ARTISANAL FISHERIES LANDINGS BY SEABED HABITAT IN FOURNI, NE AEGEAN, GREECE: PRELIMINARY RESULTS

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Abstract
Data on fishing activity and landings over different types of benthic habitats are presented for the artisanal fishing fleet operating in Fourni island complex (NE Aegean Sea, Greece). Coralligène (25 %) and rocky (20.69 %) substrates were the most targeted habitat types. Both biomass and species richness of landings by fishing trip did not differ significantly between the most highly fished seabed habitat types. Such information has important implications for the development of a successful spatial management plan of fisheries resources.

Keywords: Fisheries, Aegean Sea

Introduction
Seabed habitat type and fishing pressure both largely affect the structure and function of fish assemblages [1, 2]. However, in the Mediterranean Sea, little effort has been devoted to investigating the distribution of fishing activity among different seafloor habitats and their importance in terms of catches to the fishery. Herein, we analyzed the small-scale fishing fleet landings of Fourni island complex (NE Aegean Sea) in relation to benthic habitat type. The study area is characterized by a dynamic, multi-gear, small-scale fishing community and the presence of diverse seabed habitats, consisting mainly of *Posidonia oceanica* meadows, coralligène reefs, sand and rocky substrates. Such information can be useful in the design of an adequate spatial management plan of fisheries resources in the area.

Materials and methods
Port side landings surveys were conducted daily, between March 2012 and December 2012, on artisanal fishing boats operating in the Fourni Island complex and using trammel nets or longlines. The latter two are the fishing gears used most frequently by the artisanal fishing fleet. Landings' biomass and species richness by fishing trip were recorded along with information on gear configuration (i.e. total surface area of nets and number of hooks, respectively). Fishermen were interviewed about the structure of the seabed habitat where fishing took place. In detail, fishermen were asked about the presence or absence of rocks, coralligène formations, *P. oceanica* and sand, which are the main seabed habitat types in the area. Landings were corrected for effort, expressed as kg per m^2 of net and kg per 100 hooks for trammel nets and longlines respectively. One-way Anova was used to compare landings per unit of effort and species richness over different seabed habitat types. Only seabed habitat types with a significant number of observations were used in the comparisons.

Results and Discussion
verall 62 fishing trips were sampled. Fishing occurred over various single and mixed type seabed habitats (Fig. 1). Single type seabed habitats consisted of rocks (20.69 %) and coralligène reefs (25 %), followed by mixed habitats of *P. oceanica* and sand (20.69 %). Landings per unit of effort (LPUE) did not differ significantly between the most frequently fished seabed habitat types both for trammel nets (one-way Anova, $F_{2,53} = 0.56$, $p = 0.577$) and longlines (one-way Anova, $F_{1,23} = 0.96$, $p = 0.337$). Comparison of landings' species richness between habitats also showed no significant differences for longlines (one-way Anova, $F_{1,23} = 0.187$, $p = 0.185$) and trammel nets (one-way Anova, $F_{2,53} = 0.39$, $p = 0.681$).
Rocky substrates, coralligène reefs and *P. oceanica* meadows are complex habitats of high ecological value. Coralligène reefs, in particular, are very vulnerable and not persistent to anthropogenic disturbances due to their low turnover rates [3, 4].These habitat types receive the highest fishing pressure while are equally important in terms of productivity to the fishery. The degradation of these habitats in the NE Aegean would have high socioeconomic impact on fishing communities. Hence their protecting and sustainable management is essential to achieve a degree of fisheries sustainability which will also benefit the fishing community. Such a purpose can only be achieved by the design of a Fisheries Protected Area based on detailed seabed habitats mapping data [5, 6].

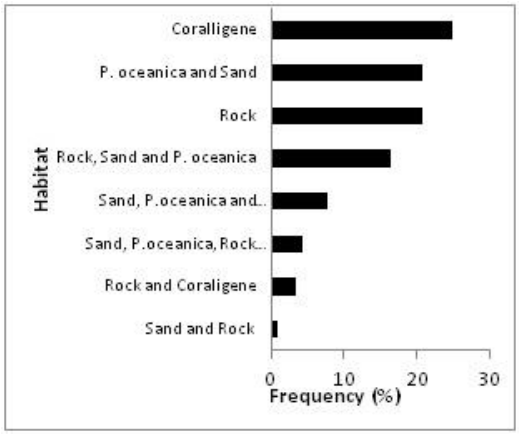

Fig. 1. Number of fishing trips (%) by seabed habitat type, Fourni, NE Aegean.

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