

CURATING TREES AT THE ROYAL PARKS IN THE FACE OF A CHANGING CLIMATE

GREG PACKMAN – TREESCAPE CURATOR – THE ROYAL PARKS

Greenwich Park

St James's Park

Green Park

Downing Street

Victoria Tower Gardens

Regents Park

Primrose Hill

Hyde Park

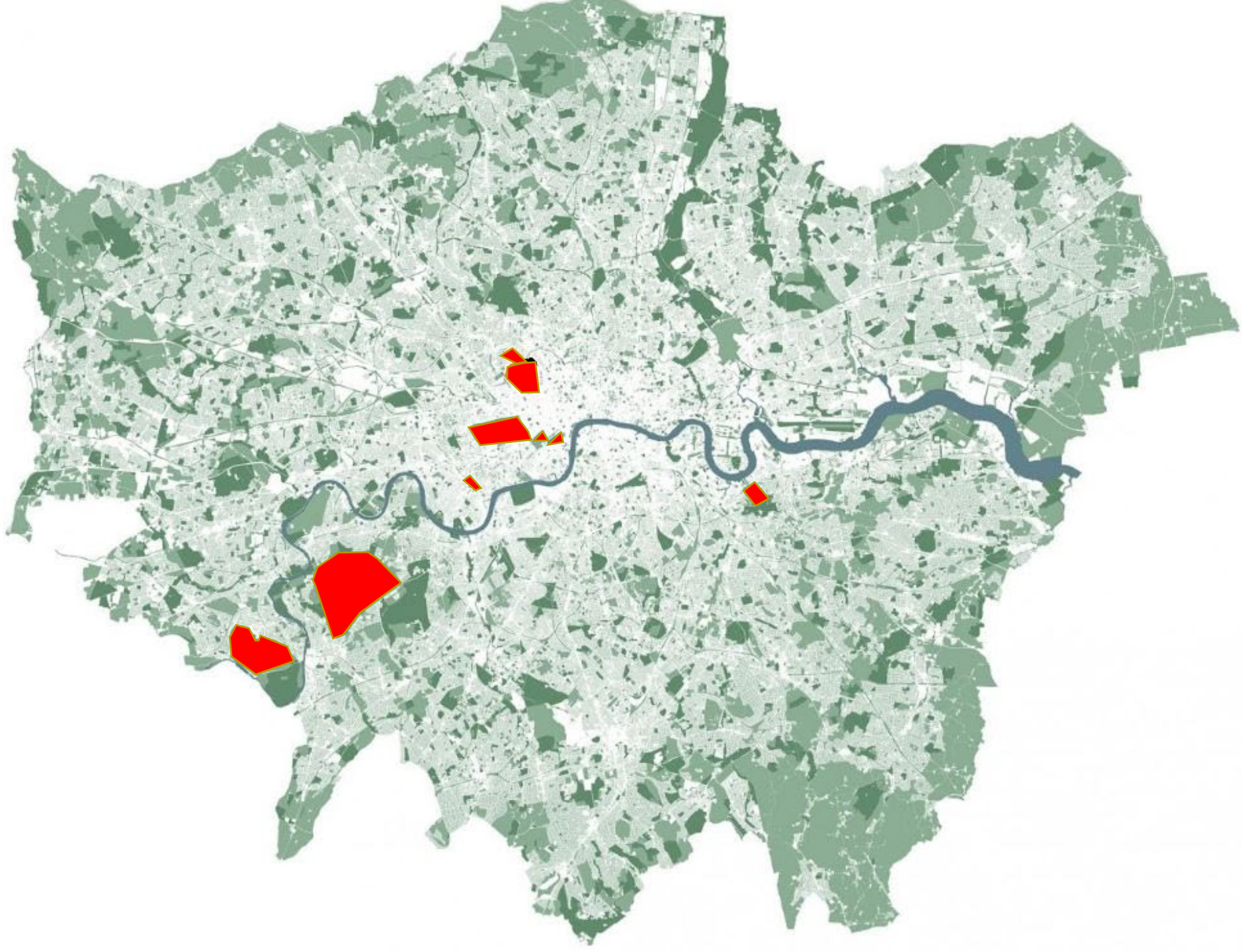
Kensington Gardens

Brompton Cemetery

Richmond Park

Bushy Park

Longford River



WHAT MY ROLE COVERS – NON-RISK RELATED TREE MANAGEMENT

SPECIES SELECTION AND SPECIES DIVERSITY

- Increasing the range of species
- Canopy structure
- Ornamental interest & collections
- Climate resilience
- Long-term species diversification
- Soil health

AESTHETIC PRUNING AND LANDSCAPE CURATION

- Avenue management and pruning
- Managing overcrowding and giving trees enough space
- Non-risk related pruning
- Managing views and vistas
- Soil health

ECOLOGY AND TREE HEALTH

- Habitat management projects
- Increasing flowering and fruiting trees
- Woodland management
- Veteran tree projects & deadwood
- Companion planting
- Soil health

DOCUMENT WRITING AND PROJECT MANAGEMENT

- Guidance notes for staff and contractors
- Policy writing
- Avenue management and tree strategies
- Individual tree projects
- Developing a tree nursery
- Soil health projects

IMPROVED TREE PLANTING AND ESTABLISHMENT

- Improved establishment rate
- Correct planting depth!!!
- Monitoring establishment and growth
- Species and establishment trials
- Planting techniques and substrates
- Soil health

FACILITATING RESEARCH

- Using TRP trees and landscape for research
- Working with different organisations
- Establishment data
- Pest and diseases
- eDNA
- Mycorrhizae research
- Soil research



ISSUES FACING THE PARKS

ST JAMES'S AND GREEN PARKS

BROMPTON CEMETERY

BUSHY PARK – WOODLAND GARDENS

OTHER PROJECTS

JULY 2026

Hyde Park

Coolest day has been 21°C

Three days below 25°C

Five days over 30°C

Average maximum 28.3°C

3.3 °C above average

0.2mm rainfall



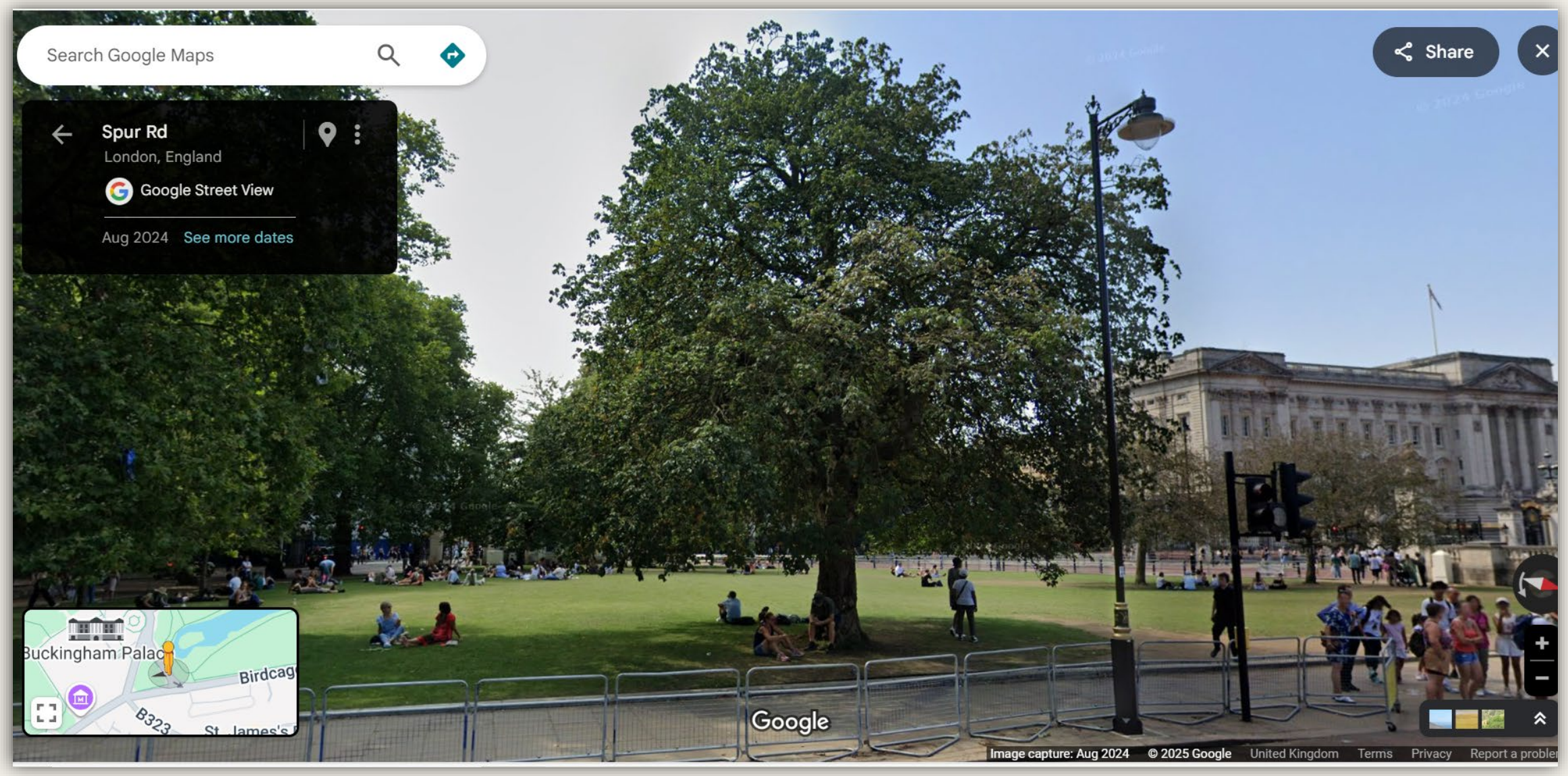


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TREE DISEASES

Experiencing a range of stem bleeds across different genera.

Acer, Aesculus, Betula, Quercus, Tilia are the most commonly affected genera.

Sampling has identified a range of bacteria and *Phytopthora,* some of which have been new to science and new to the UK.

Sweet chestnut blight *(Cryphonectria parasitica)*

Hornbeam decline *(Cryphonectria carpinicola)*

Acute oak decline

Massaria disease of plane (Splanchnonema platani)

Horse chestnut bleeding canker (Pseudomonus syringae)

Sooty bark disease *(Cryptostroma corticale)*

New diseases and tree health issues constantly being identified



NEOFUSICOCCUM PARVUM

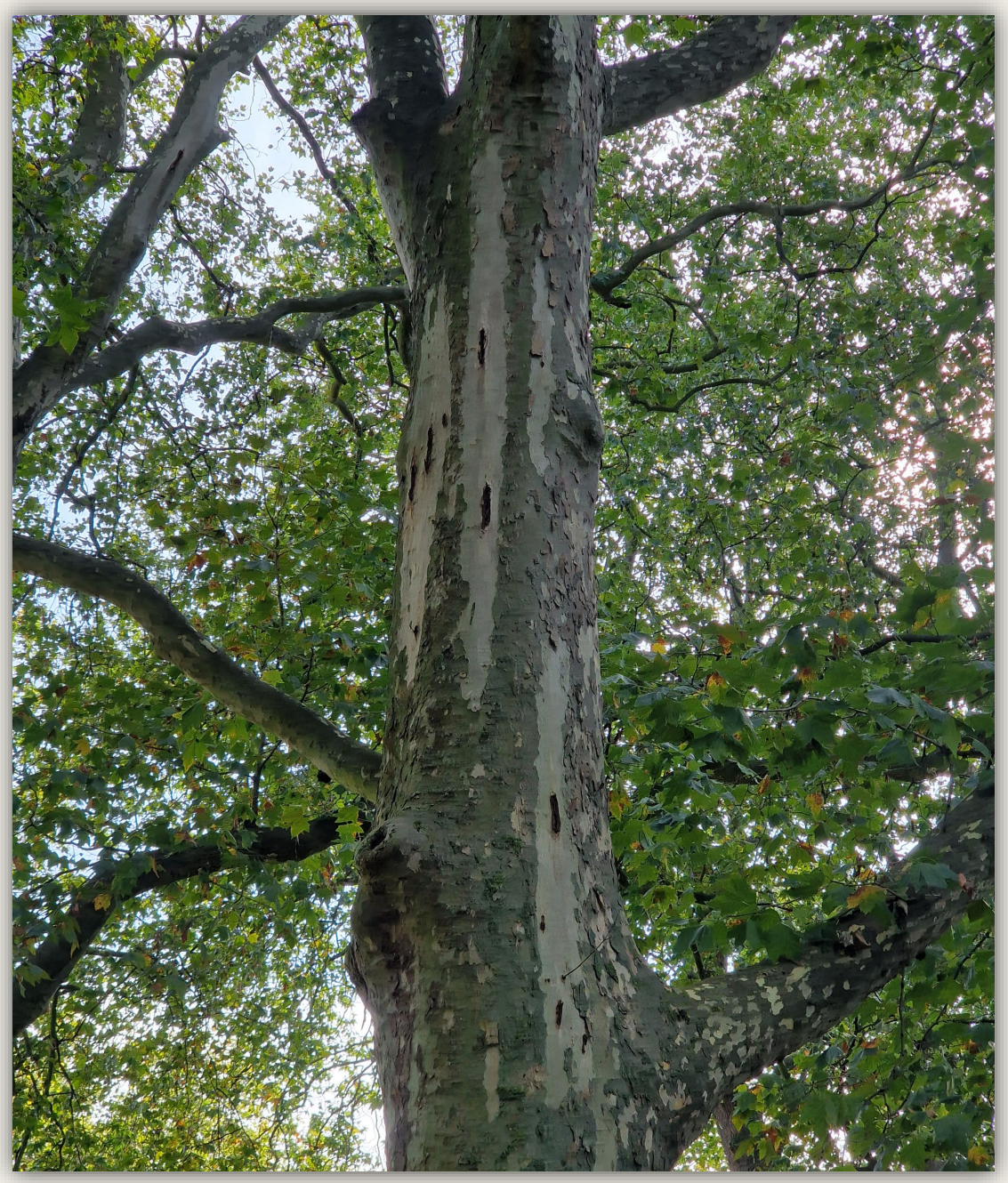
A canker forming fungi first identified in Hyde Park by James Chambers (TMA) in 2019.

Causes dieback, stem cankers, wood decay and fruit rot, typically in grapevines, mango, and *Eucalyptus.*

The cankers follow a pattern of elliptical bark loss, lesion formation, callousing then occlusion. The cankers tend to be localised and appear to follow vascular pathways.

Linked with tree fatality in central Europe although appears benign at present in the UK.

A member of *Botryosphaeriaceae* which also contains *Diplodia spp,* a genus causing damage to *Platanus spp.* across Europe.







BISCOGNIAUXIA ANCEPS?



A new decline has emerged on fastigiate hornbeam.

Characterised by wilting and browning of the canopy with black crust-like lesions on the trunk.

So far, samples have only identified *Biscogniauxia anceps* – a relative of *B. nummularia* – beech bark canker.

Associated with drought stress.

Unable to say that *B. anceps* is the cause, it has only been identified in samples.

Could just be restricted to fastigiate hornbeam cultivars.

TREE PESTS

A combined effort between TRP staff and volunteers, entomologists, DEFRA / FERA / Forest Research, Observatree and others are identifying novel invertebrate species.

Oak Processionary Moth (*Thaumetopoea processionea*)

Oriental chestnut gall wasp (*Dryocosmus kuriphilus)*

Grey Squirrels (*Sciurus carolinensis*)

London plane leaf-miner *(Phyllonorycter platani)*

Box tree caterpillar *(Cydalima perspectalis)*

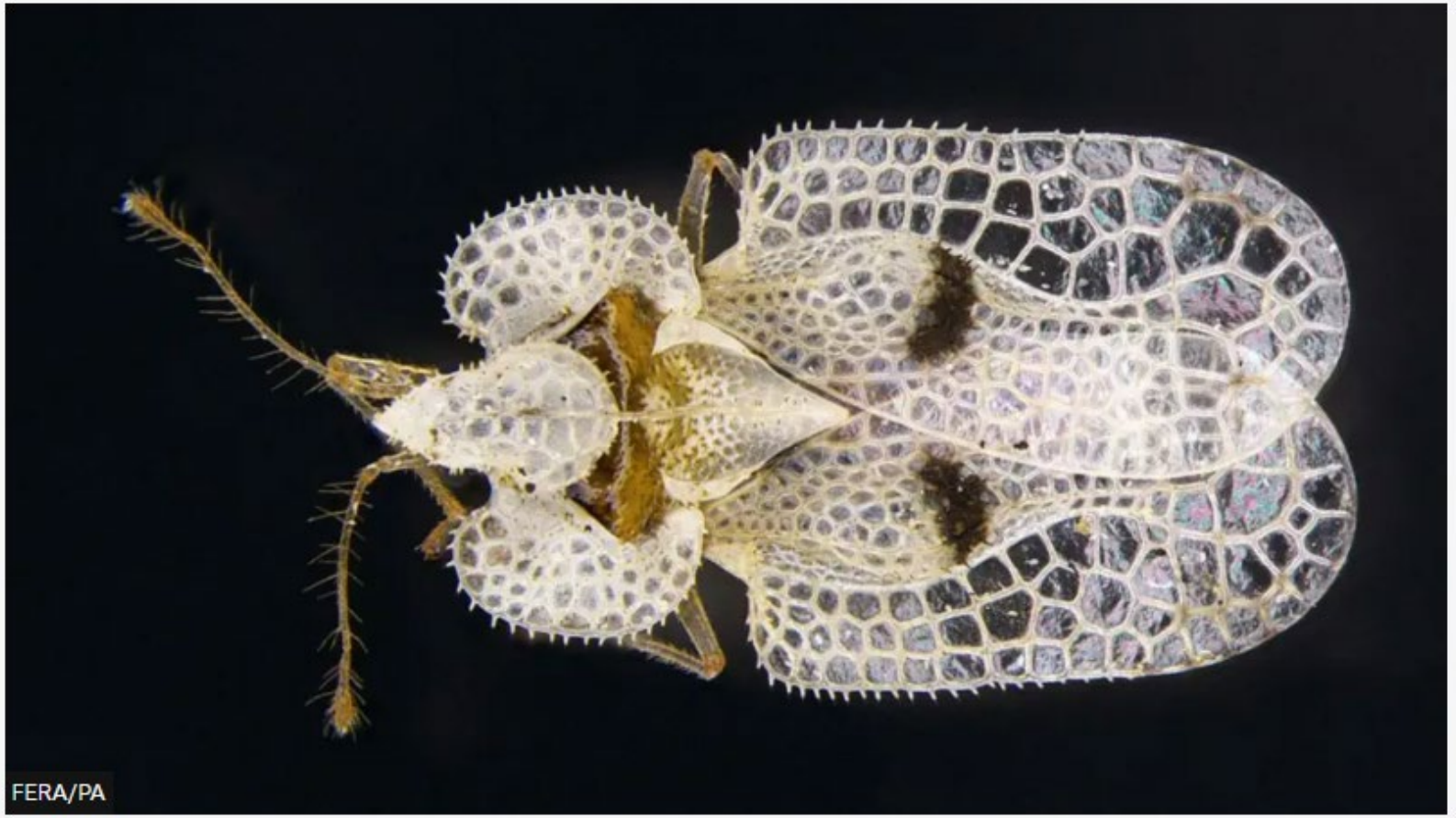
Knopper gall *(Andricus quercuscalicis)*

Holm oak scale insect *(Nidularia pulvinata)*

Involved with survey projects and working groups on new species not yet present in the UK



Hunt for invasive bug damaging London trees



The recent sighting of the plane lace bug is the first in 18 years in the UK

Jess Warren
BBC News

PA Media
News Agency

ANDRICUS MITRATUS

A new gall species to the UK identified in Hyde and Kensington Gardens in 2023

Native to eastern Europe and the Mediterranean

Green Park – 2025

Regents Park - 2026

Believed to be controlled by native parasitoids

Not a major worry at present but an example of a changing climate benefiting the establishment of novel and potentially invasive species



Photos from Chris Malumphy - Fera





TAPHRINA PRUNI – PLUM POCKET GALL





PHYLLONORYCTER PLATANI - LONDON PLANE LEAF-MINER



www.naturespot.org



ST JAMES'S & GREEN PARKS – SPECIES DIVERSIFICATION AND TREE HEALTH



ST JAMES'S AND GREEN PARKS

St James's Park is the oldest Royal Park.

23 ha park in the centre of London; sat between Buckingham Palace to the west, Downing Street and parliament to the east.

Contains The Mall at the northern end of the park.

Most famous for the pelicans, present since 1664.



Green Park (16 ha) is to the west of St James's Park; between Constitution Hill and Buckingham Palace to the south and Piccadilly to the north.

Said to have been a medieval burial ground for lepers.

ST JAMES'S PARK TREE POPULATION*

2047 trees across Green Park, St James's Park and The Mall

102 species recorded

46% tree cover

Tree Population	
P. hispanica	48%
Prunus spp.	8%
Crataegus	6.5%
Acer	6%
Tilia	4%

Platanus stats	
Share of canopy	79%
Share of leaf area	85%
Dominance value**	134
Carbon Storage	83%
Carbon Sequestration	73%

While we're not actively looking to replace *Platanus*, we are looking at long-term species diversification to reduce reliance upon a single species

This includes canopy and structural diversification in addition to species diversification



*2022 iTree Eco Inventory Report

** 6x greater than the next most dominant species – *A. pseudoplatanus*



Figure 3: Map of Species Locations.

SPECIES DIVERSIFICATION

Identifying large-canopy species that can deliver on a similar level to *Platanus.*

No other species really delivers on the scale that *Platanus* does – actually kind of helpful as it should lead to greater species diversity!

Broken down into large-scale avenue replacements and individual replacements across the parks when they naturally decline or die.

Aiming for structural diversity by introducing more shrubs and small to mid-canopy species. Increasing the range of evergreen and coniferous species.

Developing a canopy assessment model to project increase and decline.

Diversification away from flowering cherry while increasing the range of fruit trees.

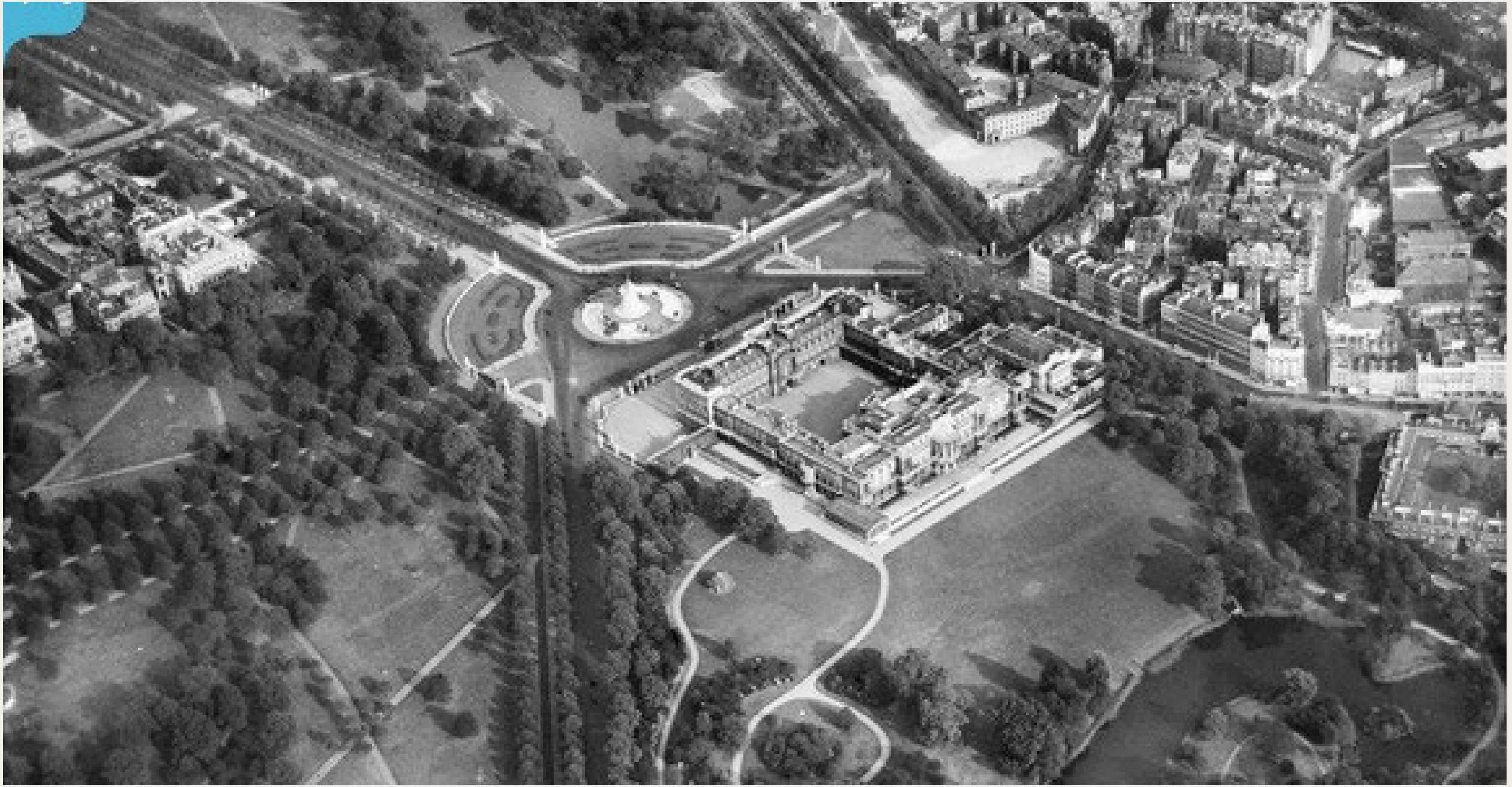
Research into *Platanus x hispanica* clone types for more informed and strategic use of *Platanus* where we continue to plant them.



WWW.BRITAINFROMABOVE.ORG.UK

VIEW ACROSS BUCKINGHAM PALACE INTO GREEN PARK -1921

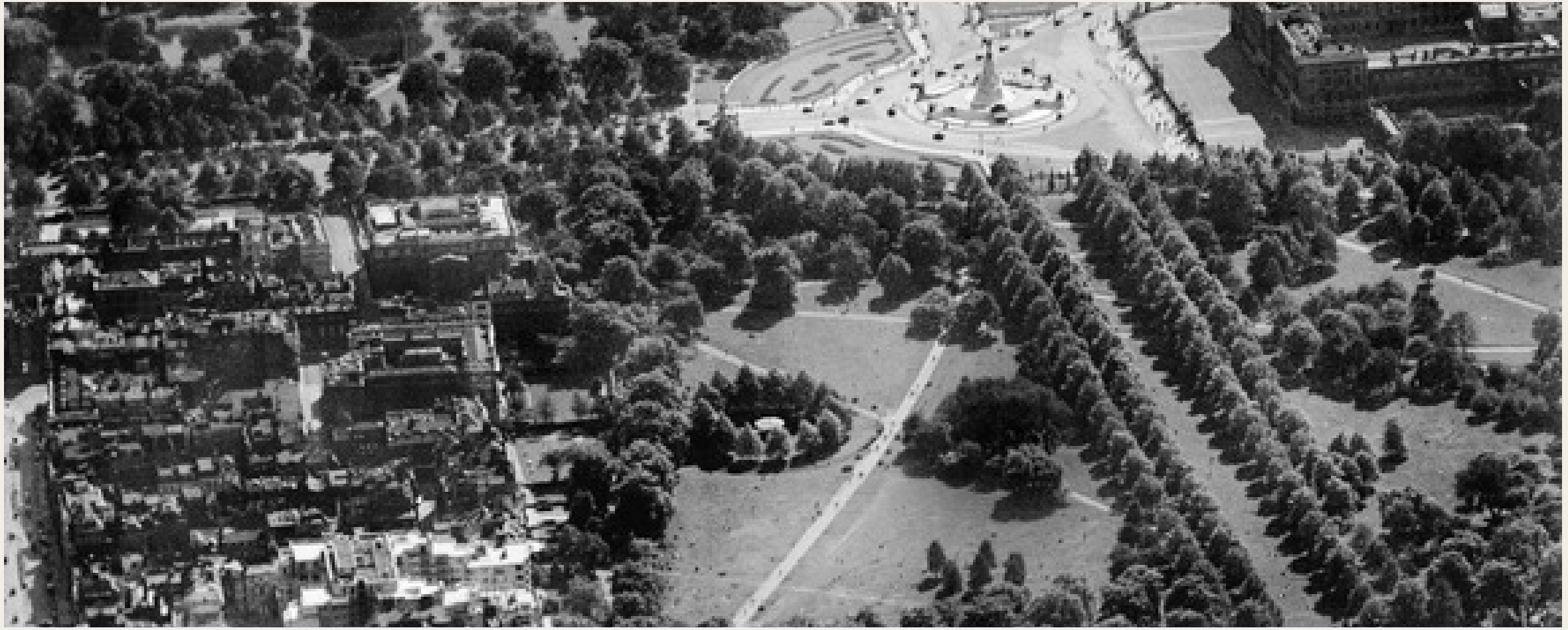




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BRITAIN FROM ABOVE -1928

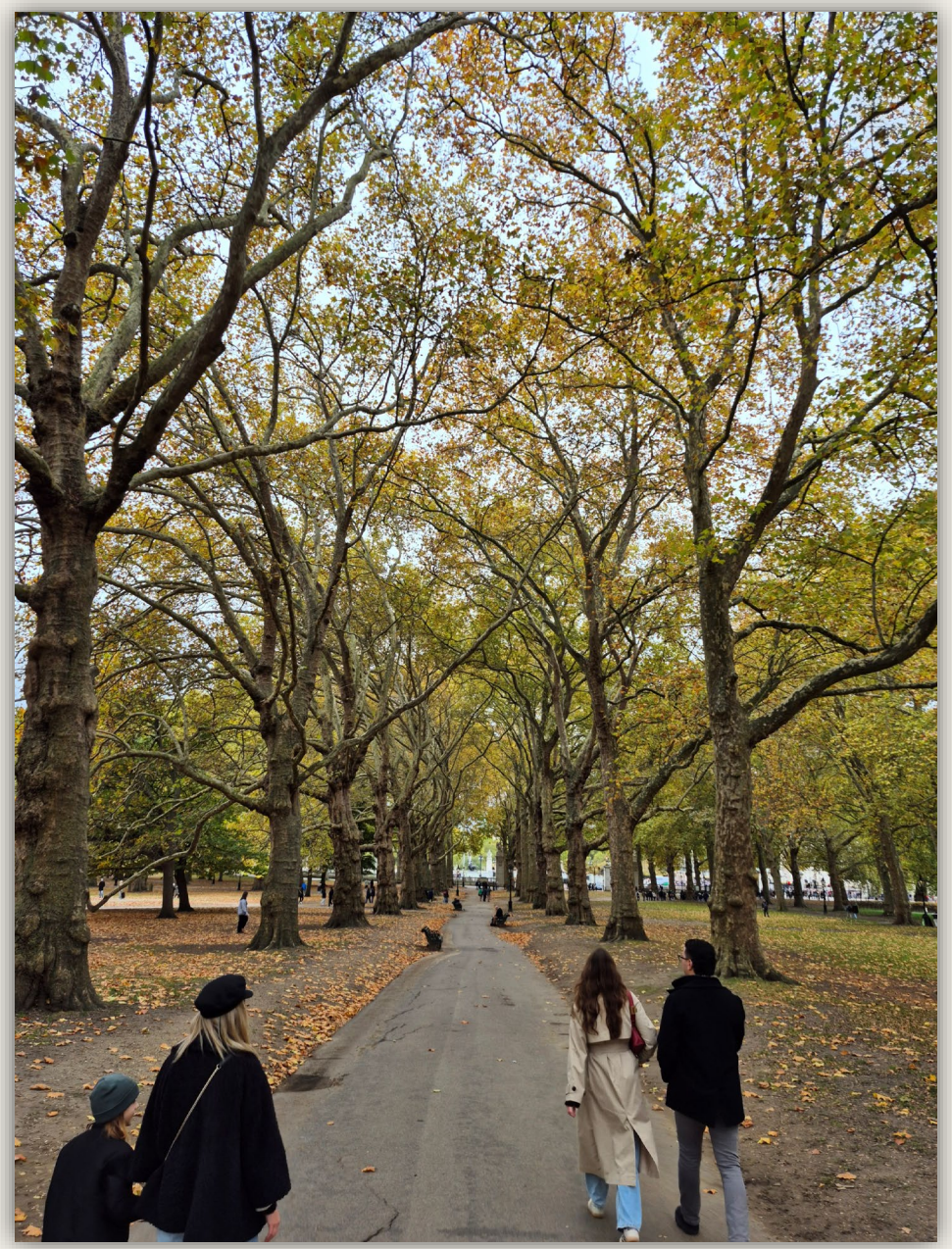
BRITAIN FROM ABOVE -1938



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‘Westminster’ or ‘Acerifolia’ clone – Parkland tree



‘Pyramidalis’ – For avenues and street trees

SPECIES DIVERSIFICATION

Large canopy trees:

Acer monspessulanum (Montpellier maple)

Acer velutinum (Persian maple)

Alnus x spaethii (Spaeth's alder)

Carya illinoinensis (Pecan)

Calocedrus decurrens (Incense cedar)

Catalpa speciosa (Western Catalpa)

Fagus orientalis (Oriental beech)

Fraxinus pennsylvanica (Green Ash)

Ginkgo Biloba (Ginkgo)

Juglans nigra (Black walnut)

Liriodendron chinense & tulipifera (Chinese & American tulip tree)

Pinus halepensis (Aleppo pine)

Quercus frainetto (Hungarian oak)

Quercus x warei & Quercus x bimundorum

Taxodium spp. (Swamp cypress)

Ulmuss spp. (Disease resistant elms)

Zelkova carpinifolia (Caucasian elm)



Acer velutinum at Wandsworth Common

SPECIES DIVERSIFICATION

Small to Medium canopy trees:

Acer cissifolium (Ivy-leaved maple)
Acer obtusifolium (Syrian maple)
Acer sempervirens (Cretan maple)
Aesculus parviflora (Bottlebrush buckeye)
Albizia jullibrissin (Persian silk tree)
Celtis spp. (Nettle Tree / Hackberry)
Cercis spp. (Judas tree & red buds)
Cormus domestica (True service)
Diospyros spp. (Persimmon)
Kalopanax septemlobus (Castor oil tree)
Luma apiculata (Chilean myrtle)
Mespilus germanica (Medlar)
Morus spp. (Mulberry)
Phillyrea latifolia (Green olive)
Prunus dulcis (Almond)
Sorbus ulleungensis 'Olympic Flame'
Tetradium daniellii (Bee-bee tree)
Ziziphus jujuba (Chinese date)



Acer obtusifolium – Trees & Shrubs Online

CERCIS CANADENSIS – EASTERN RED BUD

Perhaps most commonly seen as ‘Forest Pansy’.

Large shrub / small tree covering a vast range across North and Central America.

Three subspecies: *subsp. canadensis; mexicana; texensis* and a large range of cultivars offer increased drought tolerance, resilience and ornamental interest.

More resilient alternative to flowering cherry; cauliflorous flowering has a different visual impact.

C. siliquastrum and *C. chinensis* also fantastic.



‘Royal White’



Distribution map from Wikipedia

SOIL HEALTH

St James's and Green Parks have in the region of 30,000,000 visitors per year.

Major events such as the London Marathon, ceremonial events, state visits, and others bring in tens or hundreds of thousands of people per event, putting significant pressure on the park.

Major soil compaction across the parks due to visitor pressures in addition to nutrient depletion due to management such as continual mowing and leaf removal.

Very low effective rainfall leads to surface water runoff and poor soil infiltration due to compaction.

Developing ways to improve soil structure and health.



London Marathon

SOIL INVESTIGATION – BUILDING A BASELINE TO GUIDE SOIL MANAGEMENT

Line Item
TOPSOIL SAMPLES
Bio001 — Basic Biology Moisture content, Active & Total Bacteria, Active & Total Fungi, Fungi hyphal diameter, Organism ratios, Protozoa (no. & by type), Potential Biomass Nitrogen
Chem001 — Basic Chemistry pH, EC ($CaCO_3$), Organic Matter (LOI), Soluble P (Modified Morgans), Exchangeable P, Ca, Cu, Zn, Fe, Mn, S, B (Mehlich III), Base Saturation Ca/K/Mg/Na, CEC, Ca:Mg ratio (Ammonium Acetate)
Phys003 — In-Field Bulk Density Moisture content (%) & Bulk Density (g/L) from cylinder of known volume
SUBSOIL SAMPLES
Chem001 — Basic Chemistry pH, EC ($CaCO_3$), Organic Matter (LOI), Soluble P (Modified Morgans), Exchangeable P, Ca, Cu, Zn, Fe, Mn, S, B (Mehlich III), Base Saturation Ca/K/Mg/Na, CEC, Ca:Mg ratio (Ammonium Acetate)
MYCORRHIZAL ROOT ANALYSIS
Bio007 — Mycorrhizae Colonisation Endo or Ecto Mycorrhizae colonisation (%). Priced per tree — fully scalable. We'd recommend targeting representative species rather than a fixed number; happy to discuss which trees you have in mind.

Large-scale mulching and leaf retention now in place over the autumn and winter

Storing more woodchip on site to use with mulch and new plantings

Soil decompaction framework

Species selection looking at root exudations, arbuscular mycorrhizae associations, glomalin production, soil aggregation, species that feed other species

Using vegetation and fungi to revitalise the soil

BROMPTON CEMETERY – THE LOSS OF *QUERCUS ILEX* AND REPLANTING



BROMPTON CEMETERY

One of the ‘Magnificent Sevent’ Victorian Cemeteries in London.

West London on the boundary between Kensington & Chelsea and Hammersmith & Fulham.

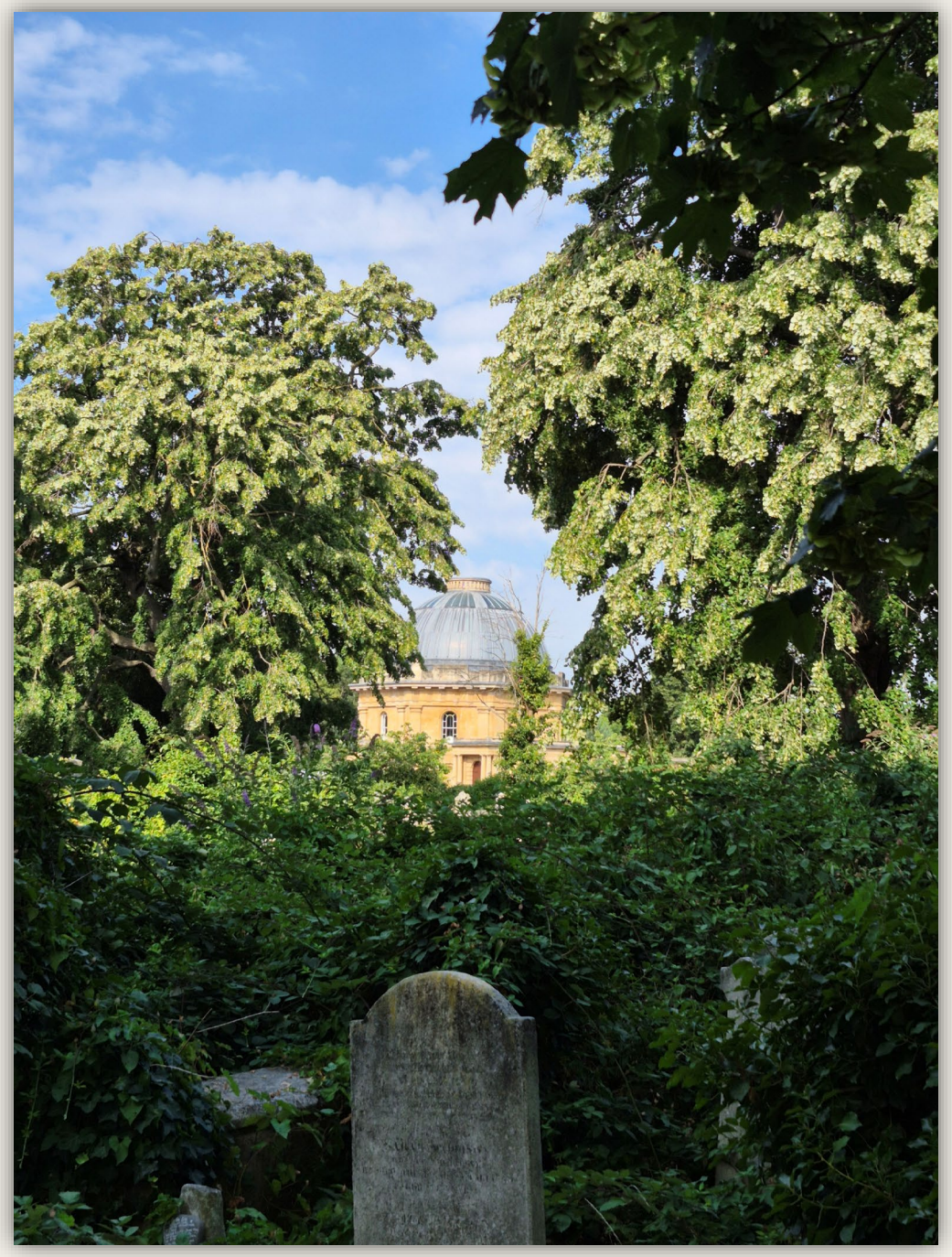
Opened in 1840, one of the UK’s oldest garden cemeteries.

16 ha, rectangular cemetery designed to resemble an outdoor cathedral.

Planting by John Claudius Loudon.

Central avenue of *Tilia* x *europaea*

Burial place of Emmeline Pankhurst



DECLINING *QUERCUS ILEX* AND THE DISCOVERY OF *NIDULARIA PULVINATA*

From 2021/22 the canopy of some Q. *ilex* were in noticeable decline – browning foliage, not typical of seasonal leaf change or impact of leaf-miner.

Canopy decline became distinctly worse from 2024 leading to the discovery of a scale insect. Tree Alert led to identification of *Nidularia pulvinata*.

First case in the UK, believed to have arrived on imported funeral wreaths.

Government advice to remove **all** Q. *ilex* within the cemetery. Forty-three mature trees removed in early 2026.

Major canopy and character loss of cemetery.









REPLANTING BROMPTON CEMETERY

The loss of Q. *ilex* has created a chance to reimagine the canopy of Brompton Cemetery. Q. *ilex* has some positives but several negatives.

Given us greater capacity for species and canopy diversification. Focusing on dappled shade canopy species such as *Juglans nigra, Ulmus spp.*

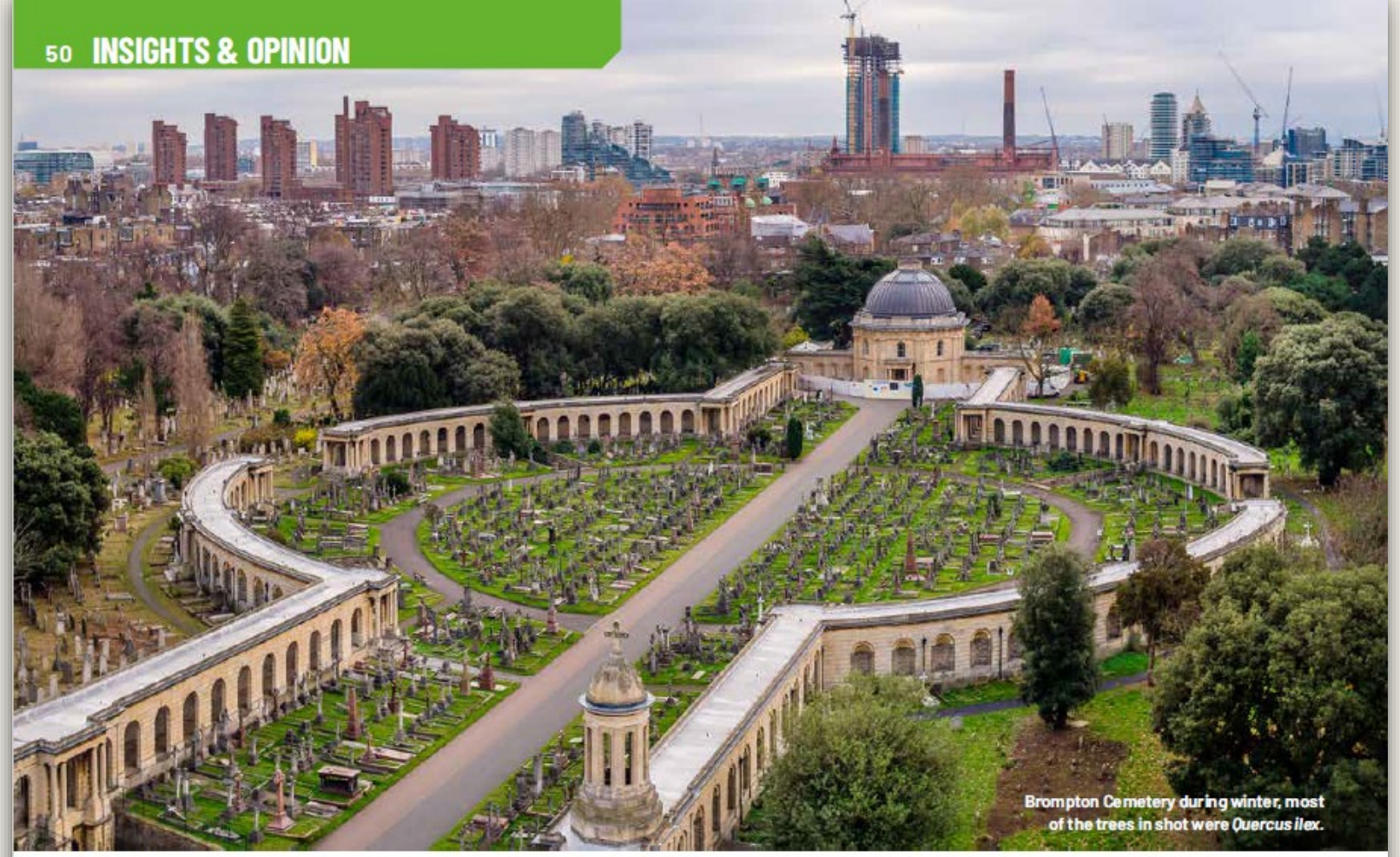
Increasing lower and mid-canopy trees as well as grassland habitats; flowering trees and a national collection of *Arbutus.*

Other species include *Meliosma veitchiorum, Polylepsis australis, Crataegus tanacetifolia, Corylus colurna, Pinus halapensis, P. greggii, Sequoiadendron giganteum, Pterocarya stenoptera* and others.






SONY



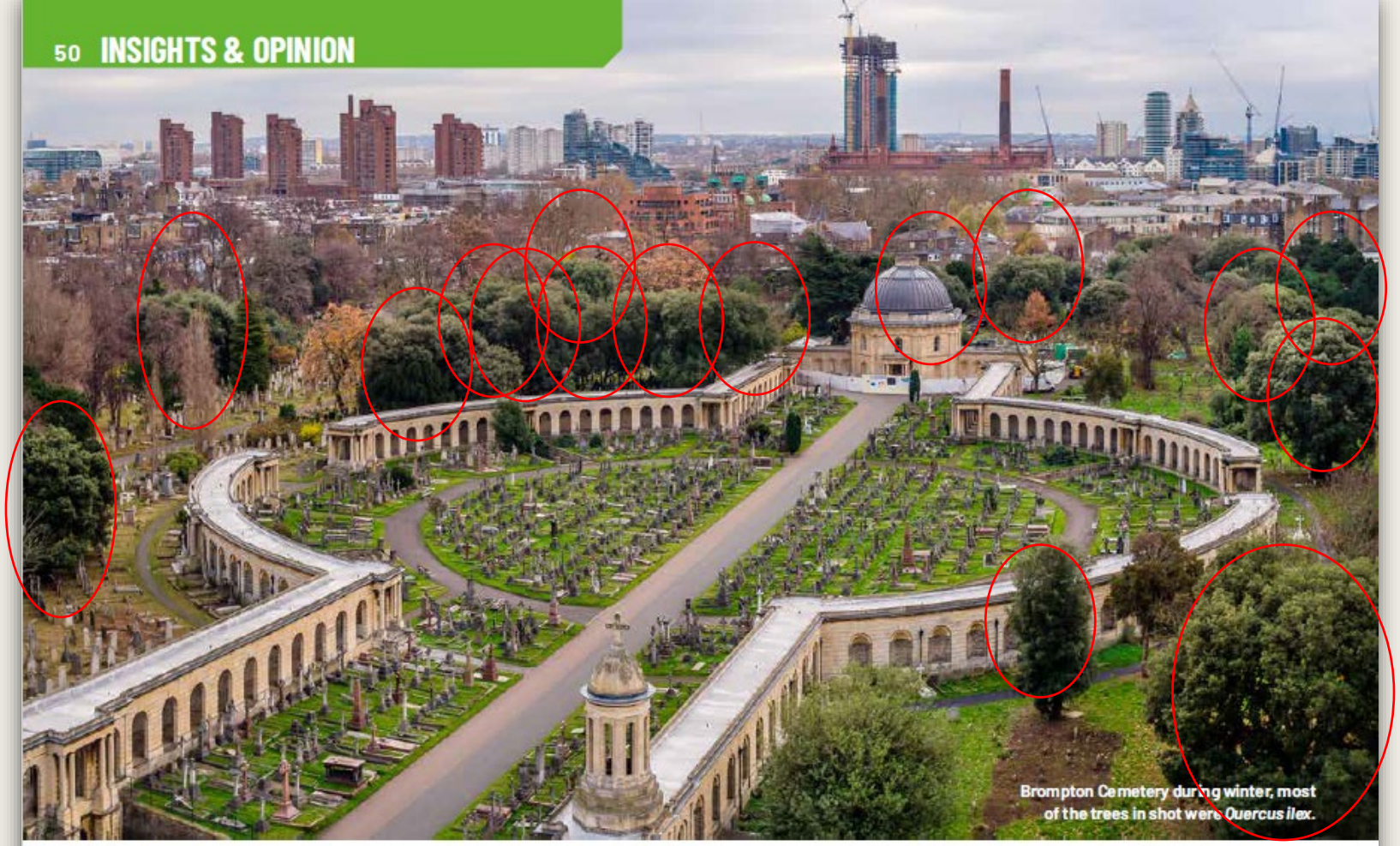
Brompton Cemetery during winter, most of the trees in shot were *Quercus ilex*.

Brompton Cemetery: replanting after the loss of holm oak

Greg Packman

Loudon. Opened in 1840, it is one of Britain's oldest garden cemeteries.

The *Quercus ilex* at Brompton Cemetery formed a significant part of the treescape. Although there were only around 40 mature



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BUSHY PARK – THE WOODLAND GARDENS – OAK HEALTH



THE WOODLAND GARDENS

Bushy Park – second largest Royal Park at 445 ha.

An enclosed deer park with extensive areas of grassland, woodland and open-grown trees.

Southwest London near Richmond Park and Hampton Court Palace.

The Woodland Gardens is a smaller (24 ha), closed woodland garden that is one of the main focal points and ornamental areas of the park.

Started life as a plantation before a park superintendent wanted it as his back garden and designed it into an ornamental area.

Has a wide range of unusual ornamental trees amongst a canopy of *Quercus robur.*

Most of the park is on sandy, acidic soil.



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OAK HEALTH

Population of *Quercus robur* is in substantial decline.

Linked with acute oak decline in addition to compacted soil, poor soil health and poor ground cover. Exacerbated by drought stress.

Rapidly losing the canopy that defines the woodland gardens, six died so far in 2026 with a further ten close to death.

The canopy is declining faster than we can grow new trees!

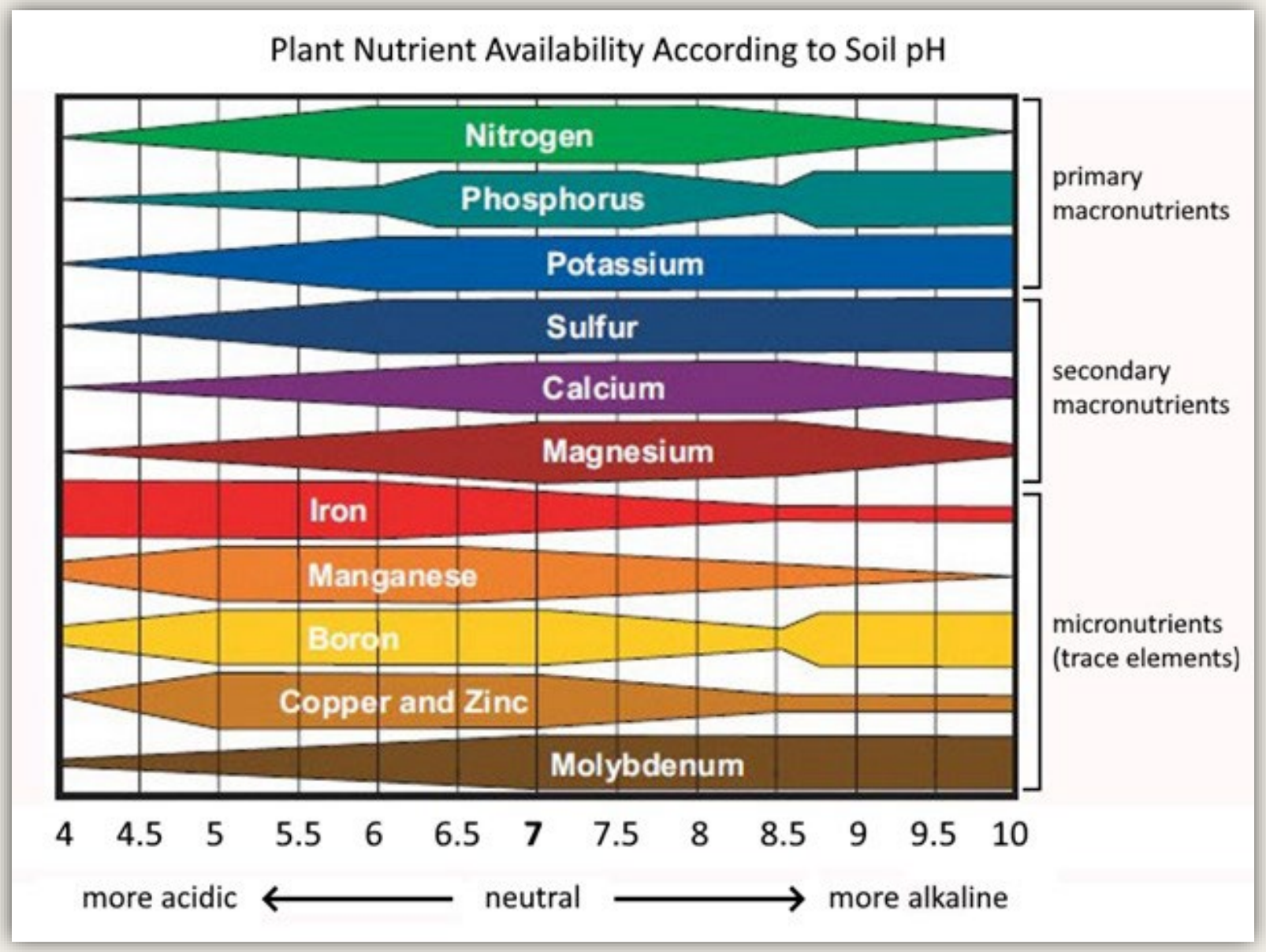
Theories on the lack of genetic variation within the species. The ‘woodlands’ were planted as plantations with the Q. *robur* having very similar form, health and decline.

Trailing different *Quercus* species and different seed source.

Establishing a mid-tier canopy and ground protection – ‘soil armour’.

The soil is acidic sand at pH 4.5 – potential nutrient availability issues.




Plant Nutrient Availability According to Soil pH
Nitrogen
Phosphorus
Potassium
Sulfur
Calcium
Magnesium
Iron
Manganese
Boron
Copper and Zinc
Molybdenum
primary macronutrients
secondary macronutrients
micronutrients (trace elements)
4 4.5 5 5.5 6 6.5 7 7.5 8 8.5 9 9.5 10
more acidic
neutral
more alkaline

COMPANION PLANTING









COMPANION PLANTING – SOIL ARMOUR





SOIL ARMOUR





MULCH, BABY, MULCH



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MULCH, BABY, MULCH





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THANK YOU!!

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