

PRELIMINAR STUDY ON FISHING YIELDS IN THE VICINITY OF TWO NO-TAKES ZONES WITHIN THE MARINE RESERVE OF CABO DE GATA-NIJAR (ALMERIA-SPAIN)

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Abstract

Marine protected areas (MPAs) are an instrument for improving both fisheries management and marine environmental protection. In order to analyse possible differences in fishing yields we studied the vicinity of two no-take zones (close and further to home harbour) within the MPA located in Cabo de Gata (Almería, Spain). Species abundance showed a spatial distribution along the coast with two clear separate groups. We suggest that those differences might be due to the effect of fishing pressure.

Keywords: *Fisheries, Coastal Management*

Introduction

The Cabo de Gata-Níjar Marine Reserve (CGMR) is situated in the Western Mediterranean (Fig. 1), in the southeast of the Iberian Peninsula. This coastal MPA covers 4,600 ha and represent typical Mediterranean habitats, such as rocky reefs, sandy bottoms and *Posidonia oceanica* seabeds. Local fishing activities are restricted to artisanal fisheries, which are often coastal with boats smaller than 10 m. Within the protected areas and outside the no-take zones (fishing is prohibited), artisanal fishing is undertaken using traditional fishing gears (gill net and trammel net) on diverse target species depending on their abundance and price. Many factors have a significant influence on effort allocation by the fishing fleets, such as distance to the port, distance to the no-take zone and water depth [1]. In general, most of the fishing effort is concentrated near the no-take zones especially those closer to home harbour. In Cabo de Gata, the prevailing winds, both east and west, produce losses of between 30-40% of the fishing days during the year, therefore can be considered a factor that could influence the spatial allocation of the fishing effort.

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Materials and Methods

In this study we aim to investigate catch abundance within the vicinity of two no-take zones in the CGMR with different accessibility (one close to home harbour (2 nm) and the other further away (8nm)). Experimental fishing surveys in the CGMR were conducted during May 2009 with two artisanal boats operating in the area, with the same gear type used in commercial fishing (Common cuttlefish trammelnets).

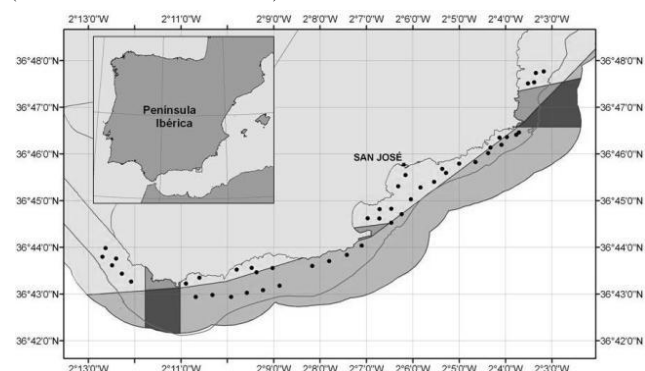


Fig. 1. Location of Cabo de Gata-Níjar Marine Reserve (CGMR) on the southeast of the Iberian Peninsula. Dots illustrate the experimental fishing sets

Results and Discussion

A total of 48 fishing sets were sampled and sixty species were collected during the study (45 of fish, 6 of mollusc, 5 of crustacean and 5 of equinoderms). To establish the contribution of each species to the mean abundance Bray-Curtis dissimilarity within a group and between groups of samples, similarity percentage analysis (SIMPER) routine was used (PRIMER 6). The MDS analysis revealed differences between both (near and further away) fishing sites. We suggest that those differences might be due to the effect of fishing on the dominant species *Sepia officinalis*.

References

1 - Stelzenmoller, V., Maynou, F., Bernard, G., Camiller, M., Criquet, G., Esparza, O. and Perez-Ruzafa, 2008. A. Spatial assessment of fishing effort