Measuring the pulse
of European biodiversity

European Red List of
Bees

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- Jakub Straka, Charles University (Czech Republic): assessor of *Sphecodes*, *Trachusa*, *Ancyla*, *Tarsalia*, *Ammobates*, *Chiasmognathus*, *Parammobatodes*, *Pasites*, *Ammobatoides*, *Schmiedeknechtia*, *Biastes*, *Epeoloides*, *Epeolus*, *Triepeolus*, *Nomada* species.
- Joffrey Thulier, University of Mons (Belgium): assessor of *Eucera*, *Tetralonia* species.
- Clément Tourbez, University of Mons (Belgium): assessor of *Chelostoma*, *Haetosmia*, *Heriades*, *Hofferia*, *Hoplitis*, *Osmia*, *Protosmia*, *Stenoheriades*, *Megachile* species; reporting.
- Aurore Trottet, IMDC (Belgium): Former co-coordinator of IUCN ERL Pulse project.
- Nicolas J. Vereecken, Université libre de Bruxelles (Belgium): data provider.
- Paul H. Williams, The Natural History Museum, London (UK): assessor of *Bombus* species.
- Eleanor Winter, IUCN: GIS mapping and technical support.
- Dominique Zimmermann, Natural History Museum Vienna (Austria): data provider.
- Guillaume Ghisbain, University of Mons (Belgium): assessor of *Dasypoda* and *Bombus* species; assessment review; leader of the writing of the present report.

Executive summary

Overview

Bees are vital pollinators, underpinning ecosystem health and food security. Four out of five crop and wildflower species depend, at least in part, on insect pollination, with wild bees making the largest contribution. The economic value of pollinators to EU agriculture is estimated between €5 and €15 billion annually. Beyond their economic role, bees are keystone species that maintain biodiversity through pollination networks.

This 2026 update of the *European Red List of Bees* delivers the most comprehensive regional assessment yet of Europe's wild bee species. Building on the 2014 assessment, this edition incorporates new taxonomic insights, extensive distribution data, and updated evaluations of threats, conservation needs, and population trends. In total, 1,928 native or long-established species were assessed across the European continent and 27 Member States of the European Union, supported by a dataset of more than 4.3 million spatial records. The reassessment was coordinated by the University of Mons and IUCN, involving over 200 experts, including data providers.

Key Results

- **Threatened species**
  · Europe: 172 species (10.4%) are threatened with extinction (Critically Endangered, Endangered, or Vulnerable). Depending on treatment of Data Deficient species, the proportion ranges from 8.9% to 23.3%.

  · *EU27:* 162 species (10.0%) are threatened, within a range of 8.7%–21.7%.

- **Extinction risk**
  No species are confirmed Regionally Extinct, though 25 are Critically Endangered, including 14 Possibly Extinct.

- **Least Concern species**
  Over two-thirds are classified as Least Concern (67.4% in Europe; 68.6% in the EU27).

- **Data gaps**
  276 species in Europe (14.3%) and 244 in the EU27 (13.0%) remain Data Deficient because of taxonomic or spatial lack of knowledge, limiting certainty on their true conservation status.

- **Endemism**
  416 bee species (21.6%) are endemic to Europe, and 310 species (16.5%) are endemic to the EU27. Many are restricted to Mediterranean islands and mountain ranges, making them highly vulnerable to local pressures.

Major Threats

1. **Agricultural intensification**
   Conversion of diverse landscapes into monocultures, pesticide (including insecticides, herbicides and fungicides) and fertiliser use and, soil degradation are the leading pressures, impacting at least 608 species (including 108 threatened ones).

2. **Climate change**
   Rising temperatures, altered precipitation patterns, and extreme events (e.g., droughts, floods, heat waves, frequent fires) threaten species with narrow spatial ranges or specialised pollen diets.

3. **Habitat loss and fragmentation**
   Urbanisation, infrastructure expansion, and land abandonment reduce and isolate suitable habitats, restricting nesting and foraging opportunities.

4. **Invasive species and pathogens**
   Invasive or non invasive alien plants and insects, exotic bees and diseases disrupt native bee–plant interactions and compete with or displace wild plant and/or bee populations.

5. **Pollution**
   Chemical pollutants like insecticides, herbicides, fungicides, heavy metals and micro-plastics degrade habitats and can have direct toxic effects on bee survival, physiology and reproduction.

Policy Context and Alignment

This assessment supports the EU Biodiversity Strategy for 2030, the revised EU Pollinators Initiative (2023), and the EU Nature Restoration Regulation (2024). These frameworks commit Member States to restoring degraded ecosystems, reducing pesticide and fertiliser use, and reversing pollinator declines by 2030. The Red List provides a science-based tool to monitor progress, identify Key Pollinator Areas, and guide the development of national restoration plans.

Conservation Priorities

- **Protect and restore habitats**
  Focus on biodiversity hotspots such as Mediterranean ecosystems, coastal areas, dry grasslands, and montane areas.

- **Promote pollinator-friendly farming**
  Reduce pesticide and fertiliser use, restore flower and microhabitat-rich margins, and encourage organic, low input and diversified agriculture.

- **Expand monitoring and research**
  Close knowledge gaps by strengthening long-term bee population monitoring, including citizen science initiatives when possible.

- **Strengthen expertise networks**
  Maintain and expand collaboration among taxonomists, ecologists, and conservationists to sustain robust Red List assessments at European and national levels.

- **Mainstream pollinator protection**
  Integrate bee conservation into wider environmental, agricultural, and urban planning policies (e.g. Natura 2000).

Conclusions

Europe's wild bees are indispensable to biodiversity, food production, and human well-being. While most species are not currently threatened, one in ten faces extinction risk, with many more potentially vulnerable given widespread data gaps in population trends. Agricultural intensification and climate change are the most urgent challenges but coordinated conservation action can mitigate these threats.

The *European Red List of Bees* (2026) provides a vital baseline for policy, conservation, and monitoring, ensuring that by 2030 Europe can move towards reversing pollinator decline and securing the ecosystem services that sustain both nature and society.

Anthophora plumipes (Pallas, 1772), male, France. © Pierre Rasmont.

1. Background

1.1. The European context

Europe is one of the seven continents on Earth, and both physically and geologically it is the Westernmost peninsula of Eurasia. The European Union, comprising 27 Member States, is Europe's largest political and economic entity. It is the world's third largest economy (EUROSTAT, 2025). Per-capita GDP in many EU states is among the highest in the world, and rates of resource consumption and waste production are correspondingly high – the EU's "ecological footprint" has been estimated to be more than twice the biocapacity of the region (European Environment Agency, 2021).

The EU's Member States stretch from the Arctic Circle in the north to the Mediterranean in the south, and from the Atlantic coast and several Atlantic islands in the west to the Danube Delta and Cyprus in the east – an area containing a great diversity of landscapes and habitats, and a wealth of flora and fauna. Mediterranean Europe is particularly rich in plant and animal species and has been recognised as a global "biodiversity hotspot" (Cuttelod et al., 2008; Mittermeier et al., 2004).

Colletes collaris Dours, 1872, male and female, Spain. © José Luis Romero Romero.

Human influence dominates the European landscape, leading to species loss and reductions in wildlife populations (Burns et al., 2021; Eichenberg et al., 2020; Ghisbain et al., 2024; Hodgetts et al., 2019; Warren et al., 2021). Europe has arguably the most highly fragmented landscape of all continents, and only a tiny fraction of its land and freshwater surface can be considered as wilderness. For centuries most of Europe's land has been used by humans to produce food, timber and fuel and provide living space. About 80% of Europe's land surface has been shaped by human activities: covered with buildings, roads, industrial infrastructure or used for agriculture. The way the land is used constitutes one of the main drivers of environmental degradation and climate change (European Environment Agency, 2025). Consequently, European wild species depend largely upon semi-natural habitats created and managed by human activities, particularly traditional, non-intensive forms of land management. These habitats are under pressure from agricultural intensification, urban sprawl, infrastructure development, land abandonment, acidification, eutrophication and desertification (Herzon et al., 2022). Many species are directly affected by overexploitation and impacts of alien invasive species, and climate change is set to become an increasingly serious threat in the future (IPBES, 2018, 2019). Europe is a huge, diverse region and the relative importance of different current and projected threats varies widely across its biogeographic regions and countries (e.g. Ghisbain et al., 2024).

Despite substantial efforts to safeguard European habitats and species, biodiversity decline persists and is coupled with the loss of crucial ecosystem services such as water purification, pollination, flood protection, and carbon sequestration (IPBES, 2018, 2019). Although protected areas cover >26% of European Union land (with 18.6% of land designated as Natura 2000 sites and 7.5% under other national designations) (European Environment Agency, 2024), the cumulative impacts of pollution, land use change (including agricultural intensification with pesticide and fertiliser use), habitat destruction, invasive alien species, and climate change are becoming increasingly challenging to mitigate. Approximately one-fifth (19.4%) of the 14,669 species that have been assessed on the European continent are currently threatened with extinction, with 50 species being Extinct, Regionally Extinct or Extinct in the Wild and a further 75 considered as Possibly Extinct. Further, for 49% of all species and for 60% of invertebrates, the population trend is classified as 'unknown', which demonstrates a general lack of data on population demographics and underlines the necessity to upscale biodiversity monitoring programs (Hochkirch et al., 2023).

1.2. The policy context

Biodiversity and healthy ecosystems provide resources and services that are essential for human well-being and sustainable development. Its decline is currently one of the most pressing global crises. The factors driving biodiversity loss can be complex and the solutions often rely on the involvement of various entities ranging from international bodies to governments, the private sector and civil society. Data on the status of biodiversity are essential to inform policies and develop frameworks aimed at further limiting its decline.

In 2020, the EU released its union-wide Biodiversity Strategy for 2030, which aims to protect nature and reverse the degradation of ecosystems. Considering that pollinators are key to agricultural production and food security, and that their richness offers a key indicator of the health of agroecosystems, reversing their decline by 2030 is one of the European Commission's priorities. The EU Biodiversity Strategy for 2030, as part of the EU Green Deal and supported by the commitments made under the Farm to Fork Strategy for 2030, outlines the ambition to reverse pollinator declines by 2030. Key commitments of the EU Biodiversity Strategy are to protect at least 30% of the EU's land and seas, restore at least 10% of agricultural land to high biodiversity landscapes, and restore 20% of the EU's degraded terrestrial and marine ecosystems by 2030. The EU Biodiversity

Strategy for 2030's targets and obligations are well aligned with the Kunming-Montréal Global Biodiversity Framework under the Convention of Biological Diversity, outlining global efforts needed to halt biodiversity and put nature on the path of recovery.

At the same time as the Biodiversity Strategy, the EU released its Farm to Fork Strategy: a guide for the EU's transition to a sustainable and healthy food system by 2030. This strategy outlines the commitments to reduce the use of pesticides by 50% and the use of fertilisers by 20% on farms by 2030, and to strengthen organic farming within the EU. These objectives are to be realised partially through the EU Common Agricultural Policy, which covers the period between 2023 and 2027. Measures implemented to achieve these objectives can particularly reduce the impacts of unsustainable agricultural practices on pollinators. This would, in turn, cultivate favourable environmental conditions for their recovery and presence.

With the three overarching priorities remaining unchanged from the first EU Pollinators Initiative of 2018 - generate knowledge, address the causes of pollinator decline, and to promote stakeholder and societal engagement – a new version of the EU Pollinators Initiative was formally adopted in 2023. It sets out a series of actions intended to enhance their conservation and reduce the main threats to their longevity. As part of the actions, the European Commission is required to identify pollinators typical of habitats protected under the Habitats Directive for their inclusion in future management plans of Natura 2000 sites. This is of particular importance for the conservation of bees, given that the Habitats Directive does not encompass any bee species in its Annexes, while enlisting some key habitats on which they rely. The Birds and Habitats Directive form the foundation of nature conservation in the EU, providing a strong legislative framework for EU Member States to protect their most valued and threatened habitats and species and underpinning the Natura 2000 network – which is now the largest network of protected areas in Europe, and worldwide. Other conservation actions tailored to ecological corridors (called "Buzz Lines") and agricultural, forest, and urban ecosystems are also provided in the revised EU Pollinators Initiative, supporting the revival of pollinators in Europe by also setting key actions for the causes underlying their decline.

Another key legislation for pollinators is the EU Nature Restoration Regulation (NRR), which was adopted in 2024. It aims to restore 20% of degraded land and seas in the EU by 2030 and all ecosystems in need of restoration by 2050. This regulation sets out several key targets and provisions relevant to the promotion of pollinator diversity and populations, including targets for agricultural, forests, urban, and freshwater ecosystems. It also delineates a specific target concerning pollinators, namely Target 10, requiring Member States to implement restoration measures to enhance pollinator diversity and reverse pollinator decline by 2030, and to subsequently attain an upward trend in pollinator populations from 2030 onwards. In parallel, Member States, under the guidance of the European Commission, are required to establish a national monitoring scheme to assess pollinator diversity and populations, as part of the EU Pollinator Monitoring Scheme (EU PoMS), including for threatened species. The data informing this monitoring scheme should be derived from an adequate number of sites and promote citizen science. The European Commission is furthermore tasked with augmenting the necessary expertise at the national level. Actions to be taken by Member States to meet this target and ensure the conditions for pollinators to return and expand throughout the EU are also set out in the recently revised EU Pollinators Initiative. To implement the regulation at the national level, Member States are required to develop National Restoration Plans by 2027, outlining their planned actions and timelines to fulfil the obligations and targets provisioned by the NRR.

Looking at the synergies amongst all these frameworks, a crucial action outlined in the revised European Pollinators Initiative is the strengthening of the monitoring of pollinator species and assessing their status and trends, which became a legally binding effort through Target 10 of the EU Nature Restoration Regulation. One available tool for this purpose is The IUCN Red List of Threatened Species™, a highly authoritative and objective methodology for classifying species by their extinction risk. The IUCN European Red List initiative, supported by the European Commission, undertook the first continental assessments of a range of species groups, including butterflies in 2010 (Van Swaay et al., 2010) and their reassessment (Van Swaay et al., 2025), bees in 2014 (Nieto et al., 2014), and hoverflies in 2021 (Vujić et al., 2022), with the assessment of moths in progress. These European Red List assessments have the potential to make a significant contribution to the knowledge aspect of the EU Pollinators Initiative and beyond. This contribution may take the form of improved database management, the mapping of Key Pollinator Areas, the development of pollinator indicators, and the promotion of capacity building and knowledge sharing. Additionally, the European Red Lists and the methods it applies have the proven potential to inform and contribute to the methodology required by the EU Nature Restoration Regulation, and to assist the European Commission and its Member States in setting up the national monitoring schemes and the action plans that will need to be in place in each country by 2027. Beyond the context of pollinator conservation, these assessments have the potential to influence the development of a European set of biodiversity indicators through the Streamlining European Biodiversity Indicators (SEBI) process and improve the understanding among policymakers, stakeholders, and the public of the necessity for European conservation actions on biodiversity and ecosystem services.

1.3. European bees: identity, diversity and endemism

1.3.1. Natural history

Bees constitute a monophyletic group that includes more than 20,000 described species globally (Branstetter et al., 2017; Danforth et al., 2013; Michener, 2007). Bees likely originated in the Early Cretaceous, shortly before the breakup of Western Gondwana, and subsequently colonised northern continents via a complex history of dispersal and vicariance (Almeida et al., 2023). The overwhelming majority of bee species rely almost exclusively on flowering plants for their life cycle. It is estimated that 87.5% of all flowering plants (Angiosperms) are adapted to animal pollination globally (Ollerton et al., 2011), a large majority of which occurs through bees as they are the main pollinators in most ecosystems. The evolution of bees and flowering plants are therefore intrinsically linked (Cardinal & Danforth, 2013; Ollerton, 2017). Pollination by bees is a key regulating ecosystem service globally, as pollinators play a vital role in ecosystem health and functionality (Klein et al., 2018; Ollerton et al., 2011). In the EU alone, four out of every five crop and wildflower species depend on insect pollination. The economic value of insect pollinators to the EU's annual agricultural output is estimated to be between €5 and 15 billion (Vysna et al., 2021), and the continent's rich bee fauna substantially contributes to this service.

Contrary to widespread assumptions, most bee species are solitary, rather than social, and do not form colonies (Michener, 2007). Solitary species operate independently, with each female constructing and provisioning her own nest(s), devoid of interaction with her offspring or other individuals other than reproduction (Antoine and Forrest, 2021; Danforth et al., 2019). By contrast, social bees such as bumblebees (genus *Bombus*) and honey bees (genus *Apis*) establish organised colonies where they participate in cooperative brood care, feature division of labour between queens and workers, and maintain overlapping generations (Heinrich, 1979; Rasmont et al., 2021; Wcislo & Fewell, 2017). Although in most bee species females gather food and nest independently, a subset of bees, known as brood parasitic bees, have evolved a different strategy: these bees deposit their eggs in the nests of other species, thereby exploiting host-provided resources for their offspring's development (Litman, 2019; Michez et al., 2019; Sless et al., 2022).

Biastes truncatus (Nylander, 1848), female, Czechia. © Jaco Visser.

Nearly all bee species depend on floral resources for nutrients, relying mainly on pollen and nectar for their development (Danforth et al., 2019; Michener, 2007; Michez et al., 2019). Nectar serves as the primary carbohydrate source, while pollen supplies essential proteins, fats, vitamins, and other nutrients (Vanderplanck et al., 2014; Vaudo et al., 2020). Floral resources vary significantly in quality, quantity and accessibility across plant species and consequently, bees may gather pollen selectively from specific plants or a range of plants to meet their nutritional needs (Roulston et al., 2000; Somme et al., 2015; Vaudo et al., 2015, 2020). Even if host-plant specialisation is a spectrum, bees can generally be categorised based on pollen collection behaviour as 'polylectic' or 'oligolectic'. Polylectic species have a wider diet, collecting pollen from numerous plant families, while oligolectic species specialise, relying on a limited number of plant species, often within a single genus or family (Praz et al., 2008; Müller, 1996; Müller & Kuhlmann 2008; Wood et al., 2021; Wood 2023). This specialisation may be beneficial in predictable environments but can increase vulnerability to habitat alterations and the loss of host plants (e.g. Duchenne et al., 2020). In contrast, most bees exhibit generalist patterns in nectar collection (Michener, 2007).

Bees display considerable diversity in nesting behaviours (Danforth et al., 2019; Orr et al., 2022; Radchenko and Pesenko, 1994). Most bees actively construct nests or utilise existing cavities, whereas parasitic species lack pollen-collecting structures and rely on parasitising other species' nests for brood development. About 75% of all wild bee species nest in the soil and therefore spend most of their life cycle underground (Antoine & Forrest, 2021). These bees typically excavate a nest composed of a main vertical gallery connected to lateral tunnels that lead to brood cells (El Abdouni et al., 2021). However, modalities of nest architecture vary widely among ground-nesting species (Cane & Neff, 2011; Michener, 1964; Packer et al., 1989; Radchenko & Pesenko, 1994). Above-ground nesting bees exhibit a variety of behaviours and are generally classified as excavators, renters and species building exposed nests. Excavator species use their mandibles to burrow tunnels in wood or in soft-pith stems. Renter species utilise pre-existing cavities and use either self-produced secretions or gathered materials, such as leaves, petals, resin, plant pubescence (trichomes) and mud to partition brood cells and seal their nests (Danforth et al., 2019; Michener, 2007). Species building exposed nests also use gathered materials, but build groups of brood cells attached to rocks, sometimes in crevices, or to plant stems. Social bees like honey bees and bumblebees construct their colonies using specialised body glands, particularly wax glands, to sequentially build, provision, and seal numerous cells simultaneously (Rasmont et al., 2021).

1.3.2. Bee distribution and diversity in Europe

Bee diversity in Europe shows a typical north-south positive gradient, with diversity increasing towards the Mediterranean basin (Michez et al., 2025; Reverté, Miličić et al., 2023). Two features explain this pattern across Europe: the more favourable energy/water balance of the Mediterranean areas which has resulted in extremely high floral diversity (Patiny et al., 2009), and the likely role of these areas as refuges during the Quaternary glaciations (De Lattin, 1967; Dellicour et al., 2015; Reinig, 1937). A recent checklist collated by Ghisbain, Rosa et al. (2023) showed that European bee fauna totals more than 2,130 species divided into six families: Andrenidae, Apidae, Colletidae, Halictidae, Megachilidae and Melittidae (Figure 1, Table 1). The most prominent and diverse family of bees is the Apidae (with more than 600 species), which includes the bumblebees (*Bombus* spp.), and while the least diverse family is the Melittidae with only around 40 species (Ghisbain, Rosa et al., 2023). The species diversity in Europe is partially explained by the presence of Mediterranean habitats in peninsulas and Islands that gather a set of spatially isolated biotic and abiotic conditions that are optimal for bee abundance and diversity (Michener 1979; Wood, 2023). Moreover, taxonomic research on bees in Europe has a rich and well documented history (Michez et al., 2019; Rasmont et al., 2021) and may skew the known diversity of bees, including cryptic species (e.g. Ghisbain et al., 2023; Lecocq et al., 2015), as many species have yet to be described in several other areas of the world.

An overview of how bees are distributed in European biomes is described in Michez et al. (2025). Arctic deserts in the northernmost parts of the continent, with their long-lasting polar nights and permanently frozen grounds, do not host thriving bee populations. Further south in the tundra, where the shallowest surface of the soil melts in summer and low-growing flowering plants can cover the ground, numerous species of bumblebees exist, sometimes in abundance (Kolosova et al., 2019; Rasmont et al., 2021). The boreal taïga, that mostly stretches from the 60th parallel to the Arctic circle, hosts highly melliferous plants including *Vaccinium* spp., *Erica* spp. and *Epilobium angustifolium* that support large bumblebee populations but also diverse communities of other bees from different families (Andrenidae, Halictidae, a few Colletidae, very few Megachilidae and parasitic Apidae). A vast expanse of terrain in Europe is covered by deciduous forests, a biome that is very rich in bees, mostly in more open areas (e.g. Le Sonchu et al., 2024), with nearly all European genera being represented by at least a few species (except for some southern genera such as *Cubiandrena*, *Simpanurgus*, *Thrincohalictus*, *Haetosmia*, and *Ensliniana*). It is further south, in the Mediterranean region, that bee communities are most strikingly diverse. In this biome, the tribe Anthophorini and Eucerini, as well as the subfamilies Xylocopinae, Nomadinae and Megachilinae show remarkable diversity (e.g. Lazarina et al., 2016). In the high mountains of southern Europe, most bee groups decrease in diversity, except for bumblebees that thrive in large communities (Hoiss et al., 2012). Mountain biomes host both floral and faunal structures that recall those living on the plains at higher latitudes. In mid and southern Europe, mountains are clearly differentiated into montane, subalpine and alpine stages, with their typical associated bee communities. Formations of forest steppes, also referred to as dry grasslands, constitute transitional biomes between forested areas and the true steppe, a biome found in both Eastern Europe and central Spain. Steppes are mostly devoid of trees and host highly diverse plant and bee communities, including rare and endemic Anthophorini, Eucerini, Megachilidae and Halictidae (Bogusch et al., 2020).

Figure 1. *European bee fauna totals more than 2,130 species divided into six families, the Andrenidae, Apidae, Colletidae, Halictidae, Megachilidae and Melittidae.*

Andrenidae: **A**. *Andrena mediovittata* Pérez, 1895 (male, Spain © Gustavo Peña Tejera) and **B.** *Andrena thoracica* (Fabricius, 1775) (female, France © Eric Leglise); **Apidae**: **C**. *Bombus ruderatus* (Fabricius, 1775) (male, Spain © Gustavo Peña Tejera) and **D**. *Epeolus cruciger* (Panzer, 1799) (male, Switzerland © Sophie Giriens); **Colletidae**: **E**. *Colletes moricei* Saunders, 1904 (female, Spain © Gustavo Peña Tejera) and **F**. *Hylaeus trinotatus* (Pérez, 1895) (male, Hungary © Henrik Gyurkovics); **Melittidae**: **G**. *Dasypoda cingulata* Erichson, 1835 (female, France © Eric Leglise); **Halictidae**: **H**. *Halictus fulvipes* (Klug, 1817) (female, Spain © Gustavo Peña Tejera) and **I**. *Lasioglossum nigripes* (Lepeletier, 1841) (male, Switzerland © Sophie Giriens); **Megachilidae**: **J**. *Coelioxys argenteus* Lepeletier, 1841 (female, Spain © Henrik Gyurkovics), **K**. *Megachile albisecta* (Klug, 1817) (female, Spain © Henrik Gyurkovics), and **L**. *Trachusa interrupta* (Fabricius, 1781) (female, Spain © José Luis Romero Romero).

Although the large-scale distribution of many bee species can be explained by climate and land cover variables (Ghisbain et al., 2020, 2024), records for many species show that complex combinations of landscape structure, soil texture and chemistry, presence of the host (when parasitic species) and floral communities are required for the existence of species at the local-scale. Microhabitats are thought to act as critical filters explaining why apparently similar habitats under similar climates can host unique bee communities (Fiordaliso et al., 2022). These habitats might host soil types with given granulometry and drainage in which bees can establish their nest (El Abdouni et al., 2021), or host plant taxa on which bees are specialised (Michez et al., 2019; Müller et al., 2006; Wood et al., 2021). Overall, data explaining the realised niche of species are severely lacking for many European bee species, especially in the southern and eastern parts of the continent where surveys are less frequent.

1.3.3. Endemism

An endemic bee species is defined here as a bee species whose global range is restricted to European boundaries. Bees are naturally not restricted by administrative borders, and therefore this definition is against biogeographically defined regions of endemism.

In the list of species we considered for the assessments, there are 416 species (21.6% of the 1,927 assessed species) that are endemic to Europe and 310 species (16.5% of the 1,875 species that occur in the EU27) that are endemic to the EU27 (Table 1). Many of the European endemic species are predominantly found in restricted montane habitats (e.g., *Osmia steinmanni* Müller, 2002 in the Alps), islands such as the Canary Islands (e.g., *Lasioglossum chalcodes* (Brullé, 1840)), Corsica (e.g., *Bombus renardi* Radoszkowski, 1884), Crete (e.g., *Ceratina teunisseni* Terzo and Rasmont, 1997), Cyprus (e.g., *Megachile cypricola* Mavromoustakis, 1938 and *Ceratina cypriaca* Mavromoustakis, 1949), and Sicily (e.g., *Chelostoma stefanii* Nobile, 1995). The Mediterranean peninsulas of Iberia (Portugal and Spain), Italy, and Greece also show a higher percentage of endemic species (Michez et al., 2019, 2025; Reverté, Miličić et al., 2023; Wood, 2023). As mentioned earlier, although the general rule is that the southern regions of Europe are much more species-rich than the northern part of the continent, bumblebees stand out as an important exception. Their diversity is the strongest in the higher latitudes and altitudes, and they remain amongst the only bee species common north of the 60th parallel and over 2,000 metres above sea level in the Alps, Pyrenees and Balkan Mountains (Rasmont et al., 2015, 2021). Although many bumblebee species display very widespread populations on the continent (e.g. *Bombus pascuorum, B. terrestris*), global endemics exist at mountainous elevations of southern Europe (*B. inexspectatus, B. konradini, B. mendax*, and *B. pyrenaeus*).

If we consider only the valid species (see Ghisbain, Rosa et al. (2023) and the section "taxonomic scope" here after) and we exclude the species that were assessed as Not Applicable, we obtain similar numbers. At the European level, the family with the highest percentage of endemism is Melittidae with 28.2% (followed closely by Colletidae with 28.1%), and the family with the lowest endemicity is Apidae with only 16.1%. At the EU27 level (excluding NA species), the family with the highest percentage of endemism is Andrenidae with 20.3% (followed closely by Colletidae with 20.1%) and the family with the lowest endemicity is Megachilidae with 13.0%. Regarding the genus level, at the European level, the five genera of bees with the highest number of endemic species are *Andrena* (108 species), *Nomada* (40 species), *Lasioglossum* (29 species), *Hoplitis* (23 species) and *Hylaeus* (23 species). At the EU27 level, the five genera of bees with the highest number of endemic species are *Andrena* (77 species), *Nomada* (34 species), *Lasioglossum* (18 species), *Hylaeus* (15 species) and *Anthophora* (15 species).

Table 1. *Diversity and endemism in bee families in Europe, including Not Applicable species, and species formerly assessed in the first Red List report (Nieto et al., 2014).*

Family	Europe		EU27	
	Number of species	Number of endemic species	Number of species	Number of endemic species
Andrenidae	525	130	494	94
Apidae	620	89	582	73
Colletidae	152	40	145	28
Halictidae	357	78	338	56
Megachilidae	463	67	451	50
Melittidae	41	11	38	9
Total	**2,158**	**415**	**2,048**	**310**

1.4. Threatened status of species – assessment of extinction risk

The conservation status of plants, animals and fungi is one of the most widely used indicators for assessing the condition of ecosystems and their biodiversity. At the global scale, the primary source of information on the extinction risk of plants and animals is The IUCN Red List, which contributes to understanding the conservation status of assessed species. The IUCN Red List Categories and Criteria (IUCN, 2012a) are designed to determine the relative risk of extinction of a taxon, with the main purpose of cataloguing and highlighting those taxa that are facing a high risk of extinction. Red List assessments are policy-relevant, and can be used to influence conservation planning and priority setting processes, but they are not intended to be policy-prescriptive, and are not in themselves a system for setting biodiversity conservation priorities.

The IUCN Red List Categories are based on a set of quantitative criteria linked to population trends, size and structure, threats, and geographic ranges of species. There are nine categories, with species classified as Vulnerable (VU), Endangered (EN) or Critically Endangered (CR) considered ‘threatened’. When conducting regional or national assessments, the IUCN Red List Regional Guidelines (IUCN, 2012b) are applied, and two additional categories are introduced (Figure 2): Regionally Extinct (RE), and Not Applicable (NA). As the extinction risk of a species can be assessed at global, regional or national levels, a species may be classified under different Red List Categories depending on the scale of assessment, considering the population of that species at each geographical level.

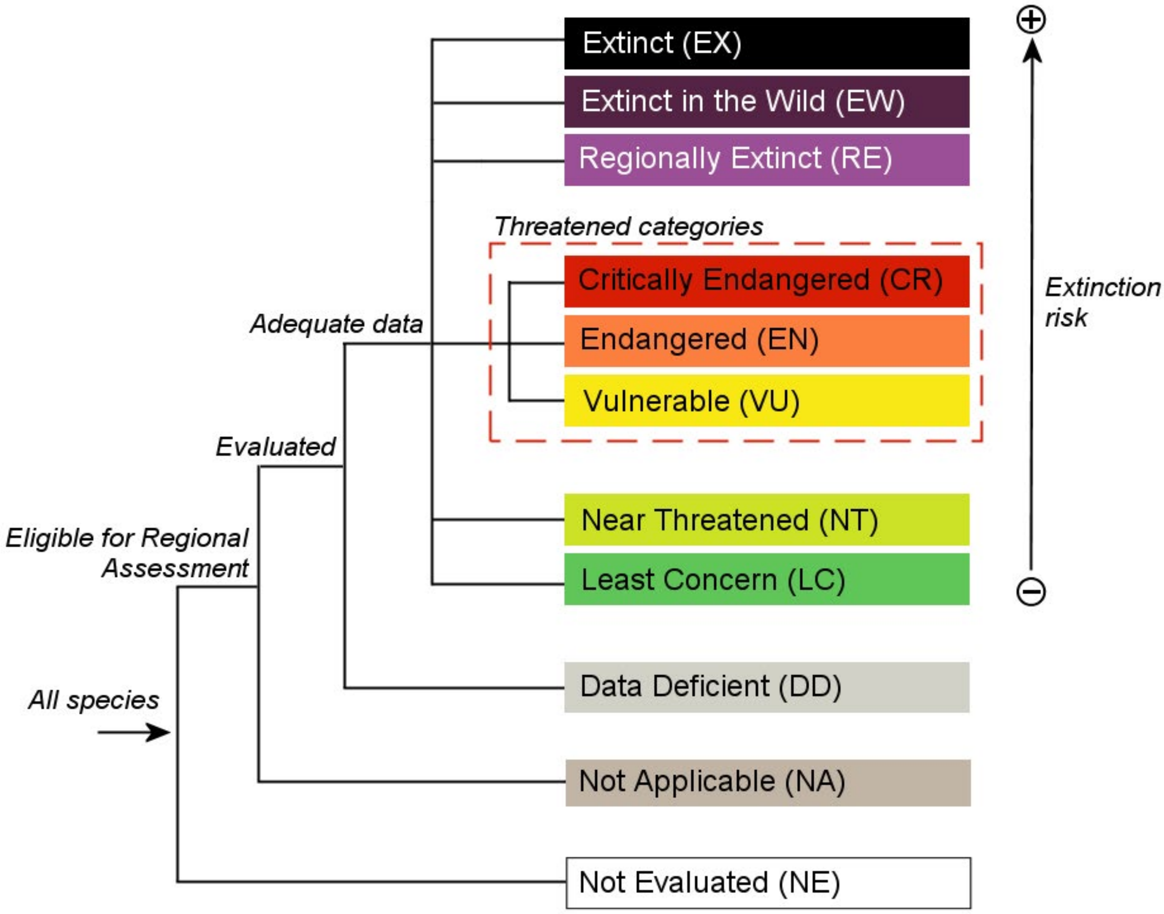


Figure 2. *The IUCN Red List Categories at the regional scale (IUCN, 2012b).*

1.5. Objectives of the assessment

This *European Red List of Bees* has several main objectives:

- To update the European Red List of Bees published by Nieto et al. (2014), taking into account new taxonomic information and distributional records, as well as new information on recent trends and threats that bees are experiencing, while also extending the network of experts and aggregating more knowledge on the continental distribution of many species that were previously classified as Data Deficient (i.e., 56.7% of the previously recorded fauna).

- To identify prioritised geographical areas and habitats in need of urgent protection to prevent extinction and to ensure that European bees maintain favourable conservation status.

- To identify the major threats to European bees and to propose potential mitigating measures and conservation actions to address them.

- To use the knowledge mobilised to contribute to bee conservation planning.

- To strengthen the network of bee taxonomists (i.e. experts on clade(s) at a large-scale level) and parataxonomists (i.e. experts on faunas at a regional/national level) in Europe, so that the expertise can be kept current and can be recruited to address conservation and monitoring priorities on the continent and at a national level.

- To provide an updated and accessible dataset of European wild bee records for fostering research on their distribution, ecology and conservation.

The assessment produced two main outputs:

- A summary report on the status of all European bees (this report).
- A website (www.iucnredlist.org) and data portal (https://www.iucnredlist.org/resources/data-repository) showcasing these data in the form of species factsheets for all European bees included in this study.

This European Red List is a completely revised second edition. It is a comprehensive, region-wide assessment of bees and builds on the previous work done for the first *European Red List of Bees* (summarised by Nieto et al., 2014), and incorporates many new data contributed from personal and institutional databases from across the European region. The globally unequalled amount of fieldwork, data and accumulated knowledge on European bees makes the present reassessment robust and authoritative.

2. Assessment methodology

2.1. Geographic scope

The geographic scope of this European Red List spans the entirety of the European continent (Figure 3). It extends from Iceland, Svalbard and Franz Josef Land (Земля́ Фра́нца-Ио́сифа) in the north to the Canary Islands in the south, and from the Azores in the west to the Urals in the east, including the European part of Türkiye ('Türkiye-in-Europe') and most of the European parts of the Russian Federation. Cyprus, the European Macaronesian islands (the Canaries, Madeira and Azores archipelagos) and the Spanish North African Territories (Ceuta, Melilla, and the Plazas de soberanía) are included in the assessment region, whereas Greenland and the North Caucasus parts of European Russia (e.g. Krasnodar Krai, Republic of Dagestan, Stavropol Krai and other administrative units within the Russian Northern Caucasus) fall beyond the European scope of this European Red List.

Figure 3. *The European Red List terrestrial assessment boundaries. Regional terrestrial assessments were made for two areas: for Europe ("Pan Europe") and for the EU27 Member States.*

Red List assessments were made at two regional levels: 1) for geographical Europe ("Pan Europe", limits described above); and 2) for the area of the 27 Member States of the European Union.

In comparison with the previous *European Red List of Bees* (Nieto et al., 2014) the EU region now includes Croatia but no longer includes the United Kingdom.

2.2. Taxonomic scope

The *European Red List of Bees* has assessed the status of all species of bee native to Europe or naturalised there before 1500 CE, a total of 1,928 species. Species introduced to Europe by humans after 1500 CE and species with marginal or vagrant occurrence (taxa found only occasionally in Europe or representing only a tiny percentage of the global population) were assessed as Not Applicable (NA) following the IUCN Regional Red List Guidelines (IUCN, 2012b), a total of 231 species. The initial species list was based on Nieto et al. (2014) and Rasmont et al. (2017) but updated according to the most recent taxonomic review, following Ghisbain, Rosa et al. (2023). Taxonomic changes published after the latter publication are not included in the present assessment.

Colletes collaris Dours, 1872, male, Spain. © José Luis Romero Romero.

Taxonomic advances since the first Red List assessment of European bees

Europe is regarded as a biodiversity hotspot for bees due to the intricate interaction between diverse ecosystems, favourable climatic conditions, and rich flora. The study of bee taxonomy in Europe is more advanced compared to other parts of the world, thanks to the efforts of generations of entomologists starting from the very beginning with Johan Christian Fabricius, Pierre André Latreille, Louis-Michel Lepeletier de Saint-Fargeau, William Kirby, among others (Michez et al., 2019). Although this region has been a focal point for bee taxonomy for over 250 years, taxonomic gaps remain in all families. The historical reasons are multifold: (i) the research has been mainly focused on central and northern Europe, and most of the literature produced in the 19th and early 20th was in the German language; (ii) there is an increasing species diversity towards southern Europe contrasted by a striking decrease in taxonomic completeness compared to northern Europe; (iii) there is a mismatch between species richness and the number of publications associated with different genera (e.g. *Apis mellifera*, has more than 15,000 publications whereas all the other species have an average of 1.3 publications (Wood et al., 2020); (iv) taxonomic research has been ill-funded in recent last decades, and the number of professional taxonomists has drastically diminished. All these threats make conservation efforts more complex to achieve.

The previous *European Red List of Bees* (Nieto et al., 2014) reported 1,965 species across 75 genera, setting the stage for the first European checklist. Of the 1,965 species, nearly 55% were assessed as Data Deficient (DD), straightening out the need for more studies on the ecology and taxonomy of European bees. This list was expanded by Rasmont et al. (2017), who added 86 additional species previously overlooked and introduced another two genera, bringing the total to 2,051 species and 77 genera. Recently, renewed taxonomic efforts with an integrative approach, have focused on certain genera, such as *Andrena* (Bossert et al., 2022; Wood 2021, 2022, 2023), *Osmia* (Müller, 2022, 2025; Müller and Griswold, 2017), *Bombus* (Rasmont et al., 2021), *Dasypoda* (Radchenko, 2017; Ghisbain et al., 2023) and the tribe Anthidiini (Kasparek, 2021; 2022; Kasparek and Ebmer, 2023; Kasparek and Fateryga, 2023; Kasparek et al., 2023; Litman et al., 2022). A new genus of the family Andrenidae, endemic to the Iberian Peninsula, *Halopanurgus*, was described by Wood et al. (2022). Concurrently, several projects aimed at enhancing taxonomic capacity in Europe and gathering ecological data, such as ORBIT (2021-2024), SPRING (2021-2023), and SAFEGUARD (2021-2025), have significantly advanced the understanding of European fauna. This progress was highlighted in the annotated European checklist published by Ghisbain, Rosa et al. (2023).

The new checklist aims to consolidate all revisions and taxonomic advancements, thereby laying the groundwork for this updated *European Red List of Bees*. Through comprehensive analysis of literature, museum, and private collections, the number of European species has increased to 2,138, across 77 genera. Among the newly reported species, 67 were recently described as new for science, primarily from the East Mediterranean and Iberian Peninsula, underscoring the taxonomic gap in southern European countries. Additionally, Reverté, Miličić et al. (2023) gathered distributional data from the literature, taxonomists, and national experts to produce checklists for European countries, many of which had their species lists compiled for the first time. Despite these advancements, the knowledge of wild bees in Europe requires substantial further effort, as evidenced by numerous recent taxonomic changes. Furthermore, while some genera and tribes are well-studied, others, like *Melecta* and *Anthophora*, still require in-depth revision and lack taxonomic attention, and also "well-known" genera often lack any tools for identification or reveal interesting findings when studied with modern techniques (Ghisbain et al., 2023). This effort must involve increasing taxonomic capacity at the national level and more extensive monitoring and sampling.

2.3. Assessment protocol

Assessments were based on the *IUCN Red List Categories and Criteria Version 3.1* (IUCN, 2012a), the Red List Guidelines (IUCN, 2016), and the *Guidelines for the application of the IUCN Red List Criteria at regional and national levels* (IUCN, 2012b), for which a correct interpretation of terms and application of criteria were ensured through an online training workshop and subsequent dialogue between the assessors and IUCN staff.

The IUCN Species Information Service (SIS) online database was used to store information for all species, based mostly on published data but also unpublished data and expert knowledge. This online database includes:

- Taxonomic classification and notes
- Geographic range (including key metrics such as the area of occupancy, extent of occurrence).
- List of countries of occurrence.
- Population information and overall population trend.
- Habitat preferences and primary ecological requirements.
- Major threats.
- Conservation measures (in place and needed) and research needed.
- Red List assessment.
- Key literature references.

For each species, the Red List Category is based on the selection of a set of standardised criteria and justified by an assessment rationale (IUCN, 2012a,b). Population size reduction (Criterion A) and geographic range (Criterion B) were the most often used criteria for assessing bees in Europe. Provisional assessments were agreed upon within the expert group and later submitted to external scientists for an independent review and final agreement.

Consistency in the application of the IUCN Categories and Criteria was checked by the IUCN European Regional Office and the IUCN Red List Unit, with contributions from Quin Baine (New Mexico BioPark Society). The resulting finalised set of IUCN Red List assessments is a product of scientific consensus concerning species status supported by relevant literature and data sources and were published on The IUCN Red List in 2025. All bee species were included in the analyses of the report, except for the Western Honey Bee as only a fraction of its population is considered wild. The 2026 update of the *European Red List of Bees* was undertaken in the context of the EU Pollinators Initiative which targets wild pollinator species. The Pollinators Initiative explicitly excludes species which primarily exist under human management, such as the Western Honey Bee. Dedicated EU policies have been put in place to support beekeeping and the apiculture sector. The IUCN Red List methodology is applied to wild populations inside their natural range, and to populations resulting from benign introductions. However, the EU policy for wild pollinators prioritises the conservation and restoration at species and community level which results in the exclusion of Western Honey Bee (see Box 5. *"wild Honey Bees"* for more information on this point). A robust diversity of species within a pollinator community is the single most important factor for the integrity and resilience of the animal pollination function in ecosystems, thereby underpinning our food security, sustainable livelihoods and healthy nature.

2.4. Species mapping

The bee record database was originally developed from the Banque de Données Fauniques de Gembloux-Mons (BDFGM) database (co-owned by UMons and ULiège - Gembloux Agro-BioTech) and progressively expanded through successive European projects. To address major data gaps, additional records were integrated from diverse sources, including museum collections, published literature, contributions from taxonomists, private and public databases, and newly collected material. All records were standardised using a template aligned with the

Darwin Core standard (TDWG, 2025). During this process, data types and inconsistent formats (e.g., dates) were corrected, and species names were verified and harmonised using a reference dictionary following Ghisbain, Rosa et al. (2023) to reflect taxonomic revisions. This work resulted in a comprehensive database counting 4,341,684 data, covering >95% of the European bee species (2,083 species) and all available historical records until 2023 (Sentil et al., under review).

Finally, point distribution maps were generated across three temporal classes (< 1970, 1970–2000, > 2000). These maps, together with the associated country records, were provided to experts prior to workshops for the validation of species distribution data.

Range maps were produced in R (R Core Team 2023, v4.3.1) using the sf (Pebesma and Bivand, 2023) and smoothr (Strimas-Mackey, 2023) packages. Occurrence points from the curated bee dataset were buffered by 50 km diameter (as recommended by P. Rasmont, pers. comm.), merged, simplified, smoothed (smooth function using Chaikin method), and holes < 25,000 km^2 were filled. Coastal polygons were clipped to the IUCN Europe country boundary shapefile, segmented by administrative areas. For countries listed as ‘Extant’ in the assessment ‘countries of occurrence’ table in SIS but lacking representative point occurrences, the distribution was either mapped for the whole country and indicated as ‘generalised’ in the shapefile metadata or that country was not mapped at all (and the ‘map status’ indicated as ‘Incomplete’ in the SIS database).

For each species, the extent of occurrence (EOO) and area of occupancy (AOO) were calculated with the red package (Cardoso and Branco, 2023). Occurrence coordinates were extracted from the dataset (without any year filtering), and EOO was computed as the minimum convex polygon encompassing all occurrences (‘eoo’ function), while AOO was computed using a 2×2 km grid resolution (‘aoo’ function).

Triepeolus tristis (Smith, 1854), female, Hungary. © Henrik Gyurkovics.

Shapefile metadata coding was used to distinguish species' 'presence', 'origin', and 'seasonality' across the spatial extent of a species distribution, and 'generalised' to indicate that the range of a species had been generalised (IUCN, 2024). These codes differentiate between: the species' presence (options include 'Extant', 'Possibly Extant', 'Possibly Extinct', 'Extinct Post-1500' and 'Presence Uncertain'); seasonal presence of the species in the locality (options include 'Resident' and 'Seasonal Occurrence Uncertain'); and the origin of the species (options include 'Native', 'Introduced' or 'Origin Uncertain'). The occurrence information (presence, origin, and seasonality coding of spatial data) can be found in the IUCN Red List *Mapping Standards and Data Quality for IUCN Red List Spatial Data* (IUCN, 2024).

The spatial analyses presented in this publication were done using a geodesic discrete global grid system, defined on an icosahedron and projected to the sphere using the inverse Icosahedral Snyder Equal Area (ISEA) Projection (S39). This corresponds to a hexagonal grid composed of individual units (cells) that retain their shape and area (865 km^2) throughout the globe. These are more suitable for a range of ecological applications than the most commonly used rectangular grids (S40). The known distributions of species were converted to the hexagonal grid for the purposes of the analysis. For the spatial analyses, species distributions with the following presence, origin and seasonality codes were included: presence = Extant, Possibly Extinct; origin = Native, Reintroduced, Assisted Colonisation; and all seasonality codes (Resident, Breeding Season, Non-breeding Season, Passage, Seasonal Occurrence Uncertain) and converted to the hexagonal grid. Any polygons coded as 'Possibly Extant', 'Extinct', 'Presence Uncertain', 'Introduced', 'Vagrant' and/or 'Origin Uncertain' were not considered in the analyses. Coastal cells were clipped to the coastline.

3. Assessment Results

3.1. Threatened status of bees in Europe

At the European level, 2,159 species of bees were considered for assessment, with 1,927 species treated as native or naturalised (i.e., introduced prior to 1500 CE) to the region and assessed considering the total of their populations (Tables 1 & 3). Of these, 172 species were found to be threatened (assessed as either VU, EN, or CR), i.e. having an elevated risk of extinction in the near future. Additionally, 276 species (14.3%) were classified as Data Deficient (DD) because there was insufficient information available to assign them a conservation status (Tables 2 & 3). The percentage of threatened European bee species could range between 8.9% (if no DD species were found to be threatened) and 23.3% (if all DD species were found to be threatened) (Table 2). The mid-point figure (10.4%) provides the best estimate (IUCN, 2016) of the proportion of threatened bees in Europe.

At the European scale, although no species were assessed as Extinct or Regionally Extinct, 25 species were assessed as Critically Endangered (1.3%); of these CR species, more than half (14 species) were considered Critically Endangered (Possibly Extinct); these are species that may already be extinct but where there is currently insufficient information to confirm this. A further 91 species (4.7%) were assessed as Endangered, 56 species (2.9%) as Vulnerable (Table 3, Figure 4), and 181 species (9.4%) as Near Threatened. Over half of bee species in Europe were assessed as Least Concern (67.3%). A total of 231 species were considered Not Applicable (NA) for assessment in Europe based on either recent introduction (post-1500 CE) or marginal presence in the European region (estimated <1% of the global population occurring in the region).

In the EU27, 2,048 species were considered for assessment, with 162 species found to be threatened, and 244 species considered as DD (Table 1). This result implies that the percentage of threatened bees in the EU27 ranges between 8.7% and 21.7%, with the mid-point value being 10.0% (Table 2).

In the EU27 (Table 3, Figure 4), no species was considered as Regionally Extinct, 21 (1.1%) were assessed as Critically Endangered (with 11 flagged as Possibly Extinct), 90 species (4.8%) as Endangered, and 51 species (2.7%) as Vulnerable. A further 183 species (9.8%) were classified as Near Threatened. In the EU27, 68.6% of bee species were assessed as Least Concern.

There are 110 species that have not been recorded in the EU27 ('Not Recorded') but have been recorded elsewhere within the Pan Europe assessment region.

Appendix 1 lists all bee species assessed under the current European Red List, their corresponding conservation status in Europe and the EU27, and indicates species that are endemic to Pan Europe and/or the EU27 regions.

Table 2. *Percentage of threatened bees in Europe and the EU27 following the IUCN Guidelines for reporting on proportion threatened (IUCN, 2016). Note: Extinct (EX), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Data Deficient (DD).*

	% threat Pan Europe	% threat EU27
Lower bound (CR+EN+VU) / (assessed – EX)	8.9	8.7
Mid-point (CR+EN+VU) / (assessed – EX – DD)	10.4	10.0
Upper bound (CR+EN+VU+DD) / (assessed – EX)	23.3	21.7

Table 3. *Summary of numbers of bee species within each Red List Category (numbers of endemic species are shown in brackets) for the Pan Europe and EU27 regions.*

IUCN Red List Categories	No. species Europe (no. endemic species)	No. species EU27 (no. endemic species)
Extinct (EX)	—	—
Extinct in the Wild (EW)	—	—
Regionally Extinct (RE)	—	—
Critically Endangered (CR)*	25 (9)	21 (7)
Endangered (EN)	91 (25)	90 (19)
Vulnerable (VU)	56 (17)	51 (15)
Near Threatened (NT)	181 (48)	183 (32)
Least Concern (LC)	1,298 (223)	1,286 (161)
Data Deficient (DD)	276 (93)	244 (77)
Total number of species assessed*	**1,927 (416)**	**1,875 (310)**

* Includes CR and CR (PE) species

** This table excludes species considered as Not Applicable for the European Red List (231 species for Pan Europe, 173 for the EU) and the 110 species that are Not Recorded in the EU (but present in the Pan Europe region). The total number of species considered for assessment is therefore 2,158 (415 endemic) for the Pan Europe region and 1,875 (310 endemic) for the EU region.

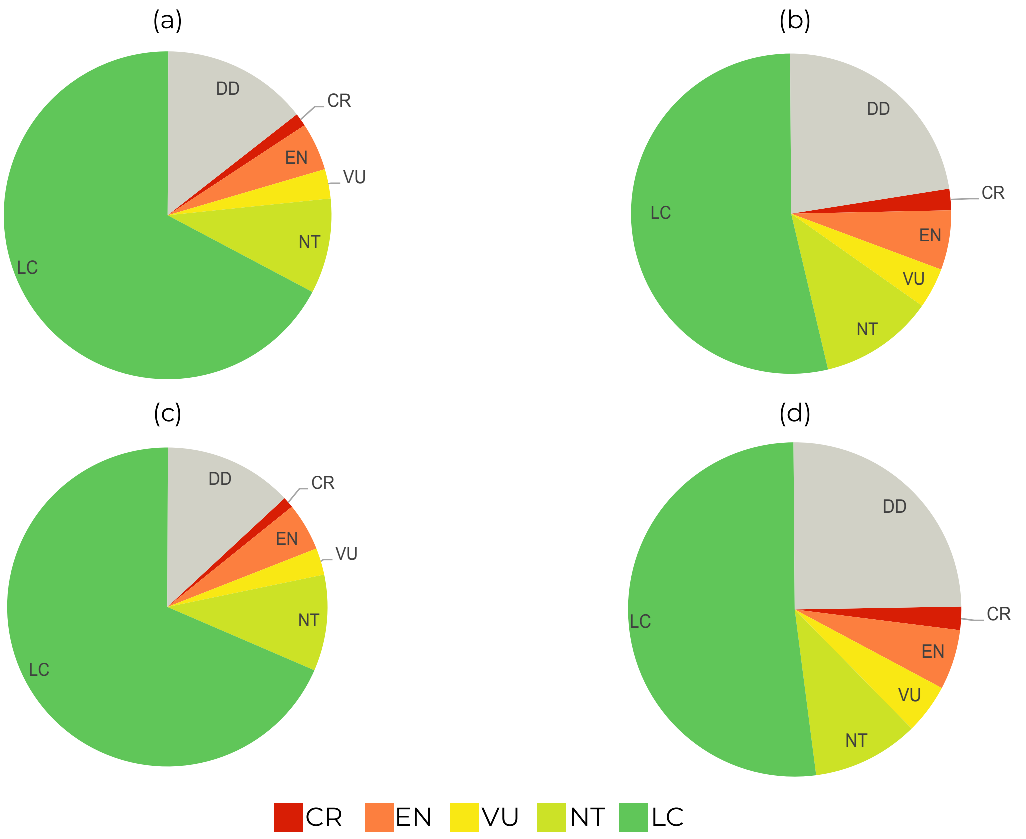


Figure 4. *IUCN Red List status of (a) all bees in the Pan Europe assessment region, (b) species endemic to the Pan Europe region, (c) all species in the EU region, and (d) species endemic to the EU region. Not Applicable species are excluded.*

3.2. Status by taxonomic group

Given the considerable ecological diversity of the six bee families occurring in Europe, the genus level represents the most appropriate scale at which to analyse conservation status across taxonomic groups. Although individual species also exhibit a wide range of behaviours and ecological adaptations, species within a genus generally share relatively similar ecological traits. We acknowledge that this pattern is, however, not universal (for example, within the bumblebees, where many species are inquiline, i.e. social parasites, and do not collect pollen). In the analyses that follow, percentages are calculated excluding species considered Not Applicable at the European scale. Strictly parasitic genera were also separated from free-living genera, as the former are entirely dependent on host populations to complete their life cycles and are therefore particularly susceptible to host population changes.

Amongst the free–living genera, some appear to be especially at risk, with >20% of threatened species. This is the case for *Bombus* (15 of 66 species, 22.7%), *Colletes* (13 of 59 species, 22.0%), *Dasypoda* (five of 18 species, 27.8%), *Dufourea* (four of 19 species, 21.1%), *Halopanurgus* (one of two species, 50.0%), *Icteranthidium* (one of four species, 25.0%), *Nomiapis* (two of eight species, 25.0%) and *Trachusa* (two of nine species, 22.2%). The species *Simpanurgus phyllopodus*, the only species of this genus in Europe and indeed in the world as it is endemic to the continent, is assessed as Critically Endangered (Possibly Extinct) as it has only been collected once in 1968 (i.e., it is only known from the type collections) with no subsequent records despite dedicated searches in the 21st century.

Bee richness and threats in the Iberian Peninsula

The Iberian Peninsula shows a noticeably different pattern of bee diversity compared to other European regions. The peninsula itself has an average elevation of over 600 metres, meaning that much of its area comprises a high and relatively dry plateau, with true Mediterranean habitats found along the coast. In addition to this high average elevation, Iberia is also criss-crossed by mountain chains, which means that areas with temperate habitats can be found at high altitude (for example the Sistema Central), even in the south of the peninsula (for example, the isolated Sierra Nevada). The south of the peninsula is close to North Africa and has a hot Mediterranean climate, hosting thermophilic species, including some which are predominantly North African and which have only a marginal or vagrant occurrence in Europe (Patiny and Michez, 2007). Combined with the history of the peninsula as a refugium during recent Ice Ages, as illustrated by the genus *Andrena,* this means that Iberia hosts a rich fauna containing Mediterranean (such as *Andrena mucida* Kriechbaumer, 1873), North African (such as *Andrena orana* Warncke, 1975), and Euro-Siberian (such as *Andrena tarsata* Nylander, 1848) elements, as well as relictual species that are found also in dry steppe habitats in North Africa and Türkiye (such as *Andrena soror* Dours, 1872; Wood, 2023), and a rich endemic fauna which has evolved during periods of isolation.

The most pressing threats to bee diversity in Iberia are those which affect the unique elements which make this fauna so interesting. These can be broadly summarised as i) touristic development and urban development, ii) agricultural intensification and land abandonment, and iii) the threat of climate change. For the first point, the predominantly low-elevation coastal environments favoured by thermophilic species have been extensively developed for tourism, particularly in south-eastern Spain, or through general economic expansion and migration to coastal areas such as around Lisbon where urban development has encroached on many historically studied coastal sites. The growth of cities occurs in Iberia as the population becomes increasingly concentrated in places with economic opportunities. This is particularly clear around Madrid, which is expanding. The habitats surrounding Madrid are high and dry grasslands that host a mixture of endemic and relictual steppic species whose presence was well-established by early 20th century collections such as those of José María Dusmet Alonso.

These open habitats of central Iberia are highly vulnerable to urban development, and also to agricultural intensification. Intensive production of citrus, olive, vines, almond and avocado with irrigation and "weed control" leads to fields with few flowers to support wild bee populations. Compared to traditional low-intensity management (Figure i in this box), these areas are flower deserts. The use of irrigation drawing on aquifers has also led to important areas for wild bees becoming drier and producing fewer flowers, such as the in Doñana region in South-Western Spain. The opposite of intensive farming has been the issue of marginal land. The difficulty of farming marginal land combined with an economic exodus of young people to cities is expressed in land abandonment across much of rural Iberia. Abandoned farmland, much of which was cultivated at low or moderate intensity, can revert to scrubland which lacks annual or short-lived perennial herbaceous plants that support Mediterranean or sub-Mediterranean bee species. Bees, which on average favour areas with intermediate levels of disturbance (e.g. Penado et al., 2022; Solascasas et al., 2025), are then caught between highly disturbed and intensified farmland, and low disturbance and low-diversity abandoned scrublands.

Finally, the ubiquitous threat of climate change will also challenge bee species in Iberia. Whilst thermophilic species adapted to life in hot microclimates may become more widespread, the Euro-Siberian or mountain endemic bee species of Iberia have limited options to disperse. Species endemic to single mountains or isolated mountain chains (e.g. Serranía de Ronda and Sierra de las Nieves in southern Spain, Figure ii in this box) have no options if their current habitats become unsuitable (Ghisbain et al., 2024).

Figure i. Low-intensity olive cultivation in the province of Madrid, central Spain. © Thomas J. Wood

Figure ii. High altitude site in the Sierra de las Nieves in the province of Málaga. © Thomas J. Wood

Some parasitic bee genera also appear to be especially threatened, with some genera displaying >20% of threatened species. This is the case for the genera *Ammobates* (three of 13 species, 23.1%), *Ammobatoides* (one of four species, 25.0%) and *Biastes* (one of three species, 33.3%). The parasitic species *Paradioxys pannonicus,* only species of this genus in Europe, is assessed as Vulnerable. The parasitic species *Parammobatodes minutus*, the only non-NA species of this genus in Europe (*Parammobatodes maroccanus* is Not Applicable for the European Red List because of marginal occurrence in the European region), is assessed as Endangered.

It must be noted that some bee genera still suffer from a lack of knowledge and exhibit a high proportion of Data Deficient species. For example, the following parasitic genera have >20% of DD species: *Ammobates* (six of 13 species, 46.2%), *Epeolus* (four of 17 species, 23.5%), *Melecta* (16 of 25 species, 64.0%), *Metadioxys* (one of one species, 100%), *Stelis* (eight of 22 species, 36.4%) and *Thyreus* (three of 11, 27.3%). This is also the case for less known non-parasitic species such as *Dufourea* (six of 19 species, 31.6%), *Habropoda* (one of three species, 33.3%), *Halictus* (12 of 44 species, 27.3%), *Melitta* (six of 18 species, 33.3%) and *Melitturga* (two of five species, 40.0%). Lack of knowledge can be explained by the scarcity of these groups (e.g. populations of parasitic genera are usually low in specimens) or a taxonomic uncertainty (e.g. uncertain species concept).

3.3. Spatial distribution of European bee species

3.3.1. Overall species richness

The geographic distribution of bee species richness in Europe is shown in Figure 5 and is based on the maps of assessed bee species for which maps could be constructed (all Least Concern and threatened species have distribution maps, some Data Deficient species are not mapped because their distributions are unknown or incompletely known) (Table 3). Some country (e.g. Belarus, Ukraine) and sub-country (e.g., South European Russia) borders appear more prominently in some parts of the maps due to the inclusion of generalised whole-country polygons for some species in regions where there is a lack of more precise locality data.

As discussed above, southern Europe, and particularly the Mediterranean climate region, is the area with the highest species richness. Richness declines gradually towards more northern latitudes and north-eastern Europe. The relatively low bee diversity observed in some areas (e.g. the Balkan Peninsula) is due to undersampling, whereas the high diversity recorded in other regions (e.g. Belgium) likely reflects more intensive sampling efforts. For eastern Europe and some parts of southern Europe, relatively lower quantities of bee distribution data are available, meaning that the patterns observed in Figure 5 should be treated with caution.

3.3.2. Distribution of threatened species

The richness pattern of threatened bee species in Europe (considering the 171 of the 172 species assessed as threatened in this report) is illustrated in Figure 6. The latter map shows the greatest concentration of threatened species from 5° East to 25° East and from 42° North to 52°N, i.e. a broad Central European corridor, spanning from eastern France to Western Ukraine and from southern France and the northern Balkans up to central Germany. It straddles the cultural-geographic transition zones between Western, Central, Southern, and Eastern Europe. As already noted by Nieto et al. (2014), we can identify a group of species associated with mountain regions (i.e. the Alps, Pyrenees, and, to a lesser extent, the Carpathians) which are threatened mainly by climate change (see section 3.4). There is another group of species associated with the Pannonian region where steppic species are threatened by land use change (e.g. intensification of agricultural practices) (see section 3.4). We can also note smaller areas such as the regions around Madrid where many endemic species threatened by urbanisation are recorded (see "*Bee richness and threats in the Iberian Peninsula*"). This map of threatened species richness should, however, be interpreted with caution with regards to the distribution of Data Deficient species (Figure 8); if a large fraction of DD species were to found to be threatened with extinction, Figure 6 would show increased concentrations of threatened species in southern Spain, Sicily and the southern Balkans, where the highest concentrations of DD species (276 bee species in Europe) are distributed.

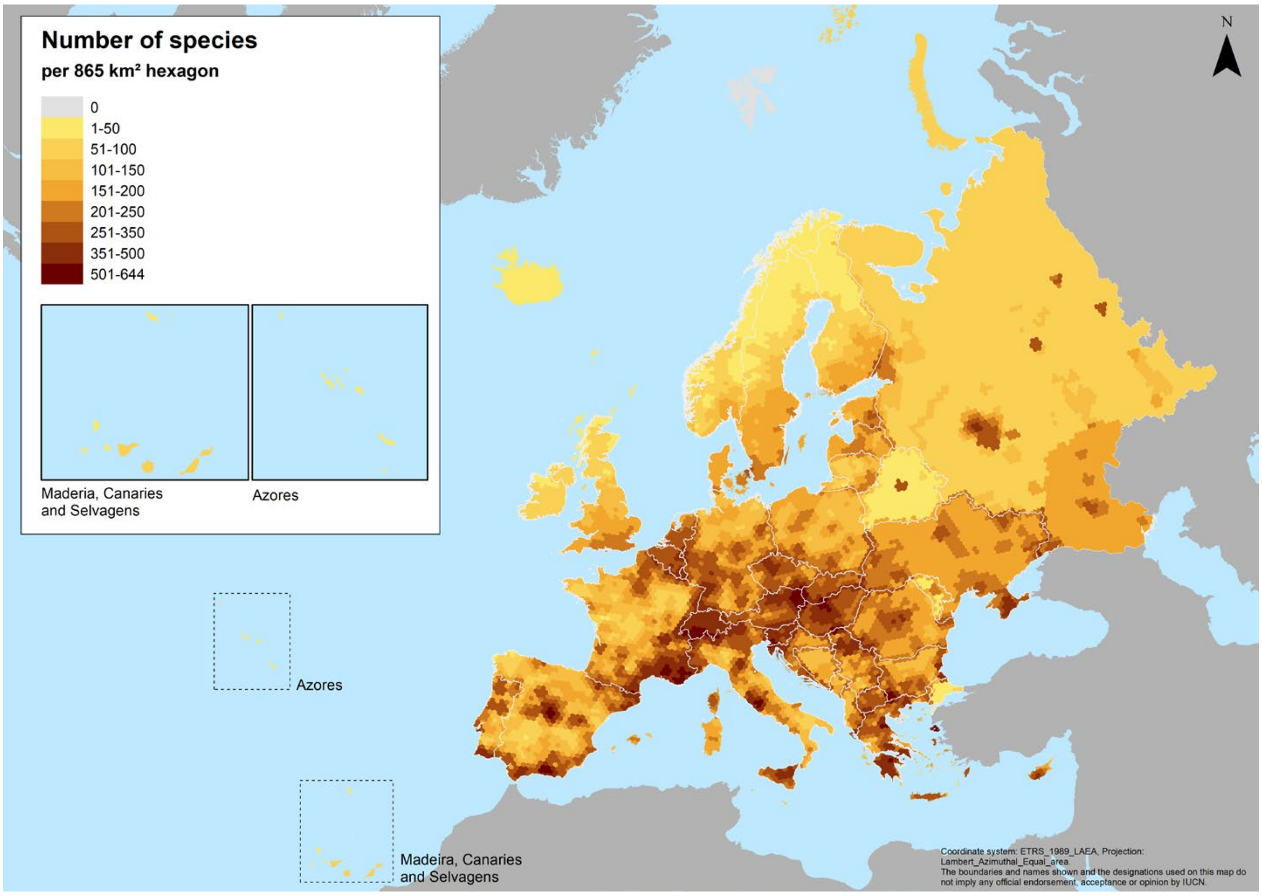


Figure 5. *Species richness of all European bees – darker colours indicate higher richness of species, based on available records. Country borders appear more prominent in some parts of the map (e.g. Belarus) due to the inclusion of some generalised whole-country polygons for some species in regions where there is a lack of more precise locality data.*

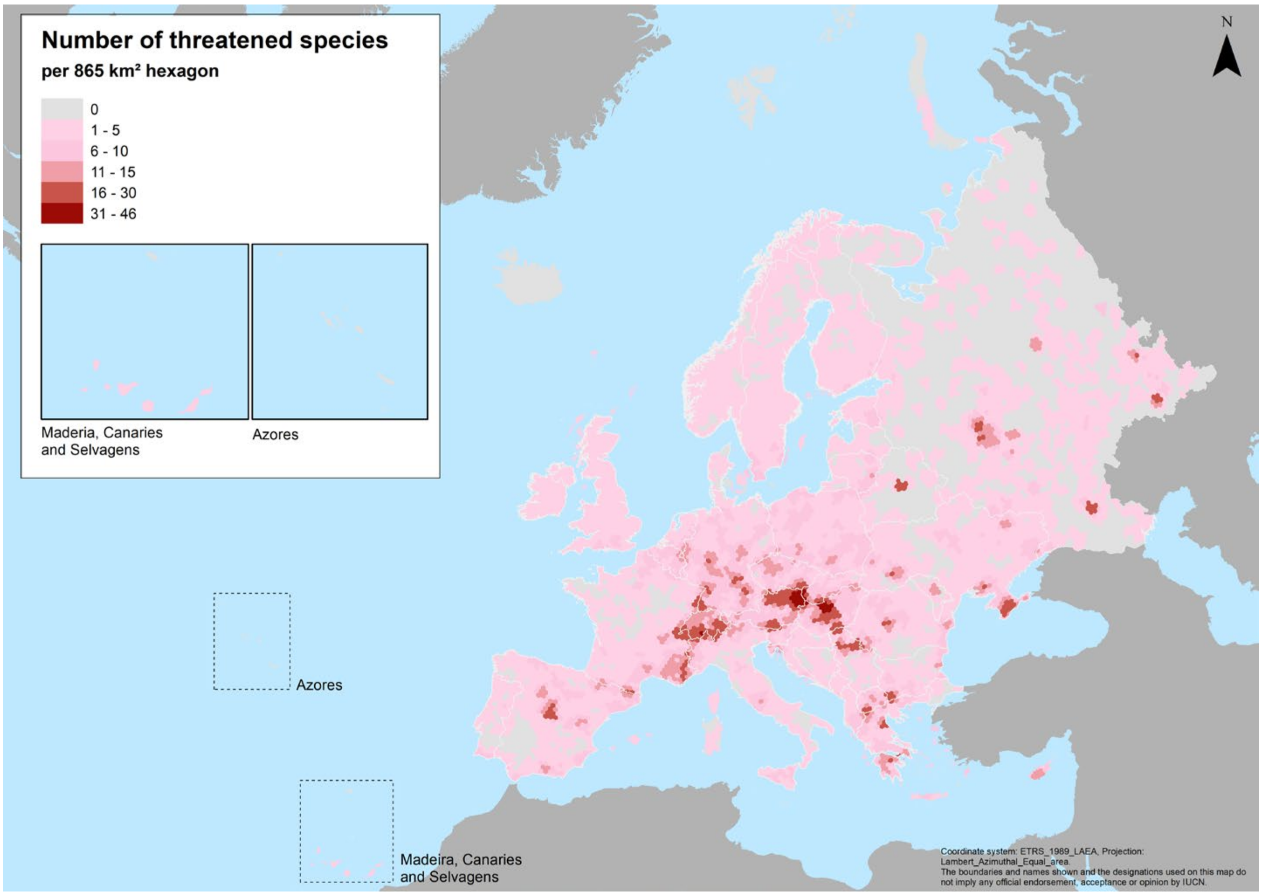


Figure 6. *Distribution of threatened bee species in Europe – darker colours indicate higher concentrations of threatened species.*

Bee richness and threats in the Mediterranean islands

The Mediterranean Sea has approximately 10,000 islands primarily distributed in the Adriatic, Ionian, and Aegean seas. The most significant Mediterranean islands by size are the Balearic Islands, Corsica, Sardinia, and Sicily in the Western part of the Mediterranean Sea, and Crete and Cyprus in the eastern part. These islands are influenced by the Mediterranean climate and exhibit a great diversity of habitats spread along their significant altitudinal gradients, with the highest peak reaching 3,357m in Sicily, and including elements of Euro-Siberian and Alpine vegetation in the highest mountains of Corsica (Médail, 2016). They are located at the intersection of three tectonic plates and are influenced by three different faunas. Thus, it is possible to observe a mix of European species with primarily North African species (e.g., in Sicily, Malta, or Lampedusa) or Oriental species (e.g., in the Aegean islands and Cyprus) that find their distribution limits here. Moreover, due to their insular nature and high mountains, these islands are home to endemic fauna, with nearly 100 endemic species recorded in the main Mediterranean islands to date (Owens and Riddiford, 2022). As a result, over 130 bee species reported from the Mediterranean islands do not occur in continental Europe (Reverté, Miličić et al., 2023). Insular endemism is still poorly known and might very well be underestimated.

Bees on Mediterranean islands and on continental coasts face the same intertwined threats, although island populations have naturally higher extinction probability due to their isolation, restricted distribution area, and low genetic diversity (Frankham 1998; Işik 2011; Lecocq et al., 2018; Mac Arthur and Wilson, 1967). This makes them particularly vulnerable to anthropogenic disturbances linked to the high human population density and concentration of economic activities on these islands. The primary threat is habitat destruction and/or degradation, often associated with human activities, with urban development, intensive agriculture, and tourism at the forefront (Petit et al., 2022; Vogiatzakis et al., 2020). Urban development and tourism primarily affect coastal areas, leading to significant degradation of dune systems and associated wetlands. This results in soil impermeability, pollution, and over-trampling of dunes. Intensive agriculture affects fertile plains and the coastline directly, impacting bee communities through the spread of biocides, the elimination of herb-layer (e.g., olive groves), or soil ploughing. It also affects them through landscape and plant community homogenization induced by increasing field sizes and fertilizer use (e.g., Neira et al., 2024; Tarifa et al., 2021).

In the past, traditional extensive transhumance pastoralism and traditional agricultural activities structured the landscape of Mediterranean islands in a more balanced and bee-friendly manner. However, the cessation or intensification of these practices is generally detrimental to biodiversity. On one hand, the abandonment of traditional agricultural practices, especially in the mountains (e.g., terrace farming), has led to land abandonment and colonization of various habitats by shrubs and trees. On the other hand, remaining open habitats frequently suffer from continuous overgrazing, which negatively impacts wild bee communities due to the reduction of floral cover, soil disturbance (e.g. over-trampling, ploughing), and eutrophication of habitats (e.g. Davidson et al., 2020; Kruess and Tscharntke, 2002; Thapa-Magar et al., 2020, 2022). In Corsica, the abandonment of transhumance for free-range or enclosed grazing has led to livestock concentration on the most profitable sites (Saïd and Auvergne, 2000). These sites are often habitats of high patrimonial interest, like Corsican peat bogs, now degraded by overgrazing. Intensive grazing is a common issue in many Mediterranean islands (e.g. Saïd and Auvergne, 2000, Vogiatzakis et al., 2020). Some areas of Crete have an average stocking rate at least four times higher than the grazing capacity. Uncontrolled practices can easily lead to overgrazing and to land degradation under arid and semi-arid climates (Papanastasis et al., 2002). Under the influence of climate change, the combined use of pasture fires and overgrazing leads to vegetation impoverishment and soil erosion, already causing desertification phenomena in Crete and the Aegean islands (e.g. Arianoutsou-Faraggitaki, 1985; Kairis et al., 2015; Morianou et al., 2021; Symeonakis et al., 2016). In these insular Mediterranean environments, floral resources (nectar and pollen) are increasingly depleted by drought, overgrazing by sheep, cattle, goats, and pigs, and also "overgrazing" by managed Honey Bee colonies. The number of beehives has exponentially increased in the Mediterranean basin over the past 50 years, leading to the replacement of wild bees by managed Honey Bees (Herrera, 2020). Excessive densities of managed Honey Bee colonies negatively affect wild pollinator populations either by competition over floral resources (e.g. Lázaro et al., 2021; Ropars et al., 2022; Shavit et al., 2009; Valido et al., 2019) and transmission of pathogens (e.g. Dalmon et al., 2021; Graystock et al., 2016; Tehel et al., 2022). Intensive beekeeping is indeed very common on the Mediterranean islands, and it is challenging to find locations where managed Honey Bees are not abundant. In a largely unfavourable context for biodiversity, the overabundance of managed Honey Bees is a serious additional threat to insular wild pollinators and should be a primary concern for conservation policies.

Finally, ongoing and future climate change will undoubtedly have detrimental consequences on insular communities. The most anticipated consequences of these changes include an intensification of droughts and extreme weather events (e.g. intense rainfall, heat waves), an intensification of drought-induced wildfire, and sea-level rise threatening coastal habitats (Vogiatzakis et al., 2016, 2020). One major concern relates to sub-alpine and alpine species and habitats, which are threatened by altitudinal shifts, and whose opportunities for dispersal are particularly limited in the island context (Inouye, 2020).

3.3.3. Endemic species richness

The richness of endemic bee species in Europe is shown in Figure 7 and is based on a total of 409 (of the 416) endemic species, with seven DD endemic species not mapped. Endemism appears to be relatively low in temperate parts of Europe (broadly above 50° North) because many species distributed in these regions have wide global ranges extending far into northern and Central Asia, and even to North America. The situation drastically differs in the southern European peninsulas with a higher proportion of endemic taxa, with notable peaks in Spain and Greece. The apparently lower bee endemism in Italy and a large fraction of the Balkans can be partly explained by undersampling in these otherwise diverse regions.

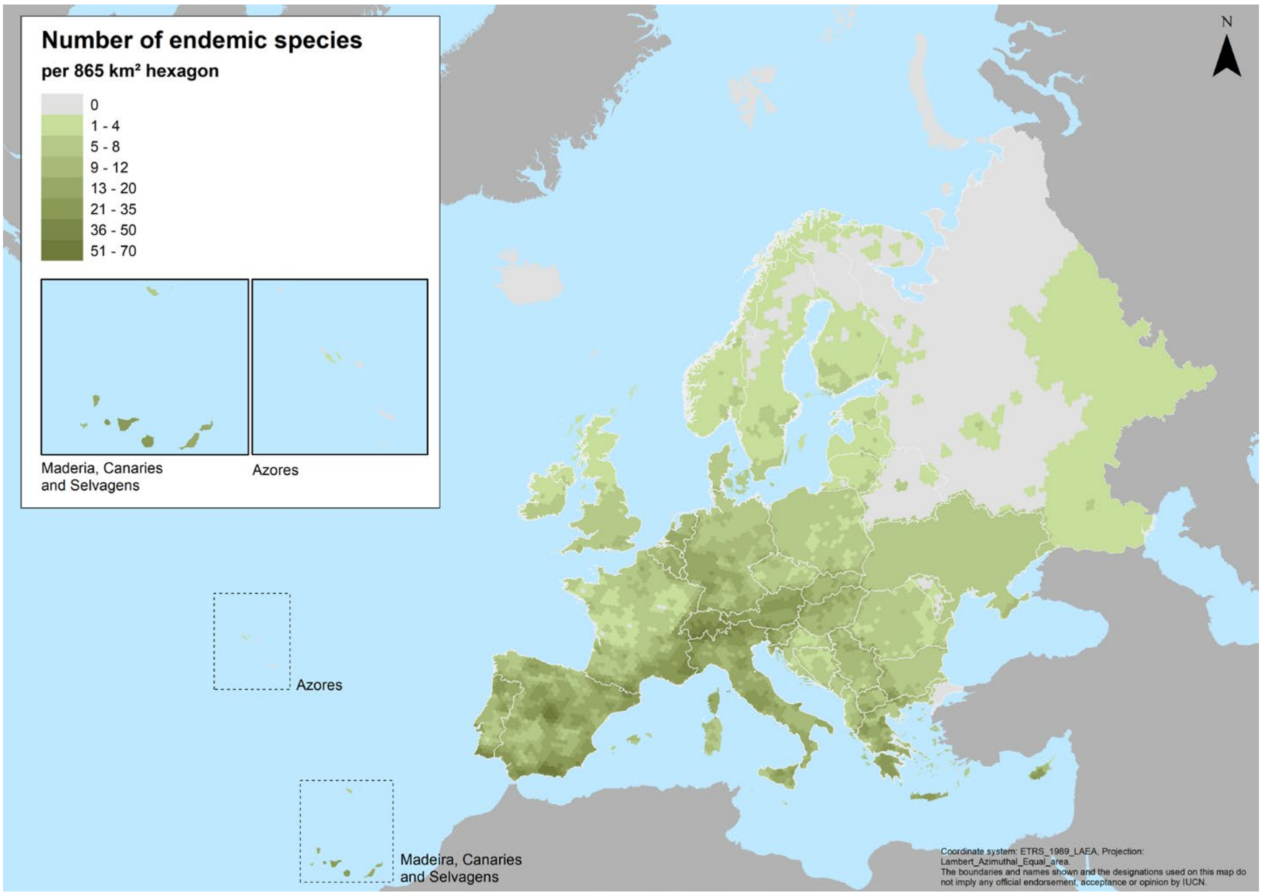


Figure 7. *Distribution of endemic European bees – darker colours indicate higher concentrations of species that are endemic to Europe.*

3.3.4. Data Deficient species richness

The richness of Data Deficient (DD) species is presented in Figure 8, based on a total of 255 (of 276) species classified as DD in this assessment at the European level; i.e., the potential ranges of 22 DD species could not be mapped and are therefore excluded here. Overall, DD species are concentrated in southern Europe, particularly in Spain, Italy, and across the Balkan Peninsula. The spatial pattern shown in Figure 8 broadly mirrors both overall species richness (Figure 5) and the distribution of endemic species (Figure 7) on the continent. In the case of DD species, the observed pattern likely reflects historical biases in sampling: countries with high species richness (mostly located in southern Europe) have generally received less intensive and systematic wild bee surveys both historically and in recent decades, strongly limiting the availability of data on species distribution, ecology, and conservation status in these regions. In contrast, western, central, northern Europe host fewer DD species, likely due to a longer-standing tradition of both professional and amateur entomological research and therefore the availability of more comprehensive historical data. Accordingly, the regions with the highest concentration of DD species should be prioritized in future survey efforts to accurately determine the status of these species in the context of global environmental change.

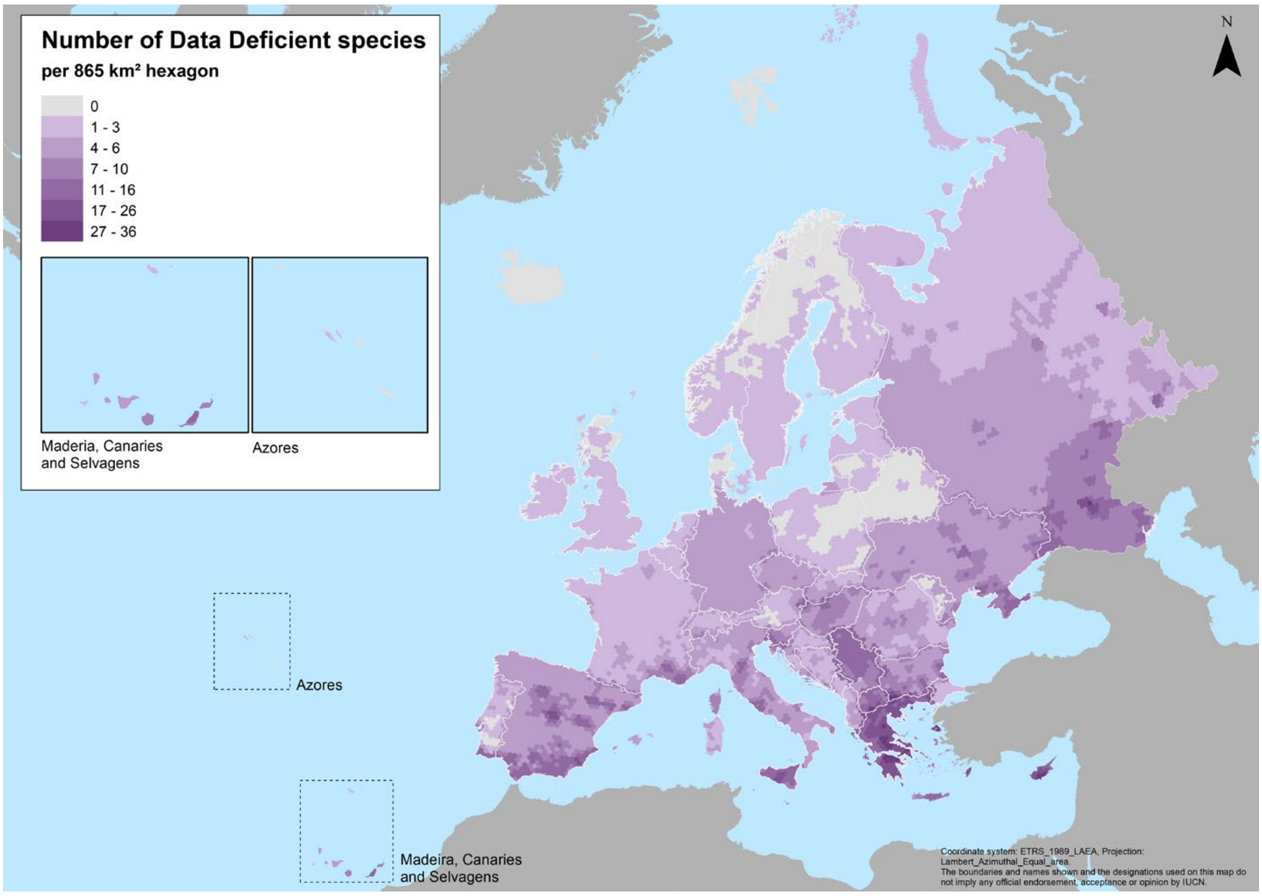


Figure 8. *Distribution of Data Deficient (DD) bee species in Europe – darker colours indicate higher concentrations of DD species.*

3.4. Major threats to bees in Europe

Out of the 1,927 bee species assessed in Europe, threats were identified for 879 species (with the remainder having no threats identified or threats unknown), with multiple threats often listed for a single species. Threats to bees can be complex and difficult to categorise, and species may be subjected to different pressures at different time points and at different life stages (Gekière et al., 2025). In addition, some threats interact or synergise with each other, for instance climate change with increased habitat fragmentation and pesticide use, potentially magnifying their individual effects and adding to the uncertainty of their impact on bee populations (Cameron & Sadd, 2020; Goulson et al., 2015; LeBuhn & Vargas Luna, 2021; Nieto et al., 2014; Rasmont et al., 2021; Williams & Osborne, 2009). A summary of the major threats to threatened and non-threatened European bees is shown in Figure 9.

This assessment revealed that the main threat to bees, regardless of their conservation status, was agriculture (as defined in the IUCN threat classification scheme). While aquaculture is also normally included with agriculture in IUCN assessments, it is not considered a threat to bees. A total of 608 species of bees are impacted by agriculture, of which 109 are threatened. As some threats also associated with agriculture (e.g. pesticide use) are included under other threat classification categories (e.g. pollution), we detailed below the evidence that wild bee decline is associated with intensive agricultural practices. It is expected that the number of species actually impacted by agriculture is higher, with a total of 694 bee species having at least one of the following threats mentioned in their assessment: agricultural and forestry effluents, annual and perennial non-timber crops, livestock farming and ranching, and wood and pulp plantations.

Regarding threatened bee species, the second and third most major threats are climate change and severe weather events, and residential and commercial development. Concerning non-threatened bees, pollution and natural system modifications (as defined in the IUCN threat classification scheme) are listed as second and third threats in terms of importance.

The following sections provide a brief literature-based overview of the major threats to bees.

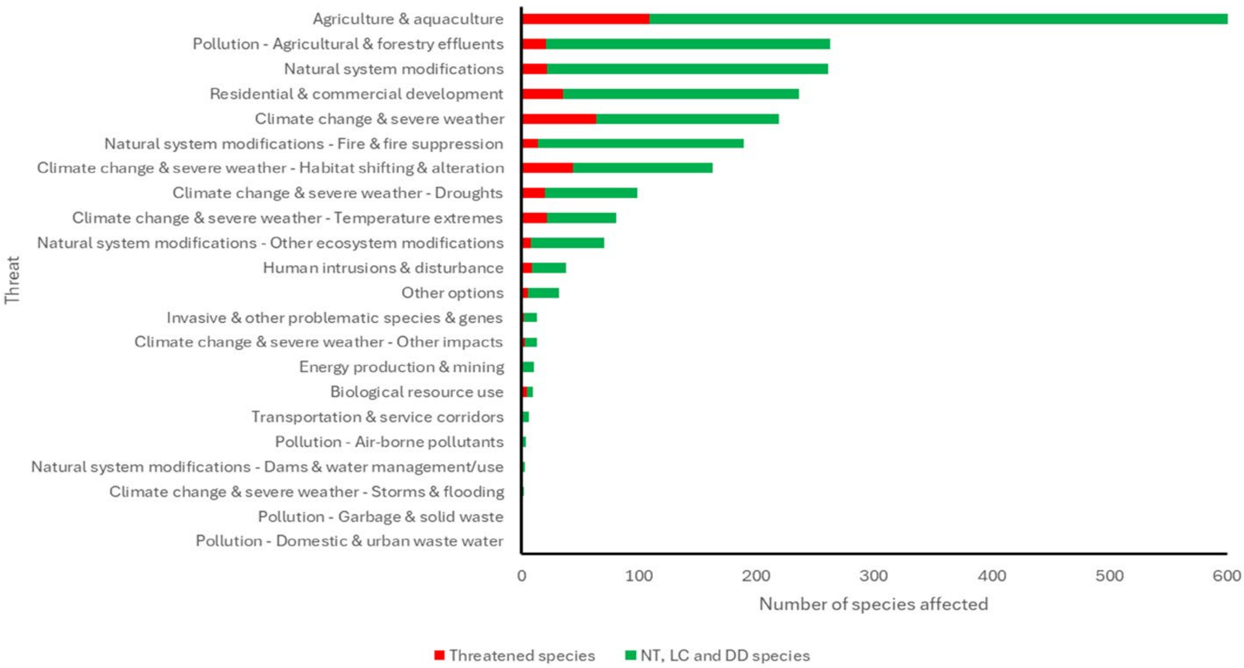


***Figure 9**. The primary threats identified for European bees based on the 913 species out of the 1,927 bee species assessed in Europe for which threats were identified. The remaining species are either threat unknown, or have no significant threats identified.*

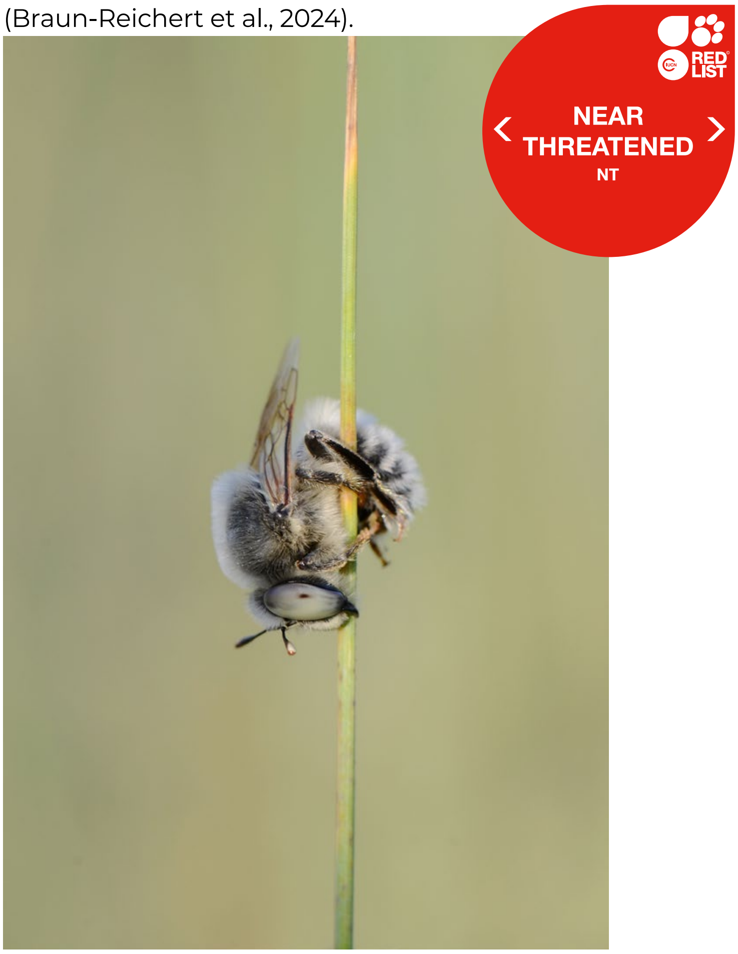
3.4.1. Habitat deterioration

A substantial proportion of the species evaluated in this assessment include habitat loss, deterioration or fragmentation as a factor of decline (i.e. these species are affected by either agriculture, natural system modifications, residential and commercial development, human intrusions and disturbance, energy production and mining, transportation and service corridors).

Habitat loss and fragmentation are the primary factors driving the decline in wild bee diversity (Dicks et al., 2021; Vray et al., 2019; Winfree et al., 2009). Habitat loss occurs when environments hosting diverse bee communities, such as flower-rich open lands, are replaced by alternative land uses that limit nesting and foraging opportunities or increase exposure to environmental stresses. Habitat fragmentation results from the isolation of suitable habitats by physical or ecological barriers, reducing genetic diversity and heightening the risk of extinction due to extreme events (Piessens et al., 2009; Vasiliev & Greenwood, 2023).

Agriculture has been the most significant component of land-use change over the past century (Winkler et al., 2021). Traditional rural landscapes once supported diverse species assemblages, but modern agricultural practices, characterised by intensive management, fail to meet the needs of pollinator species (St. Clair et al., 2022; Ockermüller et al., 2023). High-input agriculture exposes bees to pesticides (Knapp et al., 2023) and causes excess nitrogen concentration from fertilisers (Erisman et al., 2008; Fowler et al., 2013; Galloway et al., 2008; Sutton et al., 2011). This nitrogen imbalance has led to the eutrophication of European soils, homogenising and reducing the diversity of flower communities (McClean et al., 2011; Seabloom et al., 2021; Socher et al., 2013) and negatively impacting pollinator diversity (Carvalheiro et al., 2020; Ekroos et al., 2020). Without the need for leguminous crops or fallows, European fields now offer fewer floral resources throughout the year (Frenzel et al., 2021; Jachuła et al., 2021). This loss has been especially critical for bumblebees, such as the European Critically Endangered *Bombus cullumanus* (Rasmont et al., 2021). Herbicides and improved seed sorting further diminish the availability of nectar and pollen by reducing rare arable weeds that benefit pollinators (Twerski et al., 2022). Common but economically damaging weeds such as thistles are actively extirpated from European croplands, sometimes as part of farmers' legal obligations. However, these species provide important resources for bees (Balfour & Ratnieks, 2022; Vray et al., 2017).

Beyond agriculture, the conversion of open land to forestry, mainly for timber production or carbon sequestration through conifer cultivation, reduces suitable habitats for wild bee communities (Pérez-Gómez et al., 2024). Similarly, spontaneous forest recolonisation due to land abandonment negatively affects bee diversity (Penado et al., 2022; Prangel et al., 2023). This shift has been pronounced in heathlands, whose economic value has decreased relative to other land uses (Pérez-Gómez et al., 2024; Piessens & Hermy, 2006). Oligolectic bee species, strongly associated with Ericaceae, such as the bumblebee *Bombus jonellus*, may have regionally declined due to this conversion (Rasmont et al., 2021). Forests themselves have become less attractive for wild bees. In central Europe, forest gaps have become less frequent and increased atmospheric nitrogen deposition has led to denser vegetation dominated by nitrophilous plants such as brambles, adversely affecting ecologically specialised bees (Braun-Reichert et al., 2024).



Melitturga clavicornis (Latreille, 1806), male, France. © Géraud de Prémorel.

Urbanisation represents the other driving force of habitat loss, with projections indicating substantial growth of urban areas over forests and grasslands by 2100 (Chen et al., 2020). While cities are sometimes viewed as refugia compared to intensively managed agricultural lands (Baldock et al., 2019; Banaszak-Cibicka et al., 2018), recent research underline their roles as ecological filters, favouring a limited set of species (Buchholz & Egerer, 2020; Fauviau et al., 2022; Fiordaliso et al., 2025, Tsang et al., 2025). For example, impervious surfaces dominate urban landscapes, constraining nesting opportunities for underground species (Pereira et al., 2021). The prevalence of exotic flowers within urban ecosystems offers limited resources for oligolectic pollinators that forage exclusively on native plants (Ferrari & Polidori, 2022). Urbanisation is particularly harmful to coastal habitats, which suffer from the development of major European ports and mass tourism (Lagarias & Stratigea, 2023). This phenomenon

Species in the spotlight 1

Andrena hungarica Critically Endangered (Possibly Extinct)

Andrena hungarica is a strongly thermophilic mining bee species associated with Pannonian steppe habitats. In Europe, it was historically recorded from Austria, Slovakia, Hungary, Serbia and Romania, with an estimated extent of occurrence of more than 195,000 km². The species is likely to be polylectic, recorded foraging on flowering plants from the Brassicaceae (e.g., *Brassica, Erysimum, Sinapis, Sisymbrium*), Fabaceae (*Melilotus*) and Orobanchaceae (*Pedicularis*) families. The phenology of the species extends from the end of May to July, emerging as grassland flower abundance and richness increases in the late spring.

The last known record of *Andrena hungarica* is from 1962 from the steppe grasslands of Deliblatska Peščara in Serbia. Although the species has presumably always been uncommon (based on the small number of historical specimens available), it has clearly declined enormously. The populations of the species are likely to have been severely affected by agricultural intensification and the conversion of steppe habitats into agricultural land. Despite the extreme rarity and possible extinction of the species, it is not subject to any targeted conservation action, and it is not known if *A. hungarica* occurs in any protected area.

Surveys are urgently needed on remnant steppe habitats to determine whether this species continues to persist in Europe. In addition, further taxonomic research is needed to confirm the identity of records of this species from outside of the European region, where two subspecies have been described (ssp. *macroura* from the Anatolia region of Türkiye and ssp. *khuriensis* from the Caucasus), although morphologically they do appear to be conspecific with *A. hungarica*.

could reduce the populations of coastal bees, including numerous species unique to dune ecosystems (Devriese et al., 2024; Howe et al., 2010). High human population density also correlates with dense road networks, further isolating natural habitats. Traffic poses physical barriers to pollinators (Dániel-Ferreira et al., 2022; Fitch & Vaidya, 2021) and emits pollutants such as ozone and heavy metals, which stress insect species, affecting their foraging behaviour (Saunier et al., 2023) and increasing mortality rates in larval and adult stages (Gekière et al., 2023).

3.4.2. Pollutants

Human activities such as agriculture, industry, and traffic have released massive amounts of inorganic and organic pollutants into the global environment, including pesticides, plastics and plasticisers, heavy metals, and other contaminants (Morin-Crini et al., 2022). Consequently, bees in their natural habitats are frequently exposed to various toxic compounds, either through direct contact with substrates or ingestion via their food sources (Kopit & Pitts-Singer, 2018). In the field of bee ecotoxicology, pesticides are the most extensively studied pollutants, primarily due to their widespread use in agricultural environments where bees are heavily exposed. A recent Europe-wide study illustrated this by detecting over 70 active ingredients in the pollen stores of bumblebees (Nicholson et al., 2023). Although pesticides are designed to target pests, they can also affect bees. For example, insecticides like flupyradifurone or sulfoxaflor, which target insect pests like aphids and whiteflies, have been shown to have lethal and sublethal effects on bumblebees, solitary bees, and Honey Bees (e.g. Azpiazu et al., 2021; Barascou et al., 2021; Knauer et al., 2023). Even non-insecticidal plant protection products, such as fungicides and herbicides, have been found to be detrimental to bees, despite being considered safe for insects (Belsky & Joshi, 2020). Importantly, recent evidence suggests that co-formulants in pesticide formulations, which are used to increase the solubility of the active ingredient, may sometimes be more toxic than the active ingredients themselves (Straw et al., 2022).

While pesticides often receive significant attention, many other pollutants also threaten bee populations. Microplastics, surfactants, car exhaust emissions, per- and polyfluoroalkyl substances (PFAS), phthalates and heavy metals have been shown to negatively impact bees (Al Naggar et al., 2021; Dewaele & Cuvillier, 2025; Gekière et al., 2023; Mommaerts et al., 2011; Müller et al., 2025; Reitmayer et al., 2019). The toxicity of these compounds arises not only from their lethal effects but also from their sublethal effects, which can be equally detrimental to bee populations. For example, Honey Bees sampled near metal-polluted sites exhibited reduced learning performance and smaller head sizes, indicating diminished foraging abilities and weaker colonies (Monchanin et al., 2023). Likewise, exposure to polystyrene nanoparticles in Honey Bees resulted in reduced body weight and damaged gut epithelium (Wang et al., 2022), while exposure to PFAS reduced hive activity (Sonter et al., 2021). Additionally, field-realistic non-lethal concentrations of an insecticide caused a 90% reduction in total living sperm in solitary bees, significantly impairing their reproductive abilities (Strobl et al., 2021). From a population perspective, there is little distinction between compounds that are lethal and those that ultimately prevent reproduction. Therefore, sublethal effects should be thoroughly addressed in ecotoxicological studies and considered in conservation plans (Gekière et al., 2025).

The issue of toxic compounds is further emphasised by their tendency to co-occur in the environment. In a study of 350 pollen samples from 47 Honey Bee hives, Mullin et al. (2010) found over 30 different pesticides in some samples, with an average of seven different pesticides per sample. Recently, a meta-analysis reviewing 300 pesticide interactions found that over 70% exhibited synergistic effects in bees, meaning their combined effects were greater than the sum of their individual effects (Tosi et al., 2022). One common example of synergy occurs when bees are exposed to both sterol biosynthesis-inhibiting fungicides and insecticides. These fungicides are known to inhibit the metabolic pathways necessary for insecticide detoxification, exacerbating the toxic effects (Rondeau & Raine, 2022). In the wild, bees face exposure not only to multiple pesticides but also to various combinations of pollutants, such as pesticide-plastic or pesticide-metal mixtures. However, research on these complex interactions is still in its early stages and requires a more robust framework (Gekière et al., 2024).

Lastly, pollutants exacerbate the impacts of other stressors such as parasitism, climate change, and poor nutrition (Castle et al., 2023; Yordanova et al., 2022). In Honey Bees, on which much of the research in this area has been focused, simultaneous exposure to an insecticide and a microsporidian parasite led to synergistic lethal effects, likely because the insecticide impaired the bees' immunocompetence (Aufauvre et al., 2012). Similarly, solitary bees that were wintered at higher temperatures mimicking climate change scenarios showed greater sensitivity to insecticide exposure upon emergence (Albacete et al., 2023). In bumblebees, while insecticide exposure did not affect survival when workers were provided with a sugar-rich diet, a combination of insecticide and a sugar-poor diet significantly increased mortality (Linguadoca et al., 2021).

3.4.3. Climate change

Climate change significantly elevates the risk of extinction across all continents (Dicks et al., 2021). Some habitat types are particularly vulnerable to climate change, putting their associated bee fauna at risk. For instance, in the steppic regions of Eastern Europe, increased summer rainfall (Klimenko, 1994; Shahgedanov, 2002) has transformed dry xeric grasslands into meadows and scrublands (Penksza et al., 2003), adversely affecting bee species like *Bombus fragrans* that are confined to these dry habitats (Radchenko, 2009). As climate change progresses in Europe, more frequent and prolonged heatwaves and summer droughts are predicted, along with increased temperatures in Boreal, Arctic, and Alpine regions, which are expected to drastically alter vegetation composition (IPCC, 2021; Russo et al., 2015). These changes are already impacting species dependent on these habitats, with bee species in these biomes facing an increased risk of extinction (Kerr et al., 2015; Rasmont et al., 2015; Soroye et al., 2020). Moreover, the impact of elevated temperature in some biomes, such as Mediterranean regions, remains poorly investigated and warrants further attention (Kantsa et al., 2023).

Species in the spotlight 2

Dufourea minuta Vulnerable

Dufourea minuta Lepeletier, 1841, female, Austria. © Bernhard Jacobi

Dufourea minuta was a widespread species in Europe with a distribution ranging from Spain to southern Sweden and over the whole of Central Europe. Females of the species collect pollen on flowering plants of the Asteraceae family (e.g., *Hieracium, Lactuca, Leontodon*).

Subpopulations of *Dufourea minuta* have declined sharply in the northern part of its distribution, and the species has almost disappeared from the plains of central Europe. The species is Regionally Extinct in Belgium, Czechia, the Netherlands, Norway, and the United Kingdom. In Estonia and Sweden, it is Critically Endangered. The species is Endangered in Germany, and Vulnerable in Finland and Switzerland. The habitats and host-plants of *Dufourea minuta* are threatened by changing agricultural practices (e.g., increase of nitrogen deposition, herbicide use and the trend to replace hay with silage) which have caused a decline in the essential forage plant of the species.

Whilst the estimated extent of occurrence of the species exceeds 6 million km^2, the area of occupancy is very much less than 2,000 km^2 based on recent records and the species is precautionarily considered to be severely fragmented.

Further research is needed to monitor the population trends and habitat of this severely declining species.

Eucera brachycera (Gribodo, 1893), male, Spain. © José Luis Romero Romero.

Climate change impacts bees in several ways. First, certain species may shift their geographical range or their phenology, a prediction supported by current observations (Biella et al., 2024; Duchenne et al., 2020; Marshall et al., 2020; Wyver et al., 2023) – but see Kerr et al. (2015) for a discussion on the limited ability of some bumblebee species to track climate change. In addition, bee survival will depend on their tolerance to elevated temperature, with physiological traits such as critical thermal limits and behavioural plasticity dictating their ability to endure elevated temperatures (Gérard et al., 2020; Herrera, 2024; Kazenel et al., 2024). Sublethal effects of high temperatures including reduced fertility, smaller body size, altered diapause development, increased weight loss and fat body depletion, as well as drifted sensory perception and behaviour have been described in various bee species (Gérard et al., 2023; Martinet et al., 2021; Sgolastra et al., 2011). Beyond direct effects on bees, climate change will also impact the plants they interact with, complicating predictions due to the multifaceted nature of these interactions. Some studies indicate that changes in bee behaviour, such as changes in foraging and cognitive skills, could affect pollination efficiency (Gérard et al., 2022; de Manincor et al., 2023). Additionally, morphological mismatches may arise, notably if changes in tongue length are not matched by changes in plant corolla depth (Miller-Struttman et al., 2015). Finally, there is growing literature on the effect of the combination of stressors, with recent findings that warmer temperatures during winter coupled with field realistic insecticide exposure drastically reduce bee longevity (Albacete et al., 2023).

3.4.4. Fire

Fires are a frequent source of disturbance and one of the main causes of habitat conversion (Argañaraz et al., 2015). They can be caused by natural events and by human activity, and their frequency and intensity have doubled since 1984 because of climate change (Burton et al., 2024; Mansoor et al., 2022). The number of fires caused by humans is greater than those caused by natural events (Akyürek, 2023). In the

Mediterranean countries, more than 95% of fires are caused by human activity (Akyürek, 2023). Portugal, Spain, Italy, France, and Greece are the countries with the highest fire incidence, but fire events are increasingly occurring in historically colder parts of Europe (Mansoor et al., 2022).

Fires shape the diversity, composition and dynamics of plant and animal communities (Pausas & Keeley, 2009). They also disrupt their interactions and alter the services they provide and ecosystem functioning (Peralta et al., 2017). Fires influence bees directly by causing immediate mortality and indirectly by drastically changing bee habitats and floral resources. Bee susceptibility to fire varies depending on their traits (e.g. pollen specialisation, nesting behaviour). For instance, wood-nesting bees are more vulnerable to fire events, due to the destruction of the nesting material and the long time required for its regeneration (Simanonok & Burkle, 2019). Additionally, the burning of dead trees greatly reduces the availability of nesting substrates for bee species nesting in wood borings made by xylophagous beetles. Furthermore, some plant species may become more dominant, while others may be reduced or eliminated after fires. Generalist pollinators can readily adapt to this disturbance and feed on the available floral resources (Lazarina et al., 2016). In contrast, specialist bees, with their restricted range of host plants, are more likely to experience detrimental impacts from these changes (Carbone et al., 2019).

Apart from the direct effect of fires on plants and pollinators, fires can also alter their biotic interactions. Rises in generalist pollinator abundance can enhance the generality and the modularity of plant-pollinator interaction networks (Peralta et al., 2017). This increase can strengthen the network connectivity. However, it may also increase community fragility, as the effects of other stressors could spread rapidly across the entire community (Peralta et al., 2017; Stouffer & Bascompte, 2011).

Bees may show resilience to fire events depending on their flying abilities and functional traits (Peralta et al., 2017; Ponisio et al., 2020). They can quickly recolonise burnt areas as flowering plants reestablish. Nevertheless, frequent fires with short return intervals may weaken this resilience, not allowing sufficient time for reestablishment (Carbone et al., 2019).

3.4.5. Invasive alien species

The present epoch is marked by unprecedented connections between regions worldwide, which has accelerated the introductions of invasive alien species (IAS) beyond their native ranges (Laginhas et al., 2023; Seebens et al., 2021). Factors facilitating IAS spread include deliberate introductions for ornamental or agricultural purposes, as well as introductions via the pet or ornamental plant trade, escape from captivity, global commodities trade, and human transport (Pyšek et al., 2020). Many of these introduced species expand unchecked in new ecosystems, exerting influences on biodiversity through competition with native species and posing threats to their conservation, potentially driving some towards extinction (Duenas et al., 2021). Among IAS, three categories pose potential threats to native bee species: (i) bee predators; (ii) other bee species (i.e. competitors); and (iii) plant species. Examples of the former include the Asian Hornets, invasive in Europe and North America (*Vespa velutina* and *V. mandarinia*, respectively), which prey intensively on social bees, particularly the beekeeping-associated *Apis mellifera*, even leading to colony collapse (Rome et al., 2021; Wilson et al., 2023). Although not legally considered an IAS because of its natural occurrence in southeastern Europe, *Vespa orientalis* was accidentally introduced in southern Spain in 2018 and its range has been steadily expanding since then (Castro & del Pico, 2021). Like *V. velutina*, *V. orientalis* is an important predator of Honey Bees. The second category primarily refers to one solitary bee in Europe (i.e., *Megachile sculpturalis*, Giant Resin Bee). The introduction of this species in Europe (Vereecken & Barbier, 2009) was facilitated by the transport of nesting material such as wood or bee hotels (Geslin et al., 2020; Lanner et al., 2020). Competition for foraging resources occurs when introduced/managed and native bee species exhibit high overlap in their foraging niche in resource-limited ecosystems (Thomson & Page, 2020). This is especially evident with managed Honey Bees and bumblebees, which often occur at high densities and display generalist foraging strategies, thereby increasing the likelihood of competition with native species (Hung et al., 2019). Additional impacts of IAS include competition for nesting sites (Bogo et al., 2024; Russo et al., 2021); pathogen transfer (frequent with commercially available colonies; Alger et al., 2019; McArt, 2021); and reproductive disruption with closely related native species (Bartomeus et al., 2020; reviewed in Zakardjian et al., 2022). Acting in synergy, these factors may reduce native bee fitness and contribute to their decline (Russo et al., 2021). Lastly, invasive plant species can be introduced intentionally for agriculture, forestry, or horticulture, as well as unintentionally through seed transport via shipping, air, road, or rail freight (Pyšek et al., 2020). While their direct impact on native bee populations is relatively limited, some species produce toxic or low-quality floral resources that pose risks when they dominate bee diets (*e.g.*, Tiedeken et al., 2016). However, the major impact of invasive plants lies in their competition with native plant species for space, resources, and pollinators, potentially leading to the local extinction of some native plants (Hejda et al., 2021; Weidlich et al., 2020). Consequently, invasive plants may ultimately reduce the availability of floral resources for native bees and affect plant-pollinator networks (Parra-Tabla & Arceo-Gómez, 2021; Tourbez et al., 2025). Although some invasive plant species provide abundant floral resources, specialist and generalist bee species that cannot benefit from these resources due to morphological, behavioural, or phenological mismatches may experience decreased fitness, ultimately threatening their populations (Kovács-Hostyánszki et al., 2022). Considering the numerous pathways through which IAS threaten native bees, addressing these challenges is essential for safeguarding native bee populations and maintaining ecosystem functioning and biodiversity.

Species in the spotlight

Anthophora borealis Critically Endangered

In Europe, *Anthophora borealis* used to occur from Belgium and the Netherlands to European Russia, with the southernmost known locations from Romania and Hungary. It is the only species of *Anthophora* with such a distinctly northern distribution. This species seems to be associated with boreal taiga or similar forest-type. It was formerly found in sandy places in the central and southern Netherlands, occupying the edges of open pine forests, clear-felled areas and old clay quarries. The flowering plants visited by the species include Lamiaceae (e.g. *Stachys* and *Teucrium*), Fabaceae (*Trifolium*) and Boraginaceae (*Echium*). There is little information available on the habitat requirements of *A. borealis*, partly because its decline started very early during the 20th century.

While *A. borealis* has always been uncommon and scattered across its range, it appears to have suffered a critical decline over the last century. The species is considered extinct from its Westernmost locations, including France, the Netherlands, Belgium, and Estonia. The last known record of *A. borealis* in Europe is from Germany in 2002 and the species is a candidate for being considered Possibly Extinct, however, more information on the status of the species in European Russia is required. There are no conservation actions in place for this species, and it is unknown whether its distribution overlaps with any protected areas within its range.

3.5. Population trends

The species' overall populations were classed as 'declining', 'stable', 'increasing' or 'unknown'. In the following section, the percentages reported are calculated excluding species considered Not Applicable.

Of the 1,927 assessed European bee species, the population of 10.3% (199 species) of all species are thought to be declining, while the populations of 26.9% species are considered stable (518 species) and only 0.6% (12 species) are increasing.

However, very little population trend data exists from most European countries, and the population trend is unknown for 1,198 species (62.1% of all species).

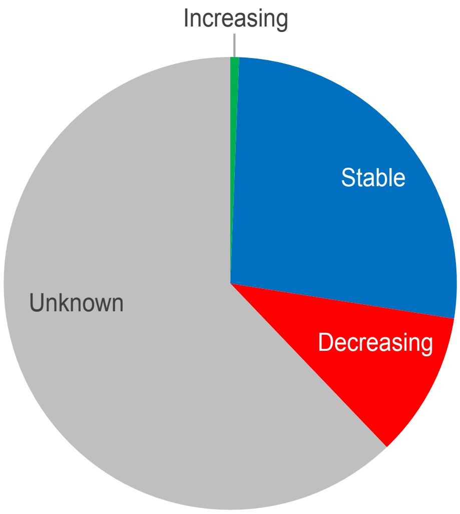


Figure 10. *Bee population trends at the Pan Europe level. Of the species for which we do have trend estimates, 27.4% are declining, 71.0% are stable, and just 1.6% are increasing.*

Regarding EU27's 1,875 evaluated species, 10.2% (192 species) are thought to be in decline, while 27.6% (517 species) are considered stable and 0.6% (12 species) are increasing (Figure 10). Very little population trend data exists for most EU27 countries, which consequently leads 61.5% (1,154 species) to have unknown population trends.

The observed declines in bee populations can be explained by the combination of factors detailed above in section 3.4. The identity of the genera that exhibit population declines is naturally correlated with those that present higher threat statuses (e.g. the parasitic genera *Ammobatoides* and *Biastes*, or the free-living genera *Colletes* and *Dasypoda*).

It is noteworthy that, in some genera, the population trends of a substantial proportion of species remain unknown. This is particularly evident in small genera represented by a single, poorly known species in the region (for example *Aglaoapis*, *Chiasmognathus*, *Clavipanurgus*, *Ensliniana*, *Epeoloides*, *Haetosmia*, *Hofferia*, *Metadioxys*, *Paradioxys* and *Simpanurgus*) for which population trends are currently unknown. However, it is also the case in much more diversified genera, such as *Eucera* (80 of 81 European species with an unknown trend, 98.8%), *Hoplitis* (all 85 of European species with unknown trend, 100%), *Hylaeus* (80 of 83 European species with an unknown trend, 96.4%) and *Megachile* (60 of 63 European species with an unknown trend, 95.2%). Unsurprisingly, many parasitic genera (of which many species are less commonly collected due to their natural rarity) also contain a large proportion of species with unknown population trends. This is for instance the case for *Melecta* (24 of 25 species, 96.0%), *Sphecodes* (41 of 47 species, 87.2%) and *Stelis* (21 of 22 species, 95.5%). Interestingly, these also correspond to genera for which important taxonomic challenges remain.

Overall, more than 50% of the bee genera evaluated at both the European and EU27 levels (38 of 74) contain >80% of species for which population trends are unknown.

Colletes perezi Morice, 1904, female, Spain. © Bernhard Jacobi.

3.6. Knowledge gaps

3.6.1. Taxonomic knowledge

Taxonomy is indispensable for preserving biodiversity and its benefits to human societies. Knowledge of species, their ecology, and their distributions is pivotal for providing high-quality assessments and to later implement relevant action plans for their conservation (Wood et al., 2021). In Europe, taxonomic expertise was historically primarily found in research institutions (e.g. Natural History museums and Universities). Museums are critical in the realm of insect taxonomy globally as they host substantial proportions of type material of insects (Cigliano et al., 2022). Nevertheless, while Europe holds significant responsibility for preserving taxonomic knowledge, the pool of taxonomic experts has been shrinking for several decades (Audisio, 2017; Green, 1998; Hochkirch et al., 2022). This shortage of trained taxonomists in Europe can directly impact our ability to conserve, use, and share the benefits of biodiversity (Global Taxonomy Initiative, 2021).

In 2022, IUCN published the *European Red List of Insect Taxonomists* (Hochkirch et al., 2022) to quantify and map the current and newly emerging gaps in expertise in insect taxonomy in Europe. This work, which also aimed to produce a set of recommendations for guiding future actions to overcome the detected gaps, showed that taxonomic capacity is threatened or eroded for 41.4% and 34.5% of the insect orders at the European and the EU levels, respectively.

Regarding wild bees, advancements in taxonomic knowledge since the 2014 European Red List (Nieto et al., 2014) have contributed to a significant reduction in the proportion of species assessed as Data Deficient. While DD species accounted for 56.7% (at the European level) and 55.6% (at the EU27 level) in the last Red List (Nieto et al., 2014), they only account for 14.4% (at the European level) and 13% (at the EU27 level) in the present work. Building taxonomic capacity was central in this process (e.g. important developments were made in the framework of the ORBIT and SPRING projects), as monitoring the distribution of wild bees fully depends on the availability of up-to-date and precise georeferenced data underpinned the taxonomic knowledge required to identify specimens to the species level (Leclercq et al., 2023). On the contrary, taxonomically understudied genera like the brood parasitic *Ammobates* and *Melecta* still include a large fraction of species assessed as DD (see above).

Despite this improvement and the substantial decrease in DD species, there remains a shortage of taxonomic expertise and capacity for wild bees in Europe (Marshall et al., 2024). Comprehensive keys to species at the European scale in English remain uncommon, and although national-level keys exist for certain groups, most focus on northern European countries and require updates to reflect modern species concepts. Common and coordinated efforts are currently developed in the framework of the ORBIT and EPIC projects (see section 5, Supporting research activities).

3.6.2. Population trends of bee species

In the context of the present assessment, population trends have been observed, estimated, inferred or suspected for 37.8% of the European species (729 of 1,927) and 38.4% of the EU27 species (721 of 1,875 species).

It must be noted that in the absence of published articles or targeted monitoring of species at the continental scale, assessments of trends by experts remain based on an unquantified comparison of the relative abundance of historical material deposited in museums and more freshly collected material. In this context, systematic species- to community-level monitoring schemes are urgently required to refine our understanding of population trends at smaller and broader scales in the absence of statistically-robust assessments. In the United Kingdom, BeeWalk schemes run by the *Bumblebee Conservation Trust* are a national-scale surveying monitoring scheme that accurately exemplifies such an initiative. Amongst their flagship species is the Great Yellow Bumblebee (*Bombus distinguendus*), that was here assessed as Vulnerable at both the European and EU27 levels. The BeeWalk scheme relies on >800 volunteers who identify and count bumblebees observed on a fixed walking route of around 1-2 kilometers. Each "BeeWalk route" is walked at least once a month from March to October. Data collected by volunteers are central to monitoring how bee populations change, allow early detection of population declines, and contribute to provide timely advice regarding conservation practices in response to changes in land-use and climate change.

At the continental level, the EU Pollinator Monitoring Scheme (EU PoMS; Potts et al., 2021, 2024) will soon provide annual data on both the abundance and diversity of pollinators, including wild bees, in each European Member State. The EU PoMs methodology answers the key policy requirements set out by the European Commission for EU under the Nature Restoration Regulation: (i) the implementation of a set of standardised and robust sampling sessions for monitoring species abundance of wild pollinators; (ii) yearly data collection in representative ecosystems (i.e. natural and semi-natural, urban and agricultural); (iii) the evaluation of the trends every six years to reliably detect changes (Potts et al., 2025). Data from this initiative will help refine our understanding of the population trends of a large set of bee species across Europe, and in turn inform on their status for the next IUCN Red List assessment of the European fauna.

Species in the spotlight

Bombus hyperboreus Vulnerable

Bombus hyperboreus Schonherr, 1809, female, Sweden. © Göran Holmström

Bombus hyperboreus is an Arctic bumblebee species found at latitudes higher than 60°N. In the European region the species is distributed north of the tree line and in the Alpine zone of the Scandinavian mountains. The species is presumed to have a generalist diet, in that it can exploit a range of floral resources for both nectar and pollen. In Europe, the flowering plants that are the most frequently visited by *B. hyperboreus* include *Astragalus alpinus*, *Epilobium angustifolium*, *Pedicularis lapponum*, *Taraxacum* spp. and *Trifolium pratense*. The inquiline behaviour of *Bombus hyperboreus* is remarkable: it is one of the few bumblebee species, outside of the parasitic subgenus *Psithyrus*, for which inquilinism is a well-documented behaviour. Although most females act as inquilines of their main host species (*B. pyrrhopygus*), some females of *B. hyperboreus* collect pollen and produce workers.

Data collected in the last decade suggest decline and fluctuations in the populations of both *B. hyperboreus* and its main host in Scandinavia. Laboratory experiments demonstrated that the resistance of *B. hyperboreus* to acute heat stress (measured as the average time the species resists to a thermal stress simulating a heat wave) is very low. The populations of the species will undoubtedly suffer from the increased frequency, intensity and duration of extreme climatic events expected in the region under climate change. Regardless of the dispersal ability of the species, results from climate and land use change modelling also suggest that *B. hyperboreus* is expected to lose nearly all climatically suitable European territories by the end of the twenty-first century.

Bumblebee decline in Europe

The abundance and diversity of bumblebees (genus *Bombus*) in areas frequented by natural historians of the northern hemisphere have made these colourful pollinators especially well-represented in European museum collections (Ghisbain, 2021; Kleijn and Raemakers, 2008; Rasmont et al., 2021; Wood et al., 2019, 2021). In comparison with many other groups of pollinator insects, this wealth of material has allowed scientists to gather massive amounts of biogeographic data that rapidly led to detecting local population and species declines across the continent (Free and Butler, 1959; Rasmont and Mersch, 1988; Williams, 1986). It is now clear that bumblebees constitute an especially threatened group of wild bees, as already quantified in the first *Red List of European Bees* (Nieto et al., 2014). Outside of Europe, numerous high-profile reports and reviews have also confirmed widespread collapses of bumblebee populations, including extirpations at national levels and possible global extinctions of species (Cameron and Sadd, 2020; Goulson et al., 2008; Williams and Osborne, 2009).

According to this reassessment, 22.7% of *Bombus* species in Europe are threatened with extinction, and 18.2% are considered Near Threatened. More than a third (36.4%) of European bumblebee species show a declining population trend. Despite being the most studied wild bees in Europe, 7 of 66 species still have unknown population trends. A major change with the first assessment (Nieto et al., 2014) is the consideration by experts of the upcoming impacts of climate and land use changes on these species in the next decades (Ghisbain et al., 2024; Rasmont et al., 2015). New data shedding light into the dramatic impact of extreme climatic events on wild bumblebee species could be used to refine our risk assessments (Gérard et al., 2022; Martinet et al., 2021a,b).

Overall, bumblebee decline in Europe is widespread and dramatic yet largely expected with regards to their climatic and habitat requirements. The overwhelming majority of *Bombus* species are cold adapted, which explains why the richest communities are found in cold and temperate environments such as mountain meadows. The boreal taiga and Arctic tundra also host large and diverse bumblebee communities across the Holactic, including in Europe (Williams et al., 2019). It is therefore with no surprise that climate change, through rising temperatures but also through extreme climatic and weather events (e.g. droughts and heat waves) can severely imperil large populations (Ghisbain et al., 2024; Rasmont et al., 2015; Martinet et al., 2015, 2021a,b). This trend is especially critical for Subarctic, Arctic and Arcto-alpine species like *Bombus alpinus, B. hyperboreus* and *B. pyrrhopygus*, three species that are currently assessed as Vulnerable in the present report.

In addition, widespread changes in land use and agricultural practices are central in explaining the large-scale decline in European bumblebee populations (Ghisbain et al., 2025; Rasmont et al., 2021). Although sometimes considered 'dietary generalists', implying an ability to feed on a large panel of flowering plants, many bumblebee species are constrained to feed on key pollen sources to feed their larvae. In this context, the availability of flowering plants of the Fabaceae family are critical for the local survival of many species, as shown in the pollen loads of these species when inspected in museum collections (Rasmont et al., 2021; Wood et al., 2021). The development of synthetic, industrial fertilisers produced through the Haber-Bosch process strongly reduced the presence of Fabaceae in European landscapes. The systematic use of these fertilisers also caused excess nitrogen deposits in European landscapes, decreasing the availability of nitrophobous melliferous plant species. The subsequent decrease in quality and quantity of key forage resources for bumblebees has been critical in the decline of the Vulnerable *Bombus confusus, B. distinguendus* and *Bombus pomorum,* and the Critically Endangered *Bombus cullumanus*. It is noteworthy that while some species appear to not be especially threatened at the continental scale, they might have gone locally extinct (e.g. the Near Threatened *B. subterraneus* that has vanished from Belgium, see Drossart et al., 2019).

Bombus confusus Schenck, 1861, male, Ukraine. © Eugene Karolinskiy.

4. Conservation action for European bees

4.1. Biodiversity protection in Europe and the EU

European countries and EU Member States are signatories to several important conventions aimed at conserving biodiversity, including the 1979 Bern Convention on the Conservation of European Wildlife and Natural Habitats, and the 1992 Convention on Biological Diversity. The Bern Convention is a binding international legal instrument that aims to conserve wild flora and fauna and their natural habitats and to promote European cooperation towards that objective. However, these conventions and regulations are poorly designed for pollinators as they mainly focus on vertebrates and not insects, and they target wetlands or forests where the diversity of wild bees is low. More recently the Pollinator initiative and the EU Nature Restoration Law (NRL) were developed with a strong focus on wild bees and pollinators. A new set of conservation actions are or will be implemented in these frameworks (see section 1.2).

4.2. Conservation management of bees in the European Union

Maintaining bee species diversity requires ensuring a mosaic of high-quality microhabitats across these systems (Fiordaliso et al., 2025; Kleijn et al., 2011). Conservation management efforts have traditionally focused on protecting habitats, nesting resources, and floral resources. Because bees, both as adults and larvae, are entirely reliant on floral resources for nutrition and survival (Michez et al., 2019), many conservation strategies prioritise the enhancement and diversification of floral availability. These actions can range from broad measures that benefit multiple habitats to highly targeted interventions designed for specific infrastructures (e.g., roadside verges or solar farms) or ecosystems (i.e., semi-natural, urban or agricultural landscapes).

Regarding semi-natural ecosystems, the Natura 2000 network of protected areas currently covers approximately 18.6% of EU territory (European Environment Agency, 2024). Many rare and range-restricted species are now confined to these sites, having disappeared from the wider landscape (e.g., Gérard et al., 2025). Although these areas were not originally designated for the conservation of wild bees, they remain a crucial tool for preserving biodiversity. Red List assessments indicate that 44 threatened species and 51 Near Threatened species occur in at least one protected area. However, the selection of Natura 2000 sites has historically been biased towards vertebrates (e.g., mammals, birds, amphibians), and the inclusion of threatened wild bees should be considered in future site selection and management plans (see Section 5.1, Recommendations).

Recent studies have also challenged the assumption that cities are poor habitats for wild bees. For example, 146 wild bee species have been recorded in Paris (France) and 291 in the urban and suburban areas of Lyon, representing roughly one third of the entire French bee fauna (Fortel et al., 2014; Reverté, Miličić et al., 2023, Ropars et al., 2025; Zaninotto & Dajoz 2022). In Vienna (Austria), 492 species are documented, i.e., 70% of all bee species reliably recorded from Austria (Zettel et al. 2022). Such findings have led some authors to describe cities as "refuges" for pollinators, likely due to lower pesticide use and increased urban conservation initiatives (Fauviau et al., 2022).

In agri-ecosystems, several conservation measures have been implemented across Europe. Mass-flowering crops such as oilseed rape, promoted under the EU Common Agricultural Policy (CAP) and increasingly cultivated to meet biofuel demands, can provide abundant but short-lived foraging resources that support generalist pollinators, including common bumblebees (Westphal et al., 2009). Similarly, apple and almond orchards, as well as late-season red clover fields, can host diverse wild bee assemblages (Rundlöf et al., 2014; Weekers et al., 2022). However, these resources have important limitations: their brief flowering periods may not cover the entire flight season, and they primarily benefit species able to exploit mass-flowering crops (Westphal et al., 2009). In some cases, they may even disrupt plant–pollinator networks or increase bees' exposure to pesticides by concentrating foraging activity (Nicholson et al., 2023).

Agri-environment schemes (AES), first introduced under the CAP in the late 1980s and now part of the EU Rural Development Programmes (RDPs), provide financial incentives for farmers to deliver environmental benefits. Among the most widely applied measures are sown wildflower strips, which can enhance bee abundance and diversity (Carvell et al., 2006; Scheper et al., 2013). However, these measures rarely benefit rare or habitat-specialist species (Korpela et al., 2013), which is unsurprising given that they are not specifically designed for their conservation. Meta-analyses of global evidence suggest that bee populations benefit most from maintaining patches of semi-natural habitat within farmland (Ricketts et al., 2008), practicing organic or low-input farming (Kennedy et al., 2013), and retaining small, heterogeneous fields with uncultivated boundaries, rather than large, simplified monocultures (Kennedy et al., 2013).

Overall, current mitigation efforts primarily support species assessed as Least Concern (Fauviau et al., 2024). While maintaining abundant populations of these common species is vital for sustaining pollination services (Kleijn et al., 2015), species-specific or guild-specific action plans are urgently needed (Senapathi et al., 2015; see Section 5). This is especially critical for threatened specialists (such as those dependent on teasel plants such as *Scabiosa*, *Knautia*, *Cephalaria*, *Succisa*) whose populations are so small that general landscape-level measures are unlikely to secure their long-term survival (Michez et al., 2023). Coordinated efforts at the European level will be essential for sharing best practices, standardizing implementation, and, where possible, enhancing connectivity among fragmented populations across borders.

Revising the status of wild populations of the Western Honey Bee in the European Union

Apis mellifera, the Western Honey Bee, is native to Europe, Africa, the Middle East, and Central and Western Asia (Dogantzis et al., 2021; Ghisbain, Rosa et al. 2023; Wallberg et al., 2014). However, the species was managed a long time ago. Although it is now the most widespread pollinator globally, as managed colonies have been introduced on all continents (except Antarctica) through beekeeping, it remains unclear to what extent the species still exists in the form of wild populations in Europe. The population trend of the managed population is well known and largely positive in Europe (see Figure a, below, and Wood et al. (2020) for further elements of discussion, and FAOSTAT/Production/ Live Animals, http://faostat.fao.org for updated data). The EU policy for wild pollinators - EU Pollinators Initiative - set the context for this Red List assessment. The Initiative targets wild species and their diversity within pollinator communities. As the Western Honey Bee primarily exists under human management in Europe, the species has been explicitly excluded from the scope of the Initiative and from this assessment of the wild bees of Europe. The European regional assessment of *Apis mellifera* can be found here: https://www.iucnredlist.org/species/42463639/277757621. In accordance with IUCN Red List methodology, the assessment of *Apis mellifera* focuses on the wild population of the species. "Wild population" is defined as self-sustaining groups of free-living colonies (i.e., colonies that nest in cavities they choose themselves and are unmanaged by humans), that are maintained through reproduction within, and the survival of, their own cohort, not via the introduction or immigration of feral swarms from managed apiaries.

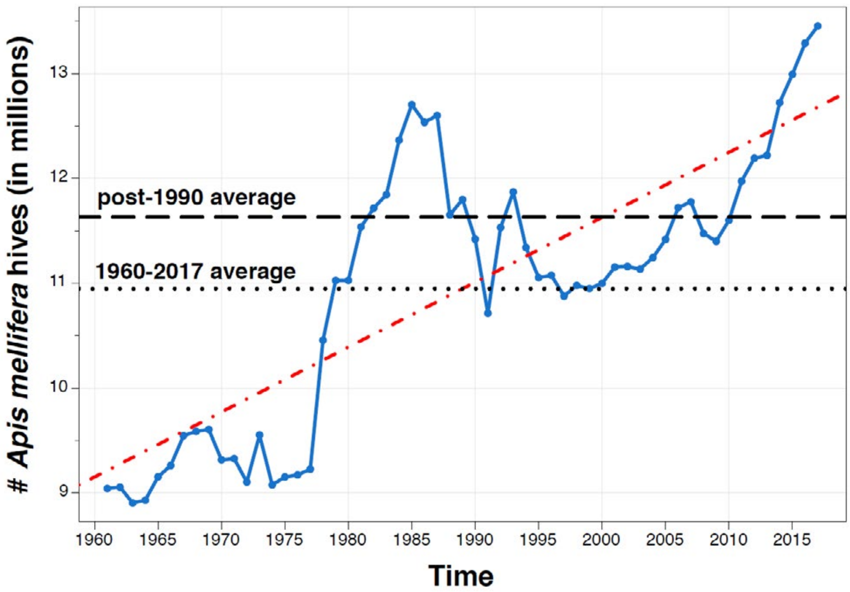


Figure a. *Evolution of the number of managed honey bee colonies in Europe between 1961 and 2017 (from Wood et al. (2020) based on data from FAO). The number of hives in Europe in 2023 is estimated at 25,405,342 according to FAOSTAT/Production/ Live Animals.* http://faostat.fao.org

Generally, free-living colonies can be found in temperate forests, shrublands, and grasslands. However, as their survival is critically dependent on the availability of floral resources and suitable nesting sites (both of which are becoming increasingly scarce, especially in areas of intensive land use) sightings of them are rare and their numbers remain unknown for many regions (Requier et al., 2015; Rutschmann et al., 2022). Although free-living colonies could in part avoid the latter limitation by nesting in artificial cavities (Bila Dubaić et al., 2021; Browne et al., 2020; Rutschmann et al., 2022), their overall survival is nevertheless hindered by several other biotic threats, such as invasive exotic parasites like *Varroa destructor* (Traynor et al., 2020), which is considered one of the most important drivers of wild populations' decline, pathogens like *Nosema ceranae* (Łopieńska-Biernat et al., 2017; Thompson et al., 2014), predators like *Vespa velutina* (Laurino et al., 2019), and pests such as *Aethina tumida* (Neumann et al., 2016).

Subject to no human intervention, the wild Honey Bee population undergoes natural selection, which favours the evolution of survival traits (Mikheyev et al., 2015). Unfortunately, modern beekeeping practices disrupt this process, inadvertently affecting free-living colonies, since the current high density of managed apiaries in Europe inevitably leads to interactions between these two cohorts. As beekeepers cannot control Honey Bee mating, and since there is no genetic division between the cohorts, local managed and free-living cohorts interbreed, leading to the introduction of traits that are advantageous in managed settings but maladaptive in the wild. Practices such as the large-scale movement of colonies, queen trade, and intensive selective breeding (all of which have increased dramatically over the last century) promote the spread and persistence of commercially attractive genotypes, rendering free-living colonies less capable of adapting to diseases and environmental changes, and further inhibiting their capacity to maintain wild populations (De la Rúa et al., 2009; Requier et al., 2019; Panziera et al., 2022). It is critical to adjust beekeeping practices with a view to mitigate these harmful impacts.

Assessments in the last few years indicate that, within the species' native range, Europe has the lowest density of free-living colonies (Visick and Ratnieks, 2023). A recent analysis of the survival rates of several free-living colonies from seven countries in Europe estimated an overall median wild population decline of 56% over a projected ten-year period (Kohl and Rutschmann, submitted). Given the extant evidence on threats affecting colony survival and their suspected dramatic population decline, the Red List status of wild *A. mellifera* population in the EU27 region has therefore been reassessed as Endangered. At the wider Pan European level, the species is retained as Data Deficient at present, given the paucity of data on free-living colonies in this larger region.

Further research on free-living colonies is urgently needed in order to identify and eventually protect self-sustaining populations. To achieve this, it is imperative to support current and emerging research focused on locating, monitoring, and studying colonies in the wild, which is the mission of international research coalition Honey Bee Watch. For more information and to get involved as a research partner or citizen scientist, visit www.honeybeewatch.com.

Apis mellifera Linnaeus, 1758, Ireland. © Arrigo Moro.

4.3. The Red List versus priority for conservation action

Assessing extinction risk and establishing conservation priorities are interrelated but distinct processes, with the former often guiding the latter. Extinction risk assessment, such as assigning IUCN Red List Categories, typically precedes priority setting for conservation. The primary aim of the present Red List categorisation is to provide a relative estimate of the likelihood of extinction for all known European bees. Conservation priority setting at the European level, however, extends beyond extinction risk assessment alone and incorporates factors such as local conservation status, that can be estimated through national Red List initiatives. For European bees, numerous reports evaluating extinction status or rarity of species provide invaluable information about their population trends across the continent (see for instance Amiet, 1994; Artsdatabanken, 2021; Cordillot and Klaus, 2011; Drossart et al., 2019; Falk, 1991; Farkač et al., 2005; Fitzpatrick et al., 2006; Gärdenfors, 2010; Głowaciński & Nowacki, 2009; Gogala, 2018; Feráková et al., 2001; Hejda et al., 2017; Hyvärinen et al., 2019; Kålås et al., 2010; Lilleleht, 2001; Monchenko et al., 2009; Peeters & Reemer, 2003; Quaranta et al., 2018; Rašomavičius, 2007; Rassi et al., 2010; Reemer 2018; Sárospataki et al., 2005; Schembri & Sultana, 1989; Spuris, 1989; Timuş et al., 2017; Verdú & Galante, 2006; Westrich et al., 2008, 2012; Wind & Pihl, 2010). Beyond extinction risk, setting conservation priorities also considers the feasibility of conservation efforts, including the probability of success, funding and personnel availability, cost-effectiveness, and legal frameworks for protecting threatened taxa.

Overall, species-level targeted conservation management for wild bees is limited. Results from the present assessment further demonstrate that bee conservation should primarily focus on the protection, restoration and conservation of habitats, as it cannot enable protection at the individual level, in contrast to what can be done for some larger birds and mammals.

5. Recommendations

5.1. Recommended actions

A more detailed overview of the following recommendations can be found in the 'Assessment to Plan' (A2P) report of Reverté et al. (2025).

5.1.1. Policy recommendations

The effective conservation of bees in Europe requires a robust policy framework that integrates existing instruments with new data and evidence-based targeted measures. First and foremost, the full implementation of existing pollinator policies must be ensured. This implies securing sufficient resources to translate strategies into tangible actions in Member States, while also improving coordination at transboundary levels. Habitat restoration and management efforts under EU legislation should be systematically linked with the ecological requirements of bees, and especially wild bees, ensuring that the issues highlighted in Section 3.4 of the present report are addressed directly at their source. In this context, the habitats that are essential for the survival of threatened species must be imminently recognised and integrated into the protected area and conservation status targets of the EU Biodiversity Strategy 2030.

The EU Habitats Directive (Council Directive 92/43/EEC) offers a strong framework to support bee conservation, but it requires refinement and targeted use. A dedicated list of bee taxa that are typical of habitat types protected under the Directive should be further developed in coordination with experts, building on initiatives such as the PollHab project (https://pollhab.com/). Priority habitats listed in Annex I of the Habitats Directive must be objectively reassessed considering their significance for the bee species that were assessed here as threatened, and awareness must be raised about the species found within these habitats. To strengthen national action, every European country should receive dedicated funding to establish and periodically update, on a five-year basis, a national Red List of bees in line with IUCN criteria (see examples of such works in Section 4.3). These Red Lists must then be considered by each Member State to prioritise conservation actions and to monitor progress in bee conservation (cf. Potts et al., 2020, 2024). Complementary to this, threatened bee species should be added to national protected species lists, thereby securing legal protection.

Policy instruments must also address the economic dimension of conservation. Subsidies should be redirected to reward farmers who adopt the principle of "no net loss of natural capital," while grazing and farming practices that support pollinator habitats must be encouraged in priority areas. The current implementation of agri-environmental measures under the Common Agricultural Policy requires critical revision to better accommodate the ecological requirements of bees. This includes extending the minimum duration of field margins created for pollinators, eliminating subsidies that encourage beekeeping in biodiversity-rich or succession habitats, and ensuring that financial incentives align with ecological priorities highlighted in this report.

Another crucial dimension concerns the testing and regulation of chemical products (cf. Section 3.4 and references therein). Member States should collectively endorse the revised EFSA guidance on the risk assessment of plant protection products for bees at the PAFF Standing Committee, thereby ensuring that new substances are evaluated with more ecologically relevant criteria (Sgolastra et al., 2019), including non-model bee species (Wood et al., 2020).

Managed bees and exotic species also pose challenges (cf. Section 3.4 and references therein). The international market of Honey Bee hives and individuals of other bee species from outside Europe should be prohibited. In agriculture and industry, managed pollinators must be restricted to species already established within the European territory. Strict rules on the health management of domesticated bees should be enforced and must require regular veterinary assessments and comprehensive pathogen screenings. Finally, biosecurity policies concerning exotic species must be strengthened. The European invasive alien species regulation should be updated to better prevent introductions, and an alert list of invasive non-native bee species should be established to allow public reporting and early response.

5.1.2. Habitat conservation

Effective conservation of bees in Europe requires a combination of habitat protection, sustainable land management, pollution control, and refined agricultural practices (cf. Section 3.4 and references therein). Protecting habitats of high bee diversity and endemism is a top priority, particularly in Mediterranean and montane ecosystems and in species-rich grasslands, which face mounting pressures from soil pollution and other anthropogenic disturbances. Conservation planning in these areas should focus on maintaining open spaces and ecological heterogeneity. In parallel, the identification, protection, and monitoring of micro-habitats that are essential for bee nesting, foraging, and mating must be reinforced. Developing relevant targets and indicators for priority habitats will provide a robust basis for long-term monitoring and evaluation of their contribution to bee conservation.

Management of key areas for threatened pollinators must be informed by the Red List status of species at European, national, and regional levels. This entails identifying priority species and threats for each area and aligning conservation actions with national responsibilities. Synergies with broader biodiversity initiatives such as Natura 2000, Important Bird Areas, Important Plant Areas, and Prime Butterfly Areas should be actively sought to maximise effectiveness. In this context, habitat connectivity is fundamental: conservation efforts must favour diverse, multi-layered landscape structures, restore semi-natural ecotones such as hedgerows and road verges, and avoid disruptive infrastructure along forest borders. Buffer zones are needed to shield priority habitats from excess nitrogen, pesticides, and seed coatings, while nitrogen deposition and soil eutrophication should be substantially reduced.

Agri-environmental schemes play a crucial role and should be further developed to explicitly benefit wild bees. This includes ensuring the availability of diverse floral resources and nesting sites across a range of farming systems. For example, Schwarz et al. (2024) showed that diverse pollen nutrition can improve the development of solitary bees. Farmers should be supported in transitioning towards sustainable land management with reduced pesticide and fertiliser use, low or no tillage, and encouraged to adopt alternative systems such as agroforestry, mixed cropping, and cover crops. Measures should also include the promotion of mass-flowering crops within arable landscapes and improved baseline habitat quality on farmland. Industry-led efforts can contribute by encouraging uptake and effective management of these schemes at the local scale. Additional financial incentives should help farmers implement pollinator-friendly practices consistently and long term.

Reducing chemical pressures, especially in important areas for threatened bees, is essential (see Section 3.4 and references therein). Clear and quantitative targets must be set for a sustained reduction in pesticide and fertiliser use, thereby decreasing pollution and improving soil and water quality. Integrated pest management, natural enemies, and other alternatives should be promoted as viable pest control strategies. At the same time, improved training and advice must be offered to farmers, landowners, managers of public and amenity spaces, and gardeners regarding safe pesticide use, with a focus on reducing exposure risks for wild bees.

Specific measures are also needed to support good beekeeping practices in sensitive habitats, as well as other commercialised and managed species. The number of Honey Bee colonies placed in areas with limited floral resources should be carefully regulated according to nectar and pollen capacity (Henry & Rodet 2018; Pasquali et al. 2025; Ropars et al., 2019; Torné-Noguera et al., 2016; Valido et al., 2019; Weekers et al., 2022). Guidance must be provided to beekeepers on managing risks to managed and wild bees.

Invasive plants and insects require strict control through rapid detection, eradication, and restoration with native vegetation. Prioritised species lists should be integrated into national and regional action plans.

Soil erosion control is another important aspect of sustainable management. Planting native melliferous plants along slopes and field margins, maintaining perennial cover, and implementing low-tillage practices all reduce habitat degradation. Agroforestry systems such as the traditional Mediterranean dehesa offer additional benefits by combining productive land use with biodiversity support. Fire management also requires careful planning: sustainable fire breaks, grazing, prescribed fire, and the promotion of fire-resistant native plants can prevent uncontrolled wildfires while maintaining high post-fire bee diversity.

Urban, mountain, and island ecosystems require tailored strategies (Reverté et al., 2025). In cities, enhancing green spaces with native flowering plants, creating ecological corridors, and preserving undisturbed nesting patches are effective measures. Citizen awareness, gardening practices favouring native species, and citizen science programmes can reinforce conservation outcomes. In mountain landscapes, conserving habitat heterogeneity, supporting sustainable grazing levels, delaying mowing or grazing until after flowering peaks, and restoring abandoned terraces can all contribute to resilience. On islands and in coastal areas, controlling invasive species, protecting dune systems, conserving native flowering plants, and regulating tourism infrastructure are essential steps to mitigate vulnerability and safeguard unique bee communities.

Finally, climate change mitigation and adaptation must be embedded across all strategies. Promoting habitat mosaics, conserving native flora with staggered blooming periods, and creating thermal refuges such as shaded areas and stone walls can help bees adapt to shifting conditions. Corridors between key habitats and refugia will be crucial to ensure gene flow and population persistence under future climate scenarios.

5.1.3. Supporting research activities

Bee conservation in Europe requires a multi-layered approach that combines targeted species and habitat action plans, long-term monitoring, research into ecological drivers, investment in taxonomy, and the building of expert capacity. The results of this report highlight that it is now essential to implement coordinated actions that address both the immediate threats to species of conservation concern (cf. Section 3.4) and the structural deficits in our knowledge and expertise (cf. Sections 3.5 and 3.6).

The establishment of long-term, dedicated networks of bee experts and parataxonomists will be central to advising local authorities and ensuring effective conservation actions. Such networks should be strengthened by investing in the training of new specialists, creating career opportunities for young researchers, and ensuring the permanent integration of high-profile taxonomists in universities and research institutes. These experts are urgently needed to lead digitisation of historic museum collections, create new reference collections, and maintain updated identification resources that underpin all other conservation efforts.

Research on lesser-studied bee groups (cf. Sections 3.5 and 3.6) must be encouraged alongside work on model species, to obtain a more representative understanding of ecological responses to global change. Efforts should continue to properly delineate species' distributions at national and continental scales, refining our understanding of their reliance on key climatic and landscape variables. This requires surveys of species-rich areas that remain underexplored, such as Mediterranean mountains and islands, where concentrations of threatened bee species are likely to be highest. Coordinated national and European monitoring should ensure temporally and spatially updated distribution data for each species, incorporating phenological information to capture seasonal life-cycle variation and ecological interactions.

Research should also address the proximate and ultimate drivers of bee decline across Europe, including well-known stressors such as pesticides and habitat loss, but also lesser-studied threats such as fire, droughts, tourism pressure, soil eutrophication, and even human conflict. Taxonomic and systematic work must be further supported to fully characterise Europe's bee diversity, complemented by fundamental ecological studies aimed at improving our understanding of bee biology, behaviour, and interactions with their environment.

To support this research base, the tools for wild bee identification must be continuously expanded, adapted, translated and made accessible to both experts and non-academic audiences (e.g. Gaspar et al., 2025; Mudri-Stojnić et al., 2023). Regional and European-level identification keys must be constructed and updated for all of Europe's bee species. While some progress has been made through projects such as ORBIT and EPIC-Bee, identification keys are still lacking for many parasitic groups (e.g. *Melecta*, *Sphecodes*) and for large genera such as *Andrena*, *Anthophora* and *Lasioglossum*. Regional keys should be translated and adapted into local languages to ensure accessibility.

Training and certification represent another pillar of this strategy. Following the recommendations of the European Red List of Insect Taxonomists, urgent measures must be taken to address the deficit of bee expertise. Training citizen scientists to identify common species, while leaving more difficult cases to specialists, can greatly expand monitoring capacity. Certification schemes, already piloted under EPIC-Bee, should be developed further to provide structured progression for practitioners. Dedicated grants and a stable job market are required for young researchers, while permanent positions for taxonomists should be secured in academic institutions to guarantee continuity of expertise.

Monitoring must also be targeted towards overlooked and threatened species (e.g. Santerre et al., 2025). This includes integrating a "rare and threatened species module" into EU-wide monitoring schemes such as EU PoMS and increasing the spatial coverage of data collection. Opportunistically gathered but validated records from non-academic entomologists should be incorporated, and existing insect collections should be digitised as standard practice. National and European monitoring programmes must be coordinated to provide a coherent picture of bee diversity across regions and time.

Red Lists remain central tools for conservation planning. In addition to European assessments, national and regional Red List assessments must be developed, promoted and regularly updated, at least every ten years, to reflect changing conditions and threats. Recommendations from this report should also be applied to taxa that, while currently not listed as threatened, are subject to similar pressures and may face future risks.

To support these efforts, a dynamic, accessible, and centralised European repository for wild bee data must be developed. Existing platforms such as GBIF, iNaturalist, or ObsIdentify provide a starting point, but an optimised repository should integrate data on species distribution, phenology, ecological traits, bee–plant interactions, photographs of living bees, and molecular data such as DNA barcodes. Funding is essential to ensure the repository's long-term functioning, staffing, and continuous updating. Standardised forms for data collection should be created to integrate information from citizen scientists and non-academic contributors seamlessly.

Finally, the establishment of national wild bee collections and databases should be promoted, alongside regular data exchange with regional and continental repositories. The validation and digitisation of historic natural history collections are equally important, as they provide the baseline knowledge required to track long-term change.

5.1.4. Supporting awareness activities

Improving the perception of bees, and especially wild bees, among the general public is critical for fostering support for their conservation in Europe. Awareness campaigns should be developed and delivered at the national level and in local languages, engaging agriculture, forestry, education, land management, journalism and policymakers. Politicians should be encouraged to sponsor or adopt threatened bee species as flagships for outreach, thereby expanding public interest away from the Honey Bee towards the broader diversity of wild species. Public engagement should also build on aesthetic and experiential dimensions: high-quality images of bees in the field, guided walks, citizen science initiatives and repeated bioblitzes are effective ways to cultivate enthusiasm across age groups and to build communities of long-term supporters. These efforts should be complemented by the creation of regional and transnational wild bee atlases, including tourist areas, that integrate biological, ecological and even folklore knowledge to enrich cultural connections with wild bees.

In this context, education remains a cornerstone of long-term change. Innovative curricula for schools and adult learning should highlight the ecological significance of wild bees. Platforms such as the Pollinator Academy (pollinatoracademy.eu) can serve as hubs of knowledge, provided that content is regularly expanded, updated, and translated into all European languages. Agricultural schools in particular should integrate state-of-the-art content on the effects of management practices on wild bees, thereby equipping future farmers with knowledge to adopt sustainable approaches. Beyond technical knowledge, educational programmes must also encourage children and teenagers to develop an environmentally responsible mindset, linking their consumer choices and lifestyles to wider impacts on biodiversity and climate.

Finally, clear and centralised guidance is necessary for all sectors with direct impacts on pollinator habitats, including agriculture, forestry, beekeeping, and grazing systems. Existing EU Pollinator and Biodiversity Guidance documents, alongside project-specific resources, should be collated and promoted widely. Where gaps exist, new guidelines must be developed, with explicit sections dedicated to the identification, protection, and management of threatened bee species. Specialised guidance should also address the management of grazing systems and habitat restoration, ensuring that the needs of wild bees, especially those assessed as threatened or with declining population trends in this report, are embedded into land-use practices across Europe.

5.2. Application of project outputs

The *European Red List of Bees* is a direct outcome of the EU Pollinators Initiative and complements the wider initiative of assessing the conservation status of all European species. It provides key resources for decision makers, policy makers, resource managers, environmental planners, NGOs and the concerned general public by compiling and distilling large amounts of data on the population, ecology, habitats, threats and recommended conservation actions for each bee species.

Red List assessments are intended to be relevant to policy and can be used to inform the processes of conservation planning and priority setting. However, they are not intended to be prescriptive with respect to policy and are not in themselves a system for setting conservation priorities. The data are freely available on the IUCN Red List website (www.iucnredlist.org/regions/european-red-list), on the website of the European Commission dedicated to European Red Lists (https://environment.ec.europa.eu/topics/nature-and-biodiversity/european-red-list-threatened-species_en) and through paper publications (see the list of published European Red Lists at the end of this report).

The EU Red List of Bees data and knowledge will be key in helping to define the priority species to be considered for monitoring under the EU PoMS methods focussed on rare and threatened species (Potts et al. 2024). Red Lists are also a dynamic tool that will evolve with time as species are reassessed according to new information or situations. They are aimed at stimulating and supporting research, monitoring and conservation actions at local, regional and international levels.

Andrena leucolippa Pérez, 1895, female, France. © Eric Leglise.

5.3. Future work

Further improving knowledge on the distribution and status of bees in Europe is imperative. Many threatened species remain understudied due to their rarity, hindering effective conservation planning.

Current EU initiatives like ORBIT, PULSE, SAFEGUARD and WildPosh aim to centralise existing spatial data into an open-access database, yet significant gaps remain. Many records are still inaccessible in private collections, museums, or unprocessed databases, and some research data are not openly available. Establishing a comprehensive, regularly updated repository that consolidates standardised and validated data will be essential. Dedicated resources and personnel are required to manage and expand this database to ensure it supports research, policy-making, and conservation action effectively.

Building capacity in wild bee identification is also a foundational step toward long-term conservation success. With few experts and limited training opportunities, the risk of losing valuable taxonomic knowledge is high. Programs like SPRING and EPIC-Bee are currently addressing this by developing training courses and identification keys, particularly for species-rich groups. However, the scale of these efforts needs expansion to cover all bee genera across Europe. Securing positions for high-profile young scientists and promoting citizen science initiatives should contribute to bolster expertise and strengthen conservation networks. Critically, the development of more comprehensive identification tools and training will enable faster and more accurate assessments, especially for threatened species, facilitating better-informed conservation strategies.

National Red Lists should be regularly updated, particularly in southern and eastern Europe (e.g. Italy, Cyprus, Hungary, Spain, Portugal and Greece), to guide interventions on the numerous threatened species they are hosting. Simultaneously, awareness campaigns should highlight the diversity and ecological importance of wild bees, aiming to inspire public interest and environmentally responsible behaviours. Initiatives like citizen science programs and interactive digital platforms can engage diverse audiences and emphasise actionable steps for supporting bee populations. By integrating educational, scientific, and policy-driven efforts, Europe can build a robust framework to protect its wild bees and their habitats.

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Appendix 1. The Red List status of European bees at the Pan Europe and EU27 levels

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena abbreviata*	LC		LC			
Andrenidae	*Andrena aberrans*	VU	B2ab(iii)	VU	B2ab(iii)		
Andrenidae	*Andrena abjecta*	DD		DD			
Andrenidae	*Andrena abrupta*	LC		LC			
Andrenidae	*Andrena acerba*	DD		DD			
Andrenidae	*Andrena aciculata*	DD		DD			
Andrenidae	*Andrena acuta*	LC		LC		Yes	Yes
Andrenidae	*Andrena aegyptiaca*	LC		LC			
Andrenidae	*Andrena aegypticola*	NT	B2b(iii)	NT	B2b(iii)		
Andrenidae	*Andrena aeneiventris*	LC		LC			
Andrenidae	*Andrena aerinifrons*	LC		LC			
Andrenidae	*Andrena afrensis*	LC		LC		Yes	
Andrenidae	*Andrena afzeliella*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena agilissima*	LC		LC			
Andrenidae	*Andrena agnata*	DD		DD			
Andrenidae	*Andrena albopunctata*	LC		LC			
Andrenidae	*Andrena alfkenella*	LC		LC			
Andrenidae	*Andrena alfkenelloides*	LC		LC			
Andrenidae	*Andrena allosa*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Andrenidae	*Andrena alluaudi*	LC		LC			
Andrenidae	*Andrena alma*	LC		LC		Yes	Yes
Andrenidae	*Andrena alutacea*	LC		LC			
Andrenidae	*Andrena amieti*	LC		LC			
Andrenidae	*Andrena ampla*	LC		LC			
Andrenidae	*Andrena anatolica*	LC		LC			
Andrenidae	*Andrena angustior*	LC		LC		Yes	
Andrenidae	*Andrena anthrisci*	LC		LC		Yes	
Andrenidae	*Andrena antigana*	LC		LC			
Andrenidae	*Andrena antonellae*	DD		DD		Yes	Yes
Andrenidae	*Andrena apicata*	LC		LC			
Andrenidae	*Andrena apiformis*	DD		DD			
Andrenidae	*Andrena argentata*	LC		LC			
Andrenidae	*Andrena asiatica*	NA		NA			
Andrenidae	*Andrena asperrima*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena asperula*	DD					
Andrenidae	*Andrena assimilis*	LC		LC			
Andrenidae	*Andrena astica*	LC		LC			
Andrenidae	*Andrena athenensis*	LC		LC			
Andrenidae	*Andrena atrata*	DD		DD			
Andrenidae	*Andrena atrotegularis*	DD		DD			
Andrenidae	*Andrena avara*	DD		DD			
Andrenidae	*Andrena baetica*	LC		LC		Yes	Yes
Andrenidae	*Andrena barbareae*	LC		LC			
Andrenidae	*Andrena barbilabris*	LC		LC			
Andrenidae	*Andrena batava*	LC		LC		Yes	
Andrenidae	*Andrena bayona*	LC		LC		Yes	Yes
Andrenidae	*Andrena bellidis*	LC		LC			
Andrenidae	*Andrena benoisti*	LC		LC		Yes	Yes
Andrenidae	*Andrena biarmica*	DD		DD			
Andrenidae	*Andrena bicolor*	LC		LC			
Andrenidae	*Andrena bicolorata*	LC		LC			
Andrenidae	*Andrena biguttata*	LC		LC			
Andrenidae	*Andrena bimaculata*	LC		LC			
Andrenidae	*Andrena binominata*	LC		LC			
Andrenidae	*Andrena bisulcata*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena blanda*	LC		LC			
Andrenidae	*Andrena boyerella*	CR	D	CR	D		
Andrenidae	*Andrena braunsiana*	DD		DD			
Andrenidae	*Andrena brumanensis*	LC		LC			
Andrenidae	*Andrena bucephala*	LC		LC		Yes	
Andrenidae	*Andrena caneae*	LC		LC			
Andrenidae	*Andrena canohirta*	LC		LC			
Andrenidae	*Andrena cantiaca*	DD		DD			
Andrenidae	*Andrena capillosa*	DD					
Andrenidae	*Andrena caprimulga*	DD					
Andrenidae	*Andrena catula*	LC		LC		Yes	Yes
Andrenidae	*Andrena cervina*	LC		LC			
Andrenidae	*Andrena chaetogastra*	CR	D	CR	D	Yes	Yes
Andrenidae	*Andrena chalcogastra*	NT	B1ab(iii)+2ab(iii)	NT	B1ab(iii)+2ab(iii)	Yes	Yes
Andrenidae	*Andrena chelma*	CR	D	CR	D	Yes	Yes
Andrenidae	*Andrena chersona*	EN	B2ab(ii,iii,v)				
Andrenidae	*Andrena chrysopus*	NT	B2b(iii)	NT	B2b(iii)		
Andrenidae	*Andrena chrysopyga*	DD		DD			
Andrenidae	*Andrena chrysosceles*	LC		LC			
Andrenidae	*Andrena cilissaeformis*	LC		LC			
Andrenidae	*Andrena cineraria*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena cinerea*	LC		LC			
Andrenidae	*Andrena cinereophila*	LC		LC			
Andrenidae	*Andrena clarkella*	LC		LC			
Andrenidae	*Andrena clusia*	CR	B2ab(iii)	CR	B2ab(iii)		
Andrenidae	*Andrena clypella*	LC		LC			
Andrenidae	*Andrena coitana*	LC		LC			
Andrenidae	*Andrena colletiformis*	LC		LC			
Andrenidae	*Andrena combaella*	LC		LC			
Andrenidae	*Andrena combinata*	LC		LC			
Andrenidae	*Andrena compta*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Andrenidae	*Andrena comta*	EN	B2ab(iii,v)	CR	B2ab(iii,v)		
Andrenidae	*Andrena concinna*	LC		LC		Yes	
Andrenidae	*Andrena confinis*	LC		LC			
Andrenidae	*Andrena congruens*	LC		LC			
Andrenidae	*Andrena contracta*	NT	B2a	NT	B2a	Yes	Yes
Andrenidae	*Andrena corax*	LC		LC		Yes	Yes
Andrenidae	*Andrena cordialis*	LC		LC			
Andrenidae	*Andrena crassana*	LC		LC			
Andrenidae	*Andrena crecca*	LC		LC			
Andrenidae	*Andrena crepidis*	LC		LC		Yes	Yes
Andrenidae	*Andrena croatica*	DD		DD		Yes	Yes

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena croceiventris*	NT	B2b(v)	NT	B2b(v)	Yes	Yes
Andrenidae	*Andrena curiosa*	NA		NA			
Andrenidae	*Andrena curtivalvis*	NA		NA			
Andrenidae	*Andrena curvana*	LC		LC			
Andrenidae	*Andrena curvungula*	LC		LC			
Andrenidae	*Andrena cussariensis*	NA					
Andrenidae	*Andrena cyanomicans*	LC		LC		Yes	Yes
Andrenidae	*Andrena cypria*	NT	B2b(iii)	NT	B2b(iii)		
Andrenidae	*Andrena damara*	DD		DD		Yes	Yes
Andrenidae	*Andrena danuvia*	LC		LC			
Andrenidae	*Andrena dargia*	DD		DD			
Andrenidae	*Andrena decipiens*	LC		LC			
Andrenidae	*Andrena delphiensis*	NT	B2b(iii)	NT	B2b(iii)		
Andrenidae	*Andrena denticulata*	LC		LC			
Andrenidae	*Andrena dentiventris*	NA					
Andrenidae	*Andrena derbentina*	NA		NA			
Andrenidae	*Andrena dinizi*	LC		LC		Yes	Yes
Andrenidae	*Andrena discors*	LC		LC			
Andrenidae	*Andrena distinguenda*	LC		LC			
Andrenidae	*Andrena djelfensis*	LC		LC			
Andrenidae	*Andrena donata*	LC		LC		Yes	Yes

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena dorsalis*	LC		LC			
Andrenidae	*Andrena dorsata*	LC		LC			
Andrenidae	*Andrena dourada*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Andrenidae	*Andrena doursana*	LC		LC			
Andrenidae	*Andrena dubiosa*	NT	D2	NT	D2		
Andrenidae	*Andrena ebmerella*	DD		DD			
Andrenidae	*Andrena ehnbergi*	NA					
Andrenidae	*Andrena elata*	LC		LC		Yes	Yes
Andrenidae	*Andrena elegans*	NT	B2b(iii)	NT	B2b(iii)		
Andrenidae	*Andrena elmaria*	LC		LC			
Andrenidae	*Andrena enslinella*	NT	B2b(ii)	NT	B2b(ii)		
Andrenidae	*Andrena erberi*	LC		LC			
Andrenidae	*Andrena erodiorum*	DD		DD		Yes	Yes
Andrenidae	*Andrena eversmanniana*	DD					
Andrenidae	*Andrena exigua*	DD		DD			
Andrenidae	*Andrena exquisita*	LC		LC			
Andrenidae	*Andrena fabrella*	LC		LC			
Andrenidae	*Andrena falcinella*	DD		DD			
Andrenidae	*Andrena fallax*	NT	B2b(i,ii)	NT	B2b(iii)		
Andrenidae	*Andrena falsifica*	LC		LC			
Andrenidae	*Andrena farinosa*	LC		LC		Yes	Yes

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena ferox*	LC		LC			
Andrenidae	*Andrena ferrugineicrus*	LC		LC			
Andrenidae	*Andrena fertoni*	LC		LC			
Andrenidae	*Andrena figurata*	LC		NT	B2b(ii,iii)		
Andrenidae	*Andrena fimbriata*	LC		LC		Yes	
Andrenidae	*Andrena flavilabris*	DD		DD			
Andrenidae	*Andrena flavipes*	LC		LC			
Andrenidae	*Andrena flavobila*	EN	B2ab(iii)	EN	B2ab(iii)		
Andrenidae	*Andrena florea*	LC		LC			
Andrenidae	*Andrena florentina*	LC		LC			
Andrenidae	*Andrena floricola*	LC		LC			
Andrenidae	*Andrena florivaga*	LC		LC			
Andrenidae	*Andrena foeniculae*	LC		LC		Yes	Yes
Andrenidae	*Andrena forsterella*	LC		LC			
Andrenidae	*Andrena fortipunctata*	NT	B2a	NT	B2a	Yes	Yes
Andrenidae	*Andrena freygessneri*	NT	B2b(iii)	NT	B2ab(iii)	Yes	
Andrenidae	*Andrena fria*	LC		LC		Yes	Yes
Andrenidae	*Andrena fucata*	LC		LC			
Andrenidae	*Andrena fulica*	LC		LC			
Andrenidae	*Andrena fuliginata*	NA		NA			
Andrenidae	*Andrena fuligula*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena fulva*	LC		LC			
Andrenidae	*Andrena fulvago*	LC		LC			
Andrenidae	*Andrena fulvata*	LC		LC		Yes	
Andrenidae	*Andrena fulvicornis*	LC		LC			
Andrenidae	*Andrena fulvida*	LC		LC			
Andrenidae	*Andrena fulvitarsis*	LC		LC			
Andrenidae	*Andrena fumida*	LC		LC			
Andrenidae	*Andrena funerea*	LC		LC		Yes	Yes
Andrenidae	*Andrena fuscipes*	LC		LC			
Andrenidae	*Andrena fuscocalcarata*	NA		NA			
Andrenidae	*Andrena fuscosa*	LC		LC			
Andrenidae	*Andrena gades*	DD		DD		Yes	Yes
Andrenidae	*Andrena gamskrucki*	DD		DD			
Andrenidae	*Andrena garrula*	NA		NA			
Andrenidae	*Andrena gelriae*	VU	B2ab(iii)	VU	B2ab(iii)	Yes	
Andrenidae	*Andrena ghisbaini*	DD		DD		Yes	Yes
Andrenidae	*Andrena glandaria*	DD		DD			
Andrenidae	*Andrena glidia*	DD		DD			
Andrenidae	*Andrena gomerensis*	LC		LC		Yes	Yes
Andrenidae	*Andrena gordia*	DD		DD			
Andrenidae	*Andrena graciliata*	DD		DD		Yes	Yes

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena graecella*	DD		DD		Yes	
Andrenidae	*Andrena grandilabris*	NA		NA			
Andrenidae	*Andrena granulosa*	LC		LC			
Andrenidae	*Andrena gravida*	LC		LC			
Andrenidae	*Andrena gredana*	LC		LC		Yes	Yes
Andrenidae	*Andrena griseobalteata*	LC		LC			
Andrenidae	*Andrena grossella*	LC		LC		Yes	Yes
Andrenidae	*Andrena grozdanici*	DD				Yes	
Andrenidae	*Andrena haemorrhoa*	LC		LC			
Andrenidae	*Andrena hattorfiana*	LC		LC			
Andrenidae	*Andrena hebescens*	DD		DD			
Andrenidae	*Andrena hedikae*	LC		LC			
Andrenidae	*Andrena heinrichi*	CR	B2ab(iii)	CR	B2ab(iii)		
Andrenidae	*Andrena helenica*	LC		LC		Yes	Yes
Andrenidae	*Andrena helvola*	LC		LC			
Andrenidae	*Andrena henotica*	NA		NA			
Andrenidae	*Andrena hesperia*	LC		LC			
Andrenidae	*Andrena heterodoxa*	CR	D	CR	D	Yes	Yes
Andrenidae	*Andrena hillana*	DD		DD		Yes	Yes
Andrenidae	*Andrena humabilis*	DD		DD			
Andrenidae	*Andrena humilis*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena hungarica*	CR	D	CR	D		
Andrenidae	*Andrena hyacinthina*	LC		LC			
Andrenidae	*Andrena hybrida*	LC					
Andrenidae	*Andrena hyemala*	LC		LC			
Andrenidae	*Andrena hypopolia*	LC		LC			
Andrenidae	*Andrena hystrix*	LC		LC			
Andrenidae	*Andrena icterina*	LC		LC			
Andrenidae	*Andrena illyrica*	DD		DD		Yes	
Andrenidae	*Andrena impunctata*	LC		LC			
Andrenidae	*Andrena incisa*	CR	D	CR	D		
Andrenidae	*Andrena inconstans*	NT	B2a	NT	B2a		
Andrenidae	*Andrena intermedia*	LC		LC			
Andrenidae	*Andrena isis*	NA		NA			
Andrenidae	*Andrena isolata*	VU	D2	VU	D2	Yes	Yes
Andrenidae	*Andrena juliae*	DD		DD		Yes	Yes
Andrenidae	*Andrena juliana*	NT	B2ab(iii)	NT	B2ab(iii)	Yes	Yes
Andrenidae	*Andrena kamarti*	DD		DD			
Andrenidae	*Andrena kocoureki*	DD		DD		Yes	Yes
Andrenidae	*Andrena korleviciana*	LC		LC		Yes	Yes
Andrenidae	*Andrena kornosica*	LC		LC		Yes	Yes
Andrenidae	*Andrena kriechbaumeri*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena labialis*	LC		LC			
Andrenidae	*Andrena labiata*	LC		LC			
Andrenidae	*Andrena labiatula*	CR	B1ab(iii)+2ab(iii)			Yes	
Andrenidae	*Andrena laevicorpus*	LC		LC		Yes	Yes
Andrenidae	*Andrena lagopus*	LC		LC			
Andrenidae	*Andrena lamiana*	LC		LC			
Andrenidae	*Andrena langadensis*	LC		LC			
Andrenidae	*Andrena lapponica*	LC		LC			
Andrenidae	*Andrena larisana*	LC		LC			
Andrenidae	*Andrena lateralis*	LC		LC			
Andrenidae	*Andrena lathyri*	LC		LC			
Andrenidae	*Andrena laurivora*	DD		DD			
Andrenidae	*Andrena lavandulae*	LC		LC			
Andrenidae	*Andrena lecana*	LC		LC		Yes	Yes
Andrenidae	*Andrena lepida*	LC		LC			
Andrenidae	*Andrena leptopyga*	LC		LC			
Andrenidae	*Andrena leucolippa*	LC		LC		Yes	Yes
Andrenidae	*Andrena leucophaea*	DD		DD			
Andrenidae	*Andrena leucopsis*	LC		LC			
Andrenidae	*Andrena levante*	LC		LC		Yes	Yes
Andrenidae	*Andrena limassolica*	LC		LC			

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Andrenidae	*Andrena limata*	LC		LC			
Andrenidae	*Andrena limbata*	LC		LC			
Andrenidae	*Andrena limonii*	DD					
Andrenidae	*Andrena limosa*	DD		DD			
Andrenidae	*Andrena lindbergella*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii,v)+2ab(iii,v)		
Andrenidae	*Andrena lineolata*	NT	B2a	NT	B2a	Yes	Yes
Andrenidae	*Andrena livens*	LC		LC			
Andrenidae	*Andrena longibarbis*	LC		LC			
Andrenidae	*Andrena lonicera*	CR	D			Yes	
Andrenidae	*Andrena lusitania*	LC		LC			
Andrenidae	*Andrena macroptera*	LC		LC			
Andrenidae	*Andrena maderensis*	LC		LC		Yes	Yes
Andrenidae	*Andrena magna*	EN	B2ab(iii)	EN	B2ab(iii)		
Andrenidae	*Andrena magunta*	LC		LC			
Andrenidae	*Andrena majalis*	NA		NA			
Andrenidae	*Andrena marginata*	LC		LC			
Andrenidae	*Andrena mariana*	NA		NA			
Andrenidae	*Andrena mediovittata*	NT	B2b(ii)	NT	B2b(ii)		
Andrenidae	*Andrena mehelyi*	DD		DD			
Andrenidae	*Andrena melacana*	LC		LC			
Andrenidae	*Andrena merula*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena metallescens*	CR	D				
Andrenidae	*Andrena microthorax*	NA		NA			
Andrenidae	*Andrena miegiella*	LC		LC			
Andrenidae	*Andrena minapalumboi*	NA		NA			
Andrenidae	*Andrena minutula*	LC		LC			
Andrenidae	*Andrena minutuloides*	LC		LC			
Andrenidae	*Andrena mistrensis*	DD		DD			
Andrenidae	*Andrena mitis*	LC		LC			
Andrenidae	*Andrena mocsaryi*	LC		LC			
Andrenidae	*Andrena monacha*	LC		LC			
Andrenidae	*Andrena monilia*	EN	B2ab(iii)	EN	B2ab(iii)		
Andrenidae	*Andrena montana*	LC		LC		Yes	
Andrenidae	*Andrena montarca*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Andrenidae	*Andrena morio*	LC		LC			
Andrenidae	*Andrena mucida*	LC		LC			
Andrenidae	*Andrena mucronata*	LC		LC			
Andrenidae	*Andrena murana*	LC		LC		Yes	Yes
Andrenidae	*Andrena muscaria*	LC		LC		Yes	Yes
Andrenidae	*Andrena nana*	LC		LC			
Andrenidae	*Andrena nanaeformis*	LC		EN	B2ab(ii,iii,v)		
Andrenidae	*Andrena nanula*	NT	B2b(iii)	NT	B2b(iii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena nasuta*	LC		LC			
Andrenidae	*Andrena nebularia*	LC		LC			
Andrenidae	*Andrena neocypriaca*	LC		LC			
Andrenidae	*Andrena neovirida*	LC		LC		Yes	Yes
Andrenidae	*Andrena nigriceps*	LC		LC			
Andrenidae	*Andrena nigroaenea*	LC		LC			
Andrenidae	*Andrena nigroolivacea*	LC		LC			
Andrenidae	*Andrena nigropilosa*	LC		LC			
Andrenidae	*Andrena nigrospina*	LC		LC			
Andrenidae	*Andrena nigroviridula*	LC		LC			
Andrenidae	*Andrena nilotica*	LC		LC		Yes	Yes
Andrenidae	*Andrena nisoria*	NA		NA			
Andrenidae	*Andrena nitida*	LC		LC			
Andrenidae	*Andrena nitidemula*	NA		NA			
Andrenidae	*Andrena nitidiuscula*	LC		LC			
Andrenidae	*Andrena nitidula*	LC		LC		Yes	Yes
Andrenidae	*Andrena niveata*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Andrenidae	*Andrena nobilis*	LC		LC			
Andrenidae	*Andrena notata*	DD		DD		Yes	Yes
Andrenidae	*Andrena nucleola*	DD		DD			
Andrenidae	*Andrena numida*	DD		DD			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena nuptialis*	LC		LC		Yes	
Andrenidae	*Andrena nycthemera*	LC		LC			
Andrenidae	*Andrena obsoleta*	NT	B2b(ii)	NT	B2b(ii)		
Andrenidae	*Andrena oedicnema*	NA		NA			
Andrenidae	*Andrena olympica*	LC		LC		Yes	Yes
Andrenidae	*Andrena omnilaevis*	LC		LC			
Andrenidae	*Andrena optata*	LC		LC			
Andrenidae	*Andrena oralis*	NT	B2b(ii,iii)	NT	B2b(iii)		
Andrenidae	*Andrena orana*	LC		LC			
Andrenidae	*Andrena orbitalis*	LC		LC			
Andrenidae	*Andrena orientana*	LC		LC			
Andrenidae	*Andrena ornata*	CR	B2ab(iii)				
Andrenidae	*Andrena ortizi*	NT	B2a	NT	B2a	Yes	Yes
Andrenidae	*Andrena ovata*	LC		LC		Yes	
Andrenidae	*Andrena ovatula*	LC		LC		Yes	
Andrenidae	*Andrena oviventris*	LC		LC			
Andrenidae	*Andrena paganettina*	DD		DD			
Andrenidae	*Andrena pallidicincta*	LC		LC			
Andrenidae	*Andrena pallitarsis*	VU	B2ab(ii,iii,v)	VU	B2ab(ii,iii,v)		
Andrenidae	*Andrena pandellei*	LC		LC			
Andrenidae	*Andrena pandosa*	DD		DD			

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Andrenidae	*Andrena panurgimorpha*	LC		LC			
Andrenidae	*Andrena panurgina*	LC		LC			
Andrenidae	*Andrena paramythensis*	DD		DD			
Andrenidae	*Andrena parata*	DD		DD		Yes	Yes
Andrenidae	*Andrena pareklisiae*	NT	B1b(iii)+2b(iii)	NT	B1b(iii)+2b(iii)		
Andrenidae	*Andrena parviceps*	LC		LC			
Andrenidae	*Andrena passerina*	CR	D	CR	D		
Andrenidae	*Andrena pastellensis*	LC		LC		Yes	
Andrenidae	*Andrena paucisquama*	LC		LC			
Andrenidae	*Andrena pauxilla*	LC		LC			
Andrenidae	*Andrena pelagonia*	DD				Yes	
Andrenidae	*Andrena pellucens*	LC		LC		Yes	
Andrenidae	*Andrena pelopa*	DD		DD		Yes	Yes
Andrenidae	*Andrena phoenicura*	DD		DD			
Andrenidae	*Andrena pileata*	DD		DD		Yes	Yes
Andrenidae	*Andrena pilipes*	LC		LC			
Andrenidae	*Andrena pirinia*	DD		DD		Yes	Yes
Andrenidae	*Andrena polita*	LC		LC			
Andrenidae	*Andrena pontica*	DD		DD			
Andrenidae	*Andrena portosanctana*	NT	B1ab(iii)+2ab(iii)	NT	B1ab(iii)+2ab(iii)	Yes	Yes
Andrenidae	*Andrena potentillae*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena poupillieri*	LC		LC			
Andrenidae	*Andrena praecox*	LC		LC			
Andrenidae	*Andrena probata*	NT	B2a	NT	B2a		
Andrenidae	*Andrena producta*	DD		DD			
Andrenidae	*Andrena propinqua*	LC		LC			
Andrenidae	*Andrena proxima*	LC		LC			
Andrenidae	*Andrena pruinosa*	LC		LC		Yes	Yes
Andrenidae	*Andrena pusilla*	LC		LC			
Andrenidae	*Andrena pyropygia*	LC		LC			
Andrenidae	*Andrena pyrozonata*	DD		DD			
Andrenidae	*Andrena quadrimaculata*	NA		NA			
Andrenidae	*Andrena querquedula*	DD		DD			
Andrenidae	*Andrena ramosa*	LC		LC		Yes	Yes
Andrenidae	*Andrena ranunculi*	LC		LC			
Andrenidae	*Andrena ranunculorum*	EN	B2ab(iii)	EN	B2ab(iii)		
Andrenidae	*Andrena relata*	LC		LC			
Andrenidae	*Andrena rhenana*	LC		LC			
Andrenidae	*Andrena rhypara*	NA		NA			
Andrenidae	*Andrena rhyssonota*	LC		LC			
Andrenidae	*Andrena robusta*	DD		DD		Yes	Yes
Andrenidae	*Andrena rogenhoferi*	LC		LC		Yes	

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Andrenidae	*Andrena roripae*	DD					
Andrenidae	*Andrena rosae*	LC		LC			
Andrenidae	*Andrena roseipes*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	
Andrenidae	*Andrena rotundata*	LC		LC			
Andrenidae	*Andrena rotundilabris*	NA		NA			
Andrenidae	*Andrena rudolfae*	DD					
Andrenidae	*Andrena ruficrus*	LC		LC			
Andrenidae	*Andrena rufizona*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Andrenidae	*Andrena rufula*	LC		LC			
Andrenidae	*Andrena rugothorace*	LC		LC			
Andrenidae	*Andrena rugulosa*	LC		LC			
Andrenidae	*Andrena rugulosella*	DD					
Andrenidae	*Andrena russula*	LC		LC			
Andrenidae	*Andrena saettana*	EN	B1ab(ii,v)+2ab(ii,v)	EN	B1ab(ii,v)+2ab(ii,v)		
Andrenidae	*Andrena sagittaria*	DD		DD		Yes	Yes
Andrenidae	*Andrena sandanskia*	LC		LC			
Andrenidae	*Andrena sardoa*	LC		LC			
Andrenidae	*Andrena savignyi*	NA		NA			
Andrenidae	*Andrena saxonica*	LC		LC			
Andrenidae	*Andrena schencki*	LC		LC			
Andrenidae	*Andrena schlettereri*	NT	B2b(iii)	NT	B2b(iii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena schmiedeknechti*	LC		LC			
Andrenidae	*Andrena schulzi*	LC		LC			
Andrenidae	*Andrena schwarzi*	DD					
Andrenidae	*Andrena scita*	LC		LC			
Andrenidae	*Andrena scotica*	LC		LC			
Andrenidae	*Andrena semiflava*	NA					
Andrenidae	*Andrena semilaevis*	LC		LC		Yes	
Andrenidae	*Andrena seminuda*	LC		LC			
Andrenidae	*Andrena semirubra*	NA					
Andrenidae	*Andrena senecionis*	LC		LC			
Andrenidae	*Andrena sericata*	LC		LC			
Andrenidae	*Andrena serraticornis*	DD		DD			
Andrenidae	*Andrena sibthorpi*	LC		LC		Yes	Yes
Andrenidae	*Andrena sillata*	DD		DD			
Andrenidae	*Andrena simillima*	VU	B2ab(iii)	VU	B2ab(iii)		
Andrenidae	*Andrena simontornyella*	LC		LC			
Andrenidae	*Andrena solenopalpa*	LC		LC		Yes	Yes
Andrenidae	*Andrena soror*	EN	B2ab(iii)	EN	B2ab(iii)		
Andrenidae	*Andrena sphecodimorpha*	LC		LC		Yes	
Andrenidae	*Andrena spolata*	NA		NA			
Andrenidae	*Andrena spreta*	LC		LC			

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Andrenidae	*Andrena stabiana*	LC		LC		Yes	Yes
Andrenidae	*Andrena standfussorum*	DD		DD		Yes	Yes
Andrenidae	*Andrena stellaris*	DD		DD			
Andrenidae	*Andrena stepposa*	EN	B2ab(iii)			Yes	
Andrenidae	*Andrena stigmatica*	DD					
Andrenidae	*Andrena stoeckhertella*	CR	B1ab(iii)+2ab(iii)				
Andrenidae	*Andrena strohmella*	LC		LC		Yes	
Andrenidae	*Andrena subopaca*	LC		LC			
Andrenidae	*Andrena suerinensis*	LC		LC		Yes	
Andrenidae	*Andrena susterai*	LC		LC			
Andrenidae	*Andrena symphyti*	LC		LC			
Andrenidae	*Andrena synadelpha*	LC		LC			
Andrenidae	*Andrena taedium*	DD		DD			
Andrenidae	*Andrena taprobana*	DD		DD			
Andrenidae	*Andrena taraxaci*	LC		LC			
Andrenidae	*Andrena tarsata*	LC		LC			
Andrenidae	*Andrena taxana*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	Yes
Andrenidae	*Andrena tenostra*	DD		DD		Yes	Yes
Andrenidae	*Andrena tenuiformis*	DD		DD			
Andrenidae	*Andrena tenuistriata*	LC		LC			
Andrenidae	*Andrena thomsonii*	DD		DD			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena thoracica*	LC		LC			
Andrenidae	*Andrena tiaretta*	DD		DD			
Andrenidae	*Andrena tibialis*	LC		LC			
Andrenidae	*Andrena tomora*	LC		LC			
Andrenidae	*Andrena torda*	LC		LC			
Andrenidae	*Andrena transitoria*	VU	B2ab(iii)	VU	B2ab(iii)		
Andrenidae	*Andrena tricuspidata*	LC				Yes	
Andrenidae	*Andrena tridentata*	CR	D				
Andrenidae	*Andrena trikalensis*	LC		LC		Yes	Yes
Andrenidae	*Andrena trimmerana*	LC		LC			
Andrenidae	*Andrena tringa*	LC		LC			
Andrenidae	*Andrena troodica*	CR	D	CR	D		
Andrenidae	*Andrena truncatilabris*	LC		LC			
Andrenidae	*Andrena tscheki*	LC		LC			
Andrenidae	*Andrena tuberculifera*	NA		NA			
Andrenidae	*Andrena tunetana*	LC		LC			
Andrenidae	*Andrena ulula*	NA		NA			
Andrenidae	*Andrena ungeri*	LC		LC			
Andrenidae	*Andrena urdula*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Andrenidae	*Andrena vacella*	LC		LC		Yes	Yes
Andrenidae	*Andrena vaga*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Andrenidae	*Andrena varia*	DD		DD			
Andrenidae	*Andrena variabilis*	LC		LC			
Andrenidae	*Andrena varians*	LC		LC			
Andrenidae	*Andrena varuga*	LC		LC		Yes	Yes
Andrenidae	*Andrena vaulogeri*	NT	B2a	NT	B2a		
Andrenidae	*Andrena ventralis*	LC		LC			
Andrenidae	*Andrena ventricosa*	LC		LC			
Andrenidae	*Andrena verae*	DD					
Andrenidae	*Andrena verticalis*	LC		LC			
Andrenidae	*Andrena vetula*	LC		LC			
Andrenidae	*Andrena villipes*	LC		LC			
Andrenidae	*Andrena viridescens*	LC		LC			
Andrenidae	*Andrena vocifera*	LC		LC		Yes	Yes
Andrenidae	*Andrena volgensis*	DD					
Andrenidae	*Andrena vulcana*	DD		DD			
Andrenidae	*Andrena vulpecula*	LC		LC			
Andrenidae	*Andrena walishanovi*	DD					
Andrenidae	*Andrena westensis*	LC		LC			
Andrenidae	*Andrena wilhelmi*	LC		LC			
Andrenidae	*Andrena wilkella*	LC		LC			
Andrenidae	*Andrena wolfi*	NA		NA			

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Andrenidae	*Andrena wollastoni*	LC		LC		Yes	Yes
Andrenidae	*Camptopoeum friesei*	LC		LC			
Andrenidae	*Camptopoeum frontale*	LC		LC			
Andrenidae	*Camptopoeum nasutum*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Andrenidae	*Camptopoeum variegatum*	NT	B2b(iii)	NT	B2b(iii)		
Andrenidae	*Clavipanurgus sculpturatus*	DD		DD			
Andrenidae	*Cubiandrena cubiceps*	DD		DD			
Andrenidae	*Flavipanurgus flavus*	LC		LC		Yes	Yes
Andrenidae	*Flavipanurgus granadensis*	LC		LC		Yes	Yes
Andrenidae	*Flavipanurgus ibericus*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Andrenidae	*Flavipanurgus kastiliensis*	LC		LC		Yes	Yes
Andrenidae	*Flavipanurgus merceti*	CR	D	CR	D	Yes	Yes
Andrenidae	*Flavipanurgus venustus*	LC		LC		Yes	Yes
Andrenidae	*Halopanurgus baldocki*	VU	D2	VU	D2	Yes	Yes
Andrenidae	*Halopanurgus fuzetus*	NT	D2	NT	D2	Yes	Yes
Andrenidae	*Melitturga caudata*	LC		LC			
Andrenidae	*Melitturga clavicornis*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Andrenidae	*Melitturga praestans*	NT	B2b(ii)	NT	B2b(ii)		
Andrenidae	*Melitturga spinosa*	DD		DD			
Andrenidae	*Melitturga syriaca*	DD		DD			
Andrenidae	*Melitturga taurica*	NA		NA			

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Andrenidae	*Panurginus albopilosus*	LC		LC			
Andrenidae	*Panurginus alpinus*	LC		LC		Yes	
Andrenidae	*Panurginus alticolus*	NA					
Andrenidae	*Panurginus annulatus*	LC		LC		Yes	Yes
Andrenidae	*Panurginus brullei*	DD		DD		Yes	Yes
Andrenidae	*Panurginus corpanus*	NA		NA			
Andrenidae	*Panurginus herzi*	LC		DD			
Andrenidae	*Panurginus labiatus*	LC		LC			
Andrenidae	*Panurginus lactipennis*	LC		LC			
Andrenidae	*Panurginus montanus*	LC		LC		Yes	
Andrenidae	*Panurginus romani*	LC		LC			
Andrenidae	*Panurginus schwarzi*	DD		DD		Yes	Yes
Andrenidae	*Panurginus sericatus*	LC		LC		Yes	
Andrenidae	*Panurginus turcomanicus*	NA		NA			
Andrenidae	*Panurginus tyrolensis*	LC		LC		Yes	
Andrenidae	*Panurgus banksianus*	LC		LC			
Andrenidae	*Panurgus calcaratus*	LC		LC			
Andrenidae	*Panurgus canarius*	LC		LC			
Andrenidae	*Panurgus canescens*	LC		LC		Yes	Yes
Andrenidae	*Panurgus cephalotes*	LC		LC			
Andrenidae	*Panurgus corsicus*	LC		LC		Yes	Yes

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Andrenidae	*Panurgus dargius*	LC		LC			
Andrenidae	*Panurgus dentipes*	LC		LC		Yes	
Andrenidae	*Panurgus meridionalis*	LC		LC		Yes	Yes
Andrenidae	*Panurgus oblitus*	NA		NA			
Andrenidae	*Panurgus perezi*	LC		LC			
Andrenidae	*Panurgus pici*	NA		NA			
Andrenidae	*Panurgus siculus*	LC		LC		Yes	Yes
Andrenidae	*Simpanurgus phyllopodus*	CR	D	CR	D	Yes	Yes
Apidae	*Amegilla albigena*	LC		LC			
Apidae	*Amegilla andresi*	DD		DD			
Apidae	*Amegilla canifrons*	LC		LC		Yes	Yes
Apidae	*Amegilla fasciata*	LC		LC			
Apidae	*Amegilla garrula*	LC		LC			
Apidae	*Amegilla nigricornis*	NA					
Apidae	*Amegilla ochroleuca*	LC		LC			
Apidae	*Amegilla quadrifasciata*	LC		LC			
Apidae	*Amegilla salviae*	NT	A2c	NT	A2c		
Apidae	*Amegilla savignyi*	LC		LC			
Apidae	*Amegilla velocissima*	DD		DD			
Apidae	*Ammobates armeniacus*	NT	B2a	NT	B2a		
Apidae	*Ammobates biastoides*	DD		DD			

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Apidae	*Ammobates dusmeti*	CR	B2ab(i,ii); D	CR	B2ab(i,ii); D	Yes	Yes
Apidae	*Ammobates mavromoustakisi*	DD		DD			
Apidae	*Ammobates melectoides*	EN	B2ab(i,ii)	EN	B2ab(i,ii)	Yes	
Apidae	*Ammobates muticus*	LC		LC			
Apidae	*Ammobates opacus*	DD		DD			
Apidae	*Ammobates oraniensis*	NT	B2a	NT	B2a		
Apidae	*Ammobates punctatus*	NT	B2b(iii)	NT	B2b(iii)		
Apidae	*Ammobates rufiventris*	DD		DD			
Apidae	*Ammobates sanguineus*	DD		DD			
Apidae	*Ammobates similis*	DD		DD			
Apidae	*Ammobates verhoeffi*	NA		NA			
Apidae	*Ammobates vinctus*	EN	B2ab(ii)	EN	B2ab(ii)		
Apidae	*Ammobatoides abdominalis*	VU	B2ab(iii,v)	VU	B2ab(iii,v)		
Apidae	*Ammobatoides luctuosus*	LC		LC			
Apidae	*Ammobatoides okalii*	DD		DD		Yes	Yes
Apidae	*Ammobatoides scriptus*	LC		LC			
Apidae	*Ancyla asiatica*	NA		NA			
Apidae	*Ancyla cretensis*	DD		DD			
Apidae	*Ancyla holtzi*	NT	B2ab(ii)	NT	B2ab(ii)		
Apidae	*Ancyla nigricornis*	DD		DD			
Apidae	*Ancyla nitida*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Ancyla oraniensis*	NA		NA			
Apidae	*Ancyla orientalica*	DD		DD			
Apidae	*Anthophora aestivalis*	LC		LC			
Apidae	*Anthophora affinis*	LC		LC			
Apidae	*Anthophora agama*	LC		LC			
Apidae	*Anthophora albosignata*	NA		NA			
Apidae	*Anthophora alluaudi*	LC		LC		Yes	Yes
Apidae	*Anthophora altaica*	DD					
Apidae	*Anthophora astragali*	NA					
Apidae	*Anthophora atriceps*	LC		LC			
Apidae	*Anthophora atroalba*	LC		LC			
Apidae	*Anthophora balassogloi*	NA					
Apidae	*Anthophora balearica*	LC		LC		Yes	Yes
Apidae	*Anthophora balneorum*	LC		LC			
Apidae	*Anthophora bimaculata*	LC		LC			
Apidae	*Anthophora borealis*	CR	B1ab(i,ii,iii,iv)+2ab(i,ii,iii,iv)	CR	B1ab(i,ii,iii,iv,v)+2ab(i, ii,iii,iv,v)		
Apidae	*Anthophora calcarata*	LC		LC			
Apidae	*Anthophora canescens*	LC		LC			
Apidae	*Anthophora cincrea*	DD					
Apidae	*Anthophora cinerascens*	LC					
Apidae	*Anthophora crassipes*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Anthophora crinipes*	LC		LC			
Apidae	*Anthophora crysocnemis*	DD					
Apidae	*Anthophora dalmatica*	LC		LC			
Apidae	*Anthophora deserticola*	DD					
Apidae	*Anthophora dispar*	LC		LC			
Apidae	*Anthophora dubia*	DD		DD			
Apidae	*Anthophora dufourii*	LC		LC			
Apidae	*Anthophora femorata*	LC		LC			
Apidae	*Anthophora ferruginea*	NT	B2b(ii)	NT	B2b(ii)		
Apidae	*Anthophora fulvipes*	LC		LC			
Apidae	*Anthophora fulvitarsis*	NT	A2c	NT	A2c		
Apidae	*Anthophora fulvodimidiata*	LC		LC			
Apidae	*Anthophora furcata*	LC		LC			
Apidae	*Anthophora gallica*	LC		LC		Yes	Yes
Apidae	*Anthophora gracilipes*	NA					
Apidae	*Anthophora harmalae*	NA		NA			
Apidae	*Anthophora hispanica*	LC		LC			
Apidae	*Anthophora ireos*	NA					
Apidae	*Anthophora laevigata*	DD		DD		Yes	Yes
Apidae	*Anthophora lanzarotensis*	NT	B1b(iii)+2b(iii)	NT	B1b(iii)+2b(iii)	Yes	Yes
Apidae	*Anthophora leucophaea*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Anthophora lieftincki*	LC		LC		Yes	Yes
Apidae	*Anthophora monacha*	DD					
Apidae	*Anthophora mucida*	LC		LC			
Apidae	*Anthophora nigriceps*	LC		LC			
Apidae	*Anthophora nigrovittata*	LC		LC		Yes	Yes
Apidae	*Anthophora orientalis*	DD		DD			
Apidae	*Anthophora orotavae*	LC		LC		Yes	Yes
Apidae	*Anthophora pedata*	DD		DD			
Apidae	*Anthophora plagiata*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Apidae	*Anthophora plumipes*	LC		LC			
Apidae	*Anthophora podagra*	LC		LC			
Apidae	*Anthophora ponomarevae*	DD					
Apidae	*Anthophora porphyrea*	VU	B1ab(iii)+2ab(iii)	VU	B1ab(iii)+2ab(iii)	Yes	Yes
Apidae	*Anthophora pruinosa*	LC		LC		Yes	Yes
Apidae	*Anthophora pubescens*	LC		LC			
Apidae	*Anthophora pulverosa*	LC		LC		Yes	Yes
Apidae	*Anthophora punctilabris*	LC		LC		Yes	Yes
Apidae	*Anthophora purpuraria*	VU	B2ab(iii)	VU	B2ab(iii)	Yes	Yes
Apidae	*Anthophora quadricolor*	DD		DD			
Apidae	*Anthophora quadrimaculata*	LC		LC			
Apidae	*Anthophora raddei*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Anthophora retusa*	LC		LC			
Apidae	*Anthophora robusta*	NT	B2b(ii,v)	NT	B2b(ii,v)		
Apidae	*Anthophora rogenhoferi*	LC		LC			
Apidae	*Anthophora romandii*	LC		LC			
Apidae	*Anthophora rutilans*	LC		LC			
Apidae	*Anthophora segnis*	NA					
Apidae	*Anthophora senescens*	LC		LC			
Apidae	*Anthophora senilis*	CR	D				
Apidae	*Anthophora sichelii*	LC		LC		Yes	Yes
Apidae	*Anthophora socia*	LC		LC			
Apidae	*Anthophora testaceipes*	NA					
Apidae	*Anthophora uniciliata*	DD		DD		Yes	Yes
Apidae	*Anthophora ventilabris*	NA		NA			
Apidae	*Anthophora vernalis*	NA					
Apidae	*Biastes brevicornis*	LC		LC			
Apidae	*Biastes emarginatus*	LC		LC			
Apidae	*Biastes truncatus*	VU	B2ab(v)	VU	B2ab(v)		
Apidae	*Bombus alpinus*	VU	A3c	VU	B1ab(iii)+2ab(iii)	Yes	
Apidae	*Bombus argillaceus*	LC		LC			
Apidae	*Bombus armeniacus*	EN	B2ab(i,ii,iii)	EN	B2ab(i,ii,iii)		
Apidae	*Bombus balteatus*	NT	A3c	NT	A3c		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Bombus barbutellus*	LC		LC			
Apidae	*Bombus bohemicus*	LC		LC			
Apidae	*Bombus brodmannicus*	NT	B1b(iii)+2b(iii)	NT	B1b(iii)+2b(iii)		
Apidae	*Bombus campestris*	LC		LC			
Apidae	*Bombus cingulatus*	NT	A3c	NT	A3c		
Apidae	*Bombus confusus*	VU	A3c	VU	A3c		
Apidae	*Bombus consobrinus*	NT	A3c	NT	A3c		
Apidae	*Bombus cryptarum*	LC		LC			
Apidae	*Bombus cullumanus*	CR	B2ab(i,ii,iii,v)	CR	B2ab(i,ii,iii,v)		
Apidae	*Bombus deuteronymus*	DD		DD			
Apidae	*Bombus distinguendus*	VU	A2c	VU	A2c		
Apidae	*Bombus flavidus*	LC		LC			
Apidae	*Bombus fragrans*	VU	B2ab(ii,iii,v)	VU	B2ab(ii,iii,v)		
Apidae	*Bombus gerstaeckeri*	NT	B2b(iii)	NT	B2b(iii)		
Apidae	*Bombus glacialis*	VU	D2				
Apidae	*Bombus haematurus*	LC		LC			
Apidae	*Bombus hortorum*	LC		LC			
Apidae	*Bombus humilis*	LC		LC			
Apidae	*Bombus hyperboreus*	VU	B2b(ii,v)c(iv)	VU	B2b(ii,v)c(iv)		
Apidae	*Bombus hypnorum*	LC		LC			
Apidae	*Bombus inexspectatus*	NT	B2b(iii)	NT	B2b(iii)	Yes	

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Bombus jonellus*	LC		LC			
Apidae	*Bombus konradini*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)	Yes	Yes
Apidae	*Bombus laesus*	VU	B2ab(iii)	VU	B2ab(iii)		
Apidae	*Bombus lapidarius*	LC		LC			
Apidae	*Bombus lapponicus*	NT	A3c	NT	A3c		
Apidae	*Bombus lucorum*	LC		LC			
Apidae	*Bombus magnus*	LC		LC		Yes	
Apidae	*Bombus mendax*	LC		LC		Yes	Yes
Apidae	*Bombus mesomelas*	LC		LC			
Apidae	*Bombus mlokosievitzii*	DD		DD			
Apidae	*Bombus modestus*	VU	B2ab(iii)				
Apidae	*Bombus monticola*	LC		LC			
Apidae	*Bombus mucidus*	LC		NT	B2ab(iii)	Yes	
Apidae	*Bombus muscorum*	VU	A2c	VU	A2c		
Apidae	*Bombus niveatus*	LC		LC			
Apidae	*Bombus norvegicus*	LC		LC			
Apidae	*Bombus pascuorum*	LC		LC			
Apidae	*Bombus patagiatus*	NT	B2b(iii)				
Apidae	*Bombus pomorum*	VU	A3c	VU	A3c		
Apidae	*Bombus pratorum*	LC		LC			
Apidae	*Bombus pyrenaeus*	LC		LC		Yes	

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Bombus pyrrhopygus*	VU	A3c; B2ab(ii,iii)	VU	A3c; B2ab(ii,iii)		
Apidae	*Bombus quadricolor*	LC		LC			
Apidae	*Bombus renardi*	NT	B1ab(iii)+2ab(iii)	NT	B1ab(iii)+2ab(iii)	Yes	Yes
Apidae	*Bombus ruderarius*	LC		LC			
Apidae	*Bombus ruderatus*	LC		LC			
Apidae	*Bombus rupestris*	LC		LC			
Apidae	*Bombus saltuarius*	NA					
Apidae	*Bombus schrencki*	LC		LC			
Apidae	*Bombus semenoviellus*	LC		LC			
Apidae	*Bombus sichelii*	LC		LC			
Apidae	*Bombus soroeensis*	LC		LC			
Apidae	*Bombus sporadicus*	NT	A3c	NT	A3c		
Apidae	*Bombus subterraneus*	NT	A3c	NT	A3c		
Apidae	*Bombus sylvarum*	LC		LC			
Apidae	*Bombus sylvestris*	LC		LC			
Apidae	*Bombus terrestris*	LC		LC			
Apidae	*Bombus vestalis*	LC		LC			
Apidae	*Bombus veteranus*	NT	A3c	NT	A3c		
Apidae	*Bombus wurflenii*	LC		LC			
Apidae	*Bombus xanthopus*	LC		LC		Yes	Yes
Apidae	*Bombus zonatus*	VU	B2b(iii)c(iv)	VU	B2b(iii)c(iv)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Ceratina acuta*	LC		LC			
Apidae	*Ceratina albosticta*	NA		NA			
Apidae	*Ceratina bispinosa*	LC		LC			
Apidae	*Ceratina callosa*	LC		LC			
Apidae	*Ceratina chalcites*	LC		LC			
Apidae	*Ceratina chalybea*	LC		LC			
Apidae	*Ceratina chrysomalla*	NT	B2a	NT	B2a		
Apidae	*Ceratina cucurbitina*	LC		LC			
Apidae	*Ceratina cyanea*	LC		LC			
Apidae	*Ceratina cypriaca*	LC		LC		Yes	Yes
Apidae	*Ceratina dallatorreana*	LC		LC			
Apidae	*Ceratina dentiventris*	LC		LC			
Apidae	*Ceratina gravidula*	LC		LC		Yes	
Apidae	*Ceratina loewi*	LC		LC			
Apidae	*Ceratina mandibularis*	LC		LC			
Apidae	*Ceratina mocsaryi*	LC		LC			
Apidae	*Ceratina moricei*	LC		LC			
Apidae	*Ceratina nigroaenea*	LC		LC			
Apidae	*Ceratina nigrolabiata*	LC		LC			
Apidae	*Ceratina parvula*	LC		LC			
Apidae	*Ceratina sakagamii*	DD		DD			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Ceratina saundersi*	LC		LC			
Apidae	*Ceratina schwarzi*	LC		LC			
Apidae	*Ceratina tarsata*	NA		NA			
Apidae	*Ceratina teunisseni*	LC		LC		Yes	Yes
Apidae	*Ceratina zandeni*	NA		NA			
Apidae	*Ceratina zwakhalsi*	NA					
Apidae	*Chiasmognathus orientanus*	NT	B2a	NT	B2a		
Apidae	*Epeoloides coecutiens*	LC		LC			
Apidae	*Epeolus alpinus*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Apidae	*Epeolus aureovestitus*	NT	B2b(v)	NT	B2b(v)		
Apidae	*Epeolus bischoffi*	DD		DD			
Apidae	*Epeolus compar*	LC		LC		Yes	Yes
Apidae	*Epeolus cruciger*	LC		LC			
Apidae	*Epeolus fallax*	LC		LC			
Apidae	*Epeolus fasciatus*	CR	B2ab(iii)	CR	B2ab(iii)		
Apidae	*Epeolus flavociliatus*	NA		NA			
Apidae	*Epeolus ibericus*	DD		DD			
Apidae	*Epeolus intermedius*	LC		LC			
Apidae	*Epeolus julliani*	LC		LC			
Apidae	*Epeolus productulus*	NT	B2a	NT	B2a		
Apidae	*Epeolus schummeli*	NT	B2b(iii,v)	NT	B2b(iii,v)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Epeolus siculus*	DD		DD		Yes	Yes
Apidae	*Epeolus sigillatus*	VU	B1ab(iii)+2ab(iii)	VU	B1ab(iii)+2ab(iii)	Yes	Yes
Apidae	*Epeolus tarsalis*	LC		LC			
Apidae	*Epeolus transitorius*	DD		DD			
Apidae	*Epeolus variegatus*	LC		LC			
Apidae	*Eucera aequata*	LC		LC			
Apidae	*Eucera albofasciata*	LC		LC			
Apidae	*Eucera alborufa*	NA					
Apidae	*Eucera algira*	LC		LC			
Apidae	*Eucera atriceps*	NA					
Apidae	*Eucera barbiventris*	LC		LC			
Apidae	*Eucera bidentata*	LC		LC			
Apidae	*Eucera brachycera*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)		
Apidae	*Eucera breviceps*	NT	B2ab(iii)	NT	B2b(iii)		
Apidae	*Eucera caerulescens*	LC		LC			
Apidae	*Eucera caspica*	LC		LC			
Apidae	*Eucera cineraria*	LC		LC			
Apidae	*Eucera clypeata*	LC		LC			
Apidae	*Eucera codinai*	LC		LC		Yes	Yes
Apidae	*Eucera collaris*	LC		LC			
Apidae	*Eucera commixta*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Eucera confinis*	LC		LC			
Apidae	*Eucera curvitarsis*	LC		LC			
Apidae	*Eucera cypria*	LC		LC			
Apidae	*Eucera dafnii*	LC		LC			
Apidae	*Eucera dalmatica*	LC		LC			
Apidae	*Eucera digitata*	LC		LC			
Apidae	*Eucera dimidiata*	LC		LC			
Apidae	*Eucera distinguenda*	NA		NA			
Apidae	*Eucera ebmeri*	LC		LC			
Apidae	*Eucera elongatula*	LC		LC			
Apidae	*Eucera excisa*	EN	B2ab(iii)	EN	B2ab(iii)		
Apidae	*Eucera fasciata*	LC		LC			
Apidae	*Eucera ferghanica*	NA					
Apidae	*Eucera flavicornis*	NT	B2a	NT	B2a		
Apidae	*Eucera furfurea*	LC		LC			
Apidae	*Eucera gaullei*	LC		LC			
Apidae	*Eucera gracilipes*	LC		LC		Yes	Yes
Apidae	*Eucera grisea*	LC		LC			
Apidae	*Eucera helvola*	LC		LC			
Apidae	*Eucera hispana*	LC		LC			
Apidae	*Eucera hungarica*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Eucera intermedia*	NA					
Apidae	*Eucera interrupta*	LC		LC			
Apidae	*Eucera kullenbergi*	LC		LC			
Apidae	*Eucera lanuginosa*	LC		LC			
Apidae	*Eucera laxiscopa*	LC		LC			
Apidae	*Eucera longicornis*	LC		LC			
Apidae	*Eucera maroccana*	LC		LC			
Apidae	*Eucera mastrucata*	NA					
Apidae	*Eucera matalae*	LC		LC		Yes	Yes
Apidae	*Eucera mediterranea*	LC		LC			
Apidae	*Eucera melectoides*	LC		LC			
Apidae	*Eucera microsoma*	LC		LC			
Apidae	*Eucera morio*	EN	B2ab(iii)	CR	B2ab(iii)		
Apidae	*Eucera nigrescens*	LC		LC			
Apidae	*Eucera nigrifacies*	LC		LC			
Apidae	*Eucera nigrilabris*	LC		LC			
Apidae	*Eucera nigripes*	NA		NA			
Apidae	*Eucera notata*	LC		LC			
Apidae	*Eucera numida*	LC		LC			
Apidae	*Eucera obliterata*	LC		LC			
Apidae	*Eucera obscura*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Eucera oraniensis*	LC		LC			
Apidae	*Eucera palaestinae*	LC		LC			
Apidae	*Eucera pannonica*	LC		LC			
Apidae	*Eucera paraclypeata*	LC		LC			
Apidae	*Eucera parnassia*	LC		LC			
Apidae	*Eucera parvicornis*	NT	B2b(iii)	NT	B2b(iii)		
Apidae	*Eucera penicillata*	LC		LC			
Apidae	*Eucera plumigera*	LC		LC			
Apidae	*Eucera pollinaris*	NT	B2b(iii)	NT	B2b(iii)		
Apidae	*Eucera pollinosa*	LC		LC			
Apidae	*Eucera proxima*	LC		LC			
Apidae	*Eucera pseudeucnemidea*	LC		LC			
Apidae	*Eucera punctatissima*	DD		DD			
Apidae	*Eucera puncticollis*	LC		LC			
Apidae	*Eucera punctulata*	LC		LC			
Apidae	*Eucera pythagoras*	LC		LC			
Apidae	*Eucera quilisi*	VU	B2ab(iii)	VU	B2ab(iii)	Yes	Yes
Apidae	*Eucera rufa*	LC		LC			
Apidae	*Eucera ruficollis*	LC		LC			
Apidae	*Eucera rufipes*	LC		LC			
Apidae	*Eucera seminuda*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Eucera spectabilis*	NA					
Apidae	*Eucera squamosa*	LC		LC			
Apidae	*Eucera syriaca*	LC		LC			
Apidae	*Eucera taurea*	LC		LC			
Apidae	*Eucera taurica*	LC		LC			
Apidae	*Eucera terminata*	LC		LC			
Apidae	*Eucera transitoria*	NA					
Apidae	*Eucera tricincta*	LC		LC			
Apidae	*Eucera tristis*	DD		DD			
Apidae	*Eucera velutina*	DD		DD			
Apidae	*Eucera vernalis*	NA					
Apidae	*Eucera vittulata*	LC		LC			
Apidae	*Eucera vulpes*	LC		LC			
Apidae	*Habropoda ezonata*	DD		DD		Yes	
Apidae	*Habropoda tarsata*	LC		LC			
Apidae	*Habropoda zonatula*	LC		LC			
Apidae	*Melecta aegyptiaca*	DD		DD			
Apidae	*Melecta albifrons*	LC		LC			
Apidae	*Melecta alcestis*	DD					
Apidae	*Melecta amanda*	DD					
Apidae	*Melecta baerii*	DD					

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Melecta canariensis*	DD		DD		Yes	Yes
Apidae	*Melecta caroli*	LC		LC		Yes	Yes
Apidae	*Melecta curvispina*	LC		LC		Yes	Yes
Apidae	*Melecta diacantha*	DD					
Apidae	*Melecta duodecimmaculata*	NT	A2c	NT	A2c		
Apidae	*Melecta eversmanni*	DD					
Apidae	*Melecta festiva*	LC		LC			
Apidae	*Melecta fulgida*	LC		LC			
Apidae	*Melecta funeraria*	LC		LC			
Apidae	*Melecta gracilipes*	DD		DD		Yes	Yes
Apidae	*Melecta grandis*	DD		DD			
Apidae	*Melecta guichardi*	DD		DD			
Apidae	*Melecta guilochei*	DD		DD			
Apidae	*Melecta italica*	DD		DD			
Apidae	*Melecta leucorhyncha*	DD		DD			
Apidae	*Melecta luctuosa*	LC		LC			
Apidae	*Melecta mundula*	NA		NA			
Apidae	*Melecta obscura*	LC		LC			
Apidae	*Melecta prophanta*	DD		DD		Yes	Yes
Apidae	*Melecta rutenica*	DD				Yes	
Apidae	*Melecta tuberculata*	DD		DD			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada accentifera*	NT	B2b(ii)	NT	B2b(ii)		
Apidae	*Nomada achaica*	DD		DD		Yes	Yes
Apidae	*Nomada acutispina*	DD		DD			
Apidae	*Nomada aeginaica*	DD		DD			
Apidae	*Nomada agrestis*	LC		LC			
Apidae	*Nomada alboguttata*	LC		LC			
Apidae	*Nomada alpigena*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	Yes
Apidae	*Nomada argentata*	VU	B2ab(iii,v)	VU	B2ab(iii,v)		
Apidae	*Nomada argentea*	DD		DD			
Apidae	*Nomada ariasi*	NT	B2a	NT	B2a		
Apidae	*Nomada armata*	LC		LC			
Apidae	*Nomada arrogans*	EN	B2ab(i,ii,iii)	EN	B2ab(i,ii,iii)		
Apidae	*Nomada atroscutellaris*	LC		LC			
Apidae	*Nomada babiyi*	LC		LC			
Apidae	*Nomada baccata*	VU	A2c	VU	A2c		
Apidae	*Nomada barcelonensis*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Apidae	*Nomada basalis*	LC		LC			
Apidae	*Nomada beaumonti*	LC		LC			
Apidae	*Nomada bifasciata*	LC		LC			
Apidae	*Nomada bispinosa*	NT	A2c	NT	A2c		
Apidae	*Nomada blepharipes*	EN	B2ab(i,ii,iii)	EN	B2ab(i,ii,iii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada bluethgeni*	LC		LC			
Apidae	*Nomada bolivari*	DD		DD		Yes	Yes
Apidae	*Nomada bouceki*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada braunsiana*	LC		LC			
Apidae	*Nomada breviceps*	DD		DD			
Apidae	*Nomada breviscapa*	DD		DD		Yes	Yes
Apidae	*Nomada cadiza*	DD		DD			
Apidae	*Nomada calimorpha*	EN	B2ab(iii)	VU	B2ab(ii,iii)		
Apidae	*Nomada carnifex*	LC		LC			
Apidae	*Nomada caspia*	LC		LC			
Apidae	*Nomada castellana*	LC		LC			
Apidae	*Nomada cherkesiana*	LC		LC			
Apidae	*Nomada collarae*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada concolor*	NT	B2b(ii)	NT	B2b(ii)	Yes	Yes
Apidae	*Nomada confinis*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada conjungens*	LC		LC			
Apidae	*Nomada connectens*	LC		LC			
Apidae	*Nomada corcyraea*	NT	B2b(iii)	NT	B2b(iii)		
Apidae	*Nomada coronata*	LC		LC			
Apidae	*Nomada coxalis*	NA		NA			
Apidae	*Nomada crenulata*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada cretensis*	LC		LC		Yes	Yes
Apidae	*Nomada cristata*	LC		LC			
Apidae	*Nomada cruenta*	NT	B2b(ii)	NT	B2b(ii)		
Apidae	*Nomada cypria*	LC		LC			
Apidae	*Nomada cypricola*	NT	B2a	NT	B2a	Yes	Yes
Apidae	*Nomada diacantha*	LC		LC			
Apidae	*Nomada dira*	LC		LC			
Apidae	*Nomada discedens*	LC		LC		Yes	Yes
Apidae	*Nomada discrepans*	LC		LC			
Apidae	*Nomada distinguenda*	LC		LC			
Apidae	*Nomada dolosa*	LC		LC			
Apidae	*Nomada dubia*	DD		DD			
Apidae	*Nomada duplex*	LC		LC			
Apidae	*Nomada ebmeri*	LC		LC			
Apidae	*Nomada ecarinata*	NA					
Apidae	*Nomada elsei*	EN	B1ab(i,ii,iii)+2ab(i,ii,iii)	EN	B1ab(i,ii,iii)+2ab(i,ii,iii)	Yes	Yes
Apidae	*Nomada emarginata*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada eos*	LC		LC			
Apidae	*Nomada errans*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada erythrocephala*	VU	A2c	VU	A2c		
Apidae	*Nomada fabriciana*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada facilis*	LC		LC			
Apidae	*Nomada fallax*	LC		LC			
Apidae	*Nomada femoralis*	LC		LC			
Apidae	*Nomada fenestrata*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada ferruginata*	LC		LC			
Apidae	*Nomada filicornis*	LC		LC			
Apidae	*Nomada flava*	LC		LC		Yes	
Apidae	*Nomada flavigenis*	DD		DD			
Apidae	*Nomada flavilabris*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada flavinervis*	LC		LC			
Apidae	*Nomada flavoguttata*	LC		LC			
Apidae	*Nomada flavopicta*	LC		LC			
Apidae	*Nomada fucata*	LC		LC			
Apidae	*Nomada fulvicornis*	LC		LC			
Apidae	*Nomada furva*	LC		LC			
Apidae	*Nomada furvoides*	LC		LC			
Apidae	*Nomada fusca*	LC		LC			
Apidae	*Nomada fuscicornis*	LC		LC			
Apidae	*Nomada gageae*	DD		DD		Yes	Yes
Apidae	*Nomada glaberrima*	LC		LC			
Apidae	*Nomada glaucopis*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada goodeniana*	LC		LC			
Apidae	*Nomada gransassoi*	LC		LC		Yes	
Apidae	*Nomada gredosiana*	DD		DD		Yes	Yes
Apidae	*Nomada gribodoi*	LC		LC			
Apidae	*Nomada gruenwaldti*	LC		LC			
Apidae	*Nomada guichardi*	DD		DD			
Apidae	*Nomada guttulata*	LC		LC			
Apidae	*Nomada halophila*	VU	D2	VU	D2	Yes	Yes
Apidae	*Nomada hera*	LC		LC			
Apidae	*Nomada hirtipes*	LC		LC		Yes	
Apidae	*Nomada hispanica*	LC		LC		Yes	Yes
Apidae	*Nomada hungarica*	NT	B2a	NT	B2a		
Apidae	*Nomada illustris*	NT	B2b(ii)	NT	B2b(ii)	Yes	Yes
Apidae	*Nomada immaculata*	LC		LC			
Apidae	*Nomada imperialis*	LC		LC			
Apidae	*Nomada incisa*	EN	B2ab(iii)	EN	B2ab(iii)		
Apidae	*Nomada insignipes*	LC		LC			
Apidae	*Nomada integra*	LC		LC			
Apidae	*Nomada italica*	EN	B2ab(ii,v)	EN	B2ab(ii,v)		
Apidae	*Nomada jaramensis*	NA		NA			
Apidae	*Nomada kervilleana*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada kohli*	LC		LC			
Apidae	*Nomada kornosica*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)	Yes	Yes
Apidae	*Nomada kriesteni*	LC		LC		Yes	Yes
Apidae	*Nomada lamellata*	DD		DD		Yes	Yes
Apidae	*Nomada lapillula*	LC		LC			
Apidae	*Nomada lateritia*	NA		NA			
Apidae	*Nomada lathburiana*	LC		LC			
Apidae	*Nomada laticrus*	EN	B2ab(iii)	EN	B2ab(iiii)		
Apidae	*Nomada legoffi*	LC		LC		Yes	Yes
Apidae	*Nomada leucophthalma*	LC		LC			
Apidae	*Nomada limassolica*	LC		LC			
Apidae	*Nomada linsenmaieri*	LC		LC			
Apidae	*Nomada litigiosa*	DD		DD			
Apidae	*Nomada lucidula*	NT	B2b(iii)	NT	B2b(iii)		
Apidae	*Nomada lutea*	NA		NA			
Apidae	*Nomada luteipes*	NA		NA			
Apidae	*Nomada maculicornis*	LC		LC			
Apidae	*Nomada mandibularis*	NT	B2b(ii)	NT	B2b(ii)	Yes	Yes
Apidae	*Nomada marshamella*	LC		LC			
Apidae	*Nomada mauritanica*	LC		LC			
Apidae	*Nomada mavromoustakisi*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada maxschwarzi*	DD		DD		Yes	Yes
Apidae	*Nomada melanopyga*	EN	B2ab(iii)	EN	B2ab(iii)		
Apidae	*Nomada melathoracica*	LC		LC			
Apidae	*Nomada merceti*	LC		LC			
Apidae	*Nomada minuscula*	LC		LC			
Apidae	*Nomada mitaii*	NA		NA			
Apidae	*Nomada mocsaryi*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Apidae	*Nomada moeschleri*	LC		LC			
Apidae	*Nomada montarco*	DD		DD		Yes	Yes
Apidae	*Nomada moravitzii*	NA		NA			
Apidae	*Nomada mutabilis*	LC		LC			
Apidae	*Nomada mutica*	LC		LC			
Apidae	*Nomada nausicaa*	LC		LC			
Apidae	*Nomada nesiotica*	LC		LC		Yes	Yes
Apidae	*Nomada nigrifrons*	NA		NA			
Apidae	*Nomada nigrilabris*	LC		LC			
Apidae	*Nomada nigrospina*	LC		LC			
Apidae	*Nomada nigrovaria*	LC		LC			
Apidae	*Nomada nobilis*	LC		LC			
Apidae	*Nomada noskiewiczi*	EN	B2ab(i,ii)	EN	B2ab(i,ii)		
Apidae	*Nomada numida*	NT	B2b(ii)	NT	B2b(ii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada obscura*	LC		LC			
Apidae	*Nomada obtusifrons*	NT	B2b(iii)	NT	B2b(iiii)		
Apidae	*Nomada oculata*	LC		LC			
Apidae	*Nomada opaca*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Apidae	*Nomada opaciformis*	NA		NA			
Apidae	*Nomada oralis*	NA		NA			
Apidae	*Nomada orbitalis*	LC		LC		Yes	Yes
Apidae	*Nomada ottomanensis*	NA		NA			
Apidae	*Nomada pallispinosa*	LC		LC			
Apidae	*Nomada panurgina*	LC		LC			
Apidae	*Nomada panzeri*	LC		LC			
Apidae	*Nomada pastoralis*	NA		NA			
Apidae	*Nomada pectoralis*	LC		LC			
Apidae	*Nomada piccioliana*	LC		LC			
Apidae	*Nomada piliventris*	NA		NA			
Apidae	*Nomada pilosa*	NA		NA			
Apidae	*Nomada platythorax*	DD		DD			
Apidae	*Nomada pleurosticta*	LC		LC			
Apidae	*Nomada polemediana*	DD		DD		Yes	Yes
Apidae	*Nomada posthuma*	LC		LC			
Apidae	*Nomada priesneri*	LC		LC		Yes	Yes

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada propinqua*	LC		LC			
Apidae	*Nomada pruinosa*	LC		LC			
Apidae	*Nomada pulchra*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada pygidialis*	LC		LC			
Apidae	*Nomada pyrgosica*	LC		LC			
Apidae	*Nomada radoszkowskii*	NA		NA			
Apidae	*Nomada rhenana*	VU	B2ab(ii)	VU	B2ab(ii)		
Apidae	*Nomada roberjeotiana*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Apidae	*Nomada rostrata*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Apidae	*Nomada rubiginosa*	LC		LC			
Apidae	*Nomada rubricollis*	LC		LC			
Apidae	*Nomada rubricosa*	NA		NA			
Apidae	*Nomada rubricoxa*	LC		LC		Yes	Yes
Apidae	*Nomada rubriventris*	DD		DD			
Apidae	*Nomada ruficornis*	LC		LC			
Apidae	*Nomada rufipes*	LC		LC			
Apidae	*Nomada rufoabdominalis*	NT	B2ab(i,ii)	NT	B2ab(i,ii)	Yes	Yes
Apidae	*Nomada sabulosa*	NA		NA			
Apidae	*Nomada sanguinea*	LC		LC			
Apidae	*Nomada scheuchli*	LC		LC			
Apidae	*Nomada serricornis*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada sexfasciata*	LC		LC			
Apidae	*Nomada sheppardana*	LC		LC			
Apidae	*Nomada sicula*	EN	B2ab(i,ii,iii)	EN	B2ab(i,ii,iii)	Yes	Yes
Apidae	*Nomada signata*	LC		LC			
Apidae	*Nomada similis*	LC		LC		Yes	
Apidae	*Nomada simulatrix*	DD		DD		Yes	Yes
Apidae	*Nomada smiti*	LC		LC		Yes	Yes
Apidae	*Nomada standfussi*	LC		LC		Yes	Yes
Apidae	*Nomada stigma*	LC		LC			
Apidae	*Nomada stoeckherti*	LC		LC			
Apidae	*Nomada striata*	LC		LC			
Apidae	*Nomada subcornuta*	LC		LC		Yes	
Apidae	*Nomada succincta*	LC		LC			
Apidae	*Nomada sybarita*	EN	B2ab(i,ii,iii)	EN	B2ab(i,ii,iii)		
Apidae	*Nomada symphyti*	NT	B2b(iii,v)	NT	B2b(iii,v)		
Apidae	*Nomada tarsalis*	NA		NA			
Apidae	*Nomada tenella*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Apidae	*Nomada teunisseni*	DD		DD		Yes	Yes
Apidae	*Nomada thersites*	EN	B2ab(iii)	EN	B2ab(i,ii)		
Apidae	*Nomada tormentillae*	NT	B2b(iii)	NT	B2b(iii)		
Apidae	*Nomada trapeziformis*	EN	B2ab(i,ii,iii)	EN	B2ab(i,ii,iii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Nomada tridentirostris*	LC		LC			
Apidae	*Nomada trispinosa*	LC		LC			
Apidae	*Nomada tuberculifera*	DD		DD			
Apidae	*Nomada umbrosa*	LC		LC			
Apidae	*Nomada unica*	LC		LC			
Apidae	*Nomada unispinosa*	DD		DD			
Apidae	*Nomada verna*	NT	B2b(ii)	NT	B2b(ii)	Yes	
Apidae	*Nomada villosa*	NT	B2b(v)	NT	B2b(v)		
Apidae	*Nomada warnckei*	NA		NA			
Apidae	*Nomada yarrowi*	NA					
Apidae	*Nomada yermasoyiae*	DD		DD		Yes	Yes
Apidae	*Nomada zonata*	LC		LC			
Apidae	*Parammobatodes maroccanus*	NA		NA			
Apidae	*Parammobatodes minutus*	EN	B2ab(iii)	EN	B2ab(iii)		
Apidae	*Pasites maculatus*	LC		LC			
Apidae	*Schmiedeknechtia oraniensis*	NA		NA			
Apidae	*Tarsalia ancyliformis*	LC		LC			
Apidae	*Tarsalia hirtipes*	NA		NA			
Apidae	*Tetralonia alticincta*	LC		LC			
Apidae	*Tetralonia cinctella*	LC		LC			
Apidae	*Tetralonia dentata*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Tetralonia fulvescens*	LC		LC			
Apidae	*Tetralonia gennargentui*	LC		LC		Yes	Yes
Apidae	*Tetralonia glauca*	LC		LC			
Apidae	*Tetralonia graja*	LC		LC			
Apidae	*Tetralonia hohmanni*	LC		LC		Yes	Yes
Apidae	*Tetralonia iberica*	LC		LC			
Apidae	*Tetralonia inulae*	LC		LC			
Apidae	*Tetralonia julliani*	LC		LC			
Apidae	*Tetralonia lanzarotensis*	LC		LC			
Apidae	*Tetralonia lyncea*	LC		NT	B2b(iii)	Yes	
Apidae	*Tetralonia malvae*	LC		LC			
Apidae	*Tetralonia nana*	LC		LC			
Apidae	*Tetralonia pollinosa*	LC		LC			
Apidae	*Tetralonia ruficornis*	DD		DD			
Apidae	*Tetralonia salicariae*	LC		LC			
Apidae	*Tetralonia scabiosae*	LC		LC			
Apidae	*Tetralonia strigata*	LC		LC			
Apidae	*Tetralonia vicina*	LC					
Apidae	*Thyreus affinis*	LC		LC			
Apidae	*Thyreus elegans*	DD		DD			
Apidae	*Thyreus hellenicus*	DD		DD			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Apidae	*Thyreus hirtus*	LC		LC			
Apidae	*Thyreus histrionicus*	LC		LC			
Apidae	*Thyreus hohmanni*	LC		LC		Yes	Yes
Apidae	*Thyreus orbatus*	LC		LC			
Apidae	*Thyreus picaron*	LC		LC			
Apidae	*Thyreus ramosus*	LC		LC			
Apidae	*Thyreus scutellaris*	DD		DD			
Apidae	*Thyreus tricuspis*	NA		NA			
Apidae	*Thyreus truncatus*	LC		LC			
Apidae	*Triepeolus tristis*	NT	B2b(ii)	NT	B2b(ii)		
Apidae	*Xylocopa amedaei*	NA		NA			
Apidae	*Xylocopa cantabrita*	LC		LC			
Apidae	*Xylocopa iris*	LC		LC			
Apidae	*Xylocopa nigrita*	NA		NA			
Apidae	*Xylocopa olivieri*	LC		LC			
Apidae	*Xylocopa pubescens*	LC		LC			
Apidae	*Xylocopa valga*	LC		LC			
Apidae	*Xylocopa violacea*	LC		LC			
Apidae	*Xylocopa virginica*	NA		NA			
Colletidae	*Colletes abeillei*	LC		LC			
Colletidae	*Colletes acutiformis*	DD		DD			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Colletidae	*Colletes acutus*	LC		LC			
Colletidae	*Colletes albomaculatus*	NT	B2b(iii,v)	NT	B2b(iii,v)		
Colletidae	*Colletes anceps*	DD		DD			
Colletidae	*Colletes anchusae*	EN	B2ab(iii)	EN	B2ab(iii)		
Colletidae	*Colletes brevigena*	LC		LC			
Colletidae	*Colletes canescens*	DD		DD			
Colletidae	*Colletes carinatus*	LC		LC			
Colletidae	*Colletes cariniger*	LC		LC			
Colletidae	*Colletes caskanus*	DD		DD			
Colletidae	*Colletes caspicus*	EN	B2ab(i,iii)	CR	B2ab(i,iii)		
Colletidae	*Colletes chengtehensis*	VU	B2ab(iii)	EN	B2ab(iii)		
Colletidae	*Colletes collaris*	EN	B2ab(iii)	EN	B2ab(iii)		
Colletidae	*Colletes creticus*	LC		LC		Yes	Yes
Colletidae	*Colletes cunicularius*	LC		LC			
Colletidae	*Colletes cyprius*	LC		LC		Yes	Yes
Colletidae	*Colletes daviesanus*	LC		LC			
Colletidae	*Colletes dimidiatus*	LC		LC		Yes	Yes
Colletidae	*Colletes dinizi*	LC		LC		Yes	Yes
Colletidae	*Colletes dusmeti*	LC		LC			
Colletidae	*Colletes eous*	LC		LC			
Colletidae	*Colletes escalerai*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Colletidae	*Colletes floralis*	NT	B2ab(iii)	NT	B2ab(iii)		
Colletidae	*Colletes fodiens*	NT	B2ab(iii)	NT	B2ab(iii)		
Colletidae	*Colletes foveolaris*	LC		LC			
Colletidae	*Colletes gallicus*	LC		LC			
Colletidae	*Colletes graeffei*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Colletidae	*Colletes halophilus*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Colletidae	*Colletes hederae*	LC		LC		Yes	
Colletidae	*Colletes hethiticus*	DD		DD			
Colletidae	*Colletes hylaeiformis*	LC		LC			
Colletidae	*Colletes impunctatus*	NT	B2b(iii)	NT	B2ab(iii)		
Colletidae	*Colletes inexpectatus*	LC		LC			
Colletidae	*Colletes intricans*	NA		NA			
Colletidae	*Colletes jansmiti*	DD		DD		Yes	Yes
Colletidae	*Colletes kozlovi*	DD		DD			
Colletidae	*Colletes ligatus*	LC		LC			
Colletidae	*Colletes maidli*	LC		LC			
Colletidae	*Colletes marginatus*	LC		LC			
Colletidae	*Colletes merceti*	CR	B1ab(ii,iii)+2ab(ii,iii)	CR	B1ab(ii,iii)+2ab(ii,iii)	Yes	Yes
Colletidae	*Colletes meyeri*	EN	B2ab(iii)	EN	B2ab(iii)		
Colletidae	*Colletes mlokossewiczi*	LC		LC			
Colletidae	*Colletes moricei*	VU	B1ab(iii)+2ab(iii)	VU	B1ab(iii)+2ab(iii)	Yes	Yes

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Colletidae	*Colletes nasutus*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Colletidae	*Colletes nigricans*	LC		LC			
Colletidae	*Colletes noskiewiczi*	LC		LC			
Colletidae	*Colletes pannonicus*	LC		LC		Yes	Yes
Colletidae	*Colletes perezi*	LC		LC			
Colletidae	*Colletes pulchellus*	VU	B2ab(iii)	VU	B2ab(iii)	Yes	Yes
Colletidae	*Colletes punctatus*	EN	B2ab(iii)	EN	B2ab(iii)		
Colletidae	*Colletes schmidi*	NT	B1b(iii)+2b(iii)	NT	B1b(iii)+2b(iii)	Yes	Yes
Colletidae	*Colletes senilis*	DD		DD			
Colletidae	*Colletes sidemii*	NA					
Colletidae	*Colletes sierrensis*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)	Yes	
Colletidae	*Colletes similis*	LC		LC			
Colletidae	*Colletes squamulosus*	NA		NA			
Colletidae	*Colletes standfussi*	DD		DD		Yes	Yes
Colletidae	*Colletes succinctus*	LC		LC			
Colletidae	*Colletes tardus*	DD				Yes	
Colletidae	*Colletes tuberculatus*	LC		LC			
Colletidae	*Colletes tuberculiger*	LC		LC		Yes	Yes
Colletidae	*Colletes wacki*	NA					
Colletidae	*Colletes wolfi*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	Yes
Colletidae	*Hylaeus absolutus*	DD		DD			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Colletidae	*Hylaeus adriaticus*	LC		LC		Yes	
Colletidae	*Hylaeus alpinus*	LC		LC		Yes	
Colletidae	*Hylaeus angustatus*	LC		LC			
Colletidae	*Hylaeus annularis*	LC		LC			
Colletidae	*Hylaeus annulatus*	LC		LC			
Colletidae	*Hylaeus ater*	LC		LC		Yes	Yes
Colletidae	*Hylaeus azorae*	DD		DD		Yes	Yes
Colletidae	*Hylaeus biarmicus*	NA		NA			
Colletidae	*Hylaeus bifasciatus*	NT	B2a	NT	B2a		
Colletidae	*Hylaeus brachycephalus*	LC		LC			
Colletidae	*Hylaeus brevicornis*	LC		LC			
Colletidae	*Hylaeus canariensis*	LC		LC		Yes	Yes
Colletidae	*Hylaeus cardioscapus*	LC		LC			
Colletidae	*Hylaeus clypearis*	LC		LC			
Colletidae	*Hylaeus communis*	LC		LC			
Colletidae	*Hylaeus conformis*	NA		NA			
Colletidae	*Hylaeus confusus*	LC		LC			
Colletidae	*Hylaeus convergens*	LC		LC		Yes	Yes
Colletidae	*Hylaeus coriaceus*	LC		LC			
Colletidae	*Hylaeus cornutus*	LC		LC			
Colletidae	*Hylaeus crassanus*	NT	B2b(ii)	NT	B2b(ii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Colletidae	*Hylaeus cypricola*	LC		LC			
Colletidae	*Hylaeus deceptorius*	LC		LC		Yes	Yes
Colletidae	*Hylaeus decipiens*	LC		LC		Yes	
Colletidae	*Hylaeus difformis*	LC		LC			
Colletidae	*Hylaeus dilatatus*	LC		LC			
Colletidae	*Hylaeus duckei*	LC		LC			
Colletidae	*Hylaeus euryscapus*	LC		LC			
Colletidae	*Hylaeus friesei*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Colletidae	*Hylaeus garrulus*	LC		LC		Yes	Yes
Colletidae	*Hylaeus gazagnairei*	NA		NA			
Colletidae	*Hylaeus gibbus*	LC		LC			
Colletidae	*Hylaeus glacialis*	EN	B2ab(iii,v)	EN	B2ab(iii,v)		
Colletidae	*Hylaeus gracilicornis*	LC		LC			
Colletidae	*Hylaeus gredleri*	LC		LC			
Colletidae	*Hylaeus hellenicus*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)	Yes	Yes
Colletidae	*Hylaeus hohmanni*	LC		LC		Yes	Yes
Colletidae	*Hylaeus hyalinatus*	LC		LC			
Colletidae	*Hylaeus hyperpunctatus*	LC		LC		Yes	
Colletidae	*Hylaeus hyrcanius*	NA					
Colletidae	*Hylaeus ibericus*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	Yes
Colletidae	*Hylaeus imparilis*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Colletidae	*Hylaeus incongruus*	LC		LC			
Colletidae	*Hylaeus intermedius*	LC		LC			
Colletidae	*Hylaeus kahri*	LC		LC			
Colletidae	*Hylaeus koenigsmanni*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)	Yes	Yes
Colletidae	*Hylaeus leptocephalus*	LC		LC			
Colletidae	*Hylaeus lineolatus*	LC		LC			
Colletidae	*Hylaeus longimacula*	LC		LC			
Colletidae	*Hylaeus maderensis*	DD		DD		Yes	Yes
Colletidae	*Hylaeus mariannae*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)	Yes	Yes
Colletidae	*Hylaeus meridionalis*	DD		DD			
Colletidae	*Hylaeus moniae*	DD		DD		Yes	Yes
Colletidae	*Hylaeus nigrifacies*	LC		LC			
Colletidae	*Hylaeus nigritus*	LC		LC			
Colletidae	*Hylaeus nivaliformis*	LC		LC		Yes	
Colletidae	*Hylaeus nivalis*	LC		LC		Yes	
Colletidae	*Hylaeus pallidicornis*	DD					
Colletidae	*Hylaeus paulus*	LC		LC			
Colletidae	*Hylaeus pectoralis*	LC		LC			
Colletidae	*Hylaeus penalaris*	LC		LC		Yes	Yes
Colletidae	*Hylaeus pfankuchi*	LC		LC			
Colletidae	*Hylaeus pictipes*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Colletidae	*Hylaeus pictus*	LC		LC			
Colletidae	*Hylaeus pilosulus*	LC		LC			
Colletidae	*Hylaeus punctatus*	LC		LC			
Colletidae	*Hylaeus punctulatissimus*	LC		LC			
Colletidae	*Hylaeus punctus*	LC		LC			
Colletidae	*Hylaeus purpurissatus*	LC		LC			
Colletidae	*Hylaeus pyrenaicus*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Colletidae	*Hylaeus rinki*	LC		LC			
Colletidae	*Hylaeus rubicola*	LC		LC			
Colletidae	*Hylaeus rugicollis*	DD					
Colletidae	*Hylaeus scutellaris*	NA					
Colletidae	*Hylaeus scutellatus*	LC		LC			
Colletidae	*Hylaeus sidensis*	DD		DD			
Colletidae	*Hylaeus signatus*	LC		LC			
Colletidae	*Hylaeus sinuatus*	LC		LC			
Colletidae	*Hylaeus soror*	LC		LC			
Colletidae	*Hylaeus styriacus*	LC		LC			
Colletidae	*Hylaeus sulphuripes*	LC		LC			
Colletidae	*Hylaeus taeniolatus*	LC		LC			
Colletidae	*Hylaeus teruelus*	LC		LC		Yes	Yes
Colletidae	*Hylaeus trifidus*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Colletidae	*Hylaeus trinotatus*	LC		LC			
Colletidae	*Hylaeus tyrolensis*	LC		LC			
Colletidae	*Hylaeus variegatus*	LC		LC			
Halictidae	*Ceylalictus variegatus*	LC		LC			
Halictidae	*Dufourea alpina*	LC		LC		Yes	
Halictidae	*Dufourea balearica*	VU	D2	VU	D2	Yes	Yes
Halictidae	*Dufourea coeruleocephala*	DD				Yes	
Halictidae	*Dufourea cypria*	DD		DD			
Halictidae	*Dufourea dentiventris*	NT	A2c	NT	A2c		
Halictidae	*Dufourea fortunata*	DD		DD		Yes	Yes
Halictidae	*Dufourea gaullei*	LC		LC			
Halictidae	*Dufourea graeca*	LC		LC			
Halictidae	*Dufourea halictula*	VU	B2ab(iii)	VU	B2ab(iii)		
Halictidae	*Dufourea inermis*	EN	B2ab(iii)	EN	B2ab(iii)		
Halictidae	*Dufourea iris*	DD		DD		Yes	Yes
Halictidae	*Dufourea longiglossa*	DD		DD		Yes	Yes
Halictidae	*Dufourea lusitanica*	LC		LC		Yes	Yes
Halictidae	*Dufourea merceti*	DD		DD		Yes	Yes
Halictidae	*Dufourea minuta*	VU	B2ab(iii)	VU	B2ab(iii)		
Halictidae	*Dufourea paradoxa*	LC		LC			
Halictidae	*Dufourea similis*	NA		NA			

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Halictidae	*Dufourea styx*	LC		LC		Yes	
Halictidae	*Dufourea trautmanni*	LC		LC		Yes	Yes
Halictidae	*Dufourea wolfi*	LC		LC			
Halictidae	*Halictus adjikenticus*	EN	B2ab(iii)	EN	B2ab(iii)		
Halictidae	*Halictus alfkenellus*	DD		DD			
Halictidae	*Halictus asperulus*	LC		LC			
Halictidae	*Halictus brunnescens*	LC		LC			
Halictidae	*Halictus candiae*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	Yes
Halictidae	*Halictus carinthiacus*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	
Halictidae	*Halictus centaureae*	NT	B2a	NT	B2a	Yes	
Halictidae	*Halictus cochlearitarsis*	LC		LC			
Halictidae	*Halictus compressus*	LC		LC			
Halictidae	*Halictus consobrinus*	DD		DD			
Halictidae	*Halictus constantinensis*	NA		NA			
Halictidae	*Halictus crenicornis*	LC		LC		Yes	Yes
Halictidae	*Halictus fatsensis*	LC		LC			
Halictidae	*Halictus frontalis*	LC		LC		Yes	Yes
Halictidae	*Halictus fulvipes*	LC		LC			
Halictidae	*Halictus fumatipennis*	DD		DD		Yes	Yes
Halictidae	*Halictus graecus*	NT	B2ab(iii)	NT	B2ab(iii)		
Halictidae	*Halictus grossellus*	DD		DD			

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Halictidae	*Halictus gruenwaldti*	LC		LC		Yes	Yes
Halictidae	*Halictus holomelaenus*	LC		LC		Yes	Yes
Halictidae	*Halictus jaramielicus*	DD		DD		Yes	Yes
Halictidae	*Halictus langobardicus*	LC		LC		Yes	
Halictidae	*Halictus luganicus*	NA					
Halictidae	*Halictus lussinicus*	DD		DD		Yes	
Halictidae	*Halictus maculatus*	LC		LC			
Halictidae	*Halictus mediterranellus*	NT	B2a	NT	B2a	Yes	Yes
Halictidae	*Halictus minor*	NA					
Halictidae	*Halictus nicosiae*	LC		LC		Yes	Yes
Halictidae	*Halictus patellatus*	LC		LC			
Halictidae	*Halictus pentheri*	NT	B2b(ii)	NT	B2b(ii)		
Halictidae	*Halictus ponticus*	DD		DD		Yes	
Halictidae	*Halictus pseudotetrazonius*	DD		DD		Yes	Yes
Halictidae	*Halictus pyrenaeus*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)	Yes	Yes
Halictidae	*Halictus quadricinctus*	LC		LC			
Halictidae	*Halictus quadripartitus*	LC		LC		Yes	Yes
Halictidae	*Halictus resurgens*	LC		LC			
Halictidae	*Halictus rossicus*	DD				Yes	
Halictidae	*Halictus rubicundus*	LC		LC			
Halictidae	*Halictus rufipes*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Halictus sajoi*	LC		LC			
Halictidae	*Halictus scabiosae*	LC		LC			
Halictidae	*Halictus senilis*	NA		NA			
Halictidae	*Halictus sexcinctus*	LC		LC			
Halictidae	*Halictus simplex*	LC		LC			
Halictidae	*Halictus subsenilis*	DD		DD			
Halictidae	*Halictus tetrazonianellus*	LC		LC			
Halictidae	*Halictus tetrazonius*	NT	A2c	NT	A2c		
Halictidae	*Halictus toparensis*	DD		DD		Yes	Yes
Halictidae	*Halictus tridivisus*	DD		DD		Yes	Yes
Halictidae	*Lasioglossum acephaloides*	NT	B2b(ii)	NT	B2b(ii)		
Halictidae	*Lasioglossum aegyptiellum*	LC		LC			
Halictidae	*Lasioglossum aeratum*	LC		LC			
Halictidae	*Lasioglossum akroundicum*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum albipes*	LC		LC			
Halictidae	*Lasioglossum albocinctum*	LC		LC			
Halictidae	*Lasioglossum albovirens*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum algericolellum*	LC		LC			
Halictidae	*Lasioglossum algirum*	EN	B2ab(iii)	EN	B2ab(iii)		
Halictidae	*Lasioglossum alinense*	NA					
Halictidae	*Lasioglossum alpigenum*	LC		LC		Yes	

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum andromeda*	NA		NA			
Halictidae	*Lasioglossum anellum*	LC		LC			
Halictidae	*Lasioglossum angusticeps*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum angustipes*	LC		LC			
Halictidae	*Lasioglossum annulipes*	NA		NA			
Halictidae	*Lasioglossum aphrodite*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum apostoli*	DD		DD			
Halictidae	*Lasioglossum arctifrons*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum ariadne*	VU	B1ab(iii)+2ab(iii)	VU	B1ab(iii)+2ab(iii)	Yes	Yes
Halictidae	*Lasioglossum articulare*	DD		DD			
Halictidae	*Lasioglossum asellum*	NA		NA			
Halictidae	*Lasioglossum aureimontanum*	DD		DD		Yes	Yes
Halictidae	*Lasioglossum aureolum*	LC		LC			
Halictidae	*Lasioglossum bavaricum*	LC		LC		Yes	
Halictidae	*Lasioglossum bicallosum*	DD		DD			
Halictidae	*Lasioglossum bimaculatum*	LC		LC			
Halictidae	*Lasioglossum bischoffi*	LC		LC			
Halictidae	*Lasioglossum bluethgeni*	LC		LC			
Halictidae	*Lasioglossum boreale*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum brevicorne*	LC		LC			
Halictidae	*Lasioglossum breviventre*	EN	B2ab(i,ii)	EN	B2ab(i,ii)	Yes	

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum buccale*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum calceatum*	LC		LC			
Halictidae	*Lasioglossum callizonium*	LC		LC			
Halictidae	*Lasioglossum capitale*	LC		LC			
Halictidae	*Lasioglossum castilianum*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum chalcodes*	VU	B1ab(ii,iii)+2ab(ii,iii)	VU	B1ab(ii,iii)+2ab(ii,iii)	Yes	Yes
Halictidae	*Lasioglossum clypeare*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum clypeiferellum*	LC		LC			
Halictidae	*Lasioglossum collopiense*	LC		LC			
Halictidae	*Lasioglossum convexiusculum*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum corsicanum*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum corvinum*	LC		LC			
Halictidae	*Lasioglossum costulatum*	LC		LC			
Halictidae	*Lasioglossum crassepunctatum*	LC		LC			
Halictidae	*Lasioglossum cristula*	LC		LC			
Halictidae	*Lasioglossum cupromicans*	LC		LC			
Halictidae	*Lasioglossum damascenum*	LC		LC			
Halictidae	*Lasioglossum danuvium*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Halictidae	*Lasioglossum debilior*	NA		NA			
Halictidae	*Lasioglossum denislucum*	DD		DD			
Halictidae	*Lasioglossum discus*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum dolichocephalum*	LC		LC			
Halictidae	*Lasioglossum duckei*	LC		LC			
Halictidae	*Lasioglossum dusmeti*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum edessae*	NA		NA			
Halictidae	*Lasioglossum elegans*	LC		LC			
Halictidae	*Lasioglossum ellipticeps*	NA		NA			
Halictidae	*Lasioglossum epipygiale*	NA		NA			
Halictidae	*Lasioglossum erraticum*	LC		LC			
Halictidae	*Lasioglossum euboeense*	VU	B2ab(iv)	VU	B2ab(iv)		
Halictidae	*Lasioglossum eurasicum*	LC		LC		Yes	
Halictidae	*Lasioglossum euxanthopus*	NA		NA			
Halictidae	*Lasioglossum euxinicum*	NA		NA			
Halictidae	*Lasioglossum fallax*	NA					
Halictidae	*Lasioglossum fratellum*	LC		LC			
Halictidae	*Lasioglossum fulvicorne*	LC		LC			
Halictidae	*Lasioglossum gilanum*	NA					
Halictidae	*Lasioglossum glabriusculum*	LC		LC			
Halictidae	*Lasioglossum glaciegenitum*	NA		NA			
Halictidae	*Lasioglossum gorkiense*	NA					
Halictidae	*Lasioglossum griseolum*	LC		LC			
Halictidae	*Lasioglossum haesitans*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum hethiticum*	NA		NA			
Halictidae	*Lasioglossum hilare*	NA		NA			
Halictidae	*Lasioglossum ibericum*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum imbecillum*	LC		LC			
Halictidae	*Lasioglossum immunitum*	LC		LC			
Halictidae	*Lasioglossum intermedium*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum interruptum*	LC		LC			
Halictidae	*Lasioglossum kirgisicum*	NA					
Halictidae	*Lasioglossum kotschyi*	DD		DD		Yes	Yes
Halictidae	*Lasioglossum kussariense*	LC		LC			
Halictidae	*Lasioglossum laeve*	VU	B2ab(i,ii)	VU	B2ab(i,ii)		
Halictidae	*Lasioglossum laevidorsum*	NT	B2b(ii)	NT	B2b(ii)		
Halictidae	*Lasioglossum laevigatum*	LC		LC			
Halictidae	*Lasioglossum laterale*	NT	B2a	NT	B2a		
Halictidae	*Lasioglossum laticeps*	LC		LC			
Halictidae	*Lasioglossum lativentre*	LC		LC			
Halictidae	*Lasioglossum leucomontanum*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)	Yes	Yes
Halictidae	*Lasioglossum leucopus*	LC		LC			
Halictidae	*Lasioglossum leucozonium*	LC		LC			
Halictidae	*Lasioglossum limbelloides*	LC		LC			
Halictidae	*Lasioglossum limbellum*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum lineare*	LC		LC			
Halictidae	*Lasioglossum lissonotum*	NT	B2b(v)	NT	B2b(v)	Yes	
Halictidae	*Lasioglossum littorale*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum loetum*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum longirostre*	NA		NA			
Halictidae	*Lasioglossum lucidulum*	LC		LC			
Halictidae	*Lasioglossum majus*	LC		LC			
Halictidae	*Lasioglossum malachurum*	LC		LC			
Halictidae	*Lasioglossum mandibulare*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum marginatum*	LC		LC			
Halictidae	*Lasioglossum marginellum*	NT	B2b(ii)	NT	B2b(ii)		
Halictidae	*Lasioglossum maurusium*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum medinai*	LC		LC			
Halictidae	*Lasioglossum mediterraneum*	LC		LC			
Halictidae	*Lasioglossum mesosclerum*	LC		LC			
Halictidae	*Lasioglossum minutissimum*	LC		LC			
Halictidae	*Lasioglossum minutulum*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Halictidae	*Lasioglossum monstrificum*	LC		LC			
Halictidae	*Lasioglossum montivolans*	DD		DD		Yes	Yes
Halictidae	*Lasioglossum morio*	LC		LC			
Halictidae	*Lasioglossum musculoides*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum nigripes*	LC		LC			
Halictidae	*Lasioglossum nitidiusculum*	LC		LC			
Halictidae	*Lasioglossum nitidulum*	LC		LC			
Halictidae	*Lasioglossum niveocinctum*	NA					
Halictidae	*Lasioglossum obscuratum*	LC		LC			
Halictidae	*Lasioglossum orihuelicum*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Halictidae	*Lasioglossum pallens*	LC		LC			
Halictidae	*Lasioglossum pallidum*	NA					
Halictidae	*Lasioglossum parvulum*	LC		LC			
Halictidae	*Lasioglossum pauperatum*	LC		LC			
Halictidae	*Lasioglossum pauxillum*	LC		LC			
Halictidae	*Lasioglossum perclavipes*	LC		LC			
Halictidae	*Lasioglossum peregrinum*	VU	B2ab(iii)	VU	B2ab(iii)		
Halictidae	*Lasioglossum phoenicurum*	DD		DD			
Halictidae	*Lasioglossum pleurospeculum*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Halictidae	*Lasioglossum podolicum*	LC		LC			
Halictidae	*Lasioglossum politum*	LC		LC			
Halictidae	*Lasioglossum prasinum*	LC		LC			
Halictidae	*Lasioglossum pressithorax*	LC		LC			
Halictidae	*Lasioglossum prunellum*	NA		NA			
Halictidae	*Lasioglossum pseudocaspicum*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum pseudoleptocephalum*	NT	B2a	NT	B2a		
Halictidae	*Lasioglossum pseudoplanulum*	LC		LC			
Halictidae	*Lasioglossum punctatissimum*	LC		LC			
Halictidae	*Lasioglossum puncticolle*	LC		LC			
Halictidae	*Lasioglossum pygmaeum*	LC		LC			
Halictidae	*Lasioglossum quadrinotatulum*	LC		LC			
Halictidae	*Lasioglossum quadrinotatum*	LC		LC			
Halictidae	*Lasioglossum quadrisignatum*	EN	B2ab(iii)	EN	B2ab(iii)		
Halictidae	*Lasioglossum ragusanum*	LC		LC		Yes	
Halictidae	*Lasioglossum rostratum*	NA					
Halictidae	*Lasioglossum rufitarse*	LC		LC			
Halictidae	*Lasioglossum rupestre*	NA		NA			
Halictidae	*Lasioglossum salinum*	NA		NA			
Halictidae	*Lasioglossum samaricum*	DD		DD			
Halictidae	*Lasioglossum semilucens*	LC		LC			
Halictidae	*Lasioglossum setulellum*	EN	B2ab(iii)	EN	B2ab(iii)		
Halictidae	*Lasioglossum setulosum*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	
Halictidae	*Lasioglossum sexmaculatum*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum sexnotatulum*	EN	B2ab(v)	EN	B2ab(v)		
Halictidae	*Lasioglossum sexnotatum*	LC		LC			
Halictidae	*Lasioglossum sexstrigatum*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum smeathmanellum*	LC		LC			
Halictidae	*Lasioglossum soror*	LC		LC			
Halictidae	*Lasioglossum sphecodimorphum*	LC		LC			
Halictidae	*Lasioglossum strictifrons*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum subaenescens*	NT	B2a	NT	B2a		
Halictidae	*Lasioglossum subfasciatum*	VU	B2ab(iii)	VU	B2ab(iii)		
Halictidae	*Lasioglossum subfulvicorne*	LC		LC			
Halictidae	*Lasioglossum subhirtum*	LC		LC			
Halictidae	*Lasioglossum tarsatum*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Lasioglossum tauricum*	DD				Yes	
Halictidae	*Lasioglossum transitorium*	LC		LC			
Halictidae	*Lasioglossum trichopygum*	LC		LC			
Halictidae	*Lasioglossum tricinctum*	LC		LC			
Halictidae	*Lasioglossum truncaticolle*	LC		LC			
Halictidae	*Lasioglossum tschibuklinum*	DD		DD			
Halictidae	*Lasioglossum tungusicum*	NA					
Halictidae	*Lasioglossum vergilianum*	DD		DD		Yes	Yes
Halictidae	*Lasioglossum villosulum*	LC		LC			
Halictidae	*Lasioglossum virens*	VU	B2ab(iii)	VU	B2ab(iii)		
Halictidae	*Lasioglossum viride*	LC		LC		Yes	Yes
Halictidae	*Lasioglossum wollastoni*	LC		LC		Yes	Yes

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Lasioglossum xanthopus*	LC		LC			
Halictidae	*Lasioglossum zonulum*	LC		LC			
Halictidae	*Nomiapis bispinosa*	LC		LC			
Halictidae	*Nomiapis diversipes*	LC		LC			
Halictidae	*Nomiapis equestris*	LC		LC			
Halictidae	*Nomiapis femoralis*	EN	B2ab(ii,iii,iv,v)	EN	B2ab(ii,iii,iv,v)		
Halictidae	*Nomiapis fugax*	NA					
Halictidae	*Nomiapis monstrosa*	LC		LC			
Halictidae	*Nomiapis paulyi*	LC		LC		Yes	Yes
Halictidae	*Nomiapis rufiventris*	NA		NA			
Halictidae	*Nomiapis susannae*	LC		LC		Yes	Yes
Halictidae	*Nomiapis valga*	EN	B2ab(ii)	EN	B2ab(ii)		
Halictidae	*Nomioides chalybeatus*	NA		NA			
Halictidae	*Nomioides deceptor*	LC		LC			
Halictidae	*Nomioides facilis*	LC		LC			
Halictidae	*Nomioides fortunatus*	LC		LC			
Halictidae	*Nomioides minutissimus*	LC		LC			
Halictidae	*Nomioides pulverosus*	NA					
Halictidae	*Pseudapis elegantissima*	NA					
Halictidae	*Rhophitoides canus*	LC		NT	B2b(ii)		
Halictidae	*Rhophitoides epiroticus*	LC		LC		Yes	

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Rophites algirus*	LC		LC			
Halictidae	*Rophites clypealis*	NA		NA			
Halictidae	*Rophites foveolatus*	NA		NA			
Halictidae	*Rophites hartmanni*	LC		LC			
Halictidae	*Rophites hellenicus*	LC		LC		Yes	
Halictidae	*Rophites leclercqi*	DD		DD			
Halictidae	*Rophites quinquespinosus*	VU	B2ab(v)	VU	B2ab(v)		
Halictidae	*Rophites thracius*	DD		DD		Yes	Yes
Halictidae	*Seladonia cephalica*	LC		LC			
Halictidae	*Seladonia concinna*	LC		LC		Yes	Yes
Halictidae	*Seladonia confusa*	LC		LC			
Halictidae	*Seladonia cretella*	LC		LC		Yes	Yes
Halictidae	*Seladonia cyprica*	NA		NA			
Halictidae	*Seladonia gavarnica*	LC		LC			
Halictidae	*Seladonia gemmea*	LC		LC			
Halictidae	*Seladonia gemmella*	LC		LC			
Halictidae	*Seladonia inpilosa*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Halictidae	*Seladonia kessleri*	LC		LC			
Halictidae	*Seladonia leucahenea*	LC		LC			
Halictidae	*Seladonia microcardia*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)	Yes	Yes
Halictidae	*Seladonia mucorea*	NT	B2b(iii)	NT	B2b(iii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Seladonia orientana*	LC		LC			
Halictidae	*Seladonia phryganica*	LC		LC			
Halictidae	*Seladonia pollinosa*	LC		LC			
Halictidae	*Seladonia pseudomucorea*	NA					
Halictidae	*Seladonia pulverea*	DD		DD			
Halictidae	*Seladonia seladonia*	LC		LC			
Halictidae	*Seladonia semitecta*	EN	B2ab(iii)	EN	B2ab(iii)		
Halictidae	*Seladonia semitica*	NA		NA			
Halictidae	*Seladonia smaragdula*	LC		LC			
Halictidae	*Seladonia subaurata*	LC		LC			
Halictidae	*Seladonia submediterranea*	LC		LC			
Halictidae	*Seladonia tuberculata*	NA					
Halictidae	*Seladonia tumulorum*	LC		LC			
Halictidae	*Seladonia vestita*	DD		DD			
Halictidae	*Sphecodes aetnensis*	DD		DD		Yes	Yes
Halictidae	*Sphecodes albilabris*	LC		LC			
Halictidae	*Sphecodes algeriensis*	LC		LC			
Halictidae	*Sphecodes alternatus*	LC		LC			
Halictidae	*Sphecodes anatolicus*	NT	B2a	NT	B2a		
Halictidae	*Sphecodes atlanticus*	VU	B1ab(iii)+2ab(iii)	VU	B1ab(iii)+B2ab(iii)		
Halictidae	*Sphecodes barbatus*	NA		NA			

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Halictidae	*Sphecodes combai*	LC		LC		Yes	Yes
Halictidae	*Sphecodes crassanus*	LC		LC			
Halictidae	*Sphecodes crassus*	LC		LC			
Halictidae	*Sphecodes creticus*	LC		LC		Yes	Yes
Halictidae	*Sphecodes cristatus*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Sphecodes croaticus*	LC		LC			
Halictidae	*Sphecodes cypricus*	LC		LC		Yes	Yes
Halictidae	*Sphecodes dusmeti*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Sphecodes ephippius*	LC		LC			
Halictidae	*Sphecodes ferruginatus*	LC		LC			
Halictidae	*Sphecodes geoffrellus*	LC		LC			
Halictidae	*Sphecodes gibbus*	LC		LC			
Halictidae	*Sphecodes gomerensis*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Halictidae	*Sphecodes hirtellus*	LC		LC			
Halictidae	*Sphecodes hyalinatus*	LC		LC			
Halictidae	*Sphecodes intermedius*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Sphecodes larochei*	LC		LC		Yes	Yes
Halictidae	*Sphecodes longuloides*	LC		LC			
Halictidae	*Sphecodes longulus*	LC		LC			
Halictidae	*Sphecodes majalis*	LC		LC			
Halictidae	*Sphecodes marginatus*	LC		LC			

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Halictidae	*Sphecodes miniatus*	LC		LC			
Halictidae	*Sphecodes monilicornis*	LC		LC			
Halictidae	*Sphecodes niger*	LC		LC			
Halictidae	*Sphecodes nomioidis*	LC		LC			
Halictidae	*Sphecodes olivieri*	NT	B2ab(i,ii)	NT	B2ab(i,ii)		
Halictidae	*Sphecodes pellucidus*	LC		LC			
Halictidae	*Sphecodes piceohirtus*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Halictidae	*Sphecodes pinguiculus*	EN	B2ab(iii)	EN	B2ab(iii)		
Halictidae	*Sphecodes pseudocrassus*	DD		DD		Yes	Yes
Halictidae	*Sphecodes pseudofasciatus*	LC		LC			
Halictidae	*Sphecodes puncticeps*	LC		LC			
Halictidae	*Sphecodes reticulatus*	LC		LC			
Halictidae	*Sphecodes rubicundus*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Sphecodes rubripes*	LC		LC		Yes	Yes
Halictidae	*Sphecodes ruficrus*	LC		LC			
Halictidae	*Sphecodes rufiventris*	LC		LC			
Halictidae	*Sphecodes scabricollis*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Sphecodes schenckii*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Sphecodes spinulosus*	NT	B2b(iii)	NT	B2b(iii)		
Halictidae	*Sphecodes zangherii*	DD		DD			
Halictidae	*Systropha curvicornis*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Halictidae	*Systropha grandimargo*	LC		LC		Yes	Yes
Halictidae	*Systropha planidens*	LC		LC			
Halictidae	*Thrincohalictus prognathus*	NA		NA			
Megachilidae	*Afranthidium carduele*	LC		LC			
Megachilidae	*Afranthidium schulthessii*	LC		LC		Yes	Yes
Megachilidae	*Aglaoapis tridentata*	LC		LC			
Megachilidae	*Anthidiellum breviusculum*	LC		LC		Yes	Yes
Megachilidae	*Anthidiellum strigatum*	LC		LC			
Megachilidae	*Anthidiellum troodicum*	LC		LC			
Megachilidae	*Anthidium caspicum*	NA		NA			
Megachilidae	*Anthidium cingulatum*	NT	B2b(ii)	NT	B2b(ii)		
Megachilidae	*Anthidium dalmaticum*	LC		LC			
Megachilidae	*Anthidium diadema*	LC		LC			
Megachilidae	*Anthidium florentinum*	LC		LC			
Megachilidae	*Anthidium loti*	LC		LC			
Megachilidae	*Anthidium manicatum*	LC		LC			
Megachilidae	*Anthidium montanum*	VU	B2ab(i,ii,iii)	VU	B2ab(i,ii,iii)		
Megachilidae	*Anthidium oblongatum*	LC		LC			
Megachilidae	*Anthidium punctatum*	LC		LC			
Megachilidae	*Anthidium rotundum*	NA		NA			
Megachilidae	*Anthidium septemspinosum*	NT	B2b(iii)	NT	B2b(iii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Anthidium spiniventre*	LC		LC			
Megachilidae	*Anthidium taeniatum*	LC		LC			
Megachilidae	*Anthidium undulatiforme*	LC		LC			
Megachilidae	*Anthidium undulatum*	NT	B2b(ii)	NT	B2b(ii)		
Megachilidae	*Anthidium wuestneii*	NA		NA			
Megachilidae	*Chelostoma aegaeicum*	LC		LC			
Megachilidae	*Chelostoma campanularum*	LC		LC			
Megachilidae	*Chelostoma comosum*	DD		DD			
Megachilidae	*Chelostoma diodon*	LC		LC			
Megachilidae	*Chelostoma distinctum*	LC		LC			
Megachilidae	*Chelostoma edentulum*	LC		LC			
Megachilidae	*Chelostoma emarginatum*	LC		LC			
Megachilidae	*Chelostoma florisomne*	LC		LC			
Megachilidae	*Chelostoma forcipatum*	NA		NA			
Megachilidae	*Chelostoma foveolatum*	LC		LC			
Megachilidae	*Chelostoma grande*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Megachilidae	*Chelostoma handlirschi*	DD		DD			
Megachilidae	*Chelostoma hellenicum*	LC		LC		Yes	Yes
Megachilidae	*Chelostoma incognitum*	LC		LC			
Megachilidae	*Chelostoma laticaudum*	LC		LC		Yes	Yes
Megachilidae	*Chelostoma longifacies*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Chelostoma lucens*	LC		LC			
Megachilidae	*Chelostoma mocsaryi*	LC		LC			
Megachilidae	*Chelostoma nasutum*	LC		LC			
Megachilidae	*Chelostoma rapunculi*	LC		LC			
Megachilidae	*Chelostoma stefanii*	LC		LC		Yes	Yes
Megachilidae	*Chelostoma styriacum*	LC		LC			
Megachilidae	*Chelostoma transversum*	LC		LC		Yes	Yes
Megachilidae	*Chelostoma ventrale*	LC		LC			
Megachilidae	*Coelioxys acanthopyga*	NT	B2b(iii)	NT	B2b(iii)		
Megachilidae	*Coelioxys acanthurus*	NT	B2b(iii)	NT	B2b(iii)		
Megachilidae	*Coelioxys afer*	LC		LC			
Megachilidae	*Coelioxys alatus*	LC		LC			
Megachilidae	*Coelioxys argenteus*	LC		LC			
Megachilidae	*Coelioxys artemis*	LC		LC			
Megachilidae	*Coelioxys aurolimbatus*	LC		LC			
Megachilidae	*Coelioxys brevis*	NT	B2b(iii)	NT	B2b(iii)		
Megachilidae	*Coelioxys caudatus*	LC		LC			
Megachilidae	*Coelioxys conoideus*	LC		LC			
Megachilidae	*Coelioxys coturnix*	LC		LC			
Megachilidae	*Coelioxys decipiens*	NA		NA			
Megachilidae	*Coelioxys echinatus*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Coelioxys elegantulus*	NA		NA			
Megachilidae	*Coelioxys elongatulus*	NA		NA			
Megachilidae	*Coelioxys elongatus*	LC		LC			
Megachilidae	*Coelioxys elsei*	DD		DD			
Megachilidae	*Coelioxys emarginatus*	EN	B2ab(ii)	EN	B2ab(ii)		
Megachilidae	*Coelioxys haemorrhoa*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Megachilidae	*Coelioxys inermis*	LC		LC			
Megachilidae	*Coelioxys lanceolatus*	NT	B2b(iii)	NT	B2b(iii)		
Megachilidae	*Coelioxys mandibularis*	LC		LC			
Megachilidae	*Coelioxys mielbergi*	NA					
Megachilidae	*Coelioxys obtusispina*	DD		DD			
Megachilidae	*Coelioxys obtusus*	NT	B2a	NT	B2a		
Megachilidae	*Coelioxys osmiae*	NA		NA			
Megachilidae	*Coelioxys polycentris*	EN	B2ab(ii)	EN	B2ab(ii)		
Megachilidae	*Coelioxys quadridentatus*	LC		LC			
Megachilidae	*Coelioxys rufescens*	LC		LC			
Megachilidae	*Dioxys ardens*	NA		NA			
Megachilidae	*Dioxys atlanticus*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Megachilidae	*Dioxys cinctus*	LC		LC			
Megachilidae	*Dioxys lanzarotensis*	DD		DD		Yes	Yes
Megachilidae	*Dioxys moestus*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Dioxys pumilus*	LC		LC			
Megachilidae	*Ensliniana bidentata*	LC		LC			
Megachilidae	*Eoanthidium clypeare*	NT	B2ab(i,ii)	NT	B2b(i,ii)		
Megachilidae	*Eoanthidium insulare*	LC		LC			
Megachilidae	*Eoanthidium nasiculum*	NA		NA			
Megachilidae	*Eoanthidium pasteelsi*	NA		NA			
Megachilidae	*Haetosmia circumventa*	LC		LC			
Megachilidae	*Haetosmia vechti*	NA		NA			
Megachilidae	*Heriades clavicornis*	NA		NA			
Megachilidae	*Heriades crenulata*	LC		LC			
Megachilidae	*Heriades labiata*	NA		NA			
Megachilidae	*Heriades punctulifera*	LC		LC			
Megachilidae	*Heriades rubicola*	LC		LC			
Megachilidae	*Heriades truncorum*	LC		LC			
Megachilidae	*Hofferia schmiedeknechti*	LC		LC			
Megachilidae	*Hoplitis acuticornis*	LC		LC			
Megachilidae	*Hoplitis adunca*	LC		LC			
Megachilidae	*Hoplitis agis*	NA		NA			
Megachilidae	*Hoplitis albatera*	DD		DD		Yes	Yes
Megachilidae	*Hoplitis albiscopa*	LC		LC			
Megachilidae	*Hoplitis anipuncta*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Hoplitis annulata*	LC		LC			
Megachilidae	*Hoplitis antalyae*	LC		LC			
Megachilidae	*Hoplitis anthocopoides*	LC		LC			
Megachilidae	*Hoplitis antigae*	LC		LC			
Megachilidae	*Hoplitis batyamae*	NA		NA			
Megachilidae	*Hoplitis benoisti*	LC		LC			
Megachilidae	*Hoplitis bicallosa*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)		
Megachilidae	*Hoplitis bihamata*	LC		LC		Yes	Yes
Megachilidae	*Hoplitis bispinosa*	LC		LC			
Megachilidae	*Hoplitis bisulca*	LC		LC			
Megachilidae	*Hoplitis brachypogon*	LC		LC			
Megachilidae	*Hoplitis cadiza*	LC		LC			
Megachilidae	*Hoplitis campanularis*	LC		LC			
Megachilidae	*Hoplitis carinata*	LC		LC			
Megachilidae	*Hoplitis caucasicola*	DD		DD			
Megachilidae	*Hoplitis ciliaris*	LC		LC			
Megachilidae	*Hoplitis claviventris*	LC		LC			
Megachilidae	*Hoplitis corcyraea*	LC		LC		Yes	
Megachilidae	*Hoplitis cristatula*	LC		LC			
Megachilidae	*Hoplitis curtula*	LC		LC			
Megachilidae	*Hoplitis curvipes*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Hoplitis cypriaca*	EN	B1ab(iii)+2ab(iii)	EN	B1ab(iii)+2ab(iii)		
Megachilidae	*Hoplitis dalmatica*	LC		LC			
Megachilidae	*Hoplitis fabrei*	LC		LC		Yes	
Megachilidae	*Hoplitis fasciculata*	LC		LC			
Megachilidae	*Hoplitis fertoni*	LC		LC			
Megachilidae	*Hoplitis fulva*	VU	B2ab(ii,iii)	DD			
Megachilidae	*Hoplitis furcula*	NA		NA			
Megachilidae	*Hoplitis galbula*	NA		NA			
Megachilidae	*Hoplitis galichicae*	DD				Yes	
Megachilidae	*Hoplitis graeca*	LC		LC		Yes	Yes
Megachilidae	*Hoplitis grandiscapa*	NA		NA			
Megachilidae	*Hoplitis grossepunctata*	NA		NA			
Megachilidae	*Hoplitis grumi*	NA		NA			
Megachilidae	*Hoplitis haemi*	DD		DD			
Megachilidae	*Hoplitis hilbera*	LC		LC		Yes	Yes
Megachilidae	*Hoplitis holmboei*	VU	D1	VU	D1	Yes	Yes
Megachilidae	*Hoplitis idaensis*	NA		NA			
Megachilidae	*Hoplitis illyrica*	LC		LC			
Megachilidae	*Hoplitis insularis*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Megachilidae	*Hoplitis jakovlevi*	LC		LC			
Megachilidae	*Hoplitis jheringii*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Hoplitis laboriosa*	NA					
Megachilidae	*Hoplitis laevifrons*	LC		LC			
Megachilidae	*Hoplitis lepeletieri*	LC		LC		Yes	
Megachilidae	*Hoplitis leucomelana*	LC		LC			
Megachilidae	*Hoplitis limassolica*	LC		LC			
Megachilidae	*Hoplitis lithodorae*	LC		LC		Yes	Yes
Megachilidae	*Hoplitis loti*	LC		LC		Yes	
Megachilidae	*Hoplitis lysholmi*	LC		LC			
Megachilidae	*Hoplitis manicata*	LC		LC			
Megachilidae	*Hoplitis manuelae*	DD		DD		Yes	Yes
Megachilidae	*Hoplitis marchali*	LC		LC			
Megachilidae	*Hoplitis maritima*	NA					
Megachilidae	*Hoplitis mazzuccoi*	LC		LC			
Megachilidae	*Hoplitis mitis*	LC		LC			
Megachilidae	*Hoplitis mocsaryi*	LC		LC			
Megachilidae	*Hoplitis mollis*	NA		NA			
Megachilidae	*Hoplitis monticola*	LC		LC			
Megachilidae	*Hoplitis moricei*	LC		LC			
Megachilidae	*Hoplitis mucida*	NA		NA			
Megachilidae	*Hoplitis nicolaei*	LC		LC			
Megachilidae	*Hoplitis nitidula*	NA					

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Hoplitis obtusa*	LC		LC			
Megachilidae	*Hoplitis occidentalis*	LC		LC			
Megachilidae	*Hoplitis ochraceicornis*	LC		LC		Yes	
Megachilidae	*Hoplitis onychophora*	NA		NA			
Megachilidae	*Hoplitis pallicornis*	LC		LC			
Megachilidae	*Hoplitis papaveris*	LC		LC			
Megachilidae	*Hoplitis parnesica*	DD		DD		Yes	Yes
Megachilidae	*Hoplitis peniculifera*	DD		DD			
Megachilidae	*Hoplitis perambigua*	LC		LC		Yes	Yes
Megachilidae	*Hoplitis perezi*	LC		LC			
Megachilidae	*Hoplitis pici*	LC		LC			
Megachilidae	*Hoplitis pomarina*	DD		DD			
Megachilidae	*Hoplitis praestans*	LC		LC			
Megachilidae	*Hoplitis princeps*	LC		LC			
Megachilidae	*Hoplitis pulchella*	NA		NA			
Megachilidae	*Hoplitis quinquespinosa*	NA		NA			
Megachilidae	*Hoplitis ravouxi*	LC		LC		Yes	
Megachilidae	*Hoplitis robusta*	LC		LC			
Megachilidae	*Hoplitis saundersi*	LC		LC			
Megachilidae	*Hoplitis saxialis*	VU	B2ab(iii)	EN	B2ab(iii)		
Megachilidae	*Hoplitis serainae*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Hoplitis stecki*	LC		LC		Yes	
Megachilidae	*Hoplitis stellaris*	NA		NA			
Megachilidae	*Hoplitis strymonia*	NA		NA			
Megachilidae	*Hoplitis subbutea*	LC		LC			
Megachilidae	*Hoplitis submanicata*	LC		LC		Yes	Yes
Megachilidae	*Hoplitis taurica*	DD				Yes	
Megachilidae	*Hoplitis tenuispina*	LC		LC		Yes	Yes
Megachilidae	*Hoplitis teucrii*	NA		NA			
Megachilidae	*Hoplitis tigrina*	LC		LC			
Megachilidae	*Hoplitis tkalcuella*	LC		LC		Yes	Yes
Megachilidae	*Hoplitis tridentata*	LC		LC			
Megachilidae	*Hoplitis tuberculata*	LC		LC			
Megachilidae	*Hoplitis turcestanica*	NA		NA			
Megachilidae	*Hoplitis villosa*	LC		LC		Yes	
Megachilidae	*Hoplitis yermasoyiae*	LC		LC			
Megachilidae	*Hoplitis zaianorum*	LC		LC			
Megachilidae	*Hoplitis zandeni*	LC		LC		Yes	Yes
Megachilidae	*Icteranthidium cimbiciforme*	CR	B2ab(i,ii,iii)	CR	B2ab(i,ii,iii)		
Megachilidae	*Icteranthidium ferrugineum*	LC		LC			
Megachilidae	*Icteranthidium floripetum*	NA					
Megachilidae	*Icteranthidium grohmanni*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Icteranthidium laterale*	NT	B2b(iii)	NT	B2b(iiii)		
Megachilidae	*Lithurgus chrysurus*	LC		LC			
Megachilidae	*Lithurgus cornutus*	LC		LC			
Megachilidae	*Lithurgus tibialis*	LC		LC			
Megachilidae	*Megachile albisecta*	LC		LC			
Megachilidae	*Megachile albocristata*	LC		LC			
Megachilidae	*Megachile albohirta*	DD		DD			
Megachilidae	*Megachile albonotata*	LC		LC			
Megachilidae	*Megachile alpicola*	LC		LC			
Megachilidae	*Megachile analis*	LC		LC			
Megachilidae	*Megachile anatolica*	LC		LC			
Megachilidae	*Megachile apennina*	LC		LC		Yes	Yes
Megachilidae	*Megachile apicalis*	LC		LC			
Megachilidae	*Megachile argentata*	LC		LC			
Megachilidae	*Megachile baetica*	LC		LC		Yes	Yes
Megachilidae	*Megachile binominata*	LC		LC		Yes	Yes
Megachilidae	*Megachile bombycina*	NT	B2b(i,ii)	EN	B2ab(i,ii)		
Megachilidae	*Megachile burdigalensis*	DD		DD			
Megachilidae	*Megachile canariensis*	LC		LC		Yes	Yes
Megachilidae	*Megachile canescens*	LC		IC		Yes	Yes
Megachilidae	*Megachile centuncularis*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Megachile circumcincta*	LC		LC			
Megachilidae	*Megachile cressa*	DD		DD		Yes	Yes
Megachilidae	*Megachile cypricola*	VU	B1ab(iii)+2ab(iii)	VU	B1ab(iii)+2ab(iii)	Yes	Yes
Megachilidae	*Megachile deceptoria*	DD		DD			
Megachilidae	*Megachile diabolica*	EN	B2ab(iii)	EN	B2ab(iii)		
Megachilidae	*Megachile disjunctiformis*	NA		NA			
Megachilidae	*Megachile doriae*	NA		NA			
Megachilidae	*Megachile ericetorum*	LC		LC			
Megachilidae	*Megachile farinosa*	LC		LC			
Megachilidae	*Megachile fertoni*	LC		LC			
Megachilidae	*Megachile flabellipes*	LC		LC			
Megachilidae	*Megachile flavipes*	NA		NA			
Megachilidae	*Megachile foersteri*	NA		NA			
Megachilidae	*Megachile fuerteventurae*	LC		LC		Yes	Yes
Megachilidae	*Megachile fulvimana*	NA		NA			
Megachilidae	*Megachile genalis*	LC		LC			
Megachilidae	*Megachile giraudi*	LC		LC			
Megachilidae	*Megachile hohmanni*	EN	B1ab(i,ii)+2ab(i,ii)	EN	B1ab(i,ii)+2ab(i,ii)	Yes	Yes
Megachilidae	*Megachile hungarica*	LC		LC			
Megachilidae	*Megachile inexspectata*	NA		NA			
Megachilidae	*Megachile lagopoda*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Megachile lapponica*	LC		LC			
Megachilidae	*Megachile leachella*	LC		LC			
Megachilidae	*Megachile lefebvrei*	NT	B2b(iii)	NT	B2b(iii)		
Megachilidae	*Megachile leucomalla*	VU	B2ab(ii)	EN	B2ab(ii)		
Megachilidae	*Megachile ligniseca*	LC		LC			
Megachilidae	*Megachile lucidifrons*	DD		DD		Yes	Yes
Megachilidae	*Megachile manicata*	DD		DD			
Megachilidae	*Megachile marginata*	LC		LC			
Megachilidae	*Megachile maritima*	LC		LC			
Megachilidae	*Megachile melanogaster*	LC		LC			
Megachilidae	*Megachile melanopyga*	LC		LC			
Megachilidae	*Megachile minutissima*	NA		NA			
Megachilidae	*Megachile montenegrensis*	LC		LC			
Megachilidae	*Megachile nigriventris*	LC		LC			
Megachilidae	*Megachile octosignata*	LC		LC			
Megachilidae	*Megachile opacifrons*	LC		LC			
Megachilidae	*Megachile otomita*	NA		NA			
Megachilidae	*Megachile parietina*	LC		LC			
Megachilidae	*Megachile patellimana*	NA		NA			
Megachilidae	*Megachile pilicrus*	LC		LC			
Megachilidae	*Megachile posti*	DD		DD		Yes	Yes

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Megachile pusilla*	LC		LC			
Megachilidae	*Megachile pyrenaea*	NT	A2c	NT	A2c		
Megachilidae	*Megachile pyrenaica*	LC		LC			
Megachilidae	*Megachile roeweri*	LC		LC			
Megachilidae	*Megachile rotundata*	LC		LC			
Megachilidae	*Megachile rufescens*	LC		LC		Yes	Yes
Megachilidae	*Megachile rufitarsis*	NA		NA			
Megachilidae	*Megachile saussurei*	NA					
Megachilidae	*Megachile sculpturalis*	NA		NA			
Megachilidae	*Megachile semicircularis*	LC		LC			
Megachilidae	*Megachile sicula*	LC		LC			
Megachilidae	*Megachile syriaca*	NA		NA			
Megachilidae	*Megachile tecta*	NA					
Megachilidae	*Megachile tenuistriga*	LC		LC			
Megachilidae	*Megachile thevestensis*	DD		DD			
Megachilidae	*Megachile troodica*	DD		DD		Yes	Yes
Megachilidae	*Megachile versicolor*	LC		LC			
Megachilidae	*Megachile walkeri*	NA		NA			
Megachilidae	*Megachile willughbiella*	LC		LC			
Megachilidae	*Metadioxys graecus*	DD		DD			
Megachilidae	*Osmia aeruginosa*	NA		NA			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Osmia alfkenii*	NA		NA			
Megachilidae	*Osmia alticola*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Megachilidae	*Osmia amathusica*	LC		LC			
Megachilidae	*Osmia anceyi*	LC		LC			
Megachilidae	*Osmia andrenoides*	LC		LC			
Megachilidae	*Osmia apicata*	LC		LC			
Megachilidae	*Osmia argyropyga*	LC		LC			
Megachilidae	*Osmia ariadne*	DD		DD		Yes	Yes
Megachilidae	*Osmia aurulenta*	LC		LC			
Megachilidae	*Osmia balearica*	LC		LC		Yes	Yes
Megachilidae	*Osmia bicolor*	LC		LC			
Megachilidae	*Osmia bicornis*	LC		LC			
Megachilidae	*Osmia bidentata*	LC		LC			
Megachilidae	*Osmia bischoffi*	LC		LC			
Megachilidae	*Osmia breviata*	DD		DD			
Megachilidae	*Osmia brevicornis*	LC		LC			
Megachilidae	*Osmia caerulescens*	LC		LC			
Megachilidae	*Osmia cephalotes*	LC		LC			
Megachilidae	*Osmia cerinthidis*	LC		LC			
Megachilidae	*Osmia cinnabarina*	LC		LC			
Megachilidae	*Osmia clypearis*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Osmia corniculata*	DD		DD			
Megachilidae	*Osmia cornuta*	LC		LC			
Megachilidae	*Osmia croatica*	LC		LC			
Megachilidae	*Osmia cyanescens*	NA					
Megachilidae	*Osmia cyanoxantha*	LC		LC			
Megachilidae	*Osmia dilaticornis*	NA		NA			
Megachilidae	*Osmia dimidiata*	LC		LC			
Megachilidae	*Osmia disjuncta*	LC		DD			
Megachilidae	*Osmia distinguenda*	NA		NA			
Megachilidae	*Osmia dives*	LC		LC			
Megachilidae	*Osmia dlabolae*	NA					
Megachilidae	*Osmia dusmeti*	DD		DD		Yes	Yes
Megachilidae	*Osmia elegans*	LC		LC			
Megachilidae	*Osmia emarginata*	LC		LC			
Megachilidae	*Osmia erythrogastra*	LC		LC			
Megachilidae	*Osmia fallax*	LC		LC			
Megachilidae	*Osmia ferruginea*	LC		LC			
Megachilidae	*Osmia forticornis*	NA		NA			
Megachilidae	*Osmia frieseana*	NA		NA			
Megachilidae	*Osmia gallarum*	LC		LC			
Megachilidae	*Osmia hellados*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Osmia heteracantha*	LC		LC			
Megachilidae	*Osmia iberica*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Megachilidae	*Osmia inermis*	LC		LC			
Megachilidae	*Osmia jason*	LC		LC			
Megachilidae	*Osmia kohlii*	LC		LC			
Megachilidae	*Osmia labialis*	LC		LC			
Megachilidae	*Osmia larochei*	NT	B1b(iii)+2b(iii)	NT	B1b(iii)+2b(iii)	Yes	Yes
Megachilidae	*Osmia laticauda*	LC		LC			
Megachilidae	*Osmia laticeps*	LC		LC			
Megachilidae	*Osmia latreillei*	LC		LC			
Megachilidae	*Osmia leaiana*	LC		LC			
Megachilidae	*Osmia leucopyga*	LC		LC			
Megachilidae	*Osmia ligurica*	LC		LC			
Megachilidae	*Osmia lunata*	LC		LC			
Megachilidae	*Osmia madeirensis*	LC		LC		Yes	Yes
Megachilidae	*Osmia maritima*	EN	B2ab(ii,iii)	EN	B2ab(ii,iii)		
Megachilidae	*Osmia melanogaster*	LC		LC			
Megachilidae	*Osmia melanura*	NT	B2b(i,ii)	NT	B2b(i,ii)		
Megachilidae	*Osmia mirhiji*	NA		NA			
Megachilidae	*Osmia moreensis*	LC		LC			
Megachilidae	*Osmia mustelina*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Osmia nana*	LC		LC			
Megachilidae	*Osmia nasoproducta*	LC		LC			
Megachilidae	*Osmia nasuta*	LC		LC			
Megachilidae	*Osmia nigriventris*	LC		LC			
Megachilidae	*Osmia nigrohirta*	LC		LC			
Megachilidae	*Osmia niveata*	LC		LC			
Megachilidae	*Osmia niveocincta*	LC		LC			
Megachilidae	*Osmia notata*	LC		LC			
Megachilidae	*Osmia nuda*	NA		NA			
Megachilidae	*Osmia olgae*	NA		NA			
Megachilidae	*Osmia padri*	LC		LC			
Megachilidae	*Osmia palmae*	DD		DD		Yes	Yes
Megachilidae	*Osmia parietina*	LC		LC			
Megachilidae	*Osmia picena*	LC		LC		Yes	Yes
Megachilidae	*Osmia pilicornis*	LC		LC			
Megachilidae	*Osmia pinguis*	NA		NA			
Megachilidae	*Osmia rhodoensis*	LC		LC			
Megachilidae	*Osmia rufohirta*	LC		LC			
Megachilidae	*Osmia rutila*	NT	B2b(iii)	NT	B2b(iii)		
Megachilidae	*Osmia saxicola*	LC		LC			
Megachilidae	*Osmia scutellaris*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Osmia signata*	LC		LC			
Megachilidae	*Osmia spinigera*	LC		LC			
Megachilidae	*Osmia spinulosa*	LC		LC			
Megachilidae	*Osmia steinmanni*	NT	B2b(iii)	NT	B2b(iii)	Yes	
Megachilidae	*Osmia subcornuta*	LC		LC			
Megachilidae	*Osmia submicans*	LC		LC			
Megachilidae	*Osmia svenssoni*	NT	B2b(iii)	NT	B2b(iii)	Yes	Yes
Megachilidae	*Osmia sybarita*	LC		LC			
Megachilidae	*Osmia tergestensis*	LC		LC			
Megachilidae	*Osmia teunisseni*	LC		LC			
Megachilidae	*Osmia tricornis*	LC		LC			
Megachilidae	*Osmia tunensis*	NA		NA			
Megachilidae	*Osmia uncicornis*	LC		LC			
Megachilidae	*Osmia uncinata*	LC		LC			
Megachilidae	*Osmia versicolor*	LC		LC			
Megachilidae	*Osmia viridana*	LC		LC			
Megachilidae	*Osmia xanthomelana*	LC		LC			
Megachilidae	*Paradioxys pannonicus*	VU	B2ab(ii,iii)	VU	B2ab(ii,iii)		
Megachilidae	*Protosmia asensioi*	LC		LC		Yes	Yes
Megachilidae	*Protosmia capitata*	LC		LC			
Megachilidae	*Protosmia exenterata*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Protosmia glutinosa*	LC		LC			
Megachilidae	*Protosmia longiceps*	LC		LC			
Megachilidae	*Protosmia lusitanica*	DD		DD		Yes	Yes
Megachilidae	*Protosmia minutula*	LC		LC		Yes	
Megachilidae	*Protosmia monstrosa*	LC		LC			
Megachilidae	*Protosmia montana*	NA		NA			
Megachilidae	*Protosmia paradoxa*	LC		LC			
Megachilidae	*Protosmia sideritis*	LC		LC			
Megachilidae	*Protosmia stigmatica*	NA		NA			
Megachilidae	*Protosmia tauricola*	NA		NA			
Megachilidae	*Protosmia tiflensis*	LC		LC			
Megachilidae	*Pseudoanthidium alpinum*	DD		DD			
Megachilidae	*Pseudoanthidium canariense*	LC		LC		Yes	Yes
Megachilidae	*Pseudoanthidium cribratum*	NA		NA			
Megachilidae	*Pseudoanthidium eximium*	LC		LC			
Megachilidae	*Pseudoanthidium kaspareki*	DD		DD			
Megachilidae	*Pseudoanthidium melanurum*	LC		LC			
Megachilidae	*Pseudoanthidium nanum*	LC		LC			
Megachilidae	*Pseudoanthidium reticulatum*	LC		LC			
Megachilidae	*Pseudoanthidium scapulare*	LC		LC			
Megachilidae	*Pseudoanthidium stigmaticorne*	LC		LC			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Pseudoanthidium tenellum*	NT	B2b(iii)	NT	B2b(iii)		
Megachilidae	*Rhodanthidium acuminatum*	DD		DD			
Megachilidae	*Rhodanthidium caturigense*	LC		LC			
Megachilidae	*Rhodanthidium infuscatum*	LC		LC			
Megachilidae	*Rhodanthidium rufocinctum*	LC		LC		Yes	Yes
Megachilidae	*Rhodanthidium septemdentatum*	LC		LC			
Megachilidae	*Rhodanthidium siculum*	LC		LC			
Megachilidae	*Rhodanthidium sticticum*	LC		LC			
Megachilidae	*Stelis aculeata*	NA					
Megachilidae	*Stelis aegyptiaca*	NA		NA			
Megachilidae	*Stelis annulata*	VU	B2ab(i,ii,iii)	VU	B2ab(i,ii,iii)		
Megachilidae	*Stelis breviuscula*	LC		LC			
Megachilidae	*Stelis denticulata*	NA		NA			
Megachilidae	*Stelis franconica*	LC		LC		Yes	
Megachilidae	*Stelis gigantea*	NA		NA			
Megachilidae	*Stelis hispanica*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	Yes
Megachilidae	*Stelis hungarica*	DD		DD		Yes	Yes
Megachilidae	*Stelis iugae*	DD		DD			
Megachilidae	*Stelis minima*	LC		LC			
Megachilidae	*Stelis minuta*	LC		LC			
Megachilidae	*Stelis murina*	DD		DD			

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Stelis nasuta*	NT	B2b(i,ii)	NT	B2b(i,ii)		
Megachilidae	*Stelis odontopyga*	LC		LC			
Megachilidae	*Stelis orientalis*	DD		DD			
Megachilidae	*Stelis ornatula*	LC		LC			
Megachilidae	*Stelis ortizi*	LC		LC		Yes	Yes
Megachilidae	*Stelis pentelica*	DD		DD			
Megachilidae	*Stelis phaeoptera*	LC		LC			
Megachilidae	*Stelis punctulatissima*	LC		LC			
Megachilidae	*Stelis rhodia*	DD		DD			
Megachilidae	*Stelis ruficornis*	DD		DD			
Megachilidae	*Stelis scutellaris*	DD		DD			
Megachilidae	*Stelis signata*	LC		LC			
Megachilidae	*Stelis simillima*	LC		LC			
Megachilidae	*Stenoheriades asiatica*	NA		NA			
Megachilidae	*Stenoheriades coelostoma*	LC		LC			
Megachilidae	*Stenoheriades maroccana*	LC		LC			
Megachilidae	*Trachusa balcanica*	LC		LC		Yes	
Megachilidae	*Trachusa byssina*	LC		LC			
Megachilidae	*Trachusa dumerlei*	LC		LC			
Megachilidae	*Trachusa integra*	EN	B2ab(iii)	EN	B2ab(iii)		
Megachilidae	*Trachusa interrupta*	VU	B2ab(iii,v)	VU	B2ab(iii,v)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Megachilidae	*Trachusa laeviventris*	LC		LC			
Megachilidae	*Trachusa laticeps*	LC		LC			
Megachilidae	*Trachusa pubescens*	NT	B2a	NT	B2a		
Megachilidae	*Trachusa varia*	DD		DD		Yes	
Melittidae	*Dasypoda albimana*	DD		DD			
Melittidae	*Dasypoda argentata*	VU	B2ab(iii,v)	VU	B2ab(iii,v)		
Melittidae	*Dasypoda braccata*	EN	B2ab(iii)	EN	B2ab(iii)		
Melittidae	*Dasypoda cingulata*	LC		LC			
Melittidae	*Dasypoda crassicornis*	LC		LC			
Melittidae	*Dasypoda dusmeti*	LC		LC			
Melittidae	*Dasypoda frieseana*	EN	B2ab(iii)	EN	B2ab(iii)		
Melittidae	*Dasypoda hirtipes*	LC		LC			
Melittidae	*Dasypoda iberica*	LC		LC		Yes	Yes
Melittidae	*Dasypoda michezi*	DD		DD		Yes	Yes
Melittidae	*Dasypoda morawitzi*	LC		LC			
Melittidae	*Dasypoda morotei*	LC		LC		Yes	Yes
Melittidae	*Dasypoda panzeri*	LC		LC			
Melittidae	*Dasypoda pyriformis*	LC		LC			
Melittidae	*Dasypoda pyrotrichia*	LC		LC			
Melittidae	*Dasypoda spinigera*	EN	B2ab(iii)	EN	B2ab(iii)		
Melittidae	*Dasypoda suripes*	EN	B2ab(iii)	EN	B2ab(iii)		

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Melittidae	*Dasypoda toroki*	NA					
Melittidae	*Dasypoda visnaga*	LC		LC			
Melittidae	*Macropis europaea*	LC		LC			
Melittidae	*Macropis frivaldszkyi*	NT	B2b(iii,v)	NT	B2b(iii,v)		
Melittidae	*Macropis fulvipes*	LC		LC			
Melittidae	*Melitta aegyptiaca*	NT	B2b(ii,iii)	NT	B2b(ii,iii)		
Melittidae	*Melitta budashkini*	DD				Yes	
Melittidae	*Melitta budensis*	LC		DD			
Melittidae	*Melitta dimidiata*	NT	B2b(iii,v)	NT	B2b(iii,v)		
Melittidae	*Melitta haemorrhoidalis*	LC		LC			
Melittidae	*Melitta hispanica*	NT	B1b(iii)+2b(iii)	NT	B1b(iii)+2b(iii)	Yes	Yes
Melittidae	*Melitta iberica*	VU	B2ab(iii)	VU	B2ab(iii)	Yes	Yes
Melittidae	*Melitta kastiliensis*	EN	B2ab(iii)	EN	B2ab(iii)	Yes	Yes
Melittidae	*Melitta leporina*	LC		LC			
Melittidae	*Melitta maura*	DD		DD			
Melittidae	*Melitta melanura*	EN	B2ab(iii)	EN	B2ab(iii)		
Melittidae	*Melitta murciana*	LC		LC		Yes	Yes
Melittidae	*Melitta nigricans*	LC		LC			
Melittidae	*Melitta schmiedeknechti*	DD		DD			
Melittidae	*Melitta seitzi*	DD		DD		Yes	Yes
Melittidae	*Melitta sibirica*	NA					

Family	Species name	European category	European criteria	EU 27 regional category	EU 27 regional criteria	Endemic to Europe	Endemic to EU 27
Melittidae	*Melitta tomentosa*	DD		DD		Yes	Yes
Melittidae	*Melitta tricincta*	NT	B2b(iii)	NT	B2b(iii)		
Melittidae	*Melitta udmurtica*	DD		DD		Yes	

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