

BOOK OF ABSTRACTS



Sassari, April 15-16-17, 2015

PaulisProject



Università
degli Studi
di Cagliari

Universitat
de Girona
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Stefania Pisanu and Simonetta Bagella (editors)

Papers should be cited as (e.g.):

Bagella S., Boix D., Caria M.C., Compte Ciurana J., Gascón S., Filippino G., Pisanu S., Elena Pittao E., Sala J., Cogoni A., 2015. "PAULIS" PROJECT: a challenge from a neglected habitat. In: Pisanu S. and Bagella S. (eds.) International Symposium on Mediterranean Temporary Ponds. Book of abstracts. Edizioni P.Ass.I.Flora Ambiente, Italy. p. 5

ISBN 978-88-940864-0-9

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Piazza Pedra e Zana 18, Bolotana (NU) - ITALY
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INTRA AND INTER-ANNUAL VARIATION OF FUNCTIONAL STRUCTURE OF MACROINVERTEBRATE ASSEMBLAGES IN MEDITERRANEAN TEMPORARY PONDS

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Temporal variation of the functional structure of macroinvertebrate assemblages in Mediterranean temporary ponds has been studied in Sardinia (Italy). Sixteen small and shallow ponds (less than 2 ha and less than 2 m deep) subject to low human pressure were sampled in different periods. To study the intra-annual variation, one sampling in each hydroperiod phase were performed during 2007: at the beginning (January), middle (March), and end (May) of the ponds' hydroperiod. Moreover, in order to study the possible inter-annual variation, samples from May 2007 and May 2013 were compared.

Macroinvertebrate taxa were assigned to nine functional groups (traits) according biological characteristics: maximal size, life cycle duration, number of reproduction cycles per year, dispersal abilities, resistance forms, type of food, feeding mechanisms, temperature range, and locomotion mechanisms and relation of the organisms to the substrate. ANOSIM analyses were performed in order to check if functional structure differed along the hydroperiod (intra-annual variation) and between hydroperiods (inter-annual variation). The preliminary results showed a significant intra-annual variation (i.e., among hydroperiod phases) of the functional structure. Similarly, significant differences in functional structure were observed between the two sampled years suggesting that the functional structure did not have the same pattern each year.