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Title: Contrasting food web structures and trends across Mediterranean Areas

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With the development of the ecosystem approach to fisheries there is an increasing interest in analysing fish communities as networks of functional groups. Functional groups are groups of species that play a similar role in the food web and whose dynamics can be considered as consistent. We propose to build simplified food web models in different Mediterranean areas, starting from the species characteristics, rather than *a priori* assumptions or imposed model structure. The question asked is whether these different communities that share a common environment with local particulars differ in their food web structure. We measured a suite of 10 morphological traits on 75 species, and carried out multivariate analyses to ascribe species to functional groups; the number and definition of functional groups may vary between Mediterranean areas. Using scientific surveys data, we assessed the temporal trends of each the functional groups. Results identified seven empirically-defined functional groups of fish species which represented a correlation of 0.10 with expert classification. Where experts would identified four major groups of species (i.e. benthic/pelagic and invertebrate/fish feeders), we highlighted a gradient of species diet varying from invertebrate to fish feeders and differentiated the habitat (water column and substrate) on which they feed or live. Preliminary observations of the biomass temporal trends for the seven functional groups showed differences between western and eastern Mediterranean areas.

Keywords: morphological traits, community models, food web structure, functional groups, Mediterranean Sea, temporal trends

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