

Biodiversity monitoring summary 2020/2021

MAY 2021

London office, 1 Angel Lane

Produced by Mark Patterson, Api:cultural

In partnership with St Mary's Secret Garden Charity



Nomura's London office is located in the heart of the City's financial district. Despite its urban location, Nomura's London office is home to a range of habitats.

The year was marked by the warmest spring on record with temperatures exceeding 20 Celsius in February 2020. The warm weather produced a flurry of spring migrating birds including a number of wheatears, followed by a noticeable spring drought, which placed considerable water stress on the plant life on the roof. Even drought hardy wildflowers began to display signs of extreme stress.



The west side of the roof in June prior to being irrigated. The grass is tinder dry and even the sedum is starting to wither.

In June, the decision was taken to switch on the irrigation system over concerns that the seeds and plants introduced to the roof the previous autumn would fail with the potential risk of biodiversity loss and investment in resources wasted if allowed to perish. There was also concern that the dryness of the roof might present a fire hazard as the vegetation had become tinder dry. The irrigation provided some respite and a noticeable difference in the abundance of flowering plants and visiting pollinators observed between the two sides of the roof.



The green roof 4 weeks after being irrigated and covered in Haresfoot clover, hawks beard and cats ear flowers.

The number of rare Green Winged Orchids growing on the roof increased to 6 plants in spring of 2020. Unfortunately two of the plants failed to survive the drought however reappeared again in March 2021. Despite this loss of two previously healthy flowering plants a further 6 plants were found in April 2021 meaning at least 10 individuals of this increasingly rare plant inhabit the roof. This is the largest population in Greater London.

Following the prolonged drought the summer was marked by frequent unsettled weather, high winds and torrential rainstorms impacting the moth trapping and malaise trapping could not take place to monitor invertebrates.

After initially struggling to establish due to the drought, the wildflower seed and plants introduced the previous autumn finally showed promise and many young Vipers Bugloss, Kidney Vetch and Mullein began to appear.



Green winged orchid

The extreme climatic conditions experienced on the roof this year highlights the challenges the Corporation of London faces with the onset of climate change and the need to adapt to a warming climate. Another consequence of the extreme weather throughout the year and reduced nectar availability was that our honeybees were unable survive throughout the autumn and winter without our intervention with additional feed provided & no surplus crop available for harvesting.

3 species of solitary bee and 1 species of solitary wasps colonised and used the nesting mounds installed in autumn of 2019.

In autumn the roof was also graced by a migrating Woodcock taking refuge among the solar panels on the Eastern side of the roof.



Migrating Woodcock resting & feeding on the Nomura green roof.

Covid19 restrictions meant some of our monitoring activities were restricted or limited. Disruptions in supplies of monitoring equipment caused by the pandemic also affected our ability to monitor the roof, most notably our new moth trap and malaise traps did not arrive until August and missed the more optimal months to monitor moths and day flying insects.

We were also unable to deliver most of our usual client engagement activities but we did engage volunteers from St Marys Secret Garden to undertake bulb planting in the autumn with the introduction of our hybrid gardening series across the four seasons streamed live from the St Mary's Secret Garden in Hackney in celebrations of City Giving Day. Horticulture therapy and eco-therapy has helped maintain mental wellness, healthy living and resilience whilst we remain apart, supporting participants develop valuable skills and a better understanding of the importance of biodiversity, resource efficiency and healthy eco systems that contribute to our food systems.



'Planting for pollinators' & Family Veg plot series streamed live from St Mary's Secret Garden hybrid gardening series across the four seasons

Outcomes and achievements

- City of London Biodiversity Action Plan 2016-2020; Action Plan 4: Data collection, survey and monitoring Aim: to improve monitoring and data on biodiversity in the City – wildlife records sent to GIGL and City Gardens. We are now contributing to the city of London biological monitoring working group and pollinator working group
- 159 species of Flowering Plant identified living on the roof. Several species found are species in decline nationally
- Largest colony of the near threatened Green Winged Orchid in the Greater London area with 10 individual plants found growing on the roof. These appear to be spreading since they were first discovered 4 years ago and changes to the mowing regime are encouraging them to spread further
- 3 species of Fungi



- 1 species of Fern
- 5 species of Grass
- 3 species of lichen identified – indicator species which tolerate poor air quality
- 41 invertebrate species identified down from 52 species seen the previous year
- 9 species of bee recorded in 2020 down from 16 species of Bee present in 2019. We did not however have access to the 6th floor this recording period and many of the smaller species are more frequently seen on the 6th floor
- 4 species of Butterfly recorded
- 3 species of Moth recorded – down from 7 species seen the previous year. This was despite more frequent attempts at monitoring using the new moth trap
- 5 species of Wasp including nesting bee wolfs
- 2 species of Slug and garden snail recorded
- Earth worms recorded
- 13 species of Fly – double the number recorded the previous 12 months
- 15 species of Bird using the roof
- Roof home to 2 protected species
- 9 City of London BAP priority species recorded
- 8 ecological monitoring visits made March to October
- Habitat improvement outcomes delivered
- City of London Biodiversity Action Plan 2016-2020; Action Plan 1: Open space and habitat management Aim: to protect and enhance habitats and species in the Square Mile – enhancements to habitats on the roof equal to 2500m² including provision of pollen and nectar rich plants, deadwood habitats and planting for climate change
- City of London Biodiversity Action Plan 2016-2020; Action Plan 2: The Built environment Aim: to improve green infrastructure in the built environment – Green roof enhancements and nest box installation
- 4 tonnes of additional substrate introduced
- 3 areas enhanced with deeper soil profile
- 1 large earthen bee nesting mound built
- 5 smaller bee nesting mounds built
- 5 solitary bee hotels installed including an observation box.
- Maintenance and monitoring of the 8 solitary bee nesting installations created in the previous year. 4 species found using the nesting habitats
- 3 hoverfly lagoons maintained and monitored for signs of breeding
- Installed an additional 5 bird boxes to attract black redstarts and wagtails. Evidence that Dunnocks used a nest box erected in previous years
- 1 tonne of reclaimed natural timber used to create invertebrate habitat



Bee nesting mound



Red sky at night, moth biological monitoring delight!



Biological monitoring of plants



Bird boxes & solitary bee hotels



Solitary bee nesting