



EU POLLINATORS INITIATIVE

A review of Member States actions to tackle the decline of wild pollinators

CYPRUS



STRATEGY



INITIATIVES



Rural



Urban



Private sector



NATIONAL RED LISTS

Threatened species



RAISING AWARENESS



Citizens



Schools children



Farmers & beekeepers

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Currently Cyprus does not have a pollinator strategy, while the national biodiversity strategy does not address pollinators specifically.

Cyprus has no red lists of the pollinator groups, but a few amateur entomologists have extensive specimen and photo collections. Systematic pollinator monitoring efforts on the island begun in 2015, as part of a MSc project, and continue in the framework of a PhD thesis and collaborations initiated through the COST Action SUPER-B (FA 1307). A pollinator monitoring scheme has been set up since 2018, with the aim of engaging citizens of all ages into observing and recording pollinators.

Within the framework of the Common Agricultural Policy and the Rural Development Programme, the Ministry of Agriculture, Rural Development and Environment has been implementing a number of agri-environmental measures. These measures offer general protection to wild pollinators. A number of initiatives and collaborations among different entities have been taking place since 2018 to raise awareness for professionals and the general public on the importance of honeybees and other wild pollinators.

There is scope to improve awareness among farmers on beneficial insects and their contribution to agriculture, and a lack of initiatives for pollinators in Cyprus landscapes. Pesticide use is probably harming pollinators. The Pancyprian Union of Beekeepers in collaboration with the Department of Agriculture run extensive campaigns to inform farmers on the importance of avoiding pesticide applications at bloom to protect honeybees, and wild bees are also benefitting from this campaign.



STRATEGIES FOR WILD POLLINATORS OR ANY OTHER SIMILAR PLANS

Cyprus has no dedicated national pollinator strategy.

The Cyprus Biodiversity Strategy 2020+ does not set any targets for wild pollinators.



IMPROVING KNOWLEDGE OF POLLINATOR DECLINE, ITS CAUSES AND CONSEQUENCES

RED LISTS ON POLLINATORS AND DATA ON POLLINATOR POPULATIONS

There are no red lists on the pollinator groups (Hymenoptera, Lepidoptera, Diptera, Coleoptera). However, a recent book on the wildlife of Cyprus (Sparrow and John, 2016) includes chapters dedicated to the main insect orders, including Lepidoptera, Hymenoptera, Coleoptera and Diptera. Out of 49 species of butterflies, three are endemic (John 2016).

A very recent work on the wild bees of the island ([Varnava et al.](#), submitted, Zookeys) lists 374 species. Twenty-one of the recorded bee species are endemic (i.e. 5.6% endemism rate) and Cyprus ranks third after Sicily and Lesvos in bee diversity among the Mediterranean islands. The endemic *Megachile cypricola* is listed as Critically Endangered in the European Red List of Bees. The work is led by the [Sustainable Agriculture Group](#) of the Cyprus University of Technology (Team Leader: Assist. Professor [M. Stavrinides](#)).

POLLINATOR MONITORING SCHEMES

The Sustainable Agriculture Group of the Cyprus University of Technology (A. Varnava) works with international experts and collects wild bees from several locations on the island to identify spatial and

temporal changes in bee diversity. Current efforts include the assessment of the contribution of wild and honeybees to carob pollination, as well as the evaluation of the impact of climate change and land use change on wild bees (see section on Research Initiatives).

In the framework of the completed [AgroLIFE](#) project (Coordinated by the Sustainable Agriculture Group of the Cyprus University of Technology), the presence of pollinators at the margins and within carob groves and vineyards was evaluated. Both butterflies and wild bees were commonly observed in both field types.

[POMS-Ký Pollinators Monitoring Scheme of Kýpros](#) is run by Angeliki F Martinou (Joint Services Health Unit & Cyprus Institute) and her colleagues developed with the collaboration of the Centre of Ecology and Hydrology in the UK (inspired by the POMS UK led by Professor Helen Roy) and Cyprus University of Technology (PhD Candidate Androulla Varnava). The main aim of POMS-Ký is to raise awareness about pollinators and engage citizens of all ages into observing and recording pollinators on native and non-native plants (see below).

The Department of Agriculture has conducted a study to determine the average number of beehives per hectare for the pollination of 32 important crops, as well as to determine the contribution of bees to the product value. During the 2011-2012 period, the economic value of pollination corresponded to 18% of product value. These conclusions were used for the preparation of relevant policies.

RESEARCH INITIATIVES

Cyprus has a historical importance on the study of wild bees, as the world-renowned wild bee taxonomist George Mavromoustakis was a native of the island and collected extensively from several different areas. In his eight Cyprus-specific publications, Mavromoustakis reported 237 currently valid species (Mavromoustakis 1948, 1951, 1952, 1953, 1954, 1955, 1957a, 1957b). Mavromoustaki's data on the wild bees of Cyprus have been organized in an online database (Varnava and Stavrínides, 2015 -www.wildbeesofcyprus.org) which includes the location, month and plant species on which bees were collected.

The Entomological Collection of G. Mavromoustakis, which is kept at the premises of the Department of Agriculture, could be further explored for studies of wild pollinators as well as for recording species that may have been previously found in Cyprus or other countries and are now possibly extinct.

The Cyprus University of Technology research group of Assist. Professor M. Stavrínides was involved in the COST Action "[Super-B: Sustainable pollination in Europe](#)" – FA 1307. In the framework of this project, the Second European Bee Course was organized in Cyprus on March 6-10, 2017.

Androulla Varnava, a PhD Candidate at the Cyprus University of Technology (supervised by Assist. Professor M. Stavrínides and Professor D. Michez of the University of Mons in Belgium) studies the ecology and biodiversity of wild bees on the island. For her MSc thesis, she documented the biodiversity, flowering plant preferences and seasonal activity of wild bees of Cyprus based on the surveys of George A. Mavromoustakis (Varnava et al., submitted, Zookeys). A. Varnava is currently working for her PhD on two additional wild bee related projects. One study aims at assessing the contribution of wild bees, as well as honeybees, to carob pollination in different regions of Cyprus. The second study evaluates the impacts of climate change and land use change on wild bees in two areas

of Cyprus that were sampled extensively in the past by G. Mavromoustakis. Furthermore, A. Varnava and M. Stavriniades are working with international experts on a) assessing the impact of agro-environmental measures on wild bees at European level, and b) evaluating preferences by both farmers and beekeepers on crop use and perceived pollination deficits.

[Ioanna Angelidou](#), a post-graduate student at the National and Kapodistrian University of Athens University, is currently undertaking her MSc thesis in Akrotiri looking at insect biodiversity in native and non-native habitats surrounding the Akrotiri wetland.

TAXONOMICAL EXPERTS ON POLLINATORS

One expert (A.Varnava) has received training on the identification of several genera of wild bees. The Sustainable Agriculture Group of the Cyprus University of Technology works closely with leading international experts to identify wild bee species of interest collected on the island. In addition, Cyprus has a few amateur entomologists with knowledge on pollinators, and with excellent photo collections as well as insect collections (Martinou personal communication).



INITIATIVES TACKLING THE CAUSES OF POLLINATOR DECLINE

The Ministry of Agriculture, Rural Development and Environment, in the framework of the Rural Development Programme, implements several agri-environmental measures that aim to protect biodiversity including wild pollinators. These schemes target environmentally friendly practices and reduce the threats and pressures on wild pollinators because they restrict the use of conventional inputs in crops. The RDP also promotes organic agriculture and pays for forest conservation and sustainable grazing in Natura 2000 areas.

The Bee-eater *Merops apiaster* is a protected bird species (Bern Convention, Directive 2009/147 EC, national law N.152(I)/2003) and its killing or disturbance is strictly prohibited. In the framework of the Rural Development Programme, the Department of Agriculture implements an agri-environmental payment scheme to support beekeepers impacted by bee-eating birds to maintain and increase their

bee colonies. Among other requirements, beekeepers are required to ensure that, near the beehives, water is available for bees as well as other pollinators.

ACTION PLANS ON SPECIES AND HABITATS

None identified.

FARMER AND LANDSCAPE INITIATIVES, AS WELL AS LOCAL LEVEL STRATEGIES

A recent measure introduced for the first time in Cyprus is the promotion of native plants that support pollinators through the 2019 Green Public Procurement Awards ([CY GPP AWARDS](#)). These [awards](#) are addressed to public and private bodies that actively contribute to the dissemination of green procurement and aim to reduce the impact of their activities on the environment and on health. In the 2019 invitation, the use of native plants that support pollinators was introduced in the category “*Gardening Products and Services*” to promote their use in landscaping activities.

Despite the organized efforts undertaken the last years at national level, there is still considerable lack of awareness amongst farmers on the importance of beneficial insects and their contribution to agriculture (Martinou personal communication).

MEASURES ON PESTICIDES

The [National Action Plan for the Sustainable Use of Plant Protection Products](#) does not mention pollinators or set any specific biodiversity protection objectives. With regard to pesticide use in Natura 2000 areas, it refers to ‘measures set out in decrees for Natura 2000 sites concerning plant protection products, and/or other measures set out by the competent authorities.’ To address pesticide use in publicly accessible green spaces, it sets up a “Green Eco-Management Bodies” programme which will certify municipalities who establish an ‘integrated biological pest and disease control programme’.

The Department of Agriculture has prepared and is currently implementing a “Targeted Action Plan for the prevention of bee deaths and other pollinators from the use of Plant Protection Products”. This action plan includes actions to raise awareness among beekeepers and farmers, implement specialised educational programmes directed at farmers, and inform local and state authorities.

The government departments have reduced significantly the use of synthetic chemicals (both pesticides and biocides for mosquito control) and rely mostly on biological control for necessary applications. However, this is more difficult to achieve at the farmer level in practice, or at the level of local communities who largely rely on synthetic chemicals for pest control.



RAISING AWARENESS, ENGAGING SOCIETY-AT-LARGE AND PROMOTING COLLABORATION

Awareness raising campaigns generally focus on honeybees in Cyprus, but some initiatives also draw attention to wild pollinators.

TRAINING AND AWARENESS RAISING CAMPAIGNS

[POMS-Ký Pollinators Monitoring Scheme of Kýpros](#) runs seminars at the Akrotiri Environmental Education Centre for citizens to identify major taxonomic groups (beetles, bugs, butterflies, bees & solitary bees and flies) and how to perform flower insect counts. The [Akrotiri Environmental Education Centre](#) has established bee hotels and is trying to raise awareness about solitary bees and their habitats.

The Awareness Campaign on the Protection of Honeybee and other pollinators was initiated in October 2018 by beekeepers associations (Pancyprian Association of Beekeepers, Pancyprian Movement of Professional Beekeepers and the Centre of Apiculture) with the support of the Department of Agriculture of the Ministry of Agriculture, Rural Development and Environment, the National Network for Rural Development and the Office of the Commissioner for the Environment. The campaign targets all relevant stakeholders and the general public and aims to raise awareness on the importance of protecting bees and other pollinators and the threats faced by pollinators. This campaign includes lectures and training for farmers and professional users, distributors and advisors, production of leaflets and other material as well as a public awareness raising actions.

The Sustainable Agriculture Group of CUT holds a demonstration stand to inform participants about the importance of wild bees at the annual Researcher Night Event organized by the Research and Innovation Foundation). A. Varnava's research work was featured in several newspaper articles and radio shows.

EDUCATIONAL CAMPAIGNS AND MATERIALS ON WILD POLLINATORS

[POMS-Ký Pollinators Monitoring Scheme of Kýpros](#) have developed mini-poms-ký in collaboration with teachers, which is an initiative designed for kids. They are hoping that the mini-pomsky will be adopted at the national level in the teaching curriculum for kids and there is interest from the Department of Education, Republic of Cyprus.

Educational actions in the framework of the Awareness Campaign on the Protection of Honeybee and other pollinators included school presentations (>80) where a newly created childrens' book was distributed to students in 10,000 copies, educational lectures for the public, announcements at the regional level (local authorities), and collaboration with the national Press and Information Office for promoting material (TV and radio spots, leaflets for the public, children's song written to accompany school visits). This material is showcased through the Facebook page of the Cyprus Office of the Commissioner for the Environment and the website of the [Pancyprian Assosiation of Beekeepers/Centre of Apiculture](#).

The Sustainable Agriculture Group of CUT engages students with lectures on the importance of wild bees.

CITIZEN ENGAGEMENT CAMPAIGNS

See [POMS-Ký Pollinators Monitoring Scheme of Kýpros](#) above.

PRIVATE SECTOR INITIATIVES FOR WILD POLLINATORS

The [Troodos Network of Thematic Centers](#) NGO has created the [Honey Routes](#) in the Larnaka Mountains through the MEDFEST Interreg-funded programme. This is an attraction for tourists that links nine villages of rural Larnaca and of the Municipality of Lefkara through a gastronomic itinerary dedicated to honey. It engages beekeepers and local entrepreneurs engaged in the production of honey-based products, and links to the habitats in the Natura 2000 sites of the region. Cyprus University of Technology collaborates with Troodos Network of Thematic Centers to give presentations on wild bees and guidance how to create bee hotels to local entrepreneurs and communities.

APICULTURE SECTOR INITIATIVES FOR WILD POLLINATORS

Please refer to the above-mentioned initiatives by beekeepers' associations which aim to protect the honeybees but also address other pollinators.

For example, regional festivals are organized to promote honeybee products and inform the public on the importance of honeybees for pollination. For example a bee festival was held in the picturesque village of Ora to celebrate [World Bee Day 2019](#) as part of the Honey Routes initiative.

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Educational materials

The [mini-poms-ký educational pack](#) was developed by the [POMS-Ký Pollinators Monitoring Scheme of Kýpros](#) using the expertise of the UK Centre for Ecology and Hydrology (Helen Roy and Mark Bothan). It is designed for use by environmental education centres and targeted mostly at primary school children. Language: Greek and English.

The education pack includes a short lesson in class (at the environmental education centre) which will introduce children to the importance of insects. Then field activities will include observations of flowers and pollinators visiting the flowers – then quantified flower insect counts (honeybees and wild bees, butterflies and moths, flies, beetles). It will also contain materials to encourage children to continue observations in their home and school environment.

Educational and outreach material developed for the “Awareness Campaign on the Protection of Honeybee and other pollinators” is showcased through the facebook page of the Cyprus Office of the Commissioner for the Environment and the website of the Pancyprian Assosiation of Beekeepers/Centre of Apiculture (<https://www.cybeeas.com>).