OC18 - Drivers of invertebrate communities in bomb crater ponds of the Pannonian Plain

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The Pannonian Plain in Central Europe is characterised by diverse aquatic habitats, but temporary ponds are still among their least known representatives. For investigating community assembly patterns of invertebrates, we chose bomb crater ponds. These habitats of anthropogenic origin have several advantages to be treated as model system, such as their high numbers in restricted regions, morphological similarity, and the length of environmental gradients they exhibit. We studied zooplankton (Rotifera, Crustacea) and aquatic insects (Coleoptera, Heteroptera, Odonata and Chironomidae), focusing on a dense cluster of 54 sodic bomb crater ponds of a confined area (<25 ha). Most of the groups were primarily constrained by the local environment of the ponds, with pH, salinity, turbidity, water depth and vegetation cover outstanding as the main structuring factors. In zooplankton, we also found a significant fraction of variation explained by unique spatial effects. Moreover, in rotifers, the unique variation explained by space was similar to that of the environment. This was most likely related to connectivity patterns, as the most important spatial eigenvectors indicated the major differences between central and peripheral ponds. We can conclude that community patterns of actively flying aquatic insects are rather driven by the local environment, but in passively dispersing invertebrates such as zooplankton, patterns originating from spatial dynamics can be evident in small-scale metacommunities consisting of discrete pond habitats.