BALEARIC ISLANDS VS. ALGERIA: TWO NEARBY WESTERN MEDITERRANEAN ELASMOBRANCHES POPULATIONS WITH DIFFERENT OCEANOGRAPHIC SCENARIOS AND FISHING HISTORIES

Francesc Ordines, Joan Moranta, Beatriz Guijarro, Maria Valls and Enric Massutí

I.E.O – Centre Oceanogràfic de les Balears

xisco.ordinas@ba.ieo.es

The Balearic Islands (north-western Mediterranean) and Algeria (south western Mediterranean) coasts show different oceanographic scenarios and bottom trawl fishing histories. The Archipelago is mainly influenced by Mediterranean originated waters, whereas Algeria coast is mainly influenced by the Atlantic inflow. It is also remarkable the high oligotrophy and the absence of river runoff in the former area. In the Archipelago, the slope red shrimp fishery has a long term history with an increasing fishing effort down to 750 m depth in the last decades. In Algeria the most important fishing activity is targeted at small pelagic species. The geo-morphological characteristics of Algeria have not facilitated the development of a demersal trawl fishery, which is mainly performed with small boats fishing down to 400 m depth.

The present work updates the analysis of the elasmobranches ecology in the Balearic Islands and is a first approach to the ecology of these species in Algerian waters. For both areas we applied: i) Generalized Linear Models (GLM) in order to analyse the species-specific bathymetric distribution models; ii) General Additive Models (GAM) to identify the trends of the community descriptors abundance (A), biomass (B), mean fish weight (MFW), species richness (S) and diversity (H'); and cluster analysis in order to determine bathymetric assemblages. Moreover, the community descriptors were compared between areas for each assemblage.

The bathymetric distribution models for species common in both areas were similar, with the exception of *Etmopterus spinax,* more abundant at shallower waters in Algeria. MFW had a similar trend in both areas, however, the rest of indexes showed a very different trend, a general depth-decreasing trend predominate in Mallorca, whereas a depth-increasing trend predominates in Algeria. Cluster analyses identified the same bathymetric assemblages, with similar depth ranges in both areas: shelf, shelf break, upper slope and middle slope. However, the species composition of these assemblages differed

between areas. It is remarkable the higher importance of Rajidae species on the shelf and shelf break bottoms off the Archipelago when compared to those in Algeria. Most community descriptors also displayed differences when compared between areas and assemblages, with the exception of the upper slope.

The differences in species composition and community descriptors trends between Balearic Islands and Algeria coast are discussed in the context of distinct oceanographic conditions and fishing history between both areas.