Ecological Management Plan

Ottershaw Chase

2014 – 2018

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Prepared for:
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Quality Control

The information and data which has been prepared and provided is true and has been prepared and provided in accordance with the '*Code of Professional Conduct'* issued by the Chartered Institute of Ecology and Environmental Management (CIEEM). We confirm that the opinions expressed are our true and professional bona fide opinions.

		Date
Survey Ecologist	Claire Gibbs BSc(Hons) MSc MCIEEM	Survey dates 17/02/2014 & 04/03/2014 and previously 14/7/2009
Report Author	Claire Gibbs BSc(Hons) MSc MCIEEM	Date passed on for authorisation 12/03/2014
Approved by	Nicky Williamson BSc(Hons) MSc MCIEEM	Date authorised as complete 17/03/2014

The contents of this report were correct at the time of the site visit. The report is provided for the sole use of the named client and is confidential.

Contents

1.0 Introduction

1.1 Surrey Wildlife Trust (SWT) Consultancy has been commissioned by Runnymede Borough Council to produce management plans for 6 sites which have been allocated as Suitable Accessible Natural Greenspace Sites (SANGS). This work will draw on previous work undertaken by SWT including Extended Phase 1 surveys, Access Assessments, Ecological Data Searches and specific surveys for certain species groups.

1.2 Due to constraints such as the time of year when surveys of certain species groups can be carried out, some surveys will be undertaken in spring / summer 2014. The results from these surveys may need to be incorporated into the management plans at a later date.

1.3 This management plan covers Ottershaw Chase. An extended Phase 1 survey, Access Assessment and Data Search of this site was undertaken in 2009. In addition a preliminary invertebrate assessment was undertaken in October 2013. A bat survey will be undertaken on the site in spring / summer 2014.

1.4 This management plan aims to bring together all available information on the site at Ottershaw Chase. Using all the available information, the site has been evaluated and the important features of the site identified. For each feature, an objective is given along with a description of the management required in order to meet that objective. Targets are given where relevant. Detailed prescriptions of work to be undertaken are then given for each feature and summarised in a five year work programme (see 6.0).

2.0 Description of site

2.1 Ottershaw Chase is approximately 11ha of land located to the south of Ottershaw, just west of the Guildford Road (A320) with a central grid reference of TQ018634.

2.2 The site is entirely covered by broad-leaved woodland with a number of magnificent specimen trees present (Sequoia, Beech, Oak, & Sweet Chestnut). See the Phase 1 surveys of the site (appendix 2) for more details of the habitats present.

2.3 Local historical knowledge indicates that the land may have been heathland at one time. Later it is thought to have come into cultivation and is thought to have been planted in the 19th Century. Some mature trees including Sweet Chestnut and exotics still survive from this time. During World War 2 it was used to store army tanks, and rubble from this time is still present within the woodland.

2.4 The site supports a network of existing footpaths, including a central broad path with old tarmac surfacing. This was a former driveway leading from the Guildford Road to Tulk House. The other paths are much narrower and dark.

3.0 Evaluation of site

3.1 Broadleaved woodland

Broadleaved woodland covers the site. This habitat is included within the UK and Surrey Biodiversity Action Plans (BAPs) and is a Habitat of Principle Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The ground flora of the woodland is limited over much of the site by the density of the canopy which is reducing the amount of light that reaches the woodland floor. This is limiting the diversity of the woodland somewhat. Although the woodland is not itself ancient, it abuts an area of ancient woodland in the north west corner. Six ancient woodland indicator species were recorded during the Phase 1 survey in 2009 (see appendix 2).

3.2 Non-native, invasive plants

Rhododendron and Cherry Laurel are scattered within the woodland although are currently quite localised. The most extensive area is along the south east boundary of the site. Rhododendron is included on Schedule 9 of The Wildlife and Countryside Act (1981 as amended) which means that it is an offence *"to plant or otherwise cause to grow in the wild".* Cherry Laurel is included on the draft Surrey Invasive Species list (Waite, 2010), and has a similar impact as Rhododendron.

Other potentially problematic species on the site which are not included on Schedule 9 are Butterfly-bush which is recognised by Plantlife (Thomas, 2010) as posing a potentially critical risk to the UK's biodiversity and Sycamore which is included on the draft Surrey Invasive Species list (Waite, 2010).

3.3 Veteran trees / dead wood

Of particular interest on the site is the number of mature to veteran status trees and standing dead wood that the site supports. The invertebrate report (see Appendix 4) states that many of the trees show signs of early veteranisation such as tear-outs, moribund limbs, peeling bark, splits and hollows. These trees will be an invaluable resource for a range of species including birds, bats, invertebrates and fungi. Fallen dead wood is also an important feature of the site, a considerable number of mature trees were blown over in the storm of 1987 and many of these still remain on the ground. This resource has been added to by more recent stormy weather. This fallen dead wood is of great value particularly to invertebrates and fungi, and is a habitat that is becoming increasingly uncommon in the wider countryside.

3.4 Saproxylic invertebrates

Due to the good quantities of wood decay habitat on the site as described above, the site is of particular importance for saproxylic invertebrates. The brief sample as part of the Preliminary Invertebrate Assessment (see appendix 4) recorded over 20 species, including 7 Nationally Scarce and 1 Red Data Book Species, directly associated with wood decay (e.g. bracket fungus, moribund branches and peeling bark). A brief analysis of the assemblage present indicated that according to the SSSI assessment methodology, the site was in favourable condition for saproxylic invertebrates based on the diversity and quality of the species encountered.

The Red Data Book species recorded is *Diaperis boleti,* a beetle which lives on fungal fruitbodies. On this site it was found on *Piptoporus* on Birch and *Laetiporus* on Oak.

One example of a Nationally Scarce invetebrate recorded during the invertebrate survey is the Brown Ant, *Lasius brunneus.* This is a notable species which the data search revealed was also recorded on the site in 1994. It is a tree dwelling ant which typically nests in old oak trees in parkland.

Although not recorded in the Preliminary Invertebrate Assessment, the data search revealed that the Stag Beetle, *Lucanus cervus* has been recorded on the site. The stag beetle is a UK Biodiversity Action Plan (BAP) priority species and a nationally notable b species. It is protected under appendix 3 of the Bern Convention. Stag Beetle larvae rely on rotting dead wood for their survival.

3.4 Bats

Due to the number of mature and veteran trees on the site, it is likely to be valuable to roosting bats. Bats are likely to forage on the site and to be roosting in the more mature trees. A bat survey will be undertaken in spring/summer 2014. All species of British bats are protected under the Wildlife and Countryside Act and under Regulation 38 (Schedule 2) of the Conservation (Natural Habitats etc.) Regulations 1994. Some species are BAP Priority species and SPIs.

3.5 Breeding birds

Birds will be breeding within the site. The data search undertaken in 2009 revealed that 18 bird species included on Appendix II of the Bern Convention and 18 bird species listed as species of Conservation Concern in the UK Biodiversity Action Plan 1995 as well as 1 species listed as priority in the UK Biodiversity Action Plan 1995 have been recorded on Ottershaw Chase. These records are from 1994, so it is unknown whether the species are still present on the site, however, it does indicate the site's potential importance for birds.

3.6 Reptiles

The data search revealed that Grass Snakes have been recorded in the local area. Runnymede Borough Council reported that an adder was seen in a glade within the woodland in 2008. However as the site is quite dark, reptiles are unlikely over most of the site. Opening up the site may encourage more reptiles into the area. All native British reptiles are protected under the Wildlife and Countryside Act (1981) from killing and injury. Sand Lizards and Smooth Snakes also receive additional protection. All British reptiles are BAP Priority species and SPIs.

3.7 Great Crested Newts, *Triturus cristatus*

The data search revealed that Great Crested Newts have been recorded within 1km of the site. Although there are currently no water bodies on the site itself, there is a low possibility that the species could use the woodland for foraging or hibernation. Great Crested Newts are protected under schedule 5 of the Wildlife and Countryside Act 1981 and Regulation 39 of the Conservation (Natural Habitats &c) Regulations 1994. Great Crested Newts are BAP Priority species and a SPI.

3.8 Position within Living landscape

The position of Ottershaw Chase within the surrounding landscape is important from an ecological point of view and should be taken into account when establishing management priorities for the site.

The invertebrate report (see appendix 4) states that the site has the potential to be an important reservoir for saproxylic invertebrates at a landscape scale. There is an established geographic link via nearby sites with significant veteran tree interest. These include Queenwood Golf Club to the immediate north west which links with Chobham, Wentworth and Virginia Water, to the internationally important Windsor Great Park which is approximately 9km to the north-west.

3.8 Access and recreation

The site is already used by the public for access and recreation although not heavily. There is a network of existing footpaths, including a central broad path with old tarmac surfacing, a former driveway leading from the A320 Guildford Road to Tulk House. The main entrance to the site is off this driveway past two former lodges and through an ornate iron gateway. The site also has pedestrian access off Cross Lane and from the path on the southern boundary of the site. Although the site does not have its own car park, it can be easily reached from the car park at Timber Hill the other side of the Guildford Road.

The SANGS Surveys carried out by Runnymede Borough Council (RBC) in 2012 found that the site along with the nearby Timber Hill and Chaworth copse is predominantly used by dog walkers and ramblers from the nearby residential area (RBC, 2012).

The site has been selected by Runnymede Borough Council as a SANGS. According to Natural England, the role of a SANGS is to provide alternative green space to divert visitors from visiting the Thames Basin Heaths SPA. It is therefore important that this aspect of the site be encouraged through this management plan.

4.0 Management Plan Features

4.1 Feature 1 – Broadleaved Woodland

Objective
Woodland will continue to be present on the site. The woodland will have a diverse structure with a varied mix of native trees and shrubs of varied ages and a good balance between canopy, shrub and field layers. Non-native invasive species will be no more than occasional. Approximately 20% off the woodland canopy will be open at any time to allow more light onto the woodland floor and to encourage a varied woodland flora. This will allow a variety of species, including birds, bats, invertebrates and reptiles, to thrive within the woodland areas. Historical woodland features such as boundary banks will be maintained and enhanced. The woodland will support frequent examples of mature and veteran trees as well as abundant standing and deadwood and will act as an reservoir for saproxylic invertebrates at a landscape scale.

Targets
- Approximately 20% off the woodland canopy will be open at any time by 2018.
- Standing dead wood and log piles will be abundant within the woodland in a variety of conditions (sunny, shaded, damp) by 2018.
- Exotic invasive species will be no more than occasional by 2018.

Management rationale
The management required to meet the objectives and targets above is outlined below. The location of the prescriptions is shown on Figure 1.

4.1.1 Rhododendron and Cherry Laurel clearance
Rhododendron and Cherry Laurel is present within the woodland. These species are aggressive non-native colonisers which regrow vigorously when cut. They produce a toxic leaf litter and reduce the biodiversity value of a site by preventing natural regeneration of the canopy, understorey and field layer.

These species are currently quite localised within the woodland, the main concentration being along the eastern boundary (see photo 1), but also in other scattered patches through the woodland (see Figure 1). Some Rhododendron and Cherry Laurel has been controlled on the site in recent years, but the re-growth may need continued treating for a number of years before it is eliminated. The removal of Rhododendron and Cherry Laurel from the woodland areas will continue be a priority. They will be cut with the stumps treated to prevent re-growth.

Rhododendron is listed on Schedule 9 the Wildlife and Countryside Act 1981 which means that it is an offence to plant or cause the species to spread in the wild. Care should be taken if moving the species off site for disposal.

Prescription W1: Clear Rhododendron and Cherry Laurel along eastern boundary in south. Treat stumps with Glyphosate (twice annually) until stumps have died.

Prescription W2: Clear other scattered Rhododendron and Cherry Laurel (as shown by purple dotted shading on Figure 1). Treat stumps with Glyphosate (twice annually) until stumps have died.

4.1.2 Rides and glades

As discussed above, much of the woodland is currently very dark which is limiting its biodiversity value. Dark closed paths will be opened up by cutting back undergrowth and young trees. In addition a number of glades will be opened up. Priority will be given to creating rides running in an east-west direction as these are in sunlight longer than those in a north-south direction and therefore have the greatest wildlife benefit.

Wherever possible the width of the rides will be equal to or greater than the height of the adjacent canopy as this will allow as much sunlight as possible to reach the ground within these areas.

Where possible, a graded profile of vegetation will be created within the ride with short grass/herbaceous vegetation in the centre (cut annually), a longer herbaceous/shrub layer further out (cut on a 3-5yr rotation) and a shrub/transition zone at the edge of the woodland (cut on an 8-20 yr coppice rotation). A wavy edge to the rides will be created which will maximise the woodland edge, which in turn increases the habitat diversity. In addition by avoiding a long straight corridor the effect of wind funnelling is reduced and warmer sheltered pockets will be created.

As part of the ride and glade creation, mature standards and standing dead wood will be retained and any old coppice stools of Sweet Chestnut and Hazel will be coppiced.

Prescription W3: This is the route of an old path leading from the central path to the church. Runnymede Borough Council have suggested re-opening this path which would also create a valuable ride within the woodland.

Prescription W4: In the south of the site, a glade will be created where two paths meet by felling some young trees (mainly Silver Birch) and re-coppicing a couple of young Chestnut stools (see photo 5). A ride will be created along the footpath here.

Prescription W5: A glade will be created just south of the central path, by felling young trees to the south of a couple of mature beech trees which are to be haloed (see prescription W18).

Prescription W6: This is the fairly wide old tarmac path which runs east to west across the site (see photo 11). Opening up the woodland along this path by cutting

back young trees and re-coppicing existing hazel stools will make the woodland more inviting for users as it is currently quite dark in the summer. Including scalloped edges on the southern edge will encourage ground flora in these areas.

Prescription W7: A glade will be created at the top of the hill towards the north of the site and the path leading down the hill from this glade will be widened to create a ride. The paths in the north of Ottershaw Chase, as marked on the Access Survey (See Appendix 3) and shown on Figure 1 were not all obvious when visited in 2014. The location of the path leading out from the proposed glade was not shown on the access survey map and has been estimated. It does not currently run all the way down to the central path as shown as this is a proposed extension.

Prescription W8: A ride will be created along the path in the north of the site opening up into a wider scallop to the south of the path by an attractive fallen tree root (see photo 9). Runnymede Borough Council have requested that the path further east of this proposed scallop be left as a narrow winding path.

4.1.3 Thinning/coppicing

Much of the woodland in the north of the site is quite dense allowing little light to the woodland floor resulting in a very bare ground flora (see photo 14). A number of coups (labelled P9-P16 on Figure 1) have been created within the woodland to the north of the central path. These coups will be managed on rotation to create temporary glades within the woodland. Silver Birch will be thinned and the medium aged Sweet Chestnut stools re-coppiced. Any Hazel stools will also be coppiced. Mature standards will be retained and Sycamore will be ring barked to create further standing dead wood.

The newly coppiced stools will be protected from deer browsing by dead hedging around the coup using the cut timber and brash. Alternatively, light brash could be piled over individual coppice stools.

Importantly, any dead or dying Birch trees which support the Birch bracket fungus, *Piptoporus betulinus* will be retained as these support the Red Data Book beetle, . *Diaperis boleti.*

To reduce the impact on existing biodiversity, adjacent coups will not be managed in consecutive years and a border of unmanaged woodland will be retained at the edges of the coups.

Prescriptions W9-W12: Thin/coppice the coups in the order shown in the work programme in Section 6, so as to prevent adjacent coups being thinned in consecutive years.

Prescriptions W13-W16: These coups are not currently shown for thinning within the 5 years of this management plan, but should be considered when this management plan is reviewed in 5 years time.

4.1.4 Haloing

There are a number of impressive mature trees on the site which will be encouraged to become veteran trees in the future by haloing (see red dots on Figure 1). This will encourage the open growth of the tree and improve the health of the tree by removing competition for nutrients. It will also create better views of the main trees on the site.

Encouraging open growth trees will benefit many species including the Nationally Scarce Brown Ant, *Lasius brunneus,* recorded on the site in 1994 which typically nests in old oak trees in parkland.

Work will involve removing any scrub or trees surrounding the tree to the extent of its canopy. Wood cleared as part of the management will be left within the root zone of the tree which will help restrict access and avoid compaction.

It is important to be aware when carrying out haloing that rapid changes to a tree's surroundings can, if not done sensitively, negatively affect the health of the tree. This can be due to a rapid drying out due to increased exposure to sun and wind or wind-throw due to sudden increased wind stress before the tree has had time to adapt (Fay & Fay, 2002). Therefore in some cases thinning may need to take place gradually over a number of years.

It is also important when considering haloing a mature tree to consider the potential impact on bats. Opening up the canopy around a roost can slightly change the environmental conditions and make a roost unfavourable for bats. The removal of sheltering trees adjacent to a roost can also make any roosting bats more vulnerable to predation and this could cause them to abandon the roost (Natural England and Forestry Commission, 2013).

A bat survey is to be undertaken on the site in the summer of 2014. It is recommended that no haloing of mature trees takes place until advice has been received from a bat expert.

Prescription W17: An old boundary bank supporting mature trees is situated along the southern boundary of the woodland (see photo 3). Selected trees along this bank will be haloed which as well as improving the health of the selected trees, will enhance the bank as a feature.

Prescription W18: Two mature beech trees are present just south of the central path. The eastern specimen is particularly interesting as it is covered in unusual growths (see photo 6). These trees will be haloed to enhance them as a feature. Young trees to the south will also be cleared to create a glade further south (see prescription W5).

Prescription W19-W21: Trees as shown as red dots on Figure 1 will be haloed.

4.1.4 Dead Wood

As discussed above there is already a good dead wood resource on the site including standing dead wood, fallen tree and established wood piles (see photos 7-10).

When felling trees, some of the resulting brash (finer branches) and trunks will be used to create additional log or habitat piles in a variety of different situations i.e. shady, sunny and damp. This will create habitat for a range of invertebrates, reptiles and amphibians. The brash will be tied into tight bundles and then stacked so as to be to be more valuable for invertebrates and occupy less space. A succession of piles of different ages will aid diversity. Half burying some of the logs in a vertical position will be particularly beneficial to invertebrates such as Stag Beetles. Taking into account health and safety considerations, standing dead wood will be left in situ wherever possible.

Prescription W22: Retain and enhance the already impressive fallen deadwood resource.

Prescription W23: Create log/habitat piles from timber and brash resulting from management works.

Prescription W24: Continue with minimal intervention management of dying trees where safe to do so and where this does not impede access routes.

4.1.6 Non-intervention

Part of the value of this site is in its undisturbed nature. Much of the site is currently quite shaded and although this management plan recommends opening up much of the woodland in order to increase its biodiversity, it is important to leave some areas undisturbed as a refuge for plants and animals which prefer the shaded conditions. Therefore much of the southern half of the woodland and the eastern edge of the northern half has been left as non-intervention within this plan. This can be reviewed when the plan is reviewed in five years time.

Prescription W25: South of the main path, the woodland is lighter than in the north and a lusher ground flora is present (see photo 4). Therefore it is proposed to leave this section as non-intervention within this management plan, although this could be reviewed in five years time when the management plan is reviewed.

Prescription W26: The woodland in the far east, north of the main path will also be left as non-intervention within this management plan. Again, this will be reviewed in five years time when the management plan is reviewed.

4.1.7 Garden waste

Prescription W27: In the east of the site, near to the church, there appears to have been some dumping of leaves and other vegetation, possibly from neighbouring gardens (see photo 2). This may need to be addressed as a constant input of vegetation could cause the nutrients in the area to increase leading to domination by

species such as Common Nettle. Also if waste is being dumped from nearby gardens, non-native invasive plant species could be introduced to the site.

4.2 Feature 2 - Access and Recreation

Objective
The site will be a welcoming, safe and attractive place for local people to visit. A network of informal paths will provide a route through the site with a number of glades featuring impressive mature tree specimens. Parking facilities will be readily available and information will be provided about the site and routes available, so visitors can get the most from their visit.

Targets
- The site allows a circular walk of 2.3-2.5km (as recommended by Natural England) in combination with other local sites.
- At least 2 benches to be installed by 2018
- At least 2 Information boards to be installed by 2018
- Leaflet to be produced and distributed by 2016

Management rationale
The management required to meet the objectives and targets above is outlined below. The location of the prescriptions is shown on Figure 1.

The access report undertaken in 2009 (Anckorn, 2009) suggested that Ottershaw Chase was underused by the public. It was suggested that this may in part be due to the gloomy and secluded appearance of the site. Management will be taken to encourage the use of the site.

The management discussed above, including the opening up of existing paths and thinning and creation of glades, will make the site feel more safe and welcoming to visitors.

The main access points to the site currently have narrow openings in wooden fencing, these will be replaced with kissing gates to allow access by push chairs.

Prescription A1 and A2: Install kissing gates at the two main entrances in the east of the site.

Pathways will be improved where necessary, using natural materials where possible, to ensure that the majority remain useable in all but the very worst of the weather. Clearing back scrub and younger trees along the paths as described above will help the paths dry up after rain.

Prescription A3: Improve some sections of footpath as detailed in the Ottershaw Woods – Footpath Improvements Specification (Runnymede Borough Council, 2014).

Prescription A4: The original route of the path here in the west of the site is blocked by some fallen trees. These will be cleared so that the original path is restored. This will allow the nearby den structures (see photo 13) to remain secluded.

The installation of a benches and information boards will encourage users to linger in certain areas of the site and enhance the visitor experience. Information boards will provide information about the site as well as the routes available to walk within the site. This will include an information board and signage from the car park at the nearby Timber Hill. Information and signposting will alert site users to the nearby SANGs sites; Timber Hill, Chaworth Copse, Ether Hill and Queenswood, so that visitors can combine use of these sites for longer walks. Visually sensitive waymarking will be installed to guide people around the main routes of the site.

Prescription A5: Install benches (shown as blue dots on Figure 1);

- at glade on top of hill (see prescription W7),
- at scallop along northern path (see prescription W8).

Prescription A6: Install information boards (shown as red crosses on Figure 1);

- within car park at Timber Hill,
- at entrance to site off Cross Lane,
- next to old brick structure (if appropriate - see prescription A7 below).

Prescription A7: An old brick structure is present just north of the central path in the east of the site (see photo 12). It would be interesting to determine the origin of this structure. If interesting, putting the history of the structure on an information board will add to the public's enjoyment of the site.

Prescription A8: Install signage from Timber Hill car park to the site.

Prescription A9: An existing tree stump near the northern entrance to the site will be used as a waymarker. The surrounding Bramble will be left as a habitat for wildlife.

Prescription A10: Install visually sensitive waymarking on main routes.

Prescription A11: Produce and distribute a leaflet including information on the site and network of footpaths (in combination with other nearby SANGS sites).

4.5 Feature 5 - Monitor and Review

Objective

Monitoring will take place to ensure the objectives within this plan are achieved. The plan will be reviewed periodically to ensure it is realistic and incorporates all relevant information. It will be reviewed in its entirety in 2018.

Management rationale
Further surveys will be undertaken and relevant information will be incorporated into the plan as it becomes available.

Prescription M1: The recommendations from the 2014 bat survey will be incorporated into the management plan where necessary.

Prescription M2: The preliminary invertebrate assessment (Dodd, 2013) recommended a targeted survey of wood decay specialists and a general survey of arboreal, field-layer, ground-layer and woodland edge assemblages. These surveys will be carried out as funding allows.

Progress towards achieving the actions within this management plan will be reviewed annually. The action plan will be amended as necessary to ensure that it remains realistic.

Prescription M3: The work programme will be reviewed annually.

It is recommended that the Phase 1 survey is repeated in 2018. The results of this survey will be used to help assess whether the objectives of the management plan have been met.

Prescription M4: A phase 1 survey will be repeated on the site in 2018. It will be useful to measure the following aspects:

- The % of open space within the woodland,
- The presence and abundance of invasive non-native species,
- The abundance of standing and fallen dead wood.

Following the results of the Phase 1 survey undertaken in 2018, the entire management plan will be reviewed and ideally a new plan developed for the next 5 years.

Prescription M5: Review the management plan in its entirely in 2018 and develop a plan for the next 5 years.

5.0 Legal Considerations

All wild birds are protected from damage or destruction of their nest whilst in use or construction. All tree and scrub clearance should avoid the bird nesting season which is between the beginning of March and the end of August.

All species of British bats are protected under the Wildlife and Countryside Act and under Regulation 38 (Schedule 2) of the Conservation (Natural Habitats etc.) Regulations 1994. It should not be necessary to fell any mature trees as part of the work advised in this plan. However should it be necessary to fell any trees older than 100 years, or with obvious cavities, or with a girth greater than 1m at chest height, these should be surveyed for bats by a licenced bat worker before any work takes place.

As discussed in section 4.1.4, the haloing of mature trees could have an impact on bat roosts. A bat survey is to be undertaken on the site in the summer of 2014. It is recommended that no haloing of mature trees takes place until advice has been received from a bat expert.

Great Crested Newts are protected under schedule 5 of the Wildlife and Countryside Act 1981 and Regulation 39 of the Conservation (Natural Habitats &c) Regulations 1994. Great Crested Newts have been recorded within 1km of the site. Although there are currently no water bodies on the site itself, there is a low possibility that the species could use the woodland for foraging or hibernation, however it is unlikey that any of the proposed management work would significantly affect the species.

All native British reptiles are protected under the Wildlife and Countryside Act (1981) from killing and injury. The data search revealed that Grass Snakes have been recorded in the local area and Runnymede Borough Council reported that an adder was seen in a glade within the woodland in 2008. However as the site is quite dark, reptiles are unlikely over most of the site and it is unlikey that any of the proposed management work would significantly affect the species. Opening up the site may encourage more reptiles into the area.

Any thinning or felling operations greater than $5m^3$ will require a felling licence from the Forestry Commission.

6.0 5 year work programme

All the prescriptions detailed in the plan are summarised in the table below. It is understood that the amount of work that RBC can undertake on this site each year will depend on funding which may vary from year to year and is currently unknown. Therefore the year suggested to undertake the work, which has aimed to spread the work out evenly over the 5 years, is given only as a guide. The priority given for each action can be used to prioritise work depending on funding available.

Priority:
Red = High
Amber = Medium
Green = Low
R = Review

Table 1 - Full Prescription list with priorities

Ref.	Prescription	Year with priority				
		2014	2015	2016	2017	2018
W1	Clear Rhododendron and Cherry Laurel along eastern boundary in south. Treat stumps with Glyphosate (twice annually) until stumps have died.	√				
W2	Clear other scattered Rhododendron and Cherry Laurel (as shown by blue dotted shading on Figure 1). Treat stumps with Glyphosate (twice annually) until stumps have died.	√				
W3	This is the route of an old path leading from the central path to the church. Runnymede Borough Council have suggested re-opening this path which would also create a valuable ride within the woodland.					
W4	In the south of the site, a glade will be created where two paths meet by felling some young trees (mainly Silver Birch) and re-coppicing a couple of young Chestnut stools. A ride will be created along the footpath.			√		
W5	A glade will be created just south of the central path, by felling young trees to the south of a couple of mature beech trees which are to be haloed (see P18).	√				
W6	This is the fairly wide old tarmac path which runs east to west across the site (see photo 11). Open up the woodland along this path by cutting back young trees and re-coppicing existing hazel stools. Including scallops on the southern edge will encourage ground flora in these areas.				√	
W7	A glade will be created at the top of the hill towards the north of the site and the path leading down the hill from this glade will be widened to create a ride.		√			
W8	A ride will be created along the path in the north of the site opening up into a wider scallop to the south of the path by an attractive fallen tree root.					√
W9	Thin/coppice the coups in the order shown, so as to prevent adjacent coups being thinned in consecutive years.		√			
W10				√		
W11					√	
W12						√
W13	These coups are not currently shown for thinning within the 5 years of this management plan, but should be considered when this management plan is reviewed in 5 years time.					R
W14						R
W15						R
W16						R
W17	Selected trees along the bank on the southern boundary of the woodland will be haloed.	√	√	√		
W18	The Two mature beech trees just south of the central path will be haloed. Young trees to the south will also be cleared to create a glade further south (see P5).				√	
W19	Other trees as shown as red dots on Figure 1 will be haloed.				√	
W20						√

Ref.	Prescription	Year with priority				
		2014	2015	2016	2017	2018
W21						√
W22	Retain and enhance the already impressive fallen deadwood resource.	√	√	√	√	√
W23	Create log/habitat piles from timber and brash resulting from management works.	√	√	√	√	√
W24	Continue with minimal intervention management of dying trees where safe to do so and where this does not impede access routes.	√	√	√	√	√
W25	Leave most of the woodland south of the main path as non-intervention within this management plan – review in 2018 when the management plan is reviewed.					R
W26	Leave the woodland in the far east, north of the main path as non-intervention within this management plan– review in 2018 when the management plan is reviewed.					R
W27	Address problem of dumping in woodland if necessary.	√				
A1	Install kissing gates at the two main entrances in the east of the site.	√				
A2		√				
A3	Improve some sections of footpath as detailed in the Ottershaw Woods – Footpath Improvements Specification (Runnymede Borough Council, 2014).	√				
A4	Clear fallen trees along footpath in the west of the site to restore original footpath.	√				
A5	Install benches (shown as pink dots on Figure 1); • at glade on top of hill (P7), • at scallop along northern path (P8).	√				
A6	Install information boards (shown as pink crosses on Figure 1); • within car park at Timber Hill, • at entrance to site off Cross Lane, • next to old brick structure (if appropriate - see prescription A7 below).	√				
A7	Determine the origin of the old brick structure just north of the central path in the east of the site. If interesting, putting the history of the structure on an information board will add to the public's enjoyment of the site.	√				
A8	Install signage from Timber Hill car park to the site.	√				
A9	An existing tree stump near the northern entrance to the site will be used as a waymarker. The surrounding Bramble will be left as a habitat for wildlife.	√				
A10	Install visually sensitive waymarking on main routes.	√				
A11	Produce and distribute a leaflet including information on the site and network of footpaths (in combination with other nearby SANGS sites).	√				
M1	Incorporate the recommendations from the 2014 bat survey into the management plan where necessary.	√				
M2	Undertake a targeted survey of wood decay specialists and a general survey of arboreal, field-layer, ground-layer and woodland edge assemblages as funding allows.			√		
M3	Review the work programme annually.	√	√	√	√	√
M4	Repeat phase 1 survey of site measuring the following aspects: - % of open space within the woodland, - Presence / abundance of invasive non-native species, - Abundance of standing and fallen dead wood.					√
M5	Review the management plan in its entirely in 2018 and develop a plan for the next 5 years.					√

7.0 References

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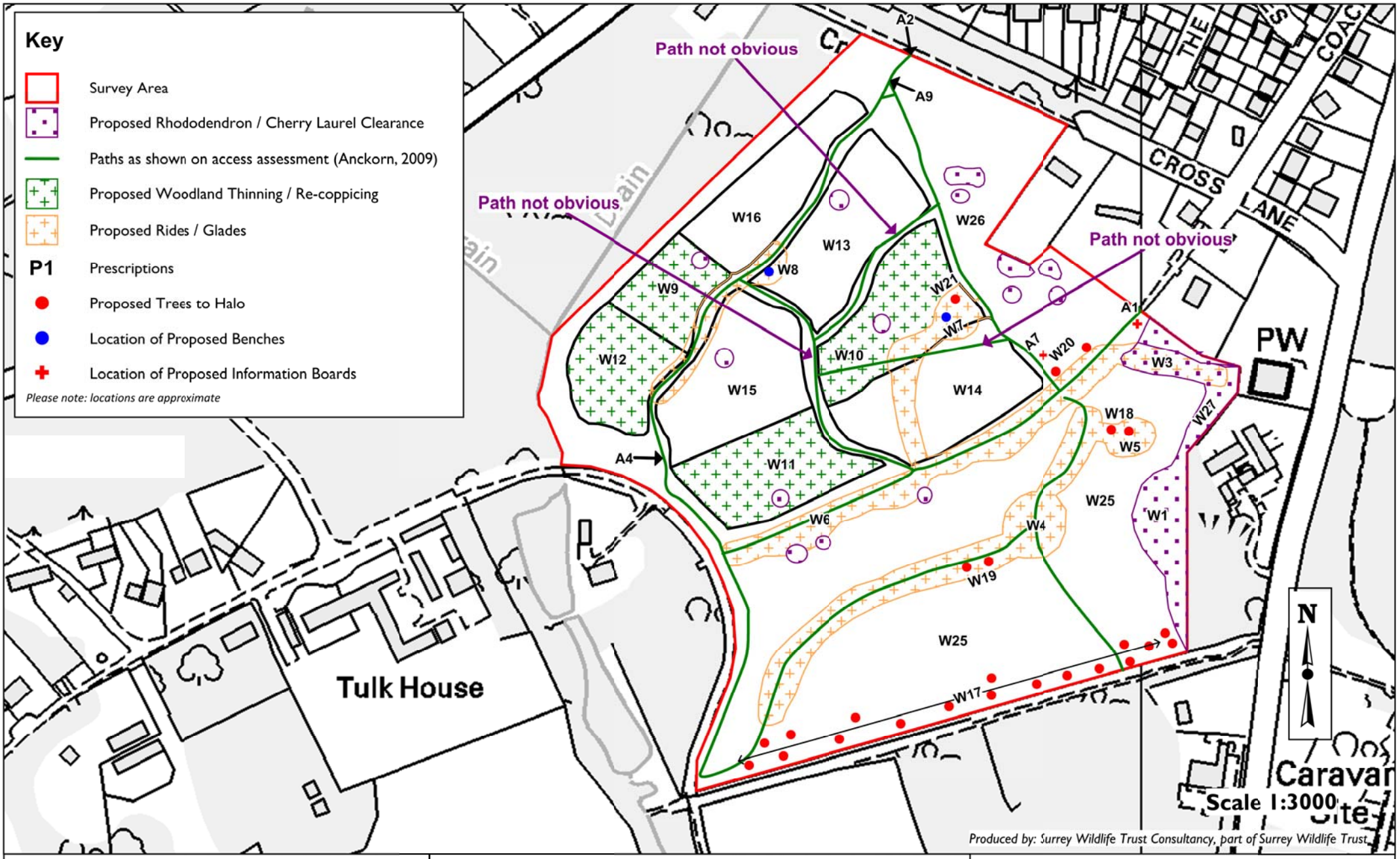

Figure 1
Ottershaw Chase
Location of Management Prescriptions

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Appendix 1 - Photographs

Photo 1. – Rhododendron (W1)

Photo 2. – Possible dumped vegetation (W27)

Photo 3. – Boundary bank in south (W17)

Photo 4. – Non-intervention woodland (W25)

Photo 5. – location of prescription W4

Photo 6. – Beech tree with unusual growths (W18)

Photo 7. – Example of fallen timber

Photo 8. – Example of dead wood pile

Photo 9. – Example of dead wood (W8)

Photo 10. – Example of standing dead wood

Photo 11. – Central path (W6)

Photo 12. – Old brick structure (A7)

Photo 13. – Dens (A4)

Photo 14. – Dense woodland in north of Site

Appendix 2 – Extract from Phase 1 Surveys of Runnymede SANGS Sites (Gibbs, 2009).

Phase 1 surveys of Runnymede SANGS sites

Written by Claire Gibbs MSc BSc (hons) MIEEM

August 2009

Surrey Wildlife Trust, School Lane, Pirbright, Woking, Surrey GU24 0JN

1. Introduction

1.1 Surrey Wildlife Trust (SWT) Consultancy has been commissioned by Runnymede Borough Council to undertake phase 1 habitat surveys of 7 Suitable Accessible Natural Green Space (SANGS) sites within Runnymede. Figure 1 shows the location of the survey sites.

1.2 The aim of the survey is to inform an access assessment on the sites. It is hoped that the access assessments and phase 1 surveys will help inform the production of management plans for the sites.

1.3 Background ecological data searches were conducted for the sites by the Surrey Biological Records Centre in order to highlight any notable or protected species in the area of the sites.

1.4 The site visits were conducted by Claire Gibbs MSc BSc (Hons) MIEEM of SWT Consultancy between the dates of 13th July and 11th August 2009.

1.5 The timing of the survey whilst appropriate for a basic phase 1 survey, is not the optimal time for botanical survey of woodlands. In order to record the most species within woodland habitats it is recommended that a spring time survey is carried out. Therefore this survey may not have picked up all the species present on the woodland sites.

2. Methodology

2.1 Phase 1 habitat survey is a standardised system for classifying and mapping semi-natural vegetation and wildlife habitats in Great Britain. Vegetation is mapped in terms of standard habitat types as defined in the JNCC Handbook for Phase 1 Habitat Survey (1990). This methodology was extended to include an assessment of the suitability of the habitats recorded to support protected species.

2.2 Where the abundances of species are mentioned, these are based on the DAFOR scale and usually refer to the specific section of the site under discussion in the site notes. The DAFOR scale is a way of describing the abundance of a species using the following key:-

(**L**ocally) **D**ominant **A**bundant **F**requent **O**ccasional **R**are

Please note that plants described as "*rare*" means that they were not found often over this site or location and does not necessarily indicate a county or national rarity.

2.3 Throughout the descriptions, plants are referred to by their English names. For reference the full species list at the end of each report section offers both English and Latin names.

5. Ottershaw Chase

Date of survey: 14th July 2009

5.1 Site description

Ottershaw Chase is just over 11 hectares to the south of Ottershaw just west of the Guildford Road (A320). The site is entirely covered by broad-leaved woodland with a number of exotic tree species present some of which are impressive, mature specimens. Local historical knowledge indicates that the land may have been heathland at one time. Later it is thought to have come into cultivation and is thought to have been planted in the 19th Centuary. Some mature trees including sweet chestnut and exotics still survive from this time. During World War 2 it was used to store army tanks, and rubble from this time is still present within the woodland. A clear path runs through the centre of the site with more overgrown paths running around the edges.

5.2 Target notes (description of habitats)

1) The main bulk of the woodland at Ottershaw Chase has a canopy dominated by sweet chestnut , both old coppice stools and standards. The sweet chestnut is very dense in parts particularly in the north. Birch (both silver and downy) fills the gaps in the canopy and is dense in storm damaged areas. Other occasional standards include pedunculate oak, ash, beech and sycamore. Most of the ground below is bare other than occasional broad buckler and male ferns as little light is reaching the floor. Where more light gets through, bracken, bramble and ash seedlings are locally frequent. Cherry laurel is present along the eastern boundary in the south where it is spreading into the woodland. A fox hole was noted near to the cherry laurel.

   Small balsam is abundant along the central path. At the western end of the path a sumac species (*Rhus spp.*) is present and looks like it may spread.

2) South of the central path, sweet chestnut is less abundant and the woodland is more open with a number of mature trees present. Pedunculate oak and Birch are the most obvious canopy species here although sweet chestnut is still occasional and frequent in parts. Other trees in the canopy include occasional ash, hornbeam and beech. Occasional shrubs include grey willow, hazel, alder, wych elm and dogwood. Some young sycamore and birch are also present in the shrub layer.

   The ground flora is lusher in this part of the woodland as more light is reaching the floor although it is bare in some areas. Bracken is locally abundant and nettle and enchanter's nightshade are locally frequent. Other occasional species include creeping thistle, ground ivy, pendulous sedge broad-buckler

fern and male fern. There are some piles of birch indicating past thinning operations.

3) This is a small area where the canopy is dominated by alder. Nettle is abundant below.

5.3 Ecological value of site / possible ecological constraints

Ottershaw Chase was surveyed by Surrey Wildlife Trust in 1999 as part of a project to identify Sites of Nature Conservation Importance (SNCIs) in Surrey. At that time it was felt that the site was not of sufficient ecological value to warrant selection as an SNCI. Nevertheless as a good sized area of broad-leaved woodland, the site does have local ecological value. There are many good sized mature trees (both native and exotic) across the site. These are important for their wildlife and visual value. There are also good amounts of both fallen and standing dead wood. This is very valuable for wildlife particularly invertebrates, such as stag beetles, and is a declining resource as people 'tidy up' their woodlands.

Potential for rare and/or protected species

The data search for this site revealed that the following species of note have been recorded on the site;

- Birds

All wild birds are protected from damage or destruction of their nest whilst in use or construction. In addition some birds receive additional protection from disturbance whilst nesting under schedule 1 of the Wildlife and Countryside Act 1981, as amended. The data search revealed that 18 bird species included on Appendix II of the Bern Convention and 18 bird species listed as species of Conservation Concern in the UK Biodiversity Action Plan 1995 as well as 1 species listed as priority in the UK Biodiversity Action Plan 1995 have been recorded on Ottershaw Chase. These records are from 1994, so it is unknown whether the species are still present on the site. It is unlikely that any minor management work on the sites would affect these bird species. Any work affecting trees or scrub should avoid the bird nesting season (March-August).

- Stag Beetle, *Lucanus cervus*

The data search revealed that stag beetles have been recorded on the site. The stag beetle is a UK Biodiversity Action Plan (BAP) priority species and a nationally notable b species. It is protected under appendix 3 of the Bern Convention. Stag Beetle larvae rely on rotting dead wood for their survival therefore it is important to ensure that the dead wood habitat on the site does not decline.

- Brown Ant, *Lasius brunneus*

This is a notable species which was recorded on the site in 1994. This is a tree dwelling ant which typically nests in old oak trees in parkland. Maintaining the mature trees on the site and selectively thinning some of the younger trees may benefit this species.

- Dragonflies

The Downy Emerald, *Cordulia aenea,* is a notable dragonfly species which was recorded on the site in 1994. The black darter, *Sympetrum danae* is classified as

local and was also recorded on the site in 1994. No ponds were noted on the site during the recent survey and therefore these species are unlikely to still be present.

No signs of any rare or protected species were found during the survey however surveys for specific species were not undertaken. However, there is potential for the following protected species to be present.

Bats

All species of British bats are protected under the Wildlife and Countryside Act and under Regulation 38 (Schedule 2) of the Conservation (Natural Habitats etc.) Regulations 1994. Together this legislation makes it an offence to kill, capture or disturb the animal, or to damage or destroy a breeding site or resting place of such an animal. Bats are likely to forage on the site and to be roosting in the more mature trees. If possible any work on the site should avoid damaging the mature trees. If this is unavoidable, all trees older than 100 years, or with obvious cavities, or with a girth greater than 1m at chest height should be surveyed for bats by a licensed bat worker before any work takes place.

Reptiles

All native British reptiles are protected under the Wildlife and Countryside Act (1981) from killing and injury. Sand Lizards and Smooth Snakes also receive additional protection. The data search revealed that grass snakes have been recorded in the local area. However the woodland at Ottershaw Chase is quite dark and reptiles are unlikely over most of the site.

Great Crested Newts, *Triturus cristatus*

The data search revealed that great crested newts have been recorded within 1km of the site. Although there are no water bodies on the site itself, there is a low possibility that the species could use the woodland for foraging or hibernation. Great crested newts are protected under schedule 5 of the Wildlife and Countryside Act 1981 and Regulation 39 of the Conservation (Natural Habitats &c) Regulations 1994. A precautionary approach to work on the site should be adopted in order to prevent harming this species and it potential habitat.

It is important to take the above species into account when planning any work on the sites.

5.4 Ottershaw Chase Species List

Abundance uses the DAFOR system;

(**L**ocally) **D**ominant, **A**bundant, **F**requent, **O**ccasional, **R**are

[Please note that plants ranked are 'rare' means that they were not found often over this site and does not necessarily indicate that they are a County rarity]:

Scientific name	**Common name**	**Abundance**
Acer pseudoplatanus	Sycamore	O
Agrimonia eupatoria	Agrimony	R
Ajuga reptans	Bugle	R
Alliaria petiolata	Garlic Mustard	O
Alnus glutinosa	Alder	LA
Betula pendula	Silver Birch	LD
Betula pubescens	Downy Birch	O
Buddleja davidii	Butterfly-bush	R
Cardamine flexuosa	Wavy Bitter-cress	R
Carex pendula	Pendulous Sedge	O
Carpinus betulus	Hornbeam	O
Castanea sativa	Sweet Chestnut	LD
Circaea lutetiana	Enchanter's-nightshade	F
Cirsium arvense	Creeping Thistle	O
Cornus sanguinea	Dogwood	R
Corylus avellana	Hazel	O
Dryopteris dilatata	Broad Buckler-fern	O
Dryopteris filix-mas	Common Male Fern	O
Epilobium montanum	Broad-leaved Willowherb	O
Fagus sylvatica	Beech	O
Fraxinus excelsior	Ash	O
Galium aparine	Cleavers	R
Geranium robertianum	Herb-robert	R
Geum urbanum	Herb Bennet	F
Glechoma hederacea	Ground-ivy	F
Ilex aquifolium	Holly	O
Impatiens parviflora	Small Balsam	LA
Iris foetidissima	Stinking Iris	R
Juncus effusus	Soft Rush	R
Ligustrum ovalifolium	Garden Privet	R
Lonicera periclymenum	Honeysuckle	R
Pinus sylvestris	Scots Pine	O
Plantago major	Greater Plantain	R
Poa annua	Annual Meadow-grass	R
Populus tremula	Aspen	LF
Prunella vulgaris	Selfheal	O
Prunus avium	Wild Cherry	R

Scientific name	Common name	Abundance
Prunus laurocerasus	Cherry Laurel	R
Pteridium aquilinum	Bracken	F
Quercus robur	Pedunculate oak	F
Ribes uva-crispa	Gooseberry	R
Rubus fruticosus agg.	Bramble	F
Rumex sanguineus	Wood Dock	O
Salix caprea	Goat Willow	O
Salix cinerea	Grey Willow	O
Sambucus nigra	Elder	O
Solanum dulcamara	Bittersweet	R
Sorbus aucuparia	Rowan	R
Tilia cordata x platyphyllos	Lime	R
Ulmus glabra	Wych Elm	R
Urtica dioica	Common Nettle	A
Veronica officinalis	Heath Speedwell	R

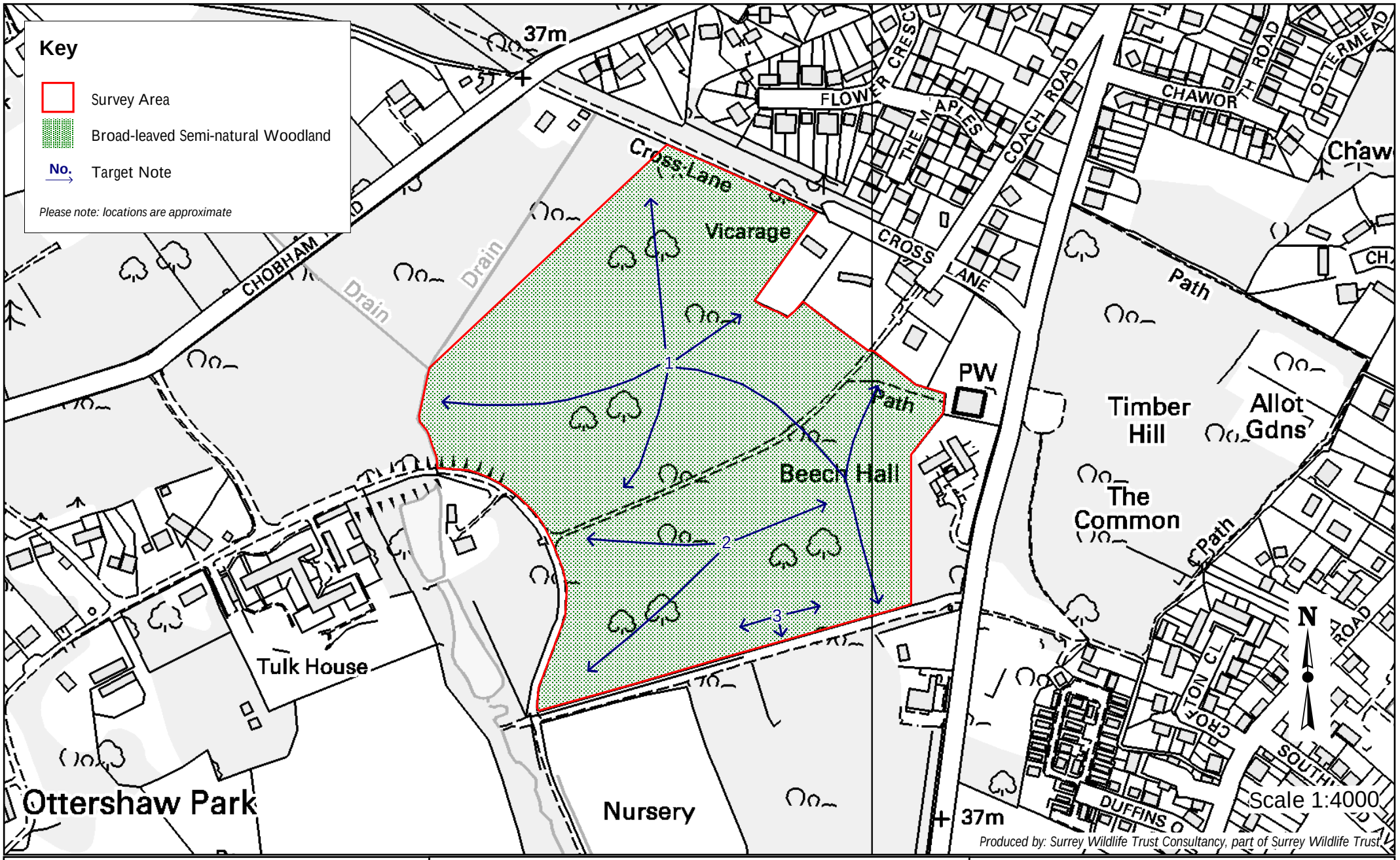

Figure 5
Ottershaw
Phase 1 Survey Results

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Appendix 3 – Extract from Access Surveys of Runnymede SANGS Sites (Anckorn, 2009).

Access Surveys of Runnymede SANGS Sites

Ken Anckorn BSc (Hons) DipMus DipEnv
September 2009

Surrey Wildlife Trust, School Lane, Pirbright, Woking, Surrey GU24 0JN

Runnymede Borough Council
Proposed
Suitable Accessible Natural Green Space (SANGS) Sites.

Public Access Assessment

1. Introduction

Runnymede Borough Council have commissioned Surrey Wildlife Trust (SWT) Consultancy to undertake an assessment of its proposed SANGS sites by walkover survey of each site, to assess them for their ability to satisfy Natural England's public access criteria for such sites. The purpose of a SANGS site is to attract public to use these sites for dog walking and quiet recreation instead of using the Thames Basin Heaths Special Protected Areas (SPA) for such purposes, thus reducing human pressure on the SPA resulting from housing development within 5km of the SPA.

The location of the seven sites assessed is shown in Figure 1. These assessments have taken into account the ecological information contained in the Phase 1 Surveys, also conducted by SWT Consultancy August 2009, to identify important ecological features, influence pathway selection and ensure that management works recommended by this assessment do not have a detrimental effect on any ecologically sensitive habitats. Each site was assessed on its current condition and general accessibility with regard to vegetation type and density in addition to visitor facilities including, car parks, pathways, signage, 'furniture' (bins, benches) and general accessibility.

Note that as some of the seven sites are adjacent to each other these have been considered as one SANGS site for the purposes of this report, these being Timber Hill and Chaworth Copse also Hare Hill and Queenwood.

Following the site survey visits, recommendations have been made regarding alterations designed to make each site better fitted to fulfil its function as a SANGS, while still retaining and where possible enhancing its biodiversity value.

2. Methodology

Each site was visited by the surveyor and a thorough walk-over survey conducted. The routes of the existing main pathways were noted, together with other existing visitor facilities. The location of each major habitat type was noted and any significant ecological feature taken into account. Any particularly sensitive ecological areas were carefully identified.

Man made features on the site, reflecting the local social history of the site was also considered, to be incorporated where relevant into the recommendations for improving public access and enjoyment of the site. Where possible key features on each site were selected to be used as focus points for visitor interest, to emphasise each site's unique qualities and add to its attractiveness as an alternative recreation space to the SPA

Lengths of pathways were measured to give an approximate figure for the distance a visitor could cover when using the paths on site. Where the sites are smaller than recommended, suggestions are made to indicate how adjacent sites can be regarded as one SANGS to provide the length of footpaths required by SANGS criteria.

2.1 Species Survey Work

When preparing detailed plans for the SANGS sites, including future Management Plans, full protected species information must be available in order that legally protected and important species are not adversely affected by any SANGS works. As the sites are mostly woodland, surveys for bats and badgers will be most important but there may also be the need for dormouse, reptile and amphibian survey work.

Data searches have been made to aid ascertaining the presence of other important species, so that any SANGS work such as path improvements and vegetation thinning avoids sensitive areas, the findings of these are given in the Phase 1 survey report SWT Consultancy 2009.

2.2 SANGS Requirements

All the sites are of sufficient interest due to their topography and current vegetation to satisfy SANGS criteria. Most have sufficient length of path to provide adequate SANGS walking routes but six of the seven sites, St Ann's Hill being the exception, are closely linked by footpaths and can be walked in-combination to provide longer distances.

The maps (Figures 2 – 6) provided give an indication of the main paths on the sites and the length of walks available.

The paths selected for SANGS use should only be confirmed after protected and important species survey information is available for each site

2.3 Information

In addition to information panels, notice boards and way markers on site; a suite of SANGS leaflets should be provided to help visitors find their way around sites and to act as advertisement. These leaflets should be available both as hard copy at off-site information points and downloadable from a website.

5. Ottershaw Chase

5.1 Description

Ottershaw Chase is an 11 hectare site of broadleaved woodland on a sloping site with no other significant ecological habitat features. It has a network of existing footpaths, including a central broad path with old tarmac surfacing, a former driveway leading from the A320 Guildford Road to Tulk House. The main entrance to the site is off this driveway past two former lodges and through an ornate iron gateway.

The site has no car park but can be easily reached from the car park at Timber Hill. The site also has pedestrian access off Cross Lane and from the path on the southern boundary of the site.

The site is almost completely covered in woodland and there is consequently very little ground cover. The site has some magnificent specimen trees, sequoia (Redwoods), beeches, oak and sweet chestnut. A considerable number of mature trees were blown over in the storm of 1987 and many of these still remain on the ground.

Despite the network of narrow paths across the site, much of it has a gloomy and secluded appearance which is most likely the reason why the site is underused by the public at present.

5.2 Current Facilities

1. Car Parks

There are no car parking facilities on site but the site can be serviced from the 39 space car park at Timber Hill. Access from the car park is across the A320 by a well marked ‘refuge’ crossing point and then down Cross Lane

2. Pathways

There is one main path through the centre of the site leading from Cross Lane towards the grounds of Tulk House. It is surfaced by old tarmac and is quite wide. The main entrance to the site is from this path, after it has passed between two former lodge houses and decorative wrought iron gates. Another broad path follows the curved western boundary of the site, leading to an access point for Ottershaw Park. The rest of the paths through the woodland are informal earth surfaced but at the time of the survey dry and free from major obstacles.

3. Furniture

This site is not supplied with furniture. There is an ownership notice at the main entrance but no other public information. There are no public rights of way across the site but Cross Lane which forms the northern edge of the site is a public bridleway.

4. Special Features

There are no obvious focal points on this site and the general appearance is of mature woodland. There are some magnificent mature trees on site, beech, oak, sweet chestnut and three giant redwoods. There are also a large number of fallen trees, which came down in the storm of 1987. Although these fallen trees restrict access to parts of the site, they are a very important ecological feature and should not be cleared or 'tidied up' except for public safety reasons. There is no water on site except for a ditch in the south-west corner.
The floor of the woodland is littered with chunks of masonry and bricks. This is a relict of World War 2 when the ground under the trees was strengthened to provide a firm base for tanks hidden in the woodland. There is also a round brick walled pound near the main path, which may also have dated from this time.
The attraction of this site is therefore the woodland itself and its impressive trees both alive and dead. It also has an interesting history as part of a large estate's landscaped parkland and the part it played in the war.

5.3 Recommendations.

a) Car Parking

Although the site does not have a car park it is close enough to the Timber Hill car park for this to fulfill this need. For visitors wishing to have a longer walk than Timber Hill and Chaworth Copse can supply, they can extend their walk into Ottershaw Chase via Cross Lane. Indeed, a walk can be further extended into Ether Hill and Queenswood by entering the Ether Hill SANG at the entry point across the A319 Chobham Road where Cross Lane meets this highway. In this way, longer walks can be undertaken.

b) Improving Site Interest

To attract more visitors and provide a more tempting walking site than the SPA, more must be made of the trees on this site. The mature or veteran trees are its key selling point and need to become a stronger focus on the site. This can be achieved by selective felling of young trees and scrub clearance to present better views of the main trees on the site.

c) Visitor Access

The main access points have narrow openings in wooden fencing. These should be widened, so that push chairs can be admitted. The topography of the site and the nature of much of the paths do not make this site suitable for most wheelchair users.
At the time of the survey, following a long dry spell all paths were dry, firm and easily walked. Inevitably, after wet weather, some of the informal paths will become soft and muddy. To prevent this and to stop people avoiding the site, paths should be strengthened and raised with suitable material and supplied with drainage. Visitors must be able to use the site in all weathers.
The main surfaced paths should require very little surfacing works but all paths will need bordering scrub and younger trees removed to let in more light. This will help paths dry up after rain and will promote the growth of ground flora, attracting more wildlife. In suitable places, glades can be opened up to increase this biodiversity. Pathside vegetation should take on a scallop edged appearance, rather than straight lines, as this edge habitat provides the greatest diversity of ecological niches. As previously mentioned, as much dead wood, both standing and fallen should be kept in situ as possible.

d) Visitor Information

Visitor Information Boards should be provided at the main site entrance off Cross Lane. Further notice boards could be provided at the access point in the south east corner of the site and at the entrance to the site off the west end of Cross Lane. These boards should provide:

- A history of the site;
- A natural history of the site;
- A map of the site showing paths and features of interest; and
- Event and other information E.g. Guided Walks.

e) Habitat Improvements

All the paths on this site are overgrown and shaded by tree cover and a scrub layer of mostly bramble and holly. Much of this should be cleared to open up paths to light, to make the paths feel more welcoming and to encourage the growth of more varied ground flora. Selective thinning of younger trees will also help this process and create interesting vistas. Mature trees will then become more of a focal point. In suitable places, glades can be opened up to add biodiversity value, where possible featuring a specimen tree either alive or as standing dead wood.
As stated before, standing dead wood and fallen trees should not be cleared away unless a real health and safety risk is perceived. Few woodlands with public access remain, which feature so much dead wood, a result of big storms now recognised as an important part ecological event. Mostly, this storm damaged wood has been removed, a process which is now recognised as being detrimental to ecological diversity.

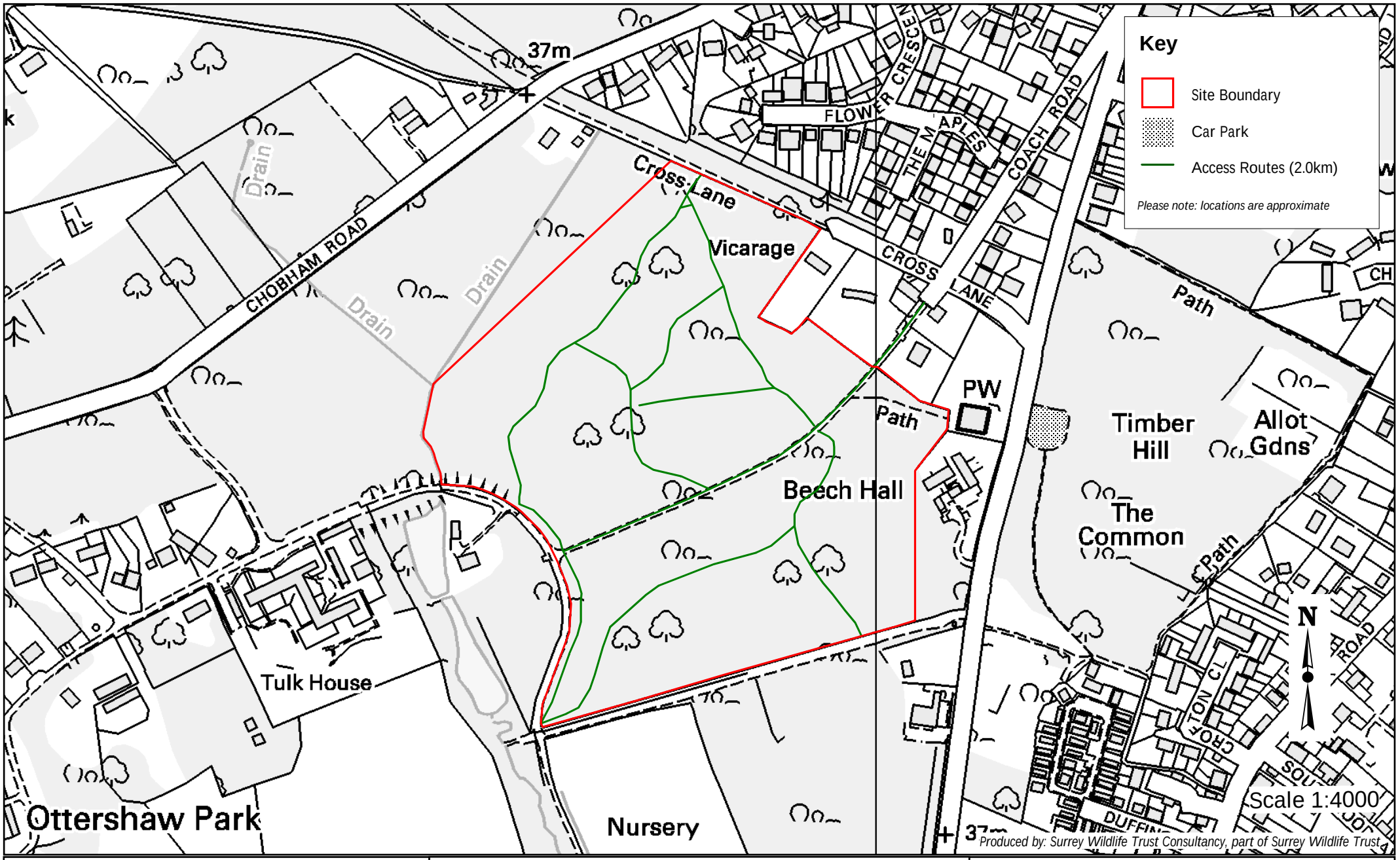
Benches should be provided at the edges of glades and where a high point provides a vista.

a) Management Plan

All of the above suggested actions should only be implemented after a Management Plan has been drawn up and agreed. Protected and important species data should be used to ensure that access improvement works does not damage but rather enhances biodiversity. Protected species surveys will be required to inform the management plan and ensure no adverse affect to species from clearance works. Allowing more light into this woodland will encourage greater biodiversity and produce a site which will attract more walkers.

5.4 Conclusion

The Trust recommends that the above works are given full consideration should the Local Authority wish to proceed with its plan to turn this site into a SANG. By adopting these measures, the SANG criteria can be satisfied and the biodiversity of the site improved. The Trust will be happy to assist with producing a Management Plan to achieve these aims.



Ottershaw Chase
Access Routes and Car Park

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Appendix 4 – Preliminary Invertebrate Assessment (Dodd, 2013).

Runnymede SANGs – Ottershaw Chase (TQ018634) & Hare Hill (TQ033639), Surrey

- **Preliminary Invertebrate Assessment**

Photograph 1: Wood decay habitat at Ottershaw Chase

Written by Scotty Dodd MSc MCIEEM
December 2013

Surrey Wildlife Trust, School Lane, Pirbright, Woking, Surrey GU24 0JN

The contents of this report were correct at the time of the last site visit. The report is provided for the sole use of the named client and is confidential.

Ottershaw Chase

The site was visited on 1st October 2013 to assess the habitats present for invertebrate potential. The site is entirely wooded with apparently minimal management intervention. There is a variety of tree species of varying age classes present – including distinct areas supporting a good number of mature to veteran status trees. The management for standing and fallen dead wood resources at the site is generally positive with many trees showing signs of early veteranisation – such as tear-outs, moribund limbs, peeling bark, splits and hollows. All of these trees appear to have been retained as habitat features where it is safe to do so. Fallen trees are largely left in-situ, only being cut and cleared where access is blocked and then the cord wood is stacked and left to rot down on site.

It was clear from the outset that the wood decay habitat at the site was an important feature for invertebrates and accessible features were briefly sampled for associated invertebrates with pleasing results (see preliminary species list). Over 20 species, including 7 Nationally Scarce and 1 Red Data Book species, directly associated with wood decay (e.g. bracket fungus, moribund branches, peeling bark etc) were recorded in just a few hours of searching. A brief analysis of the assemblage present, using the Natural England ISIS programme for SSSI condition assessment, indicated a favourable condition status based upon the diversity and quality of the species encountered.

In a local context the site has the potential to be an important reservoir for saproxylic invertebrates (i.e. wood decay specialists) at a landscape scale as there is an established geographic link via nearby sites with significant veteran tree interest, such as Queenwood Golf Club to the immediate north-west linking with Chobham, Wentworth and Virginia Water, to the internationally important Windsor Great Park ~9km (5-6 miles) to the north-west.

Features of particular note include:

- Several mature Beech dead wood monoliths with *Ganoderma* sp. bracket fungus at TQ018636

Photograph 2: Beech monoliths with Ganoderma fungi

- Mature Oaks with moribund branches/peeling bark and Chicken of the Woods bracket fungus (*Laetiporus sulphureus*) at TQ018632
- Stacked Ash cord wood with Cramp Ball fungus (*Daldinia concentrica*) and a veteran Sweet Chestnut with Beefsteak bracket fungus (*Fistulina hepatica*) at TQ017634

Photograph 3 (above): Recently cut and stacked 'sappy' timber – a gold mine of bark and sapwood decay specialists. Photograph 4 (below): Veteran Sweet Chestnut.

Management recommendations:

- Thinning/re-coppicing on rotation of medium aged Sweet Chestnut areas and Birch thickets to create temporary glades. NOTE: Retain dead/dying Birch trees supporting Birch bracket fungus (*Piptoporus betulinus*).
- Widening/scalloping of rides to enhance woodland edge-effect.
- Ensure continuity of standing and fallen dead wood resource.
- Gradual halo-release of selected mature to veteran trees and potential veterans of the future to promote open growth.
- Continue with minimal intervention management of dying or fallen trees where safe to do so and where this does not impede access routes.

Further survey recommendations:

- Targeted survey of wood decay specialists. This would entail general field-work visits and the placement/maintenance of a several Flight Interception Traps (FITs).
- General survey of arboreal, field-layer, ground-layer and woodland edge assemblages. Ideally this would include light trapping for nocturnal Lepidoptera (moths).

Hare Hill

The site was also visited on 1st October 2013 to assess the habitats present for invertebrate potential. Not as full an assessment as hoped was achieved due to failing light levels. Much of the site is wooded with a similar composition to Ottershaw Chase, though there were areas of mixed broadleaved/coniferous woodland not found to be present at the former site. In general the woodland is younger with less wood decay interest. A network of open areas of grassland and scrub provide a varied and extensive woodland edge-effect to the east of the site. Shrubby growth of Hawthorn, Blackthorn, Alder Buckthorn, Dog Rose and Broom provide an excellent nectar resource for invertebrates throughout the year.

Features of particular note include:

- Aspen TQ031639 (in small wooded area to west of Spratts Lane)
- Young open grown Oak woodland TQ033639
- Grassland/scrub matrix TQ034639 south to TQ033637
- Woodland pond/wet flush TQ032637

Management recommendations:

- Remove non-native Buddleja from woodland understory in area to west of Spratts Lane.
- General thin of the above area to promote Aspen sucker growth.
- The young open grown Oaks to the north of the grassland area has the potential to be managed as parkland, i.e. selective thinning to encourage mature open-grown Oaks to develop.
- Subject to survey the wooded pond/wet flush area has potential for ecological enhancements.

Further survey recommendations:

- General survey of grassland/scrub edge habitat and woodland wetland feature.

Ottershaw Chase species list (82 spp) 1st October 2013.

Order	Family	Taxon	Common Name	Status	Broad Habitat	Comment	Field Notes
Arachnida: Araneae	Amaurobiidae	*Amaurobius fenestralis*	a spider		Wood Decay		Under Bark
Arachnida: Araneae	Araneidae	*Araneus diadematus*	a spider		Eurytopic		
Arachnida: Araneae	Dysderidae	*Harpactea hombergi*	a spider	Local	Arboreal		Under Bark
Arachnida: Araneae	Linyphiidae	*Drapetisca socialis*	a spider		Wood Decay		Under Bark
Arachnida: Araneae	Linyphiidae	*Helophora insignis*	a spider	[*Rare in Surrey*]	Shaded habitat		
Arachnida: Araneae	Linyphiidae	*Lepthyphantes minutus*	a spider		Arboreal		Tree trunks
Arachnida: Araneae	Linyphiidae	*Lepthyphantes tenuis*	a spider		Eurytopic		
Arachnida: Araneae	Linyphiidae	*Linyphia triangularis*	a spider		Eurytopic		
Arachnida: Araneae	Oonopidae	*Oonops pulcher*	a spider		Shaded habitat		Under Bark
Arachnida: Araneae	Tetragnathidae	*Metellina segmentata*	a spider		Eurytopic		
Arachnida: Araneae	Theridiidae	*Paidiscura pallens*	a spider		Arboreal		esp. Oak
Arachnida: Araneae	Theridiidae	*Theridion tinctum*	a spider	Local	Arboreal		
Arachnida: Araneae	Thomisidae	*Diaea dorsata*	a spider	Local	Arboreal		
Arachnida: Opiliones	Phalangiidae	*Mitopus morio*	a harvestman		Eurytopic		
Arachnida: Pseudoscorpiones	Chernetidae	*Chernes cimicoides*	a pseudoscorpion	Local	Wood Decay		Under Bark
Chilopoda: Lithobiomorpha	Lithobiidae	*Lithobius variegatus*	a centipede		Shaded habitat		Under Bark, logs etc

Order	Family	Taxon	Common Name	Status	Broad Habitat	Comment	Field Notes
Coleoptera	**Anthribidae**	***Platyrhinus resinosus***	**Cramp-ball Fungus Weevil**	**Nb**	**Wood Decay**	**Bark/Sapwood Decay**	Under Bark - Ash
Coleoptera	Carabidae	*Abax parallelepipedus*	a ground beetle		Shaded habitat		Under logs, esp. woodland
Coleoptera	Cerylonidae	*Cerylon ferrugineum*	a beetle	Local	Wood Decay	Bark/Sapwood Decay	Under Bark
Coleoptera	Coccinellidae	*Coccinella septempunctata*	7-spot Ladybird		Eurytopic		
Coleoptera	Colydiidae	*Pycnomerus fuliginosus*	a beetle	Naturalised	Wood Decay	Bark/Sapwood Decay	Under Bark
Coleoptera	Cryptophagidae	*Cryptophagus dentatus*	a beetle		Wood Decay		Under Bark
Coleoptera	Curculionidae	*Euophryum confine*	a beetle	Naturalised	Wood Decay		Under Bark
Coleoptera	Curculionidae	*Strophosoma melanogrammum*	Nut Leaf Weevil		Arboreal		
Coleoptera	**Dermestidae**	***Ctesias serra***	**Cobweb Beetle**	**Nb**	**Wood Decay**	**Heartwood Decay**	Under Bark - larvae in spider webs
Coleoptera	Histeridae	*Paromalus flavicornis*	a beetle	Local	Wood Decay	Bark/Sapwood Decay	Under Bark
Coleoptera	Lucanidae	*Dorcus parallelipipedus*	Lesser Stag Beetle	Local	Wood Decay	Heartwood Decay	Under Bark - remains in spider web
Coleoptera	Mycetophagidae	*Litargus connexus*	a beetle	Local	Wood Decay	Fungal fruitbodies	Under Bark
Coleoptera	Mycetophagidae	*Mycetophagus quadripustulatus*	a beetle	Local	Wood Decay	Fungal fruitbodies	On Ganoderma brackets on Beech
Coleoptera	**Phloiophilidae**	***Phloiophilus edwardsii***	**a beetle**	**Nb**	**Wood Decay**	**Bark/Sapwood Decay**	**Moribund Oak branches**

Order	Family	Taxon	Common Name	Status	Broad Habitat	Comment	Field Notes
Coleoptera	**Pyrochroidae**	***Pyrochroa coccinea***	**Black-headed Cardinal Beetle**	**Nb**	**Wood Decay**	**Bark/Sapwood Decay**	**Larvae under bark**
Coleoptera	Pyrochroidae	*Pyrochroa serraticornis*	Common Cardinal Beetle		Wood Decay	Bark/Sapwood Decay	Larvae under bark
Coleoptera	Salpingidae	*Salpingus ruficollis*	a beetle		Wood Decay		Under Bark
Coleoptera	Scarabaeidae	*Melolontha melolontha*	Common Cockchafer		Grassland/Scrub		Remains in spiders web
Coleoptera	Silphidae	*Silpha atrata*	a beetle				Under logs
Coleoptera	**Silvanidae**	***Uleiota planata***	**a beetle**	**Na**	**Wood Decay**	**Bark/Sapwood Decay**	**Under Bark**
Coleoptera	Staphylinidae	*Gabrius splendidulus*	a rove beetle		Wood Decay		Under Bark
Coleoptera	Staphylinidae	*Philonthus succicola*	a rove beetle	Local	Grassland/Scrub		Rotting fungi
Coleoptera	Staphylinidae	*Quedius lateralis*	a rove beetle		Shaded habitat		Rotting fungi
Coleoptera	Staphylinidae	*Quedius mesomelinus*	a rove beetle		Wood Decay		Rotting fungi
Coleoptera	Staphylinidae	*Siagonium quadricorne*	a rove beetle	Local	Wood Decay	Bark/Sapwood Decay	Under Bark
Coleoptera	**Tenebrionidae**	***Diaperis boleti***	**a beetle**	**RDB2**	**Wood Decay**	**Fungal fruitbodies**	**In fungi - Piptoporus on Birch (>20) & Laetiporus on Oak (>10)**
Coleoptera	**Tenebrionidae**	***Eledona agricola***	**a beetle**	**Nb**	**Wood Decay**	**Fungal fruitbodies**	**In fungi - L.sulphureus**
Coleoptera	Tenebrionidae	*Nalassus laevioctostriatus*	a beetle		Arboreal		Under Bark
Dermaptera	Forficulidae	*Forficula auricularia*	Common Earwig		Eurytopic		
Diplopoda: Glomerida	Glomeridae	*Glomeris marginata*	Pill Millipede		Shaded habitat		Under logs

Order	Family	Taxon	Common Name	Status	Broad Habitat	Comment	Field Notes
Diplopoda: Julida	Julidae	*Tachypodoiulus niger*	White-legged Snake-millipede		Eurytopic		
Diptera	Agromyzidae	*Phytomyza ilicis*	a leaf-mining fly		Arboreal		Holly leaf mines
Diptera	Cecidomyiidae	*Hartigiola annulipes*	a gall-midge fly		Arboreal		Beech leaf galls
Gastropoda: Stylommatophora	Discidae	*Discus rotundatus*	Rounded Snail				Under Bark
Gastropoda: Stylommatophora	Helicidae	*Cepaea nemoralis*	Brown-lipped Snail		Eurytopic		
Gastropoda: Stylommatophora	Zonitidae	*Oxychilus alliarius*	Garlic Snail				Under Bark
Hemiptera: Heteroptera	Acanthosomatidae	*Elasmostethus interstinctus*	Birch Shieldbug		Arboreal		Birch
Hemiptera: Heteroptera	Acanthosomatidae	*Elasmucha grisea*	Parent Shieldbug		Arboreal		Birch
Hemiptera: Heteroptera	Anthocoridae	*Anthocoris confusus*	a predatory bug		Arboreal		
Hemiptera: Heteroptera	Berytidae	*Metatropis rufescens*	Enchanter's Nightshade Stilt Bug		Shaded habitat		Associated with Enchanters Nightshade but several adults beaten from Ash branches
Hemiptera: Heteroptera	Lygaeidae	*Kleidocerys resedae*	a ground bug		Arboreal		Birch
Hemiptera: Heteroptera	Miridae	*Deraeocoris lutescens*	a predatory bug		Arboreal		esp. Oak
Homoptera: Sternorrhyncha	Psylloidea	*Psyllopsis fraxinicola*	a psyllid bug		Arboreal		Ash
Hymenoptera: Aculeata	Formicidae	*Formica fusca*	an ant		Eurytopic		

Order	Family	Taxon	Common Name	Status	Broad Habitat	Comment	Field Notes
Hymenoptera: Aculeata	**Formicidae**	***Lasius brunneus***	**Brown Tree Ant**	**Na**	**Wood Decay**	**Heartwood Decay**	**Under Bark & on trunks**
Hymenoptera: Aculeata	Formicidae	*Myrmica ruginodis*	an ant		Shaded habitat		
Hymenoptera: Parasitica	Cynipidae	*Andricus lignicola f. agamic*	Cola-nut gall causer		Arboreal		Oak galls
Hymenoptera: Parasitica	Cynipidae	*Andricus quercuscalicis f. agamic*	Knopper gall causer		Arboreal		Oak galls
Hymenoptera: Parasitica	Cynipidae	*Biorhiza pallida f. sexual*	Oak-apple gall causer		Arboreal		Oak galls
Hymenoptera: Parasitica	Cynipidae	*Neuroterus albipes f. agamic*	Smooth-spangle gall causer		Arboreal		Oak galls
Hymenoptera: Parasitica	Cynipidae	*Neuroterus anthracinus f. agamic*	Oyster-gall gall causer		Arboreal		Oak galls
Hymenoptera: Parasitica	Cynipidae	*Neuroterus quercusbaccarum f. agamic*	Common spangle gall causer		Arboreal		Oak galls
Lepidoptera	Gracillariidae	*Cameraria ohridella*	Horse Chestnut Leaf Miner Moth	Naturalised	Arboreal		Horse Chestnut leaf mines
Lepidoptera	Gracillariidae	*Phyllonorycter coryli*	Nut Leaf Blister Moth		Arboreal		Hazel leaf mines
Lepidoptera	Gracillariidae	*Phyllonorycter esperella*	a micro moth	Local	Arboreal		Hornbeam leaf mines
Lepidoptera	Gracillariidae	*Phyllonorycter maestingella*	a micro moth		Arboreal		Beech leaf mines
Lepidoptera	Gracillariidae	*Phyllonorycter messaniella*	a micro moth		Arboreal		Beech leaf mines
Lepidoptera	Nepticulidae	*Stigmella aurella*	a micro moth		Grassland/Scrub		Bramble leaf mines

Order	Family	Taxon	Common Name	Status	Broad Habitat	Comment	Field Notes
Lepidoptera	Nepticulidae	*Stigmella hemargyrella*	a micro moth		Arboreal		Beech leaf mines
Lepidoptera	Nepticulidae	*Stigmella microtheriella*	a micro moth		Arboreal		Hornbeam & Hazel leaf mines
Lepidoptera	Psychidae	*Taleporia tubulosa*	a micro moth		Arboreal		Larval cases on tree trunks
Malacostraca: Isopoda	Oniscidae	*Oniscus asellus*	Common shiny woodlouse		Eurytopic		Under Bark etc
Malacostraca: Isopoda	Porcellionidae	*Porcellio scaber*	Common rough woodlouse		Eurytopic		Under Bark etc
Orthoptera	Tettigoniidae	*Pholidoptera griseoaptera*	Dark Bush Cricket		Grassland/Scrub		
Psocoptera	Stenopsocidae	*Stenopsocus stigmaticus*	a bark louse	Local	Arboreal		
Trichoptera	Limnephilidae	*Limnephilus lunatus*	a caddis fly		Wetland		Adult at rest on foliage

Hare Hill species list (26spp) 1st October 2013.

Order	Family	Taxon	Common Name	Status	Broad Habitat	Comment	Field Notes
Arachnida: Araneae	Araneidae	*Araneus diadematus*	a spider		Eurytopic		
Arachnida: Araneae	**Philodromidae**	***Philodromus albidus***	**a spider**	**Nb**	**Arboreal**		
Arachnida: Araneae	Tetragnathidae	*Metellina segmentata*	a spider		Eurytopic		
Arachnida: Araneae	Theridiidae	*Theridion tinctum*	a spider	Local	Arboreal		
Arachnida: Opiliones	Leiobunidae	*Dicranopalpus ramosus*	a harvestman		Arboreal		
Arachnida: Opiliones	Leiobunidae	*Leiobunum rotundum*	a harvestman		Arboreal		
Arachnida: Opiliones	Phalangiidae	*Paroligolophus agrestis*	a harvestman		Eurytopic		
Coleoptera	**Phloiophilidae**	***Phloiophilus edwardsii***	**a beetle**	**Nb**	**Wood Decay**	**Bark/Sapwood decay**	**Moribund Oak branches**
Coleoptera	Tenebrionidae	*Nalassus laevioctostriatus*	a beetle		Arboreal		
Dermaptera	Forficulidae	*Forficula auricularia*	Common Earwig		Eurytopic		
Diplopoda: Julida	Julidae	*Tachypodoiulus niger*	White-legged Snake-millipede		Eurytopic		
Diptera	Agromyzidae	*Phytomyza ilicis*	a leaf-miming fly		Arboreal		Holly

Order	Family	Taxon	Common Name	Status	Broad Habitat	Comment	Field Notes
Diptera	Anthomyiidae	*Chirosia betuleti*	a gall-midge fly		Shaded habitats		Ferns
Hemiptera: Heteroptera	Acanthosomatidae	*Elasmostethus interstinctus*	Birch Shieldbug		Arboreal		Birch
Hemiptera: Heteroptera	Nabidae	*Himacerus apterus*	a predatory bug		Arboreal		
Hymenoptera: Parasitica	Cynipidae	*Andricus quercuscalicis f. agamic*	Knopper gall causer		Arboreal		Oak
Hymenoptera: Parasitica	Cynipidae	*Neuroterus albipes f. agamic*	Smooth-spangle gall causer		Arboreal		Oak
Hymenoptera: Parasitica	Cynipidae	*Neuroterus anthracinus f. agamic*	Oyster-gall gall causer		Arboreal		Oak
Hymenoptera: Parasitica	Cynipidae	*Neuroterus numismalis f. agamic*	Silk-button gall causer		Arboreal		Oak
Hymenoptera: Parasitica	Cynipidae	*Neuroterus quercusbaccarum f. agamic*	Common spangle gall causer		Arboreal		Oak
Lepidoptera	Gracillariidae	*Phyllonorycter esperella*	a micro moth	Local	Arboreal		Hornbeam
Lepidoptera	Gracillariidae	*Phyllonorycter maestingella*	a micro moth		Arboreal		Beech
Lepidoptera	Gracillariidae	*Phyllonorycter messaniella*	a micro moth		Arboreal		Beech
Lepidoptera	Nepticulidae	*Stigmella aurella*	a micro moth		Grassland/Scrub		Bramble
Lepidoptera	Nepticulidae	*Stigmella microtheriella*	a micro moth		Arboreal		Hornbeam
Malacostraca: Isopoda	Porcellionidae	*Porcellio scaber*	Rough Woodlouse		Eurytopic		

Appendix 5 – Background Ecological Data Search (Surrey Biological Records Centre, 2009).

Background Ecological Data Search; Area Around Ottershaw Chase, Ottershaw, Surrey

Runnymede Borough Suitable Alternative Natural Greenspace Site Assessment

Produced by
Alistair Kirk
Biological Records Centre Manager

Surrey Biological Records Centre
September 2009

for
Surrey Wildlife Trust Consultancy

Surrey Wildlife Trust, School Lane, Pirbright Woking, Surrey, GU24 0JN

Contents

1.0 Introduction

The following report has been compiled by the Surrey Biological Records Centre on behalf of Surrey Wildlife Trust Consultancy as part of a desktop ecological assessment of candidate Suitable Alternative Natural Greenspace (SANG) land near Ottershaw, Surrey. Based on our standard data search service it includes information on a) protected species, b) rare/notable species and c) Priority Species/Species of Conservation Concern as identified in the UK Biodiversity Action Plan recorded from sites falling within 500 metres of land between Chobham Road and Guildford Road (Ottershaw Chase, approximate site centre Ordnance Survey grid reference TQ018634). The report is completed by a map of the search area (Annex A).

2.0 Protected Species

The Records Centre currently holds information on a number of species protected either by national [1,2] or international [3,4,5] legislation which have been recorded from sites falling within the 500 metre search area. This list should not be regarded as definitive and it is likely that further detailed survey work would be necessary prior to any development to ascertain the full extent of any activity. Furthermore, it should also be noted that although the Records Centre currently has data sharing agreements with many of Surrey's specialist recording societies we may only hold limited information for a number of important taxonomic groups. Similarly, although data transfers take place on a regular basis, we may not always hold the most upto date records for a particular area.

The following table lists species in taxonomic order by each kilometre square of the study area. Information on the national status of each species is taken from the RECORDER species database and *Checklist of Legally Protected British Species* (Betts, 2008) [6]. In each case the relevant Schedule or Annex which describes the nature and level of protection is also shown. Species information held by the Records Centre has been compiled from a variety of different sources and the precise survey methodology followed in each case may not always be available. However, the following table will attempt to identify the source of each record according to one of four different categories, namely; a) SNCI site survey, b) other SWT survey, c) Surrey Wildlife Atlas Project record, d) records supplied to the BRC by Surrey's specialist recording societies, a member of the County's biological recording community or compiled as part of a wider national survey scheme.

Please note, Appendix III of the Bern Convention includes all species of birds not listed in Appendix II with the exception of 11 abundant /perceived pest species. Species included in this list have are omitted from the following table but readers should nonetheless take note of its existence. Similarly, where a site straddles the edge of the search area all relevant records recorded from that site have been included in this report. Species records for a site are commonly assigned a locational reference based on the Ordnance Survey grid reference for the centre of that site. On occasions although part of a site may legitimately fall inside a search area, its geographical centre may lie outside. As a result the following tables may include species apparently recorded from one kilometre squares falling outside your original search area. (N.B Throughout this report, where this occurs, the relevant 1 kilometre squares are enclosed by brackets).

Finally species recorded from sites which make up the candidate SANG are shown in bold, species recorded from sites falling within the wider search area are shown in normal type.

1Km Grid Square	Common Name	Scientific Name	Wildlife & Countryside Act Schedule or Other UK Legislation	International Status	Date Last Recorded	Source of Record
TQ0163	Stag Beetle	*Lucanus cervus*	5 (Sale only)	Bern III. EC IIa.	1998	Other Record
	Great Crested Newt	*Triturus cristatus*	5	EC Annex IIa, IVa; Bern App II	1999	Other Record
	Palmate Newt	*Triturus helveticus*	5 (Sale only)	Bern App III	1999	Other Record
	Grass Snake	*Natrix natrix*	5 (Killing, injuring, sale only)	Bern App III	1994	Other Record
	Sparrowhawk	*Accipiter nisus*		Bern App II	1994	Other Record
	Kestrel	*Falco tinnunculus*		Bern App II	1994	Other Record
	Green Woodpecker	*Picus viridis*		Bern App II	1994	Other Record
	Great Spotted Woodpecker	*Dendrocopos major*		Bern App II	1994	Other Record
	Wren	*Troglodytes troglodytes*		Bern App II	1994	Other Record
	Dunnock	*Prunella modularis*		Bern App II	1994	Other Record
	Robin	*Erithacus rubecula*		Bern App II	1994	Other Record
	Blackcap	*Sylvia atricapilla*		Bern App II	1994	Other Record
	Chiffchaff	*Phylloscopus collybita*		Bern App II	1994	Other Record
	Willow Warbler	*Phylloscopus trochilus*		Bern App II	1994	Other Record
	Goldcrest	*Regulus regulus*		Bern App II	1994	Other Record
	Long-tailed Tit	*Aegithalos caudatus*		Bern App II	1994	Other Record
	Coal Tit	*Parus ater*		Bern App II	1994	Other Record
	Blue Tit	*Parus caeruleus*		Bern App II	1994	Other Record
	Great Tit	*Parus major*		Bern App II	1994	Other Record
	Nuthatch	*Sitta europaea*		Bern App II	1994	Other Record
	Greenfinch	*Carduelis chloris*		Bern App II	1994	Other Record
	Siskin	*Carduelis spinus*		Bern App II	1994	Other Record
	Hedgehog	*Erinaceus europaeus*		Bern App III	1996	Other Record
TQ0164	Little Grebe	*Tachybaptus ruficollis*		Bern App II	2003	SWT Survey
	Sparrowhawk	*Accipiter nisus*		Bern App II	2003	SWT Survey
	Kestrel	*Falco tinnunculus*		Bern App II	2003	SWT Survey
	Little Ringed Plover	*Charadrius dubius*	1 Part 1	Bern App II	2003	SWT Survey
	Green Woodpecker	*Picus viridis*		Bern App II	2003	SWT Survey
	Great Spotted Woodpecker	*Dendrocopos major*		Bern App II	2003	SWT Survey
	House Martin	*Delichon urbica*		Bern App II	2003	SWT Survey

	Grey Wagtail	*Motacilla cinerea*		Bern App II	2003	SWT Survey
	Pied Wagtail	*Motacilla alba yarrellii*		Bern App II	2003	SWT Survey
	Wren	*Troglodytes troglodytes*		Bern App II	2003	SWT Survey
	Dunnock	*Prunella modularis*		Bern App II	2003	SWT Survey
	Robin	*Erithacus rubecula*		Bern App II	2003	SWT Survey
	Whitethroat	*Sylvia communis*		Bern App II	2003	SWT Survey
	Garden Warbler	*Sylvia borin*		Bern App II	2003	SWT Survey
	Blackcap	*Sylvia atricapilla*		Bern App II	2003	SWT Survey
	Chiffchaff	*Phylloscopus collybita*		Bern App II	2003	SWT Survey
	Willow Warbler	*Phylloscopus trochilus*		Bern App II	2003	SWT Survey
	Goldcrest	*Regulus regulus*		Bern App II	2003	SWT Survey
	Long-tailed Tit	*Aegithalos caudatus*		Bern App II	2003	SWT Survey
	Blue Tit	*Parus caeruleus*		Bern App II	2003	SWT Survey
	Great Tit	*Parus major*		Bern App II	2003	SWT Survey
	Nuthatch	*Sitta europaea*		Bern App II	2003	SWT Survey
	Short-toed Treecreeper	*Certhia brachydactyla*	1 Part 1	Bern App II	2003	SWT Survey
	Greenfinch	*Carduelis chloris*		Bern App II	2003	SWT Survey
	Goldfinch	*Carduelis carduelis*		Bern App II	2003	SWT Survey
	Roe Deer	*Capreolus capreolus*		Bern App III	2003	SWT Survey
TQ0262	Common Shrew	*Sorex araneus*		Bern App III	1999	SWT Survey
TQ0263	Snowdrop	*Galanthus nivalis*		EC Annex Vb	bef. 1995	Other Record
	Butcher's-broom	*Ruscus aculeatus*		EC Annex Vb	1995	Other Record
	Stag Beetle	*Lucanus cervus*	5 (Sale only)	Bern III. EC IIa.	1998	Other Record
	Sparrowhawk	*Accipiter nisus*		Bern App II	1993	Other Record
	Kestrel	*Falco tinnunculus*		Bern App II	1993	Other Record
	Green Woodpecker	*Picus viridis*		Bern App II	1993	Other Record
	Great Spotted Woodpecker	*Dendrocopos major*		Bern App II	1993	Other Record
	Lesser Spotted Woodpecker	*Dendrocopos minor*		Bern App II	1993	Other Record
	Wren	*Troglodytes troglodytes*		Bern App II	1993	Other Record
	Dunnock	*Prunella modularis*		Bern App II	1993	Other Record
	Robin	*Erithacus rubecula*		Bern App II	1993	Other Record
	Fieldfare	*Turdus pilaris*	1 Part 1		1993	Other Record
	Redwing	*Turdus iliacus*	1 Part 1		1993	Other Record

	Garden Warbler	*Sylvia borin*		Bern App II	1993	Other Record
	Blackcap	*Sylvia atricapilla*		Bern App II	1993	Other Record
	Wood Warbler	*Phylloscopus sibilatrix*		Bern App II	1993	Other Record
	Chiffchaff	*Phylloscopus collybita*		Bern App II	1993	Other Record
	Willow Warbler	*Phylloscopus trochilus*		Bern App II	1993	Other Record
	Goldcrest	*Regulus regulus*		Bern App II	1993	Other Record
	Spotted Flycatcher	*Muscicapa striata*		Bern App II	1993	Other Record
	Long-tailed Tit	*Aegithalos caudatus*		Bern App II	1993	Other Record
	Marsh Tit	*Parus palustris*		Bern App II	1993	Other Record
	Willow Tit	*Parus montanus*		Bern App II	1993	Other Record
	Coal Tit	*Parus ater*		Bern App II	1993	Other Record
	Blue Tit	*Parus caeruleus*		Bern App II	1993	Other Record
	Great Tit	*Parus major*		Bern App II	1993	Other Record
	Nuthatch	*Sitta europaea*		Bern App II	1993	Other Record
	Treecreeper	*Certhia familiaris*		Bern App II	1993	Other Record
	Brambling	*Fringilla montifringilla*	1 Part 1		1993	Other Record
	Greenfinch	*Carduelis chloris*		Bern App II	1993	Other Record
	Goldfinch	*Carduelis carduelis*		Bern App II	1993	Other Record
	Siskin	*Carduelis spinus*		Bern App II	1993	Other Record
	Redpoll	*Carduelis flammea*		Bern App II	1993	Other Record
	Hedgehog	*Erinaceus europaeus*		Bern App III	1996	Other Record

Any work or activity likely to affect any species covered by a relevant schedule of the Wildlife and Countryside Act, must first be referred to the local office of Natural England.

3.0 Notable / Rare Species

The Records Centre currently holds information on the following species recorded from sites falling within the 500 metre search area which are thought to be rare or notable at either a national or a regional level. In each case, the known distribution of all populations (both native and non-native) as shown in the relevant County atlas is also shown where available.

Once again, the following table lists species by kilometre square and then alphabetically by taxonomic order and scientific name. Species recorded from sites which make up the candidate SANG are shown in bold, species recorded from sites falling within the wider search area are shown in normal type. Information on the national status of each species is taken from the RECORDER species database.

1Km Grid Square	Common Name	Scientific Name	National Species Status	Surrey Status	Date Last Recorded	Source of Record
TQ0163	Downy Emerald	*Cordulia aenea*	Notable/Nb [7]	94 tetrads, Confirmed and Widespread [8]	1994	Atlas
	Stag Beetle	*Lucanus cervus*	Notable/Nb	Local [9]	1998	Other Record
	Brown Ant	*Lasius brunneus*	Notable/Na [10]	Local in woodland and parkland [11]	1994	Other Record
TQ0164	Box	*Buxus sempervirens*	Nationally Lower Risk – Near Threatened [12]	Rare, 20 tetrads "native on steep slopes on chalk… off the chalk it is always planted" [13], 1987; 14 ten kilometre squares [14]	2003	SWT Survey
	White-legged Damselfly	*Platycnemis pennipes*	Notable/Nb	76 tetrads, Confirmed; strong widespread colonies	2003	SWT Survey
	Small Red Damselfly	*Ceriagrion tenellum*	Notable/Nb	22 tetrads, Confirmed, Mainly on western heaths	2003	SWT Survey
	Hairy Dragonfly	*Brachytron pratense*	Notable/Nb	29 tetrads, Confirmed, Local	2003	SWT Survey
	Downy Emerald	*Cordulia aenea*	Notable/Nb	94 tetrads, Confirmed and Widespread	2003	SWT Survey
	Ruddy Darter	*Sympetrum sanguineum*	Notable/Nb	58 tetrads, Confirmed; Increasing	2003	SWT Survey
	Silver-studded Blue	*Plebejus argus*	Notable/Nb	Restricted but Common [15], 2000; 37 tetrads, Regional Conservation Status; High [16]	2003	SWT Survey
	Brown Ant	*Lasius brunneus*	Notable/Na	Local in woodland and parkland	2003	SWT Survey
TQ0263	a bolete	*Boletinus cavipes*	Endangered [17]		1996	Other Record

	Large-leaved Lime	*Tilia platyphyllos*	Nationally Scarce [18]	Alien, Rare, probably always planted, 1987; Rare, 13 ten kilometre squares, "associated with steep slopes on calcareous rocks and this, combined with historical records for the area… have led to the suggestion that it may be native at the base of the chalk river cliff at Box Hill. There are several other records from the scarp slope of the Downs and it is tempting to suggest that these too may represent native sites. It is widely planted elsewhere and there are now many examples of natural regeneration."	1996	Other Record
	Box	*Buxus sempervirens*	Nationally Lower Risk – Near Threatened	Rare, 20 tetrads "native on steep slopes on chalk… off the chalk it is always planted", 1987; 14 ten kilometre squares	1995	Other Record
	Summer Snowflake	*Leucojum aestivum*	Nationally Scarce	Established Alien, 8 ten kilometre squares	1994	Other Record
	Stag Beetle	*Lucanus cervus*	Notable/Nb	Local	1998	Other Record

3.1 Local Species

The Records Centre also holds information on a number of species classed as Nationally Local [19]. Once again, the known distribution as shown in the relevant County atlas is also shown.

1Km Grid Square	Common Name	Scientific Name	National Species Status	Surrey Status	Date Last Recorded	Source of Record
TQ0163	Black Darter	*Sympetrum danae*	Local	Confirmed, Local mainly in the west	1994	Atlas
	a seed beetle	*Bruchidius villosus*	Local	Local	2003	SWT Survey
	Iris Flea Beetle	*Aphthona nonstriata*	Local	Widespread	2003	SWT Survey
	a seed weevil	*Exapion fuscirostre*	Local	Local	2003	SWT Survey
	a seed weevil	*Ischnopterapion modestum*	Local	Local	2003	SWT Survey
	a fungus gnat	*Mycomya fimbriata*	Local		2003	SWT Survey
TQ0164	Banded Demoiselle	*Calopteryx splendens*	Local	169 tetrads, Confirmed, Widespread	2004	SWT Survey
	Migrant Hawker	*Aeshna mixta*	Local	152 tetrads, Confirmed, Widespread	2003	SWT Survey
	Black-tailed Skimmer	*Orthetrum cancellatum*	Local	117 tetrads, Confirmed, Widespread	2003	SWT Survey
	Slender Ground Hopper	*Tetrix subulata*	Local	Widespread but Local [20]	2003	SWT Survey
	Bishop's Mitre	*Aelia acuminata*	Local	125 tetrads, Common in north and west [21]	2003	SWT Survey
	a plantbug or grassbug	*Miridius quadrivirgatus*	Local		2003	SWT Survey
	a leafhopper	*Idiocerus rutilans*	Local		2003	SWT Survey
	Orange Ladybird	*Tytthaspis sedecimpunctata*	Local	333 tetrads, Almost ubiquitous [22]	2003	SWT Survey
	a longhorn beetle	*Leiopus nebulosus*	Local	Local	2003	SWT Survey
	a weevil	*Cionus alauda*	Local	Widespread	2003	SWT Survey
	a weevil	*Cleopus pulchellus*	Local	Local	2003	SWT Survey
	a weevil	*Dorytomus melanophthalmus*	Local	Rare?	2003	SWT Survey
	a weevil	*Dorytomus rufatus*	Local	Local	2003	SWT Survey
	a weevil	*Rhinoncus bruchoides*	Local	Local	2003	SWT Survey
	Essex Skipper	*Thymelicus lineola*	Local	Widespread and Common, 2000; 321 tetrads	2003	SWT Survey
	Holly Blue	*Celastrina argiolus britanna*	Local	Widespread and Fairly Common, 2000; 431 tetrads	2003	SWT Survey
	Grayling	*Hipparchia semele*	Local	Local but Fairly Common, 2000; 48 tetrads, Regional Conservation Priority; Medium	2003	SWT Survey
	a dolichopodid fly	*Scellus notatus*	Local		2003	SWT Survey
	a sawfly	*Pristiphora fulvipes*	Local		2003	SWT Survey
	a solitary wasp	*Gorytes tumidus*	Local		2003	SWT Survey

TQ0262	Red-eyed Damselfly	*Erythromma najas*	Local	128 tetrads, Confirmed, with some very large colonies	-1980	Atlas
	Banded Demoiselle	*Calopteryx splendens*	Local	169 tetrads, Confirmed "widespread and common"	-1984	Atlas
	Migrant Hawker	*Aeshna mixta*	Local	152 tetrads, Confirmed, Widespread	-1980	Atlas
	Black-tailed Skimmer	*Orthetrum cancellatum*	Local	117 tetrads, Confirmed, Widespread	-1980	Atlas
TQ0263	Green Hairstreak	*Callophrys rubi*	Local	Restricted but Fairly Common, 2000; 74 tetrads	1993	Other Record
	Holly Blue	*Celastrina argiolus britanna*	Local	Widespread and Fairly Common, 2000; 431 tetrads	1993	Other Record
	Purple Hairstreak	*Quercusia quercus*	Local	Widespread and Common, 2000; 319 tetrads	1993	Other Record
	White Admiral	*Ladoga camilla*	Local	Fairly Widespread and Fairly Common, 2000; 102 tetrads	1993	Other Record
	Silver-washed Fritillary	*Argynnis paphia*	Local	Restricted but Fairly Common, 2000; 133 tetrads, Regional Conservation Priority; Medium	1993	Other Record

4.0 UK Biodiversity Action Plan; Priority Species and Species of Conservation Concern

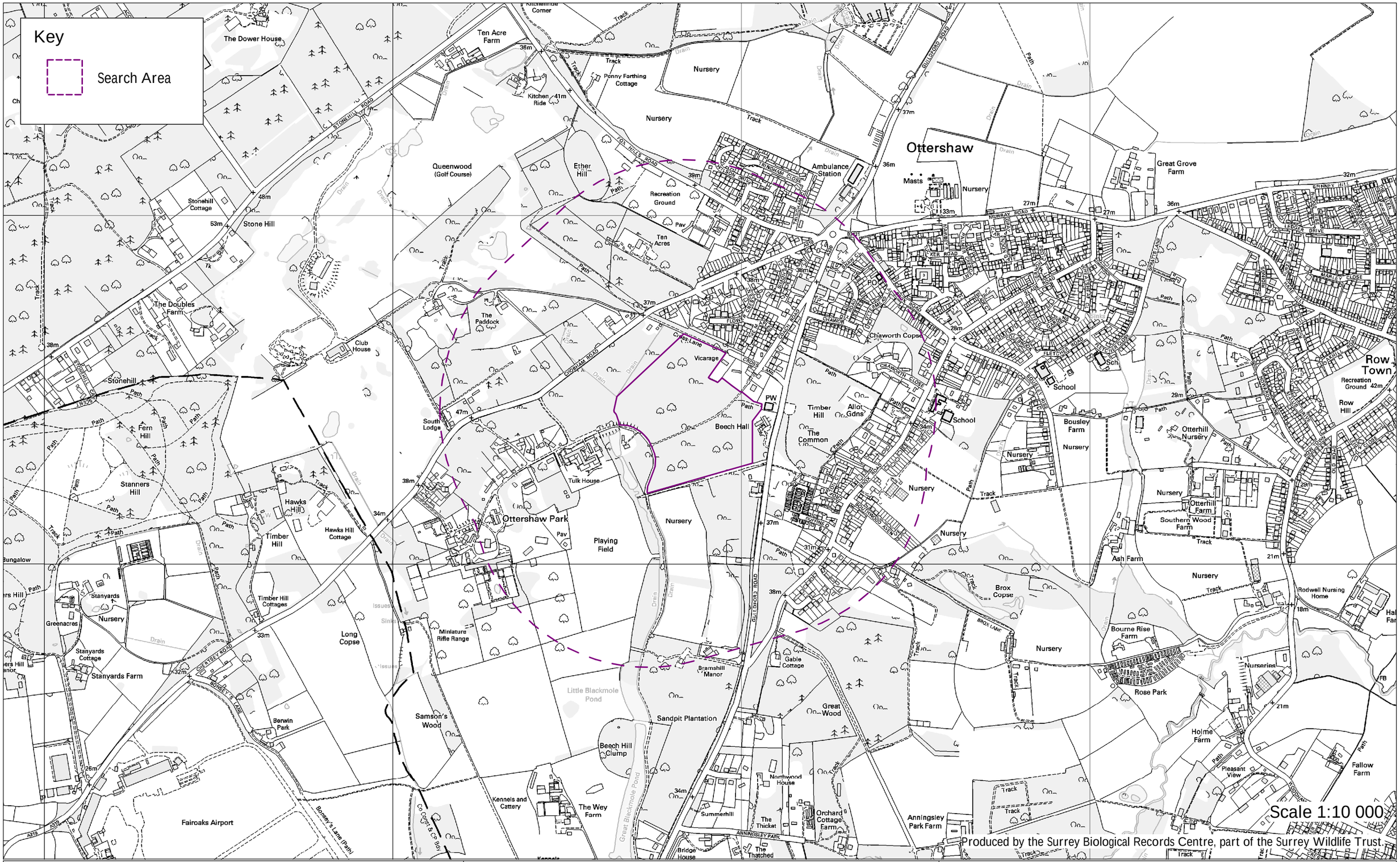
The following species which appear on either the Priority or the Conservation Concern lists of the UK Steering Group Report on Biodiversity [23] have also been recorded from sites falling within the 500 metre search area.

1Km Grid Square	Common Name	Scientific Name	UK Biodiversity Action Plan Status	Date Last Recorded	Source of Record
TQ0163	Stag Beetle	*Lucanus cervus*	Priority	1998	Other Record
	Great Crested Newt	*Triturus cristatus*	Priority	1999	Other Record
	Palmate Newt	*Triturus helveticus*	Conservation Concern	1999	Other Record
	Grass Snake	*Natrix natrix*	Conservation Concern	1994	Other Record
	Sparrowhawk	*Accipiter nisus*	Conservation Concern	1994	Other Record
	Kestrel	*Falco tinnunculus*	Conservation Concern	1994	Other Record
	Woodcock	*Scolopax rusticola*	Conservation Concern	1994	Other Record
	Tawny Owl	*Strix aluco*	Conservation Concern	1994	Other Record
	Green Woodpecker	*Picus viridis*	Conservation Concern	1994	Other Record
	Great Spotted Woodpecker	*Dendrocopos major*	Conservation Concern	1994	Other Record
	Wren	*Troglodytes troglodytes*	Conservation Concern	1994	Other Record
	Dunnock	*Prunella modularis*	Conservation Concern	1994	Other Record
	Blackcap	*Sylvia atricapilla*	Conservation Concern	1994	Other Record
	Chiffchaff	*Phylloscopus collybita*	Conservation Concern	1994	Other Record
	Willow Warbler	*Phylloscopus trochilus*	Conservation Concern	1994	Other Record
	Goldcrest	*Regulus regulus*	Conservation Concern	1994	Other Record
	Coal Tit	*Parus ater*	Conservation Concern	1994	Other Record
	Blue Tit	*Parus caeruleus*	Conservation Concern	1994	Other Record
	Great Tit	*Parus major*	Conservation Concern	1994	Other Record
	Nuthatch	*Sitta europaea*	Conservation Concern	1994	Other Record
	Greenfinch	*Carduelis chloris*	Conservation Concern	1994	Other Record
	Siskin	*Carduelis spinus*	Conservation Concern	1994	Other Record
	Bullfinch	*Pyrrhula pyrrhula*	Priority	1994	Other Record
TQ0164	Box	*Buxus sempervirens*	Conservation Concern	2003	SWT Survey
	Bluebell	*Hyacinthoides non-scripta*	Conservation Concern	2009	SWT Survey
	Silver-studded Blue	*Plebejus argus*	Priority	2003	SWT Survey

	Mute Swan	*Cygnus olor*	Conservation Concern	2003	SWT Survey
	Mallard	*Anas platyrhynchos*	Conservation Concern	2003	SWT Survey
	Tufted Duck	*Aythya fuligula*	Conservation Concern	2003	SWT Survey
	Sparrowhawk	*Accipiter nisus*	Conservation Concern	2003	SWT Survey
	Kestrel	*Falco tinnunculus*	Conservation Concern	2003	SWT Survey
	Little Ringed Plover	*Charadrius dubius*	Conservation Concern	2003	SWT Survey
	Green Woodpecker	*Picus viridis*	Conservation Concern	2003	SWT Survey
	Great Spotted Woodpecker	*Dendrocopos major*	Conservation Concern	2003	SWT Survey
	House Martin	*Delichon urbica*	Conservation Concern	2003	SWT Survey
	Grey Wagtail	*Motacilla cinerea*	Conservation Concern	2003	SWT Survey
	Pied Wagtail	*Motacilla alba yarrellii*	Conservation Concern	2003	SWT Survey
	Wren	*Troglodytes troglodytes*	Conservation Concern	2003	SWT Survey
	Dunnock	*Prunella modularis*	Conservation Concern	2003	SWT Survey
	Song Thrush	*Turdus philomelos*	Priority	2003	SWT Survey
	Whitethroat	*Sylvia communis*	Conservation Concern	2003	SWT Survey
	Garden Warbler	*Sylvia borin*	Conservation Concern	2003	SWT Survey
	Blackcap	*Sylvia atricapilla*	Conservation Concern	2003	SWT Survey
	Chiffchaff	*Phylloscopus collybita*	Conservation Concern	2003	SWT Survey
	Willow Warbler	*Phylloscopus trochilus*	Conservation Concern	2003	SWT Survey
	Goldcrest	*Regulus regulus*	Conservation Concern	2003	SWT Survey
	Blue Tit	*Parus caeruleus*	Conservation Concern	2003	SWT Survey
	Great Tit	*Parus major*	Conservation Concern	2003	SWT Survey
	Nuthatch	*Sitta europaea*	Conservation Concern	2003	SWT Survey
	Short-toed Treecreeper	*Certhia brachydactyla*	Conservation Concern	2003	SWT Survey
	Greenfinch	*Carduelis chloris*	Conservation Concern	2003	SWT Survey
	Goldfinch	*Carduelis carduelis*	Conservation Concern	2003	SWT Survey
	Bullfinch	*Pyrrhula pyrrhula*	Priority	2003	SWT Survey
TQ0263	Box	*Buxus sempervirens*	Conservation Concern	1995	Other Record
	Bluebell	*Hyacinthoides non-scripta*	Conservation Concern	1995	Other Record
	Stag Beetle	*Lucanus cervus*	Priority	1998	Other Record
	Silver-washed Fritillary	*Argynnis paphia*	Conservation Concern	1993	Other Record
	Sparrowhawk	*Accipiter nisus*	Conservation Concern	1993	Other Record
	Kestrel	*Falco tinnunculus*	Conservation Concern	1993	Other Record

	Woodcock	*Scolopax rusticola*	Conservation Concern	1993	Other Record
	Tawny Owl	*Strix aluco*	Conservation Concern	1993	Other Record
	Green Woodpecker	*Picus viridis*	Conservation Concern	1993	Other Record
	Great Spotted Woodpecker	*Dendrocopos major*	Conservation Concern	1993	Other Record
	Lesser Spotted Woodpecker	*Dendrocopos minor*	Conservation Concern	1993	Other Record
	Wren	*Troglodytes troglodytes*	Conservation Concern	1993	Other Record
	Dunnock	*Prunella modularis*	Conservation Concern	1993	Other Record
	Fieldfare	*Turdus pilaris*	Conservation Concern	1993	Other Record
	Song Thrush	*Turdus philomelos*	Priority	1993	Other Record
	Redwing	*Turdus iliacus*	Conservation Concern	1993	Other Record
	Garden Warbler	*Sylvia borin*	Conservation Concern	1993	Other Record
	Blackcap	*Sylvia atricapilla*	Conservation Concern	1993	Other Record
	Wood Warbler	*Phylloscopus sibilatrix*	Conservation Concern	1993	Other Record
	Chiffchaff	*Phylloscopus collybita*	Conservation Concern	1993	Other Record
	Willow Warbler	*Phylloscopus trochilus*	Conservation Concern	1993	Other Record
	Goldcrest	*Regulus regulus*	Conservation Concern	1993	Other Record
	Spotted Flycatcher	*Muscicapa striata*	Priority	1993	Other Record
	Marsh Tit	*Parus palustris*	Conservation Concern	1993	Other Record
	Willow Tit	*Parus montanus*	Conservation Concern	1993	Other Record
	Coal Tit	*Parus ater*	Conservation Concern	1993	Other Record
	Blue Tit	*Parus caeruleus*	Conservation Concern	1993	Other Record
	Great Tit	*Parus major*	Conservation Concern	1993	Other Record
	Nuthatch	*Sitta europaea*	Conservation Concern	1993	Other Record
	Treecreeper	*Certhia familiaris*	Conservation Concern	1993	Other Record
	Brambling	*Fringilla montifringilla*	Conservation Concern	1993	Other Record
	Greenfinch	*Carduelis chloris*	Conservation Concern	1993	Other Record
	Goldfinch	*Carduelis carduelis*	Conservation Concern	1993	Other Record
	Siskin	*Carduelis spinus*	Conservation Concern	1993	Other Record
	Redpoll	*Carduelis flammea*	Conservation Concern	1993	Other Record
	Bullfinch	*Pyrrhula pyrrhula*	Priority	1993	Other Record

Annex A – Site Map



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Background Ecological Data Search; Area Around Ottershaw Chase, Surrey Nature Reserves and Non-Statutory Designated Sites

SURREY wildlife TRUST

References

[1] Wildlife and Countryside Act, 1981 (as amended).

[2] Protection of Badgers Act, 1992

[3] Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora ("Habitats and Species Directive"). Implemented within the UK by the Conservation (Natural Habitats & c.) Regulations 1994, amended in England by The Conservation (Natural Habitats, & c.) (Amendment) (England) Regulations 2000.

[4] EC Directive 79/409 on the Conservation of Wild Birds (the Birds Directive), As amended by Council Directive 92/43 and implemented within the UK by The Conservation (Natural Habitats &c.) Regulations 1994, amended in England by The Conservation (Natural Habitats, & c.) (Amendment) (England) Regulations 2000.

[5] Convention on the Conservation of European Wildlife and Natural Habitats ("The Bern Convention").

[6] Betts C.J., (2008) *Checklist of Legally Protected British Species; Third Edition*, Christopher Betts Environmental Biology, Worcester.

[7] Nationally Notable/Nb; species estimated to occur within 31-100 10 kilometre squares of the National Grid system. For more information on the criteria used see Eversham, B., (1983); *Defining Rare and Notable Species – a discussion document, Invertebrate Site Register Report No 49*, Nature Conservancy Council and Ball, S.G. (1986); *Terrestrial and Freshwater Habitats with Red Data Book, Notable or Habitat Indicator Status*, *Invertebrate Site Register Internal Report Number 66*, Nature Conservancy Council.

[8] Follett, P., (1996); *Dragonflies of Surrey*, Surrey Wildlife Trust, Pirbright.

[9] Denton, Dr J., (2005); *Beetles of Surrey – a checklist*, Surrey Wildlife Trust, Pirbright.

[10] Nationally Notable/Na; species estimated to occur within 16-30 10-kilometre squares of the National Grid system. For more information on the criteria used see Eversham, B., (1983); *Defining Rare and Notable Species – a discussion document, Invertebrate Site Register Report No 49*, Nature Conservancy Council and Ball, S.G. (1986); *Terrestrial and Freshwater Habitats with Red Data Book, Notable or Habitat Indicator Status*, *Invertebrate Site Register Internal Report Number 66*, Nature Conservancy Council.

[11] Pontin, J., (2005); *Ants of Surrey*, Surrey Wildlife Trust, Pirbright.

[12] Nationally Lower Risk – Near Threatened; Taxa which do not qualify for Lower Risk (conservation dependant) but which are close to qualifying for Vulnerable. For more information on the criteria used see Wigginton, M.J., (1999); *British Red Data Books: 1 Vascular Plants,* Joint Nature Conservation Committee, Peterborough.

[13] Lousley, J.E., (1976); *Flora of Surrey*, David and Charles, Newton Abbot.

[14] Leslie, A.C., (1987); *Flora of Surrey, Supplement and Checklist*, A.C&P. Leslie, Guildford.

[15] Collins, G.A., (1995); *Butterflies of Surrey*, Surrey Wildlife Trust, Pirbright.

[16] Jeffcote, G., Enfield, M., Gerrard, B., (2000); *Surrey Butterfly Report*, Butterfly Conservation, Surrey and SW London Branch

[17] RDB 1 – Endangered; Species occupying habitats which are disappearing fast or those occurring in such small populations or in so few sites as to make their extinction likely in the near future. Taken from Ing, B., (1992); A Provisional Red Data List of British Fungi, *The Mycologist, 6*: 124-128. This list was produced using the original IUCN categories and an improved and updated list will replace this shortly.

[18] Nationally Scarce; species estimated to occur within 16-100 10 kilometre squares of the National Grid system. For more information see Stewart, A., Pearman, D.A., & Preston, C.D., (1994); *Scarce Plants in Britain*, Joint Nature Conservation Committee, Peterborough.

[19] Nationally Local; species estimated to occur within 101-700 10 kilometre squares of the National Grid system. For more information on the criteria used see Eversham, B., (1983); *Defining Rare and Notable Species – a discussion document, Invertebrate Site Register Report No 49*, Nature Conservancy Council See Ball, S.G. (1986); *Terrestrial and Freshwater Habitats with Red Data Book, Notable or Habitat Indicator Status*, *Invertebrate Site Register Internal Report Number 66*, Nature Conservancy Council.

[20] Baldock, D.W., (1999); *Grasshoppers and Crickets of Surrey*, Surrey Wildlife Trust, Pirbright.

[21] Hawkins, R.D., (2003); *Shieldbugs of Surrey*, Surrey Wildlife Trust, Pirbright.

[22] Hawkins, R.D., (2000); *Ladybirds of Surrey*, Surrey Wildlife Trust, Pirbright.

[23] UK Biodiversity Group (1995), *Biodiversity: The UK Steering Group Report. Volume 2: Action Plans*, HMSO, London.