

# MonitAnt



## Developing a European-level Monitoring strategy for mound-building Formica Ants and symbiont

**DURATION**  
 1/04/2024 – 30/06/2027

**BUDGET**  
 211 268 €

### PROJECT DESCRIPTION

Mound-building Formica ants (MBF) are a group of keystone species widespread in temperate and boreal forests and natural grasslands in Europe. They provide important ecosystem services especially in forest habitats and their large and long-lived nests are habitat to a broad range of other species, so-called myrmecophiles, most of them specific to Formica ants. They also play an important role for nutrition and survival of endangered birds such as the capercaillie, woodpeckers and for the protected brown bear.

While there is increasing evidence of local declines and extinctions due to fragmentation of their forest habitats, climate change, changing management practices, or conversion of natural grasslands to more intensively used agricultural land, an assessment of population trends and threat status of these ants across European countries is largely lacking. This is mainly due to the lack of a common monitoring strategy but also due to differences in conservation status throughout the EU. In addition, it is unknown how the multitude of taxa depending on the peculiar microhabitat of Formica nest mounds, are impacted by the above mentioned threats to MBFs.

Therefore, an international, coordinated framework is created to develop a common cost-effective and efficient monitoring strategy of MBFs and their associated invertebrate communities, allowing a comparison of population trends across Europe. Currently, a wealth of data on the occurrence of mound-building Formica is available in most European countries, often based on local to regional Citizen Science projects as well as monitoring programs initiated by policymakers, but these are not treated in a Europe-wide consistent way.

By compiling the available data, we will inform stakeholders (e.g. national nature conservation and forestry agencies; central and local administrations) on the current status of MBFs on a transnational level. Within MonitAnt the newly developed monitoring strategy will be validated on a transnational level to include different forest and grassland types (in terms of management and along a large latitudinal and elevational gradients) and potentially refined in the field. This validation phase will be used to collect baseline data on the manifold invertebrate species hosted by these umbrella species, on their importance in the diet of protected vertebrates, as well as on the thresholds of patch sizes for survival and reproduction. MonitAnt aims to deliver a harmonized efficient and cost-effective monitoring strategy that will be made freely available to stakeholders in policymaking but also for citizen science projects with the aim that long-term monitoring of population trends of MBF and their associated myrmecophiles, is enabled.



# MonitAnt

The aims of this project are to i) compare existing monitoring strategies for MBF on the European level, ii) develop and validate a harmonized monitoring strategy for policymakers and citizen science projects to facilitate monitoring of distribution and population trends of MBF, iii) monitor the diversity of myrmecophiles within nests along climatic, altitudinal, and fragmentation gradients to assess the importance of MBF as umbrella species, iv) screen MBF populations for pathogens prevalence and assess the role of these pathogens in colony health, v) establish thresholds for reproduction of MBF in managed forests and adjoining grasslands to identify requirements for stable populations, especially in the light of climate change, vi) monitor genetic diversity of MBF along climatic and forest fragmentation gradients, vii) develop recommendations for conservation, based on a synthesis of the results obtained in the project, viii) deliver a cost-effective and efficient common monitoring scheme based on open science principles to enable a Europe-wide comparison of the threat status, distribution and population trends of MBF and associated species, ix) communicate results to different stakeholders and to the general public to facilitate conservation of MBF.



## CONTACT INFORMATION

### General coordinator

**Heike Feldhaar**  
Universität Bayreuth, Germany  
[feldhaar@uni-bayreuth.de](mailto:feldhaar@uni-bayreuth.de)

### Belgian contribution

**Wouter Dekoninck**  
Koninklijk Belgisch Instituut voor Natuurwetenschappen /  
Institut royal des Sciences naturelles de Belgique (RBINS)  
[wdekoninck@naturalsciences.be](mailto:wdekoninck@naturalsciences.be)  
[www.naturalsciences.be/nl/wetenschap/collecties-data/entomologie](http://www.naturalsciences.be/nl/wetenschap/collecties-data/entomologie)

**Thomas Parmentier**  
Universiteit Gent (UGent)  
[thomas.parmentier@ugent.be](mailto:thomas.parmentier@ugent.be)  
[www.thomasparmentier.com](http://www.thomasparmentier.com)

### Partners

**Elva Robinson**  
University of York, United Kingdom  
[elva.robinson@york.ac.uk](mailto:elva.robinson@york.ac.uk)

**Giacomo Santini**  
Università degli Studi di Firenze, Italy  
[giacomo.santini@unifi.it](mailto:giacomo.santini@unifi.it)

**Elia Guariento**  
Eurac Research, Institute for Alpine Environment, Italy  
[elia.guariento@eurac.edu](mailto:elia.guariento@eurac.edu)

**Jiří Tůma**  
Biology Centre CAS, Institute of Soil Biology and  
Biogeochemistry, Czech Republic  
[majtynt@seznam.cz](mailto:majtynt@seznam.cz)

**Marko Balint**  
Universitatea Babeș-Bolyai din Cluj-Napoca, Romania  
[balintm@gmail.com](mailto:balintm@gmail.com)

**Jouni Sorvari**  
National Research Institute Finland, Finland  
[jouni.sorvari@luke.fi](mailto:jouni.sorvari@luke.fi)

## LINKS

[DFG - GEPRIS - MonitAnt: Developing a European-level Monitoring strategy for mound-building Formica Ants and symbiont communities residing in nest mounds](#)

[M. Sc. Melvin Opolka \(uni-bayreuth.de\)](#)

<https://www.eurac.edu/de/institutes-centers/institut-fuer-alpine-umwelt/projects/monitant>

[Developing a European-level Monitoring strategy for mound-building Formica Ants and symbiont communities residing in nest mounds | Natural Resources Institute Finland \(luke.fi\)](#)