2022) implementation. Conversely, hake and red shrimp would not recover to MSY biomass levels, even under 2024 effort reductions coupled with selectivity improvements. Deep-water rose shrimp was the only species positively affected by global warming, whereas Norway lobster was negatively impacted by warming, only recovers under a no fishing scenario.

All successful scenarios required over 5 years to achieve full potential recovery. These results call for a re-evaluation of WestMed-MAP fishing effort reductions implemented in the Balearic Islands, highlighting the need for a regional downscaling that considers specific fishing strategies and the initial state of local stocks, as well as the time lag required to detect expected management effects.

Keywords:stock recovery,fishing effort regime,global warming,ecopath with ecosim.