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Abstract

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S7. P13 Variation of leaf litter decomposition among rivers, lagoons and sea: an experiment from Corfu island (Greece)

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In aquatic ecosystems, the decomposition of organic detritus represents one of the most important ecosystem functions, which support complex detritus-based food webs that determine the critical balance between carbon mineralization and sequestration. The performance of the decomposition process is usually expressed as rate of decomposition, being a synthetic measure that take into account both abiotic and biotic factors. Decomposition rates have been also applied to evaluate the ecological status in terms of ecological functionality. However, despite a growing number of studies have tested the rate of decomposition between leaves of different riparian tree species in different aquatic ecosystems including rivers, transitional waters and sea, no comparative study among ecosystems typology is available up to date. Here, we compare decomposition rates from rivers, lagoons and sea of Corfu island (Greece). Five sampling sites were fixed in each of the three of the most important rivers and lagoons; other five sampling sites were fixed in the sea around the island. Twelve leaf packs containing 3±0.005 g of oven-dried *Phragmites australis* leaves were submerged in April 2014 and retrieved in May 2014 (after 30 days). Abiotic parameters were recorded in both sampling times. The retrieved leaf packs were cleaned and the macroinvertebrates retained were removed, counted, identified at lower taxonomic level and weighted. Leaf pack decomposition rates were calculated, and their variability was compared within each aquatic ecosystem, within each ecosystem typology (river, lagoon, sea) and among ecosystem typology. The results are going to be presented on the poster.

S7. P14 Characterization of the *Halophila stipulacea* meadow in the Red Sea along a depth gradient (4-28 m)

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Halophila stipulacea (Forsk) Aschers. is a tropical subtidal seagrass widely distributed along the coasts of the western Indian Ocean and Red Sea. This species grows fast and is a good colonizer, however due to its small size and shallow root system is known to have a low tolerance to disturbance. We have recently applied biochemical markers to seagrass (total phenol and photosynthetic pigment content) to detect ecophysiological response to environmental changes.
In this study we investigated the physiological and morphological variations of *H. stipulacea* along a 4-28m depth gradient in the Red Sea (Gulf of Aqaba, Israel). In addition the microbial community associated with *H. stipulacea* plants (leaves and rhizomes) has been characterized by pyrosequencing. The sampling was carried out in October 2013. The depth distribution of the seagrass and variation in PAR exposure accounted for physiological and morphological variations: leaves showed significant differences in biometry, pigments and phenols content along the gradient. Results indicated that in *H. stipulacea* foliar pigment and total phenol content are capable to detect variations of plant physiological status, as already observed in other species.
Preliminary results on the microbial community associated to the seagrass showed slight variations along the depth gradient and confirm the alpha proteobacteria is the dominant group, as we recently observed in another seagrass. The biochemical descriptors and the study of the microbial community were successfully applied for the first time to a tropical species, *H. stipulacea*. More investigations are necessary given the invasive habitus of this species, that recently gained worldwide distribution.