



Species Action Plans for EU Pollinators

Shortlist of 15 Species Action Plans
July 2021

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Introduction

The International Union for Conservation of Nature (IUCN), in collaboration with experts from the IUCN Species Survival Commission, in particular the Invertebrate Conservation Committee and the Hoverfly Specialist Group, as well as Buglife, have started working on the production of Action Plans for conservation of threatened pollinator species in the EU.

The Action Plans are being developed in the framework of an EU funded contract which started in April 2021 and will run for two years. The work taps into an important IUCN knowledge product – it will follow the Guidelines for Species Conservation Planning (IUCN SSC 2017), developed by IUCN SSC Conservation Planning Specialist Group (CPSG).

Experts have so far developed a shortlist of fifteen candidate pollinators species for which action plans are needed in Europe. This report is the outcome of the expert workshop which took place on 18 June 2021 and presents the 15 candidate species.

Methodology

An initial prioritisation of pollinators in Europe was done based upon the following aspects: European and Global Red List Status (CR = 3, EN = 2, VU = 1), Endemism (Endemic = 1, Non-Endemic = 0), Distribution (Number of EU Member States), Protection under the Habitats Directive (0 for HD species, 1 for others). These values were combined using the following formula:

$$Prio = (RL+E) * \sqrt{MS} * HD$$

This formula leads to an approximate equal weight of Red List category + Endemism (maximum value 7) and Number of EU Member States (maximum value 5,2), while protection under the Habitats Directive is used as an exclusion criterion based on the methodology applied by the project. The initial list was then discussed with species experts during an online workshop which took place on 18 June 2021. This resulted in the following short-list of 15 species which are deemed interesting to potentially produce conservation action plans for.

Taxon	Action Plan	Species	Expert opinion	Member States coverage
Butterflies and other pollinators	Canary Islands Pollinator Multi-species Action Plan	<i>Gonepteryx cleobule</i> , <i>Pieris cheiranthi</i> , <i>Eucera hohmanni</i>	First Preference among Butterflies	1 Member State - Spain
Wild Bees	Teasel Bee Multi-species Action Plan	Teasel-specialized bees: <i>Dasypoda braccata</i> , <i>Dasypoda spinigera</i> , <i>Dasypoda suripes</i> , <i>Trachusa interrupta</i>	First Preference among Bees	Possible to include all Members States
Hoverflies	Veteran Tree Specialist Action Plan	<i>Sphiximorpha petronillae</i> (possible to add other Veteran Tree specialists, e.g. <i>Chalcosyrphus pannonicus</i> , beetles)	First Preference among Hoverflies (with <i>E. ovatus</i>)	Possible to include all Members States (<i>S. petronillae</i> only in 2 MS)
Hoverflies	Silver-tailed Hoverfly Action Plan	<i>Eumerus ovatus</i>	First Preference among Hoverflies (with <i>S. petronillae</i>)	10 Member States – France, Germany, Italy, Austria, Slovenia, Romania, Hungary, Greece, Poland, Lithuania, Czechia
Butterflies	Large Heath Action Plan	<i>Coenonympha tullia</i> (possible to include other peat bog species)	Second Preference among Butterflies	17 Member States - Austria, Belgium, Czechia, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Romania, Slovakia, Sweden
Wild Bees	Alpine Pollinators Multi-species Action Plan	<i>Bombus alpinus</i> , <i>Bombus gerstaeckeri</i> (possible to add <i>Ischyroptera bipilosa</i>)	Second Preference among Bees	10 Member States - Italy, Austria, Finland, France, Germany, Italy, Romania, Sweden, Slovenia, Spain
Butterflies	Lesser Clouded Yellow Action Plan	<i>Colias chrysotheme</i> (possible to combine with Steppe Bee species)	Third Preference among Butterflies	5 Member States - Romania, Hungary, Slovakia, Austria, Czech Republic
Wild Bees	Steppe Multi-Species Action Plan	<i>Andrena compta</i> , <i>Bombus armeniacus</i> , <i>Bombus fragrans</i> , <i>Bombus pomorum</i> (possible to add <i>C. chrysotheme</i>)	Third Preference among Bees	18 Member States - Austria, Hungary, Romania, Slovakia, Belgium, Bulgaria, Greece, Hungary, Latvia, Lithuania, Poland, Croatia, Slovenia, Czechia, France, Germany, Italy
Wild Bees	Northern Yellow Bumblebee Action Plan	<i>Bombus distinguendus</i>	Fourth Preference among Wild Bees	16 Member States - Austria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Latvia, Lithuania, Netherlands, Poland, Romania, Sweden

Taxon	Action Plan	Species	Member States coverage
Wild Bees	<i>Megachile cypricola</i> Action Plan	<i>Megachile cypricola</i> (possible to add other endemic pollinators)	1 Member State - Cyprus
Hoverflies	<i>Merodon dobrogensis</i> Action Plan	<i>Merodon dobrogensis</i>	2 Member States – Greece and Romania
Hoverflies	<i>Pipiza luteibarba</i> Action Plan	<i>Pipiza luteibarba</i>	2 Member States – Czechia and Greece
Wild Bees	Bellflower Bee Action Plan	<i>Melitta melanura</i> , <i>Andrena curvungula</i> , <i>Dufourea inermis</i> ,	Possible to include all Members States
Hoverflies	<i>Ischyroptera bipilosa</i> Action Plan	<i>Ischyroptera bipilosa</i> (possible to combine with Alpine pollinators)	3 Member States - France, Italy, Austria
Hoverflies	<i>Chalcosyrphus pannonicus</i> Action Plan	<i>Chalcosyrphus pannonicus</i> (possible to combine with other Veteran Tree species)	5 Member States - Greece, Bulgaria, Romania, Slovakia, Poland

1. Canary Islands multi-species action plan

The Canary Islands are a global hotspot of endemism with diverse ecosystems ranging from semi-desert habitats to alpine regions. Many Canarian insects are highly threatened by habitat destruction, touristic development, invasive species or increasing frequencies of wildfires.

A Canary Islands multi-species pollinator action plan would include at least: *Pieris cheiranthi* (EN), *Gonepteryx cleobule* (VU) and *Eucera hohmanni* (DD). These Canarian species live in laurel forest habitats, a unique species-rich habitat which has been transformed into other habitats in the past (particularly into pine forests) and is now mainly threatened by increasing frequencies of wildfires, climate change and invasive alien species. Butterflies are easy to identify and good candidates for citizen science projects.



"Canary Islands Large White (*Pieris cheiranthi*) in Puerto de la Cruz, Tenerife, Spain". Quartl, 2011. CC BY-SA 3.0., via Wikimedia Commons

The action plan has a good chance of successful implementation as sectors and key stakeholders are well-connected on the islands. This action plan would aid with the conservation of a key habitat in a region vulnerable to the impacts of climate change – such as increasing forest fires. Because it is specific to the Canary Islands, it would include one EU Member State (Spain). However, this project has a high chance to become a lighthouse project for successful implementation of conservation actions.

2. Teasel Bee multi-species action plan

Many wild bee species are highly specialised in pollen plants. This multi-species plan will focus on bee species which are specialised in teasel plants (*Dipsacaceae*), such as *Scabiosa*, *Knautia* etc.



"*Dasypoda hirtipes*", Henk Wallays
Henk.Wallays@pandora.be

A Teasel Bee multi-species action plan would include the following species: *Dasypoda braccata* (EN), *Dasypoda spinigera* (EN), *Dasypoda suripes* (EN) and *Trachusa interrupta* (EN), but other teasel specialists might be added for Member States in which these species don't occur. *Dasypoda suripes* is known from 11 EU Member States (Austria, Cyprus, Hungary, Italy, Latvia, Poland, Romania - extinct in Czechia, Denmark, Germany, and Sweden). *Trachusa interrupta* is known from Austria (unconfirmed), Bulgaria, Croatia, France, Greece, Hungary, Italy, Portugal, Romania, Slovakia, and Spain. In addition to habitat conservation and restoration, this project may include reintroduction efforts in countries where *Dasypoda suripes* is extinct. These species could be good for citizen science and public engagement as they are relatively easy to identify and rely on teasel plant species which are recognisable and iconic plants across Europe. These species occur mainly in species-rich grasslands and their main threat is intensive agriculture, which makes them ideal candidates as flagship species group for the highly threatened grassland habitats in Europe.

3. Veteran Tree Specialist action plan

Sphiximorpha petronillae (EN) is a rare, but iconic hoverfly species which relies on living veteran trees in open habitats. The trees are usually also inhabited by the European velvety tree ant (*Liometopum microcephalum*). This could be an excellent flagship species action plan highlighting the importance of veteran trees, which are often logged down for safety reasons and particularly rare in open habitats. Even though this species is only known from two EU Member States (Greece and Italy), species with similar habitats occur in all Member States, as such the importance of veteran trees could be a key aspect of this plan. The hoverfly *Chalcosyrphus pannonicus* (EN) could be added for example. *Sphiximorpha petronillae* and other *Sphiximorpha* species are excellent from a citizen science perspective as they are distinctive and interesting hoverflies, mimicking wasps. In addition to hoverfly species, many saproxylic beetle species, which are often also important (but neglected) pollinators, require veteran trees.



"*Sphiximorpha petronillae*". Frank Vassen, 2017, Belgium, CC BY 2.0. via Wikimedia Commons.

4. Silver-Tailed Hoverfly action plan

The hoverfly *Eumerus ovatus* (EN) occurs in 10 EU Member States (Austria, France, Germany, Greece, Hungary, Italy, Lithuania, Poland, Romania, and Slovenia). It is extinct in Czechia and an action plan could include reintroduction efforts. It is a relatively widespread species that lives in a diversity of forest habitats. It is easy to identify and therefore good for public engagement and citizen science. Research about the larval habitat of this species could be a very beneficial part of this action plan as its habitat requirements are little understood. This lack of knowledge, however, is less beneficial for implementing conservation actions.



"Silver-Tailed Hoverfly"
Martin Speight
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5. Large Heath action plan

The Large Heath (*Coenonympha tullia*, VU) occurs in 17 EU Member States - Austria, Belgium, Czechia, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Romania, Slovakia, and Sweden. It could include a further two Member States, Slovenia and Hungary, where it is currently considered extinct, via a reintroduction initiative. This species is a flagship for peatland habitats and an action plan for this species could help raise awareness about the importance of peatland for carbon sequestration and the need to ban damaging behaviours such as horticultural extraction. There are already country-level action plans for this species in some parts of Europe (Switzerland, UK) which should be taken into account.



Large Heath (*Coenonympha tullia*).

Ryan Hodnett, 2013.

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6. Alpine Pollinator multi-species action plan

An Alpine Pollinator multi-species action plan would target two species: *Bombus alpinus* (VU) and *Bombus gerstaeckeri* (VU). While the first species occurs in alpine meadows and tundra, the second is specialist on monkshood (*Aconitum*) and found in light forests and creek valleys. Both species are threatened by climate change and habitat shifting. The alpine hoverfly *Ischyroptera bipilosa* (CR) and other alpine pollinators may be added. This plan would cover at least 10 Member States - Austria, Finland, France, Germany, Italy, Romania, Sweden, Slovenia, and Spain. These species would be flagships for alpine habitats and the threat posed by climate change. They could therefore inspire action related to climate change-proofing.



"*Bombus Alpinus*", Staverløkka.,
2013, CC BY 3.0
<<https://creativecommons.org/licenses/by/3.0/>>,
via Wikimedia Commons



"*Bombus gerstaeckeri*", Vereecken N.,
no date, CC BY 3.0
<<https://creativecommons.org/licenses/by/3.0/>>,
via Wikimedia Commons

7. Lesser Clouded Yellow action plan

The Lesser Clouded Yellow (*Colias chrysotheme*, VU) is a steppe specialist, feeding on milk-vetches (*Astralagus spp.*) and vetches (*Vicia spp.*). The species has 3-4 generations each year (adult from April to August), which makes it an interesting target for citizen science projects. It is known from five Member States - Austria, Czechia (extinct in Czechia), Hungary, Romania, Slovakia. The species could be a good flagship for steppe habitats and may also be part of a combined with other steppe pollinators (see below). The main threats to this species are agricultural intensification, afforestation and habitat fragmentation.



"*Colias chrysotheme*", Dumi, no date.
CC BY-SA 3.0., via Wikimedia Commons

8. Steppe Pollinator multi-species action plan

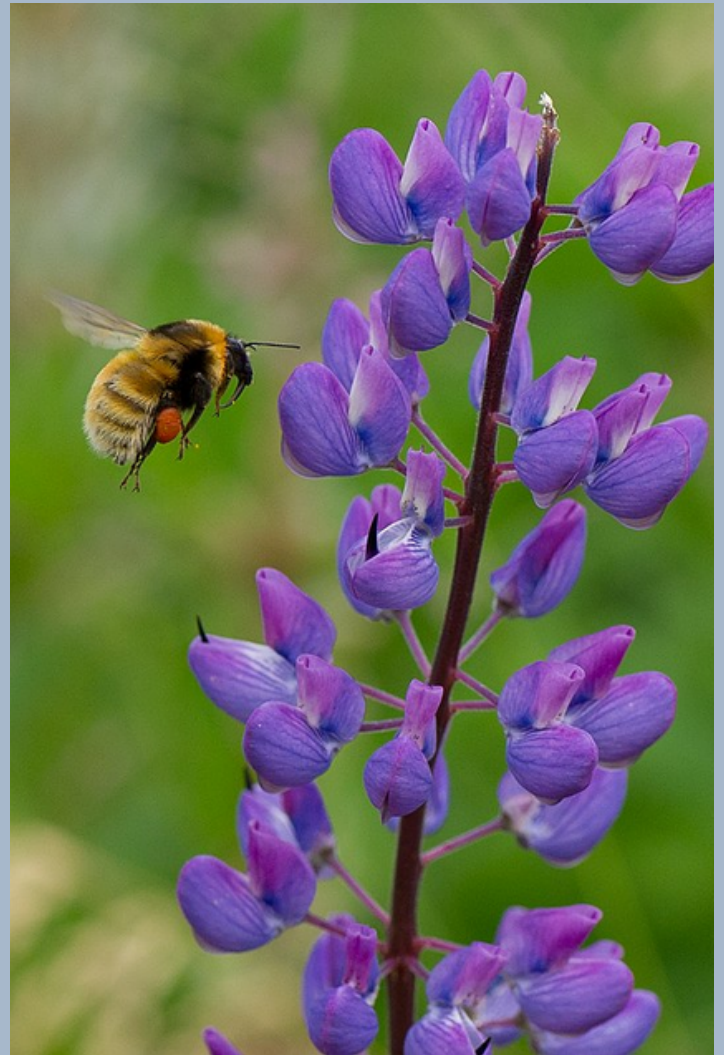
A steppe multi-species action plan would include the following species: *Andrena compta* (EN), *Bombus armeniacus* (EN), *Bombus fragrans* (EN) and *Bombus pomorum* (VU). These species occur in 19 Member States - Austria, Belgium, Bulgaria, Croatia, Czechia, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. There is the potential to also include three further Member States, the Netherlands, Denmark, and Sweden, where *Bombus pomorum* has gone extinct and could be reintroduced. Action for these species would help to protect a key and threatened habitat, which is particularly threatened by agricultural intensification and climate change (heat waves, droughts). *Colias chrysotheme* and other steppe insects may be added.



"*Bombus fragrans*", Goran Holmstrom,
via <https://www.iucn.org/content/bad-news-europes-bumblebees>

9. Northern Yellow Bumblebee action plan

Bombus distinguendus (VU) is known from 16 EU Member States - Austria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Latvia, Lithuania, Netherlands, Poland, Romania, and Sweden. It is extinct in Belgium, where it potentially could be reintroduced. This species has a Northern distribution and is a good flagship for species-rich grassland habitats which are currently under threat from intensive agriculture. This species would also be good for public engagement as an easily identifiable species. However, it is also distributed in North America. This species already has a national action plan in Ireland, which should be taken into account.



"*Bombus distinguendus*", Staverløkk A., no date.

CC BY 3.0., via Wikimedia Commons

10. Action plan for *Megachile cypricola*

This Critically Endangered (CR) species is endemic to Cyprus and a good candidate for citizen science as it is easy to identify. Due to its narrow distribution, it will only involve one Member State. The species occurs in limestone habitats with dwarf shrub and bare ground and only feeds on *Onobrychis venosa* (an endemic plant), the flight time is from March to May. It is threatened by touristic development and limestone mining. There has been some intensive recent research on this species which would assist the creation of a comprehensive action plan. Other Cypriot endemic pollinators may be added to the project.

11. Action plan for *Merodon dobrogensis*

This hoverfly species is Endangered (EN) and exists in two EU Member States, Greece and Romania. However, it may also occur in Bulgaria and more habitats at the Black Sea and Mediterranean coast. It is a coastal species and is possibly related to forest habitats. It has been documented from coastal oak matorral and steppe habitats. The species would be good to engage citizens as it can easily be recognised. The action plan could help to better understand this species by looking for unknown habitats and address known pressures, such as overgrazing, touristic development, urbanisation, and increasing frequency of wildfires.

12. Action plan for *Pipiza luteibarba*

This hoverfly species (EN) occurs in old deciduous forests and it is very rare. The distribution is very fragmented, existing in only two EU Member States - Czechia and Greece (outside the EU also in Serbia). Adults are active during April and the main threats are urbanization, tourism, and wildfires. However, the species is not easy to identify, which makes it difficult to engage citizens.



"*Pipiza luteibarba* habitat",
Snežana Radenković
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is already very rare in

Europe

13. Action plan for Bellflower Bee

An action plan for species reliant on bellflowers would include *Melitta melanura* (EN), but also some lesser threatened species, such as *Andrena curvungula* (DD) and *Dufourea inermis* (NT). By focusing on the host plant, this plan could easily cover all European Member States (similar to the Teasel Bees). These species would also be good for public engagement because of their reliance on attractive and distinctive bellflowers. However, these species exist across a wide range of habitats which would make it challenging to develop an action plan that facilitates the conservation of all of these species.



This *Campanula persicifolia* is an example of bellflowers on which these species rely for their survival.
"Campanula persicifolia", Wilson44691, 2012. CC0, via Wikimedia Commons



"Andrena curvungula", Dühr K., 2020, CC BY 4.0., via Wikimedia Commons

14. Action plan for *Ischyroptera bipilosa*

The hoverfly species *Ischyroptera bipilosa* (CR) is endemic to the southern Alps, where it occurs in three Member States: Austria, France and Italy. It occurs in montane and subalpine areas, calcareous grasslands with bare rocky areas, and talus slopes. The main threats are touristic development and climate change. The species is difficult to identify by citizens and requires photo identification confirmation by experts. However, it may also be added to a more general Alpine Pollinator Action Plan (see above).

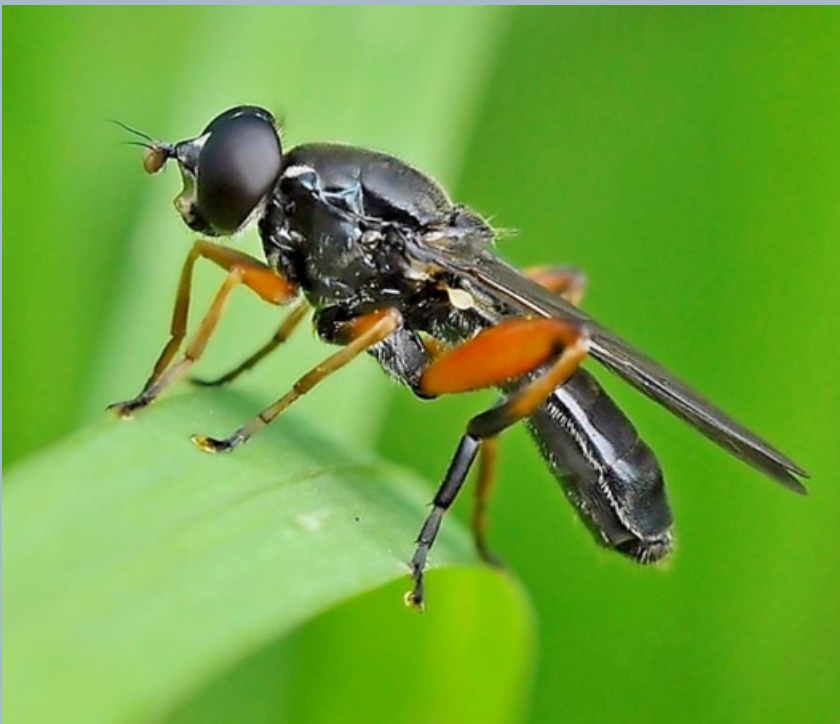


Ischyroptera bipilosa lives in subalpine grasslands and rocky slopes such as the one portrayed in this picture, taken in the Italian Alps.

"Dolomites", Foubister M., 2013.
CC BY-SA 2.0. via
Wikimedia Commons

15. Action Plan for *Chalcosyrphus pannonicus*

The hoverfly *Chalcosyrphus pannonicus* (EN) occurs in Greece, Poland, Romania and Slovakia. It is possibly extinct in Bulgaria. It requires veteran trees in moist forests and can be found in wetlands, swamps, stream valleys, and other moist areas in conifer or deciduous forests. The flight period is from June to July. Its main threats are deforestation, drainage, and logging. This species may be added to a more general plan for pollinators depending on veteran trees (see above).



"*Chalcosyrphus pannonicus*"
Rafał Kaźmierczak

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Funded by the European Union



This report has been drafted by a team of experts within the service of the contract No 07.0202/2020/839411/SER/ENV.0.2 'Action Plans for conservation of threatened pollinator species in the EU'. The information and views set out in this note do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the information included in this report. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein. Reproduction is authorised provided the source is acknowledged. Reuse is authorised provided the source is acknowledged. For any use or reproduction of photos or other material that is not under the EU copyright, permission must be sought directly from the copyright holders.