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Analysis of macroinvertebrate life strategies and dispersal processes among wetlands in a natural park.

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Dispersal processes are related to the colonization ability and the distribution of species. They have a fundamental ecological importance, influencing population demography, food web dynamics, community succession and evolution.

Islands offer an excellent opportunity to study fundamental ecological patterns and processes, such as the species-area relationship, turnover and succession. "Island habitats", such as freshwater ponds and wetlands, provide the same opportunities as true islands for ecological investigations about the influence of dispersal mechanism on the community patterns. In this study we compared the macroinvertebrate communities and their different composition in various kinds of ponds and wetlands, taking into account their dispersion mechanisms.

The considered sites are spread within Parco Pineta, a Regional Park in Lombardia, where 24 wetlands were chosen to analyse differences in invertebrate biodiversity. They are natural (16) and artificial (8) ecosystems, two of the latter being part of a constructed wetland system created for wastewater treatment. Macroinvertebrates were sampled during summer, autumn and spring and then divided into four life-strategy groups, considering their type of dispersion, the need of water to reproduce and the adaptation to survive basin desiccation. The four groups were correlated to environmental variables and water quality parameters of each considered ecosystem using multivariate statistic analyses. The groups showed preferences to different environmental and hydrological conditions in relationship to seasonal variations, thus influencing the local biodiversity.