# ... et d'ailleurs / ... en van andere streken

# When and where to apply for permits in Belgium when studying insects

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#### **Abstract**

In this paper we give an overview of the legislation that regulates the collecting activities of entomologists in Belgium. The rules are in general quite similar between the three regions but there are some minor differences. We clarify that protected species are not impossible to study in contrast to what is often believed. But the research needs to be justified and often permits need to be obtained to capture, disturb or collect specimen. This paper does not concerns import or export of specimen and (re)introduction of species.

**Keywords:** protected species, regional legislation, policy, conservation, permit

# **Samenvatting**

In dit artikel geven we een overzicht van de wetgeving die de activiteiten van entomologen reguleren in België. Over het algemeen is de regelgeving vrij vergelijkbaar tussen de verschillende regio's maar er zijn wel kleine verschillen. We verduidelijken dat het niet onmogelijk is om beschermde soorten te onderzoeken in tegenstelling tot wat vaak gedacht word. Maar het onderzoek moet gerechtvaardigd worden en vaak moeten vergunningen bekomen worden om exemplaren te vangen, verstoren of verzamelen. Dit artikel behandelt niet de import en export van exemplaren en de (her)introductie van soorten.

# Résumé

Dans cet article, nous donnons un aperçu de la législation régissant les activités entomologiques de récolte en Belgique. Les règles sont généralement assez similaires entre les trois régions, mais il existe quelques différences mineures. Nous clarifions ici qu'il n'est pas impossible d'étudier les espèces protégées contrairement à ce que l'on croit souvent. Cependant, la recherche doit être justifiée et il faut souvent obtenir des autorisations pour perturber, capturer ou collecter des spécimens. Ce document ne concerne ni l'importation ni l'exportation de spécimens, ni la (ré) introduction d'espèces.

# Introduction

Based on an inquire of the Royal Belgian Entomological Society to its members, the board of the society realized that many members have questions about the legitimism of their collection and collecting activity. Consequently, they made 'legislation' the main topic of the entomologic symposium in 2017. In this article, we present an overview of the current status of different legislations and policies in Belgium. In Belgium, species conservation is mainly the responsibility of the regions, and consequently, this regulation differs between the three regions. However, each region gives a proper interpretation to international conservation objectives from which the European Habitats directive is the most important. The European Habitats directive is the main nature conservation directive of the European Union (besides the European Birds directive). It regulates the conservation of well-defined habitats and species (listed in several annexes) that needs to be implemented by the EU member states. Consequently, the protected species in the different regions and in neighboring countries contain these so called 'Habitats directive species' further discussed under direct species protection.

The following text is split up for each region. For each region, we present the same four topics: 1) permission of the owner, 2) indirect species protection (sampling of species), 3) direct species protection (sampling of protected species) and 4) permits.

#### **Flanders**

To enter private or enclosed areas, you always need to ask permission of the owner. For public areas (e.g. parks, forests opened up for the public regardless of the owner), you still need to ask permission to leave the paths or set up traps. For forests and reserves managed by Agentschap voor Natuur en Bos (ANB, Flemish government), you can find an overview of their domains at www.natuurenbos.be and the responsible forester. Recently, additional areas managed by ANB have been marked where you can leave the paths without a permit. For reserves managed by the ngo Natuurpunt, you can find the local conservator of each site at www.natuurpunt.be. Other parks, forests or reserves can be managed by Limburgs landschap vzw, Durme vzw or by the local town or province and hence permission needs to be asked there.

- 2) Indirect species conservation is covered by the Forest decree and the Nature decree. The Forest decree forbids to leave the paths, to capture or disturb any animal and to create constructions (including traps) in any forest (private and public). The Nature decree forbids to capture or disturb any animal, to create constructions or to meaningfully disturb Habitats directive species mentioned on annex II, III or IV (Table 1) in any nature reserve. Permits to overcome these are given by the forester of ANB. Normally the administrator of the nature reserve managed by Natuurpunt has a permit to capture or collect species for scientific purpose, so you can ask the local conservator to perform your study under their permit.
- 3) A number of insects of the Habitats Directive are protected in Flanders. Furthermore, the list of protected species includes species that were formerly protected at national level and species that have a red list status in Flanders. A list of the protected insect species in Flanders is included in Table 1. Concerning these protected species, it is prohibited to kill, capture (even if they are released again) or meaningfully disturb them. It is also forbidden to have, transport, trade or exchange them or to destroy their habitat. Furthermore, it is forbidden to place non-selective traps (e.g. pit fall traps, malaise traps, window traps) if the chance to capture protected species is not negligible.
- 4) Applying for a permit concerning protected species can be done by filling in the form which can be found at www.natuurenbos.be/formulieren and send to soortencel.anb@lne.vlaanderen.be. It is important to specify your motivation (contribution to science/conservation) to allow ANB to decide upon your application. Furthermore, it is advised to apply at project base or for an association rather than as a single individual. The settlement period is 30 days. This permit is used for existing collections as well as new projects and it combines the elements of direct and indirect species conservation, so a single application can cover all permits needed. A sampling permit needs to be

renewed yearly while a permit for an existing collection remains valid as long as the collection is not moved to a new address/owner.

# **Brussels**

- 1) Permission of the owner is always needed unless for public areas if you will stay on the paths.
- 2) Observing insects in nature and forest reserves and in N2000 areas (http://www.leefmilieu.bruss/themas/groene-ruimten-en-biodiversiteit/acties-van-het-gewest/natura-2000/wat-natura-2000, cartoweb-applicatie), without disturbing them, is possible. Otherwise a permit is needed.
- 3) Strictly protected species are listed in annex II.2 and II.3 of the Ordinance for Nature Conservation (Table 1). To collect, or maintain in your collection, species that are strictly protected in the whole region (annex II.2) or species strictly protected in some green areas (annex II.3), a permit is needed.
- 4) Collection permits are obtained from Brussels Environment (biodiv@leefmilieu.brussels, biodiv@environnement.brussels) and max. require 60 days as settlement period. Permits to leave the paths are also obtained from Brussels Environment and can maximally take up to 30 days as settlement period.

# Wallonia

- 1) To enter in private or enclosed areas you need to get permission of the owner. For public areas, if you leave the paths or set up traps you need authorization from the local director of the Nature and forest Department (for contacts see <a href="http://environnement.wallonie.be/dnf">http://environnement.wallonie.be/dnf</a>). For the private reserves, you also need the authorization from the manager (often Natagora, www.natagora.be or Ardenne et Gaume, www.ardenne-et-gaume.be).
- 2) The Nature conservation law state that it is forbidden to use non selective traps to capture species, especially those that are listed in the annex V of the law. To use a non selective trap you need a permit. If you proceed to capture in a nature reserve (including capture of non protected species) you need to get a permit.
- 3) The nature conservation law set the list of protected insects (Table 1) which includes insects concerned by the Habitats directive and insects which have not a favorable conservation status in Wallonia. For these insects, it is prohibited to kill, capture (even if they are released again soon after) or meaningfully disturb them or their eggs, to transport, have with you, trade or exchange them, to destroy their mating or resting places. Note that the list of protected species as well as the law on protected species might change soon because a revision is in progress. A permit is needed for all actions that negatively affect protected species or their habitat, the case of collecting or disturbing species is explicitly mentioned. Permits are only granted if: 1) the goal is foreseen in the nature conservation act (which includes research and educational purposes), 2) no other satisfying alternative is available that has a lower impact on the species and 3) the conservation status of the species is not affected.
- 4) Permits are granted by the Département de la Nature et des Forêts (derogations.especes.dgarne@spw.wallonie.be). Forms can be filled in at http://www.wallonie.be/fr/formulaire/detail/20546 after logging in.
- It is important to explain your motivation (contribution to scientific research, education or conservation) to allow Nature and Forest Department to decide upon your application. Furthermore, it is advised to apply at project base for several scientists rather than as a single individual. The settlement period is of maximum three months so it is recommended to apply several weeks before the collecting activities. If you plan to collect in some nature reserves you have to explicitly mention it in the form. Besides, if your research implies the killing of some individuals you have to justify it. The permit may include some restrictions.

#### Discussion

It is clear that there is a lot of confusion by entomologist on which consequences the different laws enforce upon their activities. Hopefully, this contribution can take away some of these confusions and misinterpretations. It might now be clear that nature administration is responsible for delivering permits and not the police. Furthermore, it is not impossible to study protected species but a permit is needed which of course depends on certain restrictions (e.g. added value to science and conservation, report about activity, ...). Finally, permits are restricted to certain species, persons, areas and time periods; there are no permits that allow you to collect any species at any place.

In nearly all cases a report has to be made after the study has ended. We encourage all people to always make such a report and to pay attention to properly inform the owner, manager and licensing authority on what has been found and what this means concerning conservation and management of the area studied. It will likely improve the acceptance between conservationists and entomologist by allowing them to better understand our goal, methods and results. Furthermore, it might encourage you to also publish these results in a journal.

Also for animals collected in other countries or long before these laws were in play, a permit is needed to maintain these animals in your collection. But we are aware that entomologists might be restrained to declare their collection by the uncertainty of future policy rules regarding these species.

Note that there are national and international laws for importing and exporting specimen. Furthermore, the three regions have specific rules for (re)introductions and for breeding species in captivity. We haven't focused on these aspects as we found them a bit out of scope for most entomologist.

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Table 1. List of protected species in the three regions of Belgium (Fl: Flanders and Wal: Wallonia).

| Species                        | Fl | Brussels |        | Wal* |
|--------------------------------|----|----------|--------|------|
|                                |    | II.2*    | II.3** |      |
| Coleoptera                     |    |          |        |      |
| Abax carinatus                 | X  |          |        |      |
| Agonum ericeti                 | X  |          |        |      |
| Agonum gracilipes              | X  |          |        |      |
| Amara brunnea                  | X  |          |        |      |
| Anisodactylus nemorivagus      | X  |          |        |      |
| Anisodactylus poeciloides      | X  |          |        |      |
| Anisodactylus signatus         | X  |          |        |      |
| Anisosticta novemdecimpunctata |    |          |        | X    |
| Aromia moschata                |    |          |        | X    |
| Bembidion ephippium            | X  |          |        |      |
| Bembidion litorale             | X  |          |        |      |
| Bembidion monticola            | X  |          |        |      |
| Blethisa multipunctata         | X  |          |        |      |
| Brachinus crepitans            | X  |          |        |      |
| Bradycellus csikii             | X  |          |        |      |
| Calathus ambiguous             | X  |          |        |      |
| Calosoma inquisitor            |    |          |        | X    |
| Calosoma spp                   | X  |          |        |      |
| Calosoma sycophanta            | X  |          |        |      |
| Carabus cancellatus            | X  |          |        | X    |
| Carabus s.l. spp               | X  |          |        |      |
| Cerambyx cerdo                 |    |          |        | X    |

| Cetonia aurata                               | X   |   |   | X   |
|--|-----|---|---|-----|
| Chilocorus bipustulatus                      |     |   |   | X   |
| Cicindela germanica                          | X   |   |   |     |
| Cicindela spp                                | X   |   |   |     |
| Cicindela sylvatica                          | X   |   |   |     |
| Coccinelidae                                 | X   |   |   |     |
| Coccinella hieroglyphica                     | 11  |   |   | X   |
| Cucujus cinnaberinus                         |     |   |   | X   |
| Donacia en Plateumaris spp                   | X   |   |   | Λ   |
| Dytiscus circumflexus                        | A   |   |   | X   |
| Dytiscus dimidiatus                          |     |   |   | X   |
| Dytiscus aimatatus  Dytiscus en Cybister spp | X   |   |   | Λ   |
|  | Λ   |   |   | X   |
| Dytiscus lapponicus                          |     |   |   |     |
| Dytiscus latissimus                          |     |   |   | X   |
| Dytiscus marginalis                          |     |   |   | X   |
| Dytiscus semisulcatus                        |     |   |   | X   |
| Exochomus nigromaculatus                     |     |   |   | X   |
| Gnorimus nobilis                             |     |   |   | X   |
| Graphoderus bilineatus                       |     |   |   | X   |
| Harpalus flavescens                          | X   |   |   |     |
| Harpalus honestus                            | X   |   |   |     |
| Harpalus neglectus                           | X   |   |   |     |
| Harpalus quadripunctatus                     | X   |   |   |     |
| Harpalus rupicola                            | X   |   |   |     |
| Hippodamia septemmaculata                    |     |   |   | X   |
| Hippodamia tredecimpunctata                  |     |   |   | X   |
| Hydrophilus piceus                           | X   |   |   | X   |
| Lamia textor                                 |     |   |   | X   |
| Lebia cruxminor                              | X   |   |   |     |
| Leistus piceus                               | X   |   |   |     |
| Lucanus cervus                               | X   | X |   | X   |
| Meloe autumnalis                             |     |   |   | X   |
| Meloe brevicollis                            |     |   |   | X   |
| Meloe proscarabaeus                          |     |   |   | X   |
| Meloe rugosus                                |     |   |   | X   |
| Meloe variegatus                             |     |   |   | X   |
| Meloe violaceus                              |     |   |   | X   |
| Melolontha melolontha                        |     |   | X |     |
| Odontaeus armiger                            | X   |   | 1 |     |
| Osmoderma eremita                            | X   |   |   | X   |
| Oxythyrea funesta                            | X   |   |   | 7.1 |
| Perileptus areolatus                         | X   |   |   |     |
| Pogonus littoralis                           | X   |   |   |     |
| Pogonus luridipennis                         | X   |   |   |     |
| Polyphylla fullo                             | X   |   |   |     |
| **   |     |   |   | v   |
| Priorus coriarius                            | X   |   |   | X   |
| Protaetia cuprea/metallica                   | X   |   |   | X   |
| Pterostichus kugelanni                       | X   |   |   |     |
| Pterostichus longicollis                     | X   |   |   | **  |
| Typhoeus typhoeus                            | X   |   |   | X   |
| Zabrus tenebrioides                          | X   |   |   |     |
|  |     |   |   |     |
|  | l l |   | 1 | 1   |
| Hemiptera Cicadetta montana                  |     |   |   | X   |

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| Astata boops Bembix rostrata Bembix rostrata Bombus distinguendus  X Bombus humilis X Bombus muscorum X Bombus muscorum X Bombus sylvarum X Bombus veteranus X Coelioxys afarus Coelioxys adatus X Coelioxys anolimbatus X Coelioxys enonideus X Coelioxys enonideus X Coelioxys enonideus X Coelioxys enonideus X Coelioxys enarginatus X Coelioxys manginatus X Coelioxys manginatus X Coelioxys mandibularis X Coelioxys mandibularis X Coelioxys mandibularis X Coelioxys questenatus X Coelioxys pudatidentaus X Coelioxys rufescens X Coelioxys rufescens X Colletes cunicularius X Dasypoda hirtipes X Dolichurus bicotor X Ectemnius fossorius Epeolus variegatus X Epeolus variegatus X Eucera longicornis X Eucera lurgrescens X Macropis europaea X Macropis europaea X Macropis fulvipes X Macropis fulvipes X Macropis fulvipes X Macropis fulvipes X Macropis europaea X Macropis europaea X Macropis fulvipes X Macropis europaea X M M M M |                     |   |  |   |
| Bembix rostrata Bombus distinguendus SX Bombus inmilis SX Bombus jonellus SX Bombus sylvarum SX Bombus sylvarum SX Bombus sylvarum SX Coelioxys afrus SX Coelioxys afrus SX Coelioxys aurolimbatus SX Coelioxys conoideus SX Coelioxys conoideus SX Coelioxys echinatus SX Coelioxys echinatus SX Coelioxys enarginatus SX Coelioxys inermis SX Coelioxys inermis SX Coelioxys mandibularis SX Coelioxys mandibularis SX Coelioxys quadridentatus SX Coelioxys quadridentatus SX Coelioxys quadridentatus SX Coelioxys pifescens SX Colletes cunicularius SX Dinetus pictus SX Dinetus pictus SX Epeoloides coecutiens Epeolus variegatus Epeolus variegatus Eucera longicornis SX Eucera nigrescens SX Formica rufa SX Formica rufa SX Formica rufa SX Formica polyctena SX Harpactus lunatus SX Macropis europaea  |                     |   |  |   |
| Bombus distinguendus Bombus humilis SX Bombus muscorum SX Bombus sylvarum SX Bombus veteranus Coelioxys afrus Coelioxys afrus SX Coelioxys arolimbatus Coelioxys conideus SX Coelioxys echinatus SX Coelioxys echinatus SX Coelioxys echinatus SX Coelioxys echinatus SX Coelioxys enarginatus SX Coelioxys inermis SX Coelioxys mandibularis SX Coelioxys pudadridentatus SX Coelioxys pudadridentatus SX Coelioxys pudadridentatus SX Coelioxys pudadridentatus SX Coelioxys rufescens SX SX Coelioxys rufescens SX SX Coelioxys rufescens SX SX Coelioxys rufescens SX SX Ectemnius fossorius SX Expeolutes coecutiens SX SX Expeolutes exiguus SX SX Expeolutes exiguus SX SX Expeolutes exiguus SX SX Expeolutes exiguus SX Macropis europaea SX Macropis europaea SX Macropis europaea SX Macropis europaea SX Nomada obscura  |                     |   |  |   |
| Bombus humilis Bombus jonellus S Bombus muscorum S Bombus sylvarum S Bombus sylvarum S Bombus veteranus S Coelioxys afrus Coelioxys alutus S Coelioxys aurolimbatus S Coelioxys echinatus Coelioxys echinatus S Coelioxys enarginatus S Coelioxys emarginatus S Coelioxys marmis S Coelioxys marmis S Coelioxys marmis S Coelioxys marmis S Coelioxys musus S Coelioxys musus S Coelioxys obusus S Coelioxys quadridentatus S Coelioxys quadridentatus S Coelioxys refescens S Colletes cunicularius S Dasypoda hirtipes S Dalichurus bicolor S Cetemnius fossorius S Epeolus cruciger Epeolus variegatus S Eucera longicornis S Eucera nigrescens S Formica rufa S Formica polyctena S Harpactus lunatus S Lestica subterranea S Macropis fulvipes Macropis fulvipes Macropis fulvipes Macropis fulvipes Macropis fulvipes Macropis fulvip |                     |   |  |   |
| Bombus jonellus Bombus muscorum SY Bombus sylvarum Bombus veteranus SY Coelioxys afrus Coelioxys afrus Coelioxys adatus SY Coelioxys conoideus SY Coelioxys conoideus SY Coelioxys conoideus SY Coelioxys echinatus SY Coelioxys echinatus SY Coelioxys enarginatus SY Coelioxys marginatus SY Coelioxys mandibularis SY Coelioxys mandibularis SY Coelioxys mandibularis SY Coelioxys quadridentatus SY Coelioxys rufexcens SY Coelioxys enarginatus SY Coelioxys enarginatus SY Coelioxys enarginatus SY Coelioxys enarginatus SY SY Coelioxys enarginatus SY SY Coelioxys enarginatus SY  | ů .                 |   |  |   |
| Bombus muscorum  Sombus sylvarum  Sombus sylvarum  Sombus veteranus  Coelioxys afrus  X  Coelioxys afrus  X  Coelioxys adaus  X  Coelioxys conoideus  X  Coelioxys echinatus  X  Coelioxys echinatus  X  Coelioxys enarginatus  Coelioxys marginatus  X  Coelioxys marginatus  X  Coelioxys mandibularis  X  Coelioxys mandibularis  X  Coelioxys mandibularis  X  Coelioxys mandibularis  X  Coelioxys plusus  X  Coelioxys plusus  X  Coelioxys plusus  X  Coelioxys potusus  X  Coelioxys potusus  X  Coelioxys potusus  X  Coelioxys prigscens  X  Coelioxys optiscus  X  X  Coelioxys mandibularis  X  X  Coelioxys optiscus  X  X  Coelioxys mandibularis  X  X  Coelioxys optiscus  X  X  X  Coelioxys mandibularis  X  X  Coelioxys optiscus  X  X  X  Coelioxys optiscus  X  X  X  Coelioxys optiscus  X  X  X  X  Coelioxys mandibularis  X  X  X  X  X  X  X  X  X  X  X  X  X  |                     |   |  |   |
| Bombus sylvarum Bombus veteranus Coelioxys afrus Coelioxys alatus X Coelioxys aurolimbatus Coelioxys conoideus X Coelioxys echinatus Coelioxys echinatus X Coelioxys enarginatus X Coelioxys enarginatus X Coelioxys mandibularis X Coelioxys mandibularis X Coelioxys quadridentatus X Coelioxys quadridentatus X Coelioxys quadridentatus X Coelioxys rufescens X Collocys mandibularis X Coelioxys polusus X Coelioxys polusus X Coelioxys polusus X Coelioxys quadridentatus X Coelioxys rufescens X Collocys rufescens X Collocys rufescens X Collocys rufescens X Collocys rufescens X Coelioxys rufescens X X Coelioxys rufescens X X Coelioxys quadridentatus X X Coelioxys quadridentatus X X Coelioxys quadridentatus X X X X X X X X X X X X X X X X X X X  | ·                   |   |  |   |
| Bombus veteranus Coelioxys afrus X Coelioxys aurolimbatus X Coelioxys aurolimbatus X Coelioxys conoideus X Coelioxys cechinatus X Coelioxys elongatus X Coelioxys elongatus X Coelioxys emarginatus X Coelioxys mandibularis X Coelioxys mandibularis X Coelioxys quadridentatus X Coelioxys quadridentatus X Coelioxys puderidentatus X Coelioxys rufescens X Colletes cunicularius X Coelioxys rufescens X Colloturus bicolor X Ectennius fossorius X Epeolus cruciger X Epeolus cruciger X Epeolus ruciger X Eucera longicornis X Eucera nigrescens X Eucera nigrescens X Eucera nigrescens X Eucera nigrescens X Eucera longicornis X Eucera nigrescens X Eucera nigrescens X Eucera nigrescens X Eucera nigrescens X Eucera longicornis X Eucera nigrescens X Eu |                     |   |  |   |
| Coelioxys alatus  Coelioxys aurolimbatus  Coelioxys conoideus  Coelioxys echinatus  X  Coelioxys echinatus  X  Coelioxys emarginatus  X  Coelioxys marginatus  X  Coelioxys marginatus  X  Coelioxys marginatus  X  Coelioxys mandibularis  X  Coelioxys anadibularis  X  Coelioxys quadridentatus  X  Coelioxys rufescens  Colletes cunicularius  Dasypoda hirtipes  X  Dinetus pictus  Dolichurus bicolor  X  Epeolus variegatus  X  Epeolus variegatus  X  Epeolus variegatus  X  Eucera nigrescens  X  Formica polyctena  Harpactus exiguus  Harpactus exiguus  Lestica subterranea  X  Macropis europea  X  Macropis europea  X  Macropis europea  X  Macha obscura  X  Macha obscura  X  Macha obscura  X  X   | ·                   |   |  |   |
| Coelioxys aurolimbatus  Coelioxys econoideus  Coelioxys echinatus  Coelioxys elongatus  Coelioxys emarginatus  Coelioxys emarginatus  Coelioxys mandibularis  Coelioxys mandibularis  X  Coelioxys quadridentatus  Coelioxys quadridentatus  X  Coelioxys rufescens  X  Colletes cunicularius  Dinetus pictus  Dolichurus bicolor  X  Ectemnius fossorius  Epeolus cruciger  X  Epeolus cruciger  X  Eucera longicornis  X  Eucera longicornis  X  Eucera nigrescens  X  X  X  X  X  X  X  X  X  X  X  X  X  |                     |   |  |   |
| Coelioxys aurolimbatus Coelioxys conoideus X Coelioxys echinatus X Coelioxys echinatus X Coelioxys emarginatus X Coelioxys marginatus X Coelioxys mandibularis X Coelioxys mandibularis X Coelioxys obtusus X Coelioxys rufescens X Coelioxys rufescens X Colletes cunicularius X Colletes cunicularius X Dasypoda hirtipes X Dinetus pictus X Dolichurus bicolor X Ectemnius fossorius X Epeolus corecutiens X Epeolus variegatus X Epeolus variegatus X Eucera longicornis X Eucera nigrescens X Formica rufa X Formica rufa X Harpactus exiguus Harpactus exiguus Harpactus exiguus Harpactus exiguus Harpactus exiguus X Lestica subterranea X Macropis fulvipes X Macropis fulvipes X Malectal luctuosa X Melectal luctuosa X X Melectal luctuosa X X Melectal luctuosa X X Nomada obscura  | • •                 |   |  |   |
| Coelioxys conoideus  Coelioxys echinatus  Coelioxys elongatus  X  Coelioxys emarginatus  Coelioxys inermis  X  Coelioxys mandibularis  X  Coelioxys quadridentatus  Coelioxys quadridentatus  Coelioxys rufescens  X  Coelioxys rufescens  X  Coelioxys rufescens  X  Dinetus pictus  Dinetus pictus  X  Dolichurus bicolor  X  Ectemnius fossorius  X  Epeolus cruciger  X  Epeolus cruciger  X  Eucera longicornis  X  Eucera longicornis  X  Formica polyctena  Harpactus lunatus  X  Lestica subterranea  X  Macropis fulvipes  X  Macropis fulvipes  X  X  Nomada obscura  X  X  X  X  X  X  X  X  X  X  X  X  X  | •                   |   |  |   |
| Coelioxys echinatus  Coelioxys enarginatus  Coelioxys emarginatus  Coelioxys inermis  X  Coelioxys inermis  X  Coelioxys obusuus  Coelioxys quadridentatus  X  Coelioxys quadridentatus  Coelioxys quadridentatus  X  Colletes cunicularius  X  Dasypoda hirtipes  X  Dinetus pictus  Dinetus pictus  X  Ectemnius fossorius  Ectemnius fossorius  X  Epeoloides coecutiens  X  Epeolois variegatus  X  Eucera nigrescens  X  Fornica rufa  X  Harpactus exiguus  X  Lestica alatar  Lestica subteuropaea  Macropis europaea  Macropis europaea  X  Coelioxys enarginatus  X  X  X  X  X  X  X  X  X  X  X  X  X   | ·                   |   |  |   |
| Coelioxys elongatus Coelioxys emarginatus Coelioxys inermis S Coelioxys mandibularis Coelioxys mandibularis S Coelioxys quadridentatus Coelioxys quadridentatus S Coelioxys rufescens S Coelioxys rufescens S Colletes cunicularius S Dasypoda hirtipes S Dinetus pictus S Dolichurus bicolor S Ectemius fossorius S Epeoloides coecutiens S Epeolus cruciger S Eucera nigrescens S Eucera nigrescens S Eucera nigrescens S Harpactus exiguus S Harpactus lunatus Lestica alata Lestica subterranea S Macropis europaea Macropis eur | •                   |   |  |   |
| Coelioxys emarginatus  Coelioxys mandibularis  Coelioxys mandibularis  Coelioxys obtusus  X  Coelioxys quadridentatus  Coelioxys quadridentatus  X  Coelioxys rufescens  Colletes cunicularius  Dasypoda hirtipes  X  Dinetus pictus  X  Dolichurus bicolor  X  Ectemnius fossorius  Epeolus cruciger  X  Epeolus cruciger  X  Epeolus variegatus  Eucera longicornis  Eucera nigrescens  X  Formica rufa  X  Formica rufa  X  K  Harpactus lunatus  Lestica alata  Lestica subterranea  Macropis europaea  X  Melecta luctuosa  Nomada obscura  |                     |   |  |   |
| Coelioxys inermis  Coelioxys mandibularis  Coelioxys quadridentatus  Coelioxys quadridentatus  Coelioxys rufescens  Colletes cunicularius  Dasypoda hirtipes  X  Dolichurus bicolor  X  Ectemnius fossorius  Epeolus cruciger  X  Epeolus variegatus  Eucera longicornis  Eucera nigrescens  X  Formica polyctena  Harpactus lunatus  Lestica alata  Lestica subterranea  Macropis fulvipes  X  Coelioxys mandibularis  X  X  X  X  X  X  X  X  X  X  X  X  X  | •                   |   |  |   |
| Coelioxys mandibularis  Coelioxys obtusus  Coelioxys quadridentatus  X  Coelioxys rufescens  X  Colletes cunicularius  X  Dasypoda hirtipes  X  Dinetus pictus  Dolichurus bicolor  Ectemnius fossorius  Epeoloides coecutiens  X  Epeoloides coecutiens  X  Epeolus variegatus  X  Eucera longicornis  X  Eucera nigrescens  X  Formica rufa  X  Formica rufa  X  Harpactus exiguus  X  Harpactus lunatus  Lestica alata  Lestica subterranea  X  Macropis europaea  X  Coelioxys quadridentatus  X  X  X  X  X  X  X  X  X  X  X  X  X   |                     |   |  |   |
| Coelioxys obtusus  Coelioxys quadridentatus  X Coelioxys rufescens  X Colletes cunicularius  X Dasypoda hirtipes  X Dinetus pictus  X Dinetus pictus  X Etemnius fossorius  Etemnius fossorius  Epoloides coecutiens  X Epoelus cruciger  X Epeelus variegatus  X Eucera longicornis  X Eucera nigrescens  X Formica rufa  X Formica rufa  X Harpactus exiguus  Harpactus lunatus  Lestica alata  Lestica subterranea  X Macropis fulvipes  X Coelioxys quadridentatus  X X X X X X X X X X X X X X X X X X  |                     |   |  |   |
| Coelioxys quadridentatusXCoelioxys rufescensXColletes cuniculariusXDasypoda hirtipesXDinetus pictusXDolichurus bicolorXEctemnius fossoriusXEpeoloides coecutiensXEpeolus crucigerXEpeolus variegatusXEucera longicornisXEucera nigrescensXFormica rufaXX Formica rufaXArapactus exiguusXHarpactus exiguusXLestica alataXLestica subterraneaXMacropis fulvipesXMacropis europaeaXNomada obscuraX  | ·                   |   |  |   |
| Coelioxys rufescensXColletes cuniculariusXDasypoda hirtipesXDinetus pictusXDolichurus bicolorXEctemnius fossoriusXEpeoloides coecutiensXEpeolus crucigerXEpeolus variegatusXEucera longicornisXEucera nigrescensXFormica rufaXFormica polyctenaXHarpactus exiguusXHarpactus lunatusXLestica alataXLestica subterraneaXMacropis fulvipesXMacropis europaeaXNomada obscuraX  | ·                   |   |  |   |
| Colletes cunicularius  Dasypoda hirtipes  X  Dinetus pictus  X  Dolichurus bicolor  X  Ectemnius fossorius  X  Epeoloides coecutiens  X  Epeolus cruciger  X  Epeolus variegatus  X  Eucera longicornis  X  Eucera nigrescens  X  Formica rufa  X  Formica polyctena  X  Harpactus exiguus  X  Lestica alata  X  Lestica subterranea  X  Macropis fulvipes  X  Melecta luctuosa  X  X  X  X  X  X  Manada obscura  X  X  X  X  X  X  X  X  X  X  X  X  X   |                     |   |  |   |
| Dasypoda hirtipesXDinetus pictusXDolichurus bicolorXEctemnius fossoriusXEpeoloides coecutiensXEpeolus crucigerXEpeolus variegatusXEucera longicornisXEucera nigrescensXFormica rufaXYXHarpactus exiguusXHarpactus lunatusXLestica alataXLestica subterraneaXMacropis fulvipesXMacropis europaeaXNomada obscuraX  |                     |   |  |   |
| Dinetus pictusXDolichurus bicolorXEctemnius fossoriusXEpeoloides coecutiensXEpeolus crucigerXEpeolus variegatusXEucera longicornisXEucera nigrescensXFormica rufaXKarpactus exiguusXHarpactus exiguusXLestica alataXLestica subterraneaXMacropis fulvipesXMacropis europaeaXMelecta luctuosaXNomada obscuraX   |                     |   |  |   |
| Dolichurus bicolorXEctemnius fossoriusXEpeoloides coecutiensXEpeolus crucigerXEpeolus variegatusXEucera longicornisXEucera nigrescensXFormica rufaXKarpactus exiguusXHarpactus exiguusXLestica alataXLestica subterraneaXMacropis fulvipesXMacropis europaeaXNomada obscuraX   |                     |   |  |   |
| Ectemnius fossorius  Epeoloides coecutiens  Epeolus cruciger  Epeolus variegatus  Eucera longicornis  X  Eucera nigrescens  Formica rufa  X  Formica polyctena  Harpactus exiguus  Harpactus lunatus  Lestica alata  X  Macropis fulvipes  Macropis europaea  Melecta luctuosa  Nomada obscura  X  X  X  X  X  X  X  X  X  X  X  X  X  | •                   |   |  |   |
| Epeoloides coecutiens  Epeolus cruciger  X  Epeolus variegatus  Eucera longicornis  X  Eucera nigrescens  X  Formica rufa  X  Formica polyctena  Harpactus exiguus  Lestica alata  Lestica subterranea  Macropis fulvipes  Macropis europaea  Melecta luctuosa  Nomada obscura  X  X  X  X  X  X  X  X  X  X  X  X  X  |                     |   |  |   |
| Epeolus cruciger  Epeolus variegatus  Eucera longicornis  Eucera nigrescens  Formica rufa  X  X  Formica polyctena  Harpactus exiguus  Harpactus lunatus  Lestica alata  Lestica subterranea  Macropis fulvipes  Macropis europaea  Melecta luctuosa  Nomada obscura   | · ·                 |   |  |   |
| Epeolus variegatus         X           Eucera longicornis         X           Eucera nigrescens         X           Formica rufa         X           Formica polyctena         X           Harpactus exiguus         X           Harpactus lunatus         X           Lestica alata         X           Lestica subterranea         X           Macropis fulvipes         X           Melecta luctuosa         X           Nomada obscura         X   |                     |   |  |   |
| Eucera longicornis         X           Eucera nigrescens         X           Formica rufa         X           Formica polyctena         X           Harpactus exiguus         X           Harpactus lunatus         X           Lestica alata         X           Lestica subterranea         X           Macropis fulvipes         X           Melecta luctuosa         X           Nomada obscura         X  |                     |   |  |   |
| Eucera nigrescensXFormica rufaXFormica polyctenaXHarpactus exiguusXHarpactus lunatusXLestica alataXLestica subterraneaXMacropis fulvipesXMelecta luctuosaXNomada obscuraX  |                     |   |  |   |
| Formica rufa         X         X           Formica polyctena         X           Harpactus exiguus         X           Harpactus lunatus         X           Lestica alata         X           Lestica subterranea         X           Macropis fulvipes         X           Macropis europaea         X           Melecta luctuosa         X           Nomada obscura         X   |                     |   |  |   |
| Formica polyctena X Harpactus exiguus X Harpactus lunatus X Lestica alata X Lestica subterranea X Macropis fulvipes X Macropis europaea X Melecta luctuosa X Nomada obscura X  | Eucera nigrescens   |   |  |   |
| Harpactus exiguus  Harpactus lunatus  Lestica alata  Lestica subterranea  Macropis fulvipes  Macropis europaea  Melecta luctuosa  Nomada obscura   | Formica rufa        | X |  | X |
| Harpactus lunatusXLestica alataXLestica subterraneaXMacropis fulvipesXMacropis europaeaXMelecta luctuosaXNomada obscuraX   | ^ *                 |   |  | X |
| Lestica alataXLestica subterraneaXMacropis fulvipesXMacropis europaeaXMelecta luctuosaXNomada obscuraX   |                     |   |  |   |
| Lestica subterraneaXMacropis fulvipesXMacropis europaeaXMelecta luctuosaXNomada obscuraX   | Harpactus lunatus   |   |  |   |
| Macropis fulvipesXMacropis europaeaXMelecta luctuosaXNomada obscuraX   | Lestica alata       |   |  |   |
| Macropis europaeaXMelecta luctuosaXNomada obscuraX   | Lestica subterranea |   |  | X |
| Melecta luctuosaXNomada obscuraX   | Macropis fulvipes   |   |  | X |
| Melecta luctuosaXNomada obscuraX   | Macropis europaea   |   |  | X |
|  |                     |   |  | X |
| Nysson niger X   | Nomada obscura      |   |  | X |
|  | Nysson niger        |   |  | X |

|                                      |    |   | _ |
|--------------------------------------|----|---|---|
| Osmia bicolor                        |    |   | X |
| Panurgus calcaratus                  |    |   | X |
| Panurgus banksianus                  |    |   | X |
| Panurgus dentipes                    |    |   | X |
| Podalonia affinis                    |    |   | X |
| Podalonia hirsuta                    |    |   | X |
| Rophites quinquespinosus             |    |   | X |
| Trachusa byssina                     |    |   | X |
| Thyreus orbatus                      |    |   | X |
|                                      |    |   |   |
| Lepidoptera                          |    |   |   |
| Aglais urticae                       |    | X |   |
| Anthocharis cardamines               |    | X |   |
| Apatura iris                         | X  | X |   |
| Aphantopus hyperantus                |    | X |   |
| Araschnia levana                     |    | X |   |
| Argynnis niobe                       |    |   | X |
| Argynnis paphia                      | X  |   |   |
| Boloria aquilonaris                  |    |   | X |
| Boloria dia                          |    |   | X |
| Boloria eunomia                      |    |   | X |
| Boloria euphrosyne                   |    |   | X |
| Callimorpha/Euplagia quadripunctaria | X  |   | X |
| Callophrys rubi                      | X  |   |   |
| Celastrina argiolus                  |    | X |   |
| Chazara briseis                      |    |   | X |
| Coenonympha glycerion                |    |   | X |
| Coenonympha hero                     |    |   | X |
| Coenonympha pamphilus                |    | X |   |
| Coenonympha tullia                   |    |   | X |
| Colias alfacariensis                 |    |   | X |
| Colias croceus                       |    | X |   |
| Colias hyale                         |    | X |   |
| Colias palaeno                       |    |   | X |
| Conocephalus discolor                |    | X |   |
| Conocephalus dorsalis                |    | X |   |
| Erebia aethiops                      |    |   | X |
| Erebia ligea                         |    |   | X |
| Erebia medusa                        |    |   | X |
| Eriogaster catax                     | X  |   | X |
| Erynnis tages                        | X  |   |   |
| Euphydryas aurinia                   |    |   | X |
| Euphydryas maturna                   |    |   | X |
| Glaucopsyche alexis                  |    |   | X |
| Gonepteryx rhamni                    |    | X |   |
| Hesperia comma                       | X  |   | X |
| Hipparchia semele                    | X  |   | X |
| Inachis io                           |    | X |   |
| Iphiclides podalirius                |    |   | X |
| Issoria lathonia                     | X  |   | X |
| Lasiommata megera                    | X  |   |   |
| Leptidea sinapis                     | X  |   |   |
| Limenitis populi                     | 11 |   | X |
| Lopinga achine                       |    |   | X |
| Lycaena dispar                       |    |   | X |

| Lycaena helle             |   |   |   | X |
|---------------------------|---|---|---|---|
| Lycaena phlaeas           |   |   | X |   |
| Lycaena tityrus           | X |   |   |   |
| Lycaena virgaureae        |   |   |   | X |
| Maculinea teleius         | X |   |   |   |
| Maculinea/Phengaris alcon | X |   |   | X |
| Maniola jurtina           |   |   | X |   |
| Melitaea athalia          |   |   |   | X |
| Melitaea aurelia          |   |   |   | X |
| Melitaea cinxia           | X |   |   | X |
| Melitaea phoebe           |   |   |   | X |
| Neozephyrus quercus       |   |   | X |   |
| Nymphalis antiopa         | X |   | X | X |
| Nymphalis polychloros     | X |   | X |   |
| Papilio machaon           |   |   | X |   |
| Pararge aegeria           |   |   | X |   |
| Phengaris arion           |   |   |   | X |
| Pieris brassicae          |   |   | X |   |
| Pieris napi               |   |   | X |   |
| Pieris rapae              |   |   | X |   |
| Plebejus argus            | X |   |   |   |
| Plebejus argyrognomon     |   |   |   | X |
| Plebejus idas             |   |   |   | X |
| Polyommatus bellargus     |   |   |   | X |
| Polyommatus dorylas       |   |   |   | X |
| Polyommatus icarus        |   |   | X |   |
| Polyommatus semiargus     | X |   |   |   |
| Polyommatus thersites     |   |   |   | X |
| Proserpinus proserpina    | X | X |   | X |
| Pseudophilotes baton      |   |   |   | X |
| Pyrgus armoricanus        |   |   | _ | X |

<sup>\*:</sup> This list includes all species mentioned on annex IV of the Habitats directive and annex II of the Bern conference but here only the species known to occur in respectively Brussels/Wallonia have been listed.

\*\*: This list includes 99 insect species while here only the species known to occur in Brussels have been listed.