



Brighton & Hove Green Spaces Forum Spring Seminar

How to Encourage bio-diversity into Open Green Spaces

~The Level Park~

- ❖ The smallest of the city's six major parks at 8.5 hectares, The Level is one of several linear green spaces leading towards Brighton Pier.
- ❖ The park is also situated within Brighton & Lewes Downs UNESCO World Biosphere Region.
- ❖ The park's complete restoration using Heritage Lottery, Big Lottery Fund and other funding sources in 2013 provided the catalyst and inspiration to create and develop this important community and destination park as an environmental and conservation centre of excellence.
- ❖ The project aspiration - conservation of the park's natural (plus built and social) heritage so it can be appreciated and loved by park users today and in future – was put into practice from the start in a broad sweep of ways, the main beneficiaries on the insect side being bees and butterflies.
- ❖ Five years post-restoration, the twin underlying benefits of the park's central position and strong community connections have strengthened this ambition, helping the park create new partnerships, initiatives and activities that are continuing to extend sustainability measures and messages beyond the park's boundaries.
- ❖ Special note is due to The Level's mature elm avenue, which runs around the park's exterior. The elms are important to the rare White Letter Hairstreak butterfly's lifecycle, and – with other insects - feature heavily in community-led onsite artworks, education activities and other promotions.

Conservation at The Level Park



~ Key points ~

Conservation methods are taken seriously at the Level, to safeguard many species of insects (pollinators), which have declined in many areas, town and rural areas. (restore and protect their natural habitats)

❖ **The Level is a pesticide free zone, which is better for the environment and for the well-being of all.**

Quote from the book The Natural Garden written by Roger Grounds (1976)

It is worth remembering that, modern pesticides are the brain-children of the second world war. They were developed originally as nerve gases. They were meant to kill people, not pests.

You use them at your peril, and not just your peril, but at your children's children's peril, because no one knows yet how long these poisons last in the soil, or how long they remain in the bio-cycle.



Instead we use **Neem oil** for controlling pests and diseases, such as greenfly or blackspot. Neem oil itself comes from a tree in India Azadirachta indica and has been used for years as a form of natural pest control. Another name for this tree is Margosa.

First, neem oil has a hormone-like activity that causes leaf eating insects to "forget" to eat, breed, or undergo metamorphosis after they've ingested, or even just been in contact with, traces of neem

Second, neem oil does not effect predatory insects (Ladybirds, ladybirds larvae, hoverfly larvae, lacewing larvae) that feed on greenfly.

- ❖ **No peat based materials are used** (organic material only) such as leaves from autumn, grass trimmings, spent coffee grounds; wood ash, as well as tea leaves.

All of this organic matter (organic mulches) are beneficial, as they add nutrients back into the soil as they slowly decay, as well as improving the soils structure it also creates an environment for beneficial soil organisms.

- ❖ **Over 95% of green waste is recycled on site**; such as grass trimmings, leaves and of course plant prunings.

This in turn provides a home for a number of environmental heroes, including microbes, earthworms, woodlice etc, and fungi, which are accomplished biochemists that transform unrotten organic matter into plant foods.

- ❖ **Designated areas**, such as the perimeter(under the trees) of the park have been left to grow so that it may provide another stepping stone for wildlife, which in turn will give a 30% to 35% increase to the biodiversity of the park.

- ❖ **Good plant diversity**, such as a wide range of perennials, shrubs and wild flowers makes a better healthier ecosystem for pollenating insects, as well as other beneficial insects.

Note: Nectar is the flowers main attraction for our pollinators (nectar itself can be composed of glucose, fructose, and sucrose-depending on the plants main pollinators)



- ❖ some species of plants have beneficial effects to neighbouring plants, commonly known as Dynamic Accumulators or mining plants that gather certain Micronutrients & Macronutrients, such as **stinging nettles**, **chicory** and **achilleas** which can mine for Sodium, Sulphur, Nitrogen ,Calcium, Potassium, Iron & Copper which can improve the neighbouring plants defence against pests and diseases.
- ❖ Also, there are clumps of stinging nettle (*Urtica dioica*) that provide food and shelter for more than 40 species of insects, which are completely or partially dependent on nettles
Certain butterflies for example, Red Admiral, Small Tortoiseshell, Peacock and the Comma are dependent on nettles.



The nettle plant can also be used to make a natural liquid feed for your plants.



For The Love of Pollinators

Every part of the Level park is like a miniature ecosystem that is very unique, with its own combination of plants, trees, shrubs, soil conditions, insects, microorganisms, within its own microclimate.

- ❑ In 2015, Herb rock gardens provide a great habitat for insects; due to their diverse planting, such as Basil, Chives, Tarragon, Thyme, Mint, Rosemary, Oregano, Marjoram, Coriander and Sage. The rocks also provide a place for certain insects to hide and for lichens to grow on.

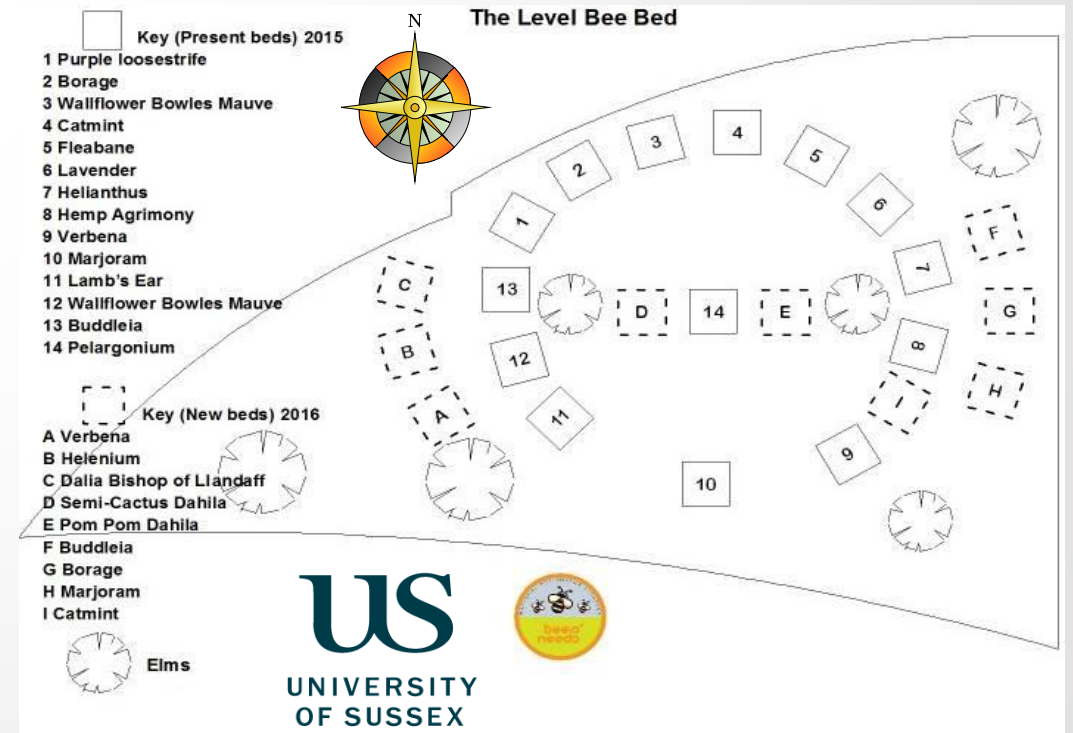


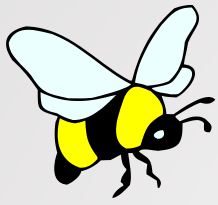
The herb rock garden at the level, that not only provides a habitat but also gives culinary delight to the café.



For The Love of Pollinators

- ❑ In 2015, A 'bee bed' was established in the north west corner of the park, as part of ongoing collaboration through the Brighton & Lewes Downs Biosphere programme to improve urban green spaces. This showcases to the public the attractive garden plants that people can grow themselves to benefit a variety of pollinators, an initiative with the University of Sussex's Laboratory of Apiculture and Social Insects (LASI).





For The Love of Pollinators

- ❑ In 2016 we created a butterfly bed, for the benefit of butterflies and other pollinators. The plants that we have selected are Echinops (Globe thistle), Verbena bonariensis, Verbena hastata, Nepeta (Cat mint), Mullein, Centaurea montana, Hemp agrimony and some buddlejas Royal red, white profusion, Black night, Empire blue and Nanho blue, as well as some clumps of stinging nettle.

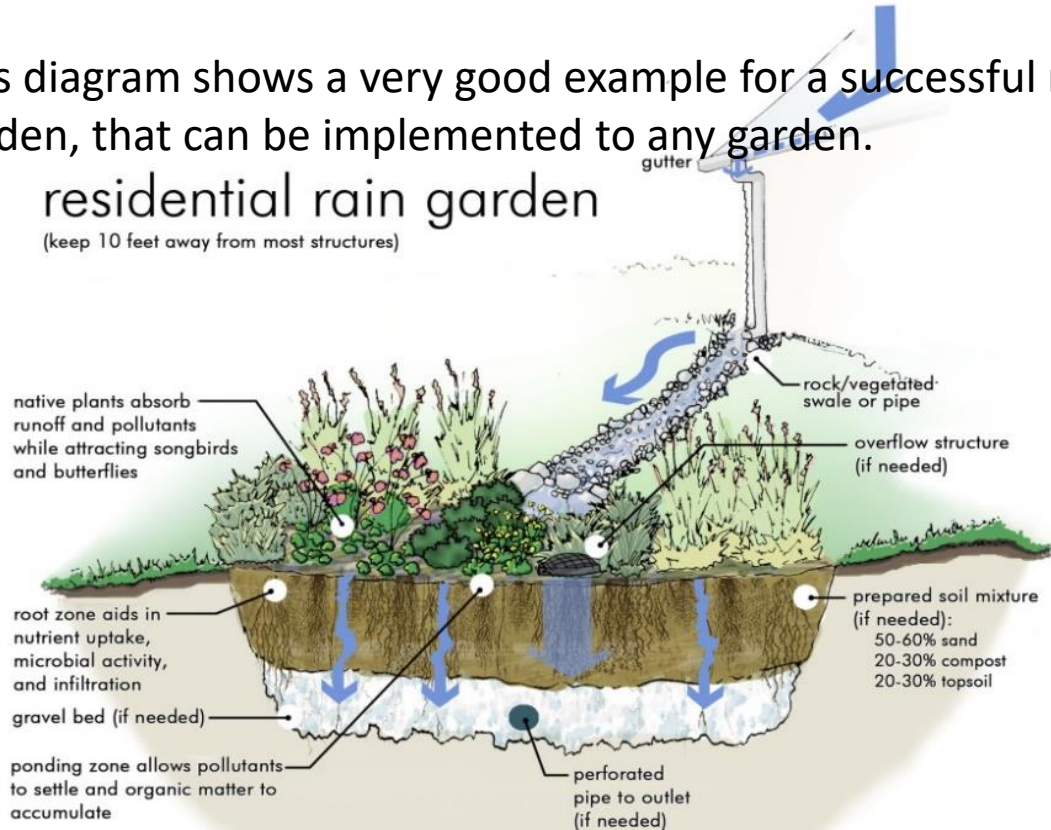




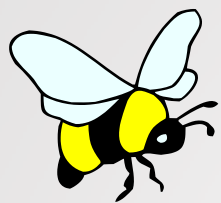
For The Love of Pollinators

- ❑ In spring 2017, we made a rain garden next to the café, in order to absorb excess rain water (75%) from the new flat roof, this new addition to the Level will prevent semi-flooding to this particular area and in addition to this we have also planted some particular plants that can cope with such conditions and provide a nectar source for pollinators.

This diagram shows a very good example for a successful rain garden, that can be implemented to any garden.



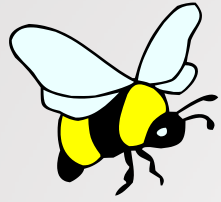
Eupatorium cannabinum (Hemp agrimony)



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- ❑ A new Bee Bed was created at the open market in 2017 with the help of volunteers from the Level and also the open market, turning a so-called brown area into a green area, linking the two sites together. This in turn provides another stepping stone for wildlife.





For The Love of Pollinators

- ❑ In 2017/18 we replanted two beds near the café with drought tolerant plants to demonstrate to the public the changing effects of our climate, and that we need to make better plant choices for the future.

(Plant Diversity Creates a Better Healthier Ecosystem)

All the plants selected for this project are all beneficial for pollinators.

The success of the new planting in these areas helped increase food for pollinators by 20%, due to fact that, some plants have a longer flowering period then others.



Cichorium intybus



Echinops 'arctic glow'



Verbena bonariensis



Why are Pollinators Disappearing?

- ❑ **The use of pesticides, which are not only harmful to pollinators but to us too.**

You use them at your peril, and not just your peril, but at your children's children's peril, because no one knows yet how long these poisons last in the soil, or how long they remain in the bio-cycle.

- ❑ **Agriculture methods:** It is suggested that due to intensive farming methods, that even in the UK, the farmed land only has another hundred harvests left in it.

- ❑ **Lose of habitat:** Through farming methods, urbanization, deforestation, loss of wildflower areas. etc

- ❑ **Human activity that gives us:** Toxic hydrocarbons(Petroleum), Acids & Nitrogen compounds(ammonia) and more?

All of which are harmful to us and our environment.

- ❑ **Global warming:** Increasing global temperatures which cause extreme weather conditions and this in turn can change habitats for ever. (The change is too fast for wildlife to adapt too)

- ❑ **Plant extinction:** One in five plants face global extinction, this means less food for our pollinators. (keep in mind that about 74% of medicines come from plants and 18% from fungi)

- ❑ **Litter:** That not only causes environmental damage, but the cost to local authorities is extreme.

(The royal parks of London, for example, spend 1.7 million per year on collecting waste)

- ❑ **Pests:** Many pests can affect honey bees (varroa mite, Asian hornet (vespa velutina) and more

- ❑ **Plant diseases:** There are many diseases that can affect and seriously damage plants, this in turn means less food for the pollinators.

- ❑ **Unaware:** If people are unaware, they don't care! (About 50-60% are disconnected from nature)

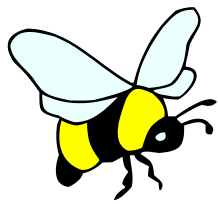


Why are Pollinators so Important?

It is worth remembering that without pollinators, we would have no flowers, fruit, cotton, chocolate, silk, coffee, fewer spices, almost no meat and almost no dairy.

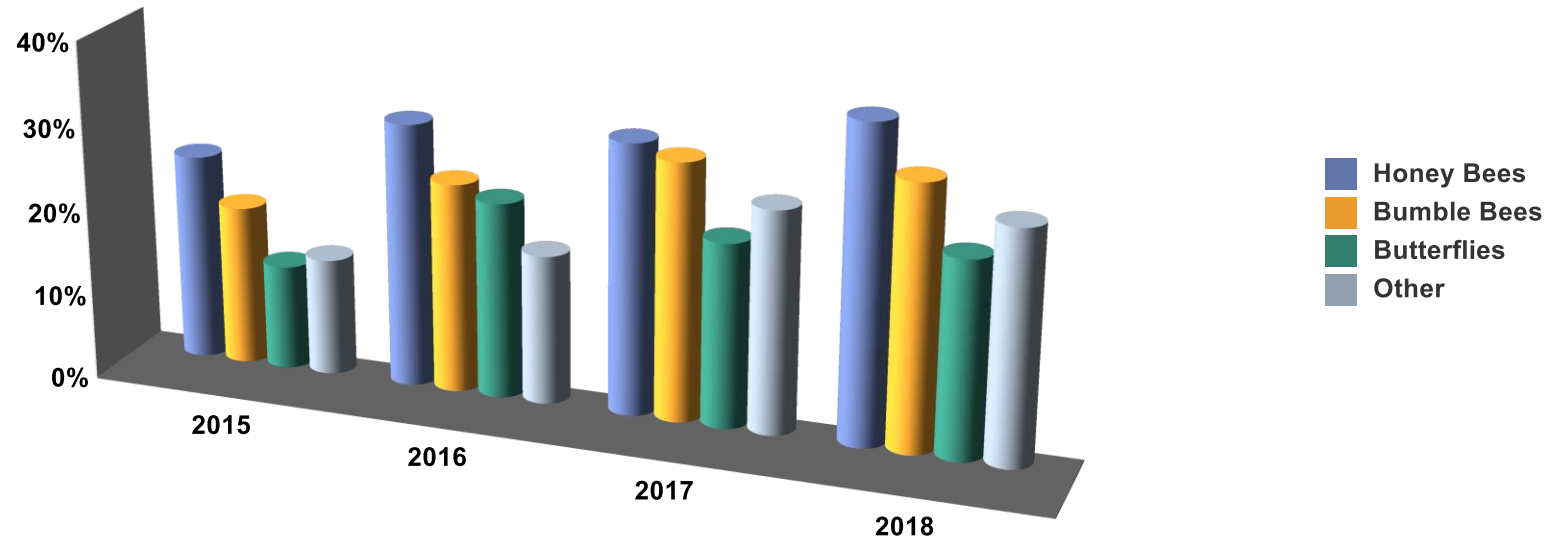
- ☐ Cotton for example makes up **35% worlds fibre** use.
- ☐ The UK fresh cut flower and indoor plant market is worth **£2.2 billion** at retail level.
- ☐ Coffee has a commodity value of **\$100 billion** across the globe.
- ☐ Chocolate has the value of about **\$90-100 billion** in the world.
- ☐ Today, at least **70 million pounds** of raw **silk** are produced each year.
- ☐ Apparently the fruit and vegetable market is worth **246 billion dollars**.

**The most important thing is that our pollinator friends are so important to our eco-system
It is said that 80-85% of the worlds flowering plants require and need a pollinator to reproduce.**



For The Love of Pollinators

Pollinator Increase at The Level



	2015	2016	2017	2018
Honey Bees	24%	31%	32%	37%
Bumble Bees	19%	25%	30%	31%
Butterflies	12%	23%	22%	23%
Other	14%	18%	26%	27%

It is worth remembering that pollinators have increased at The Level site since 2014



Pollinator Success at The Level

The bees' needs award

Which is part of the governments pollinator strategy for bees and other pollinators 2014

There is five key issues:

- Supporting pollinators on farmland
- Supporting pollinators across towns, cities and the countryside
- Enhancing the response to pest and disease risks
- Raising awareness of what pollinators need to survive and thrive
- Improving evidence on the status of pollinators and the service they provide

In taking action across these five areas, we want to achieve 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 country.
- Healthy bees and other pollinators which are more resilient to climate change and severe weather events.
- No further extinctions of known threatened pollinator species.
- Enhanced awareness across a wide range of businesses, other organisations and the public of the essential needs of pollinators.
- Evidence of actions taken to support pollinators.



Pollinator Success at The Level

The bees' needs award

The award, which is run through DEFRA and Keep Britain Tidy, is for Green Flag award winning parks and green spaces in England that have made great improvements for providing habitats for our beloved pollinators.

Since the awards began in 2015, The Level Park has won the Bees' Needs Award 3 times.

Bees' Needs Award 2015



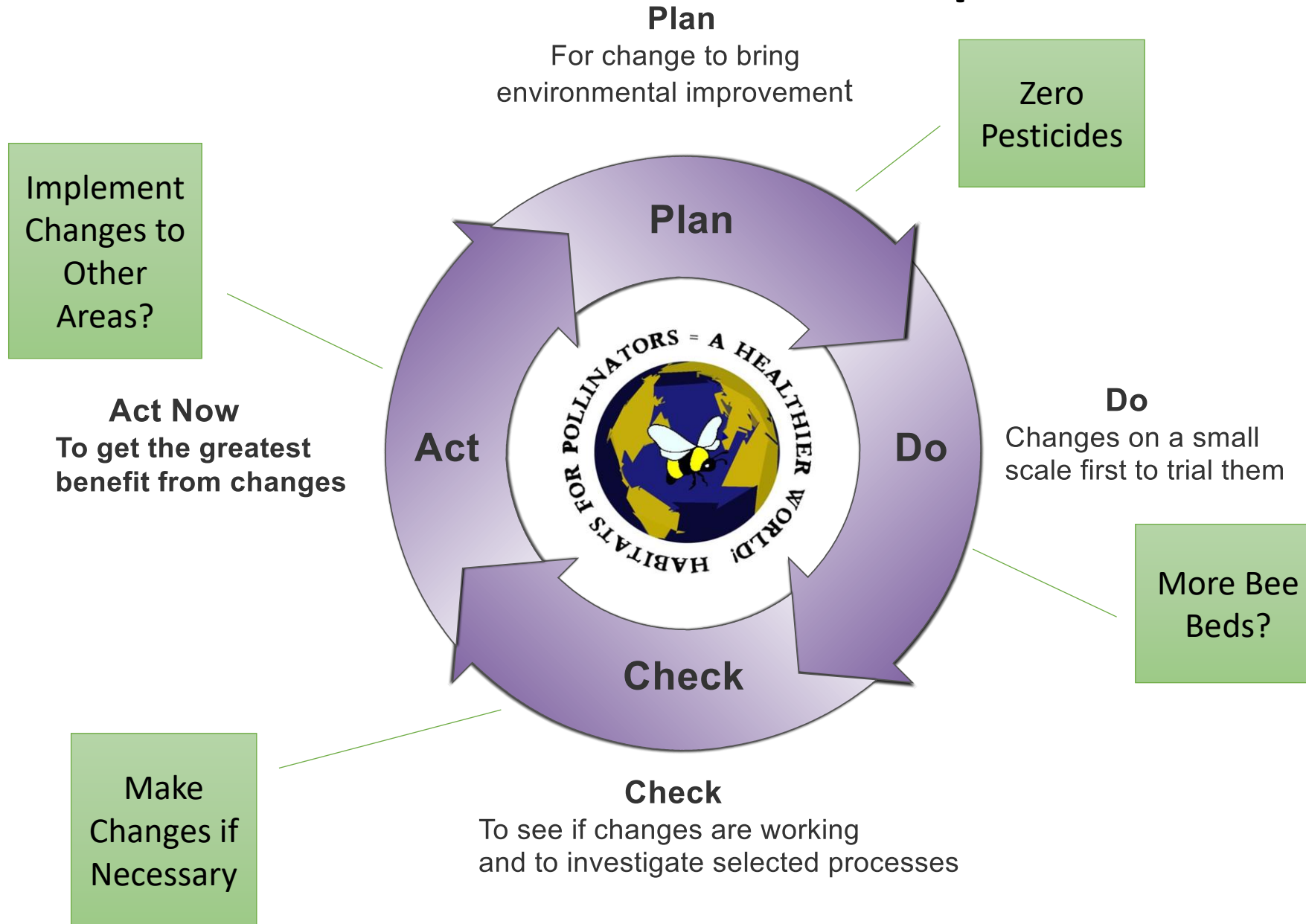
Bees' Needs Award 2016



Bees' Needs Award 2018



Future Ideas for Green Spaces





Choose Choose

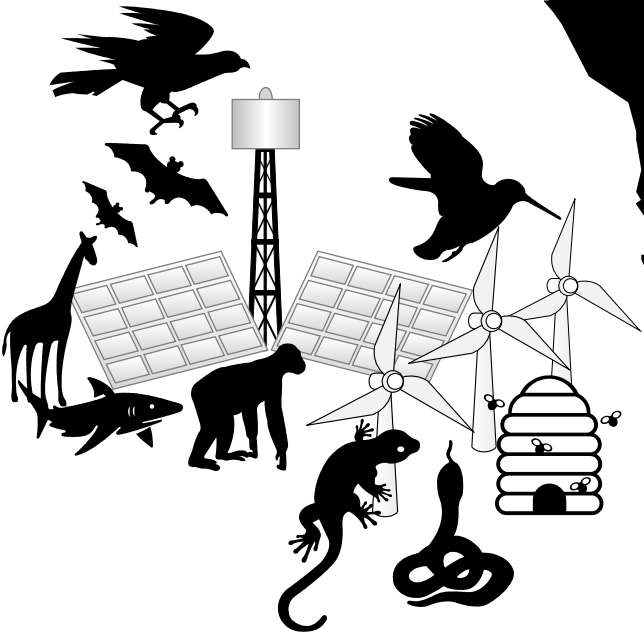


RIP
Mankind

Final Note

“ If we don’t take action, the collapse of our civilisation and extinction of much of the natural world is on the horizon”

**Sir David Attenborough
On climate change**





Thank you