
Fish nurseries: essential habitat availability and management across the Mediterranean

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Abstract

Along the Mediterranean shoreline, we located and quantified the availability of the juvenile habitat used by economically and ecologically important fish species (*Diplodus* spp.). These species use shallow (< 1.5 m depth) and gently sloping heterogeneous rocky bottoms as nurseries. About 1800 replicates (500 m shoreline segments) were sampled in 16 zones among 7 ecoregions, located both in western and eastern Mediterranean, inside and outside no-take zones. Replicates were sampled through Geographical Information System (GIS) analysis and ground thrust. Whatever the zone, *Diplodus* nursery grounds were scarce: they were present in less than 10% (in average) of the studied shoreline (min: 0.7%; max: 18.3%). This habitat availability was in average similar inside *versus* outside no-take zones, and in the western *versus* eastern Mediterranean. However it varied spatially between zones, ecoregions and was lower in the southern *versus* the northern studied zones. Besides, the spatial extent of each nursery was relatively small (less than 70 meters in average shore length). The small size and the scarcity of this essential habitat underline its vulnerability in the context of an ever increasing coastal anthropization. This preliminary study sheds light on the importance of locating and quantifying essential habitats in order to help focusing manager's conservation efforts. These preliminary data will be completed by an ongoing project in order to ultimately feed online cartographic resources available for managers.

Keywords: essential habitats, *Diplodus*, juveniles, nursery, cartography, management, MPA

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