Appendix 7.13: Habitat Survey Report

The Ecology Consultancy

Hampstead Heath Ponds Project / Habitat & Invasive Species Survey /**Report for City of London Coporation**

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Habitat & Invasive Species Survey

Report for City of London Corporation

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Executive Summary

- The Ecology Consultancy was commissioned by the City of London Corporation to undertake a Phase 1 habitat and invasive species survey of two areas of Hampstead Heath totalling 92ha. The habitat descriptions and maps will provide baseline information, for example, habitat classification and the value of those habitats that may potentially be affected as part of the reconstruction works required as part of the Hampstead Heath Ponds Project.
- A small part of the survey area (0.4ha) was located within Hampstead Heath Woods SSSI of which also encompasses Ken Wood Ancient Woodland Site. The SSSI is designated for its over mature, high forest stands of acid sessile oak – beech woodland an abundance of dead standing wood and associated rare invertebrates.
- The northern tip of Highgate Valley, including Stock Pond (TN 7), and the woodland and scattered trees along the eastern boundary (including those areas around TN19) are adjacent to the SSSI and therefore provide supporting and/or secondary habitat (CIEEM, 2006) to the ancient woodland habitat. Similar features to both areas are the mature trees and standing dead wood, which may be important for rare invertebrate species.
- The majority of the survey area falls within Hampstead Heath SMI, which has been designated for its unique mix of formal and natural habitats including numerous veteran trees and dead wood habitat, ancient woodlands, acid grassland, a sphagnum bog and numerous ponds and watercourses.
- Habitats mentioned in the citation as qualifying features of the SMI and found within the survey area comprise acid grassland, over-mature trees, dead wood habitat, ponds and watercourses, and a number of rare plants comprising water horsetail, wood club rush and hard fern and heather. The presence of these habitats, habitat features and species represent the intrinsic value of the SMI and should be protected from the development works.
- The survey area covered approximately 92ha of Hampstead Heath SMI and comprised 23 Phase 1 habitat types.
- The site contained nine Habitats of Principal Importance (JNCC 2011), seven London BAP habitats (LBP 2007) and four Camden Local BAP habitats (London Borough of Camden,2010).
- The survey area contained 12 ponds and a Catch pit. In the Highgate Valley, the Stock Pond (TN 7) Bird Sanctuary Pond (TN 9) and Highgate No 1 pond (TN 12) supported the most diverse habitat types within close proximity to the water's edge, including

abundant marginal vegetation, swamp, dense scrub, marshy vegetation, scattered (parkland) trees and semi-natural woodland. In the Hampstead Valley, the Vale of Health Pond (TN 1) and Viaduct Pond (TN 2) were the most diverse, with limited marginal vegetation, dense scrub, acid grassland and semi-natural woodland. The remaining ponds had limited marginal vegetation and were primarily managed for amenity purposes.

- The majority of the survey area was comprised of more recently naturalised semi-natural woodland and species poor semi-improved grassland. The majority of woodland areas contained numerous mature/ ancient trees but were heavily affected by foot traffic and/or were densely shaded. The combination of foot traffic and shading had led to many areas supporting limited understory or ground cover. More structurally diverse areas were centred around TN15, TN16, TN 17, TN 18 and TN 19. Most of the survey area was dominated (in the Highgate Valley) with poor semi improved grassland. However, floristically more diverse grassland, occurred in patches, often around springs within Highgate Valley and Pryor's Field.
- To ensure no detriment to Ancient Woodland, Natural England's Standing Advice is that any development works are to maintain a minimum 15m distance away.

INVASIVE SPECIES

- The survey area contained 46 separate records of invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act. These included eight stands of Japanese knotweed, 37 stands of Himalayan balsam, One stand of giant hogweed, two stands of garden yellow archangel, two stands of montbretia, one stand of Virginia creeper and four stands of cotoneaster.
- The Property Care Association's Code of Practice for the Management of Japanese knotweed (Ver. 2.6, 20/03/2013) should be consulted for advice and guidance on the control and removal of invasive plant species.

1 Introduction

BACKGROUND

1.1 The Ecology Consultancy was commissioned by the City of London Corporation (CoLC) to undertake a Phase 1 Habitat Survey and invasive species survey of two areas of Hampstead Heath, London, totalling 92 hectares (ha). The results of the surveys are to inform proposals for major works to the Heath's ponds in order to prevent a one in 10,000 year flooding event.

SCOPE OF THE REPORT

1.2 This report utilises the standard Phase 1 survey methodology (JNCC 2010), which is the most widely used and professionally recognised method for initial ecological appraisal of a site. This approach is designed to identify all broad habitat types present at a site, to identify the potential of the habitats present to support protected or ecologically notable species, and to assist in providing an overview of the site's ecological interest.

1.3 The invasive species survey for terrestrial plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) utilises the Joint Nature Conservation Committee (2010) survey method for identifying locations of plants using handheld GPS devices.

LEGISLATION AND PLANNING POLICY

1.4 Appendix 6 provides details of legislation and planning policy relating to nature conservation, and is provided for general guidance only. The Appendix includes details of relevant national legislation afforded to:

- Statutory designated sites;
- Non-statutory designated sites;
- Local planning policy;
- National planning policy;
- UK Habitats of Principal Importance for Biodiversity; and
- Local Biodiversity Action Plans (BAPs).

PROPOSED SITE DEVELOPMENT

1.5 The aim of the CoLC project is to prevent the occurrence of a one in 10,000 year flood. This will involve the reconstruction of the earth dams that impound the series of ponds on the Heath. The extent of construction activity is not fully known at this stage, but is likely to be extensive and will include site compounds, access roads, the

creation of borrow pits for site won material, and the creation of an additional dry reservoir within the Hampstead Valley.

1.6 This report is to be appended to an Environmental Statement, part of the Environment Impact Assessment (EIA), being undertaken by Atkins on behalf of CoLC. This report presents the results of the Phase 1 habitat and invasive species survey, providing up-to date baseline information on habitat types, and their value to nature conservation.

SITE CONTEXT AND STATUS

1.7 Hampstead Heath occupies an area of approximately 317 hectares in north London, in the Boroughs of Barnet, Camden and Haringey and is managed by CoLC. The Ordnance Survey central Grid Reference is TQ 273 866. The survey focussed on two distinct areas, the Hampstead pond chain and the Highgate pond chain, both of which are valleys running approximately north – south. Between them they support 11 large ponds and a smaller water-body, known as the Catch Pit, which is located in the Hampstead Valley.

1.8 The area referred to as Highgate Valley is located on the east side of Hampstead Heath and covers 48ha. The Ordnance Survey central Grid Reference is TQ 27585 86494. The area referred to as Hampstead Valley is located on the west side of the Heath and covers 42ha. The Ordnance Survey central Grid Reference is TQ 26962 86294.

2 Methodology

DESKTOP SURVEY

2.1 CoLC Hampstead Heath staff provided existing data on habitats and species and known locations of existing stands of invasive plant species.

2.2 A internet based desktop study was undertaken of the following websites to provide fuller information on the habitats present and their value to nature conservation:

- London Borough of Camden (www.camden.co.uk)
- Multi Agency Geographic Information for the Countryside (www.magic.gov.uk);
- Nature England (www.naturalengland.co.uk);
- Joint Nature Conservation Council (www.jncc.gov.uk); and
- City of London (www.cityoflondon.gov.uk).
- Greenspace Information for Greater London (www.gigl.org.uk)
- The London Biodiversity Partnership (http://www.lbp.org.uk/londonhabspp)
- Aerial photographs (www.google.co.uk/maps).

HABITAT SURVEY

2.3 The Phase 1 habitat survey of the site comprising the Hampstead and Highgate Valleys was undertaken over seven days during July and August 2013. Habitats were mapped (Figure 1-4, Appendix 1) and described following standard Phase 1 habitat survey methods (JNCC 2010) with target notes (Appendix 2) photographs (Appendix 5) and species lists compiled to provide fuller information on specific features (Appendix 7).

2.4 Nomenclature follows Stace (2010) for vascular plant species. Scientific names are given after the first mention of a species, thereafter, common names only are used.

2.5 The survey data will also be provided in ArcView format for incorporation into the CoLC database.

2.6 The surveys were conducted by suitably qualified and experienced ecologists. Rosie Whicheloe BA MSc is an associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and holds a level 4 Field Identification Skills Certificate (FISC). Annie Chipchase BSc (Hons) has over 10 years ecological

experience in London and is currently recorder for the London Borough of Hackney on the LNHS Greater London Flora project.

2.7 A summary table listing habitats that meet the criteria for UK Habitats of Principal Importance, London BAP Priority Habitats and Camden Local BAP habitats present within the survey area is given in Table 2 in Appendix 3.

INVASIVE SPECIES SURVEY

2.8 An up-to date survey of terrestrial plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) was undertaken at the same time as the Phase 1 habitat survey. The locations of all stands of invasive plants were recorded using handheld GPS devices, as recommended by the Joint Nature Conservation Committee (2010). The location and description of all stands of invasive species are provided on the Phase 1 maps (Figure 1-4, A3 size) in Appendix 1, and brief descriptions of location and number of plants provided in Table 3, in Appendix 4.

LIMITATIONS

2.9 The survey effort encompassed 92ha of the 317ha of Hampstead Heath and reflects the information collected from surveying the areas as defined by the red line boundary (Appendix 1) and may not be representative of habitats in other parts of the site.

2.10 All areas on the site were accessed, including those that were fenced and locked. However, access in some areas was restricted due to the density of scrub, particularly around the ponds, along Hampstead Brook and along old hedge lines.

2.11 The survey was undertaken late in the growing season and for this reason, early flowering species (such as those found in woodlands in spring) may have been under-recorded. In addition, the summer of 2013 was particularly dry, with much of the vegetation on the Heath becoming parched, thus increasing the risk of delicate / low-growing species, such as heath bedstraw and pignut that are known to be present within acid grassland in some parts of the Heath, being overlooked.

2.12 It should be noted that the Phase 1 habitat survey does not constitute a full botanical survey, and that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and [i]prediction of the natural environment.

2.13 Despite these limitations, it is considered that this report accurately reflects the habitats present.

2.14 Surveys of aquatic plant of the areas of open water were not required as part of the Phase 1 survey. As a result only limited information was collected on submerged or floating aquatic species, whilst all marginal vegetation was recorded.

2.15 Due to the density of vegetation it was not possible to survey the entire area for invasive species. It is possible that other stands may become apparent later in the season, when vegetation begins to die down or where vegetation management allows new plants to grow.

2.16 Despite this, it is considered that the invasive species mapping accurately reflects the current extent of invasive species on site due to the experience of surveyors and the survey effort, which spanned several consecutive weeks.

2.17 The phase 1 habitat types present within the survey area have been assessed in relation to the criteria for Habitats of Principal Importance (JNCC 2011). The guidance in general only provides a broad overview of habitat characteristics. For example some Habitats of Principal Importance have generic descriptions (e.g. hedgerows, reedbeds and ponds) and thus several features within the survey area may fit the criteria but are of limited value due to their size, context and species composition. Other habitat descriptions (e.g. lowland mixed deciduous woodland, wet woodland and wood pasture and parkland) are more prescriptive and limit the inclusion of phase 1 habitat types to those with certain defining features. As such, the Habitats of Principal Importance discussed in this report as being present within the survey area can only be used as a guide and may not qualify depending on more detailed information that was not available at the time of writing this report.

2.18 Please note there are a few minor mistakes on the maps as follows:

- Ephemeral /short perennial should be scattered scrub in Hampstead Valley, north of the Ice House / wall.
- A patch of Japanese knotweed is also located in the Hampstead Valley, just south of the “D” shaped children’s’ playground.
- The stream in the northern tip of Highgate Valley should be flowing westwards not eastwards.

3 Results

DESKTOP STUDY

3.1 The CoLC provided information on the location of certain habitat types (e.g. acid grassland) and notable species (e.g. hard fern).

3.2 Literature (paper and GIS format) on the habitats and species present on Hampstead Heath was provided comprising:

- A flora survey undertaken by the London Natural History Society (1997-2003)
- A vegetation survey of the Heath carried out by Scott Wilson (2008/09); and
- Maps of the historical locations of Himalayan balsam and locations of Japanese knotweed.

Statutory Sites of Nature Conservation Interest

3.3 A small part (0.4ha) of the survey area encompassed the southern tip of Hampstead Heath Woods SSSI). The full citation for these designated sites is given below:

3.4 *"Hampstead Heath Woods are examples of long-established high forest woodlands with an exceptional structure comprising an abundance of old and over-mature trees providing dead wood habitat for a range of invertebrate species. The site also includes an adjacent small valley containing an acidic flush with developing bog-moss communities. The woods, comprising North Wood and the much larger Ken Wood to the south, lie on the upper slopes of Hampstead Heath where a residual capping of Bagshot Sands overlies the Claygate Beds. These give rise to acidic sand and loam-based soils which are generally free-draining, although localised impedance occurs particularly in the small valleys. The sandy soils of the Bagshot Beds on the upper slopes of North Wood and to the south west of Ken Wood support stands of acid sessile oak-beech woodland, an uncommon stand-type in Greater London. Lower down on the sandy loam-based soils of the Claygate Beds, and particularly in a series of minor valleys where the drainage is poorer the stands grade into sessile oak woodland. The woods contain a large number of over-mature trees, with maiden stems of considerable girth and height, and an abundance of dead limbs, fallen branches and whole fallen trunks. High forest stands of such over-maturity are nationally uncommon and particularly scarce in Greater London.*

3.5 *"The canopy of both woods is heavily dominated by sessile oak Quercus petraea and beech Fagus sylvatica, although pedunculate oak Quercus robur occurs occasionally and wild service tree Sorbus torminalis, a species associated with ancient woodland rarely. In open areas where trees have fallen young downy birch Betula pubescens is frequent. The shrub layer is dominated by holly Ilex aquifolium with rowan Sorbus aucuparia, hazel Corylus avellana, and the locally abundant introduced shrubs rhododendron Rhododendron ponticum and cherry laurel Prunus laurocerasus. This frequently dense understorey coupled with the acidic soils produces a typically limited ground flora which is dominated by bramble Rubus fruticosus and bracken Pteridium aquilinum. Other species recorded include bluebell Hyacinthoides non-scripta and species indicating long-established woodland such as wood anemone Anemone nemorosa and pignut Conopodium majus. Adjacent to Ken Wood is a small valley containing an acidic flush dominated by soft rush Juncus effusus and bog-moss Sphagnum species. Six bog-mosses have been recorded and water horsetail Equisetum fluviatile, a species scarce in Greater London, is also present. The drier fringes of the flush are dominated by grasses such as common bent Agrostis capillaris, creeping soft-grass Holcus mollis and tufted hair-grass Deschampsia cespitosa with scattered silver birch Betula pendula and alder Alnus glutinosa. The abundance of over-mature trees with decaying heartwood and dead standing and fallen timber provides suitable conditions for a specialist invertebrate fauna. Several beetles which are dependent on dead wood have been recorded here, including the nationally rare jewel beetle Agrilus pannonicus whose larvae develop in and under the bark of oak. This species is rare in Britain and is listed as vulnerable in the British Red Data Book."*

3.6 A condition assessment was undertaken by Natural England in 2012, which identified the woodland unit to be in condition of *"unfavourable recovering"* due to problems with natural woodland regeneration, which in the interim was being partially rectified by a tree planting programme. The current condition of this part of the SSSI in 2013 is unknown.

3.7 Encompassing the same area as the SSSI (within the survey area) is the Ken Wood Ancient and Semi-natural Woodland Site, Theme ID: 243193 (AWS).

Non-Statutory Sites of Nature Conservation Interest

3.8 The majority of the survey area, including Hampstead and Highgate Valleys formed part of the larger Hampstead Heath Site of Metropolitan Importance (SMI). The citation is provided in full below:

3.9 "*Just over six kilometres from central London, this extensive site is well known for its unique mix of semi-natural and formal habitats. Ancient woodlands contain an exceptional number of old and over-mature trees, providing dead wood habitat for a range of specialist invertebrates, including the nationally rare jewel beetle Agrilus pannonicus. Another important habitat is the small wet flush (or bog) containing several species of bog-mosses (Sphagnum spp). and water horsetail (Equisetum fluviatile), all very rare in London. Acid grassland occurs on the upper slopes, supporting heath bedstraw (Galium saxatile), pill sedge (Carex pilulifera), pignut (Conopodium majus) and other characteristic plants. In several places heathland restoration is being attempted, using heathers (Calluna vulgaris, Erica spp.). Relict heathland invertebrates include the tube-web spider (Atypus affinis) at its only known London site. The many ponds and watercourses on the site are of further botanical, entomological and ornithological interest. Other rare plants include creeping willow (Salix repens), lemon-scented fern (Oreopteris limbosperma) and hard fern (Blechnum spicant). One of north London's most popular open spaces, the Heath has been skillfully managed to integrate wildlife and recreation over the last decade. Owned by the City of London with the exception of the Kenwood Estate, which is owned by English Heritage; part Site of Special Scientific Interest. Hampstead Heath won a Green Flag Award again for 2006/7."*

Hampstead Heath Management Plan

3.10 The management of Hampstead Heath is guided by the Hampstead Heath Management Plan (2007-2017), produced by Land Use Consultants (2007). This plan provides , inter alia, the following information:

- Broad Habitat Map of the entire Hampstead Heath SMI;
- Veteran tree map;
- Historical maps of the heath including previous extent of woodland and hedgerows.

3.11 The Key Vision for the SMI is: "*Our vision is of a beautiful and accessible piece of countryside in the city, a place with a rich mosaic of habitats, a diverse landscape and a wealth of historic and natural resources*":

3.12 The primary objective is:" *To manage and preserve the Heath as an open space and maintain its unique wild and natural aspects and its ecology."*

3.13 The overriding objective under 7.2 Natural Landscape is: "*Retain and enhance the Heath's habitats and natural resources to enable continued quite enjoyment and appreciation of the natural world by its visitors*."

3.14 Fuller information on the Essential Actions of the Management Plan as outlined in section 7.2 Natural Landscape is given in Appendix 6.

PHASE 1 HABITAT SURVEY

Overview

3.1 The survey area, covering 92ha in total comprised of two distinct areas referred to in this report as the Hampstead and Highgate Valleys, which have been dammed at their southern ends, to create a series of 11 ponds in total. A further water body, named the Catch Pit, (TN3) constructed to trap silt, is also located in the Hampstead Valley. Both valleys contained numerous ponds, substantial areas of semi-natural woodland, semi-improved grassland, scattered trees, amenity grassland and sports facilities. Both valleys are less formal in their northern halves, containing a mosaic of vegetation types including extensive areas of woodland and grassland, whilst their southern halves are amenity-focused with numerous scattered trees, improved grassland and was more intensively managed. Hampstead Valley was broader and contains the majority of the woodland, forming extensive areas centred on East Heath, whilst the Highgate Valley was longer and narrower and contains the majority of the semi-improved (poor) grassland and amenity grassland dissected by overgrown hedgerows.

3.2 The majority of the survey area supported semi-natural woodland, created post 1871 (LUC, 2007) but which contained numerous older, large, trees with native/ naturalised planting beneath. Numerous non-native trees were present many of which were also of significant age and stature with standing dead wood and sizeable limbs. The stand type resembled that of species poor, acidic sessile/pedunculate oak *Quercus petraea/ robur* woodland with an understorey dominated by bramble *Rubus fruticosus agg.* and ivy *Hedera helix*.

3.3 Ancient woodland indicators were rare but comprised Midland hawthorn *Crataegus laevigata* and wild service tree *Sorbus torminalis*. Other woodland species including guelder rose *Viburnum opulus* and alder buckthorn *Rhamnus frangula* were present but only occasionally. In less trampled, or densely shaded areas, a richer mix of tree and shrubs had developed including silver birch *Betula pendula*, rowan *Sorbus aucuparia*, ash *Fraxinus excelsior* and holly *Ilex aquifolium*. Where public access was greater vegetation growth was notable sparse, particularly around mature specimen trees and close to main paths.

3.4 The survey area comprised 11 large ponds most of which supported abundant emergent and marginal vegetation grading into a mosaic of scrub, tall ruderal and woodland. A twelfth pond, known as the Catch Pit is used to trap silt. Public access was generally prohibited (by fencing) around these ponds enabling a dense ground flora and shrub layer to develop, typically dominated by bramble, common nettle *Urtica dioica, and* ivy. Different usages of the ponds for bathing, fishing, model boats or wildlife refuge partially dictated the presence and abundance of marginal vegetation and adjacent habitat. Three of the ponds are used for swimming (Mixed Bathing Pond, Kenwood Ladies' Bathing Pond and Mens only Bathing Pond). Several ponds were in part or entirely concrete-lined and more open with limited marginal vegetation. These are primarily for used for recreation and amenity value (e.g. Model Boating Pond, Highgate No. 2 Pond), with fishing and dog swimming activity causing localised bank erosion.

3.5 The survey area contained the southernmost tip of Hampstead Heath SSSI and Ken Wood Ancient Woodland Site. Here the composition was not dissimilar to that found elsewhere on site comprising native and non-native species, mature tree species, with a species poor ground flora. A particularly large, mature horse chestnut cast heavy shade over the paths close to Highgate Gate and holly created a dense understorey. The present of locally frequent coppiced hazel suggested the use of traditional woodland management practices (See photographs 20 and 21).

3.6 The majority of the grassland in the survey area was within Highgate valley and comprised of poor semi-improved grassland primarily located within the Highgate Valley, with creeping bent *Agrostis stolonifera* dominant. More floristically diverse grassland was located in isolated patches, often associated with spring lines and comprising semi-improved neutral grassland, and marshy grassland, and including species such as locally frequent soft rush, *Juncus effusus,* black knapweed *Centaurea nigra*, common fleabane *Pulicaria dysenterica*, purple loosestrife *Lythrum salicaria,* yellow flag iris *Iris pseudacorus*, meadow vetchling *Lathyrus pratensis* and ladies bedstraw *Galium verum,* and were often associated with tall ruderal species.

3.7 In contrast, the small pockets of grassland habitat in the Hampstead Valley were dominated by semi-improved acid grassland with occasional or locally frequent sheep's sorrel *Rumex acetosella,* slender rush *Juncus tenuis* and occasional red fescue *Festuca rubra. .* The pressure of foot traffic has caused widespread erosion on the grassland in places, severely limiting the condition and composition of the grassland.

3.8 Scattered (parkland) trees were numerous within the open grassland of the Highgate Valley and comprised many non-native species, particularly mature Turkey oak *Quercus cerris* and locally abundant sessile oak. Mature London plane *Platanus X acerifolia* and common lime *Tilia x vulgaris* were the most common trees planted along avenues of the main footpaths.

3.9 Two streams flowed through the survey area, feeding Kenwood Ladies' Bathing Pond (TN 8) and Stock Pond (TN 9). All other linear, drainage features were dry during the time of survey.

3.10 Much of the survey area was frequented by the public with numerous footpaths dissecting the site and, in numerous places, causing substantial erosion off the grassland and woodland habitat, particularly in the Hampstead Valley.

Semi-natural woodland

3.11 The majority of the Hampstead Valley and part of Highgate Valley comprised of semi-natural woodland characterised by species typically found on acidic soils including sessile oak and pedunculate oak, which tended to form a high forest canopy. Other locally dominant (and mature) trees included ash, beech *Fagus sylvatica*, hornbeam *Carpinus betulus,* silver birch and sycamore *Acer pseudoplatanus.* The understorey varied considerably due to localised impacts of recreational use including, well-used footpaths and localised focal points beneath over-mature or large trees, rendering the ground bare in places. The ground flora was generally species poor comprising shade-tolerant species including abundant ivy and male fern. Other typical species included frequent wood avens *Geum urbanum* and enchanter's nightshade, *Circaea lutetiana.*

3.12 Although it was difficult to distinguish between different areas due to the size and complexity of the site, some parts of the woodland had broadly different characters, which may reflect underlying soil conditions and nutrient availability. Along the northern boundary of the survey area in the Hampstead Valley, woodland areas were characterised by very straight and tall pedunculate oaks (TN16, photograph 16 and 33), with a dense understorey of bramble. Other areas centred around East Heath and south of the Vale of Health (TN15, photograph 15) were more stunted in growth and contained a more varied understorey. However, the majority of the woodland was heavily shaded with an understorey limited to ivy and patches of bramble. This was particularly apparent along the main paths including the Lime Tree Walk (See photograph 31).

3.13 In less disturbed areas, species composition was more diverse and included frequent rowan, hawthorn *Crataegus monogyna,* English elm *Ulmus procera,* elder *Sambucus nigra*, blackthorn *Prunus spinosa* and privet *Ligustrum vulgare,* with rare hazel *Corylus avellana*. An area of woodland of particular note for its diverse structure and fallen dead wood habitat was that around TN19 (See photograph 19 and 33).

3.14 Natural regeneration varied across the site, but was more prevalent in less disturbed areas, such as the wet woodland in the valley bottoms or within the fenced enclosures around the ponds.

3.15 Old boundary hedgerows in the Highgate Valley had developed into linear woodlands. Woodland tree species were present along with frequent shrub species comprising wild cherry *Prunus avium,* bird cherry *Prunus padus,* field maple, elder, blackthorn and hawthorn, and the ancient woodland indicator species wild service tree *Sorbus torminalis* and Midland hawthorn. A large specimen of wild service tree was noted along the footpath north east of Stock Pond See TN19, photograph 19).

3.16 Smaller areas of wet woodland occurred along the Hampstead Brook (TN18), around localised spring lines and hollows and within Bird Sanctuary Pond (TN 9), and were dominated by mature crack willow, goat and grey willow *Salix cinera* scrub, scattered alder *Alnus glutinosa* and tall ruderal herbs. These areas were frequently impenetrable with fallen tree trunks and tangled undergrowth and numerous male fern, pendulous sedge *Carex pendula,* and common nettle *Urtica dioica* (See photograph 18 and 9).

3.17 Hampstead Heath SSSI and Ken Wood Ancient Woodland Site within the survey comprised a varied mix of species including frequent pedunculate, sessile oak hazel, ash, silver birch, hawthorn, and locally abundant holly. Non native trees were also present and comprised Turkey Oak and an over mature Horse chestnut. The footpaths were fenced off from the main interior of the woodland enabling natural regeneration, but this was generally sparse and limited to low growing shrubs of bramble. A small patch (5m x 5m) of bracken *Pteridium aquilinum* was located at the southern corner of the woodland and was the only stand within the survey area. (See photographs 20 and 21).

3.18 The presence of non-native or exotic tree and shrub species was a frequent occurrence through many areas of woodland, such as around TN 17, photograph 17). Many were present in the form large mature trees and included species such as Turkey oak *Quercus cerris*, pin oak *Quercus palustre* were particular frequent species

as was false acacia *Robinia pseudoacacia* and Horse Chestnut. Shrub species often included the Highclere holly. The ground flora was also often dominated by large patches of small balsam *Impatiens parviflora* with few other species present.

Plantation woodland

3.19 In spite of the large number of non-native or exotic tree species recorded from the survey area, only four plantation woodlands (defined as having greater than 30% of non-native species within the canopy) were present across the two valleys (JNCC 2010). At the north-west end of Hampstead Valley, a strip of woodland comprised sycamore, pedunculate oak, false acacia, tree of heaven *Ailanthus altissima,* sweet chestnut *Castanea sativa* and holly, with an understorey including cherry laurel *Prunus laurocerasus* and rhododendron *Rhododendron ponticum*. To the south of the Ice House, a small area was dominated by mature tall horse chestnut *Aesculus hippocastanum* with bare ground beneath. In the Highgate Valley to the east of Kenwood Ladies' Bathing Pond and the Bird Sanctuary Pond enclosures were two areas of tall, etiolated horse chestnut with an understorey dominated by holly, yew *Taxus baccata and* ivy (See photograph 28).

Dense /scattered scrub

3.20 Dense scrub was found as a transitional habitat between woodland and grassland areas, and typically comprised dense bramble with locally frequent hawthorn, blackthorn, elder, English elm, goat and grey willow. Scrub was also present towards the periphery of more managed areas, within enclosed areas around the ponds, below the high tree canopy in woodland and below individual trees.

Scattered (parkland) trees

3.21 Scattered mature trees, consisting of a range of species both native and exotic, were present in both valleys but were more abundant in the extensive open grassland areas of the Highgate Valley. Frequent species included pedunculate and sessile oak, hornbeam, Turkey oak, holm oak, copper beech *Fagus sylvatica 'purpurea'*, crack willow, weeping willow *Salix x sepulchralis 'Chrysocoma'*, hybrid black poplar *Populus x canadensis* and London Plane. Younger specimens included Lombardy poplar *Populus nigra italica*, Scot's pine *Pinus sylvestris*, Corsican pine *Pinus nigra* and Indian bean tree *Catalpa bignonoides*.

3.22 Locally abundant, densely scattered, mature, sessile oaks created a distinctive linear feature along the western boundary of the Highgate valley between the SSSI/ AWS and TN19. The steeply sloping bank, and wide spreading form of the oaks created a

more wooded character with sparse bramble scrub and semi-improved grassland beneath (See photograph 26).

3.23 New tree planting has also taken place in the southern half of Highgate Valley around Dukes Field, adjacent to the bowling green and children's enclosure and included alder, grey alder *Alnus incana,* crack willow and field maple.

3.24 Avenues of mature trees are a feature of Hampstead Valley, where the Lime Avenue of tall common lime*,* virtually bisects this site*,* London plane and common lime line the main path, and Norway maple *Acer platanoides* and weeping willow *Salix x sepulchralis 'Chrysocoma'* line South End Road adjacent to the car park.

3.1 At the entrance to the site, near to Hampstead Heath overground station At the southern end of Hampstead Valley, adjacent to the avenue of trees linking the Heath to South End Road, scattered trees were dominated by London Plane, common lime and Highclere holly *Ilex x altaclarensis* with an understorey including elder, forsythia *Forsythia* sp., garden privet *Ligustrum ovalifolium 'Aureum'* and spotted laurel *Aucuba japonica*.

Semi-improved acid grassland

3.2 Five areas of acid grassland were recorded in Hampstead Valley, four of which were along the route of well-worn paths that are subject to regular trampling and erosion and are less intact as a result. The fifth area was located within the Viaduct Pond enclosure. The dominant species in these grasslands were common bent with slender rush and occasional or locally frequent sheep's sorrel and red fescue. More intact grassland occurred around ant hills (adjacent to scrub and tall ruderal within Pryor's Field) and on steeper slopes where a population of common tormentil *Potentilla erecta* was found (TN14). The area adjacent to the Vale of Health Pond (TN1) was slightly different, being wetter in character. Here a few plants of hard fern *Blechnum spicant* were identified with locally frequent purple moor grass *Molinia caerulea* and rare wavy hair grass *Deschampsia flexuosa.* This area was also affected by trampling related to fishing activity. A few individual heather *Calluna vulgaris* plants were noted on a steep sandy bank, within the enclosed area surrounding Viaduct Pond (TN2). These are likely to have been planted, and were surrounded by tall ruderal and scrub vegetation. (See photographs 1,2,14, 24, 27, 29, 32).

Semi-improved neutral grassland

3.3 Semi-improved neutral grassland occurred primarily in the Highgate Valley with five small patches present. Much of this was on sloping ground in the vicinity of spring-lines. Frequently occurring species included soft rush, meadow foxtail *Alopecurus pratensis,* red fescue, common cat's-ear *Hypochaeris radicata,* common knapweed, meadow vetchling*,* wild carrot *Daucus carota,* Ladies bedstraw and goat's-beard *Tragopogon pratensis.* Typically these areas were located within larger patches of tall ruderal vegetation, dominated by creeping thistle *Cirsium arvensis*, common nettle and great willowherb *Epilobium hirsutum.* Within Hampstead Valley, a single area of Semi improved neutral grassland was present. Another area was located in the Hampstead Valley, on the eastern edge of Pryor's Field. Here hogweed *Heraculeum spondylium* was a conspicuous component of an area of grassland that consisted of frequent, locally abundant meadow vetchling, occasional bird's-foot trefoil, bloody crane's-bill *Geranium pratensis,* and black knapweed, amongst tall ruderal vegetation and numerous anthills.

Marshy grassland

3.4 Five areas of marshy grassland were identified and these were entirely located within the northern half of Highgate Valley, associated with spring-lines within the poor semi-improved grassland and waterlogged soils adjacent to Stock Pond (TN7) and Bird Sanctuary Pond (TN9). Abundant, dominant species were soft rush with frequent hairy sedge *Carex hirta* and common fleabane. Water mint *Mentha aquatic*, yellow flag iris, agrimony *Agrimonia eupatoria*, marsh foxtail *Alopecurus geniculatus*, pendulus sedge *Carex pendula* and ladies bedstraw were also locally frequent (See photograph 23).

Poor Semi-improved grassland

3.5 The majority of grassland within the Highgate valley comprised poor semi-improved grassland, which was dominated for the most part by creeping and common bent. Other species that were also frequent throughout included false oat-grass *Arrhenatherum elatius,* Yorkshire fog *Holcus lanatus,* smaller cat's-tail *Phleum bertolonii,* white clover *Trifolium repens,* and creeping buttercup *Ranunculus repens.* Other species that were locally rare included wild carrot and black knapweed.

Tall ruderal

3.6 Tall ruderal vegetation occurred in abundance throughout the site often associated with more species-rich grassland patches, perhaps retained as a deterrent / buffer between more intensively trampled grassland. It also occurred as a transitional habitat between mature woodland, dense scrub and open grassland. Abundant and

frequently occurring species included rosebay willowherb, common ragwort *Senecio* jacobaea, Oxford ragwort *S. squalidus,* creeping thistle*,* mugwort *Artemisia vulgaris,* common nettle and false oat-grass*.*

Swamp

3.7 Stands of emergent vegetation were limited within the survey area and only occurred at Stock Pond (TN 7, photograph 7) and Bird Sancturay Pond (TN9 photograph 9). The approximate size of these stands ranged from 5-8m^2. Species present included abundant common reed *Phragmites australis*, greater reedmace *Typha latifolia* and reed sweet grass *Glyceria maxima.* Smaller stands are described in the target notes for each pond as marginal vegetation.

Marginal vegetation

3.8 Most of the ponds supported marginal vegetation as a result of the gently sloping banks and restricted public access. However, this was generally limited in extent due to adjacent woodland, amenity grassland habitats and dense overhang of trees. Where ponds were concrete-edged, there had been an attempt to encourage the growth of marginal habitat by the provision of rafts. Species typically included comoon reed, greater reedmace, yellow flag iris, purple loosestrife, reed sweet grass *Glyceria maxima* and pendulous sedge. Further information is given in respect of each pond in target notes 1-12 in Appendix 2 and photographs in Appendix 5.

Standing Open Water

3.9 A series of six ponds (>2ha) are present in the Highgate Valley, running north-south. These ponds were originally reservoirs for storing drinking water from the River Fleet. Two of these ponds, the Stock Pond (TN7, photograph 7 and 30) and the Bird Sanctuary Pond (TN9, photograph 9) were enclosed by fencing and not accessible to the public. These enclosed areas both support scrub and semi-natural woodland, with reed swamp and tall ruderal herbs here the canopy was more open. Kenwood Ladies' Bathing Pond (TN8, photograph 8) and Highgate Men's Bathing Pond (TN11, photograph 11) were both enclosed but accessible to swimmers. The Kenwood Ladies' Bathing Pond was surrounded by trees and woodland, with two areas of improved grassland used for sunbathing. Planted shrubs and flowers were located along paths and amenity areas. Highgate Men's Bathing Pond was flanked on two sides by narrow strips of woodland, whilst improved grassland with concrete lined banks bordered the pond to the north and south.

3.10 The Model Boating Pond (TN 10, photograph 10) was unfenced and surrounded for the most part by improved grassland with numerous scattered, mature trees. Marginal vegetation was limited due to it being entirely concreted-edged. The east side of Highgate No. 1 Pond (TN12, photograph 12) was fenced and overhung by scrub and trees, whilst the west side supported several small stands of reed and other marginal plants, as well as scattered trees and scrub. A small stand of the rare wood club-rush *Scirpus sylvaticus* was located in the south-west corner of Highgate No 1 Pond (12a).

3.11 A small pond (>0.01ha), recently created on a spring-line in the grassland to the west of the Bird Sanctuary Pond, supports a number of wetland species surrounded by tall ruderal, scattered trees and scrub (TN 13, photograph 13).

3.12 Hampstead Valley supported five ponds and the Catch Pit. The Viaduct Pond (TN2, photograph 2) was two-thirds enclosed by semi-natural woodland and scrub, except for its southern end, which was concrete edged where the dam was located. The Mixed Bathing Pond (TN4, photograph 4) was bordered by semi-natural woodland to the west and north, and was screened by a wide border of trees and shrubs, both native and exotic, along its eastern side. Hampstead No. 1 and 2 Ponds (TN 6 & 5, photographs 6 and 7) were both readily accessible on their western sides, with marginal vegetation being limited to relatively small stands. A small stand of the rare wood club-rush was located in the south-east corner of Hampstead No. 1 Pond (6a).

3.13 The less disturbed eastern sides of both ponds support a greater extent of marginal habitat. Sheet piling lined the southern end of Hampstead No. 1 Pond, and the north end was concrete lined. The surrounding banks supported improved grassland with scattered trees, many of which overhung the pond edges. The Catch Pit (TN3, photograph 3) was a small, concrete-edged pit surrounded by semi-natural woodland and willow scrub.

Running water

3.14 Streams in the Hampstead Valley contained no running water at the time of survey. This may have been partly due to dense vegetation or intermittent flow pattern of the streams. In the Highgate valley, one stream was noted flowing into the Stock Pond from the north-west. Here the stream bed supported abundant water horsetail and wood club-rush, both rare London species, with dominant bramble scrub on the banks, along with tall herbs including great willowherb. Overhanging trees included frequented sessile oak. The only other stream was one that flowed into the Kenwood Ladies' Bathing Pond also from the north-west. Here, the stream was culverted

adjacent to residential properties before emerging below the path, at which point it was obscured from view below dense, tall nettles before flowing into the pond (See photograph 22 and 25

Amenity / Improved grassland

3.15 Amenity / improved grassland was concentrated towards the southern end of both valleys, where the main entrances onto the Heath are located along with a number of recreational facilities, and in close proximity to Hampstead Heath station and Gospel Oak overground stations. Amenity grassland dominated the children's play area, the bowling green, the playing field behind William Ellis School, the area around the southern tennis courts and petanque pitch, and a large proportion of Dukes Field. These grasslands were typically dominated by perennial rye-grass *Lolium perenne* with frequently occurring grasses including annual meadow-grass *Poa annua,* cock's-foot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus,* along with white clover*,* broad-leaved plantain *Plantago major* and creeping buttercup*.* In places, a more relaxed mowing regime was in operation towards the periphery of close-mown improved grassland, allowing areas of semi-improved grassland to develop.

Ephemeral /short perennial

3.16 Three areas had been sown or had regenerated naturally with short-lived species, possible as a result of recent management activity. The largest area was the Fairground Site, to the north-east of Hampstead No. 1 Pond, where frequently occurring species included greater plantain, knotgrass Polygonum aviculare, swinecress *Lepidium squamatus*, dandelion Tararacum agg. and pineappleweed *Matricaria discoidea*. Two other areas of ephemeral / short perennial were present in Highgate Valley. At the northern end of the grassland between Dukes Field and the houses to the north, a small area of land had been sown with a 'cornfield mix', in which corn marigold *Chrysanthemum segetum*, corncockle *Agrostemma githago* and cornflower *Centaurea cyanus* were present. On the hill immediately to the north of the cafe, a large area of grassland had been rotovated in preparation for seeding with wildflowers. The species present had presumable been sown and included cornflower, oxeye daisy *Leucanthemum vulgare*, musk-mallow *Malva moschata* and red campion *Silene dioica* – along with abundant many-seeded goosefoot *Chenopodium polyspermum*, common orache *Atriplex patula* and curled dock *R. crispus*.

Introduced shrub

3.17 Introduced shrub was present around the changing facilities of the bathing ponds and at the southern end of Highgate Valley along the entrance off Highgate Road, including the garden of the small house (close to the Secret Garden) and around the

sports and amenity facilities. Species present included mock orange *Philadelphus coronarius,* lilac *Syringa vulgaris,* rhododendron, broad-leaved cockspurthorn *Crataegus persimilis,* spotted laurel*, Cotoneaster sp.,* bay *Laurus nobilis,* Bull bay *Magnolia grandiflora* and Irish yew *Taxus baccata* var. *fastigiata.*

Native species-rich hedgerow with trees

3.18 A recently planted (post 1866) (LUC, 2007) native species-rich hedgerow with young trees was located along the edge of survey area at the southern end of Highgate Valley. Species included frequent hazel, blackthorn, pedunculate oak, field maple, guelder rose, hawthorn, ash and cherry *Prunus cerasifera spp*. Recently planted species-rich hedgerows around the northern end of the tennis courts, contained similar species, with the addition of bird cherry and birch.

Native species-poor hedgerow

3.19 Single species hedgerows (hawthorn) were located around the southern end of the tennis courts and the enclosure, which included the petanque court.

Wall

3.20 A low brick wall, located to the south of the ice house, appeared to function as a retaining wall where the ground dropped away suddenly. It was heavily shaded by trees and did not support any rare lichen or bryophyte communities nor any other species.

Dry Ditch

3.21 Dry ditches were a noticeable feature of Highgate Valley where they ran eastwards from Parliament Hill towards the ponds to the east, and were delineated by former hedgerow boundaries. Many of these ditches were enclosed by dense scrub and trees with no ground flora except abundant ivy.

Buildings

3.22 The buildings present on site were associated with public facilities and ground operations. A number of buildings, of fairly recent origin, were located at the south end of Highgate Valley. In addition, there were buildings associated with all three bathing ponds. A small, two-storey brick house was located at the entrance to Hampstead Heath off Highgate Road (close to the Secret Garden), as was a second further north, which was located along the footpath leading from the bus terminus. A small garage-type building was located a little further west along this footpath.

Hard-standing

3.23 Hard-standing comprised the numerous paths throughout both valleys, small areas associated with the bathing ponds, a seating area on the south side of the cafe in Highgate Valley and the car park in Hampstead Valley.

Bare ground

3.24 High levels of pedestrian recreational use accounted for much of the bare ground within the survey area. This was particularly noticeable on the sandier soils in Hampstead Valley, where paths criss-crossed Pryor's Field or under dense woodland canopy, where the compacted ground supported very limited ground vegetation. There was localised poaching around several ponds, notably Hampstead No 1 and 2 Ponds, Highgate No.1 Pond and Vale of Health Ponds where public access for fishing

or dog swimming had created localised soil compaction and erosion of adjacent vegetated banks.

INVASIVE SPECIES

3.25 Most of the Japanese knotweed *Fallopia japonica* plants recorded were of small stature and difficult to detect. Seven stands were located in the Highgate Valley and one stand in Hampstead Valley in areas of low bramble often growing under trees. 27 stands of Himalayan balsam *Impatiens glandulifera* were located in the Hampstead Valley and ten stands within the Highgate Valley, most often growing with tall ruderal vegetation along the ditches. A single large specimen of giant hogweed *Heracleum mantegazzanium* was recorded in the Highgate Valley within the Bird Sanctuary Pond enclosure. Three patches, two of which were quite large (5x5m) of garden yellow archangel *Lamiastrum galeobdolon argentatum* were recorded in woodland in Hampstead Valley (south-east edge of the Playing Field and southwest of the Viaduct Pond), with the small patch located within the gardens of Kenwood Ladies' Bathing Pond. Two small areas of montbretia *Crocosmia paniculata* were recorded, one on the north-west bank of Hampstead No.2 Pond and the other within the gardens of Kenwood Ladies' Bathing Pond. A single patch of Virginia creeper was present in the Hampstead Valley at its western end, adjacent to a private property garden. A total of four plants of *Cotoneaster horizontalis w*ere located in the survey area. Two in the Highgate valley, within a private garden and east of Men's Only Bathing Pond and the other two in the Hampstead Valley, one being on the edge of Hampstead No 1 Pond and within the gardens of the Mixed Bathing Pond.

4 Conclusions

HABITAT SURVEY

4.1 The majority of the survey area falls within Hampstead Heath SMI, which has been designated for its unique mix of formal and natural habitats including numerous veteran trees and dead wood habitat, ancient woodlands, acid grassland, a sphagnum bog and numerous ponds and watercourses.

4.2 Habitats mentioned in the citation as qualifying features of the SMI and found within the survey area include acid grassland, over-mature trees, dead wood habitat, ponds and watercourses, and a number of rare plants comprising water horsetail, wood club rush and hard fern. These habitats, habitat features and species are considered of Metropolitan importance as they represent the intrinsic value of the SMI.

4.3 The survey area covered approximately 92ha of Hampstead Heath SMI and comprised 23 Phase 1 habitat types. These are listed below in order of approximate abundance.

- Semi-natural woodland
- Poor semi-improved grassland
- Standing water
- Amenity grassland
- Plantation woodland
- Dense/scattered scrub
- Semi-improved acid grassland
- Semi-improved neutral grassland
- Bare ground
- Marshy grassland
- Tall ruderal herb
- Swamp
- Scattered (parkland trees)
- Marginal vegetation

- Ephemeral / short perennial
- Hardstanding
- Introduced shrub
- Buildings
- Species-rich hedgerow
- Species-poor hedgerow
- Ditch
- Running water
- Wall

4.4 The site contain nine Habitats of Principal Importance (JNCC 2011)[1], seven London BAP habitats (LBP 2007) and four Camden Local BAP habitats (London Borough of Camden,2010). These are listed in Table 2, Appendix 3 and summarised below using JNCC habitats types only:

- lowland mixed deciduous woodland;
- wet woodland;
- wood pasture & parkland
- hedgerows;
- lowland dry acid grassland
- lowland meadow
- pond;
- reedbed; and
- river.

4.5 The survey area contained 12 ponds and a Catch pit. In the Highgate Valley, the Stock Pond (TN 7) Bird Sanctuary Pond (TN 9) and Highgate No 1 pond (TN 12) supported the most diverse habitat types within close proximity to the water's edge, including abundant marginal vegetation, swamp, dense scrub, marshy vegetation, scattered (parkland) trees and semi-natural woodland. In the

[1] The JNCC guidance on Habitats of Principal Importance do not contain enough information to determine qualifying features of a particular habitat. As such, leading to inclusion of habitats (e.g. hedgerows that may not be particularly species rich or ancient). In this report, they are given as a guide only.

Hampstead Valley, the Vale of Health Pond (TN 1) and Viaduct Pond (TN 2) were the most diverse, with limited marginal vegetation, dense scrub, acid grassland and semi-natural woodland.

4.6 The majority of Highgate Valley was dominated by poor semi-improved grassland, which contained pockets of floristically more diverse grassland comprising four pockets of semi-improved neutral grassland and five areas of marshy grassland. The large open areas throughout the valley supported numerous mature scattered (parkland) trees of native and non-native origin. Semi-natural woodland tended to be linear in character (overgrown hedgerows) that dissected the valley in an east-west orientation. Dense/scattered scrub, tall ruderal herb typically bordered the woodland edges.

4.7 The majority of Hampstead Valley was dominated by semi-natural woodland, which varied in openness, structural complexity and tree species. The more structurally diverse, less eroded areas were centred in woodland at TN15, TN16, TN17 and TN 18. The majority of grassland centred in Pryor's Field contained a large expanse of semi-improved acid grassland with scattered, mature (parkland) trees, with a smaller patch of semi-improved neutral grassland and poor semi-improved grassland. Other areas of acid grassland were found in four smaller areas centred around TN 1, TN 14 and TN 2.

4.8 A small part of the survey area (0.4ha) was located within Hampstead Heath Woods SSSI of which most is Kenwood Ancient Woodland Site. The SSSI is designated for it's over mature, high forest stands of acid sessile oak – beech woodland an abundance of dead standing wood and associated rare invertebrates.

4.9 The northern tip of Highgate Valley, including Stock Pond (TN 7), and the woodland and scattered trees along the eastern boundary (including those areas around TN19) are adjacent to the SSSI and therefore provide supporting and/or secondary habitat (CIEEM, 2006) to the ancient woodland habitat. Similar features to both areas are the mature trees and standing dead wood, which may be important for rare invertebrate species.

INVASIVE SPECIES

4.10 The invasive species survey mapped 46 individual localities of invasive species across the survey area. These comprised:

- Japanese knotweed: seven stands in the Highgate Valley and one stand in Hampstead Valley;
- Himalayan balsam: 27 stands in the Hamstead Valley and ten stands in the Highgate Valley;
- giant hogweed: 1 plant in the Highgate Valley;
- Montbretia: 1 stand in the Highgate Valley and 1 in the Hampstead Valley;
- garden yellow archangel: Two stands in the Hampstead Valley and one in the Highgate Valley;
- Virginia creeper: In one location in the Hampstead Valley; and
- Cotoneaster: Two plants found in the Highgate Valley and two found in the Hampstead Valley.

4.11 From previous surveys, the size of Japanese knotweed and Himalayan balsam stands has decreased substantially as a result of activity to control the species. As such, the remaining areas are small and isolated. However, it is still possible that future management activities could disturb the soil leading to spread of these species.

5 Recommendations

Recommendations

5.1 Features, for which the Heath has been designated, including mature, old trees, acid grassland, woodland, ponds and watercourses, and rare plant species, should be protected from any proposed development works.

5.2 Remnant pockets of semi-improved acid grassland, neutral and marshy grassland should be retained where possible to maintain habitat diversity. In particular, those areas that are in good condition and supporting rare species including anthills should be conserved.

5.3 To ensure there are no detrimental impacts to Ancient Woodland, Natural England's Standing Advice is: any development works are to maintain a minimum 15m distance away.

5.4 The Hampstead Heath SMI Management Plan recognises the potential for enhancing biodiversity on the Heath with particular reference to expanding areas of reed bed (NL20), scrub and bramble (NL18) enlarging the West Heath sphagnum bog, (located outside the survey area) (NL19) and to consider the re-introduction of grazing as a management tool (NL23). The development proposals should consider the aspirations of the Management Plan in safeguarding and/ or expanding existing features where possible.

5.5 Due to the low nutrient levels of the poor semi-improved grassland compared to amenity or improved areas, there is potential scope to restore floristically more diverse grassland habitat post construction.

Invasive Species

5.6 The Property Care Association's *Code of Practice for the Management of Japanese knotweed* (Ver. 2.6, 20/03/2013) should be consulted for advice and guidance on the control and removal of invasive plant species.

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Appendix 1: Habitat Plan

Figure 1 : Phase 1 Habitat Plan of the survey area: Hampstead Valley North

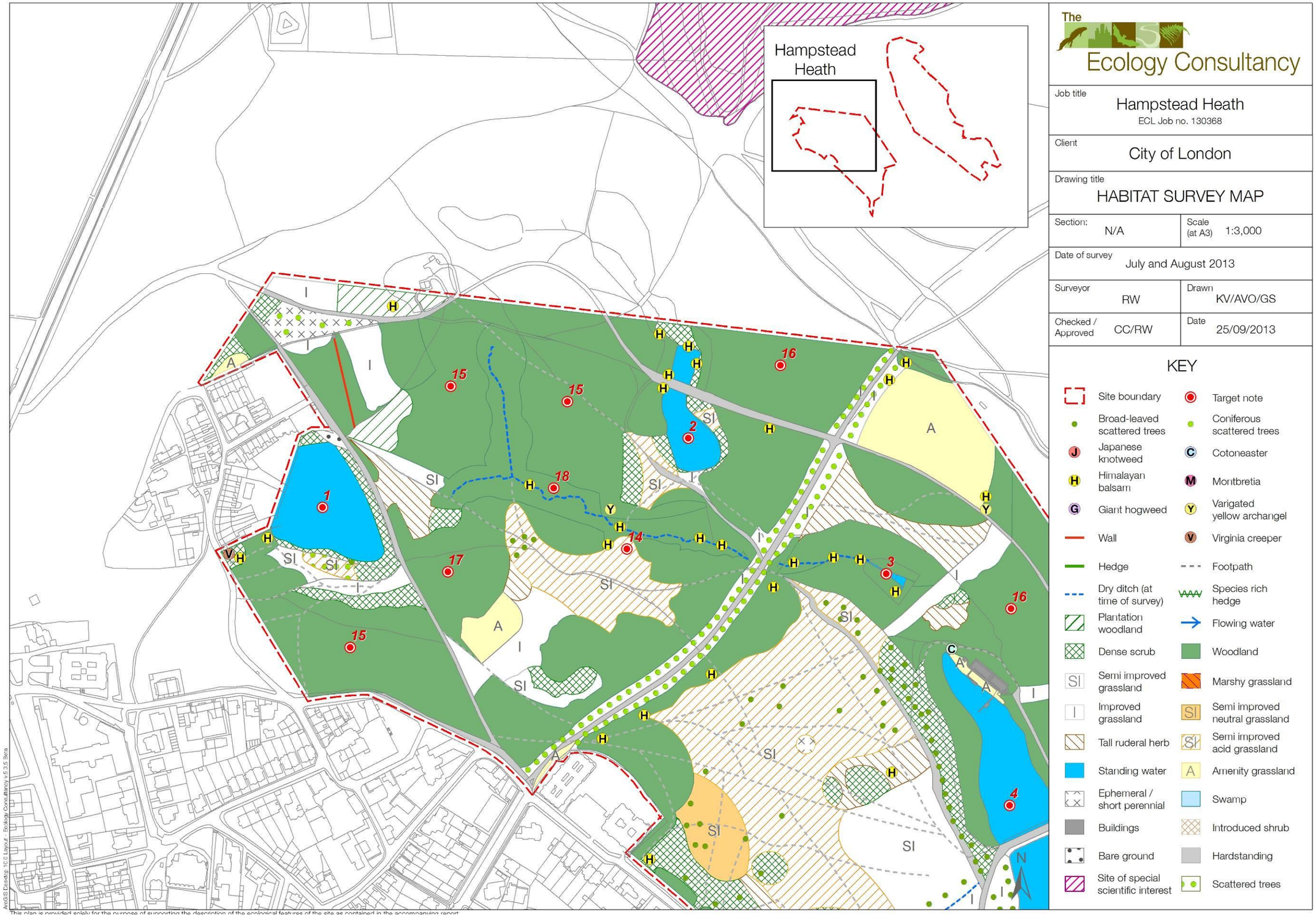


Figure 2 : Phase 1 Habitat Plan of the survey area: Hampstead Valley South

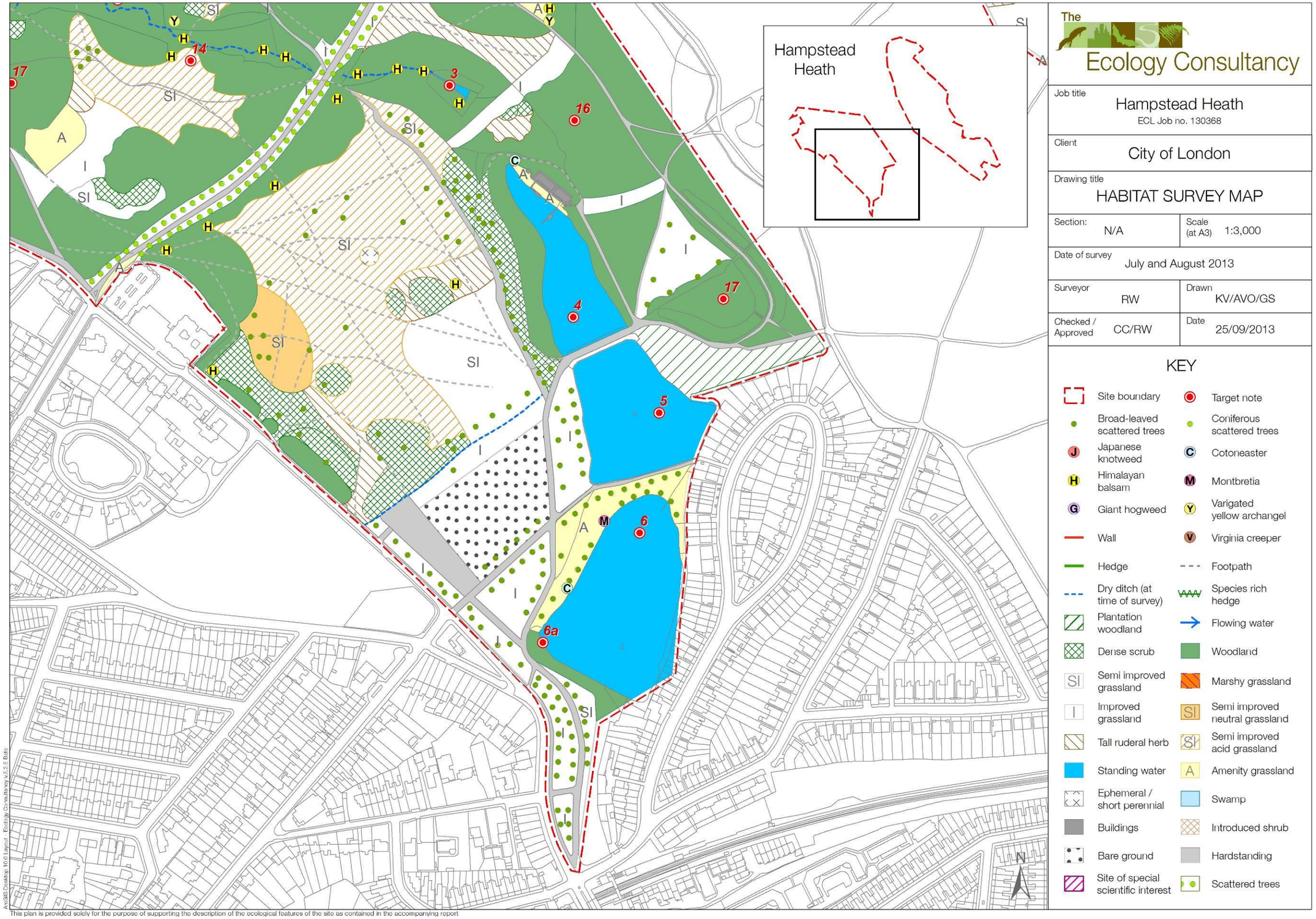


Figure 3. Phase 1 Habitat Plan of the survey area: Highgate Valley North

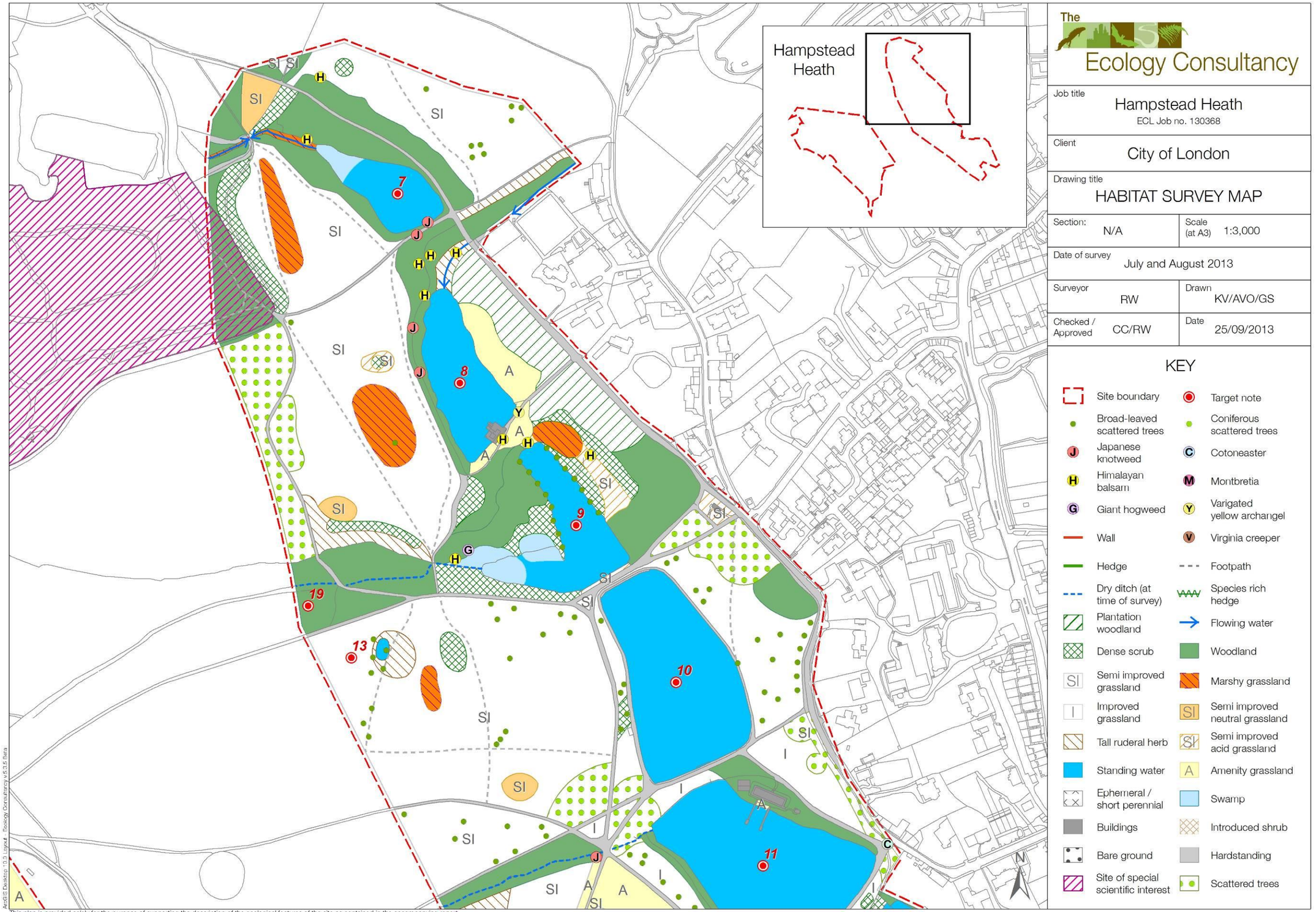
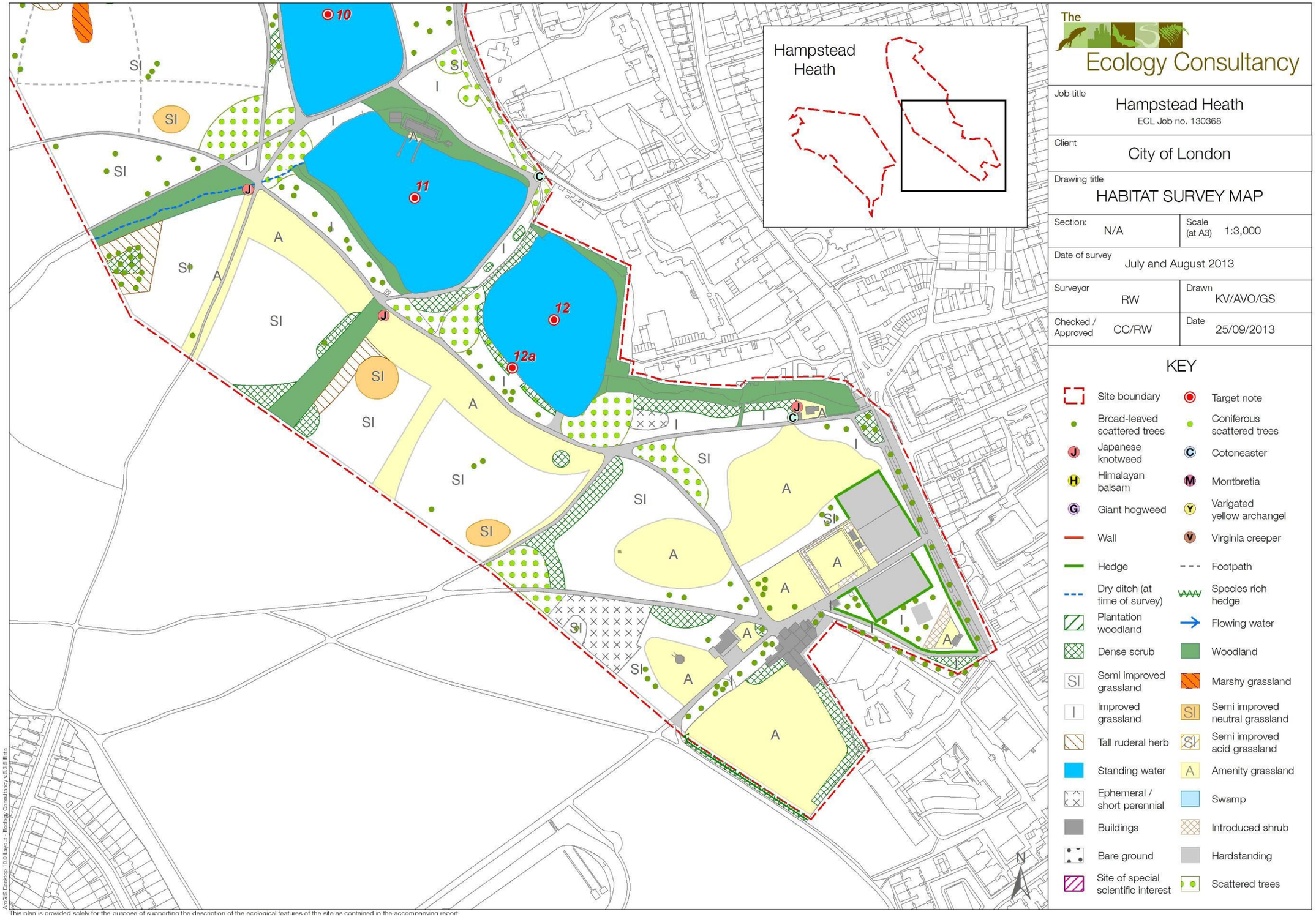


Figure 4. Phase 1 Habitat Plan of the survey area: Highgate Valley South



Appendix 2: Target Notes

Table 1: Phase 1 Target Notes

No:	Phase 1 Habitats described	Map Location	Target Note Descriptions
1	Standing open water Marginal vegetation Dense Scrub Semi-improved acid grassland	Vale of Health Pond	A pond (0.86ha) with sloping banks. Marginal vegetation occurred along the western bank (bordering residential properties) and to the south-east corner, and consisted of widely occurring common species including gypsywort, water forget-me-not, common figwort and soft rush. The southern bank was heavily shaded and badly poached by public access. The vegetation was typically dominated by overhanging crack willow and silver birch, locally frequent male fern and purple moor grass were of particular note close to the water's edge. In addition, a single specimen of the rare hard fern, was growing on a log. Further away from the pond, on slightly higher ground, frequent European gorse, red fescue and rare wavy hair grass and sheep's sorrel were present. In the south-west corner of the pond, a small stand of common reed along with occasional reed sweet-grass, purple loosestrife, sweet flag *Acorus calamnus* and water horsetail encompassed a large weeping willow. Patches of crack willow, osier and goat willow scrub overhang the water edges in the north and east, with patches of marginal flag iris and pendulous sedge in less shaded areas.
2	Standing open water Marginal vegetation Scrub Tall herb Semi-natural woodland	Viaduct Pond	A pond (0.34ha) traversed by the viaduct bridge with steeply sloping banks. To the north of the bridge, the banks were heavily vegetated with dense scrub dominated by crack willow and alder. A specimen of royal fern *Osmunda regalis* was growing close to the water along with a small stand of common reed and rare flag iris. To the south of the bridge was a larger body of open water. The eastern bank comprised of a range of marginal vegetation including yellow water-lily *Nuphar lutea*, a small stand of greater reedmace *Typha latifolia,* reed sweet-grass and pendulous sedge. Further away from the pond, a steeply-sloping sandy bank supported a mosaic of semi—improved acid grassland, scrub and tall ruderal, with several individual plants of heather *Calluna vulgaris* and rare sheep's sorrel. Scrub included bramble, bracken, dogwood, guelder rose and European gorse. Tall ruderals included common and hoary ragwort, and rosebay willowherb. The western bank was bordered by mature, semi-natural woodland comprising beech, Norway maple, ash, and silver birch with a limited understorey of hawthorn, holly, bramble and ivy. Dense scrub dominated the water's edge on this side, and included blackthorn, alder buckthorn, alder and crack willow. The southern bank was hard edged for amenity access.
3	Standing open water Scrub Tall herb Semi-natural woodland	Catch Pit	A small concrete-lined pit approximately 7m x 3m (0.01ha) used to collect silt. Vegetation choked the banks and stream inlet included pendulous sedge, yellow flag, gypsywort, brooklime and water figwort, which graded into woodland cover with frequent crack willow, ash, silver birch, common lime and sycamore, below which was a dense scrub with crack willow, blackthorn, privet, redcurrant and bramble. The dense shading limited ground cover, and ferns and ivy were abundant. Dead wood and impenetrable tree growth was frequently typical. To the southwest beyond the fence, a large patch of ferns was notable and included abundant broad buckler fern *Dryopteris dilatata*,, male fern, hart's tongue fern and several

Table 1: Phase 1 Target Notes

No:	Phase 1 Habitats described	Map Location	Target Note Descriptions
			plants of common polypody *Polypodium vulgare.*
4	Standing open water Scrub Semi-natural woodland Amenity grassland Introduced shrubs	Mixed Bathing Pond	A pond (0.70ha) surrounded by a belt of mature with overhanging trees along the water's edge. Frequent species included ash, sycamore, common lime, crack willow and silver birch with an understorey dominated by ivy and bramble. Steep banks and dense shading limited marginal vegetation to scattered scrub. The southern bank was concrete edged with no marginal vegetation and was used for fishing access. Amenity grassland and planted shrubs were present around the bathing facilities.
5	Standing open water Marginal vegetation Scattered parkland trees	Hampstead Heath Pond No. 2	A pond (1.06ha) with limited marginal vegetation on the steep-sloping western bank, with reed sweet-grass, great reedmace, yellow iris, pendulous sedge and water mint. The northern and southern banks were concreted edged. Numerous trees, including crack and weeping willow overhung the pool, with others scattered on the banks, including London plane, hybrid black poplar and eastern balsam poplar.
6	Standing open water Marginal vegetation Scattered trees Amenity grassland Semi-natural woodland	Hampstead Heath Pond No 1.	A pond (1.55ha) with overhanging scattered trees on the steeply sloping northern bank, including weeping willow, ash, crack willow and osier. Emergent vegetation was present in varying amounts around the pond perimeter included large stands of common reed and common club-rush, with locally frequent branched bur-reed, reed sweet-grass, great reedmace and galingale. A single specimen of wood club-rush was recorded in the south-western corner of the pond. Mature woodland defined the steep southern bank and comprised frequent sycamore, blackthorn, elder and ash with an understorey dominated by ivy.
7	Marginal vegetation Standing open water Semi-natural woodland Swamp Marshy grassland	Stock Pond	A pond (0.44ha) with no public access and surrounded by semi-natural woodland with abundant pedunculate oak, frequent beech with occasional hornbeam, wych elm, silver birch, ash and sessile oak. The shrub layer, dense in places, included guelder rose, dogwood, hazel and holly. The ground cover was limited, dominated by common nettle, bramble and male fern. A small swamp (5x5m) dominated by common reed was located in the northern end of the pond grading into an area of marshy grassland (6x15m) with abundant wood club-rush (at one of its few sites in London) and frequent greater horsetail, great willowherb and wild angelica. This area appears to be sustained by a small stream, which flows into the pond from the north. Scattered alder and crack willow were also present but other marginal vegetation was limited, due to the dense overhang of trees.

Table 1: Phase 1 Target Notes

No:	Phase 1 Habitats described	Map Location	Target Note Descriptions
8	Semi-natural woodland Standing open water Marginal vegetation Introduced shrubs Improved grassland Plantation woodland Amenity Grassland	Kenwood Ladies' Bathing Pond	A pond (0.66ha), which supported areas of emergent vegetation, most abundant along the eastern and southern sides of the pond. Species include abundant sweet flag, frequent greater reedmace, yellow flag iris and common reed. Marginal species, located primarily along the eastern bank included purple loosestrife, wild angelica, water mint and great willowherb. A large area of improved grassland with patches of scrub lay to the east of the pond and a smaller area was located at the southern end of the site. Along pathways and around the facilities, planted shrubs and flowers were well established. Plantation woodland dominated the eastern area with a high canopy of horse chestnut, with a dense species-poor understorey of holly, frequent yew and occasional elder and cherry laurel. Ivy was the dominant groundcover. The pond was fed by a small stream from the north east, the course of which was obscured by dominant common nettle. A small stand .(>5m^2) of common reed, with tall ruderal vegetation was abundant along the northern tip of the pond and surrounded by frequent alder, crack willow and silver birch (wet woodland).To the north of the stream, semi-natural woodland prevailed and comprised of frequent pedunculate oak, ash and field maple. The narrow, western steeply sloping bank supported a woodland canopy with abundant pedunculate oak, frequent ash, sycamore, alder and hornbeam and an understorey including hawthorn, holly, field and dog rose, and blackthorn. Marginal vegetation was limited to small patches common reed, reedmace and yellow flag iris due to the dense overhang of trees .
9	Semi-natural woodland Plantation woodland Standing open water Marginal vegetation Dense / scattered scrub Swamp Scattered trees Marshy grassland Tall ruderal	Bird Sanctuary Pond	A pond (1.67ha), the surrounds of which comprised a large fenced area, with a complex mix of mature and impenetrable vegetation. Most of the pond to the north was surrounded by wet woodland (densely scattered trees) with abundant silver birch, alder, crack willow and ash, with occasional pedunculate oak in drier areas. Marginal vegetation was limited due to the density of the tree canopy, but two patches (8x8m) of swamp vegetation (dominated by common reed) were present in the western arm of the pond. Marshy vegetation was present in two distinct areas and surrounded by dense bramble scrub, tall ruderal and scattered broadleaved trees. Species present comprised abundant great willowherb, frequent wild angelica, yellow flag, purple loosestrife, water mint, common figwort, soft rush, red campion, creeping thistle and pendulous sedge. Surrounding semi-natural woodland to the east comprised abundant pedunculate and sessile oak, and ash with sizeable canopies. The understorey consisted of frequent common and Midland hawthorn, with abundant bramble and locally dominant ivy. Abundant dead wood was present. Surrounding plantation woodland was dominated by mature horse chestnut with an understorey dominated by holly. The ground flora was notably absent or dominated by ivy. A few plants of perfoliate alexanders *Smyrnum perfoliatum* were found near the bird feeder.

Table 1: Phase 1 Target Notes

No:	Phase 1 Habitats described	Map Location	Target Note Descriptions
10	Standing open water Marginal planting Scattered trees Improved grassland Dense /scattered scrub	Model Boating Pond	A pond (1.67ha) primarily used for amenity purposes with concrete edging and lacking natural sloping banks. Marginal vegetation is limited to a series of floating rafts planted with a mixture of typical species, which included purple loosestrife, yellow iris, gypsywort, brooklime and monkey flower (XX). Two patches of common reed have been planted in the northern corners of the pond, comprising common reed, reed sweet-grass, reed canary grass with abundant skullcap *Scutellaria galericulata*. Improved grassland with scattered trees surrounded the pond. Low scrub vegetation with bramble and cherry plum *Prunus cerasifera* along with perforate St. John's-wort *Hypericum perforatum*, mugwort *Artemisia vulgaris* and scentless mayweed *Tripleurospermum inodorum*. Scattered trees included wych elm and sweet chestnut *Castania sativa*.
11	Standing open water Semi-natural woodland Scattered trees Improved grassland	Highgate Men's Bathing Pond	A pond (1.86ha), surrounded by dense scattered trees and mature linear woodland with frequent London plane, holm oak, wych elm, ash, yew, field maple and hawthorn. On the western bank, alder buckthorn *Frangula alnus* and broad-leaved cockspur thorn *Crataegus persimilis* were present The southern end was concrete edged and used for fishing access. A narrow trampled strip of bare ground was present with a few herbs and ruderals including ribwort plantain, wild carrot and bird's-foot trefoil *Lotus corniculatus.* A group of four hornbeam are located at the north-west corner of the bank and a double-trunked pedunculate oak, midway along the bank. The northern end of the pond was a sloping grass bank with abundant perennial rye-grass, frequent Yorkshire fog and a small number of tall herbs, including black horehound, creeping thistle, hoary mustard and curled dock.
12	Standing open water Marginal vegetation Scattered trees	Highgate Pond No.1	A pond (1.3ha) with most banks supporting stands of emergent and marginal vegetation with a good range of species including common and grey club-rush, common reed, branched bur-reed, gypsywort, skullcap and purple loosestrife. The western bank was more steeply sloping, overhung with trees including crack willow and sycamore and supported patchy marginal vegetation. Two over-mature hybrid black poplars were located close to north-eastern and north-western corners of the pond.
13	Standing water Marginal vegetation Scrub Tall ruderal Scattered trees	Southwest of Bird Sanctuary Pond	A small pond (5m x5m) has recently being created on a springline, dominated by Canadian waterweed Elodea Canadensis. Marginal species included reed sweet-grass, galingale *Cyperus longus* and purple loosestrife. Adjacent trees include crack willow and Lombardy poplar. Scattered tall ruderal and scrub surround the pond.
14	Semi-improved acid grassland Bare ground Scattered trees Scattered scrub	South of East Heath	The steep slopes have maintained a more intact acid grassland community than flatter areas close to well worn paths, with frequent red fescue, common and creeping bents, sheep's and common sorrel, and in this particular locality a large patch of flowering tormentil *Potentilla erecta*. Lower down, a large patch of slender rush was also present.

Table 1: Phase 1 Target Notes

No:	Phase 1 Habitats described	Map Location	Target Note Descriptions
15	Semi-natural broadleaved woodland	Hampstead Valley in 3 areas west of Viaduct pond.	These woodlands appeared stunted in character with a dense canopy of pedunculate and sessile oak with an understorey of shrubs and young trees typically comprising of frequent silver birch and rowan. The understorey was generally dominated by low growing bramble, with a sparse ground flora dominated by ivy, small balsam and enchanted nightshade. Dead standing and fallen wood was a frequent feature and paths were generally few and small. Proximity to numerous over mature beech trees (old hedge-line) rendered certain areas void of vegetation.
16		Hampstead Valley: north of main path.	These woodland areas appeared to comprise of a much higher forest by mature, vertical stemmed, pedunculate oak standards dominating the canopy. Other species were locally frequent and included ash, common lime, occasional beech and silver birch. The understorey was dominated by large expanses of tall growing bramble. Dead standing wood was also a features of these areas. Proximity to main paths and large trees rendered some areas more sparsely vegetated due to increased public access.
17		Hampstead Valley: South east corner.	Woodland in this area consisted of a large number of mature non-native species, which proved difficult to determine whether it should be placed in the planation or semi-natural woodland category. Species included locally abundant sycamore, frequent horse chestnut and occasional false acacia and common lime. Native species including frequent pedunculate oak, ash, holly, silver birch and hornbeam.
18		Along Hampstead Brook and tributaries, localised patches in Highgate Valley.	These woodland areas are associated with waterlogged soils in the valley bottoms and comprised of abundant crack willow with frequent goat willow. The understorey was typically a tangled mess of fallen branches, tall ruderal vegetation, marshy vegetation, and ferns including frequent pendulous sedge, male fern, common nettle, bramble, great willowherb and occasional flag iris and Himalayan balsam.
19		Highgate Valley: west of the Bird Sanctuary Pond.	This was a particularly healthy looking wooded area consisting of a diverse structure not seen elsewhere in the Highgate Valley. A good shrub and understorey layer was present along with a mature canopy cover of pedunculate and sessile oak, with birch, rowen, field maple and holly. Bramble was still dominant in the shrub layer and ground flora limited to common species including Yorkshire fog, herb Robert, enchanter's nightshade and male fern.
SSSI	Semi-Natural Woodland (ancient).	Within SSSI boundary	The survey area contained the southernmost tip of Hampstead Heath SSSI and Ken Wood Ancient Woodland Site. Here the composition was not dissimilar to that found elsewhere on site comprising native and non-native species, mature tree species, with a species poor ground flora. A particularly large, mature horse chestnut cast heavy shade over the paths close to Highgate Gate and holly created a dense

Table 1: Phase 1 Target Notes

No:	Phase 1 Habitats described	Map Location	Target Note Descriptions
			understorey. The present of locally frequent coppiced hazel suggested the use of traditional woodland management practices. [2]

[2] Due to the time of survey in July/August, identification of spring flowering ancient woodland indicator species may have been missed.

Appendix 3: Priority Habitats

Table 2 : Phase 1 habitat types / features [3]relating to Habitats of Principal Importance, London BAP and Camden Local BAP

Phase 1 habitat type / feature & location	Habitat of Principal Importance	London BAP	Camden Local BAP
Ancient semi- natural woodland (part of Hampstead Heath SSSI and Kenwood Ancient Woodland Site).)	Lowland mixed deciduous woodland.	Woodland	Woodland, hedgerows & trees
Semi natural woodland (of more recent origin) within Hampstead and Highgate Valley (i.e. the majority all in the survey area).	Lowland mixed deciduous woodland & Wet woodland	Woodland.	Woodland, hedgerows & trees
Plantation Woodland (located in both valleys - one next to Kenwood Ladies' Bathing Pond (TN 9) and the other north of the Vale of Health Pond (TN 1).	N/a	Woodland	Woodland, hedgerows & trees
Scattered (Parkland) trees (the majority are within the Highgate Valley).	Lowland woodland pasture & parkland [4]	Open Landscapes & ancient / old trees	Grassland and Heath and Woodland, hedgerows and trees.
Standing open water (All 12 ponds).	Pond	Standing open water	Waterways and wetlands
Marginal vegetation (All 12 ponds)	Pond	Standing open water	Waterways and wetlands
Poor semi-improved grassland (the majority is in the Highgate Valley & a small part of the Hampstead Valley in the south east of Pryor's Field).	N/a	Meadows and pastures	Grassland and heath
Semi-Improved acid grassland (only within the Hampstead Valley) within five different areas including TN14 and part of TN 1).	Lowland dry acid grassland	Acid grassland	Grassland and heath

[3] Phase 1 habitat features comprising buildings and walls have not been included in this assessment.
[4] The JNCC criteria require six key features for the habitat area to meet, of which five are present within the survey area. These are 1) comprise ancient/ old trees, 2) the presence of grazing animals, 3) the presence of micro-habitats (such as fallen trees, dead wood, decaying holes), 4) nectar source for invertebrates, 5) open grassland habitat beneath and 6) continunity of management. However, there is no guidance on the number of trees or size of area that would qualify.

Table 2 : Phase 1 habitat types / features [3]relating to Habitats of Principal Importance, London BAP and Camden Local BAP

Phase 1 habitat type / feature & location	Habitat of Principal Importance	London BAP	Camden Local BAP
Semi-improved neutral grassland (four areas within the Highgate Valley and one area within the Hampstead Valley.	Lowland Meadows[5]	Meadows and pastures	Grassland and heath
Amenity Grassland (including Improved grassland)	N/a	Parkland and urban green spaces.	Grassland and heath
Marshy Grassland (all areas within northern half of the Highgate Valley, in areas of grassland and adjacent to Stock Pond (TN 7) and Bird sanctuary pond (TN 9).	N/a	Fens Marsh & Swamp	Grassland and heath
Reed Swamp (All areas are located within the Highgate Valley associated with Stock Pond (TN 7) and Bird Sanctuary Pond (TN 9).	Reedbeds	Reedbed	Waterways and wetlands
Dense scrub	N/a	Woodland	Woodland, hedgerows & Trees
Tall ruderal	N/a	Meadows & pastures	Woodland, hedgerows & Trees
Species rich hedgerow and species poor hedgerows in the Highgate Valley.	Hedgerows	(Woodland)[6]	Woodland, hedgerows & Trees
Introduced shrub	N/a	N/a	Woodland, hedgerows & Trees

[5] Additional guidance for determining the value of grassland habitats has been taken from Natural England, Higher level stewardship Manual (2010).
[6] The London BAP does not have a separate category that includes hedgerows and the woodland BAP does not specifically mention hedgerows however it is assumed that it would fall within the Woodland BAP habitat Action Plan.

Table 2 : Phase 1 habitat types / features [3]relating to Habitats of Principal Importance, London BAP and Camden Local BAP

Phase 1 habitat type / feature & location	Habitat of Principal Importance	London BAP	Camden Local BAP
Bare ground (located in both valleys)	N/a	N/a	N/a
Ephemeral / short perennial (located at the Fairground site in the Hampstead Valley and by the café and Secret garden in the Highgate Valley)	N/a	N/a	N/a
Dry ditches (located in in both valleys).	N/a	N/a	Waterways and wetlands
Running (Flowing) water adjacent to Stock Pond TN7 & adjacent to Bird Sanctuary Pond (TN9).	River	Rivers and streams	Waterways and wetlands

Appendix 4: Invasive Species List

Table 4 : Location and description of all stands of Schedule 9 invasive plants within site survey area.

No:	Location	Species	Common Name	National Grid Reference (TQ)	Brief Location	Description
1	Highgate	*Fallopia japonica*	Japanese Knotweed	27563 87108	Stock Pond / Southern boundary.	1-2 plants amongst bramble, north side of path.
2	Highgate	*Fallopia japonica*	Japanese Knotweed	27563 87105	Kenwood Ladies' Bathing Pond / Northern boundary	3 small plants amongst bramble South side of path
3	Highgate	*Fallopia japonica*	Japanese Knotweed	27716 86525	West of Highgate Men's Bathing Pond	2 small plants amongst bramble scrub at path junction.
4	Highgate	*Fallopia japonica*	Japanese Knotweed	2730 787243	Within private property garden close to the Secret Garden	Partially visible, potentially 5 or more tall plants.
5	Highgate	*Fallopia japonica*	Japanese Knotweed	27555 87025	West of Kenwood Ladies' Bathing Pond	2 x small plants within low bramble south of mature oak.
6	Highgate	*Fallopia japonica*	Japanese Knotweed	27553 87049	West of Kenwood's Ladies Bathing Pond on slope.	3 small plants on slope with tall ruderal.
7	Highgate	*Impatiens glandulifera*	Himalayan Balsam	27697 86885	Within Bird Sanctuary Pond enclosure / Northeast side.	Area showed signs of recent removal of this species.2-4 tall plants amongst willowherb.
8	Highgate	*Impatiens glandulifera*	Himalayan Balsam	27557 86789	Within Bird Sanctuary Pond enclosure/ Western side.	3-10 scattered plants amongst tall herb and scrub following stream.
9	Highgate	*Heracleum mantegazzianum*	Giant hogweed	27623 86807	Within Bird Sanctuary Pond enclosure / Western side.	1 large plant on edge of reed swamp.
10	Highgate	*Impatiens glandulifera*	Himalayan Balsam	27848 86822	North west of Stock Pond/ edge of woodland	3-4 plants amongst large patch of small balsam.

Table 4 : Location and description of all stands of Schedule 9 invasive plants within site survey area.

No:	Location	Species	Common Name	National Grid Reference (TQ)	Brief Location	Description
11	Hampstead	*Crocosmia spp*	Montbretia	27265 85966	Hampstead Heath Pond No 2 / Eastern side.	Few plants along waters edge below trees.
12	Hampstead	Impatiens glandulifera	Himalayan Balsam	27004 86496	East of Viaduct Pond / South of path.	3-4 plants within tall herb and scrub.
13	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26613 86605	Near the Ice House /West of Toilet blocks.	2- 3 plants within tall herb and scrub.
14	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26926 86577	Viaduct Pond / Northern end.	Large stand of 20 plus plants west of pond.
15	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	27142 86541	Sports Field / North west corner.	2-3 plant within tall herb and scrub.
16	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	27203 86428	Sports Field / South east corner.	2-3 plants within tall herb and scrub.
17	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26830 86430	Viaduct Pond / Southwest within wet area.	2-3 plants in tall herb and scrub.
18	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	27003 86338	Lime Walk / South east side.	1-2 plants on bank.
19	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	27109 86532	Sports Field / North west corner.	2-3 plants within tall herb and scrub.
20	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26950 86276	Lime Walk / South east side.	1-2 plants below trees.
21	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26900 86216	Lime Walk /Southeast side.	1-2 plants within tall herb and scrub.
22	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26873 86207	Lime Walk. Southeast side.	1-2 plants within tall herb and scrub.

Table 4 : Location and description of all stands of Schedule 9 invasive plants within site survey area.

No:	Location	Species	Common Name	National Grid Reference (TQ)	Brief Location	Description
23	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26904 86088	East Heath Road / Next to The Pryor's.	1-2 plants within tall herb and scrub.
24	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	27021 86368	Catch Pit / Stream below Lime Walk.	10x15m patch in wet hollow.
25	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	27123 86165	Pryor's Field/ West of Mixed Bathing Pond.	4 -8 tall plants scattered amongst tall ruderal / marshy vegetation.
26	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26850 86376	Woodland edge.	1-2 plants within scrub.
27	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26948 86376	East Heath /Along ditch line.	Scattered plants along ditch line in 2 locations.
28	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26934 86549	Viaduct Pond/ around pond edge.	Scattered plants around pond edge & below bridge in 4 locations.
29	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26557 86399	Vale of Health Pond /South west edge.	15 x scattered plants in scrub.
30	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26514 86376	Vale of Health Road. Next to housing.	Large patch of 200 plus plants within tall herb & scrub at edge of woodland.
31	Hampstead	*Parthenocissus quinquefolia*	Virginia Creeper	26514 86376	Vale of Health Road. Next to housing.	Large patch adjacent to property.
32	Hampstead	*Fallopia japonica*	Japanese Knotweed	27237 85727	London Plane avenue /Within introduced shrubs.	2-3 small weak plants in dense shade.
33	Hampstead	*Cotoneaster horizontalis*	Cotoneaster	27199 86258	Mixed Bathing Pond.	Planted in amenity area next to pond.

Table 4 : Location and description of all stands of Schedule 9 invasive plants within site survey area.

No:	Location	Species	Common Name	National Grid Reference (TQ)	Brief Location	Description
34	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	27054 86363	Catch Pit / Along Steam	Scattered plants within dense scrub in 2 locations.
35	Hampstead	*Cotoneaster horizontalis*	Cotoneaster	27987 86534	Hampstead No 1 Pond	Within scrub along edge of pond.
36	Highgate	*Cotoneaster horizontalis*	Cotoneaster	27987 86534	Millfield Lane /East of Model Boating Pond.	Within scrub at edge of road.
37	Highgate	Cotoneaster *horizontalis*	Cotoneaster	28218 86322	Secret Garden	Planted in garden hedge of property.
38	Hampstead	*Impatiens glandulifera*	Himalayan Balsam	26739 86457	East Heath Woodland / Along ditch line.	6-10 plants amongst tall ruderal vegetation.
39	Highgate	*Impatiens glandulifera*	Himalayan Balsam	27590 87073	Within Kenwood Ladies' Bathing Pond enclosure / Feed Stream to the north.	Scattered 2-3 small plants within larger patch of small balsam.
40	Highgate	*Impatiens glandulifera*	Himalayan Balsam	27561 87066	Kenwood Ladies' Bathing Pond / West of enclosure.	2-3 plants scattered within tall herb and scrub.
41	Highgate	*Impatiens glandulifera*	Himalayan Balsam	27570 87069	Within Kenwood Ladies' Bathing Pond enclosure / Western boundary	Large patch of approximately 50 plants next to fence.
42	Hampstead	*Lamiastrum galeobdolon subsp. Argentatum*	Variegated yellow archangel	26815 86452	Viaduct Pond/ South along stream.	Large patch 15x10m wide within woodland.
43	Hampstead	*Lamiastrum galeobdolon subsp. Argentatum*	Variegated yellow archangel	27204 86419	East side of the Sports Field	Patch of plants 5x5m on woodland edge.
44	Highgate	*Impatiens glandulifera*	Himalayan Balsam	27650 86895	Bird Sanctuary Pond / North end	2-3 plants on water's edge south of amenity area.

Table 4 : Location and description of all stands of Schedule 9 invasive plants within site survey area.

No:	Location	Species	Common Name	National Grid Reference (TQ)	Brief Location	Description
45	Highgate	*Impatiens glandulifera*	Himalayan Balsam	27437 87182	Within Stock Pond enclosure / next to stream.	2-3 plants within tall ruderal.
46[7]	Hampstead	*Fallopia Japonica*	Japanese knotweed	26768 86246	South of D-shaped children's playground in scrub edge.	Stand of tall plants 1.5m x 1.5m in size.

[7] This stand is not mapped as it was a found in late September after the maps had been finalised.

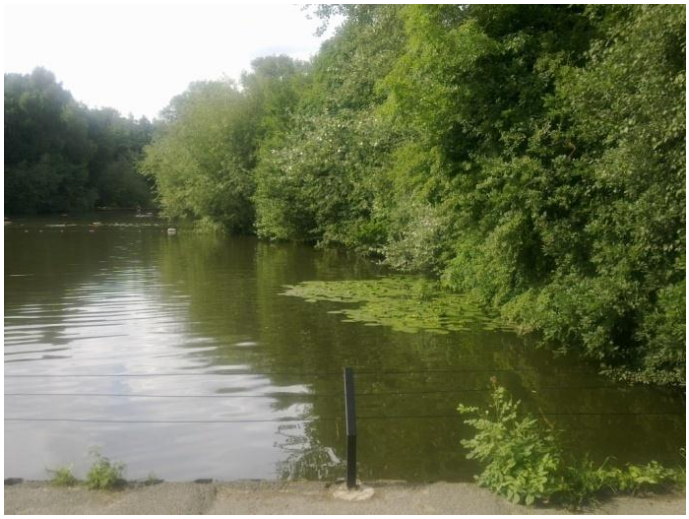
Appendix 5: Photographs

Photograph 1 (TN 1)
Vale of Health Pond, looking south, showing bare ground used for fishing access. Good marginal vegetation surrounds to the west at the edge of properties.

Photograph 2 (TN 2)
Viaduct Pond, looking north, showing bank of tall herbs, in which heather and gorse were present

Photograph 3 (TN 3)
The Catch Pit surrounded by tall ruderal and scrub.

Photograph 4 (TN 4)
Mixed Bathing Pond (No. 3), looking north, showing dense tree and scrub vegetation along the eastern bank.



Photograph 5 (TN 5)
Hampstead No. 2 Pond, looking south east showing un-natural banks to the south and marginal vegetation on the east side.

Photograph 6 (TN 6)
Hampstead No. 1 Pond, looking north west, showing narrow band of marginal vegetation adjacent to amenity grassland and scattered trees.

Photograph 7 (TN 7)
Stock Pond, looking north, showing overhanging trees, marginal vegetation and reed swamp at the far end (see also photograph 30).

Photograph 8 (TN 8)
Kenwood Ladies' Bathing Pond, looking north-east. Showing emergent vegetation along east bank and overhanding mature oak and willow in the northern corner. The Horse chestnut plantation is in the far right of photo.

Photograph 9 (TN 9)
Bird Sanctuary Pond, looking northwest, showing stands of common reed and willow with a backdrop of alder, birch and oak woodland.

Photograph 10 (TN 10)
Model Boating Pond, looking south. With common reed in northern corners and floating rafts along western edge

Photograph 11 (TN11)
Highgate Men's Bathing Pond, looking north, showing improved grassland and overhanging willow to the east and west.

Photograph 12 (TN 12)
Highgate No. 1 Pond, looking north-west, showing scrub and trees on east bank (foreground) and reedbeds along west bank. A small stand of wood club rush was located in south west corner (12a).

Photograph 13 (TN 13)
New pond created on spring line with adjacent crack willow and Lombardy poplar.

Photograph 14 (TN 14)
Acid grassland, west of Viaduct Pond. with frequent common and creeping bent, locally frequent tormentil,

Photograph 15 (TN15)
Stunted semi-natural woodland around East Heath, with twisted trunks, scrub and bramble.

Photograph 16 (TN16)
Typical view of mature, high canopy woodland of pedunculate oak with a dominance of bramble in the understorey.

Photograph 17 (TN17)
Looking south into mature woodland with wide range of native and non-native trees and naturalised sycamore, with dense ivy and bramble understorey.

Photograph 18 (TN18)
Typical view of wet woodland along Hampstead Brook within the Hampstead Valley, with abundant dead wood, ferns, tall ruderal, locally frequent marshy vegetation and regrowth from fallen crack willow stems.

Photograph 19 (TN19)
View of linear woodland in the Highgate Valley showing open / diverse woodland structure with a range of tree and shrub species with bramble dominated understorey.

Photograph 20
Looking north into Kenwood Ancient Woodland Site within Hampstead Heath Woods SSSI.

Photograph 21
Looking across fenced areas within Kenwood Ancient Woodland Site showing coppiced hazel and young tree growth.

Photograph 22
Wood club-rush and water horsetail in stream feeding Stock Pond.

Photograph 23
Marshy grassland west of Kenwood Ladies' Bathing Pond. Species including locally abundant flag iris, common fleabane, soft rush, meadow vetchling, black knapweed and rare agrimony.

Photograph 24
Erosion of acid grassland southwest of Viaduct pond adjacent to well used paths.

Photograph 25
Culverted stream section north west of Kenwood's Ladies Bathing Pond. Dense shade and limited space between property boundaries limits stream habitat.

Photograph 26
Densly scattered sessile oak along the eastern edge of the Highgate Valley. The area links woodland at TN19 with the SSSI to the north. Ground flora was sparse and species poor.

Photograph 27
Area of acid grassland adjacent to Vale of Health Pond. Several plants of hard fern, purple-moor grass and wavy hair grass occurred in this area. Area also subject to trampling and compaction from fishing activity and dog walkers.

Photograph 28
Mature horse chestnut plantation located at Kenwood ladies' Bathing Pond, with an understorey of dense holly, bramble, yew and ivy.

Photograph 29
Acid grassland adjacent to Viaduct pond, with bare soil, ruderal species and scattered heather plants.

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Photograph 30
Woodland adjacent to Stock Pond had a sparse ground cover even though the area was fenced off, with the soil potentially less fertile than further down the valley. (see also TN 7, photograph 7).

Photograph 31
Woodland surrounding The Pryor's, showing bare ground due to foot pressure and dense shade.

Photograph 32
Tormentil amongst red fescue, creeping bent and creeping buttercup on steeper slopes (TN14).

Photograph 33
Mature, high forest canopy east of Viaduct Pond (TN16), with natural regeneration and good woodland structure.

Appendix 6: Legislation & Planning Policy

B NATIONAL AND EUROPEAN LEGISLATION AFFORDED TO HABITATS

Statutory Designations: National

Nationally important areas of special scientific interest, by reason of their flora, fauna, or geological or physiographical features, are notified by the countryside agencies as statutory Sites of Special Scientific Interest (SSSIs) under the National Parks and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). As well as underpinning other national designations (such as National Nature Reserves which are declared by the countryside agencies under the same legislation), the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (Natura 2000 network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

The Wildlife & Countryside Act 1981 (as amended) also provides for the making of Limestone Pavement Orders, which prohibit the disturbance and removal of limestone from such designated areas, and the designation of Marine Nature Reserves, for which byelaws must be made to protect them.

Statutory Designations: International

Special Protection Areas (SPAs), together with Special Areas of Conservation (SACs) form the Natura 2000 network. The Government is obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds). SPAs are areas of the most important habitat for rare (listed on Annex I of the Directive) and migratory birds within the European Union. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12-200 nm).

The Government is obliged to identify and designate SACs under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). These are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the European Union. SACs in terrestrial areas and territorial marine waters out to 12 nautical miles are protected under The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as

amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12-200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and wise use, in particular recognizing wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. Ramsar sites are underpinned through prior notification as Sites of Special Scientific Interest (SSSIs) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which have been designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

Statutory Designations: Local

Under the National Parks and Access to the Countryside Act 1949 Local Nature Reserves (LNRs) may be declared by local authorities after consultation with the relevant countryside agency. LNRs are declared for sites holding special wildlife or geological interest at a local level and are managed for nature conservation, and provide opportunities for research and education and enjoyment of nature.

Non-Statutory Designations

Areas considered to be of local conservation interest may be designated by local authorities as a Wildlife Site, under a variety of names such as County Wildlife Sites (CWS), Listed Wildlife Sites (LWS), Local Nature Conservation Sites (LNCS), Sites of Biological Importance (SBIs), Sites of Importance for Nature Conservation (SINCs), or Sites of Nature Conservation Importance (SNCIs). The criteria for designation may vary between counties.

Together with the statutory designations, these are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined. The level of protection afforded to these sites through local planning policies and development frameworks may vary between counties.

Regionally Important Geological and Geomorphological Sites (RIGS) are the most important places for geology and geomorphology outside land holding statutory designations such as SSSIs. Locally-developed criteria are used to select these sites, according to their value for

education, scientific study, historical significance or aesthetic qualities. As with local Wildlife Sites, RIGS are a material consideration when planning applications are being determined.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are intended to protect 'important' countryside hedgerows from destruction or damage. A hedgerow is considered important if (a) has existed for 30 years or more; and (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys are covered by these regulations. Hedgerows *'within or marking the boundary of the curtilage of a dwelling-house'* are not.

UK BIODIVERSITY ACTION PLAN

In 1994 the UK Government published its response to the Convention on Biological Diversity that it signed along with over 150 other nations at the Rio Earth Summit in 1992. Biodiversity – the UK Action Plan (HM Government 1994) and subsequent publications (e.g. UK Steering Group 1995) set out a programme for the national Biodiversity Action Plan (BAP), including the development of targets for biodiversity, and the techniques and actions necessary to achieve them. The national BAP includes lists of species that are of conservation concern, either because they are rare in an international or national context or have undergone serious declines in their populations in recent years. Species Action Plans have been prepared or are in preparation for a many of these species, whilst Habitat Action Plans are being produced for important or characteristic habitats identified in the plan.

LOCAL BIODIVERSITY ACTION PLAN

The NERC Act 2006 states that 'every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity', otherwise known as the Biodiversity Duty. Under Section 41 of the Act, the Secretary of State must publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are 'Species of Principal Importance for the purpose of conserving Biodiversity' (SPIBs). This list is based on priority species recognised by the UK Biodiversity Action Plan (BAP), and in addition to Annex II species listed under The Conservation of Habitats and Species Regulations 2010 (as amended). The S41 SPIBs list replaces the list published under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000 as those species of material consideration to the planning process.

The UK plan also encourages the production of local Biodiversity Action Plans at the County or District level. The London Biodiversity Action Plan contains 11 Habitat Action Plans (HAPs) and eight Species Action Plans (SAPs). Specific HAPs and SAPs listed in the London BAP which are of potential relevance to this site include:

- Parks & urban greenspaces
- Standing water
- Woodland
- Open Landscapes & ancient /old trees
- Reedbeds
- Fen, Marsh, Swamp
- Meadows & Pastures
- Acid Grassland
- Rivers & Streams

NATIONAL PLANNING POLICY FRAMEWORK

The National Planning Policy Framework replaced PPS9 in April 2012 and emphasises the need for sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks via preservation, restoration and re-creation. The protection and recovery of priority species – that is those listed as UK Biodiversity Action Plan priority species – is also listed as a requirement of planning policy. In determining planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from adverse harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

CAMDEN BOROUGH COUNCIL CORE STRATEGY

Policy CS 15 in the Camden Core Strategy (2010-2025) contains the following policies of relevance to Hampstead Heath:

CS15 - Protecting and improving our parks and open spaces and encouraging Biodiversity

The Council will preserve and enhance the historic, open space and nature conservation importance of Hampstead Heath and its surrounding area by:

- k) working with the City of London, English Heritage and Natural England to manage and improve the Heath and its surrounding areas;

- l) protecting the Metropolitan Open Land, public and private open space and the nature conservation designations of sites;

- m) seeking to extend the public open space when possible and appropriate;

- n) taking into account the impact on the Heath when considering relevant planning applications;

- o) protecting views from Hampstead Heath and views across the Heath and its surrounding area;

- p) improving the biodiversity of, and habitats in, Hampstead Heath and its surrounding area, where opportunities arise.

HAMPSTEAD HEATH MANAGEMENT PLAN 2007-2017

Natural Landscape, section 7.2, Essential Actions included:

- **NL4** -Manage the Heath's woodlands and scrub to enhance their nature conservation value and improve their distinctiveness.
- **NL5**- Manage the Heath's ponds to enhance their nature conservation
- value.
- **NL6** -Manage the Heath's hedgerows to enhance their nature conservation
- value.
- **NL7** -Manage the Heath's heathland and dry acid grassland to enhance
- their nature conservation value (see Aspirational Goal NL15).
- **NL8**- Manage the Heath to protect and enhance populations of plants and
- animals protected by law, identified as being Priority Species in
- national and local Biodiversity Action Plans, or identified in
- subsequent management planning as being worthy of protection.
- **NL9** -Retain dead and dying wood wherever possible to encourage
- invertebrates, fungi and birds.
- **NL10**-Use interpretation to explain and make available the Heath's
- landscape and wildlife resources to a wide and diverse audience.
- **NL11**-Plan for climate change.

Appendix 7: Plant Species Lists

Plant species lists for Hampstead Heath Ponds project, compiled July/August 2013

Abundance was estimated using the DAFOR scale as follows:

D = dominant, A = abundant, F = frequent, O = occasional, R = rare

p = planted, e =edge only, s = seedling, y = young tree, s = shrub

Stock Pond Species (TN 7)

Scientific Name	Common Name	Abundance	Qualifier
Acer campestre	Field maple	O	
Acer platanoides	Norway maple	O	t, y
Acer pseudoplatanus	Sycamore	O	t, s
Aesculus hippocastanum	Horse-chestnut	O	y, s
Agrostis capillaris	Common bent	O	
Alliaria petiolata	Garlic mustard	A/I	
Alnus glutinosa	Alder	F	t
Angelica sylvestris	Wild angelica	O	
Betula pubescens	Downy birch	O	t
Betula utilis	Birch	O/I	t
Carex remota	Remote sedge	O	
Carpinus betulus	Hornbeam	O	t
Castanea sativa	Sweet chestnut	O	t
Circaea lutetiana	Enchanter's-nightshade	F A/I	
Cornus sanguinea	Dogwood	A/I	w
Corylus avellana	Hazel	F	
Crataegus monogyna	Hawthorn	O	
Dryopteris filix-mas	Male-fern	F	
Epilobium hirsutum	Great willowherb	O	w
Equisetum telmateia	Great horsetail	F	w
Euphorbia amygdaloides	Wood spurge	O/I	
Fagus sylvatica	Beech	F	t, y, s
Fallopia japonica	Japanese knotweed	O/I	
Festuca rubra	Red fescue	R	
Fraxinus excelsior	Ash	O	t,y, s
Galium aparine	Cleavers	F	
Geranium robertianum	Herb-Robert	F/I	
Hedera helix	Ivy	D/I	
Heracleum sphondylium	Hogweed	O	
Ilex aquifolium	Holly	F t	t,s
Impatiens parviflora	Small balsam	O F/I	
Iris pseudacorus	Yellow iris	F/I	w
Lycopus europaeus	Gypsywort	O	w
Lythrum salicaria	Purple-loosestrife	O	w
Phragmites australis	Common reed	D/I	
Prunus laurocerasus	Cherry laurel	O/I	

Scientific Name	Common Name	Abundance	Qualifier
Quercus robur	Pedunculate oak	F	t
Quercus petraea.	Sessile oak	O	t
Ranunculus acris	Meadow buttercup	O	
Rubus fruticosus agg.	Bramble	A	
Rumex conglomeratus	Clustered dock	R	
Salix babylonica	Weeping willow	R	t
Salix caprea	Goat willow	F/I	
Salix cinerea	Grey willow	O	
Salix fragilis	Crack-willow	O	w
Sambucus nigra	Elder	F/I	
Scirpus sylvaticus	Wood club-rush	A	w
Silene dioica	Red campion	O	
Solanum dulcamara	Bittersweet	O	w
Sorbus aucuparia	Rowan	O	y,s
Taxus baccata	Yew	O	t,y
Ulmus glabra	Wych elm	F/I	t
Ulmus procera	English elm	F/I	y
Urtica dioica	Common nettle	A D/I	
Viburnum opulus	Guelder-rose	F	

Kenwood Ladies' Bathing Pond Species List (TN 8)

Scientific Name	Common name	Abundance	Qualifier
Achillea millefolium	Yarrow	O/I	
Acorus calamus	Sweet-flag	A/I	
Aesculus hippocastanum	Horse-chestnut	R	y
Agrostis capillaris	Common bent	A/I	
Agrostis stolonifera	Creeping bent	A/I	
Alnus glutinosa	Alder	F	t,y,s
Angelica sylvestris	Wild angelica	O/I	
Arctium minus	Lesser burdock	O/I	
Ballota nigra	Black horehound	O/I	
Bellis perennis	Daisy	F/I	
Betula pendula	Silver birch	R	t
Betula pubescens	Downy birch	R	s
Buddleja davidii	Buddleia	O/I	
Campanula trachelium	Nettle-leaved bellflower	R	p
Carex hirta	Hairy sedge	F/I	
Carex pendula	Pendulous sedge	F/I	
Carex spp.	Sedges	R	
Carpinus betulus	Hornbeam	O	y
Circaea lutetiana	Enchanter's-nightshade	F/I	
Cirsium arvense	Creeping thistle	O	
Cirsium vulgare	Spear thistle	O	
Cornus sanguinea	Dogwood	O	p
Crataegus monogyna	Hawthorn	F	s
Dactylis glomerata	Cock's-foot	O	
Dryopteris filix-mas	Male-fern	O	
Epilobium hirsutum	Great willowherb	A/I	

Scientific Name	Common name	Abundance	Qualifier
Epilobium tetragonum	Square-stalked willowherb	O	
Erica arborea	Tree heath	R	p
Euonymus europaeus	Spindle	O/l	p
Euphorbia sp	Spurge	R	p
Fragaria vesca	Wild strawberry	O/l	
Frangula alnus	Alder buckthorn	R	
Fraxinus excelsior	Ash	F/l	
Geranium macrorrhizum	Rock crane's-bill	F/l	p
Geum urbanum	Wood avens	F	
Hedera helix	Ivy	F	
Helminthotheca echioides	Bristly oxtongue	O	
Hypochaeris radicata	Cat's-ear	F/l	
Iris pseudacorus	Yellow iris	F/l	
Juncus effusus	Soft-rush	O/l	
Knautia arvensis	Field scabious	O/l	
Lamiastrum galeobd. argentatum	Garden yellow archangel	F/l	
Liquidambar styraciflua	Sweet gum	R	t
Lolium perenne	Perennial rye-grass	A	
Lonicera periclymenum	Honeysuckle	F/l	
Lotus corniculatus	Common bird's-foot-trefoil	O/l	
Lunaria annua	Honesty	R	p
Lythrum salicaria	Purple-loosestrife	F/l	
Malus pumila	Apple	R	s
Melilotus officinalis	Ribbed melilot	R	p
Mentha aquatica	Water mint	A/l	
Nuphar lutea	Yellow water-lily	A/l	w
Oxalis sp	Sorrel sp.	R	
Phleum bertolonii	Smaller cat's-tail	F/l	
Plantago major	Greater plantain	F/l	
Prunella vulgaris	Selfheal	F/l	
Prunus domestica	Wild plum	R	t
Prunus padus	Bird cherry	R	t
Pulmonaria sp.	Lungwort	R	p
Quercus cerris	Turkey oak	O/l	s,
Quercus petraea	Sessile oak	R	t
Quercus robur	Pedunculate oak	O/l	y
Ranunculus bulbosus	Bulbous buttercup	O/l	
Ranunculus repens	Creeping buttercup	O/ A/l	
Rhododendron ponticum	Rhododendron	O	p
Ribes nigrum	Black currant	O/l	p
Ribes sp.	Currant	F/l	p
Rosa arvensis	Field-rose	O	
Rubus fruticosus agg.	Bramble	D/l	
Rumex conglomeratus	Clustered dock	O	
Rumex obtusifolius	Broad-leaved dock	O	
Rumex sanguineus	Wood dock	O	
Salix caprea	Goat willow	O	
Salix cinerea	Grey willow	O/l	
Salix fragilis	Crack-willow	F	t,
Salix pentandra	Bay willow	O/l	s
Salix x sepulchralis 'Chrysocoma'	Golden weeping willow	R	t,
Sambucus nigra	Elder	O	
Silene dioica	Red campion	O	

Scientific Name	Common name	Abundance	Qualifier
Solanum dulcamara	Bittersweet	F/I	
Stachys sylvatica	Hedge woundwort	F/I	
Symphoricarpos x chenaultii	Hybrid coralberry	R	p?
Syringa vulgaris	Lilac	R	p
Typha latifolia	Great reedmace	F/I	
Viburnum lantana	Wayfaring-tree	O	
Viburnum opulus	Guelder-rose	O	p

Bird Sanctuary Pond Species List (TN 9)

Scientific Name	Common Name	Abundance	Qualifier
Acer pseudoplatanus	Sycamore	O	t
Aesculus hippocastanum	Horse-chestnut	O	y
Agrostis capillaris	Common bent	A/I	
Alliaria petiolata	Garlic mustard	O	
Alnus glutinosa	Alder	A	t
Angelica sylvestris	Wild angelica	O F/I	
Arctium minus	Lesser burdock	O	
Arrhenatherum elatius	False oat-grass	A/I	F
Arum maculatum	Lords-and-Ladies	R	
Betula pendula	Silver birch	F	t,y
Bromus hordeaceus	Soft-brome	O	e
Bupleurum rotundifolium	Thorow-wax	O/I	
Carex pendula	Pendulous sedge	O	
Carex remota	Remote sedge	O	e
Chamerion angustifolium	Rosebay willowherb	D/I	A D/I
Circaea lutetiana	Enchanter's-nightshade	F/I	
Cirsium vulgare	Spear thistle	F A/I	
Clematis vitalba	Traveller's-joy	F/I	fence
Cornus sanguinea	Dogwood	F/I	
Corylus avellana	Hazel	O/I	
Crataegus laevigata	Midland hawthorn	F	
Crataegus monogyna	Hawthorn	F	F
Cynosurus cristatus	Crested dog's-tail	O/I	
Dactylis glomerata	Cock's-foot	F	
Deschampsia cespitosa	Tufted hair-grass	F/I	
Digitalis purpurea	Foxglove	O/I	
Dipsacus fullonum	Wild teasel	O/I	
Dryopteris filix-mas	Male-fern	F/I	
Epilobium hirsutum	Great willowherb	F D/I	
Epilobium montanum	Broad-leaved willowherb	A/I	
Fraxinus excelsior	Ash	F	t,y
Galium aparine	Cleavers	O	
Geranium robertianum	Herb-Robert	R	
Geum urbanum	Wood avens	O	
Glechoma hederacea	Ground-ivy	F	west
Hedera helix	Ivy	A D/I	
Heracleum mantegazzianum	Giant hogweed	R	
Heracleum sphondylium	Hogweed	O/I	
Hordeum murinum	Wall barley	O	e
Humulus lupulus	Hop	O/I	
Ilex aquifolium	Holly	F	

Scientific Name	Common Name	Abundance	Qualifier
Impatiens glandulifera	Indian balsam	R, O/I	
Iris pseudacorus	Yellow iris	A/I	w
Juncus effusus	Soft-rush	O	w
Lathyrus pratensis	Meadow vetchling	R F/I	
Lolium perenne	Perennial rye-grass	O	e
Lycopus europaeus	Gypsywort	O/I	
Lythrum salicaria	Purple-loosestrife	O	w
Mentha aquatica	Water mint	A	
Persicaria lapathifolia	Pale persicaria	O/I	
Phleum bertolonii	Smaller cat's-tail	F/I	
Phleum pratense	Timothy	F/I	
Phragmites australis	Common reed	D/I	w
Picris hieracioides	Hawkweed oxtongue	O/I	e
Pinus nigra	Corsican pine	R	t
Pinus sylvestris	Scots pine	R	t
Poa annua	Annual meadow-grass	F/I	
Polygonum aviculare	Knotgrass	O/I	e
Prunus avium	Wild cherry	O	t,y
Prunus laurocerasus	Cherry laurel	R	
Prunus padus	Bird cherry	F	t
Pteridium aquilinum	Bracken	O A/I	
Quercus cerris	Turkey oak	O	s, y
Quercus ilex	Holm oak	R	t
Quercus petraea	Sessile oak	O	s
Quercus robur	Pedunculate oak	O	t
Ranunculus repens	Creeping buttercup	F/I	
Rosa canina	Dog-rose	O	F/I
Rubus fruticosus agg.	Bramble	A D/I	
Rumex cristatus	Greek dock	R	e
Rumex obtusifolius	Broad-leaved dock	F/I	
Rumex sanguineus	Wood dock	O	
Salix alba	White willow	R	t
Salix cinerea	Grey willow	O	
Salix fragilis	Crack-willow	F	t
Sambucus nigra	Elder	O	
Scrophularia nodosa	Common figwort	O/I	
Senecio jacobaea	Common ragwort	O	
Silene dioica	Red campion	O	
Sisymbrium officinale	Hedge mustard	O/L	
Taxus baccata	Yew	F	
Trifolium repens	White clover	F	
Ulmus procera	English elm	F/I	
Ulmus sp.	Elm	O	t
Urtica dioica	Common nettle	A D/I	A/I

Model Boating Pond Species List (TN 10)

Scientific Name	Common Name	Abundance	Qualifier
Acer pseudoplatanus	Sycamore	O	y
Agrostis stolonifera	Creeping bent	A/l	e
Alnus glutinosa	Alder	O/l	wall
Anthriscus sylvestris	Cow parsley	O/l	
Arctium minus	Lesser burdock	O	e
Arrhenatherum elatius	False oat-grass	F	e
Artemisia vulgaris	Mugwort	O	e
Ballota nigra	Black horehound	F	
Capsella bursa-pastoris	Shepherd's-purse	O	e
Castanea sativa	Sweet chestnut	O/l	t
Cirsium vulgare	Spear thistle	O F/l	
Dactylis glomerata	Cock's-foot	F	e
Daucus carota	Wild carrot	O	e
Epilobium hirsutum	Great willowherb	O	
Epilobium parviflorum	Hoary willowherb	F/l	fl
Fraxinus excelsior	Ash	F/l	y,s
Geum urbanum	Wood avens	A/l	
Glyceria maxima	Reed sweet-grass	F/l	
Helminthotheca echioides	Bristly oxtongue	O	
Holcus lanatus	Yorkshire-fog	O	e
Hordeum murinum	Wall barley	O	
Hypericum perforatum	Perforate St John's-wort	O	
Iris pseudacorus	Yellow iris	O/l	rafts
Juncus effusus	Soft-rush	O/l	rafts
Leucanthemum vulgare	Oxeye daisy	O	
Lolium perenne	Perennial rye-grass	F	e
Lycopus europaeus	Gypsywort	O	e, rafts
Lythrum salicaria	Purple-loosestrife	F/l	rafts
Malva sylvestris	Common mallow	F/l	
Matricaria discoidea	Pinappleweed	O	e
Mentha aquatica	Water mint	O/l	rafts
Mimulus guttatus	Monkeyflower	O/l	
Myosotis scorpioides	Water forget-me-not	O/l	rafts
Phalaris arundinacea	Reed canary-grass	F/l	
Phragmites australis	Common reed	D/l	and rafts
Polygonum aviculare	Knotgrass	A/l	
Prunus cerasifera	Cherry plum	F	
Prunus spinosa	Blackthorn	F/l	
Ranunculus acris	Meadow buttercup	O	e
Ranunculus repens	Creeping buttercup	O	e
Rosa canina	Dog-rose	O	
Rubus fruticosus agg.	Bramble	F/l	e
Rumex hydrolapathum	Water dock	F/l	e
Rumex obtusifolius	Broad-leaved dock	O	e
Salix fragilis	Crack-willow	R	y
Sambucus nigra	Elder	O	y
Scorzoneroides autumnalis	Autumn hawkbit	O	e
Scutellaria galericulata	Skullcap	A/l	e
Senecio erucifolius	Hoary ragwort	O	
Senecio jacobaea	Common ragwort	F/l	e

Scientific Name	Common Name	Abundance	Qualifier
Solanum dulcamara	Bittersweet	A/I	
Trifolium repens	White clover	O	e
Tripleurospermum inodorum	Scentless mayweed	O	
Typha latifolia	Great reedmace	O	
Ulmus glabra	Wych elm	F/I	
Urtica dioica	Common nettle	O	
Veronica beccabunga	Brooklime	O/I	rafts

Highgate Men's Bathing Pond Species List (TN 11)

Scientific Name	Common Name	Abundance	Qualifier
Acer platanoides	Norway maple	O	te
Artemisia vulgaris	Mugwort	O/I	
Carex spp.	Sedges	O	e
Cirsium vulgare	Spear thistle	O/I	
Crataegus monogyna	Hawthorn	O	e
Crataegus persimilis	Broad-leaved cockspur-thorn	O	e
Daucus carota	Wild carrot	F/I	
Festuca rubra	Red fescue	O/I	
Frangula alnus	Alder buckthorn	F	e
Fraxinus excelsior	Ash	O	e
Lapsana communis	Nipplewort	O	
Lolium perenne	Perennial rye-grass	F/I	
Lotus corniculatus	Common bird's-foot-trefoil	F/I	
Plantago lanceolata	Ribwort plantain	F/I	
Salix alba	White willow	F/I	e
Salix fragilis	Crack-willow	O	e
Senecio jacobaea	Common ragwort	O/I	
Tilia x vulgaris	Common lime	R	te
Viburnum lantana	Wayfaring-tree	F/I	e

Highgate No.1 Pond Species List (TN12)

Scientific Name	Common Name	Abundance	Qualifier
Acer pseudoplatanus	Sycamore	F	t, y
Aesculus hippocastanum	Horse-chestnut	R	t
Anthriscus sylvestris	Cow parsley	F/I	
Arctium minus	Lesser burdock	D/I	
Calystegia silvatica	Large bindweed	A/I	e
Carex pendula	Pendulous sedge	F/I	w
Carex remota	Remote sedge	R	
Carpinus betulus	Hornbeam	O	t
Cirsium arvense	Creeping thistle	F	
Cirsium vulgare	Spear thistle	O	
Cornus sanguinea	Dogwood	F/I	
Crataegus monogyna	Hawthorn	F	
Daucus carota	Wild carrot	O	
Epilobium hirsutum	Great willowherb	O	mar
Epilobium parviflorum	Hoary willowherb	O	
Euonymus europaeus	Spindle	O/I	
Fraxinus excelsior	Ash	O	t,y
Geranium robertianum	Herb-Robert	O	
Geum urbanum	Wood avens	O	
Glyceria maxima	Reed sweet-grass	A/I*	w
Hedera helix	Ivy	A D/I	
Ilex aquifolium	Holly	A/I	
Iris pseudacorus	Yellow iris	O F/I	w
Lycopus europaeus	Gypsywort	O	mar
Lythrum salicaria	Purple-loosestrife	O	mar
Malus spp.	Apple	R	t
Phragmites australis	Common reed	D/I	w
Populus x canadensis	Hybrid black-poplar	R	t
Prunus cerasifera	Cherry plum	O	t
Quercus cerris	Turkey oak	O	t, y
Quercus robur	Pedunculate oak	O	t
Rubus fruticosus agg.	Bramble	F A/I	
Rumex conglomeratus	Clustered dock	O	
Salix caprea	Goat willow	O	
Salix fragilis	Crack-willow	O D/I	t
Schoenoplectus lacustris	Common club-rush	D/I	w
Schoenoplectus tabernaemontani	Grey club-rush		
Scirpus sylvaticus	Wood club-rush	A/I	w
Scrophularia nodosa	Common figwort	F/I	
Scutellaria galericulata	Skullcap	O/I	
Senecio squalidus	Oxford ragwort	O	
Sonchus asper	Prickly sow-thistle	O	
Sonchus oleraceus	Smooth sow-thistle	O	
Sorbus latifolia	Fontainebleau service-tree	g	
Sparganium erectum	Branched bur-reed	O F/I	mar
Stellaria media	Common chickweed	R	
Taxus baccata	Yew	O	y
Ulmus sp.	Elm	F	t, y

Vale of Health Pond Species List (TN1)

Scientific Name	Common Name	Abundance	Qualifier
Acer pseudoplatanus	Sycamore	O	t,e
Achillea millefolium	Yarrow	O	e
Acorus calamus	Sweet-flag	R A/I	SW
Agrostis capillaris	Common bent	F A/I	
Agrostis stolonifera	Creeping bent	F A/I	
Anthriscus sylvestris	Cow parsley	O/I	
Arctium minus	Lesser burdock	F/I	
Arrhenatherum elatius	False oat-grass	O	
Artemisia vulgaris	Mugwort	O	
Aster spp.	Michaelmas daisy	F/I	
Betula pendula	Silver birch	R	y
Betula sp.	Birch	O/I	t
Blechnum spicant	Hard-fern	R F/I	
Buddleja davidii	Buddleia	O	
Calystegia silvatica	Large bindweed	D/I	
Cardamine flexuosa	Wavy bitter-cress	R	
Carex pendula	Pendulous sedge	O A/I	
Carpinus betulus	Hornbeam	F	y,s,e
Chamerion angustifolium	Rosebay willowherb	A/I	
Circaea lutetiana	Enchanter's-nightshade	O	
Cirsium vulgare	Spear thistle	A/I	
Crataegus monogyna	Hawthorn	O	
Dactylis glomerata	Cock's-foot	F	
Deschampsia flexuosa	Wavy hair-grass	F/I	
Dryopteris filix-mas	Male-fern	F/I	
Elytrigia repens	Common couch	F	
Epilobium hirsutum	Great willowherb	O F/I	
Equisetum telmateia	Great horsetail	O/I	
Fagus sylvatica	Beech	R	y
Festuca rubra	Red fescue	O/I	
Fraxinus excelsior	Ash	O	y,s
Geranium robertianum	Herb-Robert	F/I	
Geum urbanum	Wood avens	F	
Glyceria maxima	Reed sweet-grass	O/I	
Hedera helix	Ivy	D/I	
Heracleum sphondylium	Hogweed	O	
Holcus lanatus	Yorkshire-fog	O/I	
Hypochaeris radicata	Cat's-ear	O	
Ilex aquifolium	Holly	O F/I	
Impatiens glandulifera	Indian balsam	O A/I	
Impatiens parviflora	Small balsam	O/I	
Iris pseudacorus	Yellow iris	O D/I	w
Juncus effusus	Soft-rush	A/I	w
Juncus sp.	Rushes	O	w
Juncus tenuis	Slender rush	F/I	
Lolium perenne	Perennial rye-grass	D/I	
Lycopus europaeus	Gypsywort	O F/I	
Lythrum salicaria	Purple-loosestrife	F/I	
Mentha aquatica	Water mint	F/I	e
Molinia caerulea	Purple moor-grass	A/I	
Mycelis muralis	Wall lettuce	R	

Scientific Name	Common Name	Abundance	Qualifier
Myosotis scorpioides	Water forget-me-not	R	w
Parthenocissus quinquefolia	Virginia-creeper	A/I	fence
Phragmites australis	Common reed	F/I	SW
Plantago major	Greater plantain	O	
Populus tremula	Aspen	F/I	t,y
Prunus avium	Wild cherry	F/I	s
Quercus cerris	Turkey oak	O	s
Quercus petraea	Sessile oak	R	s
Quercus robur	Pedunculate oak	O	t, e
Ranunculus acris	Meadow buttercup	F/I	
Robinia pseudoacacia	False-acacia	R	y
Rubus fruticosus agg.	Bramble	F	
Rumex acetosella	Sheep's sorrel	O/I	SW
Rumex conglomeratus	Clustered dock	O	w
Rumex obtusifolius	Broad-leaved dock	O	
Salix cinerea	Grey willow	D/I	e
Salix fragilis	Crack-willow	F	t,y
Salix sp.	Willow	F/I	
Salix viminalis	Osier	O	
Salix x sepulchralis 'Chrysocoma'	Golden weeping willow	R	t
Sambucus nigra	Elder	F	
Taraxacum sp.	Dandelion	O	
Taxus baccata	Yew	O F/I	y,s e
Tussilago farfara	Colt's-foot	F/I	
Urtica dioica	Common nettle	F/I	

Viaduct Pond Species List (TN 2)

Scientific Name	English	Abundance	Qualifier
Acer campestre	Field maple	O	t
Acer platanoides	Norway maple	O	y,s + w
Acer pseudoplatanus	Sycamore	O	t,y,e+Ftw
Agrostis capillaris	Common bent	D/l	
Alnus glutinosa	Alder	F	t,s,e
Arctium minus	Lesser burdock	O	
Betula pendula	Silver birch	O	t,e +F/l w
Betula pubescens	Downy birch	O/l	s
Buddleja davidii	Buddleia	O	
Calluna vulgaris	Heather	F/l	
Carex hirta	Hairy sedge	O	
Carex pendula	Pendulous sedge	O	e
Chamerion angustifolium	Rosebay willowherb	O	
Circaea lutetiana	Enchanter's-nightshade	O	
Cirsium arvense	Creeping thistle	O	
Cirsium vulgare	Spear thistle	F	
Cornus sanguinea	Dogwood	O	
Crataegus monogyna	Hawthorn	F	and w
Deschampsia flexuosa	Wavy hair-grass	O/l	
Dryopteris filix-mas	Male-fern	O	
Epilobium hirsutum	Great willowherb	O F/l	
Epilobium montanum	Broad-leaved willowherb	O	
Euonymus europaeus	Spindle	F/l	
Fagus sylvatica	Beech	O	t,s + w
Frangula alnus	Alder buckthorn	F/l	
Fraxinus excelsior	Ash	F	t,e, w
Geum urbanum	Wood avens	O	
Glyceria maxima	Reed sweet-grass	F/l	e
Hedera spp	Ivy- large, floppy leaves	D/l	
Ilex aquifolium	Holly	O	t,s + F w
Impatiens glandulifera	Indian balsam	O F/l	e
Impatiens parviflora	Small balsam	A/l	R in wood
Nuphar lutea	Yellow water-lily	F/l	w
Osmunda regalis	Royal fern	R	e
Prunus avium	Wild cherry	O	
Prunus spinosa	Blackthorn	F A/l	
Pteridium aquilinum	Bracken	A/l	
Quercus cerris	Turkey oak	O	s
Quercus petraea	Sessile oak	O	t (F t,w)
Quercus robur	Pedunculate oak	R	y
Robinia pseudoacacia	False-acacia	R	t
Rosa canina	Dog-rose	O	
Rubus fruticosus agg.	Bramble	F D/l	F in w
Rumex obtusifolius	Broad-leaved dock	O	
Salix caprea	Goat willow	O	e
Salix fragilis	Crack-willow	F	t,e
Salix sp.	Willow	A	t,e
Sambucus nigra	Elder	F	
Scrophularia nodosa	Common figwort	O	
Senecio erucifolius	Hoary ragwort	F/l	
Senecio jacobaea	Common ragwort	F	

Scientific Name	English	Abundance	Qualifier
Solanum dulcamara	Bittersweet	O	
Sorbus aucuparia	Rowan	O	t,y,s
Taxus baccata	Yew	O	t,y + w
Typha latifolia	Great reedmace	F/I	
Ulex europaeus	Gorse	D/I	
Viburnum opulus	Guelder-rose	O/I	

Mixed Bathing Pond Species List (TN4)

Scientific Name	Common Name	Abundance	Qualifier
Acer campestre	Field maple	O	y
Acer platanoides	Norway maple	O	y
Acer pseudoplatanus	Sycamore	O	
Aethusa cynapium	Fool's parsley	R	
Agrostis stolonifera	Creeping bent	F	
Alnus glutinosa	Alder	O	t,e
Aucuba japonica	Spotted-laurel	R	p,e
Capsella bursa-pastoris	Shepherd's-purse	O	bare
Carex pendula	Pendulous sedge	O	
Cirsium vulgare	Spear thistle	O	e
Cornus sanguinea	Dogwood	O	p,e
Corylus avellana	Hazel	O	p
Cotoneaster spp.	Cotoneasters	R	p
Crataegus monogyna	Hawthorn	F	
Dryopteris filix-mas	Male-fern	O	
Epilobium hirsutum	Great willowherb	O	e
Euphorbia peplus	Petty spurge	O/I	
Geranium macrorrhizum	Rock crane's-bill	O	p
Hedera helix	Ivy	O	
Iris pseudacorus	Yellow iris	O/I	p,e
Lapsana communis	Nipplewort	R	
Lolium perenne	Perennial rye-grass	A/I	
Lonicera periclymenum	Honeysuckle	O	p
Plantago major	Greater plantain	O	
Prunus laurocerasus	Cherry laurel	O	
Rubus fruticosus agg.	Bramble	O	e
Rumex conglomeratus	Clustered dock	O	e
Salix fragilis	Crack-willow	O	e
Sisymbrium officinale	Hedge mustard	O	
Sonchus asper	Prickly sow-thistle	F/I	
Sonchus palustris	Marsh sow-thistle	F/I	bare
Symphoricarpos albus	Snowberry	O/I	p
Taraxacum sp.	Dandelion	F/I	bare
Taxodium distichum	Swamp cypress	R	t
Taxus baccata	Yew	O	t,y
Ulex europaeus	Gorse	O	p,e
Urtica dioica	Common nettle	O	

The Catch Pit Species List (TN3)

Scientific Name	Common name	Abundance	Qualifier
Acer platanoides	Norway maple	R	y
Acer pseudoplatanus	Sycamore	F	t,y
Betula pendula	Silver birch	O	t,y
Buddleja davidii	Buddleia	R	
Carex pendula	Pendulous sedge	F	
Chamerion angustifolium	Rosebay willowherb	A/l	
Circaea lutetiana	Enchanter's-nightshade	F	
Corylus avellana	Hazel	O	
Crataegus monogyna	Hawthorn	F	
Dactylis glomerata	Cock's-foot	F/l	
Dryopteris filix-mas	Male-fern	F	
Epilobium hirsutum	Great willowherb	O F/l	
Fraxinus excelsior	Ash	F	t,y,s
Galium aparine	Cleavers	O/l	
Geranium robertianum	Herb-Robert	O	
Geum urbanum	Wood avens	F A/l	
Hedera helix	Ivy	A D/l	
Heracleum sphondylium	Hogweed	O	
Ilex x altaclerensis	Highclere holly	R	t
Impatiens glandulifera	Indian balsam	O F/l	
Impatiens parviflora	Small balsam	O F/l	
Iris pseudacorus	Yellow iris	O F/l	
Ligustrum vulgare	Wild privet	A/l	
Lycopus europaeus	Gypsywort	O F/l	w
Phyllitis scolopendrium	Hart's-tongue	R	
Plantago major	Greater plantain	F/l	
Polygonum aviculare	Knotgrass	o/l	e
Prunella vulgaris	Selfheal	R	
Prunus spinosa	Blackthorn	A/l	
Pteridium aquilinum	Bracken	O	
Quercus petraea	Sessile oak	R	y
Ranunculus repens	Creeping buttercup	A/l	
Ribes nigrum	Black currant	A/l	
Rubus fruticosus agg.	Bramble	F	
Rumex obtusifolius	Broad-leaved dock	O	
Rumex sanguineus	Wood dock	O	
Salix caprea	Goat willow	O	
Salix fragilis	Crack-willow	F A/lt	
Sambucus nigra	Elder	F	
Scrophularia auriculata	Water figwort	F/l	
Solanum dulcamara	Bittersweet	O	
Stachys sylvatica	Hedge woundwort	O/l	
Symphoricarpos albus	Snowberry	F/l	

Scientific Name	Common name	Abundance	Qualifier
Tilia cordata	Small-leaved lime	O	t
Tilia x vulgaris	Common lime	F	t
Trifolium repens	White clover	O	e
Ulmus procera	English elm	O	
Ulmus sp.	Elm	O F/I	
Urtica dioica	Common nettle	D/I	
Veronica beccabunga	Brooklime	F/I	

Highgate No. 1 Pond Species List (TN12)

Scientific Name	Common name	Abundance	Qualifier
Agrostis stolonifera	Creeping bent	F D/I	
Carex pendula	Pendulous sedge	O	e,w
Cotoneaster spp.	Cotoneasters	R	
Crocosmia x crocosmiflora	Monbtretia	O/I	
Cyperus longus	Galingale	R F/I	
Epilobium hirsutum	Great willowherb	F	e, w
Filipendula ulmaria	Meadowsweet	O	
Fraxinus excelsior	Ash	O	t,y
Glyceria maxima	Reed sweet-grass	R F/I	
Iris pseudacorus	Yellow iris	O	e,w
Lycopus europaeus	Gypsywort	A/I	e,w
Lythrum salicaria	Purple-loosestrife	O	
Matricaria discoidea	Pinappleweed	F/I	e
Phragmites australis	Common reed	A/I	
Polygonum aviculare	Knotgrass	F/I	e
Prunus avium	Wild cherry	F/I	t.y
Robinia pseudoacacia	False-acacia	R	t
Rumex conglomeratus	Clustered dock	O	
Salix alba	White willow	R?	t
Salix cinerea	Grey willow	F/I	y
Salix fragilis	Crack-willow	O	t
Salix viminalis	Osier	O	t
Salix x sepulchralis 'Chrysocoma'	Golden weeping willow	O	t
Schoenoplectus lacustris	Common club-rush	A/I	
Scirpus sylvaticus	Wood club-rush	R	
Sparganium erectum	Branched bur-reed	F/I	e,w
Typha latifolia	Great reedmace	O/I	w

Highgate No. 2 Pond Species List (TN 11)

Scientific Name	Common Name	Abundance	Qualifier
Acer pseudoplatanus	Sycamore	O	y,s
Agrostis capillaris	Common bent	O	
Alnus glutinosa	Alder	O/l	
Arrhenatherum elatius	False oat-grass	F	
Aster spp.	Michaelmas daisy	O/l	
Calystegia silvatica	Large bindweed	F/l	
Carex pendula	Pendulous sedge	O/l	
Cirsium vulgare	Spear thistle	O	
Crataegus monogyna	Hawthorn	F	
Dactylis glomerata	Cock's-foot	F	
Epilobium hirsutum	Great willowherb	F/l	
Fraxinus excelsior	Ash	O	y
Glyceria maxima	Reed sweet-grass	O F/l	e,w
Hedera helix	Ivy	O/l	D/l E side
Hordeum murinum	Wall barley	O	
Ilex aquifolium	Holly	R	s
Iris pseudacorus	Yellow iris	F/l	e,w
Lolium perenne	Perennial rye-grass	A D/l	
Malus pumila	Apple	R	t
Mentha aquatica	Water mint	O/l	
Plantago lanceolata	Ribwort plantain	F	
Plantago major	Greater plantain	F	
Platanus x hispanica	London plane	F/l	t
Poa annua	Annual meadow-grass	F	
Polygonum aviculare	Knotgrass	A/l	
Populus balsamifera	Eastern balsam poplar	O	t, suck
Populus nigra italica	Lombardy poplar	R	2t
Populus x canadensis	Hybrid black-poplar	O	t
Prunus avium	Wild cherry	O	t
Prunus cerasifera	Cherry plum	F/l	
Prunus spinosa	Blackthorn	O	
Quercus cerris	Turkey oak	O	t
Quercus robur	Pedunculate oak	O	y, s
Rubus fruticosus agg.	Bramble	O D/l	
Rumex conglomeratus	Clustered dock	O	
Rumex obtusifolius	Broad-leaved dock	O	
Salix fragilis	Crack-willow	F	t,e
Solanum dulcamara	Bittersweet	R/l	
Sorbus aria	Common whitebeam	R	t
Tilia x vulgaris	Common lime	R	t
Trifolium repens	White clover	O	
Typha latifolia	Great reedmace	O/l	w
Ulmus glabra	Wych elm	O	e
Ulmus sp.	Elm	F	t

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