WANDLE MEADOW NATURE PARK MANAGEMENT PLAN

November 1997

Written by P Guest BSc AIEEM, on behalf of the

London Borough of Merton

Education, Leisure and Libraries Department

Based on a draft document of May 1997 prepared by Ruth Hutton

Part 1: Policy Statement

The Borough Council recognises the importance of wildlife and green spaces to people living in Merton and pursues policies to defend sites of interest from development, and manages its open spaces with Nature Conservation in mind.

The Unitary Development Plan (UDP) defines policies relating to ecology and nature Conservation and is available for inspection at Merton Civic Centre and most local libraries. To further demonstrate its commitment to nature conservation the Council has already designated four Local Nature Reserves and intends to declare more in future. It is proposed that the Wandle Meadow Nature Park will be given LNR status, and the production of this management plan is an important part of this process. The handbook "Nature Conservation in Merton" will be published by the London Ecology Unit in 1998 and identifies this site as a Borough Grade 1 Site of Importance for nature conservation. This designation ensures that the common is protected by Policy EN.4 and the production of this management plan is in line with Policy EN.16 – Management of Green Spaces – Conservation Plans.

Part 2: Description and History

Name	Wandle Meadow Nature Park
Area	12 Acres
Grid Reference	TQ 264 710
Maps	BGS 1: 50,000 Sheet 270 South London OS 1: 50,000 series sheet 176 OS 1: 25,000 sheet TQ 27/37
Local Planning Authority	Merton Borough Council
District	London Borough of Merton
UDP Designation	Site of Borough Importance for Nature Conservation (Grade 1)
Contact	London Borough of Merton, The Education, Leisure and Libraries Department, The Civic Centre London Road, Morden Surrey Tel: 0181 545 3658
Photographic Records	Held in Environmental Services.
Status	Public Open Space
Public Access	Open
Public Right of Way	None
Services	The site forms part of the flood alleviation for the River Wandle

2.1: Description

The Wandle Meadow Nature Park is situated on the site of the former Wandle Valley Sewage Works, which became redundant in the 1970's. The area has slopes of about 0.1% and forms part of the flood plain of the River Wandle. It lies to the south of the Wimbledon to Tooting Railway line, and on both the north and south sides of North Road on the east Bank of the River Wandle. Such ex-industrial land is often referred to as an "urban common" and can have a surprisingly high value for wildlife. This site is a good example of this and mixture of habitats creates a valuable oasis for quiet enjoyment of nature.

2.2: Access

The site is fenced along North Road and the eastern and southern boundaries. The access points have kissing gates to prevent motorcyclists and to a lesser degree cyclists from entering the site. A number of benches, notice boards and interpretative panels are positioned around the Nature Reserve. Wandle Meadow forms part of the Wandle Trail, which runs almost continuously along the length of the River Wandle. A waymarked cycle way, separated by diamond rail fencing, is routed along the eastern edge of the site.

Hoggin surfaced footpaths were constructed around the site in 1993. Starting at a disabled access point on North Road, one path travels northwards traversing the concrete aprons until it reaches the edge of the sensitive wetland habitats at which point it turns sharp left and heads towards the Wandle. At the river, a bridge constructed in 1994 provides access to the west bank, or pedestrians can follow the footpath on the east bank, eventually returning to North Road. Towards the southern end of Mead Path there is a shorter section of path that serves the northwest quadrant of the site.

2.3: History

Byegrove Mead is the name given in the tithe map of 1847 to the area now occupied by the park, which lay between the courses of the Rivers Wandle and Graveney. It seems likely that this area was historically managed as water meadows, and perhaps deliberately flooded each winter to provide rich hay crops and grazing during the summer months.

The Wimbledon to Streatham railway line was built in 1868, however it is likely that the meadow remained otherwise untouched until acquired by the Sanitary Authority. The sewage works were designed in 1877 and served a population of 17,000 living in the parishes of Beddington, Mitcham, Merton, Morden and Wallington. Being adjacent to the Wandle for discharge purposes and lying at slightly less than 40ft above ground level the area was the ideal choice for the sewage works.

The site remained in use as a sewage farm until it became redundant in the 1970s. Following clearance of the standing structures on the northern section of the disused works, the land was sold in 1984 for commercial and industrial development. The remaining land to the south of the railway lay within an area designated as open space, but rapidly became used for motorbiking and general abuse. In 1986 the Council approved outline plans for the land to be used for the new stadium for Wimbledon Football Club. Many local residents were incensed at this and started a three-year campaign in the hope of changing the Council's mind. In 1989 the proposals for the development were abandoned.

In 1991 the Council resolved that the southern part of the former works, below the railway line should be rehabilitated as a Park for the local community. In 1992 a feasibility study was carried out putting forward various proposals for the site and a working party set up involving the National Trust, London Wildlife Trust, London Ecology Unit and officers of Leisure Services. Most above ground structures had been removed leaving subsurface tanks filled with hard-core and other rubbish along with the concrete bases of the filter beds. There were also localised dumps of fly tipping and spoil, however a number of habitats had developed on the site in the 20 years it had been derelict.

The decision was taken to reclaim the ancient Byegrove Mead as a Nature Park open to the general public. Adoption of a generally accepted scheme followed and aided by a derelict land grant and a loan sanction from the Department of Environment, the development of Wandle Meadow was started in early 1993. The majority of work was finished by March 1993, and on the 24th November1993, Professor David Bellamy was invited to formally open the Wandle Meadow Nature Park. A bridge linking Garfield Recreation Ground and the Wandle Nature Park and interpretative panels and signposting were installed during 1994. A leaflet about the area is available from the Leisure Services Department and local libraries.

2.4: Geology

The geological map shows the solid geology here as entirely London Clay, but this is expressed on the surface only to the east of the site. Some river deposits are mapped over parts of the site, and a tongue of peat crosses the railway line to occupy the north-east corner of the site. The rest is mapped as alluvium of recent geological time. The site has however been much disturbed and the features listed are not easily identified so are not a significant consideration for this plan.

2.5: Local Significance

One of the significant arguments in favour of the development of the site as public open space was that the locality was deficient in the provision of District Parks. Additionally the area was even more deficient in terms of land where nature conservation was a primary purpose. Although the site does not fulfil the space requirement for a District Park (50 acres) on its own, when the nearby Wandle Park and adjacent Garfield Recreation Ground are included this could become a more realistic 30 acres.

2.6: Recreation

Wandle Meadow is now enjoyed for passive recreational pursuits such as walking and dog walking, picnicking, and observing the pondlife. It is surrounded by industrial sites and housing and is an easy place to visit away from the noise and traffic of the surrounding urban area.

2.7: Educational Opportunities

With its variety of habitats the Wandle Meadow Nature Park would make an excellent study site for local schools to use for fieldwork. There are many local schools within walking distance of Wandle Meadow, with Garfield Recreation Ground being within a few hundred metres away and within easy access of the site via a bridge across the river.
Two interpretative panels have now been erected on site and provide educational information regarding the history of the site and the habitats found. A leaflet describing the history and habitats of the site is available from the Civic Centre, and local libraries. These are designed to increase the public's awareness of conservation and explain the contribution of the Nature Park in providing a refuge for wildlife.

In addition to a feasibility report carried out by Groundwork Trust, there were other reports aimed specifically at monitoring the levels of contamination. In September 1992 Symbio carried out surveys on soil and water contamination levels with the detailed results being held by Merton council but summarised below.

2.8: Pollution

During consideration of the creation of the site as a Nature Park the levels of soil pollution were found to be highly variable over the site area due to its previous use as a sewage works. Parcels 5 and 10 on the habitat map were more extreme than the rest of the site and showed unacceptably high levels of soil pollution for use as public open space. Parcel 5 was covered with 500mm of clay capping subsoil, which was then seeded with a wild flower mix. Parcel 10 was mainly left level and seeded with perennial ryegrass and is regularly mown to form an informal area for games etc.

The site is contaminated with Chromium, Arsenic, Copper, Zinc, Lead, Mercury, Nickel, Selenium, and Antimony. Cadmium, Lead, and Antimony are found in amounts higher than the recommended MACFAS. (Maximum Allowable Content For Agricultural Soils). It is not known whether the groundwater beneath the site is contaminated. It is possible that some pollution of the groundwater has occurred and it is not known whether this has spread within the site. This however seems unlikely due to the abundance of sensitive aquatic life in the ponds. It was considered inappropriate to remove the concrete aprons because of the possible release of pollution.

2.9: Flood Storage Capacity

There was a requirement to maintain the site as a flood water storage area for the River Wandle. This is a continuing requirement by the Environment Agency to hold up to 50,000 cubic metres of water with the estimated frequency of flooding as once in every 50 years. The site last flooded in 1968. Before work began the site was capable of holding 73,000 cubic metres of water. This figure was quoted in the feasibility study carried out by Groundwork Trust. Therefore design proposals could make provision for the in-filling of parts of the site up to a maximum 23,000 cubic metres. However the result of this requirement was that the site would remain predominantly flat.

2.10: Fly Tipping

Before the fence was erected as part of the park construction fly tipping had occurred on both sides of North Road, adjacent to Mead Path and the area opposite Garfield First School on the east side of the River Wandle. It comprised of a wide variety of substances, but was very largely soil, concrete and brick. The majority of fly tipping had colonised naturally and therefore much of this area was left on site with only obvious eyesores removed.

Part 3: The Habitats, Flora and Fauna

The present wildlife habitats are described as parcels and are indicated on the attached habitat map. Because of the changes made during the creation of the Nature Park, the original parcels as shown in Dawson (1991) are no longer appropriate for considering future management work. Amended parcel descriptions follow and are shown on Map 1.

3.1: Parcel 1, the Seasonal Ponds

Parcel 1 consists of the remains of six circular tanks shown on Map 1 as a –f and correspond to parcels 1 – 6 in Dawson (1991). These were once part of the sewage works, with brick and concrete sides and are now mainly filled with tipped and presumably inert material. All usually contain water during the winter and spring months however d, e and f, were deepened in 1993 and retain water for longer than a, b and c. By mid summer all are generally dry. It is believed that these water bodies reflect the level of groundwater under the entire site, rather than local ponding over an impermeable surface. Prior to any construction work and for 12 months after work had finished water quality monitoring in the ponds was carried out to monitor any possible pollution, but no problems were detected.

There was a small clump of Japanese knotweed near pond a, which has now been eradicated by spraying with a glyphospate based herbicide.

The circular ponds have a varying vegetational structure but are dominated by creeping bent grass *Agrostis stolonifera*, and the London rarity, small sweet grass *Glyceria declinata*. Other species include great hairy willowherb *Epilobium hirsutum*, celery-leaved crowfoot *Ranunculus sceleratus*, gypsywort *Lycopus europaeus*, marsh yellow cress *Rorippa palustris*, mosses, duckweed *Lemna sp.*, and algae. Pond f has reed grass *Phalaris arundinacea*, amphibous bistort *Polygonum amphibium*, and curled pondweed *Potamogeton crispus*. Other species found growing mainly at the edges are more typical of dry land conditions and reflect succession to dry land in the last couple of years. These include bramble *Rubus fruticosus sp.*, broad leafed dock *Rumex obtusifolius*, hoary mustard *Hirschfeldia incana*, couch grass *Elymus repens*, crack willow *Salix fragilis*, common sallow *Salix cinerea*, bittersweet *Solanum dulcamara*, silverweed *Potentilla anserina*, curled dock *Rumex crispus*, red clover *Trifolium pratense*, creeping thistle *Cirsium arvense*, Yorkshire fog *Holcus lanatus*, and rat tail plantain *Plantago major*.

Ponds 1a, b and c retain less water than the others and are being allowed to succeed to willow carr to create more varied habitats and to illustrate succession. Ponds 1d, e and f retain water for longer and are to be maintained as seasonal water bodies. These ponds are valuable as examples of shallow seasonal water bodies and the animal and plants found are typical of such conditions. Notable is the abundance of amphibians, especially common newt, but also frogs and toads. This abundance is attributable to the absence of fish and to the availability of food and terrestrial habitat for the adults. Other conspicuous freshwater animals include the azure and blue tailed damselflies, the broad-bodied chaser dragonfly, water beetles and mayflies.

3.2: Parcel 2, Damp Grassland and Coppiced Willow

Much of this parcel is the remains of a concrete rectangular tank, which has grown over and is not immediately visible. This is now damp grassland dominated by creeping bent grass *Agrostis stolonifera*, but with oatgrass *Arrhenatherum elatius*, red clover, willows *Salix sp.*,

some of which has been coppiced, and pendulous sedge *Carex pendula*. The area is very wet and will develop into wet woodland if left unmanaged.

The rest of the parcel lies partly on the concrete skirts of the round water bodies and partly on soft surfaces with some mounding from tipped material. This has resulted in a mix of habitats comprising damp grassland and young woodland, some of which has been coppiced; with a mixture of herbaceous vegetation colonising the hard surfaces. Creeping bent grass, oat grass, barren brome *Bromus sterilis*, creeping thistle, yarrow *Achillea millefolium*, and smooth-stalked meadow grass *Poa pratensis*, with a wide range of other herbs dominate the grassland. The hard surfaces have black medick *Medicago lupulina*, michaelmas daisies *Aster spp.*, cut leaved crane'sbill *Geranium dissectum*, bittersweet, spiny sow thistle *Sonchus asper*, hedge mustard *Sisymbrium officinale*, scentless mayweed *Tripleurospermum inodorum*, coltsfoot *Tussilago farfara*, and the London rarity white meliot *Melitotus alba*. The woodland area is predominately of sallow, goat *Salix caprea*, and crack willow, with some bramble, buddleia *Buddleja davidii*, and hedge bindweed *Calystegia s. sepium*, and lesser quantities of oak *Quercus robur*, and sycamore *Acer pseudoplatanus*. Notable is one specimen of the London rarity, eared willow *Salix aurita.*

This area is typical of succession to woodland on a damp site and is of considerable value for a wide range of invertebrates. At such it compliments the ponds, providing a terrestrial habitat for the amphibious species. Hackett (1995) reports finding the common groundhopper *Tetrix undulata*, in the vegetation around pond f, which feeds on mosses and algae in damp places and despite its name, is seldom recorded in the London area.

3.3: Parcel 3, The Railway Embankment and Adjacent Mead Path Cycleway

An avenue of hybrid black poplars provides a visual backdrop to the wetland part of the site, immediately to the south and also adjacent to the cycle path by Mead Path. The poplars were re-pollarded in 1993, as many of them had become overgrown. This was urgent as some large branches had split on old pollard points causing damage to the trees and access routes to become blocked. Hackett (1995) found the wood feeding weevils *Rhyncolus lignarius* and *Cossonus parallelepipedus* in damp poplar heartwood in the NE of the site. Both are uncommon with the latter species being nationally scarce, so future re-pollarding needs to be planned so that only a few are treated each year, and the very minimum necessary removed.

Under the poplars a variety of plants constitute a thick and varied hedge, with some species not abundant elsewhere on the site including hedge garlic *Alliaria petiolata*, cowparsley *Anthriscus sylvestris*, honeysuckle *Lonica periclymenum*, and elder *Sambucus nigra*. During late 1993 contractors working for British Rail inflicted considerable damage to this ground flora whilst undertaking maintenance work on the boundary fence.

3.4: Parcel 4, Fly-Tipped Area

Parcel 4 consists of mounds of fly-tipped material rising up to a height of two metres above the underlying concrete apron. This results in a small-scale mosaic of diverse ground conditions, with drainage, nutrient and pH varying considerably over small distances. The tipped areas were left largely as they were with some tidying and recontouring into the existing concrete aprons near the edges. The vegetation initially consisted of a mixture of short and tall herbs, grassland and scrub with extensive areas of bare substrate uncolonised and the occasional tree. The most

dominant species were creeping bent grass, oat grass, buddleia, couch grass *Elymus repens*, bramble, sow thistle *Sonchus oleraceus* and common vetch *Vicia sativa*. Much of this area has now developed into young scrub woodland dominated by buddleia, dog rose *Rosa canina*, bramble, hawthorn *Crataegus manogyna,* and elder. This natural process would continue and lead to the development of secondary woodland but this would be a habitat of less value and interest than the wasteland habitat it replaces. Many of London's wasteland sites have been redeveloped leading to the loss of this part of the capitals biodiversity. To maintain a series of areas in different stages of succession the prescriptions suggest rotovating small areas in rotation to restart the process.

3.5: Parcel 5, Capped and Seeded Areas

Parcel 5 was covered in 500mm of clay capping subsoil in early 1993 to cover an area described as polluted with unacceptable levels of heavy metals. It was then seeded with a wildflower mix, which by the following spring was well established. Unfortunately the species composition of the wildflower mix used is not known, however two years later the parcel supported common fumitory *Fumaria officinalis*, agrimony *Agrimonia eupatoria*, salad burnet *Sanguisorba minor*, wild carrot *Daucus carota*, and much ox-eye daisy *Leucanthemum vulgare*, and the rarity corn cockle *Agrostemma githago*, all of which probably came from the wild flower mix. Additional plant species also now established probably originated from seed already on site rather than introduced via the wild flower mix. Ruderals such as hedge mustard *Sisymbrium officinale*, mugwort *Artemisia vulgaris,* and scentless mayweed *Tripleurospermum inodorum,* can also be found growing on many of the other parcels and it seems fairly likely that their seeds have simply spread to parcel 5. (See appendix 2 for a flora survey taken after first cutting)

3.6: Parcel 6, The Concrete Aprons / Filter Beds

The concrete surface or what were once filter beds presents a harsh environment for vegetation as it has very little soil and alternates from damp or flooded conditions to being baked dry in summer. This prevents the establishment of dense growing species and allows a wide range of species to grow that are tolerant of extremes, many of them annuals. Tree and shrubs occur only where they have gained a foothold through breaks in the aprons.

In 1993 the aprons were covered in 100mm of low nutrient crushed concrete to encourage further colonisation of the developing grassland. Colonisation is now less advanced on the east than the west probably due to higher usage by pedestrians to the east, and the fact that during construction of the Nature Park, the Contractor's compound and vehicles were located on the eastern side of the concrete aprons.

This area is colourful in spring before the summer drought and again in autumn with the return of damp conditions, but tends to be bleached dry in summer. The flowers attract a wide range of invertebrates including several butterfly species. A notable plant that is found in this area is white stonecrop *Sedum album*.

3.7: Parcel 7, The Rills & Immediate Surrounds

The Rills or rectangular water bodies were retained as a feature from the old sewage works and form linear seasonal ponds. The western rill has similar vegetation to the seasonal ponds with large amount of creeping bent-grass and duckweed but with some terrestrial plants such a

common spike rush *Eleocharis palustris,* at the northern end of the ditch. A small clump of reed *Phragmites australis*, gypsywort *Lycopus europaeus,* and pendulous sedge *Carex pendula*, are to be found where a section of the rill has been partly filled in.

The eastern rill has much curled pondweed *Potamogeton crispus*, duckweed and again some spike rush at its northern end. Some of the rills are becoming overgrown with developing woody vegetation.

Amphibians were abundant in both the rills and are important for similar reasons given for Parcels 4, 5 and 6.

The area directly adjacent to the rectangular water bodies (known as rills) running down the centre of the Nature Park are wetter than the surrounding area due to overflowing in the rills during wet periods. In one damp corner reflexed salt marsh grass, *Puccinellia distans*, a plant more typical of the Thames estuary and rare in London was found.

During the 1993 site construction, diamond rail fencing was erected for safety reasons around the rills, and two small ramps were constructed in the northern ends to allow easy access across the rills for amphibians.

3.8: Parcel 8, The Periferal Habitats

Parcel 13b originally consisted of tipped mounds that were re-contoured as a result of the installation of a disabled access and removal of a lay-by. The extensive earthworks resulted in much of the vegetation being buried but two areas which included false acacia *Robinia pseudoacacia,* in the corner near the junction of North Road with Mead Path were unscathed. A 100mm layer of imported topsoil was spread over the area once it had been re-contoured and reseeded with an amenity grass mix. Here, the vegetation is now a variety of colourful plants that have invaded the sward, the most unusual being vipers bugloss, a London Notable normally found growing on dry, sun baked habitats.

Sixteen standard or multistem trees and 2000 whips of native species but probably not local provenance, were planted in total during 1993 along the edges of the site adjacent to Mead path and North Road, and near the main entrances. These included hawthorn, silver birch, ash, hazel, field maple, dog rose, blackthorn, guelder rose, dogwood, alder, buckthorn and whitebeam.

3.9: The River Wandle and its Banks

The flora growing in this reach of the River Wandle has a great deal of canadian pondweed *Elodea sp.* but also includes the following London Notables: arrowhead *Sagittaria sagitifolia*, unbranched bur-reed *Sparganium emersum*, curled pondweed *Potamogeton crispus*, and stream water crowfoot *Ranunculus penicillatus*. These species suggest reasonably good water quality and it is a pity that the deep and shaded channel prevents more appreciation of the river. The very attractive banded demoiselle damselfly *Calopteryx splendens*, has been recorded here and the three spined stickleback *Gasterosteus aculeatus*, is usually the most obvious fish present. The river banks are very steep leading down to the river and tree cover along them is dense. It is hoped that in the future it may be possible to naturalise the banks and improve the bankside habitats.

The east bank consists of recently pollarded mature crack willows with a scrub understorey bisected by a footpath. Herbaceous vegetation includes common species such as cow parsley, hedge woundwort *Stachys sylvatica,* and nettles *Urtica dioica*. The river's edge is dominated by a steep concrete flood-defence wall, which offers little opportunity for wildlife. The most important feature of the bankside habitats is the willows, which provide important habitat for invertebrates, bats and birds. A bridge connecting Wandle Meadow to Garfield Recreation Ground was installed in 1994 and a path constructed along the eastern side of the river.

The river and the western bank are not included in the area of the proposed LNR, but the pollarded crack willows on the eastern bank are within the area.

3.10: The Area to the South of North Road

Parcel 14c was found to be polluted during initial surveys of the site and was covered in 400mm of subsoil, then 100mm of topsoil and seeded with perennial ryegrass to form an informal kickabout area. This area is not included in the proposed LNR.

3.11: Fauna

The sites fauna has not been properly investigated, however a casual observations include birds such as blackbird, blackcap (breeding), bullfinch, dunnock, goldfinch, great spotted woodpecker, greenfinch, house sparrow, kestrel, linnet, moorhen, pied wagtail, reed bunting, robin, sparrowhawk, whitethroat, and wren. Mammals include the fox and occasional pipistrelle bat. Perhaps the most important breeding animals are the amphibians, common frog, toad and smooth newt, all of which breed in the ponds and rills. Recent dry years have meant that the ponds and rills dry out too early, particularly for toads and newts.

Hackett (1995) reports small tortoishell, comma, red admiral, large, small and Essex skippers, green-veined and large white, speckled wood, meadow brown and common and holly blues being present. He also reports finding the Adonis ladybird on this site, which is regarded as being nationally notable.

3.12: Invasives

Some areas were scattered with clumps of Japanese knotweed which were controlled as a matter of priority but this has not been entirely successful. At least one small clump still persists next to the fence along Chaucer Way.

Part 4: Evaluation and Prescriptions

4.1: Overall Management Objectives

1. To provide people with an accessible place to enjoy nature.
2. To manage the area as a Nature Reserve for the benefit of indigenous flora and fauna.
3. To maintain and enhance the existing ecological value of the site through the protection and enhancement of the woodland, grassland and water habitats.
4. To guide access to protect sensitive areas.
5. To prevent fly-tipping by ensuring that the fencing remains in good condition.
6. To continue to work with local Residents Associations and local schools to maintain and enhance the site.
7. To maintain the footpaths.
8. To monitor the effectiveness of the management in maintaining and enhancing the wildlife interest of the site
9. To provide opportunities for educational use by local schools.
10. To provide interpretative panels and information leaflets to improve local awareness of conservation and wildlife on the site.
11. To maintain a specified flood storage capacity for the Environment Agency.

4.2: General Ecological Trends

Much of the site can be described as an urban common with typical wasteland flora, which, if unchecked over time will succeed to woodland. In certain parcels, notable parts of 4 and 8, there are already pockets of woodland. However, others such as the concrete aprons can be expected to continue to develop as a form of chalk grassland and are likely to take many years before any woody vegetation becomes established.

The seasonal ponds, rills and other wet areas will require continued management to arrest succession and ensure that they retain their current ecological interest and do not become fully terrestrial habitats.

4.3.1: Parcel 1, the Seasonal Ponds

Ponds d, e and f should continue to be maintained as open seasonal water bodies by the removal of developing willow species in and around the margins on a biannual cycle. It was intended that ponds a, b and c were to be allowed to develop into willow carr to be coppiced on a five to eight year cycle. However development of this habitat has been prevented possible due to trampling. As willow carr is well developed on parcel 2 it may be worthwhile considering if pond c should be deepened and managed as additional seasonal ponds as this habitat is the most threatened on the site. Any concrete and brick found in and around ponds should be removed.

None of the ponds are particularly deep at present, and the recent dry years have resulted in them drying out far too early. Ponds e and f have a very poor profile and should be further deepened in their centres in an attempt to retain water in them for longer each summer. This work should be carried out in late summer 1998. In five years time when the management plan is reviewed it may be necessary to consider de-silting the ponds during September or October when most amphibians will have left the water.

4.3.2: Parcel 2, Damp Grassland and Coppiced Willow

The grassland areas should be cut and cleared occasionally during late summer to prevent further invasion of willow scrub. The existing area of willow carr should be retained but coppiced on an eight year cycle with 25% cut biannually.

The area of tarmacadam near ponds b and c should be allowed to continue to colonise naturally with low growing vegetation.

4.3.3: Parcel 3, The Railway Embankment and Adjacent Mead Path Cycleway

Agreement should be obtained with Railtrack regarding maintenance of the embankment area to ensure that no further damage to habitats is caused.

The black poplars should be pollarded on a 10 year cycle and in rotation to minimise impact on the invertebrate interest. The trees were cut in 1993 and it is suggested that every third tree (no 1, 4, 7 etc.) be recut in 2001, the next third (no 2, 5, 8 etc) in 2003 and the final third in 2005, with the cycle then repeating at a full 10 year interval. If possible the cut material should be left on site in the vicinity of the trees to increase the amount of dead wood in the park. Problems with vandalism can be reduced if the cut wood is left in large sections in areas where it will rapidly become covered with bramble or other vegetation. Consideration should be given to the erection on the trees of both bird and bat boxes on the trees along the railway line at a height of around 5m.

The bramble thickets in this area should be retained as cover for birds and small mammals, and only cut if they become too thin in order to stimulate new growth.

4.3.4: Parcel 4, Fly-Tipped Area

The eastern half of this parcel should be allowed to continue as a typical urban wasteland community dominated by buddlia. This habitat type is increasingly scarce in London as sites are redeveloped. In order to maintain this habitat, which is typical of disturbed land, alternate areas of approximately 10mx10m should be cleared and rotavated biannually. Trees and shrubs such as willows and birch will increasingly dominate the western half along the Wandle. This will form a valuable woodland habitat and management work should be limited to preventing too much sycamore and coppicing and/or pollarding the willows.

4.3.5: Parcel 5, Capped and Seeded Areas

This area includes the area near the main entrance around the path down the slope. Cut and rake off area by hand in September to reduce coarser grasses and ranker vegetation and encourage and maintain the diversity of Wildflowers.

4.3.6: Parcel 6, The Concrete Aprons / Filter Beds

The area which were covered by a thin crushed brick / concrete covering layer are generally establishing a satisfactory vegetation cover with the exception of a few areas where the cover has been lost. These areas need a replacement covering of the same or similar material.

The recent exceptionally dry summers have hampered the development of this habitat, and it is not yet necessary to consider any specific management of this area. When vegetation has become more established in a few years time, then it is likely that it will become necessary to biannually cut and rake off alternate quarters.

4.3.7: Parcel 7, The Rills & Immediate Surrounds

The rills should be maintained as open water bodies by the cutting of developing willow species in and around the margins on a biannual cycle. Any concrete and brick found in and around the rills should be removed. In five years time when the management plan is reviewed it may be necessary to consider de-silting the rills during September or October when most amphibians will have left the water. This should be undertaken over two or three years so that only a section of each rill is de-silted in any one year to avoid harming invertebrate and amphibian interest.

The tarmacadam footpath through the middle of rills has almost entirely been colonised naturally with low growing vegetation. This central section between the rills will need to have woody vegetation such as the willows coppiced every three or four years and the vegetation should have 50% cut and cleared on a biannual basis.

4.3.8: Parcel 8, The Periferal Habitats

Parcel 8 lies mainly along the boundary with Chaucer Way and the Mead path. It has been extensively planted with a variety of trees and shrubs that should be left to form a backdrop to the park, further enhancing the visual amenity as well as a valuable habitat for birds, small mammals and many invertebrates.

4.3.9: The River Wandle and its Banks

The footpaths running along the banks of the Wandle need to be inspected and if necessarily cut back to around 1m from the path edge on several occasions during spring and summer to maintain access.

In the long term consideration should be given to the possibility of working with the Environment Agency to soften the edges of the river by removal of the artificial revetment. Maintenance of the pollarded willows is the most significant regular requirement in this area and this may need to be carried out in conjunction with the Environment Agency. The existing pollards should be recut on a roughly 10 year cycle but not all of the trees should be cut at the same time as this creates both a significant visual impact and can adversely affect some wildlife interest. In the longer term 50% of the trees should be cut every five years, so that each tree is cut every ten years but at no time is the visual or wildlife impact too severe.

4.3.10: The Area to the South of North Road

This area is to be maintained for informal games with the grass mown on a 2 weekly cycle, and is not proposed as part of the LNR.

The bank to the road is extensively covered with bramble, but many of the trees and shrubs planted here (oak, wild rose, ash, hawthorn and others) are now well established and will create a small scrub / woodland in time. No action is anticipated here.

The scrub surrounding the mown grassland is also well established with a mixture of bramble, willows and buddlea. Again this is not expected to need other than very minimal intervention.

4.3.11: General Points

The network of paths have some occasional low points that pond during wet weather. These need to be raised so that they remain above the water level to maintain access throughout the year.

Part 5: Finance & Work Programme

A Grounds Maintenance team employed by Leisure Services carries out the maintenance of the Wandle Meadow. Volunteers from the London Wildlife Trust and other similar groups could carry out some of the irregular tasks, particularly those on the ponds.
It is important to remember that all tasks need to be carried out in a sensitive way so as not to disturb of harm wildlife. Heavy vehicles will not be permitted to drive on the more sensitive areas of the site, and should only be admitted when absolutely necessary.

5.1: Management Schedule

5.1.1: Regular Annual Work

1. Carry out a minimum of three annual inspections of the site by a Client Officer in the Technical Section of Leisure Services
2. Empty litter bins and dog bins on a weekly basis.
3. Mow the grassland in parcel 10 fortnightly during the normal grasscutting season.
4. Cut and clear the grassland in parcel 5 in September.
5. Inspect all paths three times during spring/summer and cut back as necessary.

5.1.2: Ad Hoc Tasks

1. Remove Fly tipping from site as directed by the Supervising Officer.
2. Remove graffiti from the two interpretative panels on site as directed by the Supervising Officer.
3. Monitor for the spread of invasive species and eradicate Japanese knotweed and other possible problems such as giant hogweed wherever they appear during spring with glyphosate based herbicide.
4. Monitor sycamore saplings on site and clear if becoming dominant in any area.
5. Cut and clear the grassland in parcel 2 in September.

5.1.3: Long Term Management

1. Maintain hoggin footpaths by topping up deteriorating sections and rolling on a 5 yearly basis (some areas need immediate attention).
2. Ponds e and f (and possibly c) should be deepened in late summer 1998
3. Ponds e and f need to have the willow around their margins coppiced in autumn 1988.
4. 25% of the willow carr in parcel 2 is being coppiced in 1997, the next 25% should be coppiced in 1999.
5. The black poplars in parcel 3 should have every third tree pollarded in 2001 and the cutting cycle maintained.
6. Clear and rotavate an area of 10m x10m in the most north eastern section of parcel 4 in autumn 1998. In 2000 the next 10m square should be cut and rotovated.
7. Cut and clear 50% of the area between the two rills in autumn 1998 and the other half in autumn 2000.
8. Coppice 50% of the willows and other trees along the rills in autumn 1998 and the other 50% in autumn 2000.
9. Consider repollarding the willows along the Wandle bankside in autumn 2000.

5.2: MONITORING

1. London Ecology Unit to continue monitoring colonisation of parcel 6 using permanent quadrats.
2. Occasional monitoring of water quality in seasonal ponds and rills by an approved contractor eg. Symbio.

Bibliography

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Species list for Wandle South study site

English name	Latin name	% of London
Aaron's rod	*Verbascum thapsus*	36.75
American willowherb	*Epilobium ciliatum*	80.75
Amphibious bistort	*Polygonum amphibium*	36.75
Annual meadow grass	*Poa annua*	99.50
Apple	*Malus domesticus*	0.00 c
Arrowhead	*Sagittaria sagitifolia*	3.75
Ash	*Fraxinus excelsior*	100.00
Autumnal hawkbit	*Leontodon autumnalis*	90.25
Barren brome	*Bromus sterilis*	96.25
Beaked hawk's-beard	*Crepis vesicaria*	83.00
Bindweed	*Convolvulus arvensis*	100.00
Bittersweet	*Solanum dulcamara*	98.75
Black horehound	*Ballota nigra*	98.50
Black medick	*Nedicago lupulina*	96.25
Bladder campion	*Silene vulgaris*	45.00
Bramble	*Rubus fruticosus*	99.75
Bristly ox-tongue	*Picris echioides*	34.25
Broad-leaved dock	*Rumex obtusifolius*	99.50
Broad-leaved willow-herb	*Epilobium montanum*	61.50
Broom	*Cytisus scoparius*	45.25
Buddleia	*Buddleja davidii*	73.50
Canadian fleabane	*Conyza canadensis*	88.50
Canadian golden rod	*Solidago canadensis*	77.25
Canadian pondweeds	*Elodea sp.*	g
Caper spurge	*Euphorbia lathyrus*	13.00
Celery-leaved crowfoot	*Ranunculus sceleratus*	34.50
Cherry	*Prunus sp.*	g
Chickweed	*Stellaria media*	99.50
Cleavers	*Galium aparine*	93.00
Cock's-foot	*Dactylis glomerata*	97.25
Coltsfoot	*Tussilago farfara*	98.25
Common St. John's wort	*Hypericum perforatum*	52.50
Common bent-grass	*Agrostis capillaris*	84.00
Common horsetail	*Equisetum arvense*	83.50
Common mallow	*Malva sylvestris*	96.75
Common mouse-ear chickweed	*Cerastium fontanum*	90.25
Common orache	*Atriplex patula*	88.75
Common sallow	*Salix cinerea*	60.25
Common spike-rush	*Eleocharis palustris*	11.50
Common vetch	*Vicia sativa*	79.25
Conglomerate rush	*Juncus conglomeratus*	16.50
Cotoneaster	*Cotoneaster horizontalis*	3.00 c
Couch grass	*Elymus repens*	99.00

Cow parsley	*Anthriscus sylvestris*	98.50
Crack willow	*Salix fragilis*	68.75
Creeping buttercup	*Ranunculus repens*	99.50
Creeping cinquefoil	*Potentilla reptans*	99.50
Creeping thistle	*Cirsium arvense*	100.00
Curled dock	*Rumex crispus*	97.50
Curled pondweed	*Potamogeton crispus*	12.00
Cut-leaved cranesbill	*Geranium dissectum*	67.25
Daisy	*Bellis perennis*	99.50
Dandelion	*Taraxacum sp.*	100.00
Dog rose	*Rosa canina*	69-75
Doves-foot cranesbill	*Geranium molle*	70.00
Duckweed	*Lemna minor*	43.25
Eared sallow	*Salix aurita*	3.00
Eastern rocket	*Sisymbrium orientate*	23.75
Elder	*Sambucus nigra*	100.00
Evening primrose	*Oenothera erythrosepala*	42.50
Everlasting pea	*Lathyrus latifolius*	52-50
False acacia	*Robinia pseudoacacia*	47.75
False fox-sedge	*Carex otrubae*	17.50
Feverfew	*Tanacetum parthenium*	73.00
Field milk-thistle	*Sonchus arvensis*	86.00
Field poppy	*Papaver rhoeas*	63.75
Fiorin / Creeping bent grass	*Agrostis stolonifera*	89.00
Fools watercress	*Apium nodiflorum*	30.00
Gean	*Prunus avium*	36.00
Giant hogweed	*Heracleum mantegazzianum*	19.25
Gipsy-wort	*Lycopus europaeus*	44.00
Glaucous sweet-grass	*Glyceria declinata*	4.25
Goat willow	*Salix caprea*	67.75
Goat's rue	*Galega officinalis*	52.00
Gorse	*Ulex europaeus*	46.75
Great hairy willow-herb	*Epilobium hirsutum*	99.25
Great reedmace	*Typha latifolia*	26.75
Ground elder	*Aegopodium podagraria*	89.25
Groundsel	*Senecio vulgaris*	99.50
Hairy tare	*Vicia hirsuta*	21.50
Hard rush	*Juncus inflexus*	42.25
Hare's-foot	*Trifolium arvense*	8.50
Hastate orache	*Atriplex prostrate*	91.25
Hawkweed ox-tongue	*Picris hieracioides*	20.00
Hawthorn	*Crataegus manogyna*	92.75
Hedge bindweed	*Calystegia s. sepium*	100.00
Hedge garlic	*Alliaria petiolata*	84-75
Hedge mustard	*Sisymbrium officinale*	98.75
Hedge woundwort	*Stachys sylvatica*	80.00
Hemlock	*Conium maculatum*	49.75

Herb Robert	*Geranium robertianum*	52.50
Hoary mustard	*Hirschfeldia incana*	5.25
Hogweed	*Heracleum sphondylium*	98.75
Hollyhock	*Althaea rosea*	18.00
Honeysuckle	*Lonicera periclymenum*	35.25
Hop	*Humulus lupulus*	65.50
Hop trefoil	*Trifolium campestre*	36.00
Horse chestnut	*Aesculus hippocastanum*	74.50
Horse-radish	*Armoracia rusticana*	92.25
Hybrid black poplar	*Populus x canadensis*	32.75
Ivy-leaved toadflax	*Cymbalaria muralis*	56.00
Japanese knotweed	*Reynoutria japonica*	91.50
Jointed rush	*Juncus articulatus*	15.50
Knotgrass	*Polygonum aviculare*	99.75
Large bindweed	*Calystegia sepium silvatica*	91.50
Lesser burdock	*Arctium minus*	92.00
Lesser hairy willow-herb	*Epilobium parviflorum*	19.75
Lesser yellow trefoil	*Trifolium dubium*	82.50
Lombardy poplar	*Populus nigra italica*	0.00 c
Marsh thistle	*Cirsium palustre*	21.25
Marsh yellow-cress	*Rorippa palustris*	37.25
Meadow foxtail	*Alopecurus pratensis*	90.75
Meadow vetchling	*Lathryus pratensis*	72.75
Michaelmas daisy	*Aster spp.*	86.75
Mountain cranesbill	*Geranium pyrenaicum*	25.75
Mugwort	*Artemisia vulgaris*	99.75
Narrow-leaved meadow-grass	*Poa angustifolia*	28.25
Nipplewort	*Lapsana communis*	95.75
Oat grass	*Arrhenatherum elatius*	99.50
Old man's beard	*Clematis vitalba*	58.25
Ox-eye daisy	*Leucahthemum vulgare*	83.00
Oxford ragwort	*Senecio squalidus*	99.00
Pale persicaria	*Polygonum lapathifolium*	54.00
Pedunculate oak	*Quercus robur*	91.00
Pendulous sedge	*Carex pendula*	18.00
Perennial rye-grass	*Lolium perenne*	100.00
Perennial wall rocket	*Diplotaxis tenuifolia*	50.25
Persicaria	*Polygonum persicaria*	97.50
Pinapple weed	*Matricaria matricarioides*	99.75
Prickly lettuce	*Lactuca serriola*	63.50
Purple toadflax	*Linaria purpurea*	52.00
Ragwort	*Senecio jacobaea*	81.25
Rape, Swede, Turnip	*Brassica napus*	25.75
Rat's tail fescue	*Vulpia myuros*	19.75
Rat-tail plantain	*Plantago major*	100.00
Red bartsia	*Odontites verna*	14.00
Red clover	*Trifolium pratense*	98.25

Red currant	*Ribes rubrum*	11.50
Red fescue	*Festuca rubra*	75.00
Reed	*Phragmites australis*	27-50
Reed sweet-grass	*Glyceria maxima*	27.50
Reed-grass	*Phalaris arundinacea*	29.75
Reflexed salt-marsh grass	*Puccinellia distans*	3.50
Reflexed stonecrop	*Sedum reflexum*	3.25
Ribbed melilot	*Melilotus officinalis*	62.25
Ribwort	*Plantago lanceolata*	100.00
Rose-bay willow-herb	*Chamaenerion angustifolium*	100.00
Rough-stalked meadow-grass	*Poa trivialis*	86.25
Scentless mayweed	*Tripleurospermum inodorum*	94.75
Self-heal	*Prunella vulgaris*	85.00
Shasta daisy	*Leucanthemum maximum*	15.75
Shepherd's purse	*Capsella bursa-pastoris*	100.00
Silver birch	*Betula pendula*	86.25
Silverweed	*Potentilla anserina*	48.75
Small blue sow-thistle	*Cicerbita plumieri*	0.00
Small-leaved cotoneaster	*Cotoneaster microphyllus*	0.00 c
Smooth hawksbeard	*Crepis capillaris*	88.00
Smooth tare	*Vicia tetrasperma*	16.25
Smooth-stalked meadow-grass	*Poa pratensis*	95.75
Snapdragon	*Antirrhinum majus*	45.75
Sorrel	*Rumex acetosa*	88.50
Sow-thistle	*Sonchus oleraceus*	99.50
Spear thistle	*Cirsium vulgare*	99.75
Spearmint	*Mentha spicata*	28.50
Spiny sow-thistle	*Sonchus asper*	93.75
Square-stemmed willow-herb	*Epilobium tetragonum*	26.25
Starwort	*Callitriche sp.*	g
Stinging nettle	*Urtica dioica*	100.00
Stream water-crowfoot	*Ranunculus penicillatus*	7.00
Sycamore	*Acer pseudoplatanus*	100.00
Tansy	*Tanacetum vulgare*	29.00
Teasel	*Dipsacus fullonum*	51.50
Timothy	*Phleum pratense*	77.25
Toad rush	*Juncus bufonius*	32.00
Unbranched bur-reed	*Sparganium emersum*	4.75
Wall barley	*Hordeum murinum*	98.75
Water plantain	*Alisma plantago-aquatica*	26.50
Weeping willow	*Salix babylonica*	0.00 c
Weld	*Reseda luteola*	44.75
White campion	*Silene latifolia*	76.00
White clover	*Trifolium repens*	100.00
White melilot	*Nelilotus alba*	33.00
Wild carrot	*Daucus carota*	41.50
Wild oat	*Avena fatua*	53.00

Winter cress	*Barbarea vulgaris*	46.75
Wood melick	*Nelica uniflora*	23.25
Yarrow	*Achillea millefolium*	100.00
Yellow flag	*Iris pseudacorus*	39.25
Yellow toadflax	*Linaria vulgaris*	75.75
Yorkshire fog	*Holcus lanatus*	98.50
Zigzag clover	*Trifolium medium*	26.25

The figures given in the column headed of London are an indication of how widespread the species is in Greater London: the percentage of the 400 Greater London 'tetrad' recording units with records of the species in Burton's (1983) Flora of the London Area. The figures give an inflated indication of the distribution of all species, as a single record in one of the recording units suffices for the species to be counted effectively as if present throughout the entire four square kilometres. Some species are difficult to record through being inconspicuous, seasonal, or occupying a difficult habitat, like open water. Nevertheless the gross differences in the percentages represent real differences in distribution. No figure is furnished for plants not mapped in the Flora (such as species that were not fully identified “g”, and lower plants “1”). Other species reproduce poorly, or not at all, in London but occur widely in cultivation or as remnants of previous cultivation “c”; the percentage of these is low, as Burton's atlas is confined to natural records.

Appendix 1: 1991 Flora Species List for Wandle South Site

Latin name	English name	% of London
Acer pseudoplatanus	Sycamore	100.00
Achillea millefolium	Yarrow	100.00
Aegopodium podagraria	Ground elder	89.25
Aesculus hippocastanum	Horse chestnut	74.50
Agrostis capillaris	Common bent-grass	84.00
Agrostis stolonifera	Fiorin / Creeping bent grass	89.00
Alisma plantago-aquatica	Water plantain	26.50
Alliaria petiolata	Hedge garlic	84-75
Alopecurus pratensis	Meadow foxtail	90.75
Althaea rosea	Hollyhock	18.00
Anthriscus sylvestris	Cow parsley	98.50
Antirrhinum majus	Snapdragon	45.75
Apium nodiflorum	Fools watercress	30.00
Arctium minus	Lesser burdock	92.00
Armoracia rusticana	Horse-radish	92.25
Arrhenatherum elatius	Qat grass	99.50
Artemisia vulgaris	Mugwort	99.75
Aster spp.	Michaelmas daisy	86.75
Atriplex patula	Common orache	88.75
Atriplex prostrate	Hastate orache	91.25
Avena fatua	Wild oat	53.00
Ballota nigra	Black horehound	98.50
Barbarea vulgaris	Winter cress	46.75
Bellis perennis	Daisy	99.50
Betula pendula	Silver birch	86.25
Brassica napus	Rape, Swede, Turnip	25.75
Bromus sterilis	Barren brome	96.25
Buddleja davidii	Buddleia	73.50
Callitriche sp.	Starwort	g
Calystegia s. sepium	Hedge bindweed	100.00
Calystegia sepium silvatica	Large bindweed	91.50
Capsella bursa-pastoris	Shepherd's purse	100.00
Carex otrubae	False fox-sedge	17.50
Carex pendula	Pendulous sedge	18.00
Cerastium fontanum	Common mouse-ear chickweed	90.25
Chamaenerion angustifolium	Rose-bay willow-herb	100.00
Cicerbita plumieri	Small blue sow-thistle	0.00
Cirsium arvense	Creeping thistle	100.00
Cirsium palustre	Marsh thistle	21.25
Cirsium vulgare	Spear thistle	99.75
Clematis vitalba	Old man's beard	58.25
Conium maculatum	Hemlock	49.75
Convolvulus arvensis	Bindweed	100.00
Conyza canadensis	Canadian fleabane	88.50

Cotoneaster horizontalis	Cotoneaster	3.00 c
Cotoneaster microphyllus	Small-leaved cotoneaster	0.00 c
Crataegus manogyna	Hawthorn	92.75
Crepis capillaris	Smooth hawksbeard	88.00
Crepis vesicaria	Beaked hawk's-beard	83.00
Cymbalaria muralis	Ivy-leaved toadflax	56.00
Cytisus scoparius	Broom	45.25
Dactylis glomerata	Cock's-foot	97.25
Daucus carota	Wild carrot	41.50
Diplotaxis tenuifolia	Perennial wall rocket	50.25
Dipsacus fullonum	Teasel	51.50
Eleocharis palustris	Common spike-rush	11.50
Elodea sp.	Canadian pondweeds	g
Elymus repens	Couch grass	99.00
Epilobium ciliatum	American willowherb	80.75
Epilobium hirsutum	Great hairy willow-herb	99.25
Epilobium montanum	Broad-leaved willow-herb	61.50
Epilobium parviflorum	Lesser hairy willow-herb	19.75
Epilobium tetragonum	Square-stemmed willow-herb	26.25
Equisetum arvense	Common horsetail	83.50
Euphorbia lathyrus	Caper spurge	13.00
Festuca rubra	Red fescue	75.00
Fraxinus excelsior	Ash	100.00
Galega officinalis	Goat's rue	52.00
Galium aparine	Cleavers	93.00
Geranium dissectum	Cut-leaved cranesbill	67.25
Geranium molle	Doves-foot cranesbill	70.00
Geranium pyrenaicum	Mountain cranesbill	25.75
Geranium robertianum	Herb Robert	52.50
Glyceria declinata	**Glaucous sweet-grass**	**4.25**
Glyceria maxima	Reed sweet-grass	27.50
Heracleum mantegazzianum	Giant hogweed	19.25
Heracleum sphondylium	Hogweed	98.75
Hirschfeldia incana	**Hoary mustard**	**5.25**
Holcus lanatus	Yorkshire fog	98.50
Hordeum murinum	Wall barley	98.75
Humulus lupulus	Hop	65.50
Hypericum perforatum	Common St. John's wort	52.50
Iris pseudacorus	Yellow flag	39.25
Juncus articulatus	Jointed rush	15.50
Juncus bufonius	Toad rush	32.00
Juncus conglomeratus	Conglomerate rush	16.50
Juncus inflexus	Hard rush	42.25
Lactuca serriola	Prickly lettuce	63.50
Lapsana communis	Nipplewort	95.75
Lathryus pratensis	Meadow vetchling	72.75
Lathyrus latifolius	Everlasting pea	52-50

Lemna minor	Duckweed	43.25
Leontodon autumnalis	Autumnal hawkbit	90.25
Leucahthemum vulgare	Ox-eye daisy	83.00
Leucanthemum maximum	Shasta daisy	15.75
Linaria purpurea	Purple toadflax	52.00
Linaria vulgaris	Yellow toadflax	75.75
Lolium perenne	Perennial rye-grass	100.00
Lonicera periclymenum	Honeysuckle	35.25
Lycopus europaeus	Gipsy-wort	44.00
Malus domesticus	Apple	0.00 c
Malva sylvestris	Common mallow	96.75
Matricaria matricarioides	Pinapple weed	99.75
Melilotus officinalis	Ribbed melilot	62.25
Mentha spicata	Spearmint	28.50
Nedicago lupulina	Black medick	96.25
Nelica uniflora	Wood melick	23.25
Nelilotus alba	White melilot	33.00
Odontites verna	Red bartsia	14.00
Oenothera erythrosepala	Evening primrose	42.50
Papaver rhoeas	Field poppy	63.75
Phalaris arundinacea	Reed-grass	29.75
Phleum pratense	Timothy	77.25
Phragmites australis	Reed	27.50
Picris echioides	Bristly ox-tongue	34.25
Picris hieracioides	Hawkweed ox-tongue	20.00
Plantago lanceolata	Ribwort	100.00
Plantago major	Rat-tail plantain	100.00
Poa angustifolia	Narrow-leaved meadow-grass	28.25
Poa annua	Annual meadow grass	99.50
Poa pratensis	Smooth-stalked meadow-grass	95.75
Poa trivialis	Rough-stalked meadow-grass	86.25
Polygonum amphibium	Amphibious bistort	36.75
Polygonum aviculare	Knotgrass	99.75
Polygonum lapathifolium	Pale persicaria	54.00
Polygonum persicaria	Persicaria	97.50
Populus nigra italica	Lombardy poplar	0.00 c
Populus x canadensis	Hybrid black poplar	32.75
Potamogeton crispus	Curled pondweed	12.00
Potentilla anserina	Silverweed	48.75
Potentilla reptans	Creeping cinquefoil	99.50
Prunella vulgaris	Self-heal	85.00
Prunus avium	Gean	36.00
Prunus sp.	Cherry	g
Puccinellia distans	Reflexed salt-marsh grass	3.50
Quercus robur	Pedunculate oak	91.00
Ranunculus penicillatus	**Stream water-crowfoot**	**7.00**
Ranunculus repens	Creeping buttercup	99.50

Ranunculus sceleratus	Celery-leaved crowfoot	34.50
Reseda luteola	Weld	44.75
Reynoutria japonica	Japanese knotweed	91.50
Ribes rubrum	Red currant	11.50
Robinia pseudoacacia	False acacia	47.75
Rorippa palustris	Marsh yellow-cress	37.25
Rosa canina	Dog rose	69-75
Rubus fruticosus	Bramble	99.75
Rumex acetosa	Sorrel	88.50
Rumex crispus	Curled dock	97.50
Rumex obtusifolius	Broad-leaved dock	99.50
Sagittaria sagitifolia	**Arrowhead**	**3.75**
Salix aurita	**Eared sallow**	**3.00**
Salix babylonica	Weeping willow	0.00 c
Salix caprea	Goat willow	67.75
Salix cinerea	Common sallow	60.25
Salix fragilis	Crack willow	68.75
Sambucus nigra	Elder	100.00
Sedum reflexum	**Reflexed stonecrop**	**3.25**
Senecio jacobaea	Ragwort	81.25
Senecio squalidus	Oxford ragwort	99.00
Senecio vulgaris	Groundsel	99.50
Silene latifolia	White campion	76.00
Silene vulgaris	Bladder campion	45.00
Sisymbrium officinale	Hedge mustard	98.75
Sisymbrium orientate	Eastern rocket	23.75
Solanum dulcamara	Bittersweet	98.75
Solidago canadensis	Canadian golden rod	77.25
Sonchus arvensis	Field milk-thistle	86.00
Sonchus asper	Spiny sow-thistle	93.75
Sonchus oleraceus	Sow-thistle	99.50
Sparganium emersum	**Unbranched bur-reed**	**4.75**
Stachys sylvatica	Hedge woundwort	80.00
Stellaria media	Chickweed	99.50
Tanacetum parthenium	Feverfew	73.00
Tanacetum vulgare	Tansy	29.00
Taraxacum sp.	Dandelion	100.00
Trifolium arvense	**Hare's-foot**	**8.50**
Trifolium campestre	Hop trefoil	36.00
Trifolium dubium	Lesser yellow trefoil	82.50
Trifolium medium	Zigzag clover	26.25
Trifolium pratense	Red clover	98.25
Trifolium repens	White clover	100.00
Tripleurospermum inodorum	Scentless mayweed	94.75
Tussilago farfara	Coltsfoot	98.25
Typha latifolia	Great reedmace	26.75
Ulex europaeus	Gorse	46.75

Urtica dioica	Stinging nettle	100.00
Verbascum thapsus	Aaron's rod	36.75
Vicia hirsuta	Hairy tare	21.50
Vicia sativa	Common vetch	79.25
Vicia tetrasperma	Smooth tare	16.25
Vulpia myuros	Rat's tail fescue	19.75

The figures given in the column headed % of London are an indication of how widespread the species is in Greater London: the percentage of the 400 Greater London 'tetrad' recording units with records of the species in Burton's (1983) Flora of the London Area. The figures give an inflated indication of the distribution of all species, as a single record in one of the recording units suffices for the species to be counted effectively as if present throughout the entire four square kilometres. Some species are difficult to record through being inconspicuous, seasonal, or occupying a difficult habitat, like open water. Nevertheless the gross differences in the percentages represent real differences in distribution. No figure is furnished for plants not mapped in the Flora (such as species that were not fully identified “g”, and lower plants “1”). Other species reproduce poorly, or not at all, in London but occur widely in cultivation or as remnants of previous cultivation “c”; the percentage of these is low, as Burton's atlas is confined to natural records.

APPENDIX 2: WILDFLOWER MEADOW CONTENT AFTER I MONTH

In late August after the meadow had been cut once, the area was surveyed and plant species present were recorded. Recording was undertaken by casual observation rather than by detailed quantitative methods.
Nomenclature follows 'Flora of the British Isles' (Clapham, Tutin and Moore, 1987)

Botanic Name	Common Name
Ranunculus repens	Creeping Buttercup
Fumaria officinalis	Common Fumitory
Capsella bursa-pastoris	Shepherds Purse
Sisumbrium officinale	Hedge Mustard
Stellaria media	Common Chickwort
Chenopodium albium	Fat Hen
Atriplex patula	Common Orache
Malva moschata	Musk Mallow
Galega officinalis	Goat's Rue
Vicia sativa	Common Vetch
Medicago lupulina	Black medick
Melilotus officinalis	Ribbed Melilot
Trifolium pratense	Red Clover
Trifolium medium	Zig-zag Clover
Potentilla anserina	Silverweed
Potentilla erecta	Tormentil
Potentilla reptans	Creeping Cinquefoil
Agrimonia eupatoria	Agrimony
Sanguisorba minor ssp minor	Salad Burnet
Daucus carota	Wild Carrot
Polygonum aviculare	Common Knotgrass
Polygonum persicaria	Red Shank
Reynoutria japonica	Japanese Knotweed
Rumex obtusifoli-us	Broad-leaved Dock
Convolvulus arvensis	Field Bindweed
odontites verna	Red Bartsia
Plantago lanceolata	Dwarf Plantain
Tussilago farfara	Colt's-foot
Bellis perennis	Daisy
Achillea millefolium	Yarrow
Tripleurospermum inodorum	Scentless Mayweed
Chrysanthemum leucanthemum	Ox-eye Daisy
Chrysanthemum vulgare	Tansy
Artemisia vulgaris	Mugwort
Cirsium vulgare	Spear Thistle
cirsium arvense	Creeping Thistle
Hypochoeris radicata	Cat's Ear
Sonchus sp.	Sow Thistle
Picris echioides	Bristly Ox-tongue
Taraxacum sp	Dandelion
Festuca rubra	Red Fescue
Elymus repens	Couch
Arrhenatherum elatius	False Oat-grass
Agrostis stolonifera	Fiorin / Creeping bent-grass

NOTES:

Groundcover is greater than 95%

Much of the Parcel is vegetated with Hedge Mustard, Mugwort, Scentless Mayweed, Common Knotgrass, Ribwort Plantain, Colt's-foot, Yarrow, Black Meddick, Ox-eye Daisy, Bristly Ox-Tongue, Red Bartsia, Sow Thistle and various grasses. (With the exception of Yarrow, Oxeye Daisy, Ribwort Plantain and possibly Black Medick it seems unlikely that many of the above forbs would have been present in a wild flower mix).

a) Wild Carrot and Salad Burnet (probably from the seed mix) are sparsely distributed over the area.
b) A small quantity of Japanese knotweed is present.
c) The western side has a spreading patch of bramble and bindweed.
d) In places there is a build-up of thatch probably caused by inadequate raking off after the first cut.

1995 Species List for Wandle Meadow Nature Park

Latin name	A	B	C	D
Acer pseudoplatanus				
Achillea millefolium				
Aegopodium podagraria				
Aesculus hippocastanum				
Agrostis capillaris				
Agrostis stolonifera				
Alisma plantago-aquatica				
Alliaria petiolata				
Alopecurus pratensis				
Althaea rosea				
Anthriscus sylvestris				
Antirrhinum majus				
Apium nodiflorum				
Arctium minus				
Armoracia rusticana				
Arrhenatherum elatius				
Artemisia vulgaris				
Aster spp.				
Atriplex patula				
Atriplex prostrate				
Avena fatua				
Ballota nigra				
Barbarea vulgaris				
Bellis perennis				
Betula pendula				
Brassica napus				
Bromus sterilis				
Buddleja davidii				
Callitriche sp.				
Calystegia s. sepium				
Calystegia sepium silvatica				
Capsella bursa-pastoris				
Carex otrubae				
Carex pendula				
Cerastium fontanum				
Chamaenerion angustifolium				
Cicerbita plumieri				
Cirsium arvense				
Cirsium palustre				
Cirsium vulgare				
Clematis vitalba				
Conium maculatum				
Convolvulus arvensis				
Conyza canadensis				

Cotoneaster horizontalis				
Cotoneaster microphyllus				
Crataegus manogyna				
Crepis capillaris				
Crepis vesicaria				
Cymbalaria muralis				
Cytisus scoparius				
Dactylis glomerata				
Daucus carota				
Diplotaxis tenuifolia				
Dipsacus fullonum				
Eleocharis palustris				
Elodea sp.				
Elymus repens				
Epilobium ciliatum				
Epilobium hirsutum				
Epilobium montanum				
Epilobium parviflorum				
Epilobium tetragonum				
Equisetum arvense				
Euphorbia lathyrus				
Festuca rubra				
Fraxinus excelsior				
Galega officinalis				
Galium aparine				
Geranium dissectum				
Geranium molle				
Geranium pyrenaicum				
Geranium robertianum				
Glyceria declinata				
Glyceria maxima				
Heracleum mantegazzianum				
Heracleum sphondylium				
Hirschfeldia incana				
Holcus lanatus				
Hordeum murinum				
Humulus lupulus				
Hypericum perforatum				
Iris pseudacorus				
Juncus articulatus				
Juncus bufonius				
Juncus conglomeratus				
Juncus inflexus				
Lactuca serriola				
Lapsana communis				
Lathryus pratensis				
Lathyrus latifolius				

Lemna minor				
Leontodon autumnalis				
Leucahthemum vulgare				
Leucanthemum maximum				
Linaria purpurea				
Linaria vulgaris				
Lolium perenne				
Lonicera periclymenum				
Lycopus europaeus				
Malus domesticus				
Malva sylvestris				
Matricaria matricarioides				
Melilotus officinalis				
Mentha spicata				
Nedicago lupulina				
Nelica uniflora				
Nelilotus alba				
Odontites verna				
Oenothera erythrosepala				
Papaver rhoeas				
Phalaris arundinacea				
Phleum pratense				
Phragmites australis				
Picris echioides				
Picris hieracioides				
Plantago lanceolata				
Plantago major				
Poa angustifolia				
Poa annua				
Poa pratensis				
Poa trivialis				
Polygonum amphibium				
Polygonum aviculare				
Polygonum lapathifolium				
Polygonum persicaria				
Populus nigra italica				
Populus x canadensis				
Potamogeton crispus				
Potentilla anserina				
Potentilla reptans				
Prunella vulgaris				
Prunus avium				
Prunus sp.				
Puccinellia distans				
Quercus robur				
Ranunculus penicillatus				
Ranunculus repens				

Ranunculus sceleratus				
Reseda luteola				
Reynoutria japonica				
Ribes rubrum				
Robinia pseudoacacia				
Rorippa palustris				
Rosa canina				
Rubus fruticosus				
Rumex acetosa				
Rumex crispus				
Rumex obtusifolius				
Sagittaria sagitifolia				
Salix aurita				
Salix babylonica				
Salix caprea				
Salix cinerea				
Salix fragilis				
Sambucus nigra				
Sedum reflexum				
Senecio jacobaea				
Senecio squalidus				
Senecio vulgaris				
Silene latifolia				
Silene vulgaris				
Sisymbrium officinale				
Sisymbrium orientate				
Solanum dulcamara				
Solidago canadensis				
Sonchus arvensis				
Sonchus asper				
Sonchus oleraceus				
Sparganium emersum				
Stachys sylvatica				
Stellaria media				
Tanacetum parthenium				
Tanacetum vulgare				
Taraxacum sp.				
Trifolium arvense				
Trifolium campestre				
Trifolium dubium				
Trifolium medium				
Trifolium pratense				
Trifolium repens				
Tripleurospermum inodorum				
Tussilago farfara				
Typha latifolia				
Ulex europaeus				

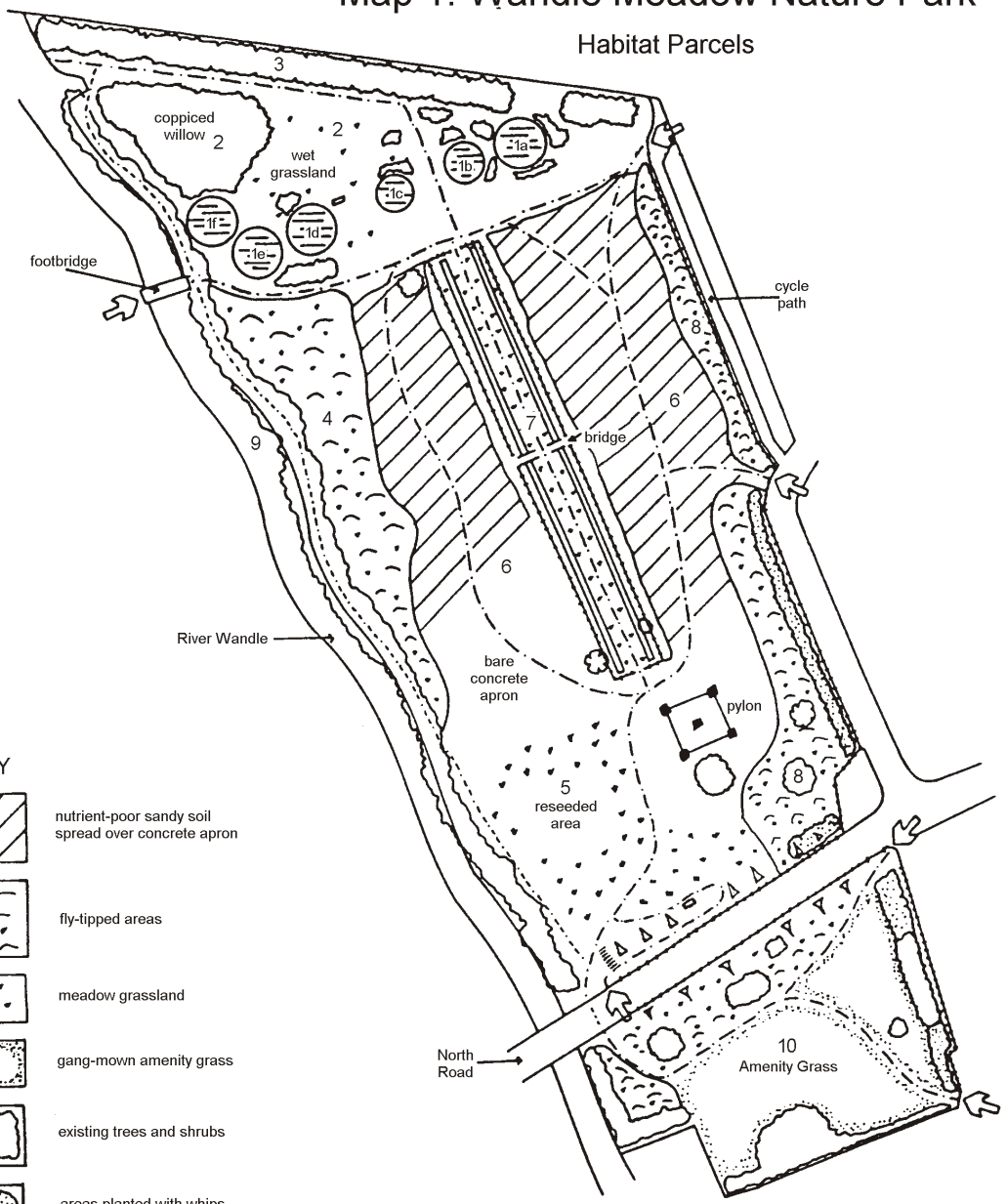
Urtica dioica				
Verbascum thapsus				
Vicia hirsuta				
Vicia sativa				
Vicia tetrasperma				
Vulpia myuros				

Survey carried out as a training session led by Dr D G Dawson of the LEU on 15th July 1995.

Location A = Road Edge Habitats, recorder Irene Kettle / D G Dawson / AC
Location B = Concrete slabs, recorder Ruth Day /
Location C = Eastern edge areas, recorder D G Dawson.
Location D = Capped and reseeded area, recorder PG / IM
Location E =

Map 1: Wandle Meadow Nature Park

Habitat Parcels



KEY

- nutrient-poor sandy soil spread over concrete apron
- fly-tipped areas
- meadow grassland
- gang-mown amenity grass
- existing trees and shrubs
- areas planted with whips
- seasonal pond
- rill
- main footpath
- minor footpath
- fencing
- park entrance
- bench

N

Redrawn by P Guest in November 1997
from an original by H S Studley April 1994
not to scale