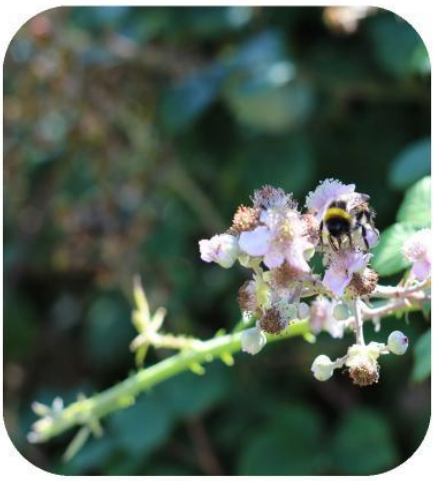
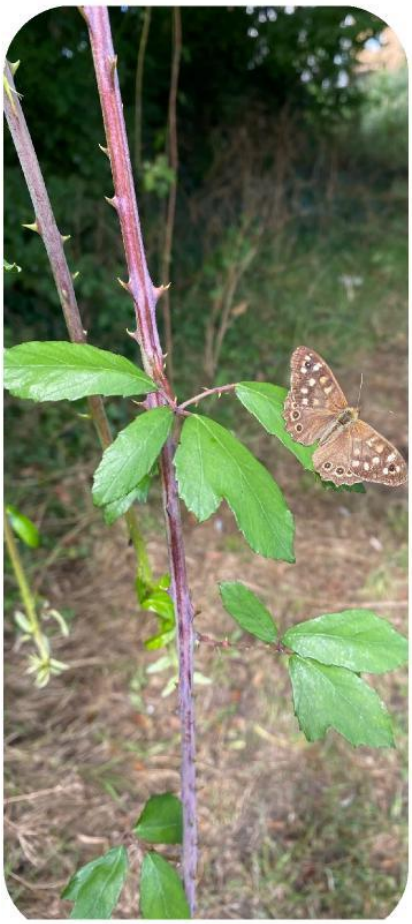
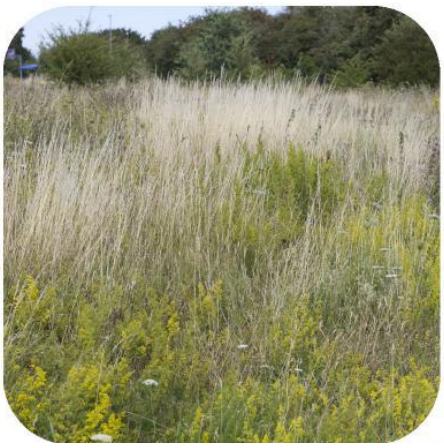
Bee Happy - A Grassland Management Strategy for bees and other pollinators – 2023 - 2028

Southend-on-Sea City Council








Southend-on-Sea
City Council

Contents

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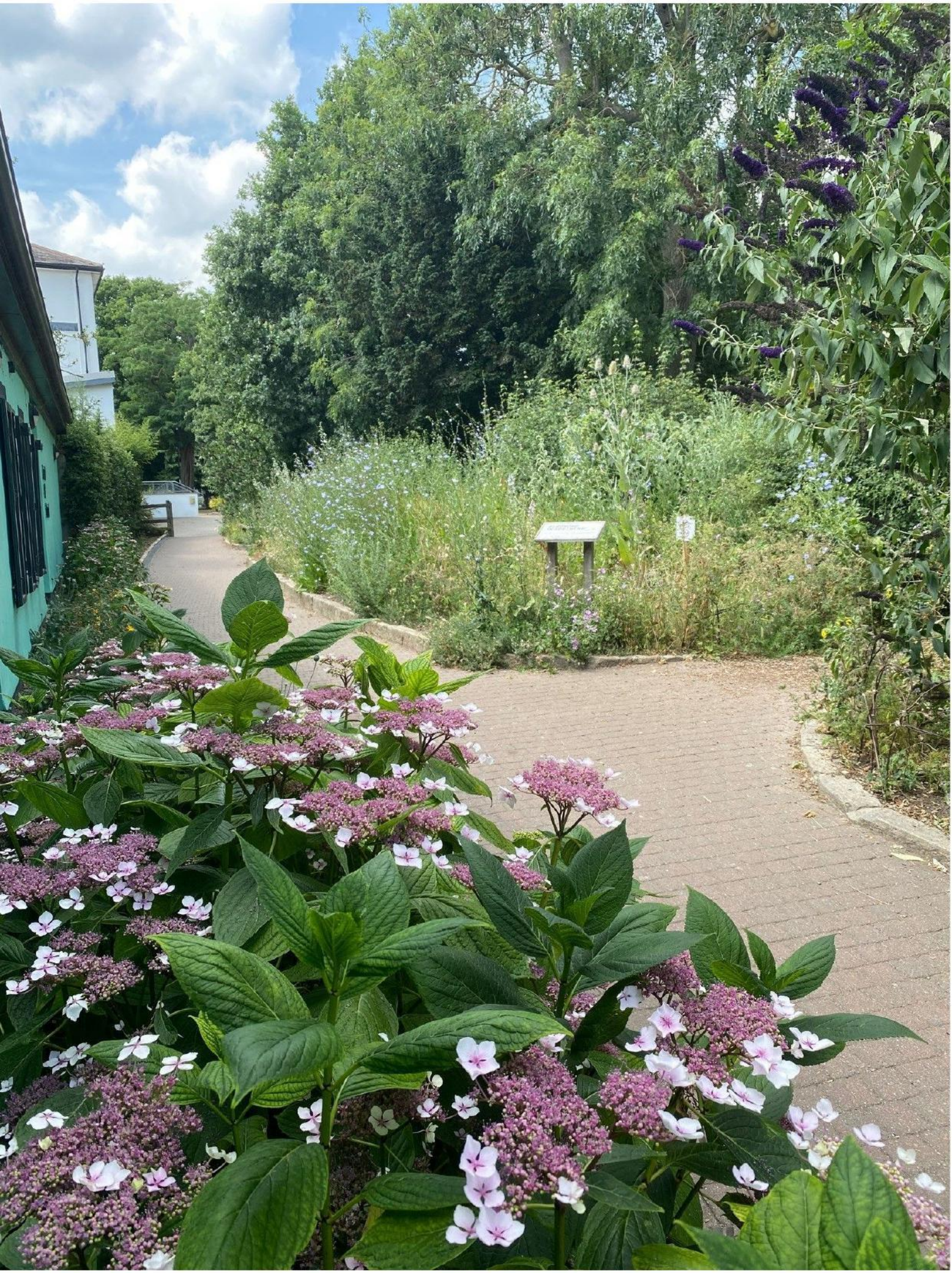


The parks, fields, gardens, open spaces across our City rely on the service pollination provides. Pollinators including bees, butterflies, hoverflies, wasps, beetles, and flies are vital contributors to our landscapes, our economy and our food industry.

Evidence has shown that one-third of pollinating insects have seen population declines in parts of the UK from 1980 to 2013, which is particularly the case among rarer species, such as solitary bees (Powney et al., 2019). Action must be taken to promote the conservation of all pollinators.

This strategy provides a framework for Southend-on-Sea City Council to improve the overall status and reduce losses in the diversity of pollinator species within the city.

2. The Council's Vision and Commitments

We must act now to ensure that we leave our environment in a better state for future generations and therefore Southend-on-Sea City Council has chosen to adopt Central Government's 2014 vision on bees and pollinators and how this can be delivered through a new 'Grassland Management Strategy'. Our vision is:-

> "...to see pollinators thrive, so they can carry out their essential service to people of pollinating flowers and crops while providing other benefits for our native plants, the wider environment, food production and all of us."

The Government vision set out in the National Pollinators Strategy for Bees and other Pollinators in England 2014 its aims to deliver across five key areas:

1. Supporting pollinators across the town and countryside
2. Enhancing the response to pest and disease risks
3. Raising awareness of what pollinators need to survive and thrive
4. Improving evidence on the status of pollinators and the service they provide
5. Supporting pollinators on farmland

In Southend-on-Sea, the Council is committed to delivering on the following outcomes:

- More, bigger, better, joined-up, diverse and high-quality flower-rich habitats (including nesting places and shelter) supporting our pollinators across the City, improving air quality and reducing the heat island effect
- Healthy bees and other pollinators which are more resilient to climate change and severe weather events
- Enhanced awareness across the City including a greater public understanding of the essential needs of pollinators and how we deliver a 'change in culture' - tidy versus 'good for pollinators'
- Evidence of actions taken to support pollinators

3. Why are pollinators important?

Globally, pollinators and animal pollinated plants contribute to a wide range of socio-cultural values including aesthetic value, air quality, heat reduction, cultural symbolism, existence value, health and undiscovered economic and non-economic value (Steele et al., 2019).

What is pollination?

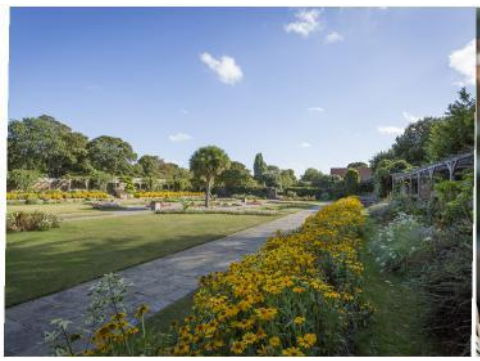
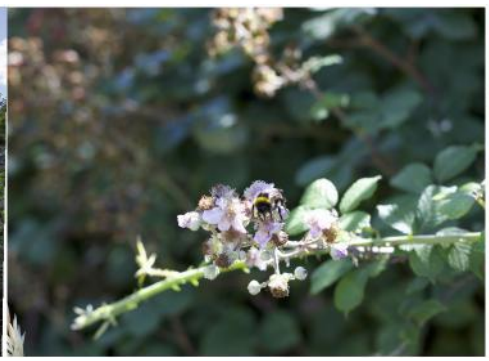
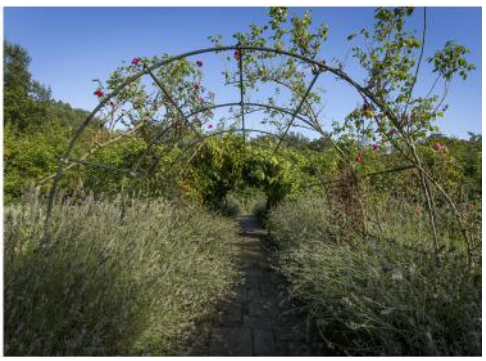
Pollination is a keystone process in both human managed and natural terrestrial ecosystems. It is critical for food production and human livelihoods and directly links wild ecosystems with agricultural production systems (FAO, 2015).

In short, pollinators eat pollen and nectar from flowers, it sticks to their bodies, it transfers between flowers they visit, and this fertilises the plants visited and allows the plants to reproduce and grow fruits and seeds. There are at least 1,500 species of insect pollinators in the UK (for example, bees, moths, flies, wasps, beetles and butterflies) (Defra, 2014). Some vertebrates can also carry out pollination, such as birds, bats, mice and squirrels (Ratto et al., 2018).

Crops and the Economy

The economic value of pollination to crop production in the UK is estimated to be approximately half a billion GBP a year (Steele et al., 2019). However, these estimates are based on generalisations of global literature, and do not include the benefits to consumers, therefore are likely to be underestimated. Pollination provides economic benefits in the UK which include the following:

- Market production – pollination directly increases the quantity and quality of yield in many crops such as raspberries, apples and pears (Smith et al., 2013 and Ollerton et al., 2016). Reduction in pollinator numbers would make it more difficult and expensive for farmers to produce some crops on the scale they do today (Steele et al., 2019).
- Producer profits – by increasing production, farmers can gain a greater degree of net profit (Garratt et al., 2016).
- Waste reduction – pollination can increase the storage life of some crops, reducing the economic costs for farmers and supermarkets in managing waste (Wietzke et al., 2018).
- Consumer surplus – by increasing the supply of a crop relative to demand, pollinators help reduce the costs for consumers (Bauer and Wing, 2016).
- Costs avoided – alternatives to wild pollination services are available, such as mechanical methods and paid services (Allsopp et al., 2008).

Health and Wellbeing

Pollinators are essential to the production of many of the micronutrient rich fruits, vegetables, nuts, seeds and oils we eat (Chaplin-Kramer et al., 2014). Close to 75% of the world's crops producing fruits and seeds for human consumption depend, at least in part on pollinators (FAO, 2015). Global evidence indicates that pollination is important in underpinning the supply of micronutrients that are necessary for good quality of life. There is also no evidence of any reported negative impact on health from this new approach to 'rewilding' in urban conurbations, in particular sufferers from hay fever or breathing issues.

The process of pollination also contributes to the beauty of our wider environment. Rich and diverse parks and open spaces contribute to our mental health and wellbeing by providing natural views and places to get away from the stresses of urban living. This can be an important factor in reducing stress-related illnesses and the consequent social and economic impact of mental ill health (Public Health England, 2020). Biodiverse parks also promote social cohesion by providing attractive places to meet, taking part in sport and walking the dog as well as increasing air quality and reducing urban heat island effects.

Biodiversity

Pollination is a keystone process in terrestrial ecosystems, and without it, many interconnected species and processes functioning within an ecosystem would collapse (United Nations, 2020). Pollinators contribute to the diversity of wildflowers and support healthy ecosystems, which improves biodiversity (DEFRA, 2014). Pollinator populations also have intrinsic biodiversity value, in addition to the ecosystem services they provide (Vanbergen et al., 2013)

Key Facts and Figures:

- Insect pollinators are vital for the maintenance of ecosystem health and global food security, with 75% of crop species, 35% of global crop production, and up to 88% of flowering plant species being dependent on insect pollinators to some extent (Powney et al., 2019).
- 3 out of 4 crops across the globe producing fruits or seeds for human use as food depend, at least in part, on pollinators (FAO, 2015).
- Improving pollinator density and diversity boosts crop yields – pollinators affect 35% of global agricultural land, supporting the production of 87% of the leading food crops worldwide (FAO, 2018).
- Safeguarding pollinators safeguards biodiversity: the vast majority of pollinators are wild, including over 20,000 species of bees (FAO, 2018).

4. Threats and reasons for decline

Pollinators are under threat. Present species extinction rates are 100-1000 times higher than normal due to human impacts (UN, 2020). Insects will likely make up the bulk of future biodiversity loss with 40% of invertebrate pollinator species – particularly bees and butterflies – facing extinction (FAO, 2015).

Land Uses

- Habitat loss and fragmentation paired with intensive land management practices have led to reduced food and nesting resources for pollinators and simplified pollinator communities which are now dominated by common, generalist species (Steele et al., 2019). For example, in the UK we have lost 97% of our wildflower meadows since the 1930s (Kew, 2017) and 50% of our hedgerows since WWII (PTES, 2019).
- Specialist pollinators, including some bumblebees and solitary bees, have specialist diets and so collect pollen from a limited range of plants (often wildflowers) and garden plants are not of benefit to them (RHS, 2019). Where suitable habitat remains, such as flower-rich meadows, it is often fragmented, making it difficult for populations to expand and colonise new areas (RHS, 2019).
- Urban insect pollinator communities are dominated by common, generalist species with some groups being more affected than others by urban development e.g. hoverflies are more affected than bumblebees (Steele et al., 2019).
- Some pollinators have specific requirements for nesting and breeding sites and loss and fragmentation of suitable habitats has reduced nesting and breeding opportunities (RHS, 2019).
- Herbicides and pesticides have a range of unintended direct and indirect effects on both wild and management pollinators. There may be synergistic effects of mixtures of these chemicals (Steele et al., 2019).
- Despite the restrictions imposed in 2015 to ensure correct use, neonicotinoids (e.g. clothianidin, imidacloprid and thiamethoxam) persist in soil leading to update and exposure to pollinators through wild plants, and plants sold for garden use (Wood and Goulson, 2017). They have negative sub-lethal effects on bumblebees, solitary bees and honeybees.

- Other pesticides, including weed killers, can remove potential foraging sources and prey species for those pollinators that have herbivorous or predatory larvae (RHS, 2019).

Invasive Alien Species

- Abundant alien flowering species (e.g. Himalayan Balsam), can dominate pollinator diets. The effects of this may be subtle, chronic (and possibly undetected) or act in combination. Invasive alien flowering plants can dominate pollinator interactions leading to a substantial modification of plant-pollinator networks (Vanbergen et al., 2017).
- The Asian hornet, if it establishes in the UK as in Western Europe, could gain high population density within ten years, and would be an additional threat to honey bee populations (Steele et al., 2019).
- Currently, in the UK the impact of invasive alien plant and predator species on pollinator and pollination is considered to be less profound than other pressures. However, their importance as a driver of pollinator status may rise with climate change creating new opportunities for invasive alien species, alongside more confounding pressures from climatic or other stressors (Steele et al., 2019).

Climate Change

- Human activities are estimated to have caused approximately 1.0°C of global warming and is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate (IPCC, 2018). This has associated impacts including increases in droughts, floods, sea level rise and biodiversity loss (IPCC, 2018). The summer of 2022 saw record temperatures reached across the UK.
- Climate change has altered the range and seasonal activity of some pollinator species, and is likely to continue to do so in the coming decades (Steele et al., 2019).
- It has contributed to spring advancement, especially in the Northern Hemisphere (Settele et al., 2014). Seasonal advancement and extreme climatic events could potentially lead to mismatches in plant and pollinator life cycles, to the detriment of both (Thackeray et al., 2016).
- A diverse assemblage of pollinators, with different traits and responses to ambient conditions, is one of the best ways of minimising risks due to climate change. The "insurance" provided by a diversity of pollinators ensure that there are effective pollinators not just for current conditions, but for future conditions as well (UN, 2020). Resilience can be built in agroecosystems through biodiversity (Oliver et al., 2015).
- Higher temperatures, droughts, floods, other extreme climate events, and changes of flowering time hinder pollination largely by desynchronizing the demand (flowers in bloom) with the supply of service providers (abundant and diverse populations of pollinators) (FAO, 2018).
- The combination of climate change with other global change pressures (e.g. land use changes and invasive alien species) are likely to pose significant future threats to pollinator communities (Steele et al., 2019).
- Future pollination service to crops will be vulnerable where climate change creates a mismatch between optimal growth area, and pollinator distributions (Polce et al. 2014)

Pests and Diseases

- A major threat to honeybee populations is the mite Varroa destructor and the many bee viruses it transmits, such as the Deformed Wing Virus (DWV) (Wilfert et al., 2016). V. destructor is a parasitic mite that sucks fat and hemolymph (the blood equivalent for invertebrates) from the bodies of honeybee larvae, pupae, and adult bees (Ramsey et al., 2019). A new, more virulent strain of DWV is currently spreading through honeybee populations in Europe and the UK (McMahon et al., 2016). Neglect by beekeepers can cause levels of V. destructor building up (RHS, 2019).

- European foulbrood (EFB) is a disease caused by the bacteria *Melissococcus plutonius* in which affected larvae starve and turn a brownish colour, often appearing contorted (FAO, 2015). Despite Statutory control for 70 years, the incidence of EFB in the UK remains high (University of Sussex, 2010).

- Colony Collapse Disorder occurs when most worker bees in a colony disappear and leave behind a queen, food and a few nurse bees to care for the remaining immature bees and the queen (EPA, 2018). It's caused by a combination of factors including parasites, agricultural chemicals and poor nutrition (The Guardian, 2013).
- Wild bumble bees share viral and fungal pathogens with managed honeybees in the UK, and these pathogens have been shown to negatively impact bumble bees in the lab (Fürst et al., 2014).

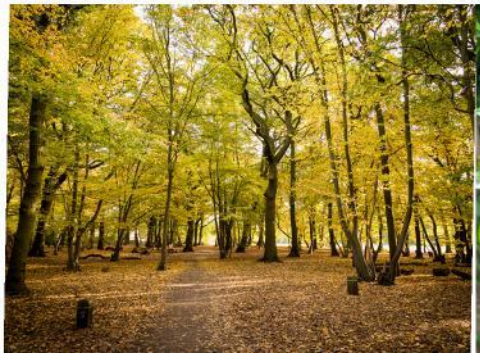
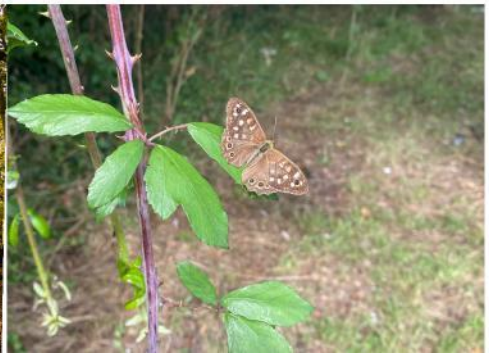
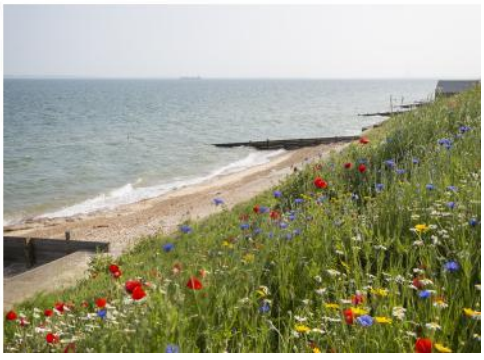
5. Actions

Southend-on-Sea City Council will take actions across different areas to support pollinators in our City. We will be flexible and adapt to new data and understanding as they emerge by reviewing this pollinator strategy annually and how it links to the Councils developing Heat Strategy. We will consult, engage, encourage residents, partners and stakeholders the benefit of supporting pollinators in our City and the reasons why.

Allotments

Allotments form habitat mosaics and wildlife corridors, creating green infrastructural connectivity between parks, hedgerows, waterways, and other green spaces. Although their main purpose is to grow food, they can provide pollen and nectar resources for pollinators. Research by the Insect Pollinator Initiative found allotments to be one of the most important land use types for pollinators in urban areas, with a modelling approach study predicting that increasing the area of allotments resulted in the greatest increase in the plant-pollinator community robustness (Baldock et al., 2019). Allotments are a win for pollinators, a win for people and a win for sustainability.

However, allotments are usually the least abundant land use in urban towns and cities. We will be acting on this new evidence to create new allotment plots. Within our allotment locations we will create shared orchard areas which will be populated by dwarf trees, to the benefit of pollinators and the community. We will also create an 'Allotments and Biodiversity' booklet for new and existing allotment holders which gives ideas of how biodiversity can be enriched in allotments. Finally, as part of the annual allotment awards, we will be awarding points for planting of pollinator-friendly species which encourages allotment holders to act for pollinators.

Parks and Open Spaces

Research has shown there are lots of opportunities in parks and green spaces in urban areas – they have a high potential for improvement in terms of pollinators.

We will:

- Manage council land and properties with consideration to providing food, shelter and nesting sites for pollinators and engage with park users and residents on a site by site basis.
- Restrict the use of pesticides (herbicides and insecticides) to the council nursery, fine turf sports pitches and highways. However, alternative options will be explored before considering pesticide use.
- Not kill pollinators or destroy nests, including wasps.

As part of this process, we will liaise with residents and park users and engage with them on issues such as impact on dogs (ticks, dog fouling), impact on hayfever and the perception of 'untidiness'.

Opportunities include:

- Nest boxes – These are for cavity nesting bees and have been successful in increasing numbers of solitary bees in their locality over time, particularly where nests are provided in the same place in subsequent years.
- Bare soil – Artificially exposed areas of bare soil can be successfully colonised by ground-nesting solitary bees and wasps in the first or second year.
- Mowing regimes – Mowing will be altered and reduced in some areas to create naturalised areas and maximise floral resources in parks for pollinators. This will include appropriate signage.
- Living roofs – Green roofs and brown roofs can attract native bees. Bee hotels on green roofs are more successful on lower buildings and in areas with increased areas of green space. We will support the development of living roofs across the City where possible.
- Wildflower meadows – The addition of meadows and naturalised areas to public greenspace areas can provide large quantities of additional floral resources in the form of pollen and nectar. Perennial native meadows have been shown to produce up to 20 times more nectar content and up to 6 times more pollen than annual meadows of equivalent size (Hicks et al., 2016). Native plant species growing in these meadows contributed high quantities of pollen and nectar, with dandelions being one of the most important pollen and nectar contributors among species commonly considered as weed (Hicks et al., 2016). A diversity of floral species is needed to provide adequate nutrition to bees at different life stages. The absence or presence of particular nutritional components, and their balance, can confer particular health benefits for bees, for example, reduce parasite loads (Steele et al., 2019).

Working with Local Groups

We will continue to work with the Essex Wildlife Trust, Parks Friends groups, local beekeepers, allotment societies, local schools, community gardeners and nature reserve volunteers. We will also engage with ward councillors and residents' associations where appropriate.

We will continue to provide volunteering opportunities to encourage good practice to help pollinators. Regular volunteer activities that we carry out with the community includes whip planting, tree planting, and bulb planting in our parks and open spaces.

We will spread awareness across the City by celebrating Bees' Needs Week (coordinated by Defra), Pollinator Awareness Week, the Big Butterfly Count and UN World Bee Day.

Road Verges

Road verges include highways verges, cycleways, pathways and shrub verges. Improving road verges for pollinators on a broad scale is a priority of ours, as even modest improvements can provide widespread benefits. Road verges can act as a food source, shelter, nesting and hibernation sites (for example, strong evidence exists that butterflies and moths breed along road verges) (Buglife, 2019). This land type provides a significant opportunity to support pollinators due to their widespread nature in Southend.

Road verges have been shown to be particularly important for pollinators in florally-poor landscapes due to limited availability of other resources (Buglife, 2019) hence the importance of road verges in our City. Research results suggest that having a regularly-mown strip along the edge of road verges, whilst maintaining high floral abundance in the rest of the verge, may reduce pollinator mortality through traffic collisions (Buglife, 2019). This also gives the appearance that the verge area is being maintained rather than abandoned. Appropriate signage will be displayed where adopted and sponsorship opportunities investigated. Leeds City Council have recently adopted such an approach.

Naturalised road verges can act as wildlife corridors and improve connectivity between our parks and open spaces. We will begin to naturalise some road verges across the town.

Another way in which we will manage road verges to the benefit of pollinators is considering pollen and nectar rich species when planting shrub verges or adopting a higher percentage of floral displays.

The suitability of certain road verges managed for the benefit of pollinators will be assessed on a case-by-case basis. Factors that determine suitability include, but are not limited to, width of the verge, occurrences of dog fouling, proximity to busy main roads and safety concerns.

It is also worth noting that there are many examples of highly 'floriferous' wildflower verges that capture the headlines and the imagination of the public. Cities like Sheffield and Rotherham have invested in such areas that are high impact and visually stimulating. Southend will investigate the impact of such management regimes. However, many of these are short-lived displays and become untidy in appearance. These mixes are usually high in floral content, whereas the preferred option is to look at verges that are managed in a way that encourage wildflowers to establish naturally along with an appropriate grassland which in the longer term, is more suitable for pollinators.

Biodiversity Net Gain

Biodiversity net gain (BNG) is an approach to development, and/or land management, that aims to leave the natural environment in a measurably better state than it was beforehand. Biodiversity net gain delivers measurable improvements for biodiversity by creating or enhancing habitats in association with development. Biodiversity net gain can be achieved on-site, off-site or through a combination of on-site and off-site measures.

The most recent State of Nature report, published in 2019, suggests there has been a 13% decline in the average abundance of wildlife in the UK since the 1970s. This is despite legislation and policy to protect biodiversity and wildlife. Although certain sites and species are protected, there are limited mechanisms to value, maintain, enhance and create wildlife habitats beyond protected sites. As a result, most habitats continue to be lost to development, reducing nature's ability to connect and thrive.

BNG is additional to existing habitat and species protections. BNG aims to create new habitat as well as enhance existing habitats. Nature is important in its own right, but it is also essential for the processes that support all life on Earth, including humans. The natural environment provides benefits to us all through 'ecosystem services'.

For local authorities, BNG links to a range of agendas including:

- addressing the climate emergency
- place-making
- green infrastructure
- access to greenspace and nature
- mental and physical health and wellbeing
- flood resilience
- improving air quality

As part of this Grassland Management Strategy, we will develop a system where existing developments can be improved with regards to BNG as well as looking at opportunities off site and how credits can be built up to ensure long term improvements to our open spaces, linked to enhanced biodiversity.

Monitoring

It is important to develop a sustainable long-term monitoring programme so we better understand the status, the causes of any declines and where our actions will have the most effect. Monitoring will allow us to improve evidence on what management techniques are most effective in the borough and where our actions can have the most impact.

We will use a citizen science approach involving volunteers logging observations and gathering other evidence. Citizen science is invaluable in providing information at scales that would not otherwise be practical, and a study by Breeze et al. (2020) suggests that combining the strengths of both volunteers (who are often highly skilled) and professionals is the most effective way of monitoring pollinators.

To develop citizen science, we will expand the pool of taxonomic expertise and people capable of identifying the many species of insect pollinators in the UK. We will also improve the understanding of those who participate in volunteer recording schemes and their motivations to aid recruitment of additional volunteers into new monitoring schemes. This will allow us to establish a baseline for the City and what the impact is of changing these management regimes.

Workshop

With inspiration from the actions of Defra, we will hold a 'Pollinator Workshop' and annual review meeting to raise awareness and share the information and evidence found by new research in a format that is easily digestible, understandable, and allows for Q&A. It will involve working with all of Southend-on-Sea to promote simple changes to land management to provide food, shelter and nest sites for pollinators.

The workshop will be for:

- Developers
- Planners
- Social landlords
- Landscape architects
- Brownfield site managers
- Local Nature Partnerships
- Businesses and potential sponsors
- Residents
- Schools
- Community groups
- Southend Youth Council
- Councillors

The workshop aims to:

- Ensure good practice to help pollinators through initiatives with a wide range of organisations and professional networks.
- Encourage the public to act in their gardens, allotments, window boxes and balconies to make them pollinator-friendly or through other opportunities such as community gardening and volunteering fostering this change of culture.
- Secure commitments from large-scale land managers in the city and in utility and transport businesses.
- Encourage developers to consider pollinators in all developments and landscaping schemes.
- Encourage a greater acceptance of naturalised area including long grass with wildflowers.

Support for these Actions

We will support these actions by:

- Delivering a State of Nature report for Southend-on-Sea
- Providing current and relevant information to the public to encourage action in support of pollinators – via workshops and the council website, newsletters, social media and member briefings.

- Working with charities and other organisations with an interest in supporting pollinators
- Supporting national campaigns including Bees' Needs and Pollinator Awareness Week

- Reviewing the Grassland Management Strategy annually to ensure integration into wider council practices
- Keeping up to date with the most recent research on pollinators
- Being flexible and adapting to new data and understanding as it emerges
- Using the pollinator friendly logo in parks and open spaces across the City.

Case Studies

Badgemore Primary School, Henley on Thames

The RHS Campaign for School Gardening team has planted willow plum and pear for early spring blooms, as well asas apple and crab apples and native hedging to provide good habitat pollinators and other wildlife. The school has reduced mowing to once a year in select areas, as the town park's team does in the area. Their beehives are complemented by a wildlife pond, flower beds and raised veg planters, providing plenty of forage for the resident honeybees.

Barnoldswick in Bloom, Lancashire

Reused plastic bottles paired with irrigation tubes and pollinator-friendly plants became a living 'bee wall' at the Rainhall Centre, designed by college students as part of Barnoldswick in Bloom activities. Planters with the same buzzing theme line the wall, alongside a bug friendly hotel. This is just one of the planting schemes in the town aimed at encouraging pollinators. 'We try and make sure every scheme is bee-friendly and ensure there are early and late sources of food for them,' explains group volunteer David Whipp. Barnoldswick also has its own 'Buzz Stop' – a bus stop complete with pollinator-friendly signage explaining the plight of bees and the need to provide them with food and shelter.Bumble Bee Conservation Trust (2019)

Stotfold Mill Meadows Local Nature Reserve

Stotfold Mill Meadows is a Local Nature Reserve in Bedfordshire consisting of 3 meadows that were used for cattle grazing until 1999. Since then, the site has been managed for conservation purposes. One of these meadows has been the focus of management to support wildflowers and pollinators. In 2016 volunteers over-seeded the meadow with a wildflower mix. A late summer hay cut was taken to continue to remove nutrients from the meadow. The area has now turned into a flowery haven for pollinators and people alike. With picnic benches and mown paths through the meadow everyone can enjoy the beauty of the reserve.

St Laurence Park, Southend-on-Sea

Historically, St Laurence Park was farmland. During its establishment, 5 different seed mixes were used. This has resulted in high diversity naturalised and wildflower areas. The mix of flowering species provides an abundant resource for pollinators. Survey transects undertaken in 2020 recorded nearly 100 butterflies and 8 different species in just one hour. There are mown paths throughout the park and benches to sit and enjoy the nature. Mowing occurs during autumn with cuttings removed to prevent excess nutrients, with patches remaining to provide refuge for any invertebrates, reptiles, or other wildlife.



6. What people can do in their gardens

Research by the Insect Pollinator Initiative found gardens to be one of the most important land use types for pollinators (Baldock et al., 2019). UK gardens have been found to contain greater density and survival of bumblebee nests, compared to agricultural and woodland habitats (Osborne et al., 2008). Parks, road verges and other green space collectively were estimated to hold far fewer pollinator visits on a city scale compared to gardens, which make up a similar area in cities (Baldock et al., 2019).

With the help of Make Southend Sparkle, we will encourage the public to take action in their gardens, allotments, window boxes and balconies to make them pollinator-friendly.

Here are some examples from the Bumblebee Conservation Trust of actions that can be taken for pollinators:

- Grow more flowers, shrubs and trees that provide nectar and pollen as food for bees and other pollinators throughout the year. For example, pussy willow, primroses and crocuses in spring, lavenders, meadow cranesbill and ox-eye daisies in summer, ivy and hebes in autumn and mahonia shrubs and cyclamen in winter.
- Avoid plants with double or multi-petalled flowers.
- Plantings comprising native and near native species attract more pollinators than exotic species, although using exotic plants to extend the flowering season is beneficial for pollinators later in the year.
- Leave patches of land to grow wild with plants like stinging nettles and dandelions to provide other food sources (such as leaves for caterpillars) and breeding places for butterflies and moths.
- Cut grass less often and ideally remove the cuttings to allow plants to flower – floral resources in gardens benefit from reduced mowing frequency.
- Avoid disturbing or destroying nesting or hibernating insects, in places like grass margins, bare soil, hedgerows, trees, deadwood and walls.
- Think carefully about whether to use pesticides especially where pollinators are active or nesting or where plants are in flower. Consider control method appropriate to your situation and only use pesticides if absolutely necessary. Many people choose to avoid chemicals and adopt methods like physically removing pests or using barriers to deter them.
- Build a bug hotel – creating a multi-storey bug hotel with natural materials can provide shelter for pollinators. Materials you can use include dead wood, hollow stems, stones and tiles, bricks, dry leaves, loose bark, and corrugated cardboard. Visit the Wildlife Trusts website for more information on how to build your own bug hotel.

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Bee Happy - A Grassland Management Strategy for Bees and Pollinators 2023-2028

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