

{rokbox title=|Map of sampling locations and harbours in the Northern Alboran Sea :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-modelling-trawling-discards-alboran-fisheries-mediterranean-sea-carbonell-et-al-2018-thumb.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-modelling-trawling-discards-alboran-fisheries-mediterranean-sea-carbonell-et-al-2018.jpg{/rokbox}

Aina Carbonell, Teresa García, Maria González, Diego Álvarez-Berastegui, **Sandra Mallo**, Jose Miguel de la Serna, Cristina Bultó, Jose Maria Bellido, Elena Barcala, Jorge Baro, 2018. [Modelling trawling discards of the Alboran fisheries in the Mediterranean Sea.](#) Regional Studies in Marine Science. Volume 23, September 2018, Pages 73-86.

Abstract: The ecosystem processes underlying the discard rates of the demersal otter-trawl fishery in the Alboran Sea, Western Mediterranean are investigated. We evaluate whether environmental and climatic variability, measured from operational oceanographic data, allow assessment of discarded species abundances. Monthly data collected by onboard fishery observers during 2011 and 2012 in the Northern Alboran Sea served as a case study of the trawling fishery's dynamics. The study area was split into west and east zones to account for differences in the Atlantic and Mediterranean Sea water influences, for distinct geomorphology and for species composition of catches. Sixteen species divided in three groups were analysed: species without discards, those partially discarded and those completely discarded. Applying Gaussian Generalized Additive Models (GAM), we tested the relationships of standard oceanographic data products and climatic variability with discard abundances. These variables were sea surface temperature (SST) and chlorophyll a (chl-a) from satellite imagery, as indicators of environmental conditions, and the North Atlantic Oscillation index (NAO) as a climatic indicator. Models were applied for target and bycatch species partially discarded. These were the following species: gadoid like European hake (*Merluccius merluccius*), Blue Whiting (*Micromesistius poutassou*), Seabreams (*Pagellus acarne*, and *Pagellus erythrinus*), and Mackerels (*Trachurus mediterraneus*, *Trachurus picturatus* and *Trachurus trachurus*). Surface seawater temperature was a relevant variable in coastal and eastern, more haline Mediterranean waters. Climatic variability represented by NAO was useful for assessing discard rates in the more productive western zone. Chlorophyll a showed less relevance for discard prediction models, but it was more related in the coastal zones. Including oceanographic data products and climatic patterns in GAM models of fishery discards provides a new perspective that may improve our predictive capabilities for management decisions.

Keywords: Discards, Otter-trawl fisheries, Fishery conservation, Operational oceanography, NAO