SUPPORTING THE RECOVERY OF FISH STOCKS AND MARINE HABITATS
Over the last decades, hundreds of fisheries restricted areas in which trawling is banned have been introduced around the world, demonstrating their contribution to the recovery of fish stocks and marine habitats, and becoming an essential component of sound fisheries management. When well implemented and controlled, these areas can effectively help restore marine ecosystems and ultimately support the fishing sector. The Mediterranean Sea hosts one of the most outstanding examples: the Jabuka/Pomo Pit FRA in the central Adriatic.

Since 2020, the Spanish Government, in the context of the Multiannual plan for demersal fisheries in the western Mediterranean (WestMed MAP), has created some permanent and temporal area closures with the explicit objective of protecting juveniles and spawners of the main fish species targeted by the MAP. In the GSA 06 subarea that covers a large part of Spanish Mediterranean waters, Spain is establishing a combination of several small permanent and larger temporal area closures.

2. Orden APA/423/2020 de 18 de mayo, por la que se establece un plan de gestión para la conservación de los recursos pesqueros en el mar Mediterráneo.
3. Orden APA/753/2020, de 31 de julio, por la que se modifica el Anexo III de la Orden APA/423/2020, de 18 de mayo, por la que se establece un plan de gestión para la conservación de los recursos pesqueros demersales en el mar Mediterráneo.
4. Orden APA/1397/2021, de 10 de diciembre, por la que se modifica el Anexo III de la Orden APA/423/2020, de 18 de mayo, por la que se establece un plan de gestión para la conservación de los recursos pesqueros demersales en el mar Mediterráneo.
Figure 1. Fisheries restricted areas established by Spain since 2020

Legend

- Pink: Area “Bol de terra a vapor de Palamòs” (2022)
- Yellow: Spain No-trawl areas (2021)
- Purple: Areas closed to Bottom Trawl-gillnets-hooks (2021)
- Orange: Spain no-trawl areas (2020)
- White: Territorial waters (12 nm)
- Light gray: GSA6 delimitation
While the creation of area closures can be considered a first step in improving fisheries management, additional key issues should be addressed to ensure that this approach can truly benefit the marine ecosystem and the fisheries communities that rely on it. To this end, Spain should urgently implement a more comprehensive approach for the recovery of depleted fish populations by:

1. Establishing FRAs where aggregations of juveniles and spawners of key commercial stocks are found, as well as to protect Vulnerable Marine Ecosystems (VMEs). In relation to the area closures created by Spain, the 2021 assessments by the Spanish Oceanographic Institute (IEO), the National Research Council (ICM-CSIC) and the EU Scientific, Technical and Economic Committee for Fisheries (STECF), indicate that the added value of the restricted areas is very limited as most don’t protect essential fish habitats of juveniles and spawners of priority species or VMEs. Furthermore, the expected displacement of fishing pressure to surrounding areas with similar ecological characteristics reduces the recovery potential for fish stocks.

5. “STECF observes that the proposed closure areas along with effort redistribution would generate little to no benefits in terms of reduction in juvenile catches. [...] In general, STECF observes that spatial and temporal closures alone may not contribute to achieving the objectives of the plan since they may not reduce the overall fishing pressure but merely lead to effort displacement toward other fishing grounds.” Scientific, Technical and Economic Committee for Fisheries (STECF) – 67th Plenary Report (PLEN-21-02). EUR 28359 EN, Publications Office of the European Union, Luxembourg, 2021. “For all the population fractions analysed, the percentages of catch reduction are negligible, except hake juveniles and spawners of hake and red mullet (around 4% and 7% reduction, respectively)”, IEO. “The percentage of catch reduction after the redistribution of the fishery effort is very low (from 2.8% to negative values).” CSIC complementary documentation.
2. **Expanding the size of permanent area closures.** The areas established by Spain are multiple and small, making their management and effectiveness more complex. Additionally, experts believe that these area closures will be extremely difficult to enforce, leaving compliance to voluntary self-control by the fishermen themselves, an approach that has failed in most cases. Finally, the small size of these areas undermines the potential of a full recovery of the ecological functions in the protected zones.

In 2022, STECF further assessed the relevance of Spanish closures and found that these lacked justification or supporting scientific evidence. Also, these areas were not fully consistent with the list and location of closures that had been provided previously and many of them didn’t fully overlap with the identified hotspots for recruits and spawners of key commercial species.⁶

3. **Closing permanently all area closures.** Several studies have documented that temporal closures are not efficient for the recovery of fish populations when enacted on ecosystems that are already degraded, as is the case in most of the western Mediterranean Spanish waters. Permanent area closures, on the other hand, can effectively support an ecosystem-based approach to fisheries, the only approach to lead to fisheries sustainability.

6. “STECF was asked to draw and assess the relevance of proposed closures resulting from the 4 successive decrees. No justification or supporting scientific information explaining how these new closures were selected were supplied. [...] STECF noticed that the list of closure areas provided to PLEN 22-02 was not entirely consistent with the list and location of closures that were provided as a background document to EWG 22-01. [...] Regarding the request on the evaluation of the efficiency of the 2022 closures, STECF concludes that the modifications introduced by the latest decree (Orden APA/XXX/2022) are limited to GSA5 and GSA6, and lead to minor changes in terms of closed trawlable surface (+0.2% in GSA 5; -5.0% for GSA6 not including Subárea Valencia - Table 6.6.1). Many of these closures do not overlay the hotspots identified by EWG 22-01. [...] STECF concludes that the efficiency of a closure area in achieving its objective depends on the spatial distribution of fishing effort (and on its redistribution) and other factors such as fishing gear selectivity. In the absence of detailed scientific information supporting the selection of the closed areas by the Member State, STECF was unable to conclude on the efficiency of the closure areas nor to identify any additional closure areas to those proposed by EWG 22-01.” Scientific, Technical and Economic Committee for Fisheries (STECF) – 70th Plenary Report (PLEN-22-02). EUR 28359 EN, Publications Office of the European Union, Luxembourg, 2022.
In this context, in 2021 the GFCM Scientific Advisory Committee (SAC) endorsed a proposal for a Fisheries Restricted Area on the margins of the Ebro Delta (EDM FRA), an area hosting key hotspots of juveniles and spawners of depleted key commercial species and VMEs.
The SAC found the proposal to be: “comprehensive, technically sound, and provided useful information to improve the spatial management of fisheries in the area”. However, the SAC advice was not adopted by the GFCM Contracting Parties due to the opposition of Spain. However, the area closures introduced by Spain do not deliver the level of protection needed for this key zone, but by expanding the spatial closure - as proposed by the EDM FRA - the quantitative and qualitative benefits for the recovery of fish population and vulnerable marine ecosystems can be significant.

The establishment of the EDM FRA can make a significant contribution to improving the network of Spanish protected areas, and to the implementation the WestMed MAP, becoming an example of good practice in the Mediterranean and a key contribution to Spain’s international commitments to improve the state of fish stocks and the recovery of marine biodiversity.

8. Nursery areas and spawning grounds for European hake, Norway lobster, red mullet, shortfin squid, blackmouth catshark, horned octopus and blue and red shrimp, can be found in the proposed EDM FRA as well as VMEs, such as those constituted by bamboo coral (Isidella elongata). Furthermore, the sandy/muddy bottoms of the Ebro area host different sea pen species (Funiculina quadrangularis, Pennatula phosphorea, Pteroeides spinosum, Veretillum cynomorium) that are important indicators for VMEs.
Figure 3. Overlapping of the current no-take areas and the EDM FRA proposal

Legend
- Purple: Area “Bol de terra a vapor de Palamòs” (2022)
- Yellow: Spain No-trawl areas (2021)
- Purple: Areas closed to Bottom Trawl-gillnets-hooks (2021)
- Red: Spain no-trawl areas (2020)
- Brown: Proposed EDM-FRA core area
- Green: Proposed EDM-FRA buffer area
- Light grey: Territorial waters (12nm)
- Light grey: GSA6 delimitation