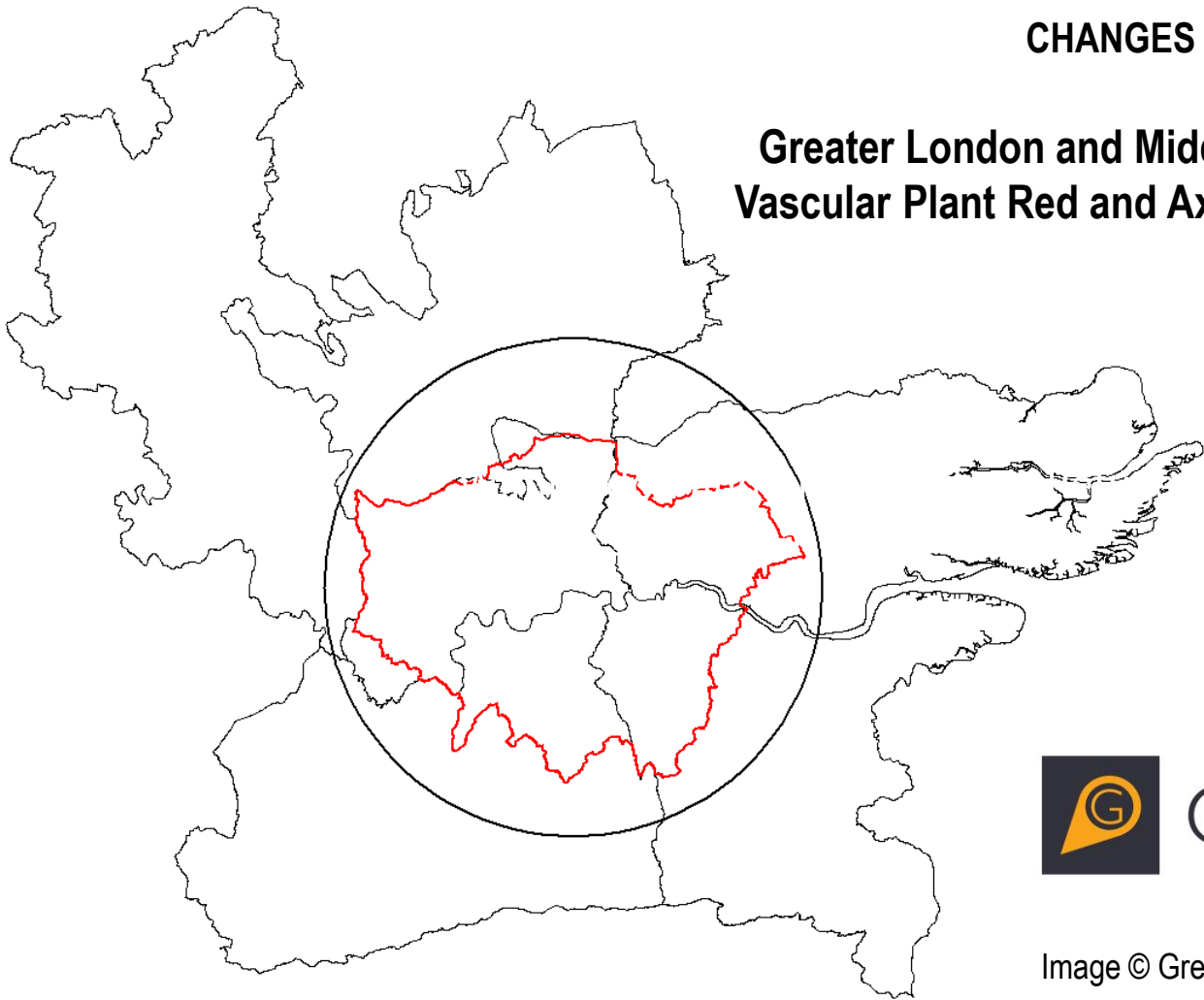




Changes in London's flora - the first
vascular plant Red and Axiophyte lists
for Greater London and Middlesex



CHANGES IN OUR FLORA

Greater London and Middlesex (vc 21) Vascular Plant Red and Axiophyte Lists

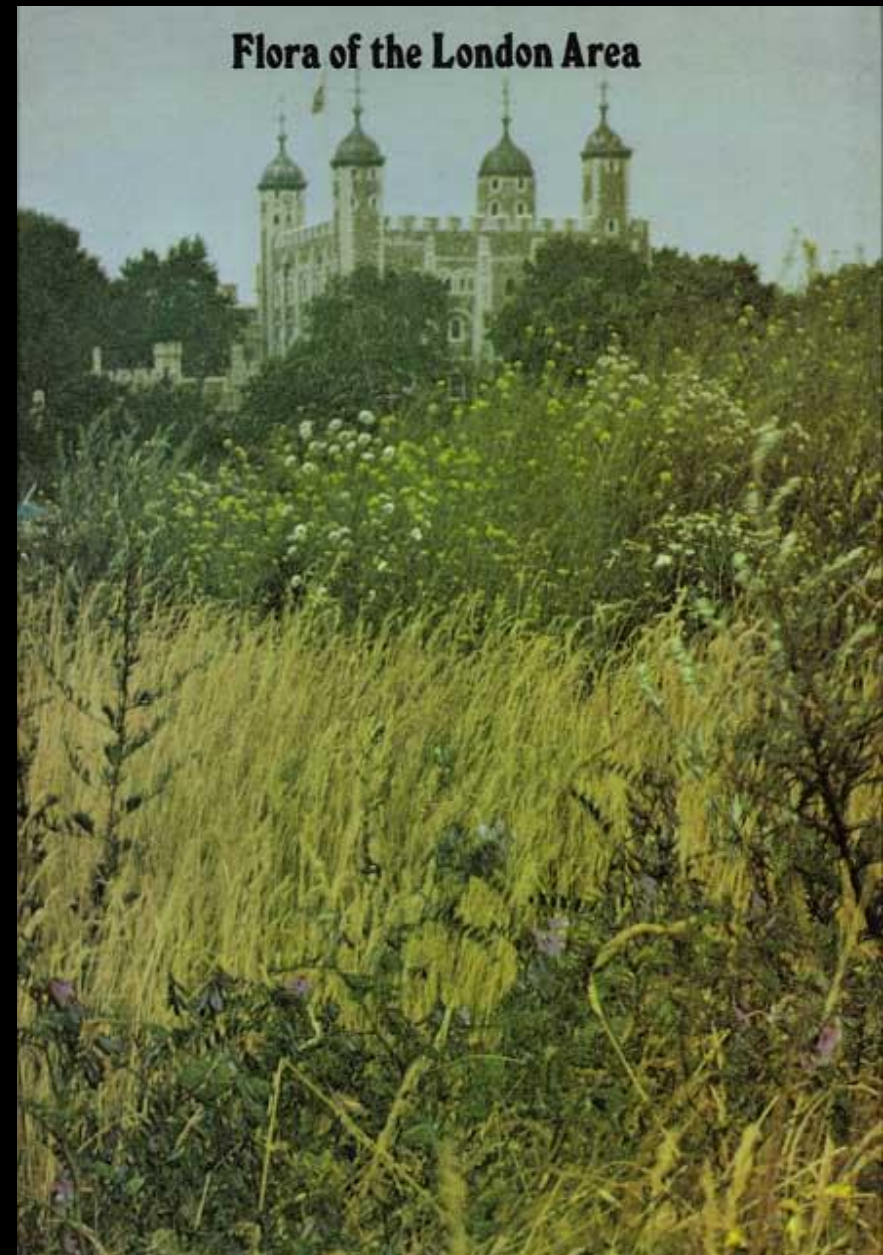


GiGL Greenspace Information for Greater London CIC
the capital's environmental records centre

Image © Greenspace Information for Greater London

General Rationale & Approach

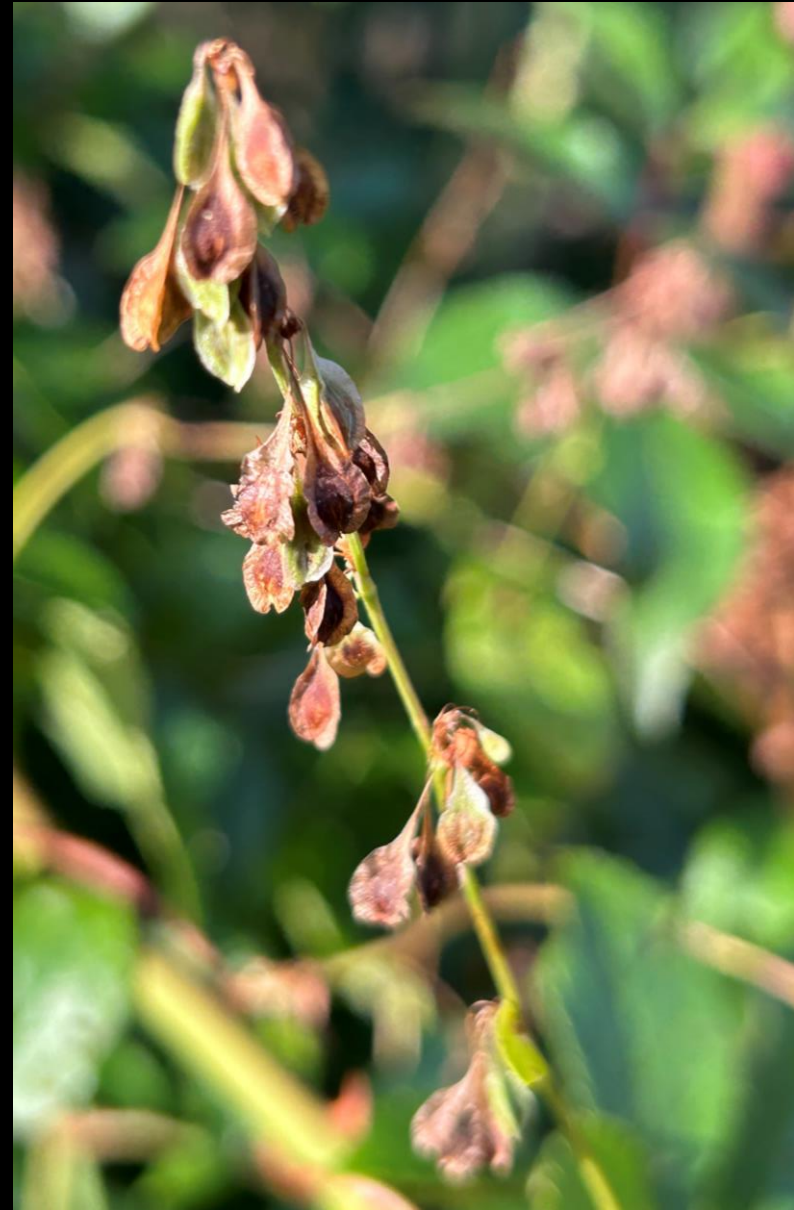
- Need to revise Greater London Authority's current Vascular Plants Priority Species List
- Attempt to incorporate IUCN Threat statuses (LC, NT, VU, EN, CR, EX) as well as Rarity
- Provide tools for local authorities, developers, land managers etc. for planting schemes and site designations (alongside a revised Invasive Species List)
- Basis for writing the next London Flora
- Identify Important Plant Areas within GL/vc21



Burton (1983)

Greater London and Middlesex Red-list

- Approx 170 species regionally extirpated/extinct (conservative estimate)
- 17 species regionally extirpated/extinct in the wild
- 156 species on GB/Eng NT & above (usually with higher risk status in GL/vc21)
- Several hundred more that are GB/Eng LC have higher risk status in GL/vc21
- 1050 taxa assessed (RPR & Axiophyte)
- **London's native and archaeophyte flora is in the midst of an extinction crisis – 512 spp. on the draft red list**



- **Developing the Axiophyte (Indicator species) List**

- Identify all vascular plants occurring in 25% of monads or less in Greater London to exclude very common taxa.
- GiGL provided a list of 2114 plant species recorded in less than 25% of monads over the last 30 years.
- Potential axiophyte species for priority habitats such as lowland dry acid grassland, lowland mixed deciduous woodland and eutrophic standing water as well as other habitats considered by the team to be of value in London (especially Brown Field).
- Some species v. challenging to categorise for a range of reasons; e.g. , wild marsh marigold *Caltha palustris* is very much a scarce axiophyte in London but is also quite commonly planted.
- The above process resulted in a draft list containing 484 species.
- List scrutinised by the team (& being prepared for consultation)

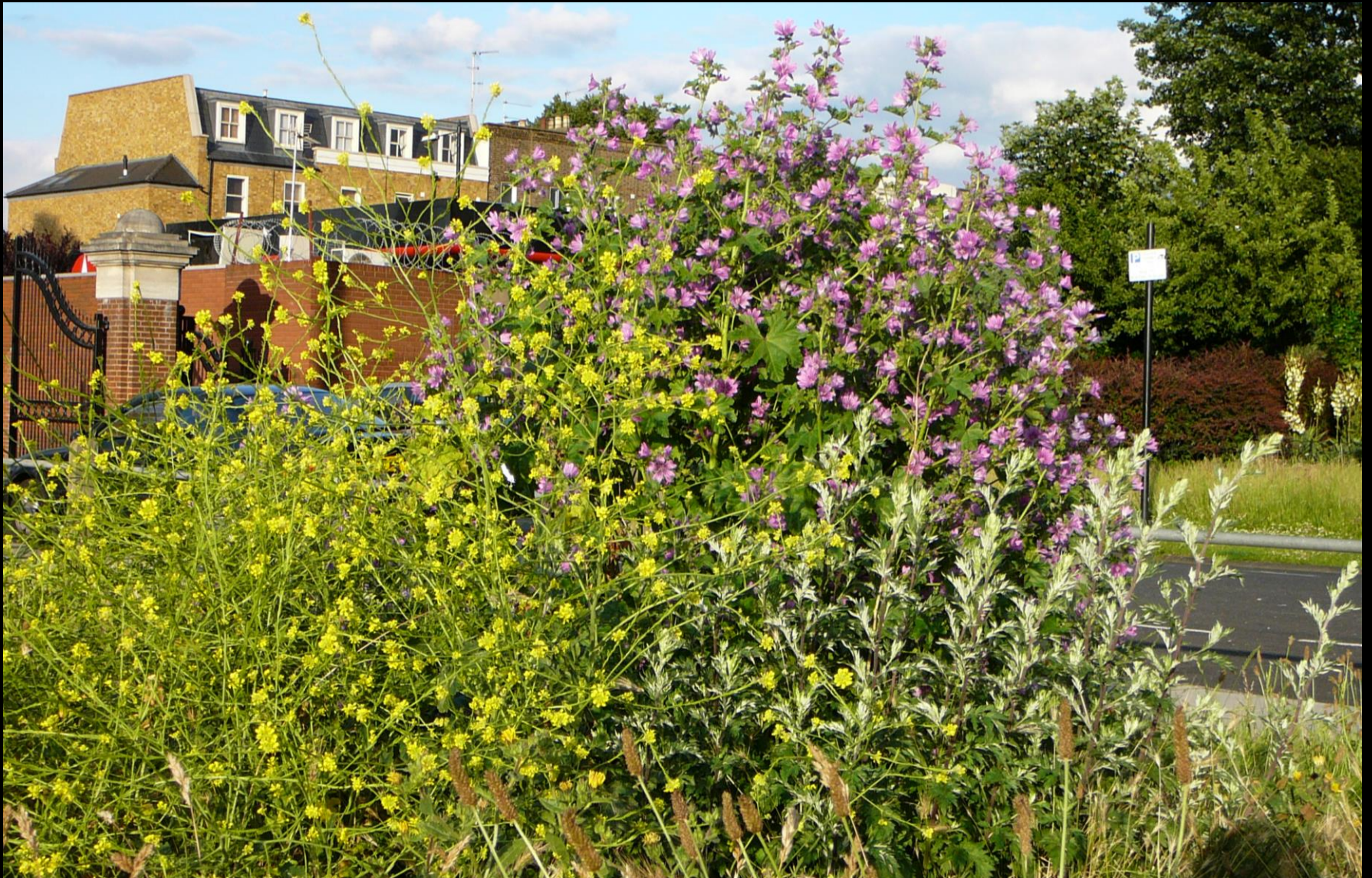
Site status	Total no sites	No. of <u>axiophyte</u> records	Mean no. axiophyte records/site	No. <u>axiophyte</u> taxa	Mean no. axiophyte taxa/site	% of sites with at least 1 axiophyte record
Local	569	3455	6.07	352	0.62	70% (396 sites)
Borough*	20	282	14.1	137	6.85	90% (18 sites)
Borough Grade II	533	13144	24.66	494	0.93	85% (451 sites)
Borough Grade I	323	14956	46.3	525	1.63	99% (320 sites)
Borough all**	876	28382	32.40	578	0.66	
Metropolitan	141	68697	487.2	644	4.57	96% (136 sites)
SSSI	39***	10776	276.31	498	12.77	87% (34 sites)

* Some boroughs have amalgamated sites of Borough Grade 1 and Grade 2

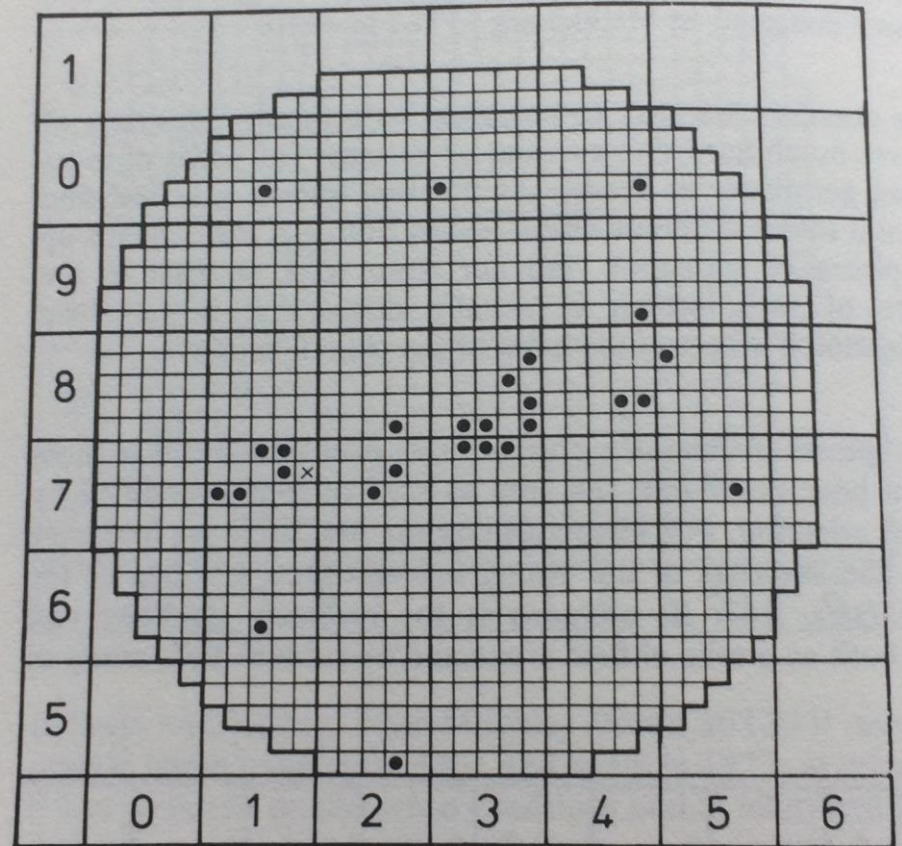
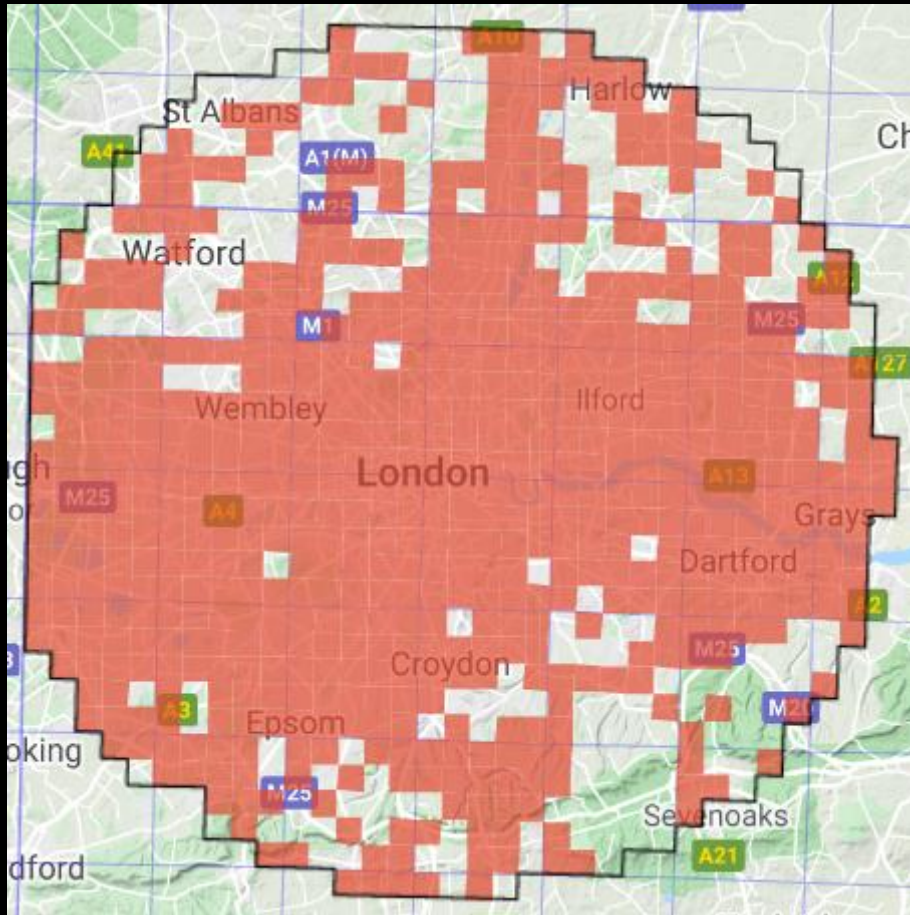
** A combination of Borough, Borough Grade II and Borough Grade I

*** GiGL records may not include all SSSIs overlapping with the London boundary

Hoary mustard, *Hirshfeldia incana* (NEOPHYTE), Common mallow, *Malva sylvestris* and Mugwort, *Artemisia vulgaris* (ARCHAEOPHYTES) – not assessed for either Red or Axiophyte Lists



Hirschfeldia incana – all records (3994)



Maps from BSBI ddb & Burton (1983).

Erica cinerea,
Bell Heather

NATIVE

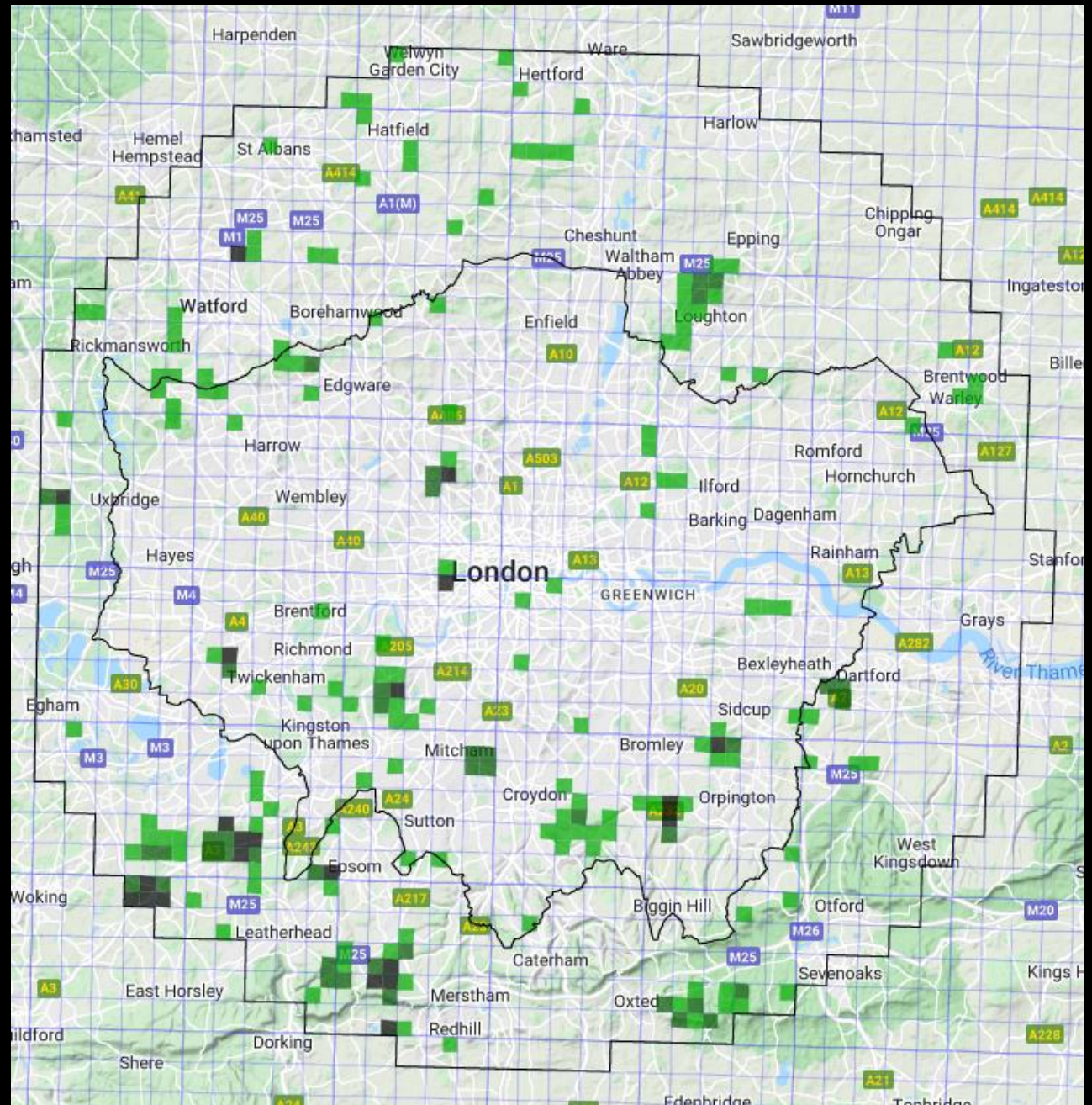
GBRL (2021) - LC
EngRL (2014) - NT
LDN (2023) – VU
Vc21 (2023) - EN

Heathland



Johnson, T. (1629) *Ericetum Hamstedianum
seu Plantarum ibi crescentium observatio
habita anno eodem 1 Augusti.*

Post 1990 distribution of heather, *Calluna vulgaris*, bell heather, *Erica cinerea* and cross-leaved heather, *Erica tetralix*



Map derived from the BSBI DDB

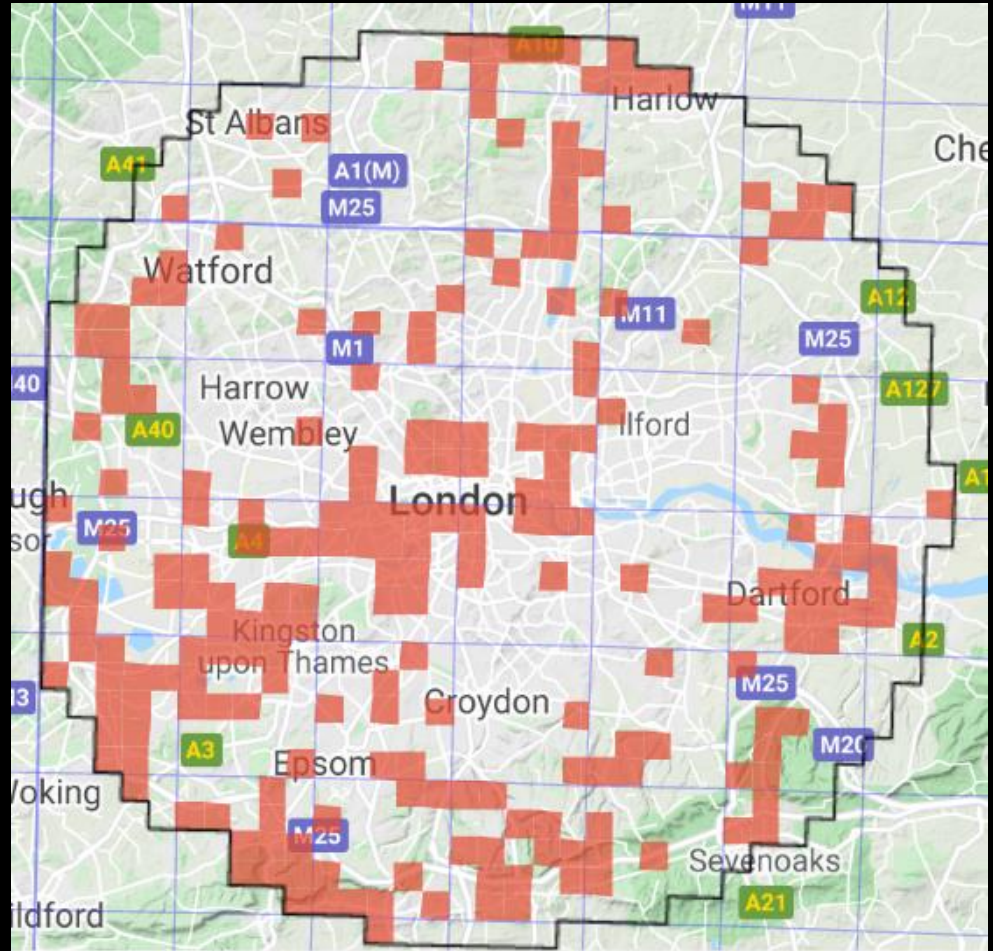
**Quantitative, qualitative and missing data:
hemp-agrimony, *Eupatorium cannabinum***

NATIVE

**GBRL (2021) - LC
EngRL (2014) - LC
LDN (2023) - LC
Vc21 - LC**

Fen marsh and swamp

All records (1299) Map from BSBI ddb



Gibson (1862) *Flora of Essex*

'Halstead, common... Hatfield Forest abundant...
Stratford rare'

Brewer (1863) *Flora of Surrey*

'Frequent throughout the county'

Trimen and Dyer (1869) *Flora of Middlesex*

'rather rare'

Hanbury & Marshall (1899) *Flora of Kent*

'common in all districts'

Burton (1983) *Flora of the London area*

'a fairly common plant [in some areas]'



Ancient pedunculate oak *Quercus robur* tree – Richmond Park



Nymphaea alba
subsp. *alba*
White waterlily

NATIVE

GBRL (2021) - LC
EngRL (2014) - LC
LDN (2023) - VU
Vc21 (2023) - VU

Standing open water
and canals

Boulger (1914) British
flowering plants (vol. 2, t. 67)



Campanula rotundifolia
subsp. *rotundifolia*
Harebell

NATIVE

GBRL (2021) - LC

EngRL (2014) - NT/DD

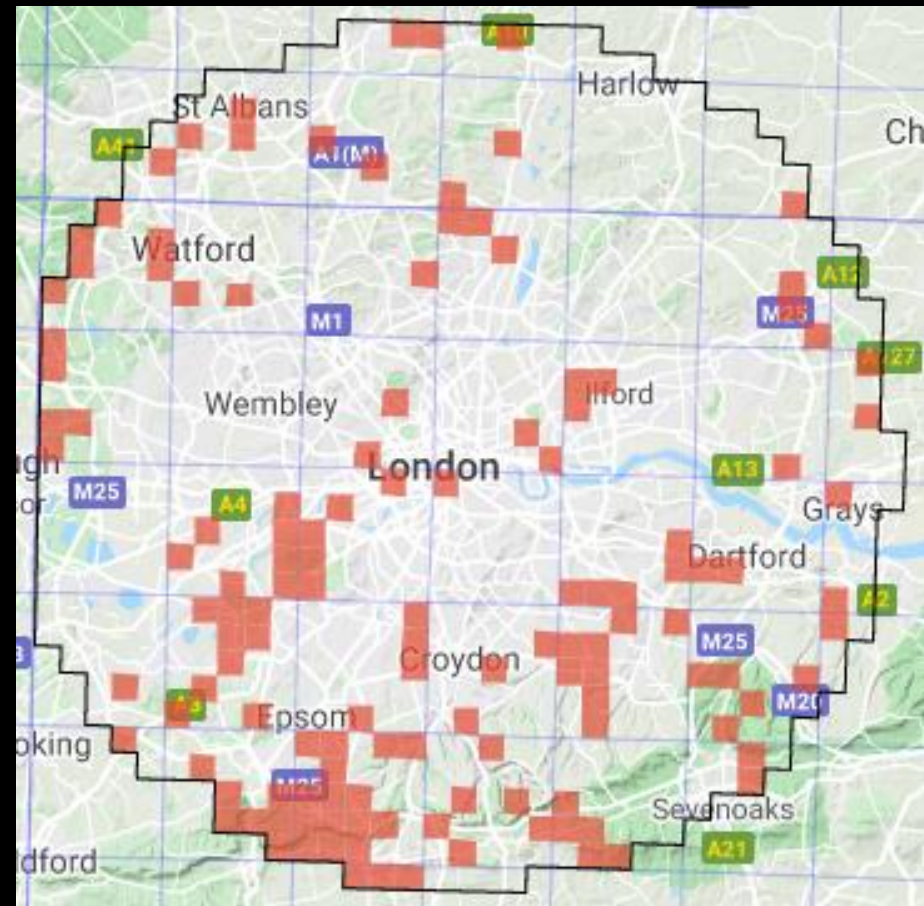
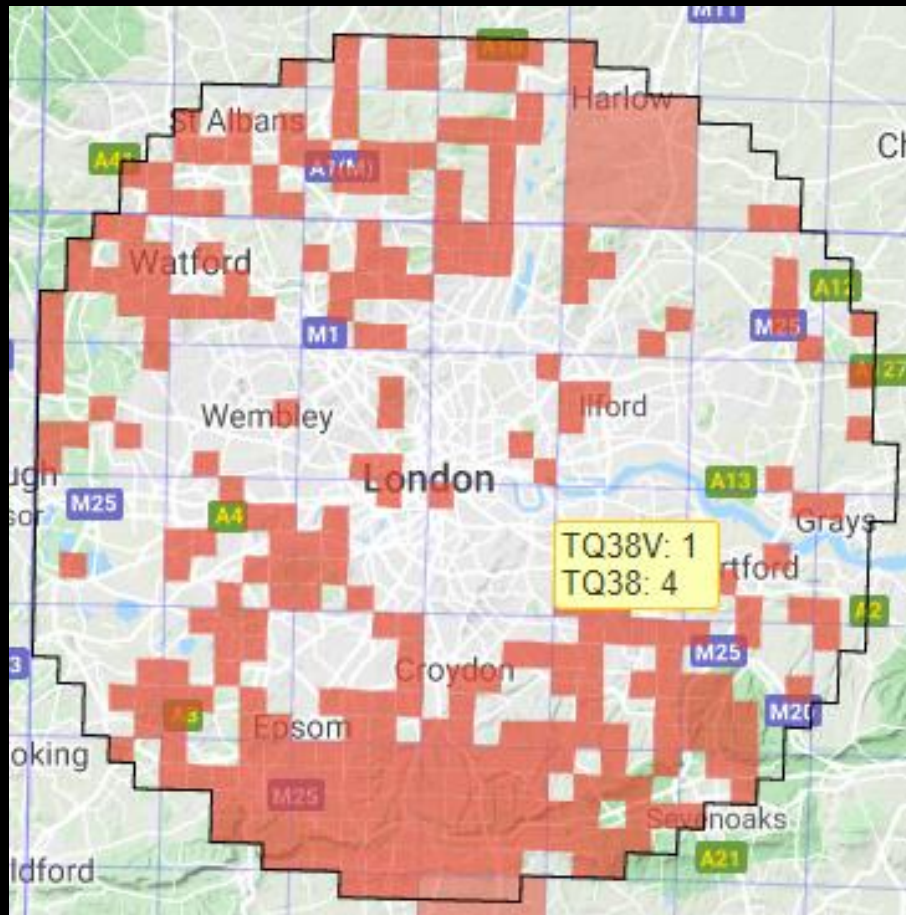
LDN (2023) – VU

Vc21 (2023) - EN

Calcareous grassland (& Acid grassland)



Campanula rotundifolia – all (1039) and post 2000 records (344)



Maps from BSBI ddb

Lythrum hyssopifolia,
Grass-poly

ARCHAEOPHYTE

GBRL (2021) - EN

EngRL (2014) - EN

LDN (2023) – RE (1922)

Vc21 – RE (1766)

Not selected as an indicator!



CC - Christian Fischer

Schoenoplectus triqueter
Triangular club-rush

NATIVE

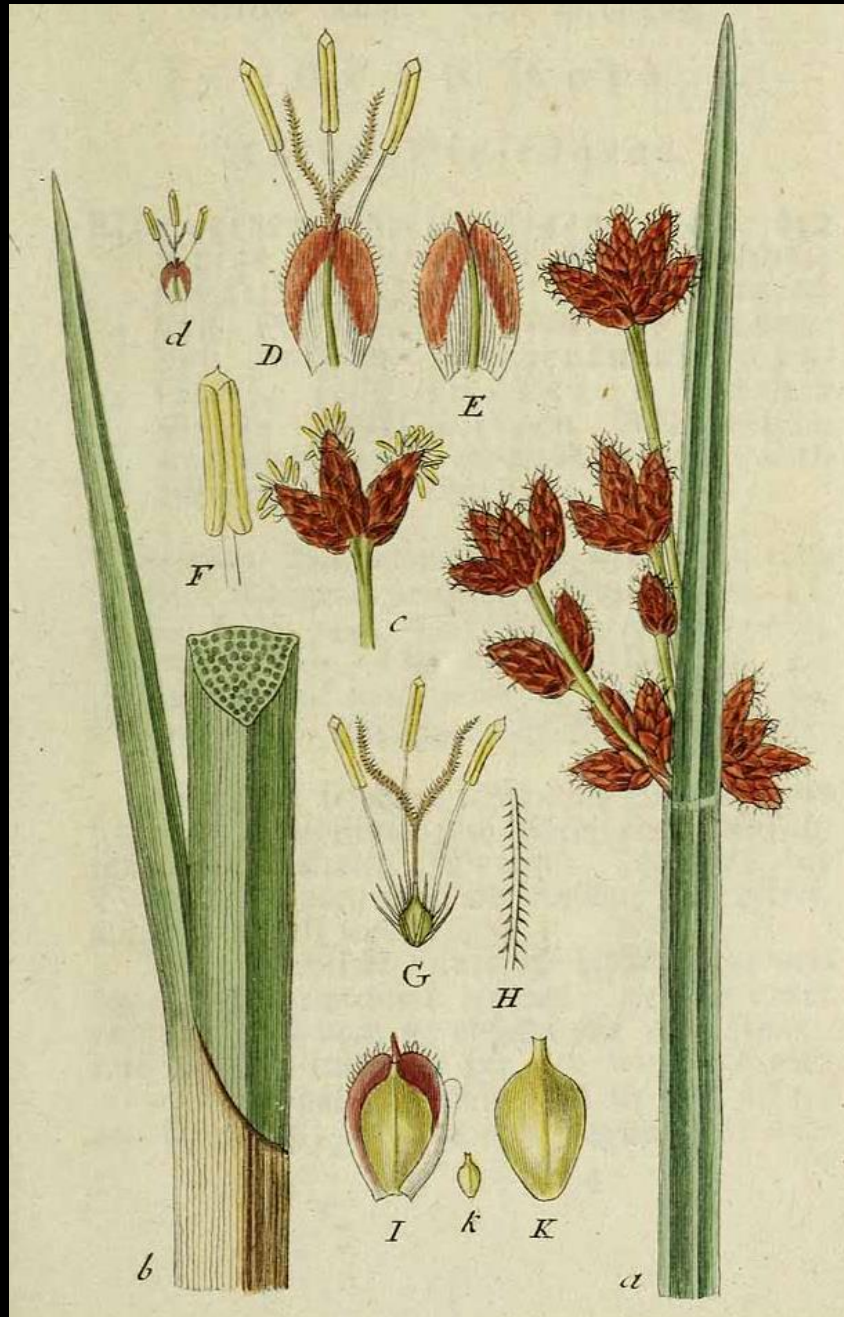
GBRL (2021) - CR

EngRL (2014) - CR

LDN (2023) – RE (1948)

Vc21 (2023) – RE (1887)

Not selected as
an axiophyte



**Sturm, J.W., (1812) Deutschl.
flora. vol. 9, t. 3.**

Damasonium alisma,
Starfruit

NATIVE

GBRL (2021) - CR
EngRL (2014) - CR
LDN (2023) – REW
Vc21 (2023) - RE

Not selected as
an axiophyte



Redouté, P.J. (1805) Liliacées.
vol. 5, t. 289.

***Fallopia dumetorum*,**
Copse bindweed

NATIVE

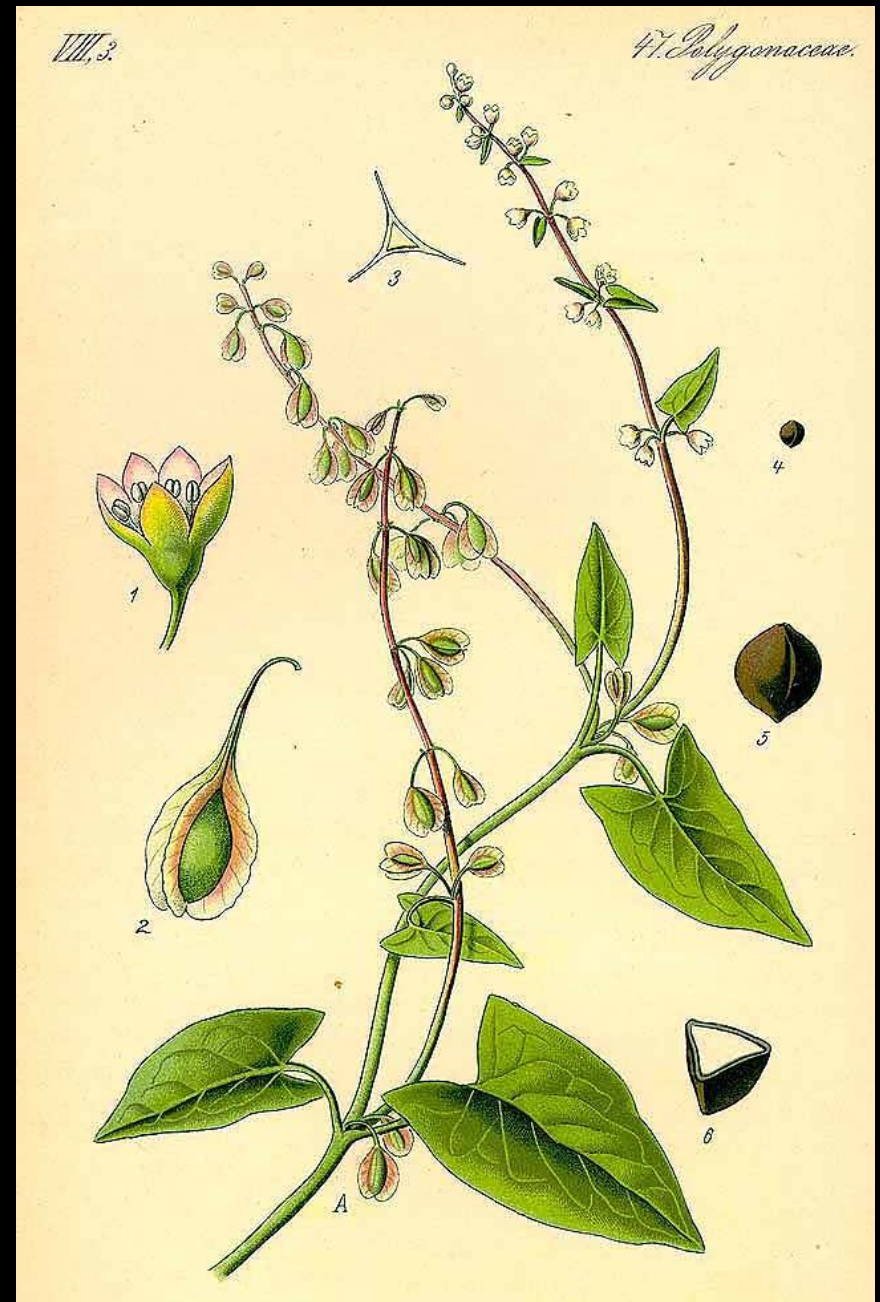
GBRL (2021) - VU

EngRL (2014) - VU

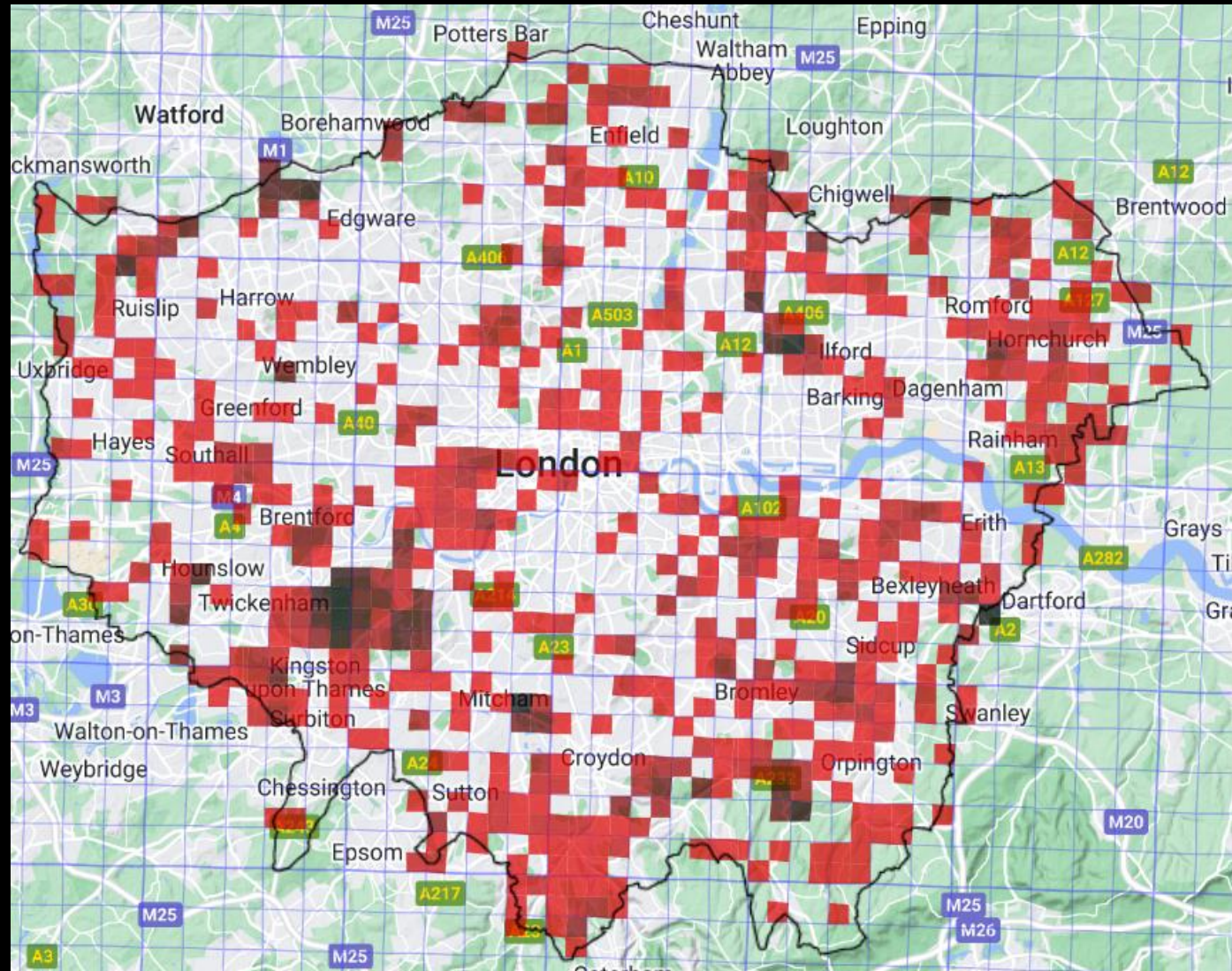
LDN (2023) – CR

Vc21 (2023) - CR

Not selected as an axiophyte



Post 2000 distribution of *Aphanes australis*, *Potentilla anglica*, *P. argentea*, *P. erecta* subsp. *erecta*, *Rumex acetosella*, *R. pulcher*, *Galium saxatile*, *Pilosella officinarum*, *Carex pilulifera*, *Aira praecox*, *Avenella flexuosa* & *Danthonia decumbens*



Map derived from the BSBI DDB

***Viola lactea*,**
Pale violet

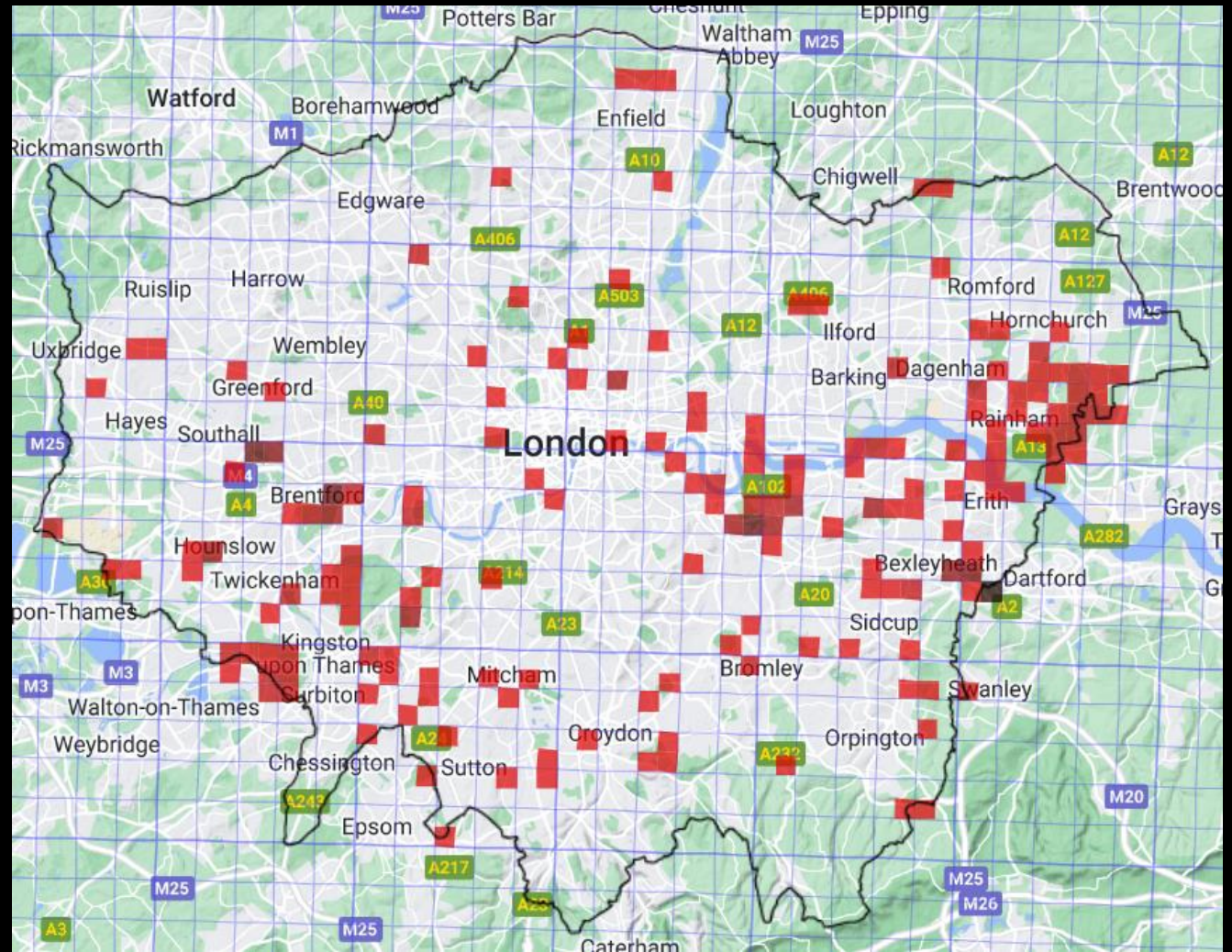
NATIVE

GBRL (2021) - VU
EngRL (2014) - EN
LDN (2023) – CR/RE
Vc21 (2023) – RE (1953)

Not selected as
an axiophyte



Post 2000 distribution
of *Ornithopus
perpusillus*, *Trifolium
arvense*, *T. glomeratum*,
T. ornithopodioides, *T.
scabrum*, *T. striatum*, *T.
subterraneum* & *T.
suffocatum*



Map derived from the
BSBI DDB

Ornithopus perpusillus
Bird's-foot

NATIVE

GBRL (2021) - LC
EngRL (2014) - LC
LDN (2023) – NT
Vc21 (2023) – VU

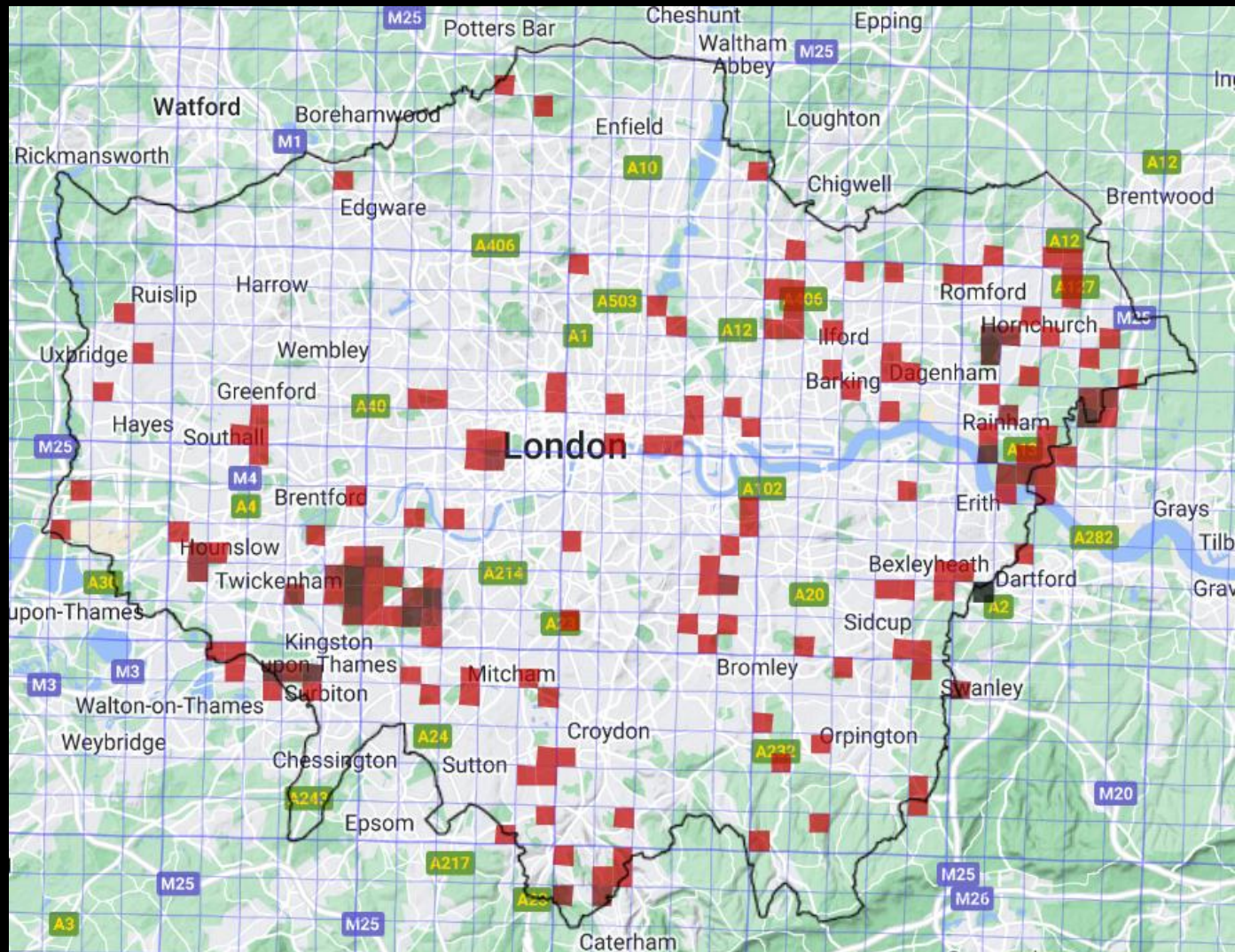
Acid grassland



L-R: Rough clover, *Trifolium scabrum*,
Subterranean clover, *Trifolium subterraneum*,
Knotted clover, *Trifolium striatum*



Post 2000 distribution
of *Arenaria leptoclados*,
A. serpyllifolia subsp.
serpyllifolia, *Cerastium*
arvense, *C. diffusum*,
C. pumilum,
C. semidecandrum,
Moenchia erecta &
Spergularia rubra



Map derived from the
BSBI DDB

Molinia caerulea
Purple moor-grass

NATIVE

GBRL (2021) - LC

EngRL (2014) - NT

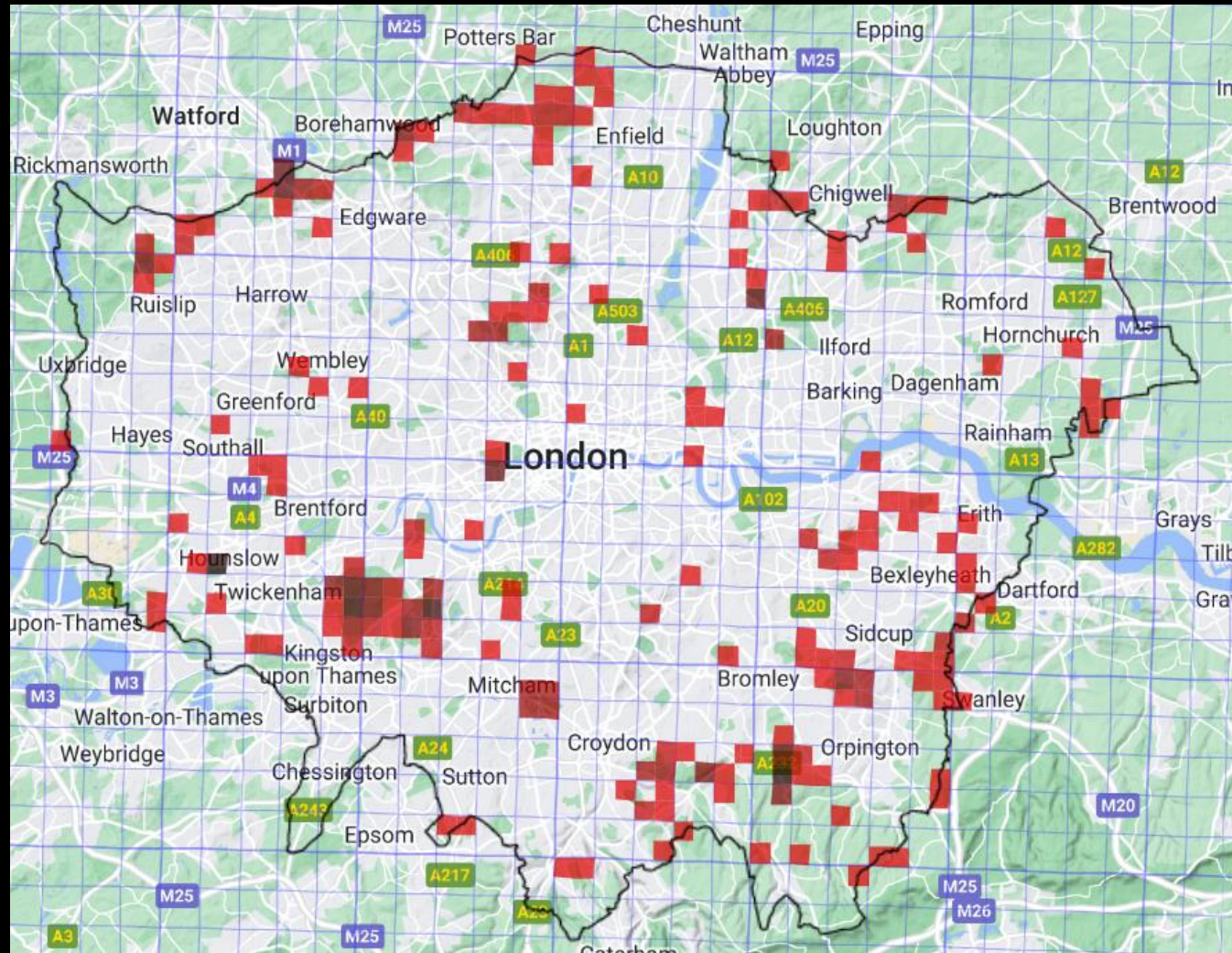
LDN (2023) – NT

Vc21 (2023) – VU

Heathland



Post 2000 distribution
of *Ulex minor*, *Polygala
serpyllifolia*, *Hypericum
pulchrum*, *Salix repens*,
Erica cinerea, *E. tetralix*,
Teucrium scorodonia,
Solidago virgaurea,
Juncus squarrosus,
Luzula multiflora subsp.
multiflora, *Molinia
caerulea*, *Nardus stricta*



Map derived from the
BSBI DDB

Solidago virgaurea,
Goldenrod

NATIVE

GBRL (2021) - LC

EngRL (2014) - NT

LDN (2023) – VU

Vc21 (2023) – EN

Heathland



Helosciadium inundatum,
Lesser marshwort

NATIVE

GBRL (2021) - LC

EngRL (2014) - VU

LDN (2023) – EN

Vc21 (2023) - CR

Not selected as
an axiophyte



Scutellaria minor,
Lesser skullcap

NATIVE

GBRL (2021) - LC

EngRL (2014) - LC

LDN (2023) – EN

Vc21 (2023) – RE (1989)

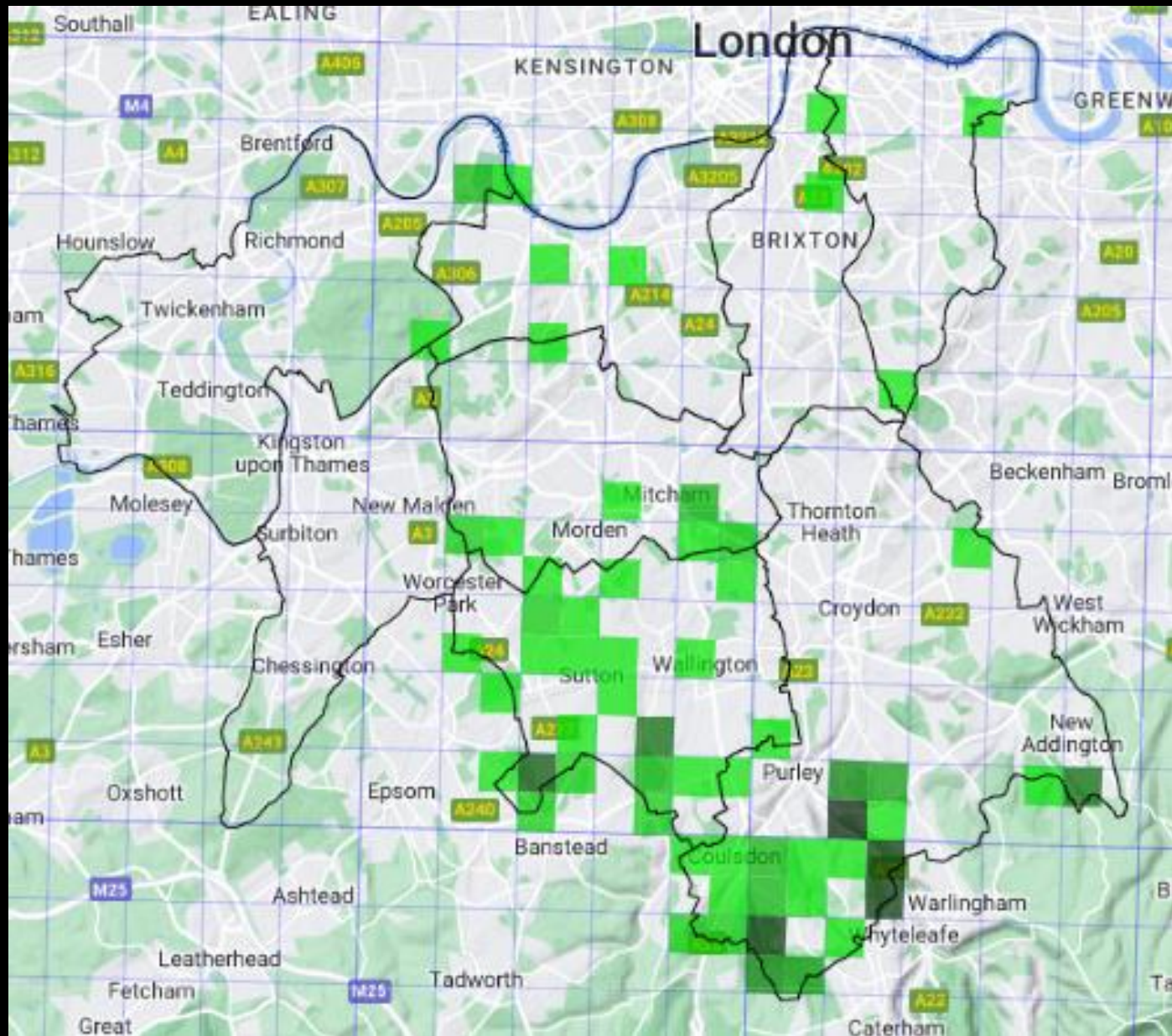
Not selected as
an axiophyte



INVASIVES: false Hampshire-purselane - *Ludwigia x kentiana*, New Zealand pigmyweed – *Crassula helmsii*, parrots-feather – *Myriophyllum aquaticum*



Post 2000 distribution of *Anthyllis vulneraria*, *Hippocrepis comosa*, *Onobrychis viciifolia*, *Polygala calcarean*, *Filipendula vulgaris*, *Helianthemum nummularium*, *Blackstonia perfoliata*, *Carlina vulgaris*, *Briza media* & *Scabiosa columbaria*



Map derived from the BSBI DDB

***Saxifraga granulata*,**
Meadow Saxifrage

NATIVE

GBRL (2021) - LC

EngRL (2014) - LC

LDN (2023) – VU

Vc21 (2023) - EN

Lowland meadows



Geranium pratense
meadow crane's-bill

NATIVE

GBRL (2021) - LC

EngRL (2014) - LC

LDN (2023) – LC

Vc21 (2023) – LC

Calcareous grassland



Oenanthe pimpinelloides
corky-fruited water-dropwort

NATIVE

GBRL (2021) - LC

EngRL (2014) - LC

LDN (2023) – NT

Vc21 (2023) – CR

Meadows



Scilla (Prospero) autumnalis
Autumn squill

NATIVE

GBRL (2021) - LC
EngRL (2014) - LC
LDN (2023) – VU
Vc21 (2023) – VU

Not selected as
an axiophyte



Oxalis acetosella
Wood sorrel

NATIVE

GBRL (2021) - LC
EngRL (2014) - NT
LDN (2023) – NT
Vc21 (2023) – VU

Mixed deciduous woodland
Ancient woodland indicator



Fragaria vesca
Wild strawberry

NATIVE

GBRL (2021) - LC
EngRL (2014) - NT
LDN (2023) – VU
Vc21 (2023) – VU

Mixed deciduous woodland



Ophrys apifera,
bee orchid

Anacamptis pyramidalis,
pyramidal orchid

NATIVE

GBRL (2021) - LC
EngRL (2014) - LC
LDN (2023) – LC
Vc21 (2023) – LC

Nutrient poor conditions

Calcareous grassland



Questions

And thanks to GiGL, Paul Losse
& Julija Fediajevaite



GiGL

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the capital's environmental records centre

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