



**Professional Development Study Trip to the 2022  
Beth Chatto Symposium – ‘Rewilding the Mind’**

**Merlin Grant No. 810 – Callum Halstead**

## Breakdown of Costs

<b>Travel:</b>	TRAIN FARE:	£ 116.70
<b>Subsistence:</b>	ACCOMMODATION:	£106.50
	FOOD:	£62.40
<b>Other Costs:</b>	EVENT TICKET:	£299.95
<b>TOTAL:</b>		£585.55
<b>Merlin Grant:</b>		£321.00
<b>Amount to be returned to Merlin:</b>		£35.40

## Professional Development Study Trip to the 2022 Beth Chatto Symposium – ‘Rewilding the Mind’

The Beth Chatto Symposium – ‘Rewilding the Mind’, was held at the University of Essex on the 1<sup>st</sup> and 2<sup>nd</sup> of September 2022. The purpose of the symposium was to start conversations within the horticultural industry about how the concept of rewilding can be applied to the way in which green spaces and gardens are managed and developed in the future. The symposium was attended by 500 delegates from across the globe, representing a range of associated sectors including gardening, commercial growing, urban planning, ecology, conservation, and journalism. From a gardener’s point of view, the event offered an extremely valuable opportunity to gain insights into sustainable and ecologically responsible, nature-led gardening from some of the industry’s leading figures.

## Rewilding on a Garden Scale

Alastair Driver (2022), director of the conservation charity Rewilding Britain, opened the symposium by making the case for applying the principles of rewilding to how gardens and green-spaces are managed in the UK, commenting that “traditional conservation practices on their own are not enough to achieve significant wildlife recovery in Britain”. While it isn’t realistic to think that full-scale rewilding can occur within the confines of a garden, gardeners can still be instrumental in supporting biodiversity and larger gardens and estates can also make a meaningful contribution to carbon capture. “Rewilding is a spectrum” (Driver, 2022) and with around 22 million private gardens in the UK, covering an area of around 400,000Ha (Goulson, 2022) gardens offer valuable opportunities to contribute to the improvement of biodiversity across the country.

Driver and Goulson (2022) both made the point that ‘rewilding’ in the UK does not solely mean cordoning off pieces of land and converting them back into forest. To think, as many do, that the UK was once carpeted with endless broadleaf woodland before the influence of humans, is incorrect. The weather, geology, topography, and the influence of native fauna would have impacted the flora to create a rich mosaic of habitats, allowing a massive diversity of species to find or carve out niches in

which they could thrive and survive (Goulson, 2022). It is this mosaic of habitat types that gardens are able to provide. Many gardens mimic woodland edge habitat, an ecotone that has been massively reduced across the UK over successive decades (Garrett, 2022). A small domestic garden may only be able to offer one or two habitat types within its boundary, however neighbouring gardens may offer something different, enabling a single street to support a wide range of wild species.

Fergus Garrett (2022) explained how gardening practices at Great Dixter have evolved over time to work in harmony with nature rather than against it. Previously the garden had been managed intensively, using weed killers and other pesticides, as well as soil sterilising chemicals. These practices were stopped in 2007, as was the use of inorganic fertiliser and peat. In 2013, the gardeners adopted a 'no burn policy' after rare beetles were found living in wood piles. Since then, large habitat piles have been constructed around the gardens, using material that would otherwise have been burnt. Planting at Great Dixter now strikes a balance between the more traditional elements of an historic English garden, such as its colourful displays of ornamentals and clipped topiary, with softer naturalistic planting, wildflower meadows and various other habitat types, blurring the boundaries between the garden and the landscape in which it sits. The garden is managed with a soft touch, in order to preserve and enhance its ecology. The cracks between slabs in paved areas are filled with self-sown ornamentals such as *Alchamilla mollis*, *Erigeron karvinskianus*, *Leucanthemum vulgare*, *Dierama pulcherimum*, *Oenothera* sp. and *Campanula lactiflora*, which have displaced the weeds that would otherwise colonise these spaces. Even the planting in nursery stock beds has been allowed to become less regimented, as wildflowers such as Poppies (*Papaver* sp.) are allowed to self-seed in amongst the stock plants. Everything is underpinned by the garden team's creativity, inquiring nature and experimental approach to ecologically minded gardening (Garrett, 2022).

"We can blur the edges between horticulture and ecology while creating beautiful artistic spaces, at the same time we can start embracing some of our wild plants and see them in another light" (Garrett, 2022).

## **Understanding the Biodiversity of a Place**

Speaking about the common pre-conceived notions that people have about the biodiversity value of gardens, Fergus Garrett (2022) explained that "gardens like [Great Dixter], large or small, are sometime labelled as 'unnatural' and 'all things bad' associated with old-fashioned gardening, and so everyone (ecologists especially) expects the wildlife value [of gardens] to be low compared to the countryside beyond." While in some intensively managed gardens this is likely to be the true, more sensitively managed gardens undoubtedly have the potential to support greater biodiversity. Both Garrett and Dave Goulson (2022) referred to the findings of Jennifer Owen, whose 750m<sup>2</sup> Leicester town garden was the subject of her book, 'Wildlife of a Garden: A 30 Year Study'. The study recorded a massive 2,673 species, of which 1,997 were species of insect. Goulson jested that, as far as he was aware, this garden was "the most biodiverse place on the planet!", although this is obviously an artefact of the intensive sampling effort undertaken by Owen.

Garrett was sure that Great Dixter supported a far greater web of life than the average UK garden and for a long time the gardeners claimed to be supporting wildlife through their considered management of the garden, however these claims remained completely unsubstantiated. Garrett (2022) pointed out that if an organisation such as a garden wants to present and promote itself as both 'ecologically minded' and 'rich in biodiversity', it will mean a lot more if that can be backed up with proof and facts about exactly what biodiversity the garden supports and sustains. This led Garrett to commission a complete ecological audit of the garden, in order to better understand the range of species that inhabit it. The surveys that were carried out included an archaeological assessment, an invertebrate survey, a woodland vascular plant and vegetation survey, a butterfly survey, a lichen survey, a bird

list and a grassland and hedgerow vegetation assessment. All of which were paid for by heritage lottery funding.

After a single year of study, over 2300 species were recorded, making it one of the richest sites that the lead ecologist had surveyed in over 30 years in the profession (Garrett, 2022). The garden can attribute its impressive level of biodiversity to a range of factors. Firstly, its complex and diverse range of habitats provide a varied range of ecological niches for different species to inhabit. The very act of gardening causes disturbance, which in itself, creates habitat that many species rely on to provide a niche for their existence (Little, 2022). Being primarily an ornamental garden that is full of a wide variety of flowering plants, Great Dixter's pollinators are treated to a long season of abundant food from a range of sources. These insects have also significantly benefited from the termination of pesticide usage in the garden. The abundance of invertebrates present in the garden has, in turn, attracted a variety of predators, further increasing the garden's biodiversity. While areas such as the wildflower meadows turned out not to be as biodiverse as was expected, the important message was that the tapestry of different habitats at Great Dixter worked together to support a greater range of species than any one of the habitat types present could support alone.

The information gathered during this biodiversity audit will not only allow the garden to back up claims about its ecological credentials with proof, but will also allow the organisation to plan for the future in a more appropriate and informed way, in order to protect existing biodiversity and make changes to improve. In a similar way, through working closely with entomologists, John Little has been able to quantify the benefit that his gardens have had on local biodiversity. This work also exposed groups of invertebrates that were missing from the gardens, allowing John to create better habitats, based on the entomologist's recommendations on how to encourage the missing species back into these spaces (Little, 2022). For example, he spoke of resisting the urge to be too tidy and disposing of waste materials, when they could be used to create or further improve habitat can be highly beneficial for wildlife. In gardens, there is a tendency to clear away dead material immediately, however John's work highlighted the biodiversity value of allowing dead wood and other materials that are often considered to be 'garden waste', to remain in green spaces. In some of his projects, he has designed in standing dead timber, as well as dead hedges, providing a greater range of niches for wildlife to inhabit.

## **Use of Materials**

"Complexity of landscape delivers biodiversity" (Little, 2022).

Little (2022) referred to a student that he had worked with who had studied the biodiversity of river banks and found greater levels of biodiversity in the litter on the riverbank, than in various pristine locations. Similarly, he also talked about fly-tipping sites that were considerably more biodiverse than the surrounding road verges. These were obviously not used as arguments to justify littering, but to emphasise the possibility of creating more diverse habitats with considered use of materials. Much of Little's work has involved taking cues and ideas from highly diverse brownfield sites and designing them into green spaces to increase their value to nature. He backed up this idea with data quoted from the British Geological Survey, which states that 20% of all SSSI sites in the UK are in areas linked to mineral extraction, such as gravel and chalk pits, and other quarries. Many of these areas had been completely trashed by human activity while they were still in operation and yet, when the industry left, the very specific niches that had been created were very quickly colonised by rare and threatened species (Little, 2022).

In many of John's projects, he has put a major focus on the materials, structure, soil and topography of each site, noting that areas that contain a greater variety of each of these elements tend to be richer,

supporting a wider range of species. He also pointed out that low-nutrient, high-stress environments often have some of the richest biodiversity (Little, 2022). By removing topsoil and reducing fertility, it is possible to create rich, biodiverse plantings, that are self-sustaining and require little or no maintenance. In contrast to this, increasing a site's fertility, which has become an accepted norm in gardens, will cause nutrient hungry plants such as brambles (*Rubus fruticosus*) and grasses to dominate, minimising biodiversity and requiring high levels of maintenance to keep them under control (Little, 2022). To illustrate this point, John spoke about how he has used low fertility substrates, into which he has direct-sown seed mixes to create species-rich wildflower meadows. Establishing a successful meadow on topsoil can be very difficult, due to high fertility levels and the resulting dominance of grass other high-nutrient-loving species. It takes a considerable amount of maintenance to keep on top of these issues. In contrast, low-fertility, inert substrates are completely weed free, making them ideally suited for meadow creation, among other uses (Little, 2022). Experiments using different recycled substrates such as brick waste, crushed brick/concrete with/without fines, crushed ceramics, crushed glass, sand, and contaminated soil flip, have not only been successful, but have also supported different types of biodiversity depending on the substrate used.

Sarah Price (2022) conducts a waste audit on every site that she works on, as she considers waste materials to be invaluable resources. The use of these materials often requires some experimentation before the project can get underway, which can incur some costs, however these costs are usually recovered later in the project, when the waste materials are utilised instead of importing expensive virgin materials. This method of working also lowers the carbon footprint of the projects.

Price's home garden is a historic walled garden with a rich soil that has been cultivated for over a hundred years. The fertility of the soil caused the plants and the weeds to grow at a rate that she could not keep up with. To try to avert this issue, she stripped the topsoil from a large area of the garden and experimented with spreading varying depths of recycled sand and other recycled aggregates (4mm, 10mm and 20mm), into which ornamental plants could be planted. This work was very much inspired by the work of Swedish plantsman Peter Korn. Price planted some potted plants with rootballs, as well as some plants that had been root washed, based on Peter Korn's methods. In contrast to Peter, Sarah noted that the plants that weren't root washed established themselves better in her garden. The resulting garden has been very impressive and very low maintenance.

Tom Stuart-Smith (2022) agreed, stating that "diversity explodes if you impoverish the soil", as it delivers greater complexity of vegetation. "It makes gardening so much more interesting if you can have ten species per square metre, rather than one" (Stuart-Smith, 2022). He also agreed with John Little's comments about the biodiversity benefits of building complexity into gardens. While describing his approach to designing the walled garden at Knepp, he remarked that "you cannot achieve floral biodiversity on a croquet lawn" and so to achieve greater habitat diversity within the garden, large earthworks were installed to create pockets of exposed and protected ground, that is free draining in some areas and poorly drained in others. Some of the material used came from a local farm that was being demolished, so in some areas of the garden, the plants are growing in eight inches of crushed concrete, mixed with sand. In other areas, the landscapers dug down up to two metres to create hollows. The result is a hugely diverse garden that supports a wealth of native and non-native species.

## Gardening for Invertebrates

“There should be no place for poisons in our gardens” (Goulson, 2022).

“If you garden for invertebrates, you get all the other stuff for free” (Little, 2022).

Dave Goulson (2022) began his presentation, reminding the audience that we are living through the sixth mass-extinction event that the planet has experienced and proceeded to share stark figures on the health of invertebrate populations across the UK and abroad. For example, since 1976, UK butterfly numbers have declined by about 50%. The UK has already lost three species of bees that once had widespread distributions and the Shril Carder Bee (*Bombus sylvarum*) is in severe danger of becoming the fourth to go extinct. In Germany, numbers of flying insects have decreased by 76% in the past 26 years and in the United States numbers of Monarch butterflies (*Danaus plexippus*) are down 80% from 1995 levels. If insect numbers continue to decline at current rates, we will soon start to lose species of birds, fish, amphibians, reptiles, bats, and other mammals that rely on insects as a source of food. Around 80% of the world’s plants are pollinated by insects. Without pollinators, these plant species would soon die out, which would have profound implications for the future of life on earth. This may sound alarmist, however this is already becoming a reality in some parts of the world. For example, in south west China, apple and pear orchards now have to be hand pollinated due to the fact that insect pollinators have been completely wiped out (Goulson, 2022).

Goulson (2022) was keen to emphasise, however, that it can be very straight forward to support a diversity of insect life in gardens, through a combination of growing the right plants and managing the garden in an appropriate way. Simple changes, such as reducing the frequency with which garden lawns are mown, can significantly improve the garden’s wildlife benefit (Goulson, 2022). Goulson (2022) also echoed John Little’s views about our tendency to ‘tidy up’ to excess in gardens, commenting that “tidiness is the enemy of biodiversity” and that unnecessary removal of dead plant matter and control of vegetation diminishes the biodiversity value of a garden. Improvement in this area will require gardeners to reflect on what is more valuable, in order to prompt a change in attitude towards how gardens should be managed.

If we are going to rewild our gardens, one part of this should be a reevaluation of our relationship with native ‘weeds’, many of which are hugely important food plants for garden invertebrates. “There is pretty good scientific evidence that – [on average] native plants tend to be better than non-native”, however, “there are native plants that are pretty hopeless for pollinators and there are non-native plants that are amazing for pollinators” (Goulson, 2022). Some of the best native plants for pollinators are *Origanum vulgare*, *Echium vulgare* and *Centaurea scabiosa* (Goulson, 2022).

Sarah Price (2022) often aims to create stylised wild spaces in her designs as a design feature, as well as a way of benefiting wildlife. She spoke about incorporating native plants such as *Valeriana officinalis* that tend to self-seed prolifically into her designs, allowing the beautiful architectural seed heads to form. From a gardening standpoint, this makes the identification of seedlings at an early stage a really important task, in order to guide the garden’s development from year to year. When sustaining populations of native plants in a garden, it is important that gardeners have the confidence to let things seed, to prevent the wilderness element of the garden from being lost.

In recent years, there has been a boom in the popularity of ‘wildflower meadows’, which by and large is a good thing. Native wildflower meadow is the habitat type that is most depleted in the UK. In 1930 this habitat type covered 7 million acres, however 97% of this had been lost by 1987. There is certainly a pressing need to encourage gardeners to plant native wildflower meadows in order to replace some of what has been lost. However, the way in which gardens go about creating their

meadows will have a significant impact on their wildlife value, as not all wildflower seed mixes are created equal. Goulson (2022) gave a brief appraisal of the various types of seed mixes that are marketed as 'wildflower mixes' and promoted as being 'beneficial for pollinators'. These tend to fall into one of three categories. The first group contains the 'pictorial meadow' type mixes that are designed to be pretty and easy to grow, containing mostly annual varieties, which are usually non-native. To call these 'wildflower mixes' is confusing and suggests that the plants present in the mix are native. These mixes rarely contain plants that provide herbivorous insects with a food source. They are also not self-perpetuating, usually only lasting for a single season. The second group contains the 'arable weed' type mixes. These are also primarily designed to be pretty and easy to grow. Again, these mixes contain mostly annuals and often contain more native species. Like the pictorial meadows, these mixes will generally only last for a single season, unless the soil is tilled every year at the correct time. The third and most preferable group contains the true 'native wildflower' mixes. These mixes are composed mostly of perennial species. They are harder to establish and are usually far less impressive in their first season, however they support considerably greater biodiversity. From a rewilding standpoint, this is the type of seed mix that should be most widely used, given the option (Goulson, 2022).

It is also important to remember to grow plants that support species of insects that are not pollinators. Relationships between herbivorous insects and their food plants tend to be more specific than the relationships between pollinating insects and their food plants. This is because the range of different toxic chemicals contained within a plants foliage changes considerably from species to species, while nectar varies far less from plant to plant. For this reason, herbivorous insects tend to specialise in eating a narrow range of plants that they have evolved to be able to consume without injury. The growing of native plants is therefore particularly of benefit to herbivorous insects.

As well as providing food for invertebrates, it is also important to provide appropriate shelter. John Little spoke on this point, referencing his own home garden, which is on London clay. No matter how many flowers he grew in the garden, he would never be able to attract some species of solitary and bumble bees to the area, due to the lack of nesting sites. However, after replacing some of the topsoil in the garden with sand, John observed a 60% increase in bees and wasps visiting and nesting in the garden within the first three years (Little, 2022). Habitat creation can be as simple as drilling holes in fence posts. Different sized holes will provide habitat for a range of different invertebrates. For example, 4mm holes will often be utilised by resin bees, while other sizes of hole will be used by other species (Little, 2022).

## **Bees**

Most people tend to assume that honey bees (*Apis mellifera*) carry out the majority of pollination, however this is not accurate. In the UK alone, there are thought to be around 6,000 species of insects that contribute to pollination, the majority of which are not bees at all (Goulson, 2022). Solitary bees can be up to 200 times more effective as pollinators than honey bees. Due to their hairy bodies and the way they interact with flowers, their bodies generally get covered with pollen as they move from flower to flower, making more pollen available for pollinating the flowers. In contrast, honey bees are very careful collectors of pollen, storing it away efficiently, making it less likely that the flowers that they visit will be successfully pollinated (Little, 2022).

By taking up bee keeping, many people believe that they are doing something to support and improve biodiversity, when in fact that the opposite has been found to be true. Garrett (2022) explained the beehives at Great Dixter had been removed on the advice of the ecologists involved in their biodiversity study, who suggested that the presence of honey bees would be detrimental to local populations of solitary and mining bees (*Andrena sp.*). He stated that "honey bees can be bad for

pollinator diversity. They are aggressive, non-native, and disruptive to plant-pollinator networks, as well as being very inefficient pollinators – as the way that they collect pollen destroys the viability of the pollen – mining bees and leafcutters being much more efficient” (Garrett, 2022).

Goulson (2022) backed up this point, explaining that the presence of honey bees will almost always be detrimental to populations of other local pollinators, stating that “it is undeniably true that they compete with native species [for food and resources]”. The honey bee itself is not threatened in any way and populations have not declined. (A global population estimate for honey bees is three trillion). It is the wild bee species that are in trouble and in need of help. A single hive of honey bees can contain as many as 60-70,000 individual bees, each of which will be stripping nectar and pollen from the landscape, leaving considerably less food for wild insects. Goulson, who has studied bees for much of his career, stated that he did not see the keeping of honey bees as a solution to anything from a biodiversity standpoint.

## **Conclusion**

My attendance at the Beth Chatto Symposium has provided me with valuable set of new ideas and insights that will no doubt shape my approach to garden management in the future. In particular, I am increasingly motivated to better understand the ecology of the gardens that I care for so that I can make appropriate, informed and ecologically sound decisions about the way that I manage them. I have been particularly inspired by the work of John Little and I hope to experiment with some of his ideas on low-nutrient gardening, recycling of materials and habitat creation, in order to increase biodiversity and support rarer species.

Events such as the Beth Chatto Symposium are extraordinarily valuable for shaping the discourse on major issues including biodiversity loss, climate change and sustainable practices within the horticultural industry. It provided a platform for key industry figures to demonstrate that they are actively looking for solutions to problems that we all face and allowed them to share their knowledge so that we all may benefit from their work. Importantly, much of this work has involved challenging the accepted gardening wisdom of the past, where it has been found to be exacerbating problems that may not have existed in years gone by, but that we now face at local, national and even global levels. As well as providing an opportunity for attendees to listen to new and forward thinking ideas, the symposium also provided valuable networking opportunities, allowing conversations to continue long after the event.

## **References**

Driver, A., (2022). *The Beth Chatto Symposium 2022: 'Rewilding The Mind'*. 1 September, University of Essex, Colchester.

Garrett, F., (2022). *The Beth Chatto Symposium 2022: 'Rewilding The Mind'*. 2 September, University of Essex, Colchester.

Goulson, D., (2022). *The Beth Chatto Symposium 2022: 'Rewilding The Mind'*. 1 September, University of Essex, Colchester.

Little, J. (2022). *The Beth Chatto Symposium 2022: 'Rewilding The Mind'*. 2 September, University of Essex, Colchester.



Price, S., (2022). *The Beth Chatto Symposium 2022: 'Rewilding The Mind'*. 2 September, University of Essex, Colchester.

Stuart-Smith, T., (2022). *The Beth Chatto Symposium 2022: 'Rewilding The Mind'*. 1 September, University of Essex, Colchester.

### **Image References**

[Rewilding the Mind] 2022. [Image Online] Available at:  
< <https://www.horticulture.org.uk/events/beth-chatto-symposium-rewilding-the-mind/> > [Accessed 28 November 2022].