

Near-shore distribution of alien Ponto-Caspian amphipods in a European dam reservoir in relation to substratum type and occurrence of macroinvertebrate taxa



Knowledge of habitat requirements and interspecific interactions of invasive species helps predict their impact and spread. We determined the relationships within the invasive freshwater Ponto-Caspian amphipod assemblage, and their associations with macroinvertebrates in the near-shore zone of a central European lowland dam reservoir. We sampled five habitat types: bare sand at the water line, bare sand (0.2 m depth), bare sand (0.5 m depth), macrophyte-overgrown sand (1 m depth), stones (0.3 m depth) on four dates (October 2015–October 2016). *Pontogammarus robustoides* occurred in all habitats, *Dikerogammarus villosus* and *Echinogammarus ischnus* were limited to the stony bottom. Amphipod densities were positively associated with one another except *Dikerogammarus* juveniles, negatively correlated with adults. The occurrence of *D. villosus*, juvenile *Dikerogammarus* and *E. ischnus* was positively related to the presence of the shelter-forming bivalve *Dreissena polymorpha*. *Pontogammarus robustoides* was positively associated with sphaeriid clams and gastropods (shelters), as well as oligochaetes and chironomids (potential prey items). *Dikerogammarus villosus* and *E. ischnus* were positively related to chironomids and oligochaetes, respectively. Coexistence of various alien amphipods in the studied area, indicated by prevailing positive relationships in their assemblage, may be enabled by the abundance of shelters and rich food sources allowing habitat partitioning.

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