

The Impact of Ecosystem Health On Pollinator Species

With Particular Emphasis on Honey Bee
Health

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Introduction

Recent Honey Bee declines have been attributed to several possible causes:

1. Habitat Loss
2. Climate Change
3. Varroa Mite
4. Viruses
5. Pesticides
6. Mobile and Wireless Communications Systems
7. In Overseas Nations GM Crops



Ecosystem Function

The Component Parts of an Ecosystem are:

1. Soil – Its constituent parts of organic matter, minerals and soil microorganisms and other life forms
2. Water – Correct pH + dissolved Oxygen +dissolved Minerals and an absence of man made pollutants
3. Solar Energy – Duration, intensity, temperature
4. Balanced populations of life forms both flora and fauna
5. The correct balance of all the above for the particular eco-zone, microclimate and altitude.
6. A correct predator – prey ratio at all levels of the ecosystem from bacteria and viruses to large carnivores but not necessarily including us.



Pollinator Health

For optimal health there needs to be:

1. A wide variety of food and habitat types available all year round
2. Ample clean water and plentiful shelter
3. Stable terrain particularly for bee pollinator species
4. No or very little pollution from any source



Ecosystem Health

What causes poor Ecosystem Health?

- Soil Erosion/Habitat Destruction
- Mono-Culture Farming
- Toxic Chemicals
- Lack of Crop Rotation
- Loss of hedgerows and field margins
- No fallow land or conservation headlands
- Fewer permanent Meadows
- Intensive Grazing on poor quality (classified as improved) Mono-Culture grassland



So What To Do...

About the harmful impacts on ecosystems and pollinator species and how to reverse the destructive trends.....
and why should we bother?



Solutions for the Landscape

1. Reduce field sizes and plant hedgerows around all
2. Encourage traditional woodland/field crafts that utilise hedgerow and woodland resources to generate income and maintain a viable hedgerow system
3. Reduce or remove all agrochemical usage
4. Restore soil health through improved soil management techniques
5. Employ more local people and fewer machines to farm the land and reduce the carbon footprint of food production
6. Maintain correct crop and land use rotations especially for long term meadow creation



Solutions for Pollinators

1. Provide adequate habitat areas free from unnecessary landscape management.
2. Introduce the importance of pollinator species and other aspects of sustainable ecosystems into the schools curriculum

With regards Beekeeping:

1. Promote natural beekeeping methods across the country and the EU
2. Redesign the hives for better insulation properties and easier inspection without interference of the internal components of the hives
3. Provide adequate and diverse all year round pollen and nectar sources for all pollinators



Why Should We Bother

1. Food is essential to all life and two thirds of our food is pollinated by wild life.
2. Without them we would not have the quantity and healthy diversity of food we currently have
3. Ecosystem health is not an optional extra. We cannot live without a healthy ecosystem.
4. Our water and air is filtered, produced and transported by healthy Ecosystems
5. Pollinators need a healthy ecosystem just like we do.
6. We cannot live on bread alone
7. We currently survive on 5 main crops globally whereas in the not to distant past we had a very diverse diet
8. Ecosystem health has declined and so has our diversity of food types. This needs to change.



Bio-security

One important factor which often gets overlooked:

1. Improve the import quarantine rules and procedures to prevent the importation of contaminated bee products and infected bee nuclei into the UK.
2. Register all importers of bee products and strictly monitor their quality control protocols
3. Stop the importation of Bumble Bees for the horticultural trade.
4. Breed our own Bumble Bees here!



Conclusion

1. Current agricultural practices do not encourage sustainable communities of pollinator species
2. Mono-culture agriculture destroys biodiversity and limits pollen and nectar availability
3. Chemical pollutants impact adversely on ALL pollinator species regardless of size and diversity
4. Government policy is steering more towards unsustainable and intensive agriculture
5. Government policy is also turning up the pressure to introduce GMO's into the British and European landscape.



References and To Do's!

<http://www.seedysunday.org/>

<http://www.biobees.com/>

<http://bumblebeeconservation.org/>

<http://butterfly-conservation.org/>

<http://www.buglife.org.uk/>

<http://www.ukfg.org.uk/pdfs/ukagroecologyalliancesummary-orfc2012.pdf>

<https://www.gov.uk/government/publications/england-biodiversity-indicators>

And of course raise the issues with your MP and/or MEP

This consultation affects all of us.

<https://consult.defra.gov.uk/eu/boc-agriculture>



Thank You!