SUPPORTING THE RECOVERY OF FISH STOCKS AND MARINE HABITATS
Over the last decades, hundreds of no-take areas 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, no-take areas can effectively help restore marine ecosystems and ultimately support the fishing sector. The Mediterranean Sea is no exception, hosting one of the most outstanding examples: the Jabuka/Pomo Pit Fisheries Restricted Area (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 no-take areas 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 the northwestern Spanish waters, Spain is establishing a combination of several small permanent and larger temporal no-take areas. In the GSA 06 subarea that covers the northwestern Spanish waters, Spain has established a combination of several small permanent and larger temporal no-take areas, with new fishing closures introduced in December 2021.
Figure 1. Current no-take areas established by Spain since 2020

Legend
- Yellow: Spain No-trawl areas 2021
- Brown: Areas closed to Bottom Trawl-Gillnets-Hooks
- Orange: Spain No-Take areas 2020
- Purple: Temporal closure Cataluna subarea (May-June)
- Blue: Temporal closure Castellon subarea (May-September)
- White: Territorial waters (12 nm)
While the creation of these no-take areas can be considered a first step in improving fisheries management, still some 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 move a step forward and implement a more comprehensive approach for the recovery of depleted fish populations by:

1. Establishing Fisheries Restricted Areas where aggregations of juveniles and spawners of key commercial stocks are found, as well as to protect Vulnerable Marine Ecosystems (VMEs). The 2021 assessments by the Spanish Oceanographic Institute (IEO), the National Research Council (ICM-CSIC) and the Scientific, Technical and Economic Committee for Fisheries (STECF), indicate that the added value of the restricted areas - currently identified by Spain in GSA 06 - 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.

2. Expanding the size of permanent no-take areas. The permanent no-take areas identified by Spain are multiple and small, making their management and effectiveness more complex. Additionally, experts believe that these areas 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 the no-take areas undermines the potential of a full recovery of the ecological functions in the protected zones.

3. Closing permanently all no-take areas. 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 no-take areas, on the other hand, can effectively support an ecosystem-based approach to fisheries, the only approach to reach fisheries sustainability.

6. “STECF observes that the proposed closures 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.
In this context, a joint initiative by researchers and NGOs has proposed to the General Fisheries Commission of the Mediterranean (GFCM) the establishment of 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 proposal was validated by the GFCM’s Scientific Advisory Committee (SAC), which found it to be: “comprehensive, technically sound, and provided useful information to improve the spatial management of fisheries in the area”.

The no-take areas identified 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 no-take areas, and to the implementation the WestMed MAP, becoming an example of good practice in the western Mediterranean and a key contribution to Spain’s international commitments to improve the state of fish stocks and the recovery of marine biodiversity.

9. 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
- Spain No-trawl areas 2021
- Areas closed to Bottom Trawl-Gillnets-Hooks
- Spain No-Take areas 2020
- Temporal closure Cataluna subarea (May-June)
- Temporal closure Castellon subarea (May-September)
- Territorial waters (12 nm)
- Proposed EDM-FRA buffer area
- Proposed EDM-FRA core area