

## **Biodiversity monitoring of a newly-established wetland in the Regional Park of Appia Antica (Rome, Italy)**

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Small wetlands are widely recognised to contribute to freshwater biodiversity at regional level, and to deliver valuable ecosystem services. Notwithstanding their value, they are seriously threatened by human activities, which has resulted in a sharp decline in numbers and ecological quality, especially in metropolitan areas of big cities. The Regional Park of Appia Antica is a protected area embedded within the city of Rome and connected with surrounding rural areas at the outskirts of the city. The aquatic habitats of the Park include small watercourses, ponds and a small artificial wetland (Caffarella Pond) built in 2004. A monitoring program was set up to study the seasonal variation of physico-chemical characteristic in the Caffarella Pond, and to analyse the spatio-temporal patterns in macroinvertebrate colonization and the benthic diatom community during the first four years. The results of our analyses show two main effects of the new pond: 1) a mitigation action of nutrient load on the small stream forming the pond; 2) an increased biodiversity of aquatic ecosystems inside the Park. In fact, the pond hosted a macroinvertebrate community more diverse than the other aquatic habitats, playing a role as "reservoir" of species for neighbouring aquatic biotopes impacted by anthropogenic activities. Our study supports the recommendation of the European Directive (WFD 2000/60/EC) that the management of river basins includes small wetlands. Caffarella Pond, in fact, could play an important role in the biodiversity restoration and, more in general, in the management of the aquatic urban ecosystem.