Bees:
Information & Contacts

Globally there are nearly 20,000 recorded species of bee, with around 260 species in the UK alone. They are found on every continent except Antarctica and they play a vital role in the pollination of a vast range of flowering plant species. In fact, one third of all human food crops are pollinated by bees, therefore they play an important role in all our lives.

But in the past two years the number of bees in the UK has fallen by 10-15%, due to starvation, extreme weather and disease (other insect pollinators are also suffering). Two bad summers have prevented many bees from getting out to forage for food (nectar), this combined with the amount of wildflowers and hay meadows declining can lead to starvation. Honey bees are also suffering from a parasite called the varroa mite. They attach themselves to the body of the bee and suck out haemolymph (insect 'blood'), which weakens the bee and leaves them highly susceptible to disease. They also spread RNA viruses, and may be a contributing factor to the Colony Collapse Disorder (CCD) affecting America and parts of Europe, including the UK. The wet weather is exacerbating the situation as bees are remaining in the hive longer, so mites and diseases are able to spread more effectively through the colony.

Actions to Help

We cannot control the weather, but there are many actions people can take to help support our bees:

Food: grow nectar rich flowers, any small area can be set aside for growing flora such as lavender, thyme, red clover, honeysuckle, foxglove, poppy, bird's foot trefoil, etc. In winter, sugar syrup is used as a food substitute for honey bees, but allowing them enough honey to last until spring is far better and will increase their chances of survival. If it has been a poor summer you may still need to supplement their diet.

Chemicals: stop using pesticides; these are possibly one of the biggest killers of insects worldwide. Individual pesticides may be classed as harmless to bees and other beneficial insects, but an autopsy of one bee (following Colony Collapse Disorder) found 25 different pesticides and fungicides in its system. What effect are these combined chemicals having on our wildlife?

Habitat: Offer bee nesting tubes/boxes (even upturned clay plant pots) to attract and home wild solitary bees/bumblebees, http://www.nationaltrust.org.uk/main/w-chl/w-countryside_environment/w-nature/w-nature-hidden_nature/w-visits-garden_habitats.htm.

The National Bee Unit (NBU) has received extra funding to research bee issues. There is also a £10 million initiative from the Living With Environmental Change (LWEC) programme, that seeks to research the problems facing insect pollinators and revive their dwindling numbers http://www.defra.gov.uk/news/2009/090421a.htm.

National Trust Supporting Bees

Several National Trust properties are striving to make a difference. At Canons Ashby, Northamptonshire, the team have allowed one of the banks in the garden to grow wild; this now holds 14 different grass types and 24 wildflower species (important nectar sources for insects). The team have a general rule of non pesticide use and have introduced bee tubes, which are attractive homes for masonry bees. Their future plan is to create a 0.6 hectare wildflower hay meadow. The restoration of Croome Park, Worcestershire, included returning 162 hectares of arable land back to wild flower meadow. Anglesey Abbey allowed 10 hectares of previously formal lawn to grow as hayfields; these now support 50 species of wildflower and benefits many insects. These changes in management can also save the property money through reduced mowing and chemical use costs.

National Trust Bee Hives

The following National Trust properties have bee hives on their land:

Arlington
Attingham Park
Avebury
Borrowdale
Calke Abbey
Cliveden Estate
Corfe Castle - Hartland Moor
Cotehele
Cut Thorn Farm
Dunwich Heath - Mount Pleasant Farm
Emmetts Garden
Felbrigg
Fenton House
Gibside
Godolphin
Greenlands Farm
Hardwick
Harewoods Estate
Harmony Farm
High Peak
Hughenden Manor Estate
Isle of Wight (Bembridge Windmill)
Killerton
Lanhydrock
Llanerchaeron
Lyme Park
Lyveden New Bield
Malham Tarn
Modern Hall Park
Parke Estate - Bovey
Pentireglaze
Purbeck Estate
Purbeck Heaths
Rosedene
Saltram
Sheffield Park
Sheringham Park
Sissinghurst
Slindon
Styal
Sunnycroft
The Vyne and N Hants
Upper Wharfedale
West Kennet Farm
Windermere - Bonnerigg Farm

Beekeepers

All UK beekeepers are advised to join the British Beekeepers' Association (BBKA) http://www.britishbee.org.uk/, sign up to the National Bee Unit's (NBU) BeeBase https://secure.csl.gov.uk/beebase/, and report any suspicion of pests or diseases to the local bee inspector or the NBU. When keeping honey bees ensure good hive hygiene is practiced, the following websites offer helpful information on this: http://www.britishbee.org.uk/files/Apiary_Hygiene_B12.pdf, http://www.ncbka.org.uk/HygienicHive.htm. Defra and the Welsh Assembly Government have also published a 10 year plan addressing the problems facing honey bees and beekeepers. The full document *Healthy Bees; protecting and improving the health of honey bees in England and Wales* can be viewed online at http://www.defra.gov.uk/hort/Bees/news/plan.pdf.

Scientists are currently working to breed more hygienic honeybees http://environment.uk.msn.com/news/headlines/article.aspx?cp-documentid=15733786. Some honeybees have a greater tendency to clean their hives of dead and dying pupae and larvae. For example, female varroa mites lay their eggs on bee pupae while they are still developing in their cells. Hygienic bees can detect these baby mites in the cell and will remove the pupae from the hive http://www.ibra.org.uk/articles/20080611_107. But these bees make up only a small proportion of the total population, so scientists are attempting to identify the most hygienic fathers and breed hygienic queens from them, eventually leading to hygienic colonies. Research is also being carried out to see if they are as good at producing honey.

Swarming Bees

Honeybee swarms mostly occur in June/July when a colony gets too big and a group separates off to look for a new home. These swarms can look quite frightening but are not usually harmful or aggressive. They will often cluster on a tree branch or other object and, if left, will usually find a new home in around 24hours.

Local beekeepers are often very interested in swarms and can be contacted to come and collect one, turning them back into a productive honeybee colony. The BBKA has a list of National Swarm Coordinators and more detailed advice on honeybee swarms, http://www.britishbee.org.uk/swarm_collection.php.

Pollination

Pollination is the transfer of pollen from the anther (male) to the stigma (female). If viable, a pollen tube is produced which grows down into the ovary to fertilise the ovule, seed formation then occurs. In fruit trees the seeds are surrounded by a covering of fruit (e.g. apples, etc). Insects are globally responsible for the transfer of vast amounts of pollen, creating seeds for new plants and for food (e.g. corn, maize, etc). In the UK alone the value of insect pollinated crops is estimated at £165 million per annum.

Honeybees are good at taking nectar but bumblebees are actually far better at pollination. They are better foragers and perform 'buzz pollination', vibrating their bodies at high frequencies, so shaking loose large quantities of pollen as they move about the flower http://baynature.org/articles/web-only-articles/buzz-pollination. A study on blueberry in 1992-94 showed that wild bumblebees pollinated in 80% of floral visits compared to just 25% for honeybees, making them about 24 times more efficient http://www.cyberbee.net/column/pollinator/bumblepoll.shtml. They also work faster, start earlier and finish later each day, even flying out in drizzle, and they are better at cross pollination which is especially important for many fruit trees.

An American study proved that honeybees are five times better at pollinating when interacting with wild bees http://www.physorg.com/news76083012.html. So it is as important to support and protect our wild bee populations as it is our honeybees, and encouraging more wild bees into areas can increase pollination efficiency.

Other Organisations

The Bumblebee Conservation Trust has a useful website containing a great deal of information about bumblebees and great advice for their conservation and support, including some very useful fact sheets http://www.bumblebeeconservation.org/. They have also created the first bumblebee sanctuary, an eight hectare wildflower meadow beside Loch Leven, Scotland.

Operation Bumblebee is a national scheme to work with farmers and growers to re-establish habitats with traditional nectar rich flowering species, such as red clover, vetches and sanfoin, http://www.operationbumblebee.co.uk/.

Useful Websites

BeeBase - https://secure.csl.gov.uk/beebase/.
Bees, Wasps & Ants Recording Society - http://www.bwars.com.
Defra: Bee Health - http://www.defra.gov.uk/hort/Bees/.
Hymettus - http://www.hymettus.org.uk.
International Bee Research Association - http://www.ibra.org.uk/.
The Bee Farmers' Association of the UK - http://www.beefarmers.co.uk/.
The British Beekeepers' Association - http://www.britishbee.org.uk/.
The Global Bee Project - http://www.theglobalbeeproject.com/.

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