EU POLLINATORS INITIATIVE

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

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There is no national strategy on wild pollinators in Italy. The main project on wild pollinators that was developed at national level in the country is AMA which ran from 1997 to 2000. While the project is now outdated and results were never published, it still represents the first project in Europe to tackle wild pollinators at a national level. In addition, the project introduced a methodology which translated into a common approach to monitoring wild pollinators that is now widely used by all research institutions and universities working on wild pollinators.

A national red list on Italian butterflies was published in 2016. Initiatives are ongoing to develop a national red list on other wild pollinators. While not publicly available yet, a first non-exhaustive list was created by CREA and Federparchi. In addition, efforts are ongoing to update the official checklist of the Italian Apoidea. Several monitoring initiatives have been and are still carried out in Italy on wild pollinators, such as the monitoring network developed previously under the Apenet project, and currently within Beenet.

A limited number of local level or community initiatives on wild pollinators have been launched in the country.

Various research initiatives are carried out focusing on their general biodiversity, as well as the study of specific pollinator species. In addition, CREA works on dissemination activities, such as the digitalisation of wild bee collections. Taxonomy courses are not widely diffused in Italy. Various initiatives have been developed to tackle wild pollinators decline and increase social awareness and engagement.

STRATEGIES FOR WILD POLLINATORS OR ANY OTHER SIMILAR PLANS

A national Strategy on wild pollinators is absent in Italy and no official regional strategies have been created.

The main project on wild pollinators that was developed at national level in the country is AMA which ran from 1997 to 2000. The project included three sub-projects, notably “Ape” (“Bee”), “Miele” (“Honey”) and “Ambiente” (“Environment”), the latter of which covered wild pollinators. While the project is now outdated and results were never published, it still represents the first project in Europe to tackle wild pollinators at a national level.

In addition, the project introduced a methodology which translated into a common approach to monitoring wild pollinators that is now widely used by all research institutions and universities working on wild pollinators.

The project’s sub-theme “Environment” was developed by CREA (Council for Research in Agriculture and Analysis of Agricultural Economics) and seven universities: Udine, Torino, Pisa, Bologna, Perugia, Sassari and Catania. With the exception of the University of Perugia, all these institutions are continuing their work on wild pollinators.

IMPROVING KNOWLEDGE OF POLLINATOR DECLINE, ITS CAUSES AND CONSEQUENCES

RED LISTS ON POLLINATORS AND DATA ON POLLINATOR POPULATIONS

The National Red List of Italian butterflies (Rhopalocera) was produced by the Italian Ministry of the Environment and protection of land and sea (MATTM), in collaboration with IUCN and Federparchi (Balletto et al., 2015). This red list was last updated in 2016 and contains a total of 289 species, of which 6% are threatened. One species was assessed as regionally extinct.

In 2018, a new initiative to develop a red list on wild pollinators at national level was started by Federparchi (member of IUCN Italia) and CREA. Due to the scope of the initiative and the associated data limitations, a complete list was deemed unfeasible. This led to the creation of a first non-exhaustive red list on wild pollinators which covered only those species at highest risk of extinction. This list has been finalised, but it is not yet publicly available.

CREA is currently involved in the update of the official national checklist of the Italian Apoidea. The checklist was published in 1995 and to date it still represents the only official checklist at the national level. CREA's initiative to update this document is in progress and will be finalised by 2020 (Quaranta, 2019).

Alongside the official checklist, a more recent but unofficial version exists, developed by Prof. Mario Comba (Comba, 2017). It reports all Italian bee species from 1792 to present, based on literature, public and private collections. The list includes a total of 1119 species, 51 of which are endemic to Italy.

POLLINATOR MONITORING SCHEMES

Despite the existence of numerous monitoring initiatives in Italy, these are rarely made public. CREA is working on the digitalisation of wild bee collections, but there is still a lack of digitalisation of results and these initiatives generally lack funding (Quaranta, 2019). Interestingly, the method used for most monitoring of wild pollinators is the same as the one used in the aforementioned AMA project.

A guide to hoverfly monitoring has been published (Burgio et al 2015), co-produced by the forest biodiversity unit of the national forestry agency CNBF (Corpo Forestale dello Stato Centro Nazionale per lo studio e la conservazione della Biodiversità Forestale).

Some wild pollinator surveys have been carried out at the local level. For example, a Phd thesis (Monterastelli, 2014) surveyed wild pollinators in the Bel Poggio Park (Bologna) to better understand their status and use it as an indicator for the environmental status of the area. The project also aimed at determining the impact of human presence on wild pollinators.

Italy has over 2000 protected areas but only a few of these have been examined for the presence of wild pollinators. There are indications that the wild bee fauna is very rich – a survey in the Natural Reserve of Monterufoli-Caselli in Tuscany found 237 species of Apoidea between 2015 and 2017 (Strumia and Filippi, 2018).

Honeybee monitoring has been established for the last decade. In March 2009, the Ministry of Agriculture food and forestry policies (MiPAAF) financed the project Apenet: monitoring and research in apiculture to study the mortality of honeybees through environmental monitoring activities and targeted research. The monitoring network is coordinated by IZSVE (Istituto Zooprofilattico Sperimentale delle Venezie), the Department of science and agro-environmental technologies of the University of Bologna (DiSTA) and CRA-API (CRA, IZS-VE, University of Bologna, SIN, 2011). A similar project was also promoted by the Ministry of Agriculture and linked to the monitoring network established through the Apenet project. The project, developed by ISPRA, IZS-LT (Lazio and Tuscany) and DiSTA, carried out monitoring in five natural protected areas in the regions of Tuscany, Veneto, Lazio and Emilia-Romagna (MATTM, 2011). Building from Apenet, CREA is developing the project "Beenet" promoted and financed by the Ministry of Agriculture. Beenet aims at providing a larger

honeybee monitoring network, based on stronger interactions with local authorities, relevant stakeholders and similar regional initiatives, and research institutes, and better communication of the information obtained. Beekeepers and apiculture associations will play an important role in shaping the monitoring strategies (CRA, IZS-VE, University of Bologna, SIN, 2011) (CREA, 2019).

RESEARCH INITIATIVES

The majority of research initiatives carried out on Italian wild pollinators concern their biodiversity, monitoring as well as laboratory-based research on specific species. These initiatives are often not funded in Italy (Quaranta, 2019).

The following organisations are carrying out research on wild pollinators:

- CREA (Council for Research in Agriculture and Analysis of Agricultural Economics)
- ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale) Dipartimento di difesa della natura
- Universities of Udine, Torino, Pisa, Bologna, Sassari and Catania

Research initiatives focus mostly on honeybees:

- The project STRANOVA financed by the region of Lombardia is increasing beekeepers' knowledge and awareness of the risks affecting bees and means to combat them.
- The Apenet project analysed the mortality of honeybees and the effects of environmental factors on honeybees.
- The project ELAB-NET, developed by CREA and UNAAPI, is providing a statistical analysis of the Beenet project pesticide residues tests in areas of particular apicultural or agronomic interest.

CREA organises an annual course on taxonomical identification of wild pollinators. This training course is carried out by Dr. Marino Quaranta. Due to the decline in the discipline of taxonomy, these types of trainings are not common in Italy. In fact, the CREA training on taxonomy represents the only institutionalised course of this kind that is carried out regularly (annually) in Europe. This year, CREA has organised its fifth course on taxonomy for identification of pollinators. This course is solely financed through the participation fee.

In addition, taxonomy courses are organised through the Distributed School of Taxonomy. For instance, CREA, in collaboration with the Museum of Natural History of Ferrara, is organising a taxonomy course on pollinators in July 2019, aimed at MSc students, PhD students as well as early career researchers and taught by Dr. Marino Quaranta, Dr. Daniele Sommaggio and Dr. Carla Corazza.

TAXONOMICAL EXPERTS ON POLLINATORS

See above.

INITIATIVES TACKLING THE CAUSES OF POLLINATOR DECLINE

ACTION PLANS ON SPECIES AND HABITATS

There are no species action plans for wild pollinators. The creation of an action plan of this kind requires an official red list on wild pollinators, which is currently lacking in Italy.

FARMER AND LANDSCAPE INITIATIVES, AS WELL AS LOCAL LEVEL STRATEGIES

The following initiatives were identified:

- The project LIFE Progetto PP-ICON (Plant Pollinator Integrated CONservation approach) is a local initiative that aimed at ensuring the conservation of a locally rare plant (*Dictamus albus*), present in the protected area of Parco Regionale dei Gessi Bolognesi e Calanchi dell'Abbadessa, and to restore the community of its pollinators. The project included management activities (such as selective shrub clearings), the creation of nesting sites and the reintroduction of new colonies of the most important pollinators for the plant. By the end of the project 25% of the artificial nests were successfully colonised by *Osmia*, *Megachile* and *Xylocopa* species all of which are very good pollinators for the target plant.
- The project of environmental and landscape valorisation Ca' Corniani is an initiative that aims to introduce agro-environmental interventions in the area of the Ca' Corniani farm, combining agriculture, art and nature. It aims at creating 7 km of buffer strips to increase pollination and have positive impacts on agricultural production and landscape.

MEASURES ON PESTICIDES

The Italian National Action Plan for the sustainable use of pesticides, adopted in 2014, includes some measures to safeguard wild pollinators in protected areas. The Ministries of Environment, of Agiculture, and of Health provide the guidelines for the selection of measures to be included in the management plans of Natura 2000 and other protected areas. The specific characteristics of the areas, the agricultural practices in place and the risks associated to the use of pesticides are to be taken into account so as to ensure the safeguarding of habitats where there is a necessity to protect wild bees, butterflies and moths, and other pollinators (MATTM, MiPAAF, Ministry of Health, 2014).

The new Italian National Action Plan for the sustainable use of pesticides covers the period between 2019 and 2024. The draft plan aims to pay more attention to the necessity to protect bees and other

pollinators in and beyond protected areas. In addition, the plan aims to coordinate with the new national strategies for the CAP post 2020, currently being defined (Tosi, 2018; Falzarano, 2019; Armentano, 2019).

An increasing number of Italian cities and towns have declared a ban on pesticide use in public areas (for example, Robilante, Sorradile, Ragusa, Miglierina, Limatola, Fallo, Limana). The municipality of Malles/Mals in South Tirol has declared a complete pesticide ban in the whole municipal area.

ISPRA, in collaboration with ARPA Piemonte, the University of Turin and Tor Vergata University, is carrying out a project financed by the Italian Ministry of Environment, aimed at experimenting measures for a more sustainable use of pesticides. The project surveyed pollinators (butterflies and bees) in ten organic agricultural fields and ten conventional ones (rice and hazelnut plantations, vineyards and sunflower fields). In 2015 and 2016, pollen was sampled in vineyards and rice plantations for residues of pesticides (D'antoni, 2019).

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

TRAINING AND AWARENESS RAISING CAMPAIGNS

There are several awareness raising campaigns happening in Italy, but these are often developed unilaterally and locally.

The campaign "Cambia la terra", promoted by Federbio, is an information and awareness raising campaign supported by farmers and food producers who do not use synthetic pesticides and fertilisers on their fields. The campaign aims at increasing the agricultural area where ecological agricultural practices are used. Within this campaign, WWF Italia and Conad brought forward "Beesafe", a campaign directed towards the protection of bees and other insects. Beesafe aims at realising "aree amiche delle api" (areas friends of bees) in ten WWF Oasis in Italy, comprising of bee-hotels, buffer strips, and information panels to raise awareness on wild pollinators.

EDUCATIONAL CAMPAIGNS AND MATERIALS ON WILD POLLINATORS

None identified.

CITIZEN ENGAGEMENT CAMPAIGNS

Public involvement in data collection is encouraged in Italy to complement the existing studies on wild pollinators or to contribute to the creation of new ones. For example, the citizen science platform "Api selvatiche" ("Wild bees") calls for public contribution to increase data on wild bees in protected areas as well to help the creation of an Italian red list on these species.

The campaign "Beewatching" - initiated in 2017 by CREA and the Department of Biological, Geological and Environmental Science of the University of Bologna, and supported by the Ministry of Agriculture - is based on citizen science and aims at increasing the awareness on the status of bees in the Italian territory. The objective is to create a community of people that consider nature as a valuable asset and to explore which of the pollinators in Italy are stable and which ones are endangered (CREA and University of Bologna, 2019).

To raise funds for pollinator-friendly measures in the metropolitan area of Bologna, the city launched a crowdfunding campaign called BEE HAPPY (Let's Protect Biodiversity). The campaign managed to raise 4,000EUR and spread awareness on the importance of biodiversity conservation (Wilk et al. 2019).

PRIVATE SECTOR INITIATIVES FOR WILD POLLINATORS

None identified.

APICULTURE SECTOR INITIATIVES FOR WILD POLLINATORS

The campaign "Bee Active", initiated by the Italian National Consortium of Beekepers and Organic Farmers (CONAPI), promotes awareness raising on the decline of bees. The initiative aims to inform and incentivise consumers and farmers to encourage behaviours which can contribute to the protection of bees and their habitats. Examples of behaviours promoted by the initiative include the purchase of biologic products, the avoidance of pesticides from farmers, the cultivation of flowers to increase polline sources, among others (Tedeschi, 2014).

The initiative "Api e Orti" (bees and orchards), developed by CONAPI in collaboration with Legambiente and the Department of Agricultural Sciences of the University of Bologna, monitors polluting substances in beehives located in urban orchards in three pilot cities: Bologna, Milano and Potenza. The honeybees are biological indicators for monitoring of environmental quality of the surrounding areas. Bees are analysed and tested by the University of Bologna (Beeactive, 2017).

The UNAAPI (Unione Nazionale Associazioni Apicoltori Italiani) is a member of the BEE FRIENDLY Association, which developed, manages and secures the Bee Friendly label. The label sets out requirements for different types of products (dairy products, fruit and veg, cosmetics, etc.) that protect domestic honeybees as well as pollinators more widely. It defines 27 measurable criteria, a list of

qualifying practices and 3 skill levels corresponding to the successive stages of an improvement process to bee-friendly production systems.

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Educational materials

None identified.