EU Pollinator Initiative

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The above members of the European Habitats Forum (EHF) have agreed the following position regarding the EU Pollinators Initiative.

Summary

We welcome the decision of the European Commission to launch an initiative to tackle the rapid decline of pollinators in Europe. Invertebrates are at the very heart of our ecosystems and their precipitous decline presents a crisis for agriculture and the health of the environment across the EU. Resolute action is needed to halt the decline of pollinators and the pollination service they provide. The Pollinators Initiative must not shy away from addressing the real drivers and pressures behind pollinator decline, including intensive agriculture, pesticide use and land use change. This initiative must introduce measurable changes benefiting pollinators and biodiversity at large scale by protecting and restoring pollinators' habitats. Only then can we ensure the long-term sustainability of pollination in Europe.

The EU Pollinators Initiative should comprise both legally binding measures (e.g. changes to relevant EU acquis, for instance on pesticides) as well as voluntary elements (exchange of knowledge and best practices). The aim of the initiative should be to establish an integrated EU approach to tackle the decline of pollinators by raising its political profile, increasing the effectiveness of EU policies and evaluating potential EU policy gaps for pollinators. It is important to include the evaluation of potential EU policy gaps, as existing policies, even with higher effectiveness, might not be enough to fully address the decline of pollinators.

The pollinators initiative should as a priority include measures to 1) restore essential pollinators' habitats and increase their connectivity in agricultural landscapes and; 2) address harmful subsidies and incentives in the Common Agriculture Policy and replace them with incentives for practices benefitting pollinators; 3) prevent the harmful impact of pesticides by ensuring their sustainable use, reviewingthe pesticides approval process, and addressing the problem of abusive derogations and lack of transparency on the actual use of pesticides in the EU.

It will also be important to promote the use of EU funding streams to achieve the objectives of the pollinator initiative. This should include: 1) an estimation of the financial needs to fund the pollinator initiative and its follow up; 2) the evaluation of the potential of existing EU funding streams to support the implementation of the strategy for pollinators; 3) a proposal on how to better channel EU resources to implement the EU pollinator initiative.

Background

Invertebrates are at the very heart of our ecosystems and their precipitous decline presents a crisis for agriculture and the health of the environment across the EU. A successful programme of environmental regulation, sustainable management of remaining flower rich habitats, and habitat restoration, targeted at reversing the declines of pollinators will, along the way, address many of the factors underlying biodiversity decline.

Declines in European flying bees, moths and other pollinators, such as the 76% decline in insect biomass in 27 years on German nature reserves[1], bee and hoverfly declines[2], the decline of butterflies and moths in the Netherlands[3] and UK[4] [5] and the 32% decline in the abundance of EU grassland butterflies in 25 years[6] are amongst the most severe of modern biodiversity declines and for many species the situation is now critical. Even the 56 pollinator species listed on the Habitats Directive are doing badly, 67% of the assessments are unfavourable and 55% of their trends are negative (only 8% positive).

It is estimated that 84% of EU crops (valued at 15 billion euro per year) and 80% of wildflowers rely on insect pollination. Pollinators provide an excellent indicator of the health of our environment and

[1] Hallmann CA, Sorg M, Jongejans E, Siepel H, Hofland N, Schwan H, et al. (2017) More than 75 percent decline over 27 years in total flying insect biomass in protected areas. PLoSONE 12(10): e0185809. https://doi.org/10.1371/journal.pone.0185809.
[2] Biesmeijer, J. C., et al. (2006) Parallel Declines in Pollinators and Insect-Pollinated Plants in Britain and the Netherlands. Science, Vol. 313, Issue 5785, pp. 351-354.
[3] Groenendijk, D. & Ellis, WN (2011). The state of the Dutch larger moth fauna. Journal of Insect Conservation, 15, 95-101
[4] Thomas J.A., Telfer M.G., Roy D.B., Preston C.D., Greenwood J.J.D., Asher J., Fox R., Clarke R.T., Lawton J.H. (2004) Comparative losses of British butterflies, birds, and plants and the global extinction crisis. Science, 303, 1879–1883.
[5] Conrad K.F., et. al. (2004) Long-term population trends in widespread British moths. Journal of Insect Conservation, 8, 119–136.
[6] Van Swaay, C.A.M., et al.. (2015). The European Butterfly Indicator for Grassland species 1990-2013. Report VS2015.009, De Vlinderstichting, Wageningen.

underpin essential services. Impacts on agricultural production are already being observed, for instance on apples in the UK[7] and oilseed yields in Finland[8].

Historically the loss and degradation of habitats linked particularly to agricultural intensification and abandonment has been the main driver of pollinator decline. In the last two decades the growing and excessive use of particularly harmful pesticides, has become another major driver. While the priority is to reverse habitat fragmentation and degradation and significantly reduce the use of harmful pesticides, there are also other drivers that must also be addressed if we are to save our pollinators; including disease and invasive species, light pollution, peat use, and air pollution. It will be impossible to establish progress towards saving our pollinators, unless monitoring and knowledge are also improved.

Without new and resolute action the decline of pollinators and the pollination service they provide is expected to continue, affecting negatively EU's efforts in halting the loss of biodiversity, securing recovery and implementing the Sustainable Development Goals.

Fixing Agriculture for Pollinators

a) Grasslands and CAP

Over the last century, more than 90% of semi-natural grasslands have been lost in most European countries owing to intensification or abandonment, and populations of a large number of grassland species have declined or become extinct[9]. Almost half (49 %) of the grassland habitats assessed under the Habitats Directive are in 'unfavourable-bad' condition[10].

Agri-environmental measures have not been implemented at a sufficient scale across Europe to compensate for the losses of good pollinator habitats and declines in habitat quality. Incentives are inadequate and often there is a lack of independent, professional ecological advice available to land managers to assist with the delivery of biodiversity results. The comeback of wild herbivory – being one of the most important natural processes behind insect rich grasslands – is complicated by the existing regulations and subsidy regimes in European agriculture and forestry.

Climate change is already a driver of pollinator declines [11] [12]. Fragmentation of wildflower rich habitats leaves populations of insect pollinators marooned and unable to move in response to land-use or environmental change.

An EU wide network of corridors mapped at a local level, joining existing and proposed wildlife rich areas, and being the target for habitat restoration has the potential to reverse the impacts from fragmentation and climate change, at a fifth of the cost of a scatter-gun approach[13]. 'BeeLines' are

[7] Garratt, M.P.D., Breeze, T.D., Jenner, N., Polce, C., Biesmeijer, J.C., Potts, S.G. (2014) Avoiding a bad apple: insect pollination enhances fruit quality and economic value. Agric. Ecosyst. Environ. 184, 34–40

[8] Hokkanen, H., Menzler-Hokkanen, I. and Keva, M. (2017) Long-term yield trends of insect-pollinated crops vary regionally and are linked to neonicotinoid use, landscape complexity, and availability of pollinators. Arthropod-Plant Interactions 11:449–461

[9] Gustavsson, E., et. al. (2011) 'Combining historical and ecological knowledge to optimise biodiversity conservation in semi-natural grassland', In: Pujol, J.L. (ed.), The importance of biological interactions in the study of biodiversity, InTech

[10] EEA (2015) State of nature in the EU. Results from reporting under the nature directives 2007–2012. EEA Technical report No 2/2015. ISSN 1725-2237

[11] Kerr, J.T., et al. (2015) Climate change impacts on bumblebees converge across continents. Science, 349, 177–180.

[12] Fox, R, Oliver, TH, Harrower, C, Parsons, MS, Thomas, CD & Roy, DB (2014) Long-term changes to the frequency of occurrence of British moths are consistent with opposing and synergistic effects of climate and land-use changes. Journal of Applied Ecology, vol 51, no. 4, pp. 949-957. DOI: 10.1111/1365-2664.12256

[13] Hodgson, J. A., Thomas, C. D., Cinderby, S., Cambridge, H., Evans, P., & Hill, J. K. (2011). Habitat re-creation strategies for promoting adaptation of species to climate change. Conservation letters, 4(4), 289-297. DOI: 10.1111/j.1755-263X.2011.00177.x

key component of the Dutch Pollinator Action Plan[14], and 'B-Lines' have already been mapped for much of the United Kingdom.

A network of managed and restored wildflower habitat would address the finding of the 'Evaluation Study to support the Fitness Check of the Birds and Habitats Directives' (March 2016) "there is little evidence that Member States are taking additional measures to implement Articles 3 and 10 of the Habitats Directive, even though they appear to be necessary."[15]

Conversion of uncultivated or semi-natural grasslands, that are often the most flower-rich, into arable or intensive grassland requires an Environmental Impact Assessment, unfortunately this is not always applied, and loopholes often allow the destruction of small meadows or meadows that are not absolutely pristinely natural[16].

Recommendations

1. Allocate 30% of earmarked CAP Pillar 1 monies (currently linked to "Greening" obligations) to eco-schemes to finance inter alia targeted measures for pollinators, including:
    a. Securing safeguarding and positive management of remaining HNV grassland and restoration of sufficient areas of wildflower grassland to reconnect them;
    b. Designate more areas of permanent grassland as Environmentally Sensitive (both inside and outside the N2K network) as envisaged in current architecture of the CAP;
    c. Create (legally and financially) enabling conditions for wild and feral herbivores to play their ecological key role in developing and structuring insect rich grasslands;
    d. EU wide BeeLine/B-Line network mapped in association with Member States and targeted for habitat restoration activity;
    e. Introduce independent, ecologically knowledgeable Farm Advisory Services and make them widely accessible;
    f. Monitoring of the quality of results and availability of advice to land managers undertaken by MSs and reported to EC.
2. Implement the Environment Impact Assessment Directive more effectively in relation to protecting unimproved grassland, including lowering area thresholds to encompass small meadows and improve impact assessment on pollinators through ecosystem services.

b) Pesticides

The widespread use of neonicotinoid insecticides has harmed populations of wild bees[17] and probably other pollinators. As well as impacts from insecticides, herbicides reduce the availability of pollen and nectar across agricultural landscapes, fungicides have recently been implicated in bumblebee declines[18] and synergistic effects that magnify insecticide toxicity are also well documented[19].

[14] Netherlands Government (2018) NL Pollinator Strategy "Bed & Breakfast for Bees" Ministry of Agriculture, Nature and Food Quality, The Hague
[15] Milieu, IEEP and ICF (2016) Evaluation Study to support the Fitness Check of the Birds and Habitats Directives. EC, Brussels.
[16] Goldthorpe, C. (2016) Semi-natural grassland decline: the failings of environmental impact assessment in England. Environmental Law & Management, 26.
[17] Woodcock, B. A. et al. (2016) Impacts of neonicotinoid use on long-term population changes in wild bees in England. Nat. Commun. 7:12459 doi: 10.1038/ncomms12459
[18] McArt SH, Urbanowicz C, McCoshum S, Irwin RE, Adler LS. (2017) Landscape predictors of pathogen prevalence and range contractions in US bumblebees. Proc. R. Soc. B 284: 20172181. http://dx.doi.org/10.1098/rspb.2017.2181
[19] Schmuck R, Stadler T, Schmidt HW. Field relevance of a synergistic effect observed in the laboratory between an EBI fungicide and a chloronicotinyl insecticide in the honeybee (Apis mellifera L, Hymenoptera) Pest Manag Sci. 2003;59:279–286

The current pesticide approval procedure is inadequate with numerous flaws, starting with weak and secretive science, including that the EFSA bee risk assessment guidance[20] is not being routinely applied and culminating in a political process that is slow to respond to scientific evidence. Even in the case where restrictions are finally adopted at EU level, Member States grant unjustified "emergency" derogations, which means that in practice bees are still exposed to harmful pesticides.[21]

The patent system currently encourages the development of broad spectrum pesticides which maximise sales over a short period of time. Short-termism acts against good environmental and resistance stewardship and encourages secrecy of environmental and efficacy data.

The sale of pesticides to farmers is often commission based, such systems introduce a strong bias against the interests of the customer, and in this case against the environment and the public as well. Commission based selling is not allowed where a close relationship exists between the advisor and individual (e.g. medicines and financial products).

The sale of banned pesticides by Western companies to countries with less rigorous, or in 35% of countries no, pesticide regulation has been described by the UN Human Rights Council as a clear human rights abuse. It is also a clear abuse of the planet's pollinator services. The UN OHCHR has proposed a global convention to bring pesticides under control[22].

In addition to a more robust regulatory system there is an urgent need to address the overuse of pesticides[23]. The Sustainable Use Directive (SUD) sets out an ambition to reduce pesticide use and increase take up of Integrated Pest Management but many MSs are failing to do this. Transparency on the actual use of pesticides in the EU is needed. The Pesticides Regulation imposes precise record-keeping obligations on professional users on the pesticides they use, including the name of the products, the time and the dose of application as well as the area and the crop where the pesticides are used.[24] These records need to published so that citizens, including beekeepers, can track where, when and in which quantities which pesticides are used. Moreover, the Commission must make it clear to MS that measures to promote IPM need to be line with Article 14 of the SUD which states that "Member States shall take all necessary measures to promote low pesticide-input pest management, giving wherever possible priority to non-chemical methods, so that professional users of pesticides switch to practices and products with the lowest risk to human health and the environment among those available for the same pest problem."

Recommendations

1. EFSA Guidance on bee risk assessment adopted immediately and applied routinely at EU level.
2. EU pesticide approval 'test method' for pollinators reviewed, including toxicity and risk assessment for a wider range of pollinator species.
3. Integrated Pest Management must be implemented effectively with Integrated Pest Management principles being made mandatory.
4. The Sustainable Use Directive further developed, and implemented effectively making sure that all Member States set quantitative pesticide reduction targets, time tables and measures

[20] European Food Safety Authority (2013) EFSA Guidance Document on the risk assessment of plant protection products on bees (Apis mellifera, Bombus spp. and solitary bees). EFSA Journal 2013;11(7):3295, 268 pp., doi:10.2903/j.efsa.2013.3295
[21] Pesticides Action Network Europe, ClientEarth, European Bee Keeping Coordination, Romapis, Bee emergency call, February 2017.
[22] UN Human Rights Council (2017) Report of the Special Rapporteur on the right to food. UN, New York.
[23] Milner, A.M. and Boyd, I.L. (2017) Toward pesticidovigilance. Science 22 Sep 2017: Vol. 357, Issue 6357, pp. 1232-1234
[24] Regulation (EC) No 1107/2009, Article 67

5. Current partial ban on three neonicotinoids extended to all crops and greenhouse use.
6. Link between farm advice and income from pesticide sales broken.
7. Transparency on the actual use of pesticides in the EU ensured.
8. The EU provides leadership in the development of a Global Convention on Pesticides.

Protecting rare and threatened pollinator species

At least 40% of threatened species of bees are found on at least one Natura 2000 site[25]. Many species have been lost from the wider landscapes and so protected areas provide an essential tool in conservation even if these sites were never designated based on the presence of particular pollinator species. The full implementation of the Birds and Habitats Directives and measures to support the management and funding for the Natura network will benefit pollinators.

Despite there being hundreds of EU pollinator species threatened with extinction, there are only 56 pollinator species protected by the Habitats Directive; most are butterflies with some moths and beetles, but not a single bee, wasp or fly. It is therefore important that the Pollinators Initiative also includes additional measures, needed to conserve rare and threatened pollinator species, particularly those on the EU red list.

Recommendations

1. Focussed effort on ensuring that pollinator species and habitats listed in the Habitats Directive are in FCS, supported by sufficient funding.
2. Efforts to conserve rare and threatened pollinator species, particularly those on the EU red lists, a clear priority for Governments at all levels.
3. EU species action plans drawn up for a range of threatened and endangered pollinator species.
4. New funding made available to conserve rare and threatened pollinator species.

Wild pollinators protected from invasive species and diseases

Imported bees – honeybees and bumblebees - can spread disease to indigenous bees, causing in some cases catastrophic crashes of their populations - this has happened to wild American bumblebees[26] [27]. Using locally bred, indigenous bees would avoid this problem, as a first step much higher standards of biosecurity on bee imports would reduce the risk[28].

Pot plants present several risks to pollinators, firstly they can contain peat which is sourced from flower rich wildlife habitats, secondly they usually contain insecticides harmful to bees[29] and thirdly they can be imported with little biosecurity, introducing disease and species such as the Asian hornet that feeds on bees.

[25] Nieto A., et al. (2014) European Red List of bees. Publication Office of the European Union, Luxembourg.
[26] McArt SH, Urbanowicz C,. McCoshum S, Irwin RE, Adler LS. (2017) Landscape predictors of pathogen prevalence and range contractions in US bumblebees. Proc. R. Soc. B 284: 20172181. http://dx.doi.org/10.1098/rspb.2017.2181
[27] Graystock, P., Yates, K., Evison, S. E. F., Darvill, B., Goulson, D. and Hughes, W. O. H. (2013) The Trojan hives: pollinator pathogens, imported and distributed in bumblebee colonies. J Appl Ecol, 50: 1207–1215. doi:10.1111/1365-2664.12134
[28] Goulson, D., Hughes, W.O.H. (2015) Mitigating the anthropogenic spread of bee parasites to protect wild pollinators. Biol. Conserv. 191, 10–19.
[29] Lentola, A, David, A, Abdul-Sada, A, Tapparo, A, Goulson, D and Hill, EM (2017) Ornamental plants on sale to the public are a significant source of pesticide residues with implications for the health of pollinating insects. Environmental Pollution, 228. pp. 297-304.

Recommendations

1. The cross border transportation or long distance transport of bumblebees and other pollinators for crop pollination strictly regulated, or stopped in favour of the use of locally produced, naturally occurring pollinators.
2. Effective biosecurity measured introduced for potted plants and soil before it is moved significant distances.
3. Ecolabel for pot-plants introduced – addressing growing medium, pesticide status and origin.

Improved pollinator monitoring and science

Knowledge about pollinator taxonomy, identification, knowledge, status and ecology is the bedrock of their conservation and consideration in policy development, but there are many gaps.

The FAO has provided guidance on the development and implementation of national pollinator monitoring schemes[30]. They should have good geographical coverage, utilise standardised and quantifiable collection techniques and have a broad taxonomic coverage of pollinators, including flies, wasps and beetles as well and moths and bees. Volunteer schemes, particularly transects, add valuable data for some easily identified pollinators.

Emerging issues such as the impacts of electromagnetic radiation on pollinators[31] and road mortality[32] are currently not being addressed via funded research.

A healthy red-listing process will ensure that statuses are established for pollinators and are kept up to date.

Recommendations

1. National and Regional Governments supported in establishing standardised pollinator monitoring programmes – following FAO guidance.
2. Centralised EU pollinator data platform.
3. Requirement that pollinator distribution and abundance data gathered using public money or gathered in compliance with the Environmental Impact Assessment directive is submitted to public database.
4. EC support for the coordination of pollinator monitoring data from systematic and volunteer based schemes.
5. Horizon 2020 funding call targeted at understanding pollinator ecology, declines and solutions.
6. Support and funding for insect taxonomy boosted – EC grants available to establish taxonomy posts with a focus on taxonomic groups and biogeographic regions where the biggest current gaps exist – e.g. Mediterranean flies.
7. EC grants available to create online pollinator identification tools – keys and image identification.
8. EU pollinator DNA barcoding project to produce database of DNA profiles of all pollinators.
9. EU Red-listing exercises completed for as yet unassessed groups of pollinators.

[30] Berkeley, CA. LeBuhn, G., S. Droege, E. Connor, B. Gemmill-Herren, and N. Azzu. 2016. Protocol to Detect and Monitor Pollinator Communities: Guidance for Practitioners. UN: Food and Agriculture Organization. Rome, Italy.
[31] Lázaro, A., Chroni, A. Tscheulin, T. Devalez, J. Petanidou, T. Matsoukas, C. (2016) Electromagnetic radiation of mobile telecommunication antennas affects the abundance and composition of wild pollinators. Journal of Insect Conservation 20:315–24.
[32] Baxter-Gilbert, J.H., Riley, J.L., Neufeld, C.J.H. et al. (2015) Road mortality potentially responsible for billions of pollinating insect deaths annually. J Insect Conserv 19: 1029.

Supporting national and local action and awareness raising

Local authorities, businesses and the public can all take action that will help the recovery of pollinator populations and bring back wildlife into towns and cities.

The EC Pollinator Initiative should set out clear roles for national, regional and local governments to contribute to reversing the loss of pollinators and support the development of national and local pollinator action plans. Agreed result targets with member states would be very helpful. Measures to be encouraged should include: retaining and improving public spaces for pollinators; protecting sites of high environmental quality for pollinators; including requirements for flower rich green infrastructure such as green (brown) roofs, living walls and rain gardens in planning policies; enabling more pollinator conservation activity on mineral extraction sites; reducing light pollution which has been shown to reduce pollinator health and pollination rates[33] and awareness raising actions.

Corporations whose business model is threatened by declining pollinators, or whose business model threatens pollinators, should be required to account for these risks and effects and to take action to address them. These risks, effects, predictions and actions should be audited to a standardised format and reported annually.

Recommendations

1. Support the development of national and local pollinator action plans
2. Awareness raising actions like an annual EU pollinator day to celebrate all pollinators and provide a focus for activity and/or annual EU Pollinator Awards for industry sectors, governments and public.
3. Corporate reporting reviewed and risks and threats to pollinators and risks of pollinator decline to business model included where appropriate – standardised format and audited.

[33] Knop E., Zoller L., Ryser R., Gerpe Ch., Hörler M., Fontaine C. (2017) Artificial light at night as a new threat to pollination. Nature, 02. doi:10.1038/nature23288