

Blue Carbon release by bottom trawling in the Malaga Bay. (SW-Mediterranean)



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Introduction

The capture and store of carbon in coastal and marine ecosystem is referred to as blue carbon storage. Conservation, maintenance and estimation of carbon storage in marine ecosystems are key issues for climate change scenarios.

The Intergovernmental Panel on Climate Change IPCC considers world-wide estimation of carbon sequestration to the seafloor by the biological pump. The first estimation of CO₂ release from the seafloor due to bottom trawling disturbance of the seafloor has been described recently at global scale (Salas 2021), and has been identified as a globally important source of CO₂ emission. Due to its importance as nursery area, Malaga Bay (Southern Spain) has been proposed by the FAO as an Essential Fish Habitat (GFCM, 2019) suggesting reduction of fishing pressure.

Methods

Calculation of mean CO₂ release (2016-2018) were carried following Sala et al, 2021 and Muñoz et al, submitted).

Literature: Sala et al. (2021) Protecting the global ocean for biodiversity, food and climate. Nature 592, 397–402
Muñoz et al. (submitted) Carbon footprint, economic benefits and sustainable fishing: lessons for the future from the Western Mediterranean. Science of the Total Environment.

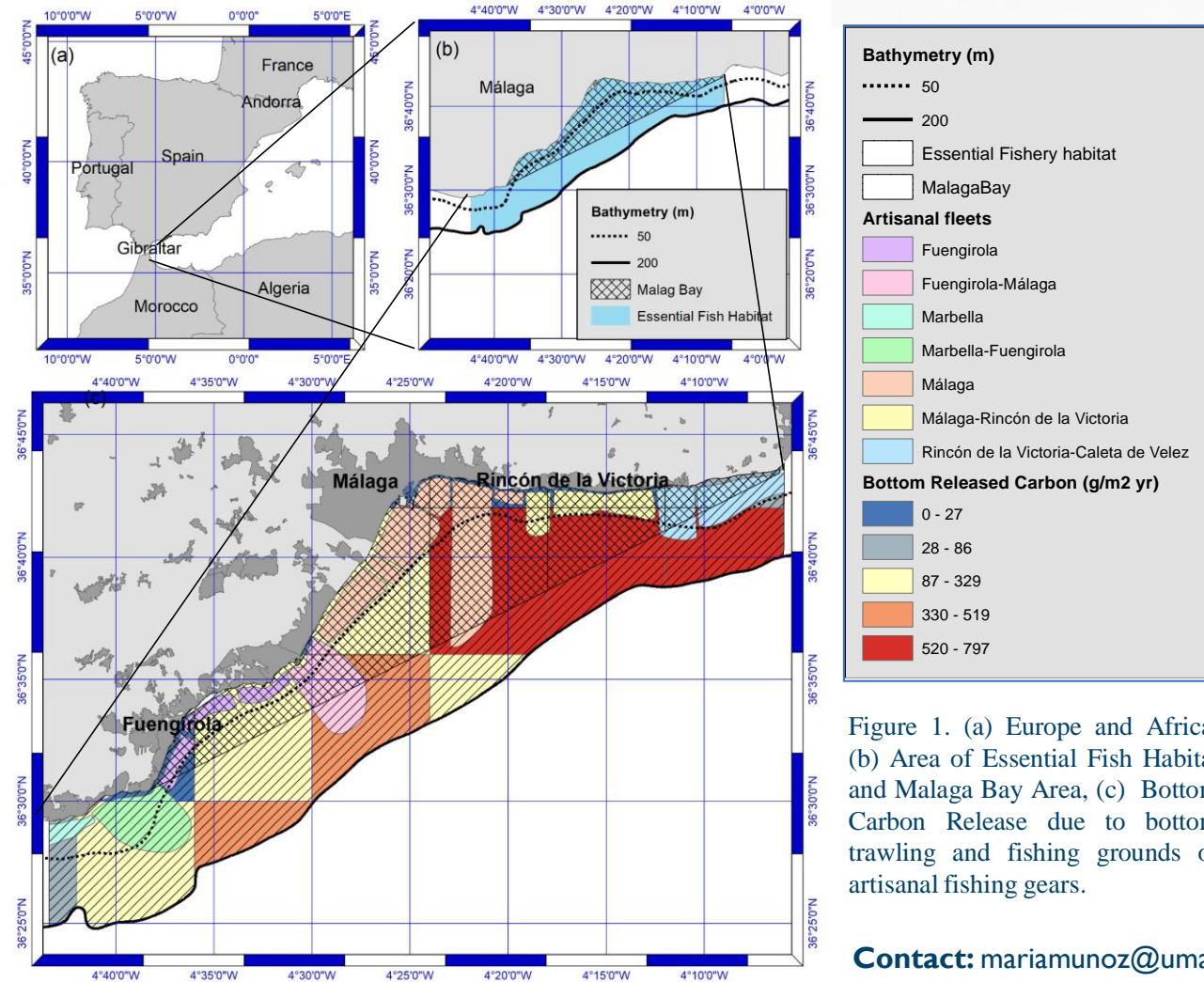


Figure 1. (a) Europe and Africa, (b) Area of Essential Fish Habitat and Malaga Bay Area, (c) Bottom Carbon Release due to bottom trawling and fishing grounds of artisanal fishing gears.

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Results

A first estimate of CO₂ release of bottom trawler for the Malaga Bay Area and Malaga Bay Essential Fish Habitat, show that closing these areas for bottom trawling would avoid a CO₂ emission around 1.8 x 10⁶ and 3.0 x 10⁶ tons/year

Conclusion Apart of the protection of important nursery area, the reduction of bottom trawling in the study area reduces considerably CO₂ emission which should be considered in the global CO₂ balance.



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