

The Belgium Odonata Atlas Project: changes in distribution

G. DE KNIJF, A. ANSELIN & Ph. GOFFART

Extended abstract

The Belgian Working Group “*Gomphus*”, a volunteer organisation founded in 1983, had as one of the major activities the organisation of an Atlas Project of Odonata distribution in Belgium.

A special effort has been made to achieve a good coverage of the territory during the last ten years. Since 1990, all 10 km UTM grids and nearly 60 % of the 5 km UTM grids of Belgium have been visited at least once. Nearly 65,000 records are available, 2/3 of them collected since 1990, on 66 species (on a total of 69 species for Belgium). Figure 1 shows the coverage of all 1 km UTM grids in which Odonata were observed since 1990.

The northern part of Belgium (the Flemish region) and some river valleys in the south are very thoroughly investigated. The highest species diversity (see figure 2) per UTM5 is found on the poor sandy soils with heathlands and moors in the northeastern part and in some river valleys and marshlands in the south. The maximum num-

ber for a single grid cell is 48 species or 73 % of the actual Odonata fauna of Belgium. Even in a European perspective, where there occur merely 130 species (WASSCHER & BOS 2000), this means a relative high percentage of 37 %. Analysing the number of species per UTM5 grid, we found that 33 or 50 % of the species occur in less than 7 % of the UTM5 grids and can be considered as rare in Belgium.

Comparing the data since 1990 with the period before 1950 and between 1950-1989 we remark the following changes in occurrence and distribution in Belgium. *Nehalennia speciosa* and *Leucorrhinia caudalis* are extinct in Belgium (DE KNIJF & ANSELIN 1996) and *Onychogomphus uncatus*, non-autochthonous species, has not been observed since 1980. On the other hand, *Gomphus flavipes* was only recently recorded in Belgium (GUBBELS 2001) and new sites were discovered for some rare species or were only rediscovered since the last 20 years: *Coenagrion mercuriale* (GOFFART 1995, DE KNIJF & DEMOLDER 2000), *C. scitulum* (VANDERHAEGHE 1999),

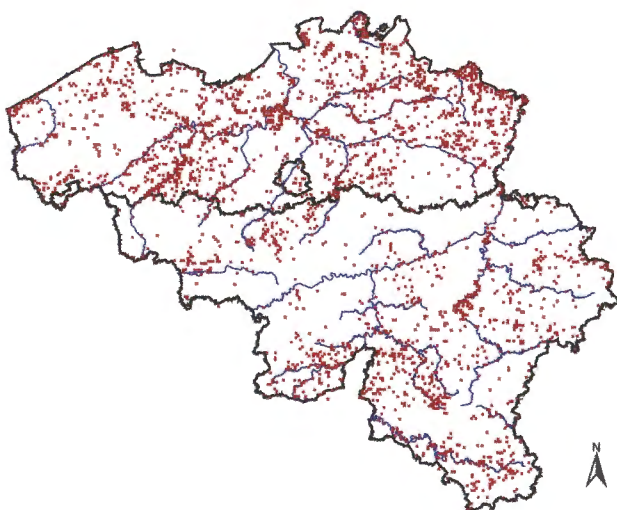


Fig. 1 — Geographic distribution of the localities with data since 1990, grid cells are 1 km UTM.

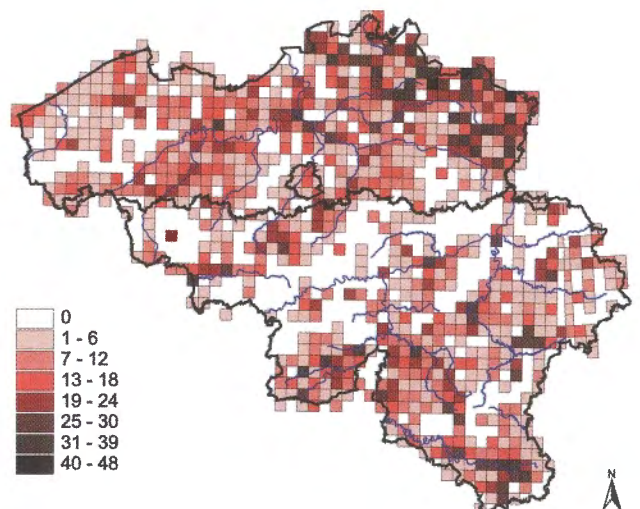


Fig. 2 — Total number of Odonata species since 1990, grid cells are 5 km UTM.

Oxygastra curtisii (DUMONT 1977), *Epitheca bimaculata* (MARTENS 1982) and *Cordulegaster bidentata*. Despite the increased effort and the higher number of investigated UTM grids, some species clearly show a decrease: *Coenagrion hastulatum*, *Leucorrhinia pectoralis* (e.g. DE KNIJF & ANSELIN 1996, 2001) or decreased slightly despite an increased effort: *Coenagrion pulchellum*, *C. lunulatum*, *Aeshna isocetes* (DE KNIJF & ANSELIN 1996) and *A. subarctica*. Different southern species are recently observed very regularly and reproduce successfully. Some even have become fairly common: e.g. *Lestes barbarus* (STOKS & DE BLOCK 1997, STOKS *et al.* 1997), *Cercion lindenii* and *Crocothemis erythraea* (DE KNIJF 1995). Others are migratory and can remain for some years and then disappear again: *Aeshna affinis* (ANDRIES 1997, VAN DEN BERGHE 1999), *Anax parthenope* (DE KNIJF 1999) and *Sympetrum fonscolombii* (GOFFART 1999).

Analysing the species composition and the distribution of some Odonata for several kinds of threatened habitat types in Belgium, we notice that the species which inhabit rivers, rivulets and brooks are *Calopteryx splendens*, *C. virgo*, *Coenagrion mercuriale*, *Gomphus vulgatissimus*, *Onychogomphus forcipatus*, *Cordulegaster bidentata*, *C. boltonii*, *Oxygastra curtisii* and *Orthetrum coerulescens*. Those species can be found along many rivers in the southern part of Belgium and in the northeastern part. Species of oligotrophic waters and bogs are *Coenagrion hastulatum*, *C. lunulatum*, *Aeshna juncea*, *A. subarctica*, *Somatochlora arctica*, *Leucorrhinia dubia* and *L. rubicunda*. They are restricted to the northeast and the high altitudes of the Ardennes in Southeast-Belgium. Species of mesotrophic and natural eutrophic ponds and marshes occur in the whole northern part and in the very south of Belgium and are *Lestes dryas*, *Coenagrion pulchellum*, *Erythromma najas*, *Aeshna isocetes*, *Brachytron pratense*, *Libellula fulva*, *Somatochlora flavomaculata* and *Leucorrhinia pectoralis*.

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Geert DE KNIJF

Anny ANSELIN

Institute for Nature Conservation

Kliniekstraat 25

B-1070 Brussels

Philippe GOFFART

Unité d'Ecologie et de Biogéographie

Université Catholique de Louvain

Place Coix-du-Sud 5

B-1348 Louvain-la-Neuve