

08 Conservation and management

8.6 The Dragonfly Association Index – a new tool for the type-specific assessment of lowland rivers

Andreas Chovanec¹, Johann Waringer

¹ Federal Environment Agency, Spittelauer Lände 5,
1090 Vienna, Austria

correspondence: <andreas.chovanec@umweltbundesamt.at>

Species traits of 57 Odonata species occurring in the Bioregion Eastern Ridges and Lowlands within Illies' Ecoregion Hungarian Lowlands were defined by factor loadings of twelve habitat parameters: crenal, rhithral, potamal, standing water, size of water body, flow velocity, water persistence, open water area, open banks, riparian trees, submerged macrophytes, and reed. Based on the species-specific configurations of these habitat parameters, Pearson correlations and cluster analysis (squared Euclidean distances; Ward method) revealed seven dragonfly associations with different habitat needs: rhithral association, potamal assoc., assoc. of open banks, assoc. of open water, assoc. of reed beds, assoc. of reed beds combined with riparian trees and assoc. of temporary waters. Correlations between the associations' habitat requirements and the habitat factors of near-natural river types in this bioregion were performed to define river-type specific association compositions characteristic of small headwater streams, larger meandering and marshy rivers. Based on these results, the Dragonfly Association Index was created to assess the ecological status of these rivers in the 5-tiered system of the EU Water Framework Directive by comparing the type-specific reference situation with the actual status quo. The method can also be applied to evaluate restoration measures.

8.7 An overview on the protection of dragonflies (Odonata) in Europe

Geert De Knijff

Research Institute of Nature and Forest (INBO),
Kliniekstraat 25, 1070 Brussels, Belgium

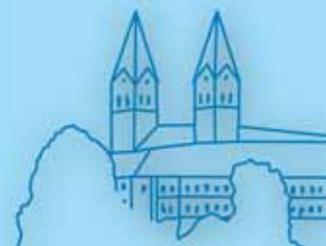
<geert.deknijff@inbo.be>

The most important regulation in Europe for the protection of dragonflies is the Habitats Directive (1994), which aims to maintain or restore natural habitats, fauna, and flora in the Member States of the European Union. One of the regulations of this Directive is that Member States have to designate special areas of conservation for the species mentioned in Annex II. Species of community interest in need of strict protection are mentioned in Annex IV. Altogether 16 dragonfly species are mentioned in one of both Annexes. Furthermore, many dragonfly habitats, especially the most rare and threatened, are also protected by this Directive.

In addition, many European countries have national legislation that often protects a different set of species. The aim of these national legislations and their enforcement varies strongly between countries, making a comparison difficult. In some countries, no species are protected, in others a limited number, mostly the species of the Habitats Directive, and in a last group of countries, all dragonflies are protected, so that the netting of dragonflies or even the collecting of exuviae is prohibited.

I give an overview on the species protected in Europe and compare this with the species that are only protected on a national level. From the results of the European Red list (Kalkman et al. 2010), it became clear that many threatened species in Europe are not mentioned in the Annexes of the Habitats Directive and, therefore, don't receive the necessary attention in European conservation policy. Moreover, most of the threatened species are also not covered by national legislation. Therefore, an update of the protection of dragonflies in Europe is urgently needed.

Kalkman VJ, Boudot, JP, Bernard R, Conze KJ, De Knijff G, Dyatlova E, Ferreira S, Jović M, Ott J, Riservato E, Sahlén G. 2010. European Red List of Dragonflies. Publications Office of the European Union, Luxembourg



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