

# BELBEES

## Multidisciplinary assessment of BELgian wild BEEdecline to adapt mitigation management

<b>DURATION</b> 15/03/2019 - 15/03/2021	<b>BUDGET</b> 20 000 €
Valorisation of the BRAIN-be project <a href="#">BELBEES</a>	

### PROJECT DESCRIPTION

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. Vulnerable (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, ULiège 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 and Haubruge 2014) and key literatures references (e.g. Rasmont *et al.* 2017; Pauly 2018). It concerned:

- Taxonomic classification and potential taxonomic 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 are not included in the present short report but should be published. The main objective of this 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.

#### Actions objectives:

**Action 1:** *Dissemination of the results to the scientific community and the public.* The publication of the Belgian Red List of wild bees on the website "Atlas Hymenoptera" would provide an easy access to the results generated by the BELBEES project for anyone interested in learning about the current decline in wild bees. Beyond the dissemination of our results, the BELBEES project will also benefit from a certain visibility with each person visiting the site, prompting them to consult the other elements produced as part of the project.

**Action 2:** *Policy decision-making support.* The vulnerability status granted to the different wild bee species and the statistics generated in our report will provide information required for regulating and mitigating the current decline of wild bees.



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**Action 4:** *Implementation of conservation measures for endangered species and their habitats.* The threatened status of some wild bee species associated with a particular type of environment could lead to specific action plans to promote their habitat.

**Action 5:** *Promote data sharing.* The data included in the Red List of Belgian wild bees can be used as comparison to a continental scale and in neighboring countries. It will provide important information for Belgium to fulfill international commitment of the country.

## Action implementation:

Related to action 1, 3, 5: *Implementation of the Red List data on the website "Atlas Hymenoptera"* (Month 1-10)

The website *Atlas Hymenoptera* (<http://www.atlashymenoptera.net/>) will need a technical update before the implementation of the red list data. The present version of its software has been installed in 2010 for the STEP project. It now requires an upgrade and functional improvements. The expected upgrade should allow some "Wiki" like functions.

We will develop species sheets for each wild bee present in Belgium (398 species). These sheets will include ecological information (e.g. foraging plant, nesting substrate) as well as Red List status (based on observed population trends) and key morphological diagnostic features. These bring together the work of several partners of the BELBEES project (UMONS, RBINS, Natuurpunt, ULiège). In order to make information easier to find on the website, the descriptive sheets will be made according to the same framework. In addition, the production of these sheets will provide access to the most recent and detailed information about bee species in Belgium. The descriptive sheets will be uploaded on "Atlas Hymenoptera" and downloadable as PDF from the website.

Photograph edition and management for the 400 species sheets. These pictures will be added to the 400 species sheets to allow a first identification of the species. It could be also used by citizen sciences partners as a visual aid during actions with citizen.

Related to action 1-5: *Publishing a report of the Red List of Belgian wild bee species* (Month 11-14)

A first report of the Red List of wild bees in Belgium will be produced in the same way than for the European wild bees. This report will contextualize 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 will allow a trend comparison of wild bee populations in Belgium with the trends observed at the European level. This report is already written but needs funds for its publication.

Proof review of the report of the Red List of Belgian wild bees. This report will be reviewed by wild bee specialists to confirm all information.

The consortium will look for funding in the future to monitor the wild bee fauna of Belgium. Regional Red list are usually updated each 5 to 10 years. Collaboration will depend on the opportunity of funding.

## CONTACT INFORMATION

### Coordinator

**Pierre RASMONT**  
Université de Mons (UMONS)  
[pierre.rasmont@umons.ac.be](mailto:pierre.rasmont@umons.ac.be)

### Partners

**Alain PAULY**  
Royal Belgian Institute of Natural Sciences (RBINS)  
[alain.pauly@naturalsciences.be](mailto:alain.pauly@naturalsciences.be)

**Jens D'HAESELEER**  
Natuurpunt  
[jens.dhaeseleer@natuurpunt.be](mailto:jens.dhaeseleer@natuurpunt.be)

**Marc DUFRÈNE**  
Université de Liège (ULiège)  
[marc.dufrene@uliege.be](mailto:marc.dufrene@uliege.be)