

Regional species diversity of freshwater Ostracoda (Crustacea), distribution and habitat relationships

Mehmet YAVUZATMACA, Okan KÜLKÖYLÜOĞLU, Derya AKDEMİR & Necmettin SARI

To understand the relationship between regional (alpha) diversity of ostracods and their distribution in variety of habitat types, 95 different water bodies were randomly sampled from southern Kahramanmaraş (Turkey) between 07 June and 31 July 2010. Total of 47 ostracods (16 subfossils and 31 recent forms) including two new species (*Herpetocypris helenae*, *Heterocypris barbara*) for Turkish ostracod fauna were encountered from 68 of 95 sites. Four alpha diversity indices (Shannon Wiener, Menhinick, Brillouin, Margalef) individually outlined higher species diversity and evenness for three types of habitats (limnocrene springs, ponds, stream) with low dominance. First axis of CCA exhibited about 71% of the correlations between species and environmental variables along with 70% of explained variance. Accordingly, water temperature ($P = 0.002$; $F\text{-value} = 2.531$) having negative or positive correlations to individual species was the most effective factor on diversity. Altitude did not affect numbers of species when 20 species were identified from the elevational ranges of 400–600 m and 800–1000 m despite different numbers of habitat types. Although the numbers of limnocrene springs were twice as high as the ponds, species number was higher in ponds than limnocrene springs. Results revealed that cosmopolitan species apparently have important contribution to the regional diversity. Finding at least nine cosmopolitan species from 56 sites supports this view. Hence, suitability of aquatic (ecological) conditions and habitat types can be better explanatory factors for ostracod diversity than the other abiotic factors. However, ostracod diversity was generally controlled by the availability of ecological conditions (e.g., temperature) and characteristics of species (e.g., cosmopolitan) in different habitat types that corresponds to the assumption of Habitat Diversity Hypothesis.

Authors addresses:

Mehmet Yavuzatmaca, Okan Kulköylüoğlu & Necmettin Sari
Department of Biology, Faculty of Arts and Science, Abant İzzet Baysal University,
Gölköy 14280 Bolu, Turkey; kulkoyluoglu_o@ibu.edu.tr

Derya Akdemir
Dept. of Biology, Faculty of Arts and Science, Marmara University, Istanbul, Turkey