

Management Plan:
Seven Acre Lake and Basin Lake
Local Wildlife Site

April 2011 – March 2016

London Borough of Harrow
For the Canons Park Estate Association



March 2011

Contents:

1. Description	1
2. Important features on site	4
3. Aims and Objectives	7
4. Management Prescriptions	9
Maps and plans	18
Figure 1: Location	
Figure 2: Management Compartments	
Appendices	23
Appendix 1: List of Vascular Plants and Fauna (Surveyed 2010)	

1. Description

The Seven Acre Lake and Basin Lake are located about 200 m from the eastern boundary of the London Borough of Harrow with Barnet, east of the A5 (Stone Grove/High Street) - see Figure 1. Basin Lake (grid coordinates TQ 184,921) lies about 300 m south-east of Seven Acre Lake (at TQ 183,922) separated by the Canons Park Estate. Seven Acre Lake and Basin Lake Local Wildlife Site (LWS) are recognised in Harrow's Unitary Development Plan as of Borough Grade 2 Importance for Nature Conservation. Both water-bodies are wholly owned by Surplus Land (Canons) Ltd hold shares on trust for Canons Park Estate Association (CPEA)

Seven Acre Lake is the larger of the two sites with an area of 4.5 ha. Access is limited to Members of the CPEA with gated access points from Lake View and Rose Garden Close. It currently enjoys recreational usage including angling.

Basin Lake is a smaller, oval-shaped body of water fringed with woodland, with an area of just under 1 ha. Canons Drive forms its northern boundary. There is access to the public aside the road but no public access to the rest of the site to the south.

To facilitate description three composite compartments are recognised for Basin Lake (Figure 2) and two for Seven Acre Lake (Figure 3). These are described below:

Basin Lake – Standing Water - Compartment B1 (0.57 ha)

- 1) There is no obvious submerged or floating vegetation associated with this water-body. Due to deep shade few marginals are present. These include yellow iris, pendulous sedge, soft rush and great willowherb. There is a small wooded island near the centre; alder and weeping willow are apparent.

Various water-birds frequent the area (and banks) including black-headed gull, common tern, coot, cormorant, grey heron, mallard and moorhen. The only Odonata species recorded during the survey was the blue-tailed damselfly. There is at least one terrapin present in the water: probably the yellow-bellied slider (*Trachemys scripta scripta*).

Basin Lake – Wildlife Area - Compartment B2 (0.26 ha)

- 2) This compartment is located to the south of the site. It is densely wooded. Horse chestnut is abundant. Other common trees include common lime, sycamore, alder, ash and pedunculate oak. Some Norway maple, aspen and crack willow are also present.

The wood shrub layer is well defined and includes elder, elm, hawthorn, holly, cherry laurel as well as young specimens of alder, ash, birch, evergreen oak, pedunculate oak, sycamore, wild cherry and yew.

The ground flora is dominated by ivy and bramble. Cow parsley and stinging nettle are abundant. Other important constituents include pendulous sedge, foxglove, wood avens, garlic mustard, cleavers, wood and clustered docks. Logs removed from trees, as part of the compartment's management, are stacked into habitat piles or partly buried in soil, in a vertically position, to form loggeries for stag beetles (which are present at Basin Lake).

Basin Lake – Public Area - Compartment B3 (0.14 ha)

- 3) This area is more formally managed and has a greater proportion of non-native species present. Trees and shrubs include alder, beech, crack willow, lime, sycamore, cherry laurel, and buddleia. In places there are low (well maintained) hedges (<1 m height) between the road and water's edge. These help to prevent unnecessary trampling and erosion of the bankside and reduce the disturbance of waterfowl. The chief hedging plant is hawthorn but in places this is joined by barberry, dogwood and beech.

Seven Acre Lake – Standing Water - Compartment S1 (3.06 ha)

- 4) The lake is, in fact, a little over 7.5 acres in area making it the largest body of standing water in the borough. It is defined as a reservoir by the Environment Agency and is covered by the Reservoirs Act 1975. It is chiefly used for fishing and a past report from the Environment Agency (2000)¹ suggest the lake was stocked with carp, perch, roach, gudgeon, pike, bream and tench – it is probable that all these species are still present although through population dynamics are likely to have seen abundances fluctuate over the years. The same report shows 78 species of macroinvertebrate present including eight species of notable and local conservation interest, including: ramshorns snails, leeches and a water beetle and water spider. Two thirds of all the macroinvertebrates recorded were associated with the margins (and one third with the lake bed) indicating the conservation importance of this habitat.

The survey conducted by the author found four species of Odonata present: blue-tailed damselfly, brown hawk, common blue damselfly and southern hawk. CPEA found a fifth species, the black-tailed skimmer.

¹ Environment Agency, 2000. Environmental Statement: Silk Stream Alleviation Scheme, Scheme Reference: 3781. Volume 1: Main Text

The lake's vegetation is generally rather impoverished: two submergent species present, i.e. curled pondweed and fennel-leaved pondweed; floating on the surface of the lake is a little common duckweed; emergent species, at the lake's edge, are great willowherb, yellow iris, soft rush, water mint and pendulous sedge.

A diverse range of water birds use the lake. The 2010 survey included common tern, coot, cormorant, grey heron, little grebe, moorhen and mute swan. In the past these have been joined by green sandpipers, redshank and on one occasion an osprey². Sadly the ever increasing density of marginal woodland has made sightings of these visitors far less likely.

Seven Acre Lake – Wooded Perimeter - Compartment S2 (1.42 ha)

- 5) This compartment is characterised by dense, shady woodland. Sycamore and ash are abundant as canopy trees. Frequent species are alder (particularly near the banks of the lake) and horse-chestnut. These species are joined by the occasional specimens of grey poplar, turkey oak, Holm oak, pedunculate oak and lime. Beech is rare and a single specimen of service tree of Fontainbleau is also present.

A well defined shrub layer occurs which includes frequent specimens of hawthorn, cherry laurel, bramble, elder, rhododendron and English elm. Joining these are occasional specimens of young tree e.g. hornbeam, grey poplar, wild cherry, Holm oak, yew and lime. Grey and crack willows also occur.

The ground flora is dense and characteristic of shady places. Ivy, wood avens, stinging nettle and pendulous sedge are abundant components. Cow parsley and bramble are frequent. Other species include the non-native palm bamboo, male fern, enchanter's-nightshade, herb Robert and hedge woundwort.

² London Ecology Unit, 1989. Nature Conservation in Harrow – Ecology Handbook 13

2. Important features on site

A number of locally important features which are crucial to the management of this site have been identified:

Secondary woodland

- a) The secondary woodland of the site with its array of native and more exotic trees and shrubs is of local significance in Harrow and supports a variety of birds and invertebrates. Woodland is a London and Harrow LBAP³ habitat.

Old and Veteran trees

- b) Some of the large trees at the perimeter of Seven Acre Lake are 100+ years in age and are shown on the 1864-1894 OS map (Figure 4) and quite obviously already well established. Conversely, the trees surrounding Basin Lake are depicted, on the same map, as a much younger mix of conifers and broadleaved species.

Veteran trees and trees in general are referred to in the UK BAP under 'Parkland; and as Veteran Trees' in the 'Woodland' category of the London and Harrow LBAPs. The inclusion of veteran trees at all levels of the BAP process reflects the importance of this habitat.

Dead wood

- c) Dead wood of all types, but particularly standing is a valuable habitat and asset for a variety of fauna. For example, woodpeckers, nuthatch and treecreeper are often dependent on this resource for foraging and nesting. Additionally, a variety of insects are associated with dead wood and many species of fungi are completely dependent upon it. Dead wood is a Harrow LBAP habitat. This habitat is often lost, particularly in urban areas, when sites are tidied up.

Ivy-clad trees

- d) Ivy is a valuable resource during the autumn and winter months providing a late source of nectar for insects and foraging and shelter for birds at a time of year when deciduous trees are dormant. There is not a lot on site with most occurring on the eastern side. It is a

³ LBAP = Local Biodiversity Action Plan

common misconception that a covering of ivy somehow harms the trunks and branches of trees consequently it is sometimes cut-back or otherwise removed by well-meaning people.

Standing and Running water

- e) Many rivers and streams within Harrow are undergrounded (piped) and there are no large water courses in the borough although tributaries of the Rivers, Brent, Crane and Colne rise in the area and are counted by the Environment Agency (EA) as major rivers. Additionally, many Harrow watercourses flow through concrete channels and as a result are of limited biodiversity value. Only about 0.25% of the borough's surface area is attributed to 'running water' and similarly 0.5% to 'standing water'. Running and standing water are Harrow LBAP habitats.

Marshland (including reedbeds, marginal vegetation and wet grassland)

- f) This is a very uncommon habitat in Greater London with only about 0.17% of its surface area attributed to this habitat. Marshland in Harrow accounts for only 2% of the Greater London total.

Small strips and pockets of this type of vegetation occur at the perimeter of Seven -acre Lake (and to a far lesser extent at the edges of Basin Lake) and are of particularly high conservation value, e.g. marshland is an important feature in which water birds can nest and young amphibians take refuge. Additionally, at Seven Acre Lake species of larger invertebrates, associated with lake margins, have been found to outnumber those of the lake bed by a factor of 2 to 1.

Common Frog

- g) Harrow has a Species Action Plan for all amphibians and reptiles (herpetofauna) as part of its LBAP

Birds

- h) A variety of birds are known from both lakes. Included are a number of London/UK BAP Priority Species and Species of Conservation Concern e.g. song thrush, dunnock, and starling. Additionally, at Seven Acre Lake these species are joined by the kingfisher, which is also a W&CA⁴, Schedule 1, Part 1 species. The varied trees and shrubs of both areas prove attractive to small birds, providing places to forage and places to nest. Both lakes are breeding sites for a number of common waterfowl although the larger, less disturbed Seven Acre Lake is favoured by some species e.g. tufted duck, great crested grebe and mute swan.

⁴ W&CA = Wildlife and Countryside Act 1981 (& amendments)

Bats

- i) Two types of bat are listed by CPEA as being present at Basin Lake, brown long-eared and pipistrelle – no specific species⁵ is given regarding the latter example. In England all species of bat are protected under the W&CA and The Conservation (Natural Habitats, &c.) Regulations 1994 (better known as the Habitats Regulations). Over the country as a whole bat populations have been in decline. This has led to 7 of the 18 UK species of bat being listed in the UK Biodiversity Action Plan (BAP) including the brown long-eared. Additionally, the local demise in bat populations is acknowledged by their inclusion in the Harrow and London Biodiversity Action Plans. CPEA report that a bat survey of Seven Acre Lake had taken place in the past – results are currently not available. However, there is a high probability the bats still roost and forage at Seven Acre Lake, as well as Basin Lake.

Stag Beetle

- j) The stag beetle is a globally threatened species, partially protected under the W&CA, and listed as a priority species in the UK and London BAPs. Its distribution has contracted in the last 40 years, although it is still locally common in a number of places in the south-east of England e.g. Thames Valley, around north-east Essex and parts of London. CPEA report it as being present at Basin Lake – it is probably present at Seven Acre Lake too.

⁵ There are three types of pipistrelle bat recognised in the UK: common, soprano and Nathusius'.

3. Aims and Objectives

Management should:

- reflect species and habitat targets set in the UK and local BAPs
- maintain and enhance the general qualities of existing habitats whilst re-establishing others, appropriate to the site
- promote appreciation of sites' biodiversity by members of the Canons Park Estate Association and where applicable the general public

This should be achieved via:-

- 1) Maintenance of woodland, particularly the understorey (i.e. shrub to ground layers) to:
 - Prevent selected areas of woodland ground flora from becoming progressively more wooded
 - Maintain/increase floral (and with it faunal) diversity of woodland and associated areas
- 2) Maintaining health of old/veteran trees
- 3) Maintaining woodland/scrub habitat for its biological interest
- 4) Ensuring an adequate quantity of dead wood microhabitats, both standing and fallen
- 5) Maintaining ivy-clad trees and banks wherever it is appropriate to do so
- 6) Maintaining/improving wet and aquatic (i.e. marshland, standing and running water) habitats associated with Seven Acre Lake and Basin Lake
- 7) Ensuring that Seven Acre Lake is managed appropriately as it is known to support a population of common frogs
- 8) Ascertaining the types and numbers of birds currently using the two lakes e.g. by conducting a Breeding Bird Survey (BBS). The results of the survey will inform future

management – habitats can be created or maintained with a view to attracting a range of birds (including waterfowl) and encouraging species to breed where appropriate.

- 9) Establish which species bats are using both water-bodies and whether or not they are roosting – in the light of survey findings both lakes should be managed appropriately
- 10) Maintain and enhance the population of stag beetle using Basin Lake and encourage stag beetles to use wooded areas associated with Seven Acre Lake.
- 11) The control/eradication of invasive species (particularly those listed under Schedule 9 of the W&CA).
- 12) Deterring littering on site and removal of rubbish as and when required
- 13) Improving safety standards and interpretation, to encourage recreational use and the biological recording on the site

4. Management Prescription

Recommended Action

Compartment B1

- a) Terrapins in the wild are now listed as an invasive species under Schedule 9, Part 1 of the W&CA⁶. Section 14(1) of the WCA prohibits the 'release' or 'allowing to escape' into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, GB in a wild state, or any species of animal listed in Part 1 of Schedule 9. These reptiles have been blamed for a variety of problems e.g. unexplained absence of frogspawn, disappearance of dragonfly larvae, fish and ducklings. In extreme cases, attacks on small dogs have been reported. The following organisations can be contacted for advice concerning capture, removal and re-homing:

Wayne Rampling
Turtle Rescue and Re-Homing Centre.
22 Washington Road,
Dovercourt,
Harwich,
Essex.
CO12 4XX
07951033456

Terry Bunn
Terrapin rescue
<http://www.users.waitrose.com/~terrapirescue/>

Compartment S1

- b) The banks of Seven Acre Lake are steep and in parts are eroding due to the action of wind and 'waves'. One possible engineering solution is to grade the affected stretches of bank into a gentler incline or to form a series of graduated terraces. This would allow planting with native marginal species such as yellow iris, lesser reedmace, flowering rush, lesser pond-sedge, soft and hard rushes. Other species could include: water plantain, water mint, gypsywort, lesser spearwort and figworts. Such native planting should be undertaken in

⁶ Section 14(1) of the Wildlife & Countryside Act 1981 (as Amended)

conjunction with bank-side tree and shrub removal. This would improve the site's aesthetics as well as its overall attractiveness to wildlife. More sheltered conditions would provide habitat for breeding birds, amphibians, young fish and invertebrates such as the black-tailed skimmer dragonfly. Works such as this, which will diversify existing marginal habitats, should become a long-term aim of the site's management.

- c) The installation of a tern nesting raft should be investigated. This would be a safe loafing area for water-fowl during the winter months whilst encouraging common tern to breed over the spring and summer. Visit the RSPB website⁷ for details of construction.

Compartments B1 and S1

- d) Control of Blanket Weed: In the past barley straw has been used for this purpose. However, in the summer of 2010 large quantities of this algal-growth were evident within Seven Acre Lake. A detailed methodology has been produced by the Centre for Ecology and Hydrology (CEH)⁸. Relatively large amounts are required particularly at first. CEH recommends an initial dose of 50g for each m² of the lake's surface area, followed by 25g/m² dose for the second treatment. After this a maintenance dose of 10g/m² can be applied. Scaling up for Basin Lake and Seven Acre Lake this translates thus:

Table 1: Quantities of Barley Straw required to treat algal infestation with CPEA Lakes

Name of water-body	Area m ²	Dose/m ²		
		50	25	10
Basin Lake	5,700	285 kg	142.5 kg	57 kg
Seven Acre Lake	30,600	1,530 kg	765 kg	306 kg

The following measures will maximise the effectiveness of the barley straw:

- The process works more reliably if the straw floats in a sunny spot near the surface and if the water is well oxygenated (e.g. contains plenty of weed)
- The straw is floating as it rots
- The straw is put into the lake early in spring so that by the time the algae bloom, the barley is starting to rot.

⁷ RSPB: <http://www.rspb.org.uk/ourwork/conservation/advice/rafts/index.aspx>

⁸ CEH, 2004. Centre for Aquatic Plant Management INFORMATION SHEET 1: CONTROL OF ALGAE WITH BARLEY STRAW. http://www.ceh.ac.uk/sci_programmes/documents/BarleyStrawtocontrolalgae.pdf

- Allow a couple of months for process to become noticeable, if practicable blanket-weed should be hauled out in the meantime
- A new straw should be put in the pond before the first starts to go black and disintegrate, to keep up the momentum

These are relatively large quantities of barley straw, purchase and handling may not be practicable for CPEA. Additionally, as Seven Acre Lake is classed as a reservoir the use of barley straw on this scale should be approved by the Environment Agency (EA).

Compartment S2

- e) Create small embayments, each of 10-15 m² area, in the woodland shrub layer aside the circular path by coppicing shrubs and young trees between November and February (inclusive). The total area should be no greater than 40 m². Timber so removed should be stacked in habitat piles together with any natural debris.
- f) Cherry laurel/Rhododendron scrub should be cut-back to stumps in agreed areas to help diversify ground flora. Timber so removed should be stacked in habitat piles together with any natural debris. If necessary the excess brushings should be chipped and used for footpath renovation. The Environment Agency should be approached with the view to treating cherry laurel/rhododendron stumps with glyphosate herbicide. Rhododendron is listed as an invasive weed under Schedule 9, Part 2 of the W&CA⁹
- g) Continue to keep the path encircling the lake clear of obstructions such as overhanging vegetation and fallen trees to maintain and facilitate access.
- h) A diversion of the path back from the water's edge should be investigated in selected areas. In conjunction with clearance of marginal scrub this would allow waterfowl and other birds of a shier nature to breed on site.

All tree and scrub removal work should be undertaken between November and February wherever possible.

- i) The planting of native bluebells to increase attractiveness of site and early floral diversity should be undertaken. Bluebells should be planted in full leaf (i.e. in the green). What this means is that the bulbs must be lifted by the supplier in February and March, whilst in full

⁹ Section 14(2) of the Wildlife & Countryside Act 1981 (as Amended) prohibits 'planting' or 'causing to grow' in the wild of any plant listed in Part 2 of Schedule 9

growth and planted as soon as possible. The planting of other appropriate native bulbs should also be considered.

- j) j)The installation of a kingfisher bank to encourage this species to breed on site should be investigated. A best practice document has been produced by the Environment Agency¹⁰

Compartments S2 and B2

- k) Generally, woodland and trees will be maintained via non-intervention over the period of the management plan except in the case of health and safety concerns.
- l) Replanting of trees and shrubs can be undertaken as and when the need arises as old trees die and require replacement. Only native replacement trees should be planted.
- m) Dead wood should remain on site within wooded areas. Standing dead wood (e.g. monoliths) must be considered were safe to retain. Larger trunks and branches can remain *in situ* providing they do not compromise access or health and safety of site users. Smaller logs should be used to construct loggeries for stag beetles¹¹ (in S2) or stacked in habitat piles. Brushings can be chipped and used to surface boggy parts of path in S2.
- n) To ensure continuing health of veteran trees continued checking on a regular basis (yearly) is required and any necessary tree surgery undertaken.
- o) Ivy should not be cut-back or cleared from bank or trees unless it can be demonstrated that it is likely to cause instability during windy conditions which may lead to tree fall.

All tree and scrub removal work should be undertaken between November and February wherever possible.

¹⁰ EA, 2001. Best Practice Guidelines Artificial Bank Creation for Sand Martins and Kingfishers.
http://www.lbp.org.uk/downloads/Publications/Management/artificial_bank_creation.pdf

¹¹ English Nature/London Wildlife Trust. Stag Beetle: An advice note for its conservation in London.
<http://www.wildlondon.org.uk/LinkClick.aspx?fileticket=5mFAexmixeM%3D&tabid=176&mid=1207&language=en-GB>

p) To supplement bird nesting and bat roosting habitat bird and bat boxes should be placed in suitable locations as indicated:

Birds:

- The height above ground is not critical to most species of bird, so long as the box is clear of inquisitive humans and prowling cats.
- It is best to mount a box facing somewhere between south-east and north, to avoid strong direct sunlight and the heaviest rain. The box should be tilted slightly forwards so that the roof may deflect the rain from the entrance.
- Ensure a direct flight-path to the entrance. Squirrels and woodpeckers are a serious threat if using wooden nestboxes; fix a metal plate around the entrance, so that it can not be enlarged.
- Nails or wire may be used to secure boxes. Maintenance is easier if the box is wired and can thus be taken down easily for cleaning/repair.
- The number of nestboxes which can be used depends on the species you are catering for and how territorial it is. The RSPB Bird Guide¹² gives an indication of how territorial a species is. It is recommended here that the type of nestboxes used corresponds to species list in the London and UK BAPs

Bats:

- Boxes need to be mounted high enough on trees to prevent unscheduled disturbance, vandalism and theft (3-5 m)
- They should be located so as to provide clear approach that is free of overhanging vegetation, but also dark (away from any direct street lighting for example)
- They should be mounted in clusters of two or three, facing various directions (one of which should point due south)
- Bats use boxes externally painted or stained black more frequently than untreated boxes
- Further information of the placement of bat boxes can be obtained from the Bat Conservation Trust (BCT)¹³

The use Schwegler woodcrete bird and bat boxes are recommended here

¹² RSPB, Bird Guide. <http://www.rspb.org.uk/wildlife/birdguide/>

¹³ BCT, <http://www.bats.org.uk/>

Compartment B3

- q) Trees will be maintained via non-intervention over the period of the management plan except where there are health and safety concerns.
- r) Planted shrubbery to be formally maintained within planting beds via cutting back and clipping as and when required.
- s) Grass is to be maintained formally as amenity grassland cutting as and when required.
- t) Part of the formal area of Basin Lake becomes covered in cow parsley each spring - needs to be cut back as it flowers (from mid-April) on a regular basis 3-6 times each year and not allowed to set seed. Cow parsley does not appear able to form a persistent seed bank in soil. The seeds have no obvious dispersal mechanism. Perseverance will see it thin-out. A document has been produced by Garden Organic¹⁴ covering its management.
- u) The planting of snowdrop, crocus and wild daffodil to increase attractiveness of site and early floral diversity should be undertaken between September and November.

Compartments S1, S2, B1, B2 and B3

- v) Litter should be cleared as and when required. This will make the site appear cared for and less likely to be vandalised or littered.
- w) A 'Nip and Tuck' patrol should be conducted on a weekly basis to pick up essential repairs and potential H&S issues
- x) Local wildlife experts and groups should be encouraged to undertake regular biological survey and monitoring. Bats, reptiles, amphibians and breeding birds are of particular interest. Identification of some invertebrate groups can be particularly difficult; however, there is no reason why some groups which are more readily identified cannot be recorded. Groups to be involved could include Harrow Natural History Society, Herts & Middlesex Bat Group, members of the Harrow Nature Conservation Forum and local RSPB. Records should be passed on to Greenspace Information for Greater London.(GiGL). Results of

¹⁴ Garden Organic. Organic Weed Management: Cow Parsley.
http://www.gardenorganic.org.uk/organicweeds/weed_information/weed.php?id=115

the monitoring and surveys should be used to inform future management of biodiversity. Below is a survey calendar suggesting times of year when surveying could take place.

Table 2: Survey calendar:

Nov					
Dec					

<i>Five-Year Management Plan: Schedule and Summary of Projects</i>						
Compartment(s)	Project	Priority	Notes	Year(s)	Timing	Para.
B1	Terrapin removal	1		1	asap	4a
S1	Re-profiling parts of bank - marginal planting with native species	1	Will require external funding	\$	bank works: autumn-winter Planting: spring-summer	4b
	Building/installation of tern nesting raft	3		\$	Install over winter	4c
B1 S1	Control of blanket-weed	2	Large amounts of barley straw required	\$	Barley straw addition early spring	4d
S2	Create small embayments in woodland area	3	10-15m ² each - upto 40m ² total	1 to 5	Nov-Feb	4e
	Cut-back cherry laurel and Rhododendron in selected areas	2		1 to 5	Nov-Feb	4f
	Treatment of cherry laurel and Rhododendron with herbicide		EA approval required		Mar-Sep	
	Footpath clearance	1	Remove H&S obstructions	1 to 5	as required	4g
	Lakeside diversion of path	2	To prevent disturbance of wildfowl	\$	Nov-Dec	4h
	Planting of native bluebells	3	To be planted 'in the green'	3 to 5	Mar-Apr	4i
	Building/installation of kingfisher nesting bank	3		\$	install over winter	4j
S2 B2	Woodland managed by non-intervention except H&S	1		1 to 5	as required	4k
	Planting of replacement trees	3	Native species only	1 to 5	as required	4l
	Retention of deadwood: monoliths, habitats piles & loggeries	1	For stag beetles & other inverts, birds & fungi	1 to 5	ongoing	4m

	Regular inspection of old and veteran trees by tree surgeon	1	Tree surgery if needed	1 to 5	yearly	4n
	Retention of ivy except on H&S grounds (where a tree is becoming unsafe in the wind)	1	Ivy is a late source of food & cover for insects & birds	1 to 5	ongoing	4o
	Erection of bird nesting boxes	2	To cater for UK & local BAP species	After bird survey is carried out (see 4x)	Autumn-winter	4p
	Erection of bat roosting boxes	2	To cater for local species	After bat survey is carried out (see 4x)	Autumn-winter	
B3	Trees managed by non-intervention except H&S	1		1 to 5	as required	4q
	Planted shrubbery to be formally maintained within planting beds	1		1 to 5	as required	4r
	Grass maintained as amenity grassland	1		1 to 5	as required	4s
	Control of cow parsley	1	Cut 3-6 times per year	1 to 5	from mid-April	4t
	Planting of bulbs	3		One off 1 to 5	Sep-Nov	4u
S1 S2 B1 B2 B3	Litter clearance	2		1 to 5	as required	4v
	Site Patrol	1	To pick up potential H&S issues	1 to 5	weekly	4w
	Biological Survey	1	Involve local wildlife experts & groups	1 to 5	see Table 2 for suggested survey calendar	4x

Priority:

1=High

2=Medium

3=Low

\$=Will probably require external funding

Maps and plans

Figure 1: Location

Figure 2: Management Compartments

Figure 1: The Basin and Seven-acre Lake - Location

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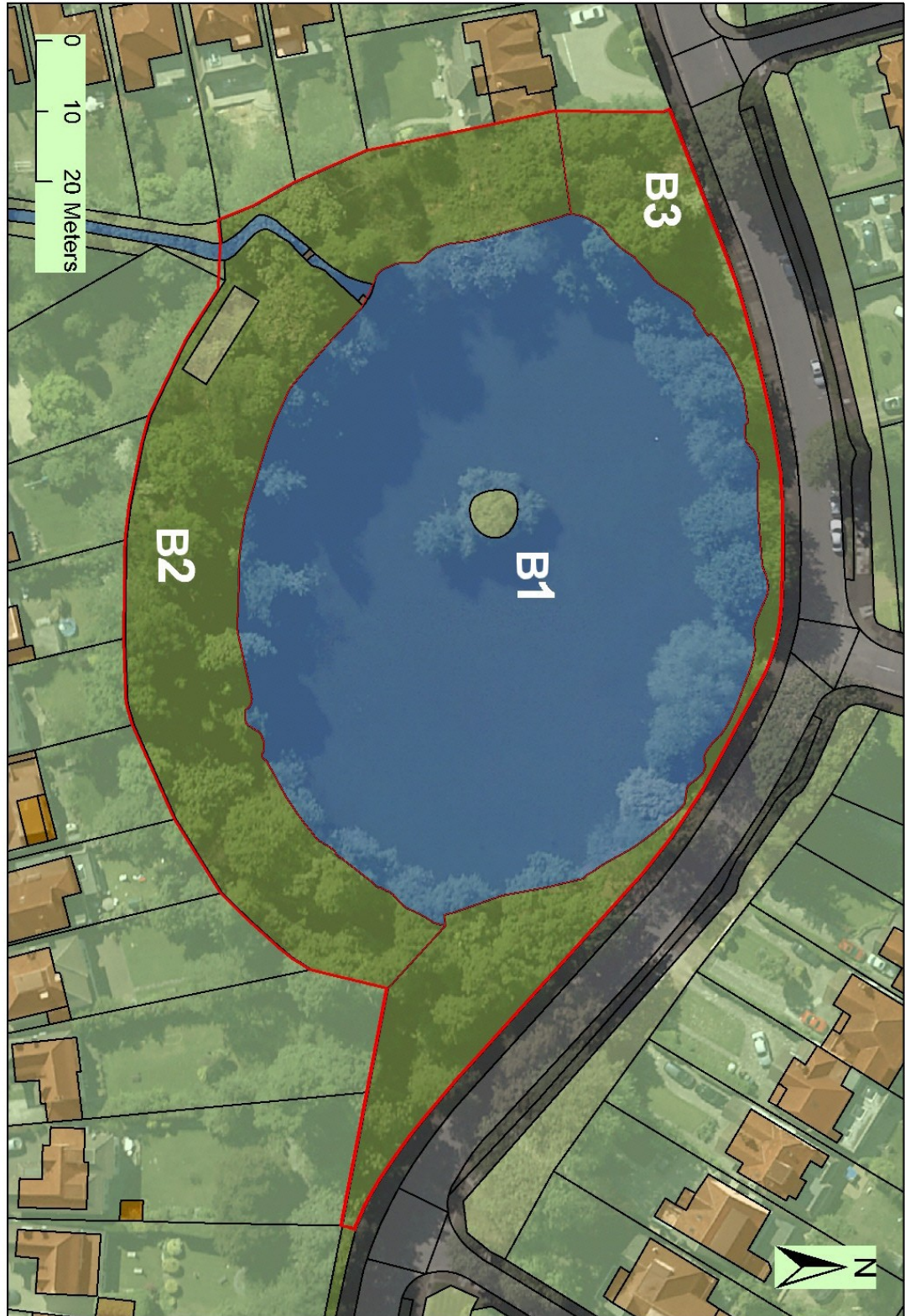


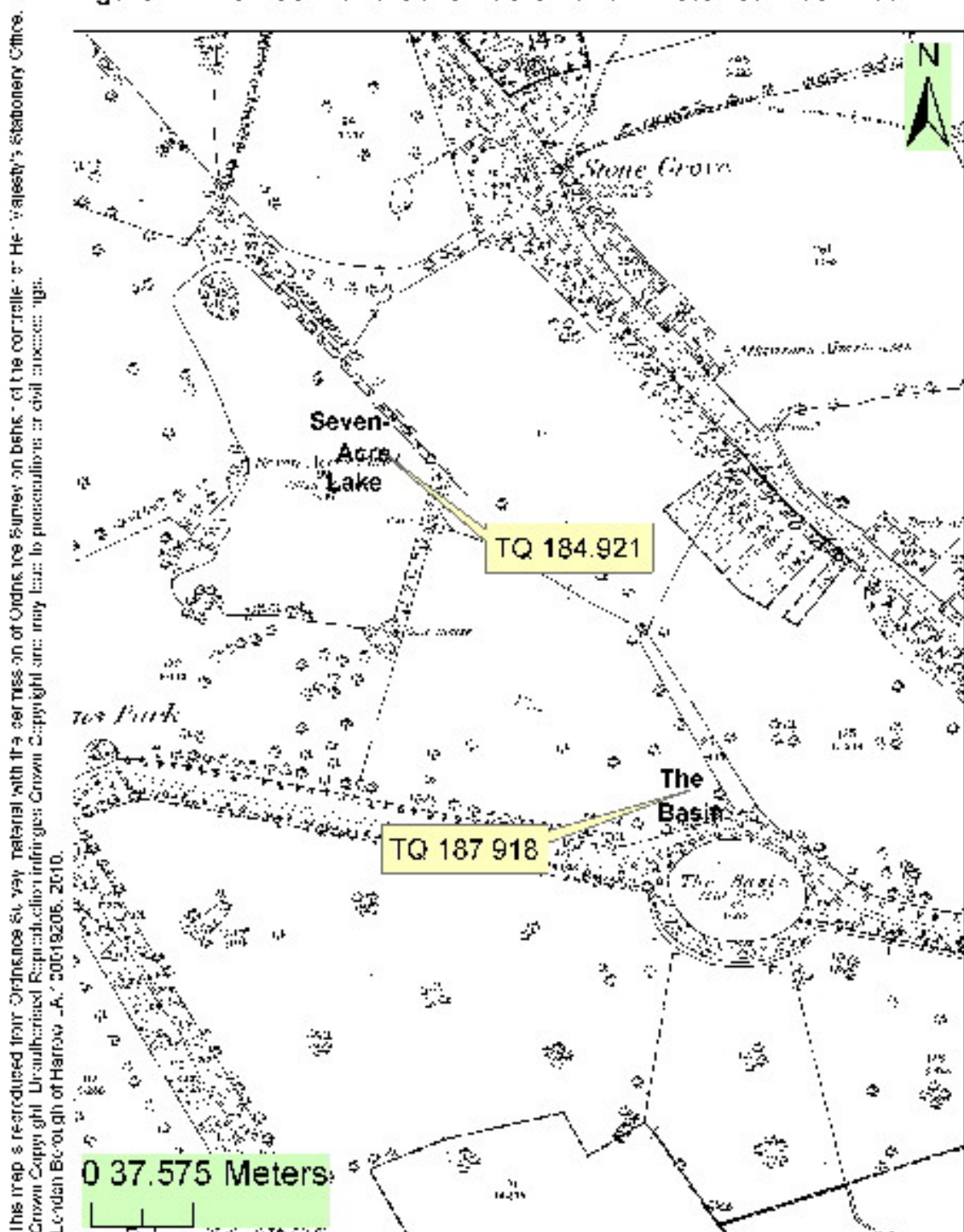
Figure 3: The Basin - Management Compartments

Figure 3: Seven-acre Lake - Management Compartments

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Figure 4: The Basin and Seven-acre Lake - Historical 1864-1894



Appendices

Appendix 1: List of Vascular Plants and Fauna (Surveyed 2010)

Appendix 1: List of Vascular Plants and Fauna (Surveyed 2010)

		Seven Acre-Lake			Basin Lake		
Scientific Name	Common Name	DAFOR	Qualifiers	Notes	DAFOR	Qualifiers	Notes
VASCULAR PLANTS							
<i>Acer campestre</i>	Field Maple				R	P	
<i>Acer platanoides</i>	Norway Maple	O	YT		R	T	
<i>Acer psuedoplatanus</i>	Sycamore	A	STY		F	SYT	
<i>Aesculus hippocastanum</i>	Horse-chestnut	F	STY		A	SYT	
<i>Agrostis stolonifera</i>	Creeping Bent	R					
<i>Agrostis</i> sp.	Bent				R		
<i>Alliaria petiolata</i>	Garlic Mustard	R			O		
<i>Alnus glutinosa</i>	Alder	F	STY		F	SYT	Also on island
<i>Alnus incana</i>	Grey Alder				O	ST	
<i>Anisantha sterilis</i>	Barren Brome	R			R		
<i>Anthriscus sylvestris</i>	Cow Parsley	F			A		
<i>Arctium minus</i>	Lesser Burdock				R		
<i>Arrhenatherum elatius</i>	False-oat Grass	O			O		
<i>Arum maculatum</i>	Lords and Ladys/Cuckoopint				R		
<i>Atriplex prostrata</i>	Spear-leaved Orache				O		
<i>Ballota nigra</i>	Black Horehound				O		
<i>Bellis perennis</i>	Daisy	R		Odd grassy glade	R		
<i>Berberis</i> spp.	Bareberry				FC		Hedge
<i>Betula pendula</i>	Silver Birch				O	SY	
<i>Brachypodium sylvaticum</i>	False-brome	F					
<i>Bromopsis ramosa</i>	Hairy Brome	O					
<i>Buddleja davidii</i>	Buddleia	R			R		
<i>Calystegia sepium</i>	Hedge Bindweed	R					
<i>Carex divulsa divulsa</i>	Grey Sedge				R		
<i>Carex pendula</i>	Pendulous Sedge	A		Damp woodland and marginal	F		
<i>Carex remota</i>	Remote Sedge	F					
<i>Carpinus betulus</i>	Hornbeam	O	TY		O	T	
<i>Chamerion angustifolia</i>	Rosebay Willowherb	R					
<i>Choisya ternata</i>	Mexacan Orange Blossom				R	P	
<i>Circaea lutetiana</i>	Enchanter's-nightshade	O					

<i>Cirsium arvense</i>	Creeping thistle				R		
<i>Cirsium vulgare</i>	Spear Thistle	R			R		
<i>Cornus sp.</i>	Dogwood				OC		Hedge
<i>Corylus avellana</i>	Hazel	R					
<i>Cotoneaster sp.</i>	Cotoneaster				O	P	
<i>Crataegus monogyna</i>	Hawthorn	F	STY	One or two veteran specimens	A		Planted hedge and regenerating
<i>Crepis capillaris</i>	Smooth Hawksbeard	R					
<i>Dactylis glomerata</i>	Cock's-foot	R					
<i>Digitalis purpurea</i>	Foxglove				F		
<i>Dryopteris filix-mas</i>	Male Fern	O					
<i>Epilobium hirsutum</i>	Great Willowherb	O	W		O		
<i>Epilobium montanum</i>	Broad-leaved Willowherb				O		
<i>Epilobium parviflorum</i>	Hoary Willowherb	O					
<i>Fagus sylvatica</i>	Beech	R	ST		O	Y	Planted in hedge and site
<i>Festuca rubra</i>	Red Fescue	O			F		
<i>Fraxinus excelsior</i>	Ash	A	STY		F	SYT	
<i>Galium aparine</i>	Cleavers				O		
<i>Geranium robertianum</i>	Herb Robert	O					
<i>Geum urbanum</i>	Wood Avens/Herb Bennet	A			F		
<i>Hedera colchica</i>	Persian Ivy	R	G				
<i>Hedera helix</i>	Ivy	A		Locally dominant	A		Locally dominant
<i>Hemerocallis fulva</i>	Daylily				R	P	
<i>Holcus lanatus</i>	Yorkshire Fog				R		
<i>Hyacinthoides sp.</i>	Bluebell	R			O	C	
<i>Hypericum sp.</i>	St john's-wort	R					
<i>Ilex aquifolium</i>	Holly	O			F		
<i>Iris psuadacorus</i>	Yellow Iris	O	W	Marginal	R	W	Marginal
<i>Juncus effusus</i>	Soft Rush	R	W		R		
<i>Lamium maculatum</i>	Spotted Dead-nettle	F	C				
<i>Lapsana communis</i>	Nipplewort				O		
<i>Lemna minor</i>	Common Duckweed	O	W	At lake margins			
<i>Lolium perenne</i>	Perennial Rye-grass	F	C	Odd grassy glade	D	C	One small patch near road
<i>Lonicera periclymenum</i>	Honeysuckle	R					
<i>Mahonia aquafoium</i>	Oregon Grape	R					
<i>Melilotus albus</i>	White Melilot	R					
<i>Mentha aquatica</i>	Watermint	R	W	Marginal			

<i>Mentha</i> sp.	Mint	R					
<i>Phragmites australis</i>	Common Reed	F	C				
<i>Plantago lanceolata</i>	Ribwort plantain				O		
<i>Poa annua</i>	Annual Meadow-grass	O					
<i>Poa nemoralis</i>	Wood Meadow-grass	O					
<i>Poa pratensis</i>	Smooth Meadow-grass				O		
<i>Populus x canescens</i>	Grey Poplar	O	STY	Suckering			
<i>Populus tremula</i>	Aspen				R	T	
<i>Populus</i> sp.	Poplar				O		Suckering
<i>Potamogeton crispus</i>	Curled Pondweed	O	W	Submerged			
<i>Potamogeton pectinatus</i>	Fennel-leaved Pondweed	O	W	Submerged			
<i>Potentilla reptans</i>	Creeping Cinquefoil	R		Odd grassy glade			
<i>Prunella vulgaris</i>	Self-heal	R		Odd grassy glade	O		
<i>Prunus avium</i>	Wild Cherry/Gean	O	Y		O	Y	
<i>Prunus laurocerasus</i>	Cherry Laurel	F		Invasive (not scheduled)	O		Suckering, recently cut-back
<i>Prunus lusitanica</i>	Portugal Laurel	R					
<i>Prunus</i> sp.	Cherry	R	T				
<i>Pyracantha</i> sp.	Firethorn	R			O	P	
<i>Quercus cerris</i>	Turkey Oak	O	T				
<i>Quercus ilex</i>	Holm Oak	O	Y		O	SYT	
<i>Quercus robur</i>	Pedunculate Oak	O	T		F	T	
<i>Quercus rubra</i>	Red Oak				R	YP	
<i>Ranunculus repens</i>	Creeping Buttercup				O		
<i>Rhododendron</i> sp.	Rhododendron	O		W&C Act, Schedule 9 (invasive sp.)			
<i>Rosa rugosa</i>	Japanese Rose	R		W&C Act, Schedule 9 (invasive sp.)			
<i>Rosa</i> spp.	Roses	R			R		
<i>Rubus fruticosus</i> agg.	Bramble	F			D	C	
<i>Rubus idaeus</i>	Raspberry	R					
<i>Rumex conglomeratus</i>	Clustered Dock	O			O		
<i>Rumex sanguineus</i>	Wood Dock	R			O		
<i>Salix caprea</i>	Goat Willow	R					
<i>Salix cinerea</i>	Grey Willow	O					
<i>Salix fragilis</i>	Crack Willow	O	Y		R	T	
<i>Salix x sepulcralis</i>	Weeping Willow				R	T	On island
<i>Sambucus nigra</i>	Elder	F			O		
<i>Sasa palmata</i>	Palm Bamboo	F	C	Invasive (not scheduled)			

<i>Senecio erucifolius</i>	Hoary Ragwort	R				
<i>Senecio jacobaea</i>	Common Ragwort	R			O	
<i>Solanum dulcamara</i>	Bittersweet/Woody Nightshade				R	
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	O			R	
<i>Sorbus latifolia</i>	Service tree of Fontainebleau	R	T			
<i>Sorsus aucuparia</i>	Rowan	R	Y			
<i>Stachys sylvatica</i>	Hedge Woundwort	O				
<i>Symphoricarpus albus</i>	Snowberry	R				
<i>Taraxacum sp.</i>	Dandelion				O	
<i>Taxus baccata</i>	Yew	O	TY		O	Y
<i>Tilia x vulgaris</i>	Common Lime	O	TY		A	T
<i>Ulmus procera</i>	English Elm	F			A	
<i>Urtica dioica</i>	Stinging Nettle	A			A	
<i>Vicia sepium</i>	Bush Vetch	O				

FAUNA

Birds	Blackcap	*				
	Black-headed Gull	*			*	
	Canada Goose				*	
	Carrion Crow				*	
	Common Tern	*			*	
	Coot	*			*	
	Cormorant	*			*	
	Dunnock	*			*	
	Great-Crested Grebe	*				
	Great Tit	*				
	Green Woodpecker	*			*	
	Grey Heron	*				
	Kingfisher	*				
	Little Grebe	*				
	Mallard				*	
	Moorhen	*			*	
	Mute Swan	*				
	Rose-ringed Parakeet				*	
	Swift	*				
	Tufted Duck	*				

	Woodpigeon	*			*		
	Wren	*					
Amphibians	Common Frog	*		Froglets			
Reptiles	Terrapin				*		25cm length, W&CA Schedule 9
Coleoptera	Stag Beetle				*		Grubs in old ash stump CPEA
Odonata	Black-tailed Skimmer	*					CPEA
	Blue-tailed Damselfly	*			*		
	Brown Hawker	*					
	Common Blue Damselfly	*					
	Southern Hawker	*					
Lepidoptera (Butterflies)	Gatekeeper	*					
	Holly Blue	*					
	Meadow Brown	*					
	Small White	*			*		
	Speckled Wood	*			*		

CERA=Canons Estate Residents Association

DAFOR Scale:

D=Dominant
A=Abundant
F=Frequent
O=Occasional
R=Rare

Qualifiers:

E=Edge
M=Mature tree
S=Sapling
Y=Young tree
W=Wet area