

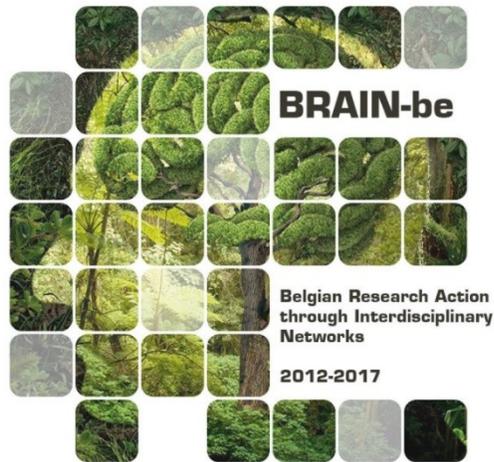
BELBEES Project

**Multidisciplinary assessment of BELgian wild BEE decline to
adapt mitigation management policy**

TRANSVERSA-VALORISATION

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Axis 1: Ecosystems, biodiversity and evolution



NETWORK PROJECT

BELBEES Project

Multidisciplinary assessment of BELgian wild BEE decline to adapt mitigation management policy

Contract - BR/132/A1/BELBEES

TRANSVERSA - VALORISATION

SHORT FINAL REPORT

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Introduction: the BELBEES project

The main objective of the BELBEES project was to gather and analyze data related to wild bee populations in Belgium and to evaluate the impact of their likely drivers of decline (climate change, landscape modifications, decrease of floral resources availabilities, pesticide use, diseases and pathogens) in order to identify a management framework for wild bee conservation in Belgium and to conserve the ecosystem service of wild bee pollination. In this perspective, one of the main actions of the BELBEES project was to determine the trend of the wild bee populations in Belgium following IUCN Red List protocols (WP2. Task 6). All species were classified in eleven Categories, based on quantitative criteria which are linked to population size, structure, trends as well as geographic range. Threatened species are classified in three Categories (i.e. Vulnérable (VU), Endangered (EN) and Critically Endangered (CR)). Categories Regionally Extinct (RE) and Not Applicable (NA) are specifically applied for regional or national assessments.

During the BELBEES project, the status of all the Belgian wild bee species were assessed by scientific partners (UMONS, ULg AgroBioTech and RBINS), citizen sciences partner (Natuurpunt) and external collaborators. These assessments were reported in a first short report. The Red List of Belgian wild bees will provide an important basis for political decision-making related to the protection of endangered species, the adoption of measures to promote the conservation of wild bees (i.e. land use planning, agri-environmental measure) and also to raise public awareness to the decline of wild bees. The acquisition of new funds would allow completing a final step of the BELBEES project by dissemination of the Red List of Belgian wild bees.

Information linked to each bee species (398 recorded species) were compiled from the European assessments of bees (European Red List, Nieto *et al.* 2014), Atlas Hymenoptera (Rasmont & Haubruge 2014) and key literatures referenced (e.g. Rasmont *et al.* 2017; Pauly 2018). It concerned:

- Taxonomie classification and potential taxonomie impediment
- European Red List Categories & criteria
- Belgian distribution (i.e. map for each species)
- Habitat preferences and primary ecological requirements
- Location in nature reserve

All these information have not been included in the BELBEES final report but should be published. The main objective of this TRANSVERSA VALORISATION project is to valorise all this important dataset. The added value will be a comprehensive publication of BELBEES data that could be cited and used by a wider readership and policy makers.

BELBEES WP2. TASK 6.2.: IMPLEMENTATION OF THE RED LIST DATA ON THE WEBSITE "ATLAS HYMENOPTERA"

Subtask 6.1.1. Website *Atlas Hymenoptera*. The website *Atlas Hymenoptera* (<http://www.atlashymenoptera.net/>) required a complete rewriting in order

- to fill the present requirement of compatibility with smartphones format (Android, iPhone) ;
- to allow downloading of mapping data ;
- to allow a PDF output for a faster publishing ready version;
- to follow the compatibility requirements of web technology.

A good example is given by the next page:

<http://www.atlashymenoptera.net/page.aspx?id=160>

- The page layout is now much more readable on small display, like smartphones;
- There is now a "clickable mention" "**download dataset**" that allows to download and save a CSV file with the exact data content of the map.
- The PDF output is easily possible (after personal connexion) (see exemple in Annex 1)
- The Atlas Hymenoptera software has been fully rewritten with up-to-date technology.

Subtask 6.1.2. Species sheets for each Belgian wild bee. We prepared species sheets for each wild bee present in Belgium (398 species). These sheets include ecological information. We produced a full document in book format that includes all assesement information. The book is now available as proof and should be issued in December 2021. It includes 765 pages of documentation on Belgian wild bees, fully illustrated with all available pictures.

The reference of this book is :

Lambaere K., Drossart M., Tourbez C., Rasmont P., d'Haeseleer J., Dufrêne M., Pauly A., Vanormelingen P., Vereecken N., Vray S., Zambra E. & Michez D. 2021. *Species assesement of the Red List of Belgian wild bees*. Presse universitaire de l'Université de Mons (Belgium), 765 p. (Annex 2)

Subtask 6.1.3. Photographs of Belgian wildbees. We prepared photos for a large majority of Belgian wild bees to help identification by users.

WP2. TASK 6.1.: PUBLISHING A REPORT OF THE RED LIST OF BELGIAN WILD BEE SPECIES

Subtask 6.2.1. Red List of Wild Bees in Belgium. A first report of the Red List of wild bees in Belgium has been produced. We have followed the same layout as the European one. This report contextualizes the BELBEES project by introducing the current causes of the decline of wild bees and their study. Summary tables including the IUCN status of the species and the

rationale for these statuses will be included in this report. Then, statistics allow a trend comparison of wild bee populations in Belgium with the trends observed at the European level.

The reference of this book is :

Drossart M., Rasmont P., Vanormelingen P., Dufrêne M., Folschweiller M., Pauly A., Vereecken N. J., Vray S., Zambra E., D'Haeseleer J. & Michez D. 2019. *Belgian Red List of Bees*. Belgian Science Policy 2018 (BRAIN-be), Presse universitaire de l'Université de Mons (Belgium), 140 p. (Annex 3)