

ARTISAN FISHING AND MARINE PROTECTED AREA (MPA): AN EXAMPLE OF SUSTAINABLE FISHING AND BIODIVERSITY CONSERVATION

The first Marine Protected Area (MPA) in Italy was established on Ustica Island in 1986, and functioning since 1991, due to the environmental peculiarities that have always attracted scholars and divers to its depths. At the end of the '60s the Ministry of Shipping commissioned De Cristofaro to carry out a study on the island, the aim of which was to draw a map of the sea bed and the characteristics of the marine environment and, finally, thanks also to the contribution of research from Giaccone et al. (1985) and Chemello (1986), the MPA was established and the Municipality of Ustica was appointed to manage it. Halfway through the '90s, the Managing Body, in mutual agreement with the Ministry for the Environment, made the economic resources available to begin research aimed at the chemical monitoring of the waters, the study of biodiversity and fishing resources and the evaluation of the effects of protection measures. This research involved researchers from various bodies such as Universities, the National Research Council and the Marine Scientific and Technological Research Institute. The first results on the island's marine biodiversity and naturalistic issues were collected and published in 2004 by Riggio and Milazzo, who highlighted how environmental complexity is represented by a number of animal species (invertebrates and vertebrates) equal to approximately 19% of the entire diversity present in the Mediterranean.

Thanks to the support from the Managing Body, research was funded on the visual census of fish species and fishing yield, the latter being conducted via the use of trammel nets, pots and deepwater longlines. As is well-known, artisan fishing is a diversified activity in as much as it uses various tools and targets a wide variety of species depending on seasonality. What's more, artisan fishing takes on an important economic role in sustaining, directly and indirectly, the local economy and maintains a harmonious balance between the exploitation of fish resources and respect for the marine environment. Artisan fishing on Ustica Island has maintained, over time, an almost unvaried number of fishermen and boats thanks to the nature of its sea bed, which does not lend itself to the development of activities that cause greater impact such as trawling. This guarantees a sufficient standard of life and applies an eco-sustainable fishing pressure on the resources. In particular, fishing activity on the island, besides being linked to the hard substratum and the prairies of *Posidonia oceanica*, is also characterized by its fishing of pandalid shrimp (*Plesionika narval*), which, within the Mediterranean, is almost unique to the island and is highly sought after during the tourist season by restaurateurs and tourists. In fact, thanks to its organoleptic characteristics, it is consumed and served by restaurateurs raw, marinated in oil and lemon. Analysis of fishing yields, the number of species caught, the size as well as information on reproductive cycles, indicate that, as far as the qualitative-quantitative aspect is concerned, fishing activity on the island maintains high levels of diversity and is perfectly integrated with the aims of the MPA. What's more, the data relative to the frequency of size of some fish and shrimp species have shown perceptively greater modal class values compared to those reported in other areas of the Mediterranean, suggesting that fishing pressure is maintained at optimal levels, which are eco-compatible with the presence of the MPA. Unfortunately, research on fishing hasn't been financed for more than a decade causing, therefore, a lack of information needed to clarify how eventual spillovers from zone A, represented by eggs, larvae and individual adults, can benefit nearby areas (*fishing grounds*). In the future it would be worthwhile to carry



out monitoring campaigns in order to adopt suitable management strategies needed for the purposes of the MPA and the economic development of the island.

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