CHANGES IN MESOZOOPLANKTON ABUNDANCE, BIOMASS AND SPECIES COMPOSITION WITH DEPTH IN THE LEVANTINE BASIN (EASTERN MEDITERRANEAN)

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Abstract
Species composition, abundance and biomass distribution of mesozooplankton species with depth were studied in the Levantine basin (eastern Mediterranean) within the framework of SESAME (Southern European Seas: Assessing and Modelling Ecosystem changes). Copepods were found to be the dominant group at all depth layers sampled during both sampling periods. Mesozooplankton biomass and abundance varied between 2.2-18.1 mgm^{-3}, 72.28-757.55 ind.m^{-3} in April 2008 and 0.98-4.67 mgm^{-3} and 99.54-492.52 ind.m^{-3} in October 2008, respectively. Mesozooplankton biomass and abundance tend to decrease with depth.
Keywords: Levantine Basin, Biomass, Zooplankton , Eastern Mediterranean

Introduction
Mediterranean and particularly the eastern Mediterranean is considered to be one of the extreme oligotrophic regions in the world, in terms of both primary productivity and chlorophyll *a* concentrations (1). Zooplankton form an important link in the pelagic food web due to the transfer of energy from unicellular algae to higher trophic levels (2). Studying zooplankton communities are especially crucial for not only detecting ecological changes and understanding the functioning of pelagic ecosystems, but also in terms of fisheries. The aim of this study was to determine the vertical distribution of mesozooplankton biomass & abundance and species composition in the oligotrophic Levantine basin.

Material and methods
Mesozooplankton samples were collected from standard layers (0–50, 50–100, 100–200 m), with the aid of a WP2 closing net of 200 µm mesh size during daytime (06:00-18:00) from the Levantine basin (Fig.1) in April and October 2008. All samples were split into two halves for the estimation of biomass (dry weight) in one and
for species identification in the other.

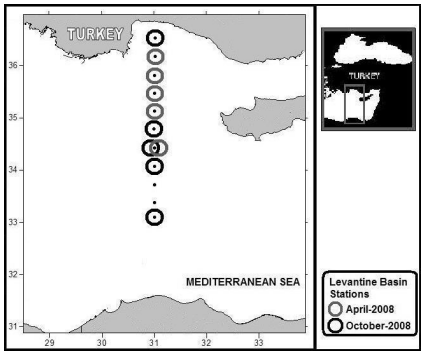

Fig. 1. Location of the sampling stations in the Levantine Basin

Results and Discussion
A total of 145 taxa were identified from the basin. Copepods were found as the dominant group at all layers during both sampling periods. In April 2008, copepods and siphonophorans were generally more abundant in the layer 0-50m (except E30N00), whereas, doliloida and appendicularians in layers 0-50 and 50-100 m, ostracoda in layers 50-100 and 100-200 m were found more abundant. In April, *Calocalanus styliremis, Clausocalanus jobei, C. parapergens, C. paululus, Lucicutia flavicornis, Mecynocera clausi, Paracalanus dunudatus, P. nanus, Farranula rostrata, Oithona plumifera, O. setigera,* Oncea media groups, *Oncea mediterranea* dominated the top 50 m whereas *C. contractus, Ctenocalanus vanus, Haloptilus longicornis, L. flavicornis, M. clausi, P. denudatus, P. nanus, F. rostrata, O setigera,* Oncea media groups became dominant in the layer 50-100 m. Finally copepod species namely *H. longicornis, O. setigera, Mormonilla minor* and *O. mediterranea* dominated the layer 100-200 m . In October 2008, copepods, chaetognaths, siphonophorans and cladocerans were more abundant in the layer 0-50 m , while Ostracoda was found higher in the 50-100 m depth range. Appendicularians were more abundant in the layers 0-50 and 50-100 m. In general, *Clausocalanus furcatus, C. paululus, C.pavoninus,O. plumifera* in the layer 0-50 m., *C.contractus, C styliremis ,C. pavo, C. jobei, O. setigera, F. rostrata* in the layer 50-100 m and *C. paululus, H. longicornis, M. clausi, P. denudatus, O. setigera, M. minor* in the layer 100-200 m were found abundant copepod species. Changes in mesozooplankton biomass and abundance at stations during April & October 2008 are shown in fig2. In April 2008, mesozooplankton biomass and abundance varied from 2.20 mg m^{-3} (F50N00, 100-200 m) to 18.10 mg m^{-3} (E30N00, 50-100 m) and from 72.28 ind (G10N00, 100-200m) to 757.55 ind m^{-3} (E30N00, 50-100 m), respectively. Mesozooplankton biomass and abundance in October 2008 found to vary from 0.98 mg m^{-3}, 99.54 ind m^{-3} (E30N00, 100-200 m) to 4.67 mg m^{-3}, 492.52 ind m^{-3} (E10N00, 0-50 m), respectively. Mesozooplankton was more abundant in April than in October and both biomass and abundance values tend
to decrease with depth.

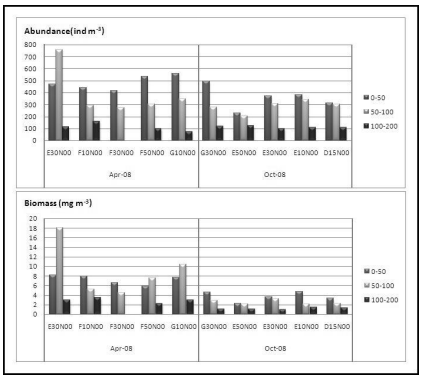

Fig. 2. Changes in mesozooplankton biomass and abundance in all sampling stations

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