

Monday, 7 September

Session II—Seagrass and its associated fauna

Chair: Khalid Elkalay

Influence of seagrass epiphytes on macroinvertebrate assemblages associated with two bed types of the seagrass *Posidonia oceanica*

J. A. Borg^{1,2}, A. A. Rowden^{1,3}, M. J. Attrill¹, P. J. Schembri² and M. B. Jones¹

¹Marine Biology & Ecology Research Centre, Marine Institute, University of Plymouth, Drake Circus, Plymouth PL4 8AA, United Kingdom; ²Department of Biology, University of Malta, Msida MSD2080, Malta; ³Present address: National Institute of Water and Atmospheric Research, P.O. Box 14-901 Wellington, New Zealand

The influence of seagrass architecture on the species richness, abundance and assemblage composition of macroinvertebrates associated with the reticulate and continuous bed types of *Posidonia oceanica* was investigated at three different spatial scales: (i) tens of metres ('small' scale); (ii) hundreds of metres ('medium' scale) and (iii) kilometres ('large' scale). No consistent significant differences in attributes of the macroinvertebrate assemblages were identified by univariate and multivariate analyses between the two *P. oceanica* bed types over the three spatial scales considered. However, significant spatial differences in attributes of the macroinvertebrate assemblages were detected at the large and medium spatial scales, irrespective of bed type. Results of multiple linear regression indicated that, irrespective of bed type, epiphyte biomass was a main attribute explaining large-scale variation in the species richness and abundance of motile macroinvertebrates associated with *P. oceanica* beds. The implications of these findings for the conservation of *Posidonia oceanica* habitat in the Mediterranean are discussed.

Exploring the relationships among nutrient availability, epiphyte load, and the abundance of invertebrate grazers in *Posidonia oceanica* meadows

Inés Castejon-Silvo, Marta Dominguez, David March, Miquel Palmer, Beatriz Morales-Nin, Jorge Terrados

Departament of Ecology and Marine Resources, Mediterranean Institute for Advanced Studies (IMEDEA. CSIC-UIB), Spain

Epiphyte over-growth may have detrimental effects on seagrass functionality. The biomass of epiphytes that grow on *Posidonia oceanica* leaves is affected by nutrient availability and the grazers' pressure. In addition, fish predation on epiphyte grazers may indirectly drive changes in the epiphyte load through top-down mechanisms. This study explores the relationships between fish and grazer abundance, epiphyte load, and nutrient availability in *P. oceanica* meadows in Palma Bay (Majorca, Western Mediterranean). We determined the size, the nutrient content and the epiphyte load of *P. oceanica* shoots, and the nutrient content of *P. oceanica* epiphytes in ten locations within Palma Bay. We selected four locations representing the extremes of the gradient of *P. oceanica* epiphyte load present in Palma Bay and we estimated the abundance and determined the structure of the associated fish and invertebrate communities. We also increased the availability of nutrients in the water column of those four locations to evaluate the responses of the invertebrate community and the epiphytes. We found a negative correlation between shoot size and