The Inner Temple Garden

Biodiversity & Sustainability Policy

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Contents

Left: Angle shades moth (*Phlogophora meticulosa)* on long grass Middle: Deadhedge in Gardener's Yard Right: Hoverfly (*Eupeodes latifasciatus*) on Oxe eye daisy.

Foreword

The Inner Temple Garden is committed to being an exemplar in its field in terms of its sustainability credentials and biodiversity contribution. Demonstrating it is possible to marry these with high horticultural aesthetic standards in a grade II historic Garden with an events programme.

This policy covers how the Garden, and its various practices relates to and impacts on the natural world. The objective is for the Garden to positively contribute to the environmental health of the City and wider, whilst reducing waste and resource input. Biodiversity refers to all the different types of life which includes the variety of plants, animals, fungi and microorganisms such as bacteria, that can be found in the Garden. [1]

Please note that there are a list of Actions throughout the document within each heading.

This is the second version of the policy which is intended as a living document. The aim is to continuously assess and update in line with new research and best practice.

[1] WWF, *What is Biodiversity* (2023). Available online: https://www.worldwildlife.org/pages/what-is-biodiversity [Accessed 07/05/2023].

Pollinators & Habitat

- Pollinators include any insect or bird that visit flowers and spread pollen. These include bees (277 species in the UK, honeybees being just one), flies (not just hoverflies), social, solitary and parasitoid wasps, butterflies, moths, lacewings and beetles.
- The RHS cites that a conservative estimate would suggest we have lost over 1500 pollinating insect species in Britain.[2]
- Pollinators have evolved over millions of years with plants, adapting their behaviour and physiology to gather and collect pollen and nectar. Some pollinators are generalists, adapting to various plant species, whilst some pollinators are specialists and forage on only a small group of specific flowers.
- Overly bred double flowers do not provide any nectar for the visiting insects as they cannot reach the pollen.
- In London and other cities, the well-meant introduction of beehives on a large scale puts a strain on the population of wild pollinators as they outnumber them and compete so efficiently for floral resources.
- Flower-rich habitats, such as meadows, are crucial to supporting pollinators by providing good sources of nectar and pollen throughout the summer, in addition to shelter and nest sites.
- Pollinating London Together is an initiative that is raising awareness of the importance of biodiversity and pollinators and their substantial recent decline. Based in London, the initiative began as a collaboration between the City of London's livery companies, first initiated in 2020 by the Worshipful Companies of Wax Chandlers and Gardeners[3]. In 2022, PLT employed entomologists from the University of Reading to survey pollinators in various locations in the City including the Inner Temple Garden. This work continues.
- A habitat is a place where an organism makes its home which meets the environmental conditions it needs to survive.[4]
- Meadows and species-rich grasslands are habitats that support a very large range of organism including wildflowers, fungi, bees, flies, beetles, spiders, moths, butterflies, reptiles, amphibians, small mammals, bats and birds. Only 2% of the meadows that existed in the 1930s currently remain, with nearly 7.5 million acres of wildflower meadow having been lost so far.[5]
- Deadwood provides habitat for approximately 20% of Britain's woodland insect fauna. Logs and standing dead timber provides food for wood-boring insects that in turn are eaten by woodpeckers and treecreepers. [6] Dead wood in standing trees (still upright) play host to slightly different invertebrates from fallen dead wood laying on the ground.

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[2] RHS, *Pollinators: Decline in numbers* (2023). Available online: https://www.rhs.org.uk/wildlife/pollinators-decline-in-numbers [Accessed 08/05/2023].

[4] National Geographic, *Habitat* (2023). Available online: https://education.nationalgeographic.org/resource/habitat/ [Accessed 08/05/2023].

[5] Save our Magnificent Meadow, *Importance of Meadows* (2024): Available online: http://www.magnificentmeadows.org.uk/conserve-restore/importance-of-meadows [Accessed 07/03/2024].

[6] RHS, *Wildlife in Gardens* (2024) Available online: https://www.rhs.org.uk/wildlife/in-gardens [Accessed 07/03/2024].

- Gardens can provide a wide range of habitats if designed and managed appropriately. Habitats can be provided through trees, shrubs, hedges, meadows, mixed herbaceous borders and providing access to water. Shifts in maintenance regimes such as leaving standing seed heads for birds and insects then cutting back high in early spring to allow hollow stems and foliage to provide a home for overwintering invertebrates can make a large difference to the habitat provided.

ACTIONS:

1. Continue to work with the City of London (COL) Biodiversity Action Plan (BAP) and contribute as it is replaced by a Local Nature Recovery Strategy (LNRC). Assist in monitoring research such as that being conducted by Imperial College London in collaboration with COL into bird and bat species within the City.
2. Conduct a biodiversity audit of the Garden to create a baseline from which to assess going forward.
3. Continue to work with Pollinating London Together (PLT) to monitor pollinators in the Garden, this includes site visits from their entomologists, in addition to the monitoring and logging of moths, butterflies and other pollinators by the Garden team**.**
4. To implement any recommendations from PLT to adjust planting and practices to help support pollinators further.
5. Continue to look to best practice at other sites such as Knepp, Horniman and John Little's Grass Roof Company to build knowledge and techniques to implement. This to be based on evidence and implemented in a manner that is appropriate to the surrounds.
6. Not to install beehives as these adversely affect the wild bee populations.
7. Assess current plant collection for its contribution to pollinators, reducing the amount of sterile or double flowers used in the Garden without completely eliminating if they have significant other benefits for the Garden.
8. Build on the current plant collection, editing to have a wide range of plants that support the various pollinators (and other species i.e birds) at each stage of their life cycle, not only nectar but also host plants and creating habitat in meadows and other forms.
9. Build wider public awareness of biodiversity & the plight of pollinators through appropriate signage, tours and articles.
10. Leave plants with seedheads standing over winter. When cutting back, cut high leaving some standing twigs, cut back areas of the Garden in stages so habitat remains. Likewise with cutting meadow and long grass areas, stagger the cutting of these area (where possible using traditional non mechanical methods) to ensure plants and insects have completed lifecycles.
11. Continue to convert areas of bare ground under trees and lawn that are not utilised for the event season or recreation into meadow/long grass areas. Monitor and develop existing areas of meadow to increase plant diversity. Where appropriate raise cutting height of lawn.
12. Develop more areas for log piles, dead hedge and where possible allow standing tree stumps when trees need to be removed.
13. Do not install Garden lighting.
14. Look for areas to add shallow water for wildlife to drink and bathe in the form of bird baths and if possible, some form of wildlife pond.

Pesticides (including Herbicides) and Fertilisers

- Pesticides (alongside other factors) have been linked to declining 'bees, pollinators, beneficial insects, bird, mammals and aquatic animals', in addition to the 'poisoning of soil microorganism and earthworms leading to soil infertility'. [7] There are also human health risks with research being carried out in the links to pesticide exposure and cancers.
- The scale of pesticide, herbicide and fertiliser use at the Inner Temple has been reduced significantly in recent years, instead looking to plant selection and cultural controls as an alternative, though in some instances residual herbicides on path edges have still been employed up until 2023.

ACTIONS

15. Pesticides and herbicides are not to be used in the Garden or other horticultural areas of the estate unless in very specific circumstances where all other methods have been explored. Instances of this may include a pest outbreak threatening the historic trees such as Plane Wilt or the control of Japanese Knotweed (*Fallopia japonica*).
16. To use up any current stock of fertilisers, as required and in a safe and appropriate manner. When stock is finished, do not re-order and instead employ new working methods (such as physical) or organic replacements.

[7] Pesticide Action Network UK, *Key Issues* (2017). Available online: https://www.pan-uk.org/key-issues/ [Accessed 08/05/2023].

Resources (including water) and Waste (including plant material)

- For the Garden to be sustainable, it needs to control the resources inputted, assess the benefits, and reduce any waste (including green waste).
- Green waste has traditionally been composted off site and equates to roughly 186 cubic meters. A large proportion was from Plane tree leaves which also went into the green waste skips. In autumn 2024, a leaf pen was constructed in the garden yard to process leaves into leaf mould on site and so diverting them from the green waste skips going off site. Currently, when homemade compost is required for the Garden, this is supplied for free from another garden (local to the Inn) that produces more than it needs or alternatively bought in from an appropriate supplier.
- The amount of green waste that is produced by the Garden is something that can continue to be reduced by assessing planting choices and methods, for instance the move away from large scale bedding displays which are dug up twice a year creating large amounts of green waste has already reduced significantly the amount of green waste.
- Experiments by the previous Head Gardener to shred plane leaves and spread (before turning to leaf mould) as a thick mulch on the beds unfortunately failed. The shredded plane leaf litter created an impenetrable layer for water to get through the soil and the planting suffered.
- The Garden has been using peat free compost for the past 5 years due to the environmental considerations associated with peat.
- Over a year the Garden uses in the region of 120 bags (50 litres) of various types of compost mixes. This is in addition to saving spent compost from pots and reusing in appropriate situations. Unfortunately, the bought in compost comes in black plastic and there is not currently an alternative on the market though this will continue to be monitored.
- Over the past four years the Garden has extended its irrigation system which comes from a bore hole to cover all the beds bar one and areas of lawn. Therefore, the Garden irrigation can now take place at appropriate times at night which reduces wastage to evaporation. In addition to reducing significantly mains treated water being used on the Garden. Around 60% of all mains water is recycled which requires a lot of energy to clean to achieve safe drinking water standards. Though not horticultural, an example of a medium to large sized manufacturing business uses around 80,000m3 of mains water annually which results in an average carbon footprint of 24,500kg CO2e**.** With a borehole this business could reduce its carbon footprint by 22,000kgCO2e per annum, which is a 90% carbon reduction.[8]
- Considerations for the resources (transport, plastic, compost etc) that goes into buying in new plants, bulbs and all other goods for the Garden needs to be evaluated.
- The Garden has increased the amount of electric powered tools which includes hedge cutters, strimmers, pedestrian mower and hand blowers. The tractor is diesel, the ride on mower is petrol, in addition to a Hayter pedestrian mower which is also petrol and backpack blowers which are two stroke (petrol). Research has been conducted into electric alternatives to the back pack blowers and ride-on mower, though unfortunately the battery length and power is not yet comparable.

[8] Inenco, *Boreholes are far from Boring* (2021) Available online: https://www.inenco.com/insight/blog/boreholes-are-far-from-boring/ [Accessed 07/03/2024].

ACTIONS

17. Continue to evaluate the garden planting choices in terms of the amount of material it generates. Continue to evaluate the amount of seasonal bulbs and bedding which are for one year only, balancing small amounts of 'showy' possibly double flowers that are still popular with the public (that may not have biodiversity benefits) with significant amounts of planting that is of benefit .
18. When sourcing plants, where possible buy bare root or 9cm and from reputable peat free UK suppliers.
19. Create areas for deadhedges for branches and woody material in a manner that does not compromise the aesthetics of the Garden, creating habitats and reducing the amount of green waste being taken off site.
20. Evaluate the possibility of Reducing the number of green waste skips being taken off site for composting further, by creating areas for own composting and creating leaf mould on site. This in turn will reduce the reliance on bringing in bagged (in plastic) compost mixes and garden compost from the other Garden that is local to the Inn and produces more than can use. Due to space restrictions (and pernicious weeds) a number of green skips will always be necessary.
21. To keep on top of developments and move to electric equipment, with a long term aim for the need for petrol or diesel to be removed, when the market has comparable products to the fuel equivalents.
22. Continue to reuse plastic plant pots, look into alternatives to plastic, recycle and continuously evaluate methods in order to reduce waste and resource input.

Climate, Pollution and Pest/Disease.

- London's summers are expected to become hotter and drier and by the middle of the century, an average summer will be a fifth drier and an average summer's day 3°C warmer. Heatwaves will be more likely and be even hotter. Winters, by contrast, will be milder, but wetter, with very heavy rainfall periods becoming more frequent.[9]
- Droughts are expected to get longer and occur more frequently, with double the number of days of drought predicted in 2050 compared to 2020.[10]
- Though the Greater London Authority has extensive aims for reducing pollution and clean air in the City, it will be mindful to ensure a diverse planting that can cope and filter pollution levels in the City, in the same vein that the London Planes were selected previously for this purpose.
- There continues to be an increased risk from pests and diseases which would have a significant impact on mature trees which would then result in a major decline in carbon capture, air quality and habitat if they were to be lost. Currently the Garden has a management strategy for Massaria disease[11] on the Plane Trees which includes inspections three times a year. If Plane Tree Wilt[12] hit from the continent, then that could be dire for the Garden's tree collection which is heavily dependent on the historic Plane Trees.

ACTIONS

23. Protect existing plant collection including the trees by ensuring best practice in terms of plant health and ongoing management.
24. Alter planting choices across Garden and estate to increase diversity and reflect changing climate with plants selected consider pests, diseases and for the adaptability to higher temperatures and drought, in addition to wetter winters.

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[9] Mayor London, *Climate Change and Weather* (2024) Available online: https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/climate-change/climate-change-and-weather#:~:text=Adapting%20to%20a%20changing%20climate,-Our%20climate%20is&text=We%20expect%20London's%20summers%20to,likely%20and%20be%20even%20hotter [Accessed 07/03/2024].

[10] Mayor London, *Climate Resilience* (2024) Available online: https://www.cityoflondon.gov.uk/services/environmental-health/climate-action/climate-resilience [Accessed 07/03/2024].

[11] Forestry Commission, *Massaria Disease* (2024) Available online: https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/massaria-disease-splanchnonema-platani/ [Accessed 07/03/2024].

[12] Woodland Trust, *Plane Wilt* (2024) Available online: https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/tree-pests-and-diseases/key-tree-pests-and-diseases/plane-wilt/ [Accessed 07/03/2024].

25. Monitor water use (including from bore hole) with the aim of reducing the amount of water usage to the absolute minimum required whilst maintaining the diverse planting with a biodiversity focus. Though the Inn has the licence to use water from the bore hole, in extreme summers the Garden would allow the lawn to go off to show responsible usage of resources in line with other public gardens, though without creating long term issues that could cause greater resource usage in the future i.e if the Garden then needed to re-turf an area this would require more resource and water in the long term than keeping an area going with the minimum water required through the drought.
26. To record reading from the weather station and begin getting accurate data of the climate of the Garden and how it is changing. Keep up to date with current long term weather predictions for the City and the implications.
27. Formulate 'The Inner Temple Tree Masterplan: current procedures for safeguarding and future proofing the tree collection'