

PST33 - Integration of ecological monitoring protocols for water framework and habitats directive in ponds

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The ecological status of standing waterbodies in the European Union is the subject of various environmental regulations, with the Habitats Directive (HD; 1992) and Water Framework Directive (WFD; 2000) comprising two important legal instruments to safeguard freshwater natural heritage. In the Brussels-Capital Region (Belgium), monitoring of ponds can be specifically directed towards addressing both directives and their translation into regional legislation, as well as be tuned for surveillance of cyanobacterial blooms.

In order to optimize efficiency and completeness of the scientific protocol for pond monitoring, ecological status of a series of ponds has been assessed in 2013 and 2014, followed by selection of relevant biotic and abiotic variables and occasional adjustment of previously employed thresholds. In total, 15 ponds with ecological status ranging from clear, macrophyte-dominated to intermediately or turbid were assessed.

Overall, many of the indicators for good or bad quality correlated significantly, although several variables remain highly informative even if partly redundant. In any case, monitoring in terms of HD and WFD objectives and cyanobacterial containment requires the inclusion of a particular set of parameters.

For the purpose of WFD monitoring, a number of changes to the original scheme were proposed. Three ponds attained the WFD objective of Good Ecological Potential. Compared to previous methodologies, the proposed protocol tends to increase the appreciation of a seasonally stable, clear-water equilibrium dominated by a diverse submerged macrophyte community.

The potential and occurrence of two aquatic HD habitat types, H3140 (“Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.”) and H3150 (“Natural eutrophic lakes with Magnopotamion- or Hydrocharition-type vegetation”) was evaluated for Brussels ponds. A dominance of characean species in a number of clear ponds probably corresponded to a tolerant but short-lived variant of H3140. Concerning H3150, key diagnostic species of the habitat are lacking and the probability of attaining sufficient or good status appears rather low on short notice.

Tendencies of ecological degradation within the growth season necessitate repeated visits in order to accurately evaluate the ecosystem status. WFD and HD monitoring cycles most likely exceed the expected life span of a particular ecological state in ponds of the Brussels-Capital Region. Habitat status of ponds should at least be checked once every three years, ideally every year.