



WILDLIFE GARDENING FORUM

E-newsletter: September 2023

www.wlgf.org

@WLGForum



Welcome to our end of summer newsletter! We hope you enjoy having a read. With the erratic weather this summer, wildlife probably doesn't know if it's coming or going. Bumblebees were late to get their nests started but seem to have done quite well since. It also seems quite a promising year for butterflies. And as a recent BTO analysis of Garden BirdWatch data [has shown](#), gardens in the UK appear to be providing a real haven for butterflies. We at the Wildlife Gardening Forum welcome more studies that can shine a spotlight onto gardens and the species they support. If you come across any we've missed, do drop us a line at info@wlgf.org and we'll cover it in our next news roundup.

Sunny Wisley! The Trustees enjoy the Science Building rooftop



For the past few years the Forum's trustee board have been holding meetings only in the virtual world. So it was with great delight that we held an in-person Away Day at the end of July, convening at the RHS's flagship garden in Wisley, Surrey. The modern Hilltop Science building was the perfect meeting space from where we could spill out into the gardens for tours,

picnicking and wildlife-hunting. Trustee Judith Conroy captured some incredible close-up photos of insects on the day, which I just had to share with you, from green-eyed flower bees in the teaching garden to solitary bees hiding out in bee hotels in the wildlife garden. If you find yourself in the southeast, Wisley is well worth a visit – www.rhs.org.uk/wisley



Four-banded longhorn beetle, by Judith Conroy



Green-eyed flower bee, by Judith Conroy



A spot of lunch in the gardens between showers!

After the Away Day we were sad to say goodbye to three of our trustees – David Perkins, Johan Ingles-Le Nobel and Karen Murphy – who are stepping down from the board and all of whom have made a huge difference to our charity, from minute-taking to newsletter compiling, book reviewing to growing our Facebook audience. Thank you from all of us. What that does now of course mean is that we have a number of vacancies on the trustee board. If you or someone you know might be interested, do please get in touch. Details below of how to find out more.

Helen Bostock, Chair, Wildlife Gardening Forum

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Forum news

Call for new Trustees!

Do you want to help the Wildlife Gardening Forum make a difference? Do you have skills that would help us direct the charity and extend its reach and influence? We're a small charity with a very friendly, hands-on trustee board and are seeking new trustees to join us. We're particularly looking for enthusiastic individuals with experience in the following areas; finance/fundraising, web development, growing a charity (or similar) and EDI (equality, diversity & inclusion). If you would like to apply, know more or simply talk to one of us about what it would entail, email chair@wlgf.org

- Deadline for applications is 30th September.



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easyfundraising is a free online platform that raises funds for **The Wildlife Gardening Forum** via online shopping. easyfundraising has helped raise over £42 million and has been helping good causes since 2007.



How does easyfundraising work?


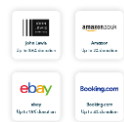
They turn everyday online shopping into funds for good causes like us. When you use the easyfundraising website or app to shop online, the brand sends us a free donation at no additional cost.

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Just follow the link below to register – it takes two minutes. THEN! Please download the 'Donation Reminder'. It means you'll get an alert every time a donation is available from the brand you're shopping with. It's 100% adware and spyware safe – you won't be bombarded with ads or spam.



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“Opinion Piece”

Welcome to our new section of the newsletter, where each issue we'll feature a piece written by one of our esteemed Forum Patrons or Advisors, in which they share their thoughts on wildlife gardening.



Ken Thompson is a retired plant ecologist who spent most of his career at Sheffield University. He still writes and lectures extensively, including teaching on the Kew Horticulture Diploma, and has written several books on gardening and popular science. It used to be his proud boast that he had never won a prize or award of any kind until the RHS ruined everything in 2016 by awarding him their Veitch Memorial Medal. He was one of the founding Trustees of the Wildlife Gardening Forum.

Why am I writing this? More to the point, why are you reading it? Because we love gardens, and especially because we love garden wildlife. And yet, there's a paradox. We know the average garden is home to thousands of species of wildlife, while thousands more may visit, regularly or only occasionally. But of how much of this wildlife are we actually aware? Almost none; nearly all of it is too small, too secretive, too nocturnal or too subterranean, or sometimes all of the above. Not only that, even if you could see it, you'd be able to identify approximately none of it. Did you know (or care) that four out of every five terrestrial animals on earth are nematodes? No, of course you didn't.

So where does that leave us? Mostly, I think it means we have to continue to do our best to garden with wildlife in mind, while accepting that we'll never see most of the animals we're trying to please. Having said that, an abundance of birds, frogs, slow worms and hedgehogs is a sure sign that all is well further down the food chain.

But if I may make another suggestion – you can enjoy your wildlife vicariously by buying and reading a few volumes of the *New Naturalist* series*. These are intended 'to interest the general reader in the wildlife of Britain by recapturing the inquiring spirit of the old naturalists', and I can't imagine how that could possibly be done any better. I've recently read the two latest (numbers 146 and 147), on *Solitary Bees* and *Shieldbugs*, and both deliver, in spades. And although it's got nothing whatever to do with shieldbugs, if you read the latter you will learn of the existence of a pair of parasitoid wasps called *Heerz tooya* and *Heerz lukenatcha*. Priceless.

*In which I have no financial interest, honest.

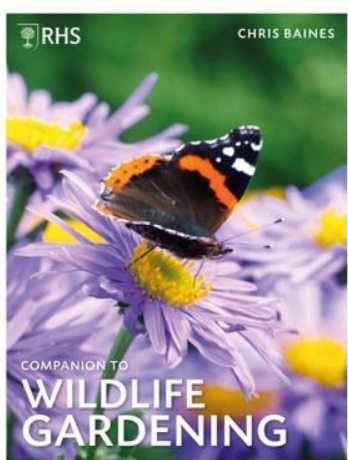
Ken Thompson, August 2023

Forum noticeboard



RHS Lindley Late with Forum patron Chris Baines, Tues 19th Sept

Live in London or within easy access? Then you'll want to book a seat to hear our very own Forum patron Chris Baines in conversation with RHS Senior Wildlife Specialist (and Forum Chair!) Helen Bostock. This event will take place on the evening of Tuesday 19th September in the RHS Lindley Library, London as part of their 'Lindley Late' series. Chris will be discussing his newly released book *RHS Companion to Wildlife Gardening* and there will be opportunities to purchase a signed copy. Search for the event [here](#). Book tickets (£5-£10) [here](#).



Chris Baines has championed wildlife gardening for more than 40 years and this book is often quoted as the 'wildlife gardener's bible'.

This new edition still includes all Chris's enthusiasm for his subject, and the very practical advice that has guided two generations of gardeners, but his 40-year perspective now also provides a unique insight into the way horticultural attitudes have changed. He provides a commentary on the gains and losses achieved through wildlife gardening and he celebrates the expanding knowledge achieved through research by the RHS and through citizen-science programmes such as The Big Garden Bird Watch.

- [Order your copy here](#)



Call for notices

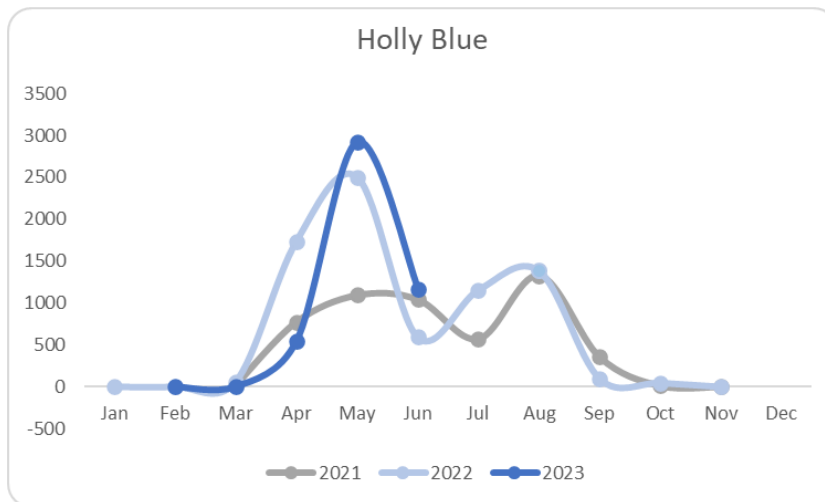
If any readers have any wildlife gardening events, advertisements or news you'd like to publicise in this newsletter here on the forum noticeboard, then do please send details over to info@wlgf.org and they'll be included in the next issue.



Making the headlines

Holly Blues buck the trend in the Garden Butterfly Survey

The team at Butterfly Conservation's [Garden Butterfly Survey](#) have been receiving reports of high numbers of holly blue this year, with some participants excited to see the species in their garden for the first time. Butterfly Monitoring Officer, Rachael Conway, took a sneak peek at the data so far to see if the anecdotal evidence stands true. Despite a lower number of surveys submitted so far this year than the same period last year, the spring generation of holly blue has been strong, as can be seen in the graph below. This is in contrast with other garden species such as small tortoiseshell, peacock and green-veined white, which all appear to be having a poor year so far.



As well as high abundance, the number of gardens where the holly blue has been seen this year so far is up by 21%. Between 1st April and 30th June 2022, 58% of participating gardens hosted holly blue, whereas during the same period this year occupancy was at 70%. Garden Butterfly Surveyor, Graham Jackson, had further holly blue news to share. Having noticed increased numbers in his own garden this spring, Graham was fortunate enough to witness a female laying eggs on an unusual food plant, ceanothus, and he's followed the development from egg to larvae through a series of photographs.



Young caterpillar on ceanothus flower buds © Graham Jackson



A later instar (stage) feeding on flower heads © Graham Jackson

Holly blue female



Holly blue is known to use a wide variety of foodplants, but ceanothus is not one that's commonly reported. Ceanothus is a very popular evergreen garden shrub, which can tolerate a wide range of conditions, including drought. It flowers prolifically, producing an abundance of forage for pollinators from late spring to early summer. Although holly and ivy are the preferred holly blue foodplants for the spring and summer broods respectively, the species is known to be polyphagous, meaning its caterpillars can feed on a wide range of plants, including garden shrubs such as dogwoods and buckthorns. Having an extensive palette, however, doesn't guarantee successful transition into adulthood and the success of Graham's ceanothus feeding caterpillars remains to be seen.

If you have interesting garden butterfly news or sightings you'd like to share, please contact us at gardenbutterfly@butterfly-conservation.org. You can help us understand more about how gardens support butterflies by joining the [Garden Butterfly Survey](#) and submitting your sightings all year round. We're currently undertaking analyses of the Garden Butterfly Survey dataset to provide insights into how the location of a garden and the way that it's managed (such as whether grass is allowed to grow long) affect the diversity and abundance of butterflies that visit. We'll share the results in due course.

Dr Zoe Randle, Senior Surveys Officer, Butterfly Conservation

The National Education Nature Park gets up and running

This, as we've reported before, is a partnership being led by the Natural History Museum with partners including the RHS and Learning through Landscapes. Working with the Department for Education (DfE), the project aims to make sure every young person in England has opportunities to develop a meaningful connection to nature, understand the concepts of climate change and biodiversity loss and feels able to do something about it. This will be achieved by schools increasing the biodiversity of their school grounds. To register your interest in the park [click here](#).

Harvest mice found at RHS gardens



Harvest mouse nest

Listed as a UK BAP (Biodiversity Action Plan) species due to becoming scarcer in recent years, harvest mice (*Micromys mimuta*) aren't typically thought of as garden animals. However, after efforts to make habitats more favourable to these small mammals, two of the RHS's five gardens have found evidence this year of harvest mice. Garden staff at RHS Garden Hyde Hall in Essex and RHS Garden Rosemoor in Devon were excited to spot tell-tale signs of harvest mice nests in their

ornamental grass borders. In Devon a mouse was caught on a trail camera and in Essex they found several nests. The mice favour the slightly finer-leaved grasses such as *Molinia*, *Calamagrostis* and *Anemanthele* for constructing their nests, splitting and weaving the grass blades into dome-shape nests, suspended within the grasses.



Gardeners discovered the nests while cutting back grasses over winter at Clover Hill, RHS Garden Hyde Hall

Wildlife gardening research



Do hedgehogs use nestboxes?

Yes! And for multiple reasons – resting, breeding and hibernating. But what features or factors influence their uptake? Researchers at the University of Reading have undertaken a [hedgehog housing census](#) to explore nest box use. With a large dataset (over 4,300 responses from UK residents) authors Abi Gazzard and Philip Baker have been able to draw out some interesting results. 81% of monitored hedgehog houses had been used for summer day nesting, 28% for breeding, 66% for winter day nesting and 57% for hibernation.

Four factors appeared to significantly increase the likelihood of the nestboxes being used; the length of time the box had been in place (the longer the better), connectivity between front and back gardens, the provision of food, and if other nesting sites were present. Read more [here](#).

Robotic mowers vs. hedgehogs

In a somewhat gruesome but necessary [study](#), Danish hedgehog researcher Sophie Lund Rasmussen, with teams from Aalborg University, Natural History Museum of Denmark and WildCRU University of Oxford, used dead hedgehogs to test 18 models of robotic lawn mower. Prior to this study it wasn't clear to what degree these increasingly popular mowers are a threat to hedgehogs. Their findings are a concern. While some makes stopped with a light 'nudge' and others cut out the blades once over a hedgehog (so avoided injury), others caused injuries and all had to physically interact with the hedgehogs before detecting them. While there are some limitations to this study (for example live hedgehogs may respond differently to mowers), it has helped prompt constructive discussions with manufacturers including helping to develop standardised testing for robotic lawn mowers. A couple of more papers on this topic are due out by the authors before the end of this year, so we'll return to this subject in a later issue. Read more [here](#).



The costs and benefits of feeding garden birds



A blackcap

The most widespread wildlife gardening activity is feeding the birds, and there is a £200m industry based on supplying feeders and food. In reality there are lots of other [things you can do](#) to encourage garden birds, and there are some downsides as well as benefits in feeding birds – [see our how-to guide](#). Now Mike Toms of the British Trust for Ornithology has published a major review in the excellent journal *British Wildlife**. Mike notes that in Britain, gardeners supply enough food to support the combined populations of our common feeder visitors three times over!

Supplementary feeding lures in countryside birds in years when their natural tree seed supply such as beech mast fails. It improves over-winter survival from the normal 30% to 70% for an American tit, not just by food provision but by reducing costly foraging times. Some, but not all studies, have shown feeding can result in larger and earlier clutches and better survival. On the other hand, unnatural sunflower seed feeding causes sperm damage in some finches. At the population level, feeding helps weaker individuals survive winter and boosts populations in the following spring. In Britain, garden feeding has allowed some continental blackcaps to stop migrating south for the winter and instead to over-winter here.



Blue tits and great tits are out-competing their relatives, so you should consider stopping feeding them if this could help local declining species. Photo: Steve Head

On the other hand, supplementary feeding primarily helps seed-eating birds, giving them an edge over other species. Blue and great tits are becoming more common, and by flying over a kilometre from the countryside to garden feeders, can out-compete declining coal and willow tits for natural countryside food and nesting sites. Disease transmission within and between species at feeding stations is a considerable worry. Trichomonosis parasites have reduced greenfinch populations by 66% and chaffinches by 34% in recent years. Other birds are threatened with other old and emerging diseases, some of which, such as salmonella, can be caught from feeders by gardeners. Bringing lots of birds to feeding stations can attract sparrowhawks, but the evidence suggests the impact on our favourite songbirds is negligible at the population level. There's little doubt that seed provision is helping the spread of invasive species such as the grey squirrel and rose-ringed parakeets. We should even ponder the sustainability issues of mass importation of bird food from overseas – peanuts aren't a common crop in Britain!

In the end, the issue is still finely balanced. Yes – feeding birds greatly helps some species but seems to be causing declines for others. Facilitating disease spread threatens birds and even people. The strongest argument for feeding remains the human benefits of linking people to nature and raising awareness. But if you live near populations of coal or willow tits, you should consider stopping providing food for their competitors.

* *British Wildlife* Vol. 34 pp402-411, and you can buy it for 99p from www.britishwildlife.com

Gardens get top marks for British butterflies

Marbled white



A [unique study](#) by the BTO (British Trust for Ornithology) using data from the BTO Garden BirdWatch scheme to specifically look at population trends of UK butterflies in gardens has provided further evidence of the importance of garden habitat. In it they discovered half of the 22 butterfly species considered have increased in numbers in the 13-year period between 2007 and 2020, with greater increases in gardens than in other habitats. Some species more closely associated with grassland – marbled white, large skipper and small skipper – appear to be doing particularly well in gardens, suggesting that the quality of garden habitat is steadily improving for butterflies. One could speculate that this is due in part to the upward trend in long grass and wilder lawns, offering refuge and opportunities for butterflies to complete their life cycle. Other species also doing markedly well in gardens include holly blue, small skipper, ringlet, brimstone and orange-tip.

Bumblebees get busy earlier – but it's more complicated than climate change

Climate change is upon us, and we already know that it's altering the breeding patterns of some garden birds. A new [Swedish study](#) has shown it's affecting queen bumblebees, too – but in rather a complicated way. The ecologists looked at museum collections of 10 species of bee from the southern tip of Sweden, recording capture dates over 117 years, and compared these with 20 years of modern citizen science data.



On average the flight period of bees has got five days earlier in the last 20 years, but in simplified agricultural landscapes it's 14 days earlier than 100 years ago. Surprisingly, in complex landscapes with a mix of small arable fields, pastures and other semi-natural habitats, the flight period was *delayed* by about 17 days over the same period. In 1902, the two landscape classes had the same starting flight date. The effect was most marked for the bumblebee species that normally become active earlier in the year.

While the general advance in flight time is likely a result of increasing temperature, the marked advance in bees in simple landscapes may be an adaptation to reduced pollen and nectar availability later on in the agriculture-dominated simple landscapes, whereas in complex landscapes there's a greater range of resources over a longer period. It may be that in our gardens, which have flowers through much of the year, there's been little pressure to fly earlier.

Urban tree surgeons worry about wildlife impact – but it's hard to make policies



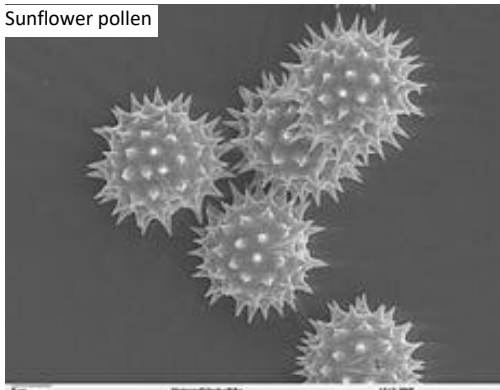
Tree surgeons are often criticised by the nature-loving public for causing damage to nesting birds and to other urban wildlife through removing dead wood and rotten cavities. A [survey](#) of 805 mainly American and Canadian arborists by scientists from the university of British Columbia showed a considerable awareness and concern among practitioners. Nearly 90% saw wildlife as important in the urban tree environment, ranking biodiversity, natural pest control and seed dispersal/pollination as most important. However, 60% had experienced deaths of wildlife during their activities. Encouragingly, 75% change their work plans when they find wildlife in danger, although only a fifth actually stop operations. While most clients were keen to avoid wildlife loss, company bosses with an eye to profits were much less tolerant of changes to planned work schedules. There was limited belief in the effectiveness of current legislation and best practice standards, and nearly all arborists wanted to see new standards to properly protect wildlife. Here in Britain we have comprehensive legislation to outlaw damage to protected species and nesting birds, but extensions to include important invertebrate habitats would be very desirable.

A mix of native and exotic flowers could be best for honeybees and bumblebees

North American grasslands have been extensively modified with deliberate and accidental releases of non-native plant species. In the same communities, alien honeybees are sharing resources with native bumblebees. An American study has shown how both sets of bees can coexist by partitioning the pollen and nectar resources between them. The [results showed](#) that honeybees preferentially selected the exotic plants, while native bumblebees made use of the native flowers. Where the native plants were more dominant, bumbles had higher numbers, the opposite for honeybees. The authors suggest that management could be adapted to favour one or other groups of bees, but nevertheless, maintaining a greater floral diversity of native and non-native flowers works well for both groups. This is exactly what most of us provide in our gardens.

Spiky pollen helps defend bumblebees against a common parasite

Sunflower pollen



Plants are a major source of medicines for people, and in some cases for insects as well. It's known that pollen from the common sunflower *Helianthus annuus* suppresses the gut parasite *Crithidia bombi* in the American eastern bumblebee, *Bombus impatiens*. The parasite has significant non-lethal impacts on bumblebee species in many parts of the world. Feeding on sunflower pollen greatly reduces infection in workers and queens of *B. impatiens*, but is this down to helpful chemicals or something else? A [neat American study](#) has shown that it's the spiky outer coat of sunflower pollen grains that makes the difference, by physical abrasion in the gut – like dogs eating grass to

reduce parasitic worm loads. Other spiky-pollen species in the Asteraceae family such as dandelion and ragwort were also effective. So – tolerate dandelions in your lawn and help bumblebees!

Urban road verges and grassy strips under power lines help grassland species but aren't as good as the real thing

Traditionally managed wildflower-rich meadows are probably the most depleted habitat in Britain and many other countries, removed by building, intensive agriculture or simply over-fertilising. But we're creating new, linear grassland habitats such as road verges and under power-lines, so to what extent could these be small-scale replacements? A [team of scientists](#) from Uppsala in Sweden looked at plant, butterfly and bumblebee diversity in 32 sample landscapes, comparing counts



in semi-natural pastures with road verges and power-line corridors. The total number of species for all groups was similar in both small-road verges and power corridors to those of the pastures, but the patterns of species occurrence between sample sites were not, with bumblebees linked to rarer occurrences of some plant species in road verges. Plant and butterfly distribution showed that the linear habitats only supported partial but different subsets of the species within pastures.

The authors conclude that the linear structures are important for biodiversity conservation of less specialised grassland species, but that they don't make an adequate substitute for traditional semi-natural meadows, which demand conservation priority. It would be interesting to see if any similar patterns could be found in long-established domestic lawns.

White clover populations are evolving to adapt to urban conditions worldwide



White clover is now a globally ubiquitous plant in both the countryside and in urban locations. It has the ability to produce toxic hydrogen cyanide to repel herbivores, but this varies greatly between plants based on their genetics. Physical factors such as water stress can increase cyanide production as well as herbivore impact. An [international study](#) with nearly 300 authors looked at how cyanide production varies within urban-rural gradients in 160 cities. They found the likelihood of a plant producing cyanide increased by 44% from the city centre populations to those on the rural edge. While this could have been due to differences in many physical factors such as

reduced water stress within cities, they concluded it was most likely due to greater herbivore pressure in more natural rural habitats. The differences showed up in the genetics of the plants, so this represents evolution of the populations rather than just individual plant response. Lots of evidence is now showing how urban life exerts a powerful evolutionary pressure on a great range of species.

Sacred college lawn is now a wildflower meadow and has high biodiversity



King's back lawn before the meadow

Cambridge alumni will know that King's College has always had a reputation for being ahead of the curve for adopting (trendy) new ideas. In 2019 it decided to replace part of its hallowed Back Lawn planted in 1772 with a wildflower meadow. Now, after only a couple of years, the [results](#) are impressive. A third of a hectare of lawn was treated with glyphosate to kill the existing grass and reseeded with 72 plant species, including 12 cornfield annuals to give an immediate visual impact in the first year. The soil wasn't highly fertile, so topsoil removal needed for most lawn soils wasn't needed. The new

meadow was mown late in the season using shire horses, drawing much public interest.

By the end of 2021 a total of 84 plant species were found and plant species richness was 3.6 times that of the adjacent (already quite biodiverse) classic lawn. Spiders and bugs (Hemiptera) sampled by sweep netting and pitfall trapping were 3.7 and 3.8 times higher. Insectivorous bats were recorded 3.1 times more often over the meadow than over the lawn. Overall insect biomass was 25 times higher in the meadow. In terms of sustainability, it was calculated that greenhouse gas emissions are 112 times higher on the (frequently mown and fertilised) lawn than the meadow, and maintenance cost is 132 times greater. Converting all Cambridge college lawns to meadows could save £51,713 per year.

The public response in a survey was overwhelmingly positive in terms of mental wellbeing as well as plain aesthetics, although lawns were seen to provide more recreational opportunities. However, since access to most college lawns is forbidden to any but senior fellows, this meant that two thirds of people would have no problem with conversion to meadows!

The lessons for both private and public green space are clear. While leaving enough space for recreation, converting boring mown grass to meadow can boost biodiversity, help sustainability AND save money – and people like it.

Urban allotments are important for food production and biodiversity – and also for social cohesion for non-gardeners as well as gardeners



Allotments are beloved by their owners and yield lots of food but are perhaps undervalued as part of the urban environment, especially for the majority of people who don't have them. A questionnaire-based [survey](#) of over 500 gardeners and non-gardeners in Berlin may help to restore the balance. Picking out only a few points from the mass of data, a third of the gardeners harvest up to 30kg vegetables and 50kg of fruit each year and almost all passed on some of their crop to grateful neighbours. Gardeners also rated the social benefits of meeting other allotmentees highly, and of working there with their

families and friends. Recreationally, gardening in itself was a major activity and helping the work was popular with non-owners of gardens. Nearly all gardeners and non-gardeners alike look out for insects in allotment gardens, although gardeners tend to spot more. German allotment gardens fill important roles for other city dwellers as well as the gardeners themselves, and new opportunities should be found to enhance the accessibility of allotment spaces to more people through improving city planning.

Both landscape and plant species control bee diversity in urban environments



Urban landscapes are just as complicated as 'natural' ones, but with different forcing factors. What controls bee communities and their pollination roles within our cities? A [study of 164 species](#) of bees in 29 sites in Toronto, Canada has provided some answers. Bees were trapped within three environments with high, medium and low urbanisation defined by how much impervious surface was surrounding them. The behaviour, nesting and feeding habits of the bees were recorded. Seventy per cent of the bee species known to exist in Toronto were encountered, but some were much more common than others. Native, ground-nesting and generalist bees were significantly

more abundant than non-native, cavity-nesting and specialist bees, and the greatest number captured were in the intermediate level of urbanisation. Surprisingly, urban intensity determined neither bee abundance nor diversity for social bees – perhaps because the geographical scale of the study was small compared with bee flight distances. Parasitic and sub-social bees didn't favour impervious surfaces but did associate with urban tree numbers. Ground-nesting bees aren't normally considered successful in cities with lots of concrete and tarmac, so again, the Toronto bees may have been commuting. A few plant species were disproportionately influential on the bees, such as dandelions in spring and goldenrod and Michaelmas daisies in summer and autumn. Honeybees pollinated a wide range of plants, while other bees such as *Chelostoma philadelphia* were very specific, in this case to mock-orange. Urban green spaces (including gardens) tend to have an artificially high but very variable diversity of floral resources. At least in Toronto, plant availability seems the major factor for bee communities, but larger, more heavily urbanised cities may be different.

It's not just neonic insecticides that mess up bees

The dreadful impact of neonicotinoid insecticides on bees is now completely clear, even if our government sometimes seems unconvinced. But as these are (hopefully) removed, other insecticides will be brought forward to replace them. Synthetic pyrethroids and organophosphates are prime candidates, so a [new study by University College Dublin](#) has looked at their sub-lethal effect on bumblebees. Sub-lethal impacts are just as dangerous for survival in the long term as lethal poisoning, but less well studied. The study revealed that two representative chemicals, one from each insecticide type, used in field-relevant conditions had significant sub-lethal effects on behaviour and pollen collection. The organophosphate reduced foraging activity by 67%, and pollen return to the nest by 92%. The pyrethroid didn't change activity but reduced pollen collection by 62%. This level of impact would have devastating effects on colony development – and pollination effectiveness. Much more effort should be made to assess sub-lethal effects of agrochemicals and make sure it's not just honeybees that are researched.

An interesting group on light at night...

Common garden spider is a night-time marauder of sleeping insects



Candy-striped spider with prey

Sean McCann is a biologist and nature photographer in Toronto, Canada. He was out in the early morning, which is a good time to photograph cold 'sleeping' insects before the day warms up. He came across a group of wasps that had been attacked and killed by a [Candy-striped spider](#) (*Enoplognatha sp*) without the use of a web. This small spider is common in Britain and Europe and has been introduced to North America. It can hunt using a small web, or by active daytime chasing or even stealing from

another spider species' web, but it now seems that it can save time and effort by sneaking up on sluggish insects at night. Over 14 days sampling, night marauding, especially for bees and wasps, was the most effective predation tactic. It would be fun to look in the early morning to see if Dracula spiders are taking slumbering insects in our gardens.

Modern LED streetlights *didn't* damage night-flying insect populations in Singapore



Singapore city at night

Modern energy saving LED lights produce a much wider and more blue range of light wavelengths than less efficient but red-coloured sodium streetlights. There is concern – and some evidence – that these lights are much more attractive to flying insects and can lure them to their doom by being taken by bats or simply interrupting their feeding and egg laying. Singapore is a highly urbanised and brightly lit city, so scientists there [tested the hypothesis](#) that retro-fitted LEDs were more damaging than the sodium lights they

replaced. To their surprise, the sticky traps they placed on the lamps caught equal numbers of insects on both types of lights, although LEDs attracted fewer flies and more true bugs and bees and wasps. Now this may be a one-off result – perhaps Singapore beasts are already completely adapted to streetlights, but it certainly suggests a bit more research is needed.

Artificial light at night delays pupa development in an urban moth species and could be a contributor to general insect population declines

Common latticed heath moth



There's a plethora of anthropogenic factors implicated in causing insect decline, and it now looks as if artificial light at night is more important than we thought. [A paper](#) by a group of Finnish ecologists describes how the common latticed heath moth, *Chiasmia clathrata*, is affected by dim light such as city sky-glow. Moth larvae from urban and rural populations were reared in two settings, one with natural dark night conditions and another with simulated dim light as is found in urban areas. For both northern and mid-European derived moths, dim light at night inhibited larvae from going into diapause (hibernation) as winter

approached. Diapause helps conserve energy and food reserves and is an important survival strategy for many animals, and the inhibition of diapause would have severe fitness consequences for the moth. Urban-derived larvae were genetically more prone to avoid diapause than rural one, probably a result of warmer conditions in cities extending the growing season of food plants. Since sky-glow can be present long distances from big cities, the impact it could have on insect life cycles could be significant. All the more reason to turn off garden lights and reduce light-spill from streetlights in urban areas.

Bats in Leicester like tree-lined streets but lighting seemed less significant – or was it?

Common pipistrelle

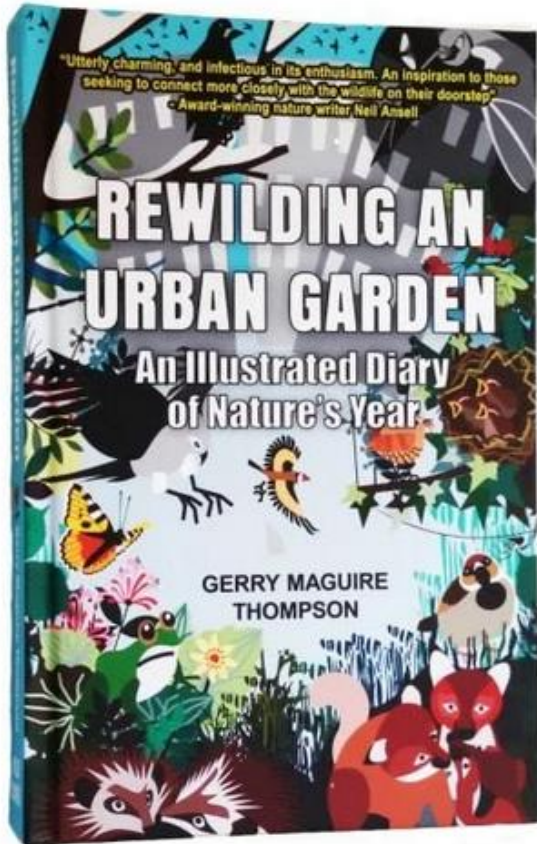


Lots of bat species inhabit urban areas where flying insect numbers can be high, and some aspects of street architecture may be beneficial for nesting. Ecologists from the Department for Continuing Education at Oxford University have [reported](#) on how bats use bare or tree-lined streets in Leicester, and streets with bright or dimmed streetlights. They used high-frequency bat call detectors to assess species and numbers hunting at night. Six

species were found, but the common pipistrelle was dominant at 94% of calls, and only counts for this species were analysed. They found wooded streets were significantly more used than streets without trees, probably because they provided cover against predators like owls, and provided corridors linking populations. On the other hand, there was no significant difference between the use of dimly or brightly lit streets by pipistrelles, which aren't particularly light-averse and are often seen in early dusk. The study did not encounter really light-averse *Myotis* species such as Daubenton's or Natterer's bat, so we can only conclude that for *some* bat species, street lighting isn't *too* much of a problem.

Book reviews

Rewilding an urban garden: An Illustrated Diary of Nature's Year, by Gerry Maguire Thompson
(WildBooks, 2022) Reviewed by Steve Head



Irish writer Gerry, now based in Brighton, has written a charming book documenting his observations of everyday wildlife in his garden, with short entries for practically every day of the year. The entries are supplemented by his own vignettes and quotes from favourite poems. To be honest, the book as a whole is like a free-form poem with his insightful and often wry observations on animal behaviour. I was tickled by his honest categorising of species into 'bad' (magpies) and 'good' (hedgehogs, sparrows) and how he clearly knows this is pretty irrational – but like most of us he just can't help it. Early on he sets up a nest cam, and for weeks afterwards records the adoption, nest building and brooding of two successive families of sparrows. His short observational entries are interspersed with long philosophical meditations about many subjects, evolution and specialisation, our relationships with nature, television pundits and even fungi and the nature of vision.

At the end are three very short chapters on wildlife gardening, including his ten top tips, which include letting some parts of the garden 'go completely wild' and mainly planting native species, both of which are

debateable. Our gardens are so ridiculously biodiverse, precisely because the way we manage them makes them so! This is a trivial point given the value of the book as a whole. I recommend reading it in bed before sleep, perhaps a month's entries each night, and you'll sleep happily and soundly.

Citizen science

Help scientists record the impact of invasive plants

Coventry University in collaboration with the North Wales Wildlife Trust is running a new project exploring the use of citizen science for the recording of impacts of invasive plants. This is a pilot study testing the approach for rhododendron (*Rhododendron ponticum*), cherry laurel (*Prunus laurocerasus*), Himalayan honeysuckle (*Leycesteria formosa*), variegated yellow archangel (*Lamiastrum galeobdolon subsp. argentatum*), Japanese rose (*Rosa rugosa*), and winter heliotrope (*Petasites pyrenaicus*). These species have been selected to represent various degrees of establishment and lack of knowledge about impacts. If you're aware of these species in your area, please sign up and you get access to the recording protocols, including a digital sampling protocol using the Epicollect app. People based in Wales can also participate in a field event. To register, please [click here](#).

And finally...

Beautiful Bumblebees
Abbie Lathe



"Adorable, mellow song, profits from downloads to the Bumblebee Conservation Trust: what's not to love!" (Dave Goulson, bumblebee expert)

A song for our wonderful bumblebees written and performed by Abbie Lathe

Download now from abbieatthebandcamp.com

All profits to Bumblebee Conservation Trust



Buy a beautiful bee song for charity!

The sound of summer and the buzz of bumblebees has been encapsulated in a seasonal, folk-inspired song by Abbie Lathe. The song creates the wonderful sound of summer in the garden, while at the same time it reminds us not to take bumblebees for granted.

Bumblebee expert Dave Goulson said it's an *"adorable, mellow song, with profits from downloads to the Bumblebee Conservation Trust: what's not to love!"*

Abbie has produced this song to celebrate bumblebees, which can be heard, at no cost, by following [this link](#). The profit from downloads will raise money for the Bumblebee Conservation Trust.

The newsletter is sent to all the members of the WLGf; you're welcome to forward it to friends or colleagues. Do encourage them to join the Forum (it's free!) by visiting www.wlgf.org and filling in the simple form.

The Wildlife Gardening Forum is a consortium of the UK's leading wildlife, conservation, gardening and horticultural organisations, from both the private and the public sectors. We now have over 2,600 members. Formed in 2005, our core aim is to help gardeners and decision-makers understand just how important our gardens are for wildlife.

Newsletter compiled by Karen Murphy, with Helen Bostock, Zoe Randle, Mary Jackson, Katharina Dehnen-Schmutz, Steve Head, Judith Conroy and Ken Thompson. Images from Pixabay and Wikicommons unless stated otherwise.

