The role of Orthoptera in Dutch nature conservation

R.M.J.C. Kleukers

European Invertebrate Survey – Nederland, P.O. Box 9517, 2300 RA Leiden, The Netherlands
(kleukers@naturalis.nnm.nl)

From 1990 until 1995 the Orthoptera Recording Scheme was performed in The Netherlands. The information was summarized in a book, treating the 45 Dutch Orthoptera species. This paper describes the results of two other important goals: a better protection of endangered Orthoptera and a better representation of invertebrates in nature conservation policy in The Netherlands.

Keywords: Orthoptera, nature conservation, species protection

Nature conservation is traditionally focussed on birds and plants. In many cases insects and other invertebrates are not taken in consideration because of the lack of information on distribution, biology and ecology. In an important book on Dutch ecosystems (Bal et al., 1995) almost 60% percent of the so called target species of animals belong to the vertebrates, while only 2% of the total number of Dutch animal species are vertebrates. With the publication of a large number of distribution atlases on invertebrates (Table 1), the tide is changing. In this paper it is shown how Orthoptera are slowly becoming integrated in Dutch nature conservation.

Orthoptera Mapping Scheme

From 1990 - 1995 the Orthoptera Mapping Scheme was performed. The present distribution was recorded in the field by more than 100 Dutch naturalists. The historic distribution was analysed by studying all available collections and publications. All these data were stored in a database, with in total more than 60,000 records. This provided the possibility to assess the status of the different species (see example in Fig. 1). The results of the mapping scheme were published, together with all available knowledge on distribution, trends, biology (including bioacoustics), ecology and biogeography, in a book on Dutch Orthoptera (Kleukers et al., 1997). It was the first volume in an ambitious new series Nederlandse Fauna, treating the Dutch fauna.

Nature conservation policy

The distribution data from the Orthoptera Recording Scheme formed the basis for the red list of Dutch Orthoptera (Odé, 1999). This is an official document, which is necessary for further involvement of a group in nature conservation. After publication of the red list another important step was taken. Recently it was decided that Orthoptera will be included as official target species in Dutch nature conservation (in the revised edition of Bal et al., 1995). Until now Orthoptera have not been included in the national Network Ecological Monitoring. At the moment only some preliminary studies involving monitoring of Orthoptera are being done.

Table 1. Recent distribution atlases on Dutch groups of invertebrates

<table>
<thead>
<tr>
<th>Invertebrate group</th>
<th>Reference</th>
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<tbody>
<tr>
<td>Butterflies (Rhopalocera)</td>
<td>Tax, 1989</td>
</tr>
<tr>
<td>Microlepidoptera</td>
<td>Kuchlein, 1993</td>
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<tr>
<td>Dragonflies (Odonata)</td>
<td>Wasscher et al., 1995, NVL, 2001</td>
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<td>Robberflies (Asilidae)</td>
<td>Van Veen, 1996</td>
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<tr>
<td>Grasshoppers (Orthoptera)</td>
<td>Kleukers et al., 1997</td>
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<tr>
<td>Hoverflies (Syrphidae)</td>
<td>NJN, 1998</td>
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<tr>
<td>Freshwater molluscs (Mollusca)</td>
<td>Gittenberger et al., 1998</td>
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<tr>
<td>Bees (Apidae)</td>
<td>Peeters et al., 1999</td>
</tr>
<tr>
<td>Groundbeetles (Carabidae)</td>
<td>Turin, 2000</td>
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<tr>
<td>Watermites s.l. (Heteroptera part.)</td>
<td>Smit &amp; Van der Hammen, 2000</td>
</tr>
<tr>
<td>Waterbugs s.l. (Heteroptera part.)</td>
<td>Aukema et al., 2001</td>
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</table>
Protection

Owners of nature reserves are more and more inclined to involve Orthoptera in the management choices. Some endangered populations are actively protected, for example the only population of *Gomphocerippus rufus* (Jansen *et al.*, 1999) and all remaining populations of the wartbiter (*Decticus verrucivorus*). Important changes to the landscape in The Netherlands need to be evaluated in terms of Environmental Impact Studies. In these studies the national database of EIS-Nederland is consulted to assure that valuable Orthoptera populations are not affected.

Conclusions

With the publication of the book on Dutch Orthoptera (Kleukers *et al.*, 1997) the first goal of the project was achieved. Three years later we can conclude that significant progress has been made in integrating Orthoptera in Dutch nature conservation. A red list has been published, some endangered populations are being studied and protected and Orthoptera are becoming used in management choices of nature reserves.
Although invertebrates are seriously underrepresented in Dutch nature conservation policy, Orthoptera were not automatically taken in consideration. It was a slow process in which the qualities of the group had to be advertised a lot. Nowadays information on Orthoptera is used in many nature conservation policy plans.

Still many important Orthoptera populations remain unprotected and Orthoptera were, for the moment, rejected for the Network Ecological Monitoring. In the next years the European Invertebrate Survey - Nederland will therefore remain active in promoting the role of Orthoptera (and other invertebrate groups) in nature conservation.

REFERENCES


