



The facts about honey bee declines

For several years now there has been a great deal of concern about the future and survival of managed honey bee stocks and the effects bee declines will have on pollination and global food production. More than a third of all the food we eat and most of the highly nutritional foodstuffs in our diets are reliant on bees and other beneficial insects for pollination.

High profile awareness campaigns by the likes of the Soil Association, Greenpeace, PAN, the BBKA and Friends of the Earth have greatly increased the profile of the honey bee within mainstream media resulting in a much higher awareness that honey bees are in decline and according to some even considered threatened or endangered. Phenomena like Colony Collapse Disorder (CCD) have wiped out large numbers of colonies in North America and these losses have been widely publicised. Much of the blame for bee losses including those to CCD have been directed at pesticides, specifically a class of systemic pesticides called Neonicotinoids which have now been temporarily banned from use within the EU, pending further testing. Academics are still divided as to the degree with which neonics are responsible for bee losses but overall conclusions are that while they are harmful to bees (bumble bees and solitary bees especially) [they are not the primary cause for losses of managed honey bees](#).

Factors which likely contribute to colony collapse in the US but may explain why the phenomena is absent in Europe are the differences in commercial apiculture in the US including the moving of colonies over vast distances to meet demands for pollination services. This [animated infographic](#) illustrates US commercial honey bee movements.

Movements on this scale combined with limited forage availability and nutritional intake restricted to one monoculture crop after another are thought to cause distress and weaken colonies making them more susceptible to other stressors such as pesticide exposure and pathogens.

Other arguably more important factors implicated with bee declines have been largely ignored and left unaddressed until very recently, despite most leading scientists agreeing that pesticides are not the main cause of bee declines. Habitat loss, invading exotic pests and pathogens and bad husbandry practices are far more critical threats according to most academics, like Prof Francis Ratneiks of the University of Sussex Laboratory for Apiculture and Social Insects (LASI).

Winter Losses

Each year the British Beekeepers Association (BBKA) and The National Bee Unit (a government agency) publish results from their 2 separate winter losses surveys. These surveys highlight winter losses and attempt to understand the causes behind them. Often this is simply down to poor weather. (2014/15 winter losses stand at 16%) Both Organisations deem losses greater than 10% to be considered unacceptable whilst some academic believe this to be well within acceptable losses. In the US reports of average

winter losses among American hives of 41% have driven the message that honey bees are in decline leading to sensationalist articles portraying honey bees heading for extinction.

These figures when released each year are quickly interpreted by the mainstream press as evidence for extreme declines and portray an image that honey bees are continuing to fare poorly and are endangered. The truth is losses of the nature experienced across Europe are not that alarming and are easily replaced in good summers.

What these reports do not take into consideration is that each year the remaining colonies whether they be wild or managed will likely swarm and multiply or be split intentionally by the beekeeper increasing colony numbers to replenish any lost stocks. In good years with ideal weather conditions numbers of managed colonies can increase substantially.

There are now a number of joined-up long term studies being carried out by leading bee scientists around the world investigating colony losses and fluctuations in managed colony numbers. Recent reports from these studies are countering the perception that honey bees are in rapid decline and endangered. Studies in Europe include the COLOSS partnership, Epilobee and in the US the Bee Informed partnership. The International Bee research Association is studying bee populations on a global scale.

Data from these organisations and their studies suggests that despite bad winter losses in some regions in some years, honey bee numbers are actually on the increase and conclude that concern about the decline of the honey bee is misplaced, or even bogus. **However, many species of bumble and solitary bees are under threat.**

A study by *Breeze et al* published January 2014 in the peer reviewed journal Plos One has pointed to European honey bee stocks increasing by 7% between 2005 and 2010 and points out that the apparent pollination crisis stems from our increased demand on pollinators for pollinating biofuel crops and increasing demands to produce more food for a growing population rather than pollinators declining. Other sources indicate that global stocks are up significantly, largely due to increasing numbers of beekeepers and managed hives in countries like China stepping up their honey production. Numbers of amateur beekeepers across the western world are also on the increase. More people are taking to beekeeping as a means of reconnecting with nature in urban environments and because they want to help the honey bee. In the UK members of the BBKA have soared from 8,463 members in 2003 to over 25,500 members in 2015. National Bee Unit data shows that nationally, managed colony numbers have increased to 147,500 hives in England and its islands (excluding Ireland, Wales and Scotland). Numbers of beekeepers in London have more than doubled since 2008 whilst colony numbers have more than tripled to over 5000 managed colonies according to Bee Base, a government register of beekeepers and their apiaries.

It is the position of the LBKA that honey bees are no longer in 'grave danger', are currently enjoying a period of revival and do not need saving, but rather that they do need our help and assistance. We also feel that sensational media hype about their demise is unhelpful and distracting from the real issues such as forage availability, prevention of establishment

of new invasive pests and pathogens, the need for training and improved husbandry and the declines in wild bees which are under more serious threat.

Whilst not in immediate danger, honey bees and their keepers do face challenging times ahead with *varroa destructor* becoming increasingly resistant to synthetic chemical treatments and the threat of small hive beetle, asian hornet and numerous exotic pathogens arriving in the UK. Climate change may also bring challenges for our bees, however the honey bee is found throughout the world in a wide variety of habitats and ecozones and its genome contains a great deal of genetic diversity which will ensure its survival. Most of these threats can be successfully managed through appropriate integrated pest management prescriptions and vigilance of beekeepers and do not necessarily spell doom and gloom for our managed honey bees.

Unmanaged or feral honey bees without beekeepers to tend to them face a more uncertain future. Many wild or feral colonies are short lived succumbing to high varroa infestation. There is some evidence that some isolated honey bee populations are showing resistance to varroa but it will take many years and many more generations for the entire species to develop resistance to varroa at a species level.

Our attentions instead need to be focussed on declines of other pollinators including solitary bees and bumble bees. Of the insect pollinators which pollinate crops across Europe solitary and bumble bees play an important role and are responsible for a considerable portion of insect pollinated crops. They are relied upon to pollinate many crops which the honey bee cannot pollinate successfully or they work in synergy alongside managed honey bees to improve pollination yields, fruit development and marketability of the finished crop. Examples include Solanums like Tomato and Aubergine which can only be pollinated by bumble bees and field beans which are heavily reliant on solitary species for pollination. According to a recent report by the International Union for Nature Conservation (IUCN) 9% of Europe's 2000 species of wild bee are seriously under threat with several facing imminent extinction unless actions are taken to safeguard their fragile populations. According to the Bees, Wasps and Ants Recording Society (BWARS) a further 30% of Europe's wild bees lack sufficient data on population size and distribution to be able to assess their vulnerability. It is these unsung heroes (which work in synergy with honey bees to ensure pollination of our crops) that most deserve our attentions and which are most in need of our help.

Many people sympathise with the plight of insect pollinators and are keen to help. Our message is that everyone can be a beekeeper whether you keep a hive of honey bees or not. The easiest way that everyone can help our struggling pollinators is to plant more flowers for them. Improved forage for all bees will mean healthier bee populations able to forage on a nutritionally diverse floral resource, improved pollination of crops, improved food security and improvements to honey yields.

