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The fifth issue of the [Buzz Club](#) newsletter has arrived. It marks a year since we published our first newsletter. We hope to help answer important questions about insects and bees, whilst encouraging everyone to learn more about and

take an active part in scientific research. Our fifth quarterly newsletter contains news about some exciting new research on pollinator foraging choice, work on neonics at Sussex Uni, and updates of current projects our members can join. This

issue is edited by Dr. Rob Fowler.



## Current Projects Update

### Pollinator Abundance Network (P.A.N.)

The third year of our Pollinator Abundance Network (P.A.N.) project (the first official project under the Buzz Club banner) is coming to its end. Participants are sending back their samples for us to count and identify. We'll then be able to tell you what pollinators are present in your gardens/allotments. This is a long process which may take a few months, but we hope to have it completed by early 2017. Thanks again to everyone who has taken part. Although some of you may have caught only a few insects, these are still potentially valuable records which we plan on adding to national records.

After we have identified all the samples collected we

will have 3 years of data! This is a great start, and we hope to publish our findings and show how effective this method can be for estimating pollinator abundance across the UK. We'll keep you updated on our progress.

We will be undertaking this project again next spring and will send out invites to members to sign up to the project early 2017.

### Hoverfly Lagoons

The Hoverfly Lagoon project is still going strong! We have been receiving data from your hoverfly lagoons over the summer, and the results look promising.

Since May, you have helped us record over 1500 hoverfly larvae in the lagoons and 350 pupae in the pupation sites. June appears

to be the best month for spotting larvae in your lagoons, and July for pupae in pupation sites.

This is a sizable dataset that we hope you will continue to supply information for. It is still important to keep submitting your records for September and October, as several species of hoverfly, such as *Myathropa florea* and *Helophilus* spp. will overwinter in the lagoons as larvae, and pupate and emerge as adults in spring the following year.



*Helophilus pendulus* basking in the autumn sun.

Currently, you may be able to see hoverflies visiting late flowering plants in your garden, mainly Ivy which is usually in full bloom around now. See if you can spot any of the species of hoverfly that utilise these lagoons as nesting sites (see pictures).

There is still a lot of information and conclusions we can draw from these records, and hopefully we will be writing this study up soon for publication.



*Myathropa florea* laying eggs in a lagoon.

# Bees, Neonics and Garden Flowers

By Prof Dave Goulson

Bees are in trouble. Around the world many types of bee are in decline, and some species have gone extinct. These declines are driven by multiple factors including loss of wildflowers from the countryside, outbreaks of disease, and exposure to the many pesticides used in modern farming. This is particularly worrying, as of course we need bees; they pollinate our crops and our wildflowers. Without bees we would have no strawberries, tomatoes, chili peppers, blueberries or cucumbers, to name just a few. We need to take action to help them.

One action we can all take is to grow bee-friendly flowers in our gardens, providing bees with much-needed nectar and pollen. If every gardener did this we could turn our suburban areas into giant bee nature reserves. Buying plants for bees has proved to be very popular, and most garden centers help by providing labelling to show which plants are best for bees. The Royal Horticultural Society has a special “Perfect for Pollinators” label, with a cartoon picture of a bumblebee on it. Most bee-friendly flowers are also very pretty, so planting them has the added bonus of making your garden beautiful. It is a win-win – isn't it?

Sadly, there is a problem, a hidden danger. The pretty flowers on sale in garden centres are usually grown on the continent, many of them in the Netherlands, in intensive production facilities. To keep them looking perfect they are treated with chemicals, including a class of insecticide called neonicotinoids which are very harmful to bees. These chemicals, neonics for short, are neurotoxins that attack the brains of insects and paralyse and kill them, or at lower doses leave them dazed and confused.

Neonics have been banned for use by farmers on flowering crops such as oilseed rape, but their use on garden flowers is much less well controlled. If you ask your local garden center whether their plants have been treated with neonics, they usually do not know. Greenpeace recently screened some garden flowers on sale in mainland Europe, and found that many contained neonics and other toxic chemicals. It seems almost certain that this is also true in the UK, but no-one knows for sure. The sad truth is that this weekend a kind-hearted wildlife enthusiast might buy a pretty bee-friendly plant such as lavender, la-



belled with a RHS “Perfect for Pollinators” sticker, not knowing that it is full of potent neurotoxins and that they will be inadvertently poisoning their bees.

To investigate this, we recently ran a crowd-funding campaign to raise money to fund research into what pesticides are in ‘bee-friendly’ plants in garden centers. It went very well and we exceeded our target; thank you so much if you contributed. Now the work is well underway. We won't be able to screen every type of bee-friendly plant from every garden center chain and retail outlet, but we should be able to get a good idea what risks you are taking when you buy those pretty flowers from your local garden center.

If we find significant concentrations of neonics or other harmful chemicals, we would use this information to highlight the issue, putting pressure on the garden centers to buy in only plants that are genuinely good for bees, and putting pressure on the RHS to reserve their bee-friendly logo for pesticide-free plants that genuinely merit the accolade. With luck, the work will be finished by the end of this year, so watch this space!



## Hot off the Press! Floral abundance and resource quality influence pollinator choice

Although studied for many years, the specifics of why bees and other pollinators preferentially forage on certain flowers is still relatively under-studied. What research has been conducted however, suggests there is more than just what meets the eye.

A new paper, from three founding members of the Buzz Club, has just been published shedding light on how the quality of resources flowers offered to pollinating insects influences their foraging choice.

Over the summer of 2014, we recorded the quan-

tity and quality of nectar and pollen from the flowers of six common species of plant. We also undertook observation surveys, recording which pollinators visited which flowers at different times of the day.

The results showed that pollinators (mainly bees in our study) visited flowers that offered more sugar in their nectar, whilst the protein content of pollen appeared not to play a significant role in flower choice for the species tested. Furthermore, pollinators only chose flowers with more sugar when the flower 'patch' contained more than 50 inflores-

cences of that particular species.

Although many factors are believed to be important for foraging choice, including flower colour, shape, size, smell and location, as well as pollinator-plant compatibility (e.g. tongue-length), our results support lab based experiments where pollinators (again bees feature most in previous research) select nectar with great sugar content.

This could be important for conservation efforts; farmland or garden planting schemes could benefit by ensuring that rewarding plant

species are present at high density and/or are aggregated in space,

You can view the paper [here](#).



*Bombus pratorum* (♂) nectar robbing from Comfrey

## Do garden wildlife products actually work?

By Prof Dave Goulson

These days most garden centres stock a bewildering range of wildlife products, targeted at the gardener who wants to attract wildlife of various sorts to feed, breed or hibernate in their garden. Some of these clearly work; blue and great tits nest in tit boxes, a range of birds come to feed if you hang out peanuts or seed feeders. However, many of the others are less convincing, particularly those targeted at insects. Bee

hotels definitely attract solitary bees to nest, at least some of the time, but what about lacewing houses and butterfly hibernation boxes? A walk around your local garden centre or a browse on the internet will reveal many more products; butterfly feeders, hedgehog boxes, frog houses, bumblebee nest boxes, ladybird houses.

Many of these products are quite expensive, some look very attractive, but are they any good? I'd like to find out, with your help. So, if you have purchased any product aimed at helping insects, I'd like you to drop me an email; let me know what product it is, the brand/supplier, when you put it up, and whether it has worked (or whether it has provided a home for other creatures, such as woodlice, spiders or

earwigs!). My email is [d.goulson@sussex.ac.uk](mailto:d.goulson@sussex.ac.uk). If I get enough respondents I'll follow this up by sending you a short survey. If I can gain enough useful information, I will then be able to circulate useful advice as to which products actually help wildlife and which ones are a waste of your hard-earned money!

Thanks for your help!

Prof Dave Goulson



*Some examples of wildlife products commonly on offer in garden centres and online*

## Pollinator Corner - Autumn Flowering Ivy

Usually in pollinator corner we talk about a particular pollinator of interest. However, this time I want to mention a particular plant and its huge benefit to pollinators at this time of year. Ivy (*Hedera helix* and the very similar species *Hedera hibernica*) flowers from the beginning of September to the end of October, and offers both nectar and pollen to species of bee, wasp, butterfly, fly and hoverfly that are still active at this time of year.

Ivy tends to grow quickly but only produces flowers after 8 to 10 years of age. Plants of this age will begin to slow their 'creeping' growth and concentrate resources on producing flowers that emerge in small inconspicuous clusters.

Both the sugar rich nectar and valuable pollen represent bountiful resources for pollinators at a time where most other forage plants and trees have finished flowering. In one [study](#), 89% of pollen collected by honey bees in

the autumn months was from Ivy.



Ivy (*Hedera helix*), a great nectar and pollen plant for

If you have any pictures or interesting experiences with insects or pollinators please feel free to send them to [buzzclub.uk@gmail.com](mailto:buzzclub.uk@gmail.com), or tweet to us @The\_Buzz\_Club and we will add them into our newsletters.

## Wildflower Mix



Check out our video [here](#) where Josh shows you how to use the wildflower seed mix in your member pack. It also has lovely shots of some foraging pollinators!

## Upcoming event



### Apple Day 2nd Oct—Stanmer Park

We are back again this year in the old Orchard talking about pollinators and what you can do to help them.

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*We are a group of scientists and non-scientists, adults and children, working together to find out more about bees and other pollinators. The Buzz Club's goal is to ensure that we look after our wild bees and other insects, giving them a future. We can only do this if we understand more about them; why are some disappearing, how many are left, and where are they? How fast are they declining? What can we best do to help them? Together, we undertake fun nationwide surveys and experiments.*

Visit our website

[www.thebuzzclub.uk](http://www.thebuzzclub.uk)

*Help us study and save pollinators!!*