

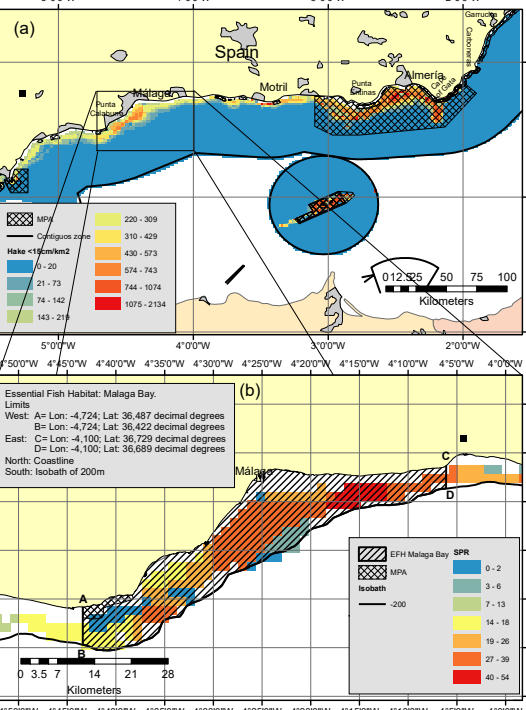
Local MSP approach towards sustainable development of Malaga Bay (SW-Mediterranean)

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Introduction

One of the main objectives of sustainable fishing development is the sustainable biological, economic and environmental exploitation of living resources (CFP, 2013). Breeding areas of target species are of special importance.



Essential Fish Habitat (EFH)

High abundances of Hake <15cm can be observed in the unprotected Bay of Malaga (Fig. 1a). The swept per recovery time index (SPR) of bottom habitat shows that trawling frequency in the Bay of Malaga has to be reduced 60 times in order allow benthic habitat to recover. In order to protect the Hake nursery area, Malaga Bay has been proposed as an Essential Fishing Habitat (GFCM, 2019) (Fig 1b)

Figure 1. (a) Abundance of Hake <15 cm along the Andalusian coast. 1 (b) Swept per recovery time index, SPR in the Hake nursery area of Malaga Bay, and essential fishing area (GFCM, 2019).

Present uses in the Bay of Blue, such as MPAs, sediment extractions, bottom trawling and submarine cables (Figure 2) lead to conflicts among the uses, specially close to the coast (Figure 3a).

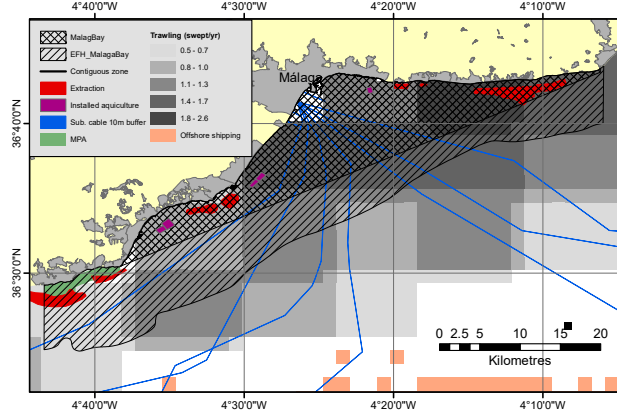


Figure 2 Present uses in the Bay of Malaga.

Future uses

Aquaculture suitable declared areas, by the government, is one of the most important conflict with extractive fishery in the future (figure 3b).

MSP Proposal

The reduction of extractive fishery in the EFH protects the nursery area, while fishery benefit fishing on the spill-over outside of the EFH. Coastal aquaculture of herbivory species replacing fishmeal by algae (García-Márquez et al., 2022) cultivated on nutrient rich waste water could reduce eutrophication of the Bay of Malaga.

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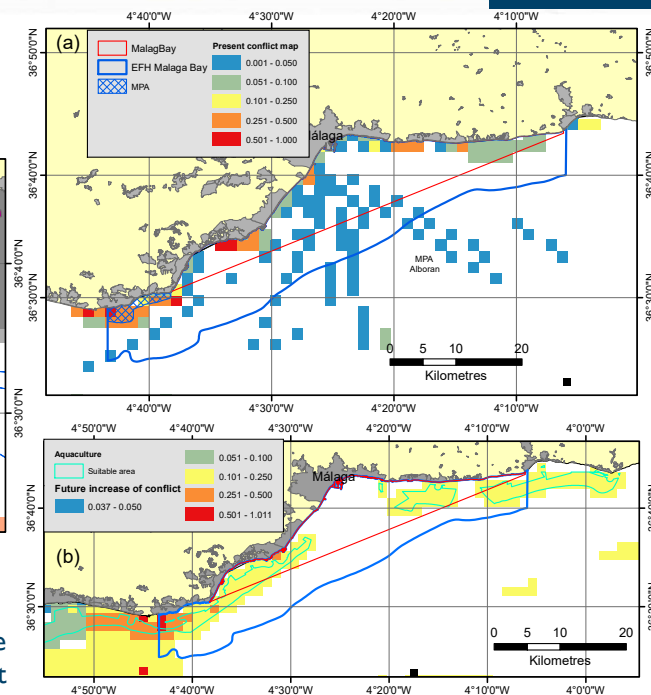


Figure 3 (a) Present conflict among uses in the Bay of Malaga. (b) Increasing conflict among uses due to sea space occupation by new blue growth industries (Methods, see Muñoz et al., 2018)

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References:

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- Muñoz et al., 2018. <https://doi.org/10.1016/j.marenvres.2018.10.008>
- García-Márquez et al., 2022. <https://www.frontiersin.org/articles/10.3389/fmars.2022.902203/full>