Ecological Management Plan

Timber Hill & Chaworth Copse, Ottershaw

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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
Ecologist	Isobel Girvan BSc (Hons) PGCert MCIEEM	Site visit date: 22/11/2013
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1.0 Introduction

1.1 Surrey Wildlife Trust (SWT) Consultancy has been commissioned by Runnymede Borough Council to produce management plans for six sites which have been allocated as Suitable Alternative (or Accessible) Natural Greenspace Sites (SANGS). This management plan covers Timber Hill and Chaworth Copse (see Appendix 1 for site photographs) and draws on previous work undertaken by SWT and other relevant information.

1.2 A Site of Nature Conservation Importance survey (SNCI) was undertaken on 31st July 2000 at Timber Hill (Gibbs, 2000) (see Appendix 2). An extended Phase 1 survey (Gibbs, 2009), an Access Assessment (Anckorn, 2009) and a Data Search (Kirk, 2009) were undertaken for both Timber Hill and Chaworth Copse (see Appendices 3 - 5). Prior to that in 1994 and 1996 members of the Surrey Botanical Society recorded on Timber Hill, see Appendix 6 for species list. In 1994, Land Management Consultants completed a Phase I of Chaworth Copse, the species are listed in Appendix 7. Bird, bat and reptile surveys will be undertaken in spring / summer 2014. An invertebrate survey has also been recommended. The recommendations from thee surveys should be incorporated into the management plan.

1.3 Surrey Biological Information Centre (SBIC) also holds data on past fungi surveys between 1994 to 1998, and bird survey data for 1993 (see Appendix 8 & 9).

1.4 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 plan at a later date.

1.5 This report is based on the information gained at the time of the site visits, drawn from the findings of the suite of ecological surveys and knowledge of the site. The management plan is to be seen as a work in progress that can evolve as more information is gathered.

1.6 Within the management plan the site has been evaluated for important features, for which an objective is given along with a description of the management required in order to meet that objective. Detailed prescriptions of the work to be undertaken are then listed for each feature and targets where relevant. This is summerised in a five year work programme (see section 5.0)

2.0 Description

2.1 Timber Hill and Chaworth Copse are situated just to the south of Ottershaw, off the A320 Guildford Road. Timber Hill has a central grid reference of TQ022634 and Chaworth Copse is centred on TQ024636. They are owned and managed by Runnymede Borough Council. Chaworth Copse is to the north of Timber Hill, where they share a boundary along which is a public footpath. Together they cover approximately 9.2ha, with Timber Hill covering 6.5 and Chaworth Copse covering 2.7. They are an Open Space and SANGS. There are multi-access points over the site often using existing Public Rights of Way. There is a car park provided off the Guildford Road that is also used by walkers using Ottershaw Chase, which is situated to the west of Timber Hill on the other side of the A320. See Figure 1.

2.2 Local records suggest that Timber Hill (also known locally as The Common, as it is marked on the maps) would have been farmland in the past, and probably been part of The Mansion grounds used for grazing. The north east corner of Timber Hill was also used as allotments (still marked on the current day map) until 1960. It is likely to have been more open in the past and there is evidence to suggest that it supported heathy species such as Heather and Gorse. Currently it is a secondary woodland with mature and maturing trees on top of a hill with a height of approximately 50m with moderate slopes. The current management has included the thinning out of Sycamore to the north and removal of Rhododendron in the south east corner. There has also been ring barking some of the trees to create additional decaying standing wood. Other areas are left to non-intervention and only managed when health and safety issues arise.

2.3 Chaworth Copse was once nursery land and also part of the landscaped grounds of Chaworth House. This is still evidenced from the terraces, a grassy area, an old pond, old estate drive, exotic specimen trees and the remains of a brick outbuilding (Anckorn, 2009). It is currently secondary woodland, with some mature trees, stands of exotic trees and shrubs, a small grassy area and the now overgrown pond. In the past some of the grass was rabbit grazed and the resulting short sward contained some Field Wood-rush and Heather (Gibbs, 2009). However, the composition of the sward is now described as semi-improved and is relatively species poor. Recent management has focused on the removal of Cherry Laurel from around the eastern Chaworth Copse entrance (near Chaworth Close). There are currently no scheduled programmes of maintenance for this site.

3.0 Evaluation

3.1 Mixed Semi-natural Woodland

Timber Hill and Chaworth Copse support a number of mature and maturing trees, some of which are thought be around 100 years old. These mature trees are valuable for their wildlife and visual value as well as their historical importance. For example there is a particularly old Beech tree on the eastern boundary of Timber Hill just south of the old Allotment Gardens and another on the southern boundary in Chaworth Copse.

The even aged secondary woodland that covers the majority of the site is a common place habitat where wildlife, particularly birds are frequent. However it does lack structure and there is potential to enhance it and create a more varied mosaic of habitats.

An extensive list of fungi has been recorded on the site during the mid to late nineties. Whilst none are rare, several were considered interesting such as Bitter Bolete and Veiled Oyster Fungus, most were confined to Pedunculate Oak and Silver Birch.

3.2 Indicator Plants

No rarities are present on the site. Large-leaved Lime (described as Nationally Scarce in the 2009 data search), Box (described as Near Threatened in the 2009 data search) and Summer Snowflake (classed as Nationally Scarce in the 2009 data search) were all recorded in during 1994 and 1996 surveys by Surrey Botanical Society (formerly Surrey Flora Committee), but almost certainly have been planted when the site was part of an estate garden.

From the Phase I data and historical data there have been six ancient woodland indicators recorded on the site, they are Aspen, Remote Sedge, Hornbeam, Holly, Creeping Soft-grass and Wild Cherry. However the history as open farmland and former allotments and landscaped grounds is well known and it is not designated as ancient woodland in the Surrey Inventory (Davis, 2010).

3.3 Non-native, Invasive Plants

The area has been degraded around the edges from garden waste and fly tipping as well as planted invasive Cherry Laurel and other exotic species from when it was formal landscaped gardens. This has led to an invasion of introduced garden plants, some of which are non-native, invasive species. The Wildlife and Countryside Act (1981 as amended) includes a list of problem key species in the UK called the Schedule 9 list of invasive species, those recorded over the common have been listed below. Where negligent or reckless behavior, such as inappropriate disposal of garden waste, results

in a Schedule 9 species becoming established in the wild this would constitute an offence (Defra, 2010).

- Variegated Yellow Archangel
- Rhododendron
- Cotoneaster both Hollyberry and Himalayan were identified in 1994 and may still be present, a cotoneaster was seen during the 2013 site visit but not identified to species

In addition the following have also been recorded on the site and are on the Plantlife list (Thomas, 2010) as research has shown that certain non-native plants that may become invasive in the future:

- False-acacia
- Garden Privet
- Snowberry
- Spanish Bluebell
- Japanese Honeysuckle
- Wilson's Honeysuckle

Two recorded plant species are also on the draft Surrey Invasive Species (Waite, 2010) list and listed below:

- Cherry Laurel
- Sycamore
- Rum Cherry

Other species that have been recorded and whilst not currently on any of the above lists should also be considered as problem species are:

- Atlantic Ivy
- Greater Periwinkle
- Lesser Periwinkle

3.4 Pond

The pond found in the eastern part of Chaworth Copse is a potentially interesting ecological feature for the site and should be if possible enhanced. There are problems that need to be addressed such as it does not seem to hold water during the summer months (Gibbs 2009 & Anckorn 2009). It is currently very overgrown and subsequent problems with access. That said, if access is improved it could become a pond frequently visited by dogs and thus resulting in reduced wildlife interest. Once these issues have been resolved this pond could benefit the area by supporting invertebrates including dragonflies, damselflies and potentially newts.

3.4 Grassland

The small area of open grassland area is situated in the north of the site in Chaworth Copse, at the back of residential properties. It has been encroached upon by the woodland and would be improved by annual strimming or mowing in the style of a ride system. With a central short sward, grading into long grassland, Aspen scrub and then woodland would provide opportunities for invertebrates such as moths and butterflies. It is a valuable part of the mosaic of habitats that the site supports and whilst it is described as species poor, there is evidence to suggest that more interesting species are present such as Field Wood-rush and Common Centaury.

3.5 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 list of 49 birds recorded from the site in 1993 revealed that 3 species are listed as priority in the UK Biodiversity Action Plan 1995 and 3 species are protected under schedule 1 of the Wildlife and Countryside Act including two rare birds of prey. The declining Lesser Spotted Woodpecker was also on the list. However, these records are from 1993, so it is unknown whether the species are still present on the site. A bird survey during 2014 will provide up to date information. It is unlikely that any minor management work on the sites would affect these bird species.

3.6 Invertebrates

A number of notable and local invertebrate species were listed in the data search, including five species of butterfly with local classifications. However, they are fairly widespread and common (Willmott *et al*, 2013). Therefore whilst management for the site is designed to improve habitat for wildlife including butterflies, the species will not be referenced directly

A Preliminary Invertebrate Assessment (Dodd, 2013) was undertaken at Ottershaw Chase where 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. As this site is contiguous with Timber Hill with similar habitats and conditions it is possible that some of these species could be found here as well. An invertebrate assessment for Timber Hill is recommended.

3.7 Stag Beetle

The stag beetle is a UK Biodiversity Action Plan (BAP) priority species and a nationally notable b (Nb) 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.

3.8 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 (but the site does not provide suitable habitat for them). All British reptiles are BAP Priority species and SPIs.

The data search revealed that Grass Snakes have been recorded in the local area. However in the past there would have been more open and grassy areas than as it looks today with a dense canopy. However remnant populations may still be present and Slow-worms and possible Common Lizards could be present. Up to date survey work on reptiles will commence in 2014, so that appropriate enhancements can be suggested for the site and recommendations be made to avoid harming these species if they are still present.

3.9 Amphibians

The data search did not reveal any records for Great Crested Newts within 1km of the site. However there is potential for this species to be using the water bodies on site for breeding. If present within the ponds they may use the woodland for foraging or hibernation.

Great Crested Newts are protected under schedule 5 of the Wildlife and Countryside Act 1981 and of the Conservation (Natural Habitats &c) Regulations 2010 from intentional killing and injury and from intentional damage, destruction or obstruction of access to a place of shelter. In addition they are a UK BAP Priority species and SPI.

An assessment of the likelihood of the ponds to support Great Crested Newts should be undertaken prior to any major work on the site.

3.10 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. Some species are BAP Priority species and SPIs. Bats are likely to forage on the site and to be roosting in mature trees with suitable features such as holes, cracks and loose bark.

A survey will be undertaken during 2014 and will provide details of species present and management recommendations which should be incorporated into this plan. It is important to take the above species into account when planning any future work on the site.

3.11 Position Within Living Landscape

The position of Timber Hill and Chaworth Copse 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. This Open Space is contiguous with Ottershaw Chase, another RBC Open Space and SANGS site (see separate management plan Gibbs, 2014). In addition the following was reported in the Ottershaw Chase Preliminary Invertebrate Assessment (Dodd, 2013) and therefore could also be true of Timber Hill:

'*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.*'

3.12 Site of Nature Conservation Importance

After the SNCI survey in 2000 it was felt that the site was not of sufficient ecological value, largely due to the presence of non-native, invasive species such as Cherry Laurel, to warrant selection as an SNCI. The fact that it was not selected as an SNCI does not diminish its importance of semi-natural habitat in Surrey and it is recognised that all semi-natural habitat is important for wildlife and of potential education value.

3.13 Access and Recreation

According to guidelines for SANGS, car parking facilities are essential for sites over 10ha. There are several access points onto the two areas, and one main car park, situated in the west of Timber Hill off Guildford Road A320 which also services visitors to Ottershaw Chase on the other side of the road. The site is predominantly used by dog walkers and ramblers from the nearby residential area (RBC, 2012).

There is a network of public footpaths and informal paths crossing the site which are unsurfaced and natural and in places can become very muddy in wet weather. There is a stepped path down from the high point on Timber Hill and a short flight of steps down a terrace on a path near the Timber Hill/Chaworth Copse boundary. Local people recollect that there used to be views from the top of Timber Hill (at a height of about 50m) out towards London.

There is a two hour walk covering approximately four miles advertised on a website taking you through both Timber Hill, Chaworth Copse as well as Ottershaw Chase. RBC have produced a leaflet which promotes a healthy walk around both Timber Hill and Chaworth Copse taking approximately 30 minutes and covering 1 mile.

The site was selected in 2008 by Runnymede Borough Council as a SANGS which means it is used to provide alternative green space to divert visitors from vising the Thames Basin Heaths Special Protection Area (SPA) and

therefore it is important that this aspect of the site be encouraged through this management plan.

The access survey concluded that '*In order to function as a SANGS, this site needs to divert visitors away from the Thames Basin Heath SPA. In the current condition, there is little to tempt the visitor. The site must develop its features of interest to attract more visitors*.' (Anckorn, 2009).

4.0 Features

4.1 Feature 1: Mixed semi-natural woodland

Objectives
The woodland will continue to be present with at least 95% native species and an emphasis on diversifying the structure. There will be early growth, diverse field layer, understorey, maturing woodland, old growth and deadwood habitat all represented. There will be thinning and ride/path opening system to ensure that up to 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, better structural diversity and dead wood habitats. The invasive and non-native species will be removed. Therefore the habitat quality will continue to support native populations of plants, bryophytes, lichens, fungi, mammals, bats, birds, amphibians and reptiles, to thrive on the site. Both Timber Hill and Chaworth Copse will continue to support mature trees as they provide continuity of habitat for wildlife and increase landscape value.

Targets
- There will be a 20% open glade/path system over 5 strategic areas.
- Thinning will create structural diversity and with an understorey to represent 20-30% of the stand area.
- There will native seedlings growing through to young trees of sufficient density to maintain a canopy for the future.
- A minimum of 4 trees per ha allowed to die standing where compatible with health and safety, or retained as dead standing wood.
- Veteran trees, future veteran trees and open grown trees are to be retained and positively managed.
- As least 95% of native (or acceptable naturalised) species cover in any one woodland layer.
- Problem species have been controlled and are at a level where they are not adversely affecting the site, ideally less than 5%.
- Invasive, non-native plants should not be introduced onto the site.
- Both Timber Hill and Chaworth Copse to have no garden waste or rubbish.

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 Rides & glades
More open spaces will be created as much of the woodland is currently very densely packed and limiting biodiversity value. Dark closed paths will be

opened up by cutting back undergrowth and young trees. This will create a series of wide paths and open glades.

Prescription W1: Towards the south west corner of Timber Hill there is opportunity for a glade where there are a lot of thin, young trees. This would work in tandem with suggested path widening and thinning to the north up towards the car park (W4). Retain open-grown or future open-grown oaks to grow uninhibited. Cut back Bramble unevenly approximately 1m from the path edge to open it up and allow grasses and other plants to colonise.

Prescription W2: This area provides another opportunity to create a wide open glade with scattered trees at the high point of Timber Hill. There are in excess of 50 young and struggling Silver Birch trees that could be whipped out and several sub-mature trees. Or the more mature trees could be left as dead standing stick. It's unlikely that views out to London would be achieved, but from an ecological point of view it would help encourage a range of field layer species, encourage the Gorse here and provide a focal point for people who have just arrived from the car park.

Prescription W3: Thin out young, etiolated Silver Birch forming a stand just to the south west of the former allotments. There is opportunity to also thin out Silver Birch over where the allotments used to be and re-coppice or pollard Hazel overshot stools close to the path to create a large open glade.

4.1.2 Thinning

Tree thinning will be undertaken in parts of the woodland. As much of the wood stock is relatively young and densely packed, periodic thinning will boost woody growth, whilst ensuring light penetrates the woodland floor for the field layer to flourish and will allow the more mature or maturing trees to benefit. Removing younger, competing trees may also bring advantages to the mature trees underground mycorrhizal fungi and other supporting micro organisms. It also provides a structural diversity to increase the niches for different flora and fauna.

Sycamore can be a problem in Surrey woodlands as it comes into leaf early, shading spring flowering plants. The leaf litter rots slowly and does not provide a good environment for ground flora. In addition it supports a lower diversity of insects than native trees, therefore there will be principle of preferentially thinning the Sycamore. An example of where this type of management is already in practice is in the north west corner of Timber Hill, Sycamore has been thinned out recently and brash and log piles have been left to rot down.

Preferential thinning of Turkey Oak will also be recommended throughout Timber Hill, it has been highlighted by Plantlife as a future problem species.

In general thinning should avoid mature trees, if this becomes 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.

When thinning some of the sub-mature trees could be ring-barked, pollarded or stripped of branches and crown to create decaying woodsticks.

All thinning/clearing works should avoid the bird nesting season which is between the beginning of March to the end of August.

The native Common Ivy will be left on the trees for the benefit of invertebrates, bats and birds.

Prescription W4: Thin out young trees, especially the small glade of small Silver Birch along the path that leads down south from the car park towards the steps up the hill as well as preferentially thinning the Turkey Oak and Sycamore. The woodland here is dense and over crowded, with little diversity of structure, the widening of the path (between 15-20m) will also help to open up the woodland.

Prescription W5: There are several large Pedunculate Oaks along the edge of Guildford Road, south of the car park. Over the years smaller trees have grown up around them and competing for light and water. In order to ensure their longevity and create potential future ancient trees, the interloper trees should be thinned out, preferentially the Sycamore and Turkey Oak.

Prescription W6: Thin out some of the dense Holly towards the south east corner of Timber Hill.

Prescription W7: On the north east corner of the car park there are at least eight Hazel stools that would benefit from some re-coppicing.

Prescription W8: Along the southern edge of Chaworth Copse there is a mature Beech being crowded out by a small Pedunculate Oak tree. It would be advantageous to take out the oak or manage it as a dead wood stick.

Prescription W9: There is a dense thicket of Holly to the west of the pond which could do with some thinning out by up to 50%.

4.1.3 Brash Habitat Piles/Decaying Wood

Decaying wood is an invaluable resource. The aim for the site should be to have a variety of different types from decaying standing wood including hollowed cavities to different ages of decaying lying wood in the form of trunks, branches and smaller types. It is vital to think about the next generation of decaying wood and to ensure there is a succession for the future. Fallen dead wood will be left in *situ* (where health and safety allows).

There are examples of good dead wood management over the site, e.g. just north of the allotment gardens and along the western pinch point in Chaworth Copse.

When felling trees, some of the resulting brash (finer branches) and trunks will be ideally strewn randomly around the site, or used to create log or habitat piles in a variety of different situations i.e. shady, sunny and damp. Although too many can surpress ground flora. This will create habitat for a range of invertebrates, reptiles and amphibians. Some brash can be tied into tight bundles and then stacked so as to be to be more valuable for invertebrates (eg. Stag Beetles) 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.

Prescription W10: There is a good example of decaying standing Pedunculate Oak tree in the northern corner of Chaworth Copse (to the west of the pond), which should be retained.

Prescription W11: Brash from clearance operations can be used to create habitat piles by the pond, on the grassland edge and on the glade edges. Decaying wood refugia habitat for reptiles and other wildlife can be created by digging a 1m wide hole to a depth of about 50cm and infilling with logs horizontally or vertically (and perhaps some rubble), sticks and soil and then overtopping with the original soil and vegetation.

4.1.4 Non-intervention

Not all areas of the woodland will require or have work recommended and non-intervention is a valid woodland practice.

Prescription W12: Non-intervention is proposed at the moment for the Sweet Chestnut stand in the central northern part of Timber Hill (to the west of the Allotments), whilst the other glade and thinning works are pursued. However, the coppicing of this stand should be considered in future management plans.

Prescription W13: In the south west corner of Chaworth Copse there is a dense thicket of Holly. Holly does have a tendency to grow in thick patches and become a dominant in the understory and therefore is often recommended for thinning. In this case there is generally little in the understory over this site and so in this case it is worth retaining it. It will be used by birds as well as other wildlife. Future management plans may decide it requires a cut at that stage.

4.1.5 Bird & Bat Enhancement

The majority of trees within this site are relatively young and lack features often exhibited by mature trees such as holes and peeling bark which are utilised by bats and birds.

It may prove advantageous to erect a variety of bird and bat boxes on trees to simulate these features. However, the results from the bird and bat survey must be taken into account before this can be recommended.

4.1.6 Invasive Non-native Species

As a matter of priority all Schedule 9 listed species should be removed from the site, see Evaluation section. For example Rhododendron is widespread on acid soils throughout Surrey. Its dense thickets shade out indigenous plants, preventing regeneration of trees in woods and obliterating the ground vegetation (Waite, 2013).

In general the non-native invasive shrubby plants should be managed by cutting stems by hand or chainsaw, as close to the ground as possible and treating the stumps with appropriate herbicide if possible. Chip or remove the cut material from the area. The stumps will then need to be monitored regularly for regrowth. Non-shrubby plants should be hand-pulled and carefully composted.

Removal of all of the other non-native, invasive species is also highly recommended especially the variegated Yellow Archangel (it was not seen during the 2013 site visit), Rum Cherry and False Acacia (noted as being on the southern edge of Timber Hill in one of the Phase I surveys) but not seen in 2013.

As a general rule the Turkey Oak should be preferentially thinned out (it is found across the whole site), as it has been flagged up by Plantlife as problem species of the future.

Prescription W14: Remove Rhododendron and Cherry Laurel along the track edge along the southern edge of the Timber Hill, treat stumps and monitor. There is also some Cotoneaster spreading along this track edge which should be removed as well.

Prescription W15: There is a patch of Turkey Oak along the track along the southern boundary to Timber Hill, which should be either thinned or removed.

Prescription W16: In this area there is a former patch of Rhododendron that has been removed recently in the south east corner of Timber Hill. It should be monitored for regrowth and treated.

Prescription W17: In the south east corner of Timber Hill there is a large sprawling patch of a garden Ivy variety named Atlantic Ivy, which is spreading far into the woodland. This should be pulled up and taken off site or burnt.

Prescription W18: Remove patch of Snowberry and Cherry Laurel, but retain Spindle.

Prescription W19: Another patch of Cherry Laurel to be removed located on the eastern edge of Timber Hill.

Prescription W20: Remnant Garden Privet hedge to be removed from eastern edge of Timber Hill.

Prescription W21: Small area of Cherry Laurel to be removed from north east corner of Timber Hill.

Prescription W22: Patch of Cherry Laurel that could do with being whipped out from south west corner of Chaworth Copse.

Prescription W23: More Cherry Laurel and Rhododendron to be removed from south west corner of Chaworth Copse.

Prescription W24: In the western pinch point of Chaworth Copse there is a large overgrown patch of Cherry Laurel that requires removal.

Prescription W25: There is a lot of Cherry Laurel around the base of the mature Sweet Chestnut. In removing the invasive plant, the tree will once again become an impressive feature of the site. There is also a Norway Maple here muscling in and should be removed from around the Sweet Chestnut.

Prescription W26: Also in this pinch point of Chaworth Copse there are a lot of redundant remnant conifers including Leyland Cypress from a once garden landscape. Ideally they should be removed.

Prescription W27: More Cherry Laurel to be removed from just west of the pond.

Prescription W28: Remove the garden Cotoneaster from along the southern edge of Chaworth Copse.

Prescription W29: Continue removing Rhododendron from the eastern end of Chaworth Copse.

Prescription W30: Along the western entrance of Chaworth Copse there has been recent work on Cherry Laurel removal and this should be monitored for regrowth and treated if required. Ideally the Leyland Cypress would also be

removed. After a couple of years, consideration should be given to planting up with native shrubs and trees such as Blackthorn, Rowan and Hawthorn.

4.1.7 Litter

There are pockets of garden waste and general fly tipping that requires clearing. It is unsightly, a health and safety issue, encourages more tipping and is introducing and spreading exotic species. The following Prescription code W30 is mapped several times on Figure 1 to indicate those areas that were seen during the site visit.

Prescription W31: Key litter/garden waste areas to be removed.

4.2 Feature 2: Pond

Objectives
The pond will be enhanced by dealing with the drainage issues. The resulting pond will not be shaded by more than 50% so that enough sunlight reaches the water surface to allow native vegetation to flourish. No invasive species will be present. Invertebrates such as dragonflies will flourish and this will indicate the general wellbeing of the water body.

Targets
- One permanent water body present on site 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.

When Chaworth Copse was part of landscaped gardens a pond was created, however over the years it has been abandoned. A well maintained and managed pond on the site, would help diversify the biodiversity on the site, compliment the mosaic of habitats and provide a focal point for visitors. Currently access to the area can be difficult as it is overgrown with shrubs and trees.

Prescription P1: The pond will need to be cleared of litter and debris.

Prescription P2: Investigate clay lining for the retention of water.

Prescription P3: In order to maintain good light levels onto the water, up to 50% of the surrounding trees and shrubs should be thinned out along the southern edge. It will be important to leave some dense surrounding vegetation along the north eastern edge to prevent access to all sides of the pond and therefore fewer disturbances.

4.3 Feature 3: Grassland

Objectives
The grassland should be retained in extent. The central core will be short grass, whilst the edges will be left long with some encroaching Aspen scrub to enhance the site for invertebrates including grasshoppers and butterflies. There should be an increase in the number of herbs present over the grassland area.

Targets
- Increase the ratio of herbs in the sward to up to double to the number of grasses
- Enhance structural diversity of grassland.
- Retain the Aspen scrub with different age class.
- Enhance the Bramble underscrub edge.

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 ratio of grasses to herbs provides a rough indication of how valuable grassland is. In general, semi-natural swards in good condition have a much higher number of herbs compared to grasses.

A range of heights over the grassland will be more beneficial to wildlife. A diversity in the sward composition and structure from short grassland to long grass buffer zone around the edges will ensure there is invertebrate refuge and encourage a scrub and underscrub ecotone. Clippings must be removed and taken off site or they will cause enrichment and prevent seeds from reaching the soil surface and germinating and can make cutting the following year difficult to get through the resulting 'thatch'.

There is a path leading down the western side of Chaworth Copse to the west side of the grassy area. Here there is a young stand of Aspen. The Aspen is steadily encroaching on the grassland, however it does bring with it plenty of benefits as it is known to attract several local and rare invertebrates such as the Poplar Leaf Beetle.

The aim of managing the Aspen is to leave the older trees towards the edge of the woodland, then have a variety of different age classes along the edge of the grass. Suckering Aspen young Aspen will also provide a valuable habitat for invertebrates and will therefore continue to encourage a variety of ages and young Aspen saplings. It is hoped that by managing the central core of grassland the more acidic influenced sward species will flourish under this regime.

Prescription G1: Strim or mow the central core of grassland to a height of around 5cm. The arisings should be removed. The grassland edges should be left long with suckering Aspen and then cut on a three year rotation, leaving a jagged uneven edge. Coppicing some of the taller trees by the grass edge would be advantageous.

Prescription G2: Common Ragwort is also present, but is being pulled out. Given that it is not grazed, and that it can have significant benefits for a wide range of invertebrates it is recommended that it be left, as long as it does not spread outside of the site.

Prescription G3: Following cutting leave 1-2 piles of arisings in small piles in scrub/woodland margins to provide refugia for reptiles and small mammals.

Prescription G4: Some of the Bramble scrub edge (on the northern edge by the housing) will require strimming back every 4-5 years to ensure that it does not spread out too far into the grassland.

4.4 Feature 4: Access

Objectives
The site will be a welcoming, safe and attractive place for local people to visit. A network of informal will provide a route through a variety of habitats. 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 as well as an understanding of the history of the site.

Targets
- There will be increased opportunities for the public to visit and walk around the woodland.
- Install a bench in pond area.
- Provide interpretation material on the history of the site.
- Engage with visitors and locals to achieve sense of ownership.
- Overall management of the site will improve the visitor experience.
- Understand who uses the site and why.

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 mosaic of habitats and proximity to local housing estates gives the site potential for local schools to use it as an educational resource.

Thinning and glade clearance in the woodland will attract more people to use the site. Positive conservation management will show that the site is being cared for. The woodland areas will be readily accessible for the use of the public via a network of informal paths that are well maintained whilst not leading to a decrease in biodiversity. The grassland areas will be used for recreational purposed whilst also enhancing the sward composition with varied heights.

The general thinning out of trees and preferential cutting back of Sycamore will help to open out the woodland and provide a more appealing walk for visitors.

Sections of paths that become muddy during wet weather are to be improved. Footpaths should incorporate natural surfaces wherever possible depending on site conditions. However, some areas are particularly affected by wet weather and more substantial foot path material will be required.

The local community and other interested parties should be able to help self-police the site and encourage people to be more sensitive towards the site. An annual clearance or more frequently, may be required. This could be part of the national campaign such as '*Make a difference day*'.

Providing visitors with information on this history, natural history, map of the site showing paths and events will increase knowledge and enjoyment of the site. Also well getting visitor opinion via informal means.

Prescription A1: The focal point for Timber Hill is the hill itself. The access survey suggested that this could be returned to a view point, with some selective tree felling. A bench or two at this point would be a positive attraction and the path form the car park to the view point could be made suitable for disabled access.

Prescription A2: The pond area could be made a focal point by installing a bench.

Prescription A3: Steps up from the grassy area in Chaworth Copse back up to Timber Hill have been proposed and would help access up a short section of steep slope.

4.5 Feature 5: Monitoring

Objective
Monitoring the site will help establish changes over time, will be a valuable record, help establish if the project is a success and provide a guide to the on-going management programme.

Targets
- Regularly review work programme.
- Gather regular information on biodiversity of the site to guide on-going management.
- Produce before and after management photographs.

Prescription M1: The work programme should be reviewed annually.

Prescription M2: The management plan should be reviewed in its entirely in 2018.

Prescription M3: The recommendations from the 2014 surveys should be incorporated into the management plan and carried out.

Prescription M4: Monitoring of the woodland should take the form of a repeat Phase 1 SNCI style survey in 5 and 10 years time. This should be undertaken at optimal times of the year i.e. May. It will be useful to measure the following aspects:

- The % of open space
- The % of canopy cover
- The % of shrub cover
- The % of field layer
- The presence and abundance of invasive non-native species
- The abundance of standing and fallen dead wood
- Review of before and after management photographs.

Prescription M5: Use simple or detailed monitoring/surveys to ascertain if the current management is increasing the herb to grass ratio.

4.6 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.

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

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.

The recommended thinning operations could potentially 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 thinning of 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. No newts have been recorded within 1km of the site and the pond/wet therefore the likelihood of the pond of supporting a population of Great Crested Newts is low. However, it would be good practice to carry out any management work on the pond during the winter months when the effects on pond life are minimised.

All native British reptiles are protected under the Wildlife and Countryside Act (1981) from killing and injury. A reptile survey will be undertaken in spring/summer 2014 and any recommendations from this survey should be undertaken when undertaking management on the site.

5.0 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.

1 High priority 2 Medium priority 3 Low priority

Table 1 Full Prescription list with priorities

Prescription list	Year with priority				
	2014	2015	2016	2017	2018
Woodland Feature					
W1: Thin young trees to create a glade in the south west corner of Timber Hill. Retain future ancient oaks. Cut back any Bramble 1m from the path edges.			2		
W2: Create an open glade at the top of Timber Hill by thinning out young Silver Birch and sub-mature trees or leaving them as dead standing sticks.		2			
W3: Thin out Silver Birch stand to create glade south west of the former allotments. Re coppice or pollard Hazel.				2	
W4: Thin out young Silver Birch, Sycamore, Turkey Oak and other trees along path that leads south from the car park to create a 15-20m wide ride.			2		
W5: Thin out trees to expose mature Pedunculate Oaks along Guildford Road.					2
W6: Thin out dense Holly towards the south east corner of Timber Hill.		2			
W7: Coppice Hazel on the north east corner of the car park.		2			
W8: Open up mature Beech by cutting back surrounding trees found on the southern edge of Chaworth Copse.			2		
W9: Thin dense Holly to the west of the pond.	1				
W10: Retain decaying standing Pedunculate Oak tree in northern corner of Chaworth Copse.					
W11: Create habitat piles using the brash and branches.	1	1	1	1	1
W12: Non-intervention for Sweet Chestnut stand in the central northern part of Timber Hill.					
W13: Retain dense Holly in south west corner of Chaworth Copse.					
W14: Remove Rhododendron and Cherry Laurel along southern track edge in Timber Hill, treat stumps and monitor. Remove Cotoneaster.	1				
W15: Thin or remove Turkey Oak.		2	2		
W16: Monitor and treat if necessary a cut patch of Rhododendron in south east corner of Timber Hill.					
W17: Remove Atlantic Ivy from south east corner of Timber Hill.		2			
W18: Remove Snowberry and Cherry Laurel from along eastern edge of Timber Hill.	1	1			
W19: Remove Cherry Laurel from eastern edge of Timber Hill.	1	1			
W20: Remove Garden Privet from eastern edge of Timber Hill.	1	1			
W21: Remove Cherry Laurel from north east corner of Timber Hill.	1	1			
W22: Remove Cherry Laurel from south west corner of Chaworth Copse.	1	1			

Prescription list	Year with priority				
	2014	2015	2016	2017	2018
W23: Remove Cherry Laurel and Rhododendron from south west corner of Chaworth Copse.	1	1			
W24: Remove Cherry Laurel from western pinch point of Chaworth Copse.	1	1			
W25: Remove Cherry Laurel and Norway Maple from around Sweet Chestnut in western pinch point of Chaworth Copse.	1	1			
W26: Ideally remove conifers from western pinch point of Chaworth Copse.					3
W27: Remove Cherry Laurel west of the pond.	1	1			
W28: Remove Cotoneaster from along the southern edge of Chaworth Copse.	1	1			
W29:Continue removal of Rhododendron from the eastern end of Chaworth Copse	1	1			
W30: Monitor Cherry Laurel regrowth from along the western entrance of Chaworth Copse and treat if required. Consider planting up with native shrubs and trees.					
W31: Remove litter and garden waste.					
Pond Feature					
P1: Clear pond of litter and debris.		2			
P2: Investigate retention of water, e.g.clay lining.					
P3: Cut back up to 50% of the surrounding trees along southern edge. Leave some densely vegetated areas along north eastern edge.		2			
G1: Strim or mow central core of grassland to a height of 5cm. Remove arisings. Leave grassland edges long and cut on three year rotation. Leave older Aspen towards woodland edge untouched. Aspen on edge of grassland can be coppiced.	2	2	2	2	2
G2: Retain Common Ragwort.					
G3: Leave 1-2 piles of arisings in small piles on grassland/woodland edge.	1			1	
G4: Cut into Bramble underscrub on northern edge of grassland every 4-5 years.			2		
Access Feature					
A1: Thinning and glade creation at the top of Timber Hill will create a view point with a bench. Path from car park could be made suitable for disable access.	1				
A2: Pond restoration will turn it into a focal point with a bench.		2			
A3: Steps up from the grassy area in Chaworth Copse back up to Timber Hill have been proposed and would help access up a short section of steep slope.					
Monitoring					
M1: The work programme should be reviewed annually.	1	1	1	1	1
M2: The management plan should be reviewed in 2018.					1
M3: The recommendations from the 2014 surveys should be incorporated into the management plan and carried out.		1	1	1	1
M4: Monitor with Phase 1 survey.					1
M5: Use simple or detailed monitoring/surveys to ascertain if the current management is increasing the herb to grass ratio.		1	1	1	1

6.0 References

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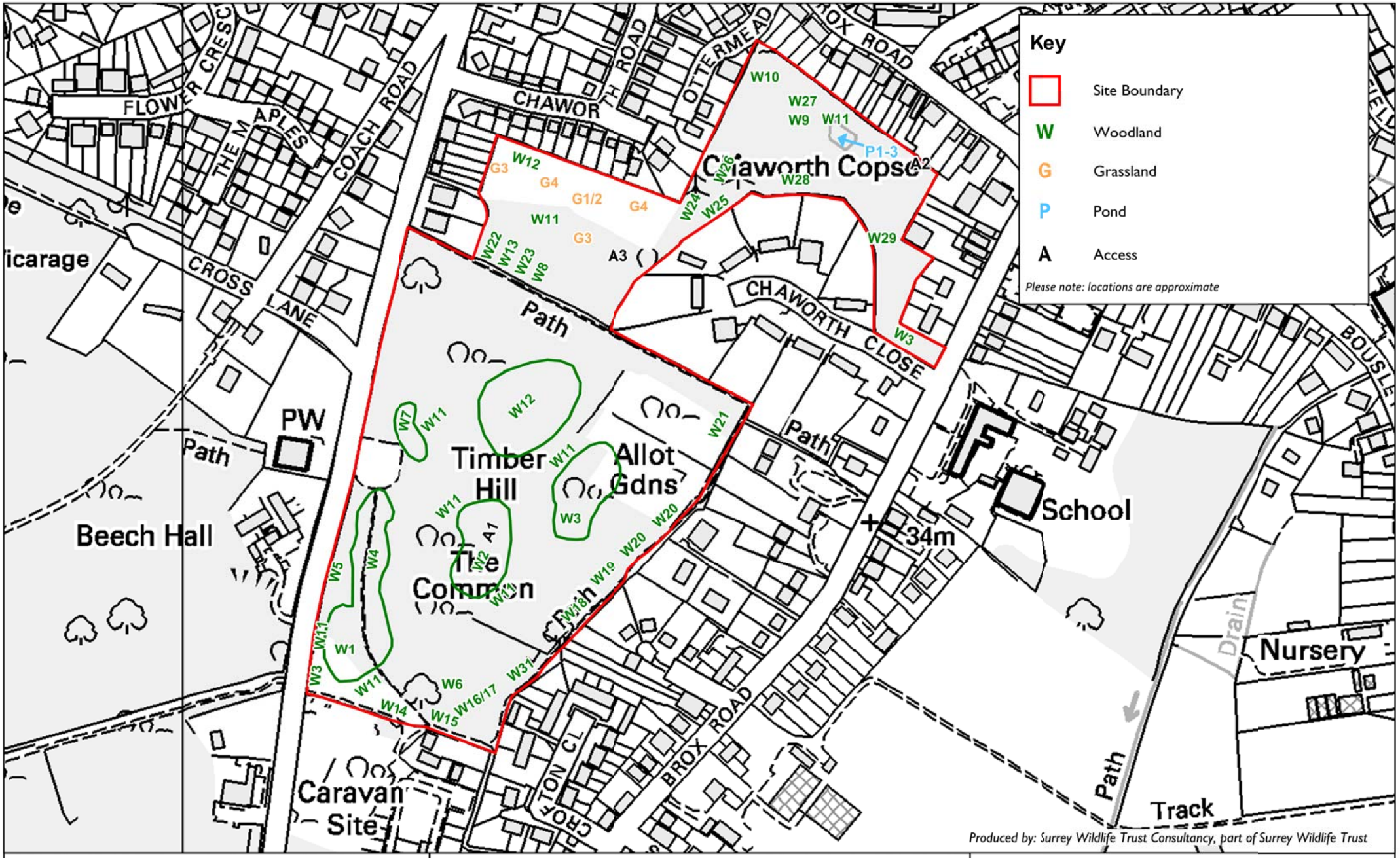
Figure 1 Management Prescriptions



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C2409, February 2014

Figure 1
Timber Hill & Chaworth Copse Management Prescriptions

SURREY wildlife TRUST

Appendix 1 Photographs

Photograph 1: Southern path from car park to be thinning (W4)

Photograph 3: Steps up to Timber Hill top

Photograph 2: Car park & path (W4)

Photograph 4: Overstood Hazel (W7)

Photograph 4: Southern Timber Hill track with exotics (W14)

Photograph 6: Atlantic Ivy (W17)

Photograph 5: Southern Timber Hill lane entrance with debris (W31)

Photograph 7: Dead lying wood

Photograph 8: Dead standing wood

Appendix 2 Phase 1 Survey of Timber Hill 2000

Mike Gibbs BSc MCIEEM

Site Description

This site lies to the east of Guildford Road (A320) to the south of Ottershaw village. It is open to the public. The habitat is secondary woodland and scrub developing on land of mixed use. Part of the site was once allotments and a large part was perhaps common land or heath. The present flora gives some clues to the history and is a mixture which contains heathy woodland and garden escapes

The geology is Barton Beds with pebbles on top of Bracklesham Beds. The soils are stagnogley-argillic brown earths and stagnogley podzols (the latter towards the west of the site). There is a moderate slope to the top of Timber Hill (to a height of 50m) south of the car-park on the western side.

Site Notes

(1) The greater part of the site is covered with secondary woodland with Pedunculate Oak (*Quercus robur*) the most common canopy tree and Turkey Oak (*Quercus cerris*), Silver Birch (*Betula pendula*), Sweet Chestnut (*Castanea sativa*), Beech (*Fagus sylvatica*) and Ash (*Fraxinus excelsior*) present at varying abundance. Hornbeam (*Carpinus betulus*) is present, but rare. Sycamore (*Acer pseudoplatanus*), perhaps a prominent feature as a sub-canopy tree at one time has been cleared, and is re-growing from the stumps.

There are scattered shrubs, Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*) and Elder (*Sambucus nigra*) are all frequent, and occasional areas of dense understorey formed from Wild Plum (*Prunus domestica*). Sapling Sycamore and Ash are also a feature of the shrub layer. Stumps of cleared Cherry Laurel (*Prunus laurocerasus*) indicate that it may have been a locally dominant shrub. Holly (*Ilex aquifolium*) is occasional and rare species include Rowan (*Sorbus aucuparia*), Garden Privet (*Ligustrum ovifolium*), Dog-rose (*Rosa canina*) and Rum Cherry (*Prunus serotina*).

The field layer is patchy, with some areas quite bare. Where the light breaks through the canopy, Rosebay Willowherb (*Chamerion angustifolium*) is abundant, but the dominant ground flora species are Bramble (*Rubus fruticosus*) and Bracken (*Pteridium aqulinum*), both which are locally extensive. Ivy (*Hedera helix*), Common Nettle (*Urtica dioica*) and Male-fern (*Dryopteris filix-mas*) also show local abundance. Rarities include Enchanter's-nightshade (*Circaea lutetiana*), Wood Avens (*Geum urbanum*), Wood Dock (*Rumex sanguineus*), Herb-Robert (*Geranium robertianum*), Ground-ivy (*Glechoma hederacea*) and Foxglove (*Digitalis purpurea*).

(2) Where an area of Sycamore has been felled, an open glade has been formed. Rosebay Willowherb and Common Nettle are co-dominant amongst the regrowth.

Common Ragwort (*Senecio jacobaea*) is also frequent.

(3) This area has a young canopy of Silver Birch and Pedunculate Oak over old allotment gardens. The furrowed surface is still noticeable on the woodland floor. Bramble, Bracken and Common Nettle are abundant in the understorey but little else.

(4) At the southern end of the site the canopy becomes almost exclusively Pedunculate Oak. Other rare or occasional trees include Turkey Oak, Aspen (*Populus tremula*) and False Acacia (*Robinia pseudoacacia*). Hazel, Hawthorn and Holly form a patchy shrub layer. Sapling Sycamore and Cherry Laurel are also present, sometimes abundant, the latter controlled. The field layer is dominated by Bramble, and, locally, an introduced ivy (*Hedera* sp.). This compartment has a continuous cover of low, sprawling Bramble.

(5) This area has a weak canopy of both oak species, Silver Birch and Downy Birch (*Betula pubescens*) on well-drained sandy slopes and damp hollows of Timber Hill. The woodland gives the impression of being the result of secondary colonisation of a heath or scrub habitat. The shrub layer features Gorse (*Ulex europaeus*), Grey willow (*Salix cinerea*) and Alder Buckthorn (*Frangula alnus*), but gaps in the canopy allow a more diverse field layer, with a high proportion of grasses including patches of Creeping Soft-grass (*Holcus mollis*), Common Bent (*Agrostis capillaris*) and rarely Purple Moor-grass (*Molinia caerulea*). Wood Sage (*Teucrium scorodonia*) is occasional. Bramble and Bracken are still abundant.

Management

The site appears to be actively managed. Sycamore and Cherry Laurel has been cleared within the last year. There is likely to be management plan in place similar to Ottershaw Chase (also owned and managed by Runnymede BC) on the opposite side of Guildford Road.

Additional Information

NVC Communities present:

Area 1 is W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland Typical sub-community. Towards the southern end of the site the community grades to W10c *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland *Hedera helix* sub-community, which occupies Area 4. Area 5 shows weak affinities to W16a *Quercus* spp.-*Betula* spp.-*Deschampsia flexuosa* woodland *Quercus robur* sub-community.

Nature Conservation Interest

Although heather is no longer present on the summit of Timber Hill, the flora and soil type suggest that at least that part of the site was once heathland, and perhaps some amount of the seedbank remains.

Species list for Timber Hill

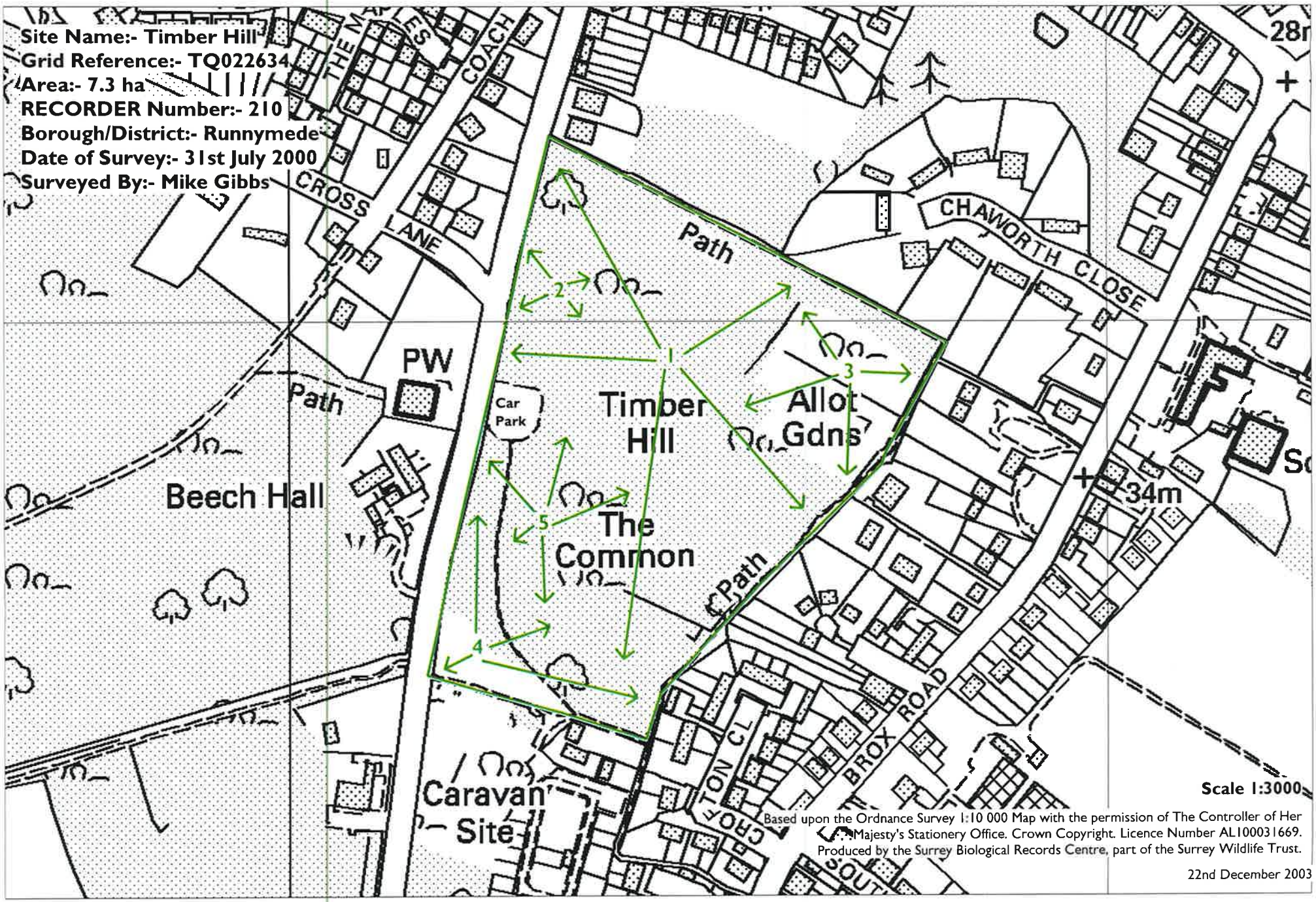
Scientific Name	Common Name	Abundance*
Acer pseudoplatanus	Sycamore	abundant
Agrostis capillaris	Common Bent	occasional
Agrostis stolonifera	Creeping Bent	rare
Alliaria petiolata	Garlic Mustard	rare
Arrhenatherum elatius	False-oat	rare
Betula pendula	Silver Birch	abundant-locally dominant
Betula pubescens	Downy Birch	abundant
Calystegia sepium	Hedge Bindweed	rare
Carex remota	Remote Sedge	rare
Carpinus betulus	Hornbeam	rare
Castanea sativa	Sweet Chestnut	occasional
Cerastium fontanum	Common Mouse-ear	rare
Chamerion angustifolium	Rosebay Willowherb	abundant-locally dominant
Chelidonium majus	Greater Celandine	rare
Circaea lutetiana	Enchanter's-nightshade	occasional
Cirsium arvense	Creeping Thistle	rare
Corylus avellana	Hazel	frequent
Crataegus monogyna	Hawthorn	frequent
Digitalis purpurea	Foxglove	rare
Dryopteris dilatata	Broad Buckler-fern	occasional
Dryopteris filix-mas	Male-fern	occasional-locally frequent
Elytrigia repens	Common Couch	rare
Epilobium montanum	Broad-leaved Willowherb	frequent
Euphorbia peplus	Petty Spurge	rare
Fagus sylvatica	Beech	occasional
Frangula alnus	Alder Buckthorn	occasional
Fraxinus excelsior	Ash	occasional
Galium aparine	Cleavers	rare
Geranium robertianum	Herb-Robert	rare
Geum urbanum	Wood Avens	occasional
Glechoma hederacea	Ground-ivy	rare
Hedera helix	Ivy	locally abundant
Hedera sp.	An introduced ivy	locally abundant
Holcus lanatus	Yorkshire-fog	rare
Holcus mollis	Creeping Soft-grass	locally frequent
Ilex aquifolium	Holly	occasional
Juncus effusus	Soft-rush	rare
Lamiastrum galeobdolon ssp. *argentatum*	Variegated Yellow Archangel	locally abundant

Ligustrum ovalifolium	Garden Privet	occasional-locally frequent
Lolium perenne	Perennial Rye-grass	rare
Lonicera periclymenum	Honeysuckle	frequent
Malus domestica	Garden Apple	rare
Molinia caerulea	Purple Moor-grass	rare
Plantago major	Greater Plantain	rare
Poa annua	Annual Meadow-grass	frequent
Populus tremula	Aspen	occasional-locally frequent
Prunus avium	Wild Cherry	rare
Prunus domestica	Wild Plum	occasional-locally dominant
Prunus laurocerasus	Cherry Laurel	occasional-locally dominant
Prunus serotina	Rum Cherry	rare
Pteridium aquilinum	Bracken	abundant-locally dominant
Quercus cerris	Turkey Oak	occasional
Quercus robur	Pedunculate Oak	abundant-locally dominant
Quercus rubra	Red Oak	rare
Robinia pseudoacacia	False-acacia	rare
Rosa canina agg.	Dog-rose	occasional
Rubus fruticosus agg.	Bramble	abundant-locally dominant
Rumex obtusifolius	Broad-leaved Dock	rare
Rumex sanguineus	Wood Dock	rare
Salix caprea	Goat Willow	rare
Salix cinerea	Grey Willow	occasional
Salix fragilis	Crack Willow	rare
Salix sp.	a willow	rare
Sambucus nigra	Elder	frequent
Senecio jacobaea	Common Ragwort	locally frequent
Sorbus aucuparia	Rowan	occasional
Stellaria holostea	Greater Stitchwort	rare
Taraxacum agg.	Dandelion	rare
Teucrium scorodonia	Wood Sage	locally frequent
Ulex europaeus	Gorse	occasional
Urtica dioica	Common Nettle	occasional-locally frequent

*Using DAFOR (Locally)

Dominant
Abundant
Frequent
Occasional
Rare

Timber Hill Phase 1 Map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Grid Reference:- TQ022634
Area:- 7.3 ha
RECORDER Number:- 210
Borough/District:- Runnymede
Date of Survey:- 31st July 2000
Surveyed By:- Mike Gibbs
502000
502500
163500
CROSS LANE
COACH
CHAWORTH CLOSE
Path
PW
Car Park
Timber Hill
Allot Gdns
Beech Hall
The Common
Path
Path
+34m
BROX ROAD
Caravan Site
1
2
3
4
5
Scale 1:3000
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Produced by the Surrey Biological Records Centre, part of the Surrey Wildlife Trust.
22nd December 2003

Appendix 3 Phase 1 Survey of Timber Hill & Chaworth Copse 2009

Claire Gibbs BSc MSc MCIEEM

Site description

Timber Hill is a woodland site covering approximately 6.5 hectares, east of the Guildford Road (A320) just to the south of Ottershaw. It has a central grid reference of TQ 022634. The geology is Barton Beds with pebbles on top of Bracklesham Beds. The soils are stagnogley-argillic brown earths and stagnogley podzols towards the west of the site. The site slopes up to the top of Timber Hill (to a height of 50m) south of the car park on the western side. Local historical knowledge indicates that Timber Hill was originally woodland, but that it may have been cleared and become heathland at some time. Part of the site was once allotment gardens. Today the site is entirely covered by secondary woodland.

Chaworth Copse is a site covering approximately 2.7 hectares immediately to the north of Timber Hill with a central grid reference of TQ 023636. Local historical knowledge indicates that the site was once nursery land and more recently has been part of the garden of Chaworth House. Today the majority of the site is covered by secondary semi-natural woodland although a number of exotic tree species are also present. There is an open grassy area in the north west of the site and a small pond in the north east although this was dry at the time of the survey.

Target notes (description of habitats) – Timber Hill

1) Most of the site is covered by broadleaved secondary woodland with pedunculate oak and silver birch the dominant canopy species. Turkey oak, hornbeam, beech, ash and sweet chestnut are also occasional in the canopy. There is a defined shrub layer with holly, elder, garden privet and damson all locally frequent. Hazel, rowan, hawthorn and cherry laurel are also occasional in the shrub layer. Sycamore saplings and re-growth are occasional. The ground is quite bare over much of the area although in some areas bracken, bramble, ivy and nettle are locally frequent. Other species in the ground flora include occasional male and broad-buckler ferns and locally frequent enchanter's nightshade. Rosebay willowherb is locally abundant in the more open areas. Other species only rarely recorded include wood avens, wood dock, herb-robert and foxglove.

2) The woodland in the far south of the site is similar to that described above although bracken and especially bramble are much more dominant on the ground. In the far south, cherry laurel is frequent along the fence line.

3) On the slopes of the hill the woodland changes slightly on the well drained and undulating ground. Birch (both silver & downy) becomes more frequent and pedunculate oak less so. Gorse and alder buckthorn are present in the shrub

layer.

4) This area is marked on the OS map as allotment gardens. However today it is covered by trees which blend in with the rest of the woodland. Birch is the main tree in this area with pedunculate oak occasional and elder a feature of the shrub layer. The ground is fairly bare with nettle and bramble occasional.

Target notes (description of habitats) – Chaworth Copse

1) This is an area of woodland which slopes down towards the north east. On the top of the slope beech is the most common canopy species. Further down sweet chestnut dominates. Other occasional species in the canopy include pedunculate oak, ash and sycamore. The shrub layer is quite dense. Holly is the most abundant shrub, particularly under the sweet chestnut. Other species making up the shrub layer include cherry laurel, hazel, hawthorn and young beech. The ground is fairly bare although ivy is locally abundant and bracken occasional.

2) In the north adjacent to the open area (see target note 3 below) is a stand of aspen with nettle abundant below.

3) This is an open area covered by species poor grassland with a slightly acidic nature. The grassland is heavily grazed by rabbits which maintain a very short sward broken only by the frequent ragwort which has been allowed to grow tall. The grassland is composed of abundant Yorkshire fog and creeping bent with occasional false oat-grass, sweet vernal-grass and early hair-grass. Herbs include frequent ragwort and self heal with locally frequent creeping thistle and aspen saplings. Other occasional species include common centaury, lesser stitchwort, creeping buttercup and spear thistle. Bracken is locally abundant near to the fence line.

4) This is a dark area of secondary woodland with ivy a prominent feature. Many exotic species are present including Lawson's cypress, cherry laurel, bamboo and Norway maple giving the woodland an unnatural feel. Pedunculate oak and ash are the dominant canopy species. Scots pine and goat willow are locally frequent. Other occasional trees in the canopy include beech, Norway maple, sycamore, yew, hornbeam and wild cherry. In the shrub layer sycamore saplings are frequent and cherry laurel locally abundant particularly in the east. Other species include hazel, holly and elder. The ground particularly towards the south and east is a tangle of bramble, nettle and ivy. Bracken is locally abundant and sycamore saplings are frequent. Other occasional species in the ground flora include foxglove, wood sage, enchanter's nightshade, red currant and wood dock. Lord's and ladies and broadleaved hellebore are rare.

5) This is a pond, which was practically dry at the time of the survey, although it is still damp in the middle, it has silted up and there is lots of rubbish and debris. It is very shaded, surrounded by pedunculate oak and beech trees with cherry

laurel coming up to the edges in places. There is little in the way of aquatic or marginal plants.

Ecological value of site / possible ecological constraints

Timber Hill and Chaworth Copse were both surveyed by Surrey Wildlife Trust in 2000 and 1999 respectively as part of a project to identify Sites of Nature Conservation Importance (SNCIs) in Surrey. At that time it was felt that the sites were not of sufficient ecological value to warrant selection as an SNCI. The presence of exotic species, particularly cherry laurel in Chaworth Copse decreases its value for wildlife. Nevertheless as good sized areas of semi-natural woodland and grassland, the sites do have local ecological value.

Local knowledge suggests that at least part of Timber Hill may have been heathland in the past. The flora and soil type particularly on the slopes of Timber Hill also suggest that heathland was once present. Heathland is identified as an important habitat in both the UK and Surrey Biodiversity Action Plan.

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 sites;

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 28 bird species included on Appendix II of the Bern Convention and 29 bird species listed as species of Conservation Concern in the UK Biodiversity Action Plan 1995 as well as 3 species listed as priority in the UK Biodiversity Action Plan 1995 have been recorded on Timber Hill and Chaworth Copse. In addition 3 species of bird protected under schedule 1 of the Wildlife and Countryside Act, fieldfare, *Turdus pilaris,* redwing, *Turdus iliacus* and brambling*, Fringilla montifringilla* have been recorded on the site*.* These records are from 1993, so it is unknown whether the species are still present on the site. It is unlikely that any minor work on the sites would affect these bird species. Any work affecting trees or scrub should avoid the bird nesting season (March-August).

Butterflies

Five butterflies classified as local have been recorded on the sites. Any work to open up the sites is likely to benefit these species.

Boletinus cavipes

This is an endangered bolete, a type of fungus. It was recorded on the site in 1996. Any future management on the site should take this species into account.

Stag Beetle, *Lucanus cervus*
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.

Large-leaved lime, *Tilia platyphyllos*
This species is classified as Nationally Scarce. It was recorded in 1994, but not found in the recent survey. Any work should avoid damaging this tree species.

Box, *Buxus sempervirens*
This species has been classified as near threatened. It was recorded in 1994, but not found in the recent survey. Any work should avoid damaging this species.

Summer snowflake, *Leucojum aestivum*
This species is classified as Nationally Scarce. It was recorded in 1994, but not found in the recent survey.

No signs of any rare or protected species were found during the survey however surveys for specific species were not undertaken. The following protected species could potentially be present on the site.

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. 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. Most of the woodland is quite dark and reptiles are unlikely over most of the site. However, as the site was more open in the past, there may be remnant populations of reptiles such as grass snakes, *Natrix natrix*, common lizards, *Zootoca vivipara*, and slow worms, *Anguis fragilis*, present on the edges of the woodland and possibly along the wider paths as well as in the grassland area at Chaworth Copse. The data search revealed that grass snakes have been recorded in the local area. If any major work were to take place in any of these areas, it is advised that they are surveyed for reptiles and that appropriate mitigation be undertaken to avoid harming these species.

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

Timber Hill 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	Abundance
Acer pseudoplatanus	Sycamore	F
Agrostis capillaris	Common Bent	O
Agrostis stolonifera	Creeping Bent	R
Alliaria petiolata	Garlic Mustard	R
Arrhenatherum elatius	False Oat-grass	R
Betula pendula	Silver Birch	A
Betula pubescens	Downy Birch	O
Calystegia sepium	Hedge Bindweed	R
Carex remota	Remote Sedge	R
Carpinus betulus	Hornbeam	R
Castanea sativa	Sweet Chestnut	O
Cerastium fontanum	Common Mouse-ear	R
Chamerion angustifolium	Rosebay Willowherb	F
Chelidonium majus	Greater Celandine	R
Circaea lutetiana	Enchanter's-nightshade	O
Corylus avellana	Hazel	F
Crataegus monogyna	Hawthorn	F
Digitalis purpurea	Foxglove	R
Dryopteris filix-mas	Common Male Fern	O
Dryopteris dilatata	Broad Buckler-fern	O
Epilobium montanum	Broad-leaved Willowherb	F
Euphorbia peplus	Petty Spurge	R
Fagus sylvatica	Beech	R
Frangula alnus	Alder Buckthorn	O
Fraxinus excelsior	Ash	O
Galium aparine	Cleavers	R
Geranium robertianum	Herb-robert	R
Geum urbanum	Herb Bennet	O
Glechoma hederacea	Ground-ivy	R
Hedera helix	Ivy	LA
Ilex aquifolium	Holly	O
Ligustrum ovalifolium	Garden Privet	O
Lonicera periclymenum	Honeysuckle	F
Malus domestica	Apple	O
Poa annua	Annual Meadow-grass	O
Prunus laurocerasus	Cherry Laurel	LD

Scientific name	Common	Abundance
Prunus domestica ssp. insititia	Damson	LF
Pteridium aquilinum	Bracken	A
Quercus cerris	Turkey oak	O
Quercus robur	Pedunculate oak	A
Quercus rubra	Red oak	R
Rosa canina agg.	Dog Rose	O
Rubus fruticosus agg.	Bramble	A
Salix fragilis	Crack Willow	R
Sambucus nigra	Elder	F
Senecio jacobaea	Common Ragwort	O
Sorbus aucuparia	Rowan	O
Teucrium scorodonia	Wood Sage	O
Ulex europaeus	Gorse	O
Urtica dioica	Common Nettle	O
Prunella vulgaris	Selfheal	R
Tilia cordata x platyphyllos	Lime	R
Iris foetidissima	Stinking Iris	R
Solanum dulcamara	Bittersweet	R
Ulmus procera	English Elm	R

Chaworth Copse 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
Agrostis stolonifera	Creeping Bent	LA
Arrhenatherum elatius	False Oat-grass	O
Arum maculatum	Lords-and-ladies	R
Calystegia sepium	Hedge Bindweed	R
Centaurium erythraea	Common Centaury	O
Cerastium fontanum	Common Mouse-ear	O
Circaea lutetiana	Enchanter's-nightshade	O
Circaea lutetiana	Enchanter's-nightshade	O
Cirsium arvense	Creeping Thistle	LF
Corylus avellana	Hazel	O
Crataegus monogyna	Hawthorn	O
Digitalis purpurea	Foxglove	O
Epipactis helleborine	Broad-leaved Helleborine	R
Fagus sylvatica	Beech	F
Scientific name	**Common name**	**Abundance**

Fraxinus excelsior	Ash	O
Geum urbanum	Herb Bennet	O
Hedera helix	Ivy	F
Holcus lanatus	Yorkshire-fog	LA
Ilex aquifolium	Holly	F
Poa trivialis	Rough Meadow-grass	O
Populus tremula	Aspen	LF
Prunella vulgaris	Selfheal	LF
Prunus laurocerasus	Cherry Laurel	F
Pteridium aquilinum	Bracken	LF
Quercus robur	Pedunculate oak	F
Ranunculus repens	Creeping Buttercup	O
Ribes rubrum	Red Currant	O
Rumex acetosa	Common Sorrel	R
Rumex obtusifolius	Broad-leaved Dock	O
Rumex sanguineus	Wood Dock	O
Salix caprea	Goat Willow	LF
Salix cinerea	Grey Willow	O
Sambucus nigra	Elder	O
Senecio jacobaea	Common Ragwort	LF
Solanum dulcamara	Bittersweet	R
Sorbus aucuparia	Rowan	O
Stellaria graminea	Lesser Stitchwort	R
Taxus baccata	Yew	R
Teucrium scorodonia	Wood Sage	O
Urtica dioica	Common Nettle	F
Veronica chamaedrys	Germander Speedwell	O

Timber Hill & Chaworth Copse Phase 1 Survey Map

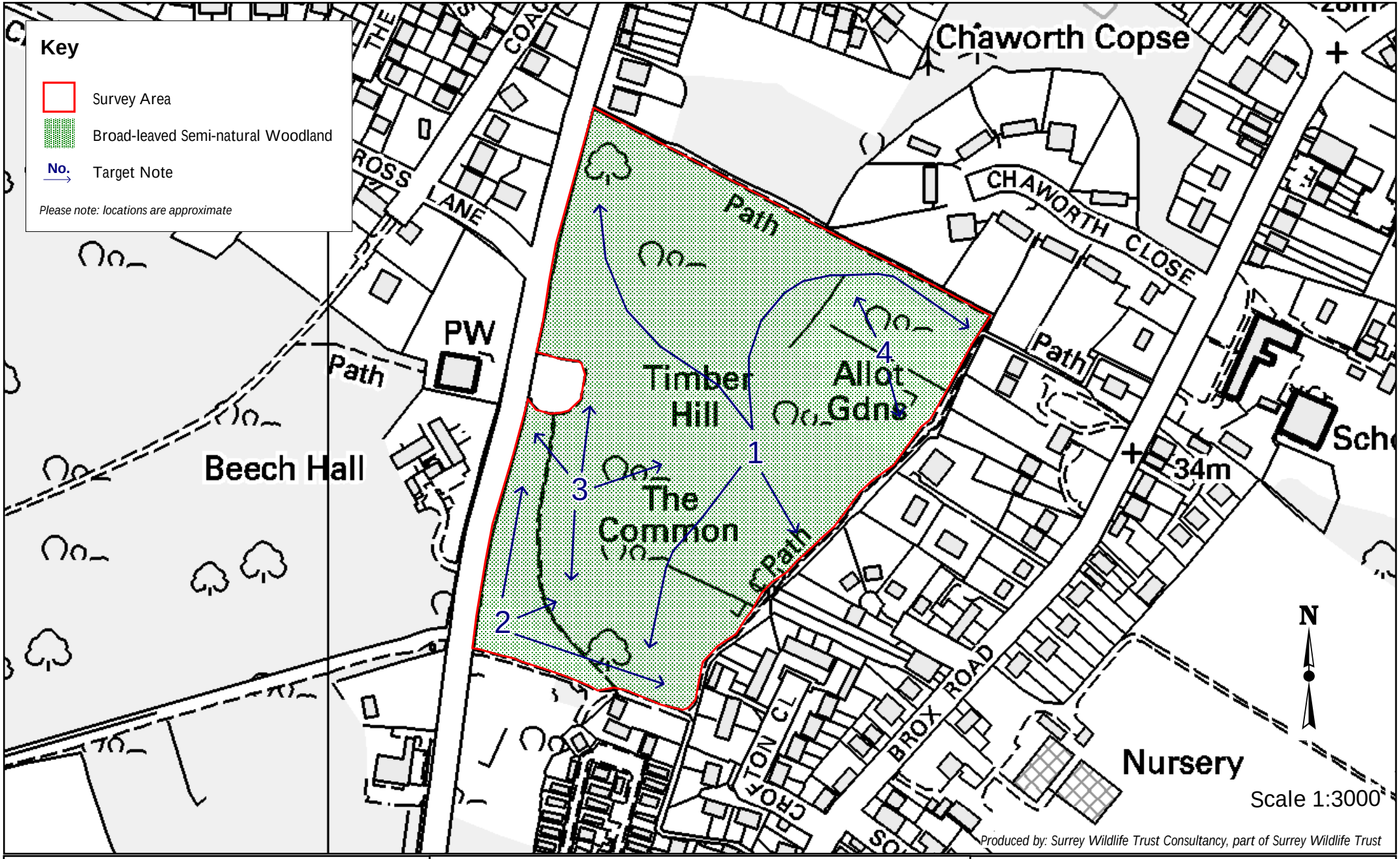

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Figure 3
Timber Hill
Phase 1 Survey Results

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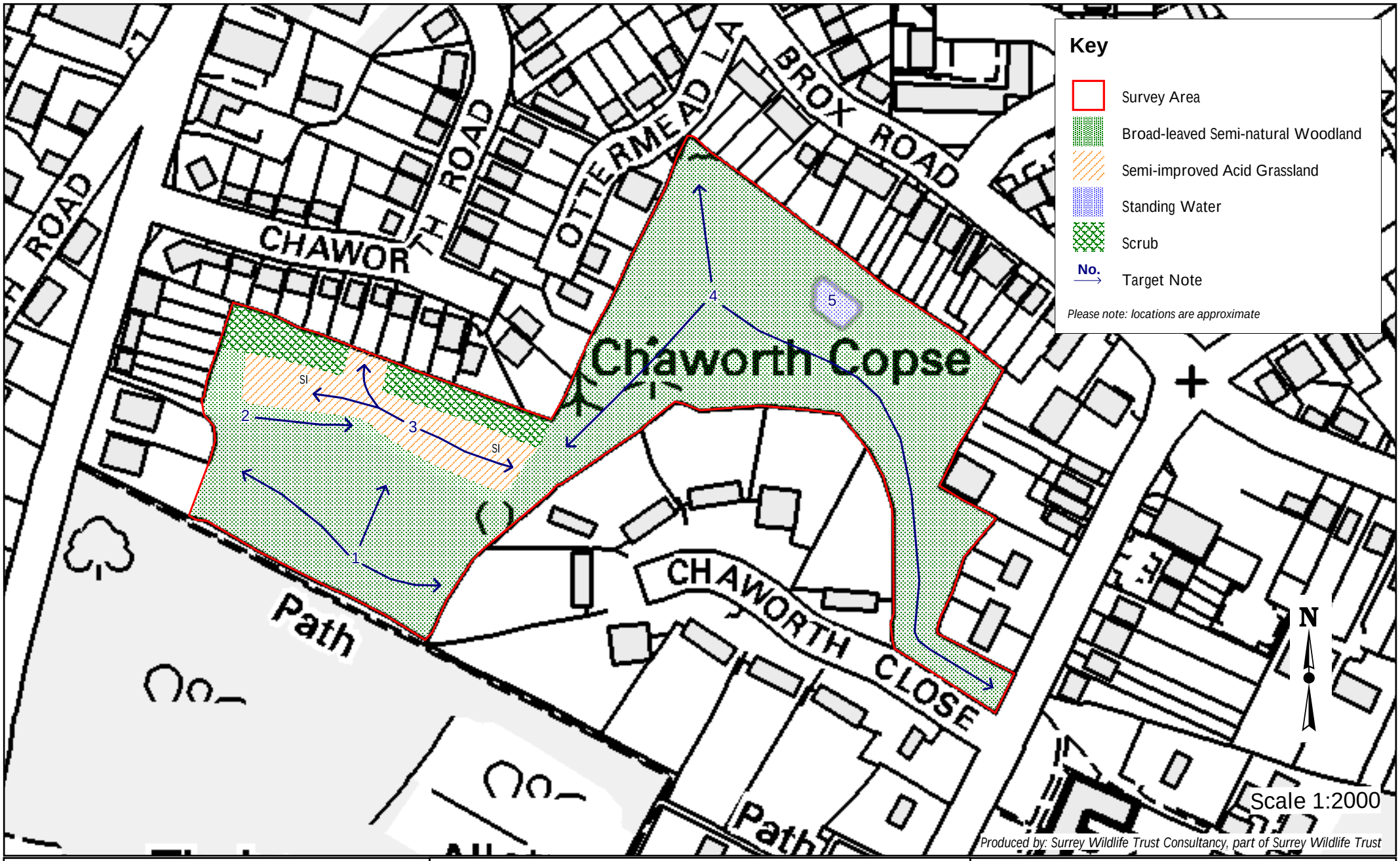

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Figure 4
Chaworth Copse
Phase 1 Survey Results

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Appendix 4 Access Survey of Timber Hill & Chaworth Copse 2009

Ken Anckorn BSc (Hons) DipMus DipEnv

Description

These two sites are adjacent to each other, sharing a boundary on the northern side of Timber Hill and the southern edge of Chaworth Copse. Indeed, one of the two main access points to Chaworth Copse is off the northern boundary of Timber Hill and both sites are served by one 39 space car park. Therefore, these two sites have been treated as one unit for SANGS consideration.

Timber Hill or 'The Common' as it is better known locally is a completely wooded site of approximately 6.5 hectares. Local records show that in its time it has probably been farmland, heathland and is currently all woodland although until relatively recently part of the site was used as allotments, although very little evidence of this can be seen on site. There is a high point on site but due to tree growth no views are obtainable. Records tell however of local people using the hill to look out towards London.

Chaworth Copse is the remains of the landscaped gardens of Chaworth House, some 2.7 hectares. The site has therefore some interesting features, including terraces, a grassed area, an old pond and some exotic specimen trees. A path has been created from the entrance off the northern boundary of Timber Hill which snakes through the Copse, to join Brox Road via an iron railing gateway.

The Trust is of the opinion that taken as one unit, the site can be made into an interesting walking area, which should be able to serve its SANGS purpose of attracting visitors away from SPA sites.

Current Facilities

a) Car Parks

The 39 space car park has been recently 'improved' with a tarmac surface; it is delineated with white line parking bays and includes two disabled parking spaces. Dog waste bins and litter bins are provided next to the access points into the woodland. The car park has separate entrance and exit points which are height protected. The car park is surrounded by a post and rail fence with two kissing gate access points into the woodland.

b) Pathways

The pathways in the woodland are informal and unsurfaced. Due to a prolonged spell of dry weather, all paths were dry and easily walked at the time of the site visit, although it is likely that after wet weather paths become muddy. There is a stepped path down from the high point on Timber Hill and a short flight of steps down a

terrace on a path near the access point to Chaworth Copse from Timber Hill. There are a number of public footpaths crossing the site, marked by tall wooden finger posts and meter high posts with the standard colour coded signs.

c) Furniture

Dog waste bins and litter bins are provided at the car park and at other entrance points onto the site off the A320 and Brox Road. Public rights of way are signposted.

d) Special Features

Timber Hill woodland, although an attractive woodland, has no special focal point. The high point to the south of the car park is now completely enclosed by trees and the once extensive view towards London has been lost.

Chaworth Copse has several interesting features, the most important of which is a pond, which while dry at the time of the site visit, is obviously water filled at other times of the year.

The Copse has the remains of the estate landscaping features associated with its time as part of the grounds of Chaworth House, including terraces, estate drive, exotic specimen trees and the remains of a brick outbuilding. The only area of open space on the two sites is approximately 1 acre of grassland in the middle of the Copse.

Recommendations

In order to function as a SANGS, these sites need to divert visitors away from the SPA. In their current condition, there is little to tempt the visitor onto the site, particularly those coming from a distance. Consequently the site is predominantly used by locals as it is convenient and now has a good car park. The site must develop its features of interest to attract more visitors away from the SPA.

a) Car Parking

The existing car park should provide for the extra visitors a SANGS site might expect. It should also prove sufficient for those visitors wishing to go to Ottershaw Chase, or to extend their walk to other SANGS sites.

b) Improving Site Interest

Timber Hill has no significant feature which could be developed into a visitor focus point, other than the high point of the site. This could be returned to a view point, with a vista towards London, with some selective tree felling. A bench or two at this point would be a positive attraction and the path from the car park to the view point could be made suitable for disabled access.

Other improvements could be made to the grading and surfacing of paths, to improve wet areas and particularly uneven surfaces. Thinning of the holly and bramble thickets and removal of cherry laurel and rhododendron would help to open the site to more sunlight, improving the biodiversity of the woodland floor and making parts of the woodland less 'oppressive'.

The interest of the site could be significantly improved by developing and restoring the interesting features of Chaworth Copse. The main focal point of the site could be the restored pond. Wheel chair access to the pond for the more able could be possible from the car park with some footpath improvements. A bench or two would be popular beside the pond.
Some clearance of the former garden terraces and featuring of specimen trees would add to the sites attraction. New paths and steps in this area would add to the interest, particularly if they could reflect the old gardens original design.

c) Visitor Access

Some upgrading of the main paths to the high point at Timber Hill and from the car park to the pond could provide 'all access' routes and broaden the attraction of the site. Other paths on the site should be improved only where wet or eroded but generally pathside scrub should be cleared back to encourage pathside ground flora to develop in the improved light.
Other than from the car park, access to the site is obtained from paths to the south and east of Timber Hill and from Brox Road. These access points largely serve local visitors who walk to the site. To aid access for less able visitors, some disabled car parking facilities could be considered for Brox Road, where the access path to Chaworth Copse starts. This path to the pond could be easily improved to allow access for all as it is almost flat.
Paths around the old garden terraces of Chaworth Copse could be easily created from the network of informal paths already existing.

d) Visitor Information

Information boards are required at the car park's access points to the woods, at the entrance to Chaworth Copse from Timber Hill and at the access point off Brox Road into Chaworth Copse.
These notice 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. Eg Guided Walks.

Wooden way markers could be provided on the main routes in addition to the right of way markers.

e) Habitat Improvement

The main improvement to biodiversity for this site would be the reinstatement of the pond. Although public access to the pond must be encouraged, some of its banks should be made non accessible to allow water birds to breed and provide shelter for other aquatic animals and plants.
The grassy areas of Chaworth Copse should be maintained and encroaching scrub cut back.
The dense thickets of bramble and holly on the two sites should be thinned and efforts made to remove the vast majority of rhododendron and cherry laurel. There may however be rare or interesting species of rhododendron surviving from the old Chaworth House garden. These and any other interesting surviving garden shrubs should be trimmed and maintained as features.

The removal of pathside vegetation and selective thinning of young trees to create woodland rides along paths with the occasional wider glade will eventually add to site biodiversity and provide more interesting walks.

There is a lot of garden waste and other encroachments around the edge of Chaworth Copse. This should be removed and local residents informed of the adverse affect this dumping can have on biodiversity.

Bird and bat boxes should be erected on suitable trees on site.

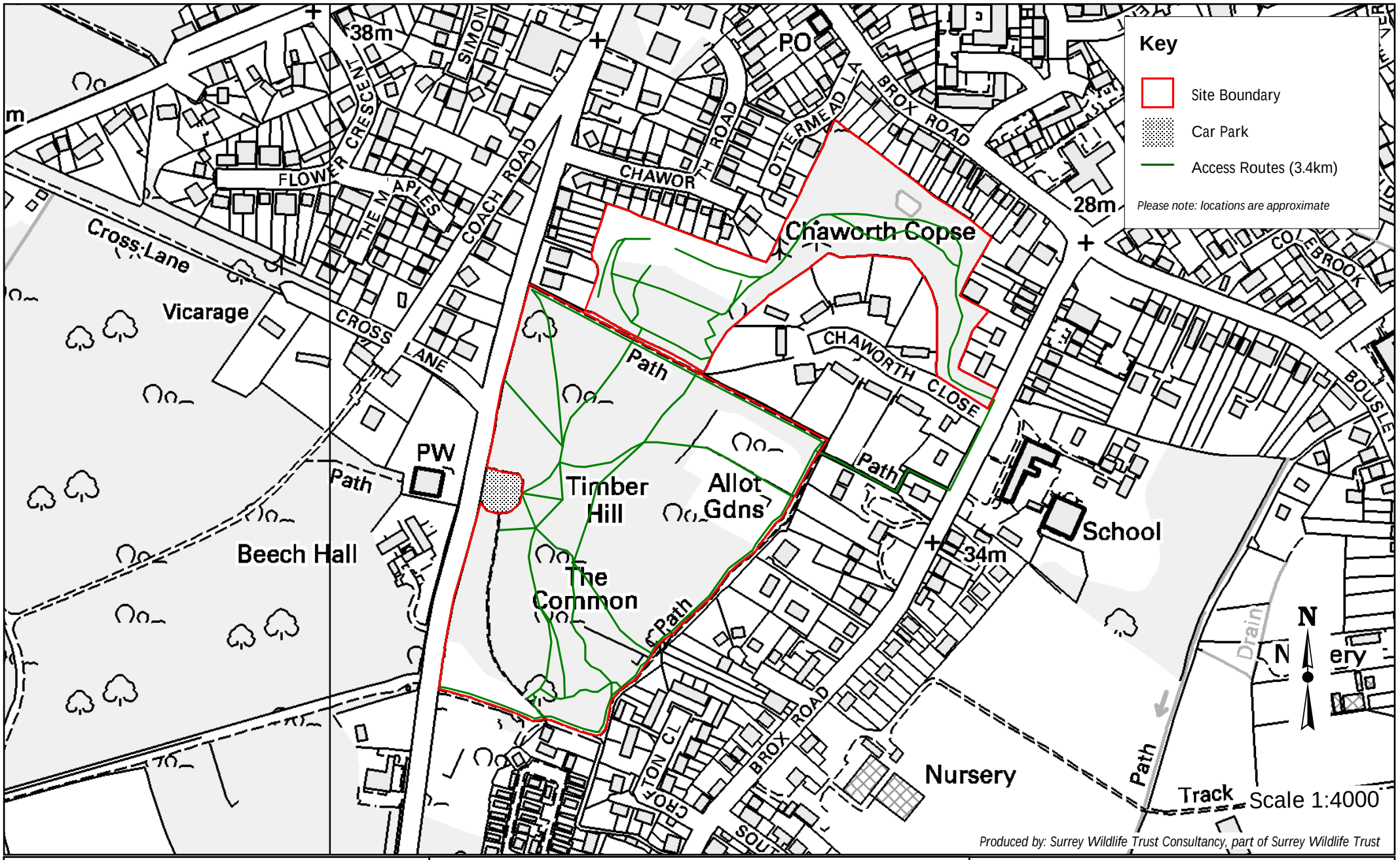
f) Management Plan.

All of the above works should only be done after a Management Plan has been drawn up and agreed. Detailed ecological advice should be consulted in order that more sensitive features on site are not damaged and the more interesting flora and fauna on site is protected. This can be achieved by careful vegetation control and re-routing paths where necessary to avoid ecologically sensitive areas. The Phase 1 survey has not identified any ecologically sensitive areas on this site but species survey work may pinpoint ecological 'hotspots'.

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 SANGS. By adopting these measures, the SANGS 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.

Timber Hill & Chaworth Copse Access Routes & Car Park



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Timber Hill and Chaworth Copse
Access Routes and Car Park

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Appendix 5 Timber Hill & Chaworth Copse Data Search 2009

Background Ecological Data Search; Area Around Timber Hill and Chaworth Copse, 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 to the east of Guildford Road (Timber Hill and Chaworth Copse, approximate site centre Ordnance Survey grid reference TQ023635). 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
	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
	Tawny Owl	*Strix aluco*		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
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
	Tawny Owl	*Strix aluco*		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
	Ruddy Darter	*Sympetrum sanguineum*	Notable/Nb	58 tetrads, Confirmed; Increasing	1994	Adler, M.
	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
TQ0262	Copse-bindweed	*Fallopia dumetorum*	Nationally Scarce [17]	Rare 14 tetrads, 1987; Rare, 9 tetrads	1991	Other Record
TQ0263	a bolete	*Boletinus cavipes*	Endangered [18]		1996	Other Record

	Large-leaved Lime	*Tilia platyphyllos*	Nationally Scarce	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	1994	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
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
	a shield bug	*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

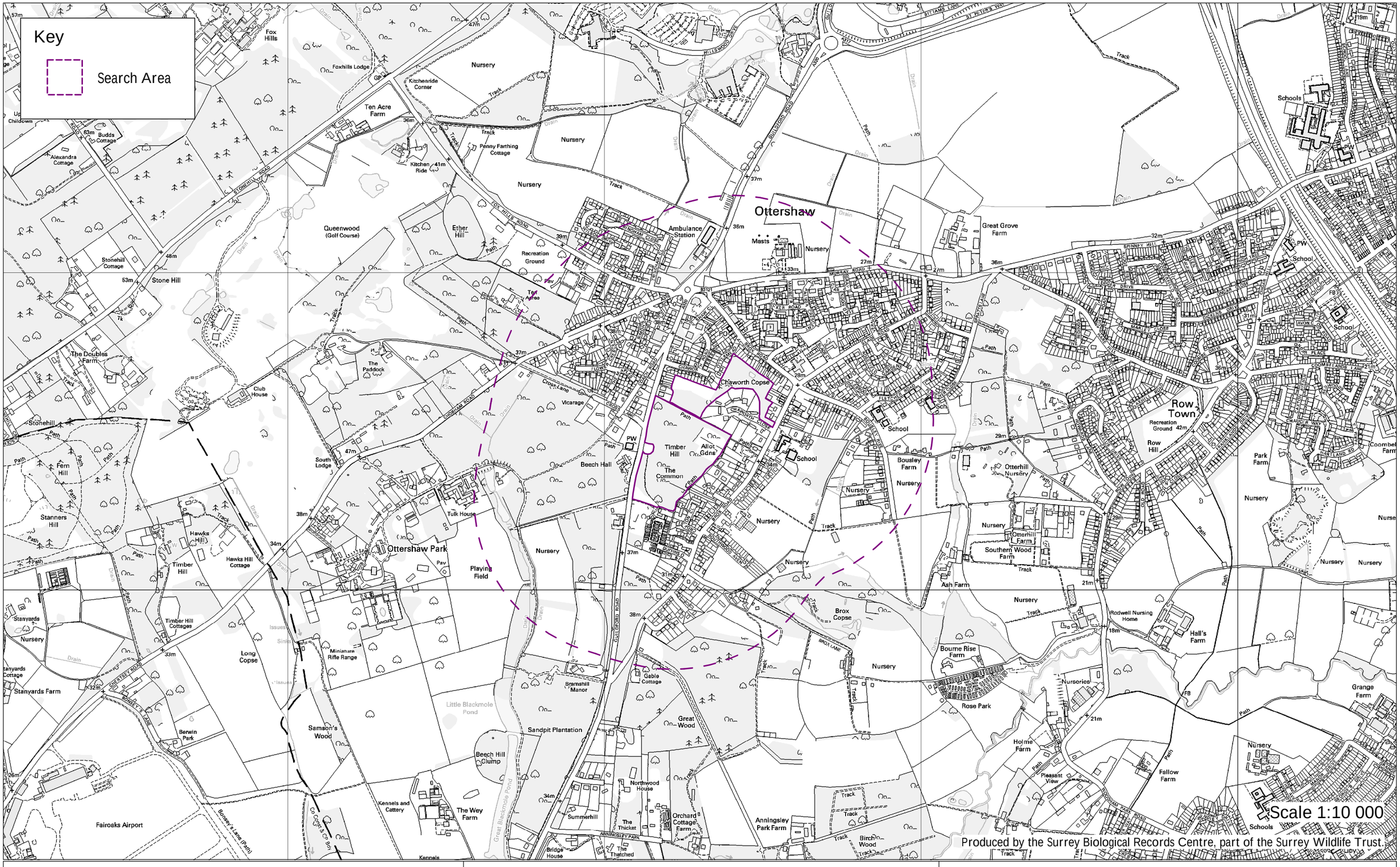
The following species which appear on either the Priority or the Conservation Concern lists of the UK Steering Group Report on Biodiversity [23] have also been recorded from sites falling within the 500 metre search area.

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
	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	1994	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 Timber Hill and Chaworth Copse, 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] 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.

[18] 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.

[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.

Appendix 6 Additional Survey data – Plants

Ken Page & Sylvia Berrett 1994 & 1996

Scientific Name	Common Name
Acer pseudoplatanus	Sycamore
Aegopodium podagraria	Ground-Elder
Aesculus hippocastanum	Horse-Chestnut
Alliaria petiolata	Garlic Mustard
Anthriscus sylvestris	Cow Parsley
Arrhenatherum elatius	False Oat-Grass
Arum maculatum	Lords-And-Ladies
Ballota nigra	Black Horehound
Betula pendula	Silver Birch
Buxus sempervirens	Box
Cardamine flexuosa	Wavy Bitter-Cress
Cardamine hirsuta	Hairy Bitter-Cress
Carex pendula	Pendulus Sedge
Castanea sativa	Sweet Chestnut
Cerastium fontanum	Common Mouse-Ear
Chamerion angustifolium	Rosebay Willowherb
Cirsium arvense	Creeping Thistle
Corylus avellana	Hazel
Cotoneaster bullatus	Hollyberry Cotoneaster
Cotoneaster simonsii	Himalayan Cotoneaster
Crataegus monogyna	Hawthorn
Cytisus scoparius	Broom
Dactylis glomerata	Cock's-Foot
Dipsacus fullonum	Wild Teasel
Dryopteris dilatata	Broad Buckler-Fern
Dryopteris filix-mas	Common Male Fern
Epilobium ciliatum	American Willowherb
Epilobium montanum	Broad-Leaved Willowherb
Epilobium obscurum	Short-Fruited Willowherb
Epipactis helleborine	Broad-Leaved Helleborine
Fagus sylvatica	Beech
Frangula alnus	Alder Buckthorn
Fraxinus excelsior	Ash
Galium aparine	Cleavers
Geranium robertianum	Herb-Robert
Geum urbanum	Herb Bennet
Hedera helix subsp. helix	Common Ivy
Hedera hibernica	Atlantic Ivy
Heracleum sphondylium	Hogweed
Holcus lanatus	Yorkshire-Fog
Hyacinthoides hispanica	Spanish Bluebell
Ilex aquifolium	Holly
Juncus effusus	Soft Rush
Juncus inflexus	Hard Rush
Lapsana communis	Nipplewort
Leucojum aestivum	Summer Snowflake
Ligustrum ovalifolium	Garden Privet
Lolium perenne	Perennial Rye-Grass
Lonicera japonica	Japanese Honeysuckle

Scientific Name	Common Name
Lonicera nitida	Wilson's Honeysuckle
Lonicera periclymenum	Honeysuckle
Lunaria annua	Honesty
Malus pumila	Apple
Molinia caerulea	Purple Moor-Grass
Pentaglottis sempervirens	Green Alkanet
Picea abies	Norway Spruce
Plantago major subsp. major	Greater Plantain
Poa annua	Annual Meadow-Grass
Poa nemoralis	Wood Meadow-Grass
Poa trivialis	Rough Meadow-Grass
Populus tremula	Aspen
Potentilla reptans	Creeping Cinquefoil
Primula vulgaris	Primrose
Prunella vulgaris	Selfheal
Prunus avium	Wild Cherry
Prunus cerasifera	Cherry Plum
Prunus domestica	Wild Plum
Prunus laurocerasus	Cherry Laurel
Pteridium aquilinum	Bracken
Pyrus communis	Pear
Quercus cerris	Turkey Oak
Quercus robur	Pedunculate Oak
Quercus rubra	Red Oak
Ranunculus ficaria	Lesser Celandine
Ranunculus repens	Creeping Buttercup
Rhododendron ponticum	Rhododendron
Ribes uva-crispa	Gooseberry
Rosa multiflora	Many-Flowered Rose
Rubus fruticosus agg.	Bramble
Rubus idaeus	Raspberry
Rumex obtusifolius	Broad-Leaved Dock
Rumex sanguineus	Wood Dock
Salix caprea	Goat Willow
Salix cinerea subsp. oleifolia	Willow
Salix fragilis x alba = S. x rubens	Hybrid Crack-Willow
Sambucus nigra	Elder
Scrophularia nodosa	Common Figwort
Senecio jacobaea	Common Ragwort
Sisymbrium officinale	Hedge Mustard
Sorbus aucuparia	Rowan
Stellaria holostea	Greater Stitchwort
Taraxacum officinale agg.	Dandelion
Teucrium scorodonia	Wood Sage
Tilia platyphyllos	Large-Leaved Lime
Ulex europaeus	Gorse
Urtica dioica	Common Nettle
Veronica hederifolia subsp. hederifolia	Ivy-Leaved Speedwell
Viburnum tinus	Laurustinus
Vicia cracca	Tufted Vetch
Vinca major	Greater Periwinkle
Vinca minor	Lesser Periwinkle

Appendix 7 Additional Survey data – Plants

Land Management Consultants 1994

Scientific Name	Common Name
Acer platanoides	Norway Maple
Acer pseudoplatanus	Sycamore
Achillea millefolium	Yarrow
Aegopodium podagraria	Ground-elder
Agrostis capillaris	Common Bent
Agrostis stolonifera	Creeping Bent
Anthoxanthum odoratum	Sweet Vernal Grass
Anthriscus sylvestris	Cow Parsley
Arrhenatherum elatius	False Oat-grass
Arum maculatum	Lords-and-ladies
Betula pendula	Silver Birch
Calluna vulgaris	Heather
Calystegia sepium	Hedge Bindweed
Cardamine pratensis	Cuckoo-flower
Castanea sativa	Sweet Chestnut
Centaurea nigra	Common Knapweed
Centaurium erythraea	Common Centaury
Cerastium fontanum	Common Mouse-ear
Chamerion angustifolium	Rosebay Willowherb
Circaea lutetiana	Enchanter's-nightshade
Cirsium arvense	Creeping Thistle
Cirsium vulgare	Spear Thistle
Corylus avellana	Hazel
Cotoneaster sp.	a cotoneaster
Crataegus monogyna	Hawthorn
Cytisus scoparius	Broom
Dactylis glomerata	Cock's-foot
Danthonia decumbens	Heath-grass
Deschampsia caespitosa	Tufted Hair-grass
Digitalis purpurea	Foxglove
Dryopteris dilatata	Broad Buckler-fern
Dryopteris filix-mas	Common Male Fern
Dryopteris filix-mas agg.	Male Fern
Epilobium montanum	Broad-leaved Willowherb
Epipactis helleborine	Broad-leaved Helleborine
Fagus sylvatica	Beech
Festuca arundinacea	Tall Fescue
Festuca rubra sens.str.	Red Fescue
Fraxinus excelsior	Ash

Scientific Name	Common Name
Galanthus nivalis	Snowdrop
Galium aparine	Cleavers
Galium saxatile	Heath Bedstraw
Geum urbanum	Herb Bennet
Glechoma hederacea	Ground-ivy
Glyceria sp.	a sweet-grass
Hedera helix	Ivy
Holcus lanatus	Yorkshire-fog
Holcus mollis	Creeping Soft-grass
Hyacinthoides non-scripta	Bluebell
Hypericum pulchrum	Slender St. John's-wort
Hypochaeris radicata	Cat's-ear
Ilex aquifolium	Holly
Iris foetidissima	Stinking Iris
Juncus acutiflorus	Sharp-flowered Rush
Juncus effusus	Soft Rush
Lonicera periclymenum	Honeysuckle
Lotus corniculatus	Common Bird's-foot-trefoil
Luzula campestris	Field Wood-rush
Lysimachia nummularia	Creeping-Jenny
Narcissus pseudonarcissus ssp. pseudonarcissus	Daffodil
Picea abies	Norway Spruce
Pilosella officinarum	Mouse-ear-hawkweed
Pinus sylvestris	Scots Pine
Plantago lanceolata	Ribwort Plantain
Poa pratensis sens.str.	Smooth Meadow-grass
Poa trivialis	Rough Meadow-grass
Populus sp.	a poplar
Populus tremula	Aspen
Potentilla reptans	Creeping Cinquefoil
Primula sp.	a primrose
Prunella vulgaris	Selfheal
Prunus avium	Wild Cherry
Prunus laurocerasus	Cherry Laurel
Prunus lusitanica	Portugal Laurel
Prunus sp.	a planted cherry
Pteridium aquilinum	Bracken
Quercus robur	Pedunculate Oak
Quercus sp.	an oak
Ranunculus repens	Creeping Buttercup
Rhododendron ponticum	Rhododendron

Scientific Name	Common Name
Ribes rubrum	Red Currant
Rubus fruticosus agg.	Bramble
Rumex acetosa	Common Sorrel
Rumex acetosella agg.	Sheep's Sorre
Rumex obtusifolius	Broad-leaved Dock
Rumex sanguineus	Wood Dock
Salix caprea	Goat Willow
Salix cinerea	Grey Willow
Sambucus nigra	Elder
Sasa sp.	a bamboo
Senecio jacobaea	Common Ragwort
Solanum dulcamara	Bittersweet
Sorbus aucuparia	Rowan
Stellaria graminea	Lesser Stitchwort
Stellaria media	Common Chickweed
Taraxacum officinale agg.	Dandelion
Taxus baccata	Yew
Teucrium scorodonia	Wood Sage
Tilia cordata x platyphyllos	Lime
Trifolium pratense	Red Clover
Trifolium repens	White Clover
Ulmus sp.	an elm
Urtica dioica	Common Nettle
Veronica chamaedrys	Germander Speedwell
Veronica officinalis	Heath Speedwell

Appendix 8 Additional Survey data – Fungi

Ray Tantrum 1995-1998

Timberhill	Common_name	Frequency	Comments
Amanita citrina	False death cap	Common	
Amanita fulva	Tawny grisette	C	
Amanita muscaria	Fly agaric	C	
Amanita rubescens	Blusher	C	
Annulohypoxylon Hypoxylon) multiforme		C	black bumps on Birch
Bisporella citrina		C	
Bjerkandera adusta		C	bracket, not confined to Birch
Boletus (Tylopilus) felleus	Bitter bolete	Occ.	
Boletus (Xerocomellus) chrysenteron	Red-cracking bolete		This species has been revised and split, and the common form, mainly under Oak, renamed as *Boletus ((Xerocomus) cisalpina*, with *X.chrysenteron* now considered rare! Old records suspect!
Boletus (Xerocomellus) porosporus		O to R	Reasonably rare, unusual truncate germ pore in some of its spores (only British Bolete species to do this). 1994, 1995
Boletus (Xerocomellus) pruinatus		C	
Boletus badius	Bay bolete	C	good edible species
Boletus edulis	Penny bun	C	prized edible species – target of commercial collectors
Bulgaria inquinans	Bachelors buttons	C	appears quickly on oak trunks after felling
Chalciporus piperatus	Peppery bolete	C	note name change from *Boletus piperatus*
Chlorophyllum brunneum (Macrolepiota rhacodes var. hortensis)	a shaggy parasol	O	grows on garden debris, and found here where house owners used the Reserve to dump garden waste! – genus and species name change
Chlorophyllum (Macrolepiota) rhacodes	Shaggy parasol	C	woodland species- genus change
Chondrostereum purpureum	Silver leaf	C	not confined to parasitizing plum trees, also on old stumps (as saprotroph)
Clitocybe nebularis	Cloudy cap	C	
Clitocybe odora	Aniseed toadstool	C	(but of interest for its colour-cap attractive bluish-green) and strong aniseed smell)

Timberhill	Common_name	Frequency	Comments
Clitocybe sp.	funnel caps		customary now not to accept records not at species level
Cortinarius hemitrichus		C	
Cortinarius sodagnites		O	
Cortinarius sp.			ditch this as not to species level (as above)
Crepidotus variabilis		C	
Daedaleopsis confragosa	Blushing bracket	C	
Ganoderma australe (adspersum)	Southern bracket -an artist's fungus	C	
Gymnopilus penetrans		C	often found on recently cut stumps
Gymnopus (Collybia) confluens		C	genus name change
Gymnopus (Collybia) fusipes	Spindle shank	C	grows in tufts at base of (mainly) oak trees - genus name change
Gymnopus (Collybia) peronatus	Wood woollyfoot	C	genus name change
Hebeloma crustuliniforme	Poison pie; Fairy cakes	C	(but now considered a 'species complex' due for splitting!
Hypholoma fasciculare	Sulphur tuft	C	
Hypomyces (Sepedonium) chrysospermum	Mould	C	Grows on old Boletes and *Paxillus involutus*
Inocybe geophylla		C	
Laccaria amethystina	Amethyst deceiver	C	
Laccaria laccata	Deceiver	C	
Lactarius quietus	Oak milkcap	C	with Oak
Lactarius subdulcis		C	
Lactarius tabidus		C	
Lactarius turpis	Ugly milkcap	C	
Lactarius vietus	Grey milkcap	C	with Birch
Lenzites betulina		C	bracket fungus - not confined to Birch 1995, 1996
Lepista (Clitocybe) flaccida	Tawny funnel cap	C	
Lepista nuda	Wood blewit	C	
Lepista sordida	a blewit	O	
Lycoperdon nigrescens (foetidum)	a puffball	C	
Lycoperdon perlatum	Puffball	C	
Macrolepiota fuliginosa (permixta)	a parasol mushroom	C	a woodland 'version' of *M. procera*. 1997 ID confirmed Brian Spooner
Mycena galericulata	Bonnet mycena	C	
Mycena galopus		C	
Mycena sp.		C	

Timberhill	Common_name	Frequency	Comments
Mycena vitilis	'snapping bonnet'	C	
Nectria cinnabarina	Coral spot	C	
Parasola (Coprinus) plicatilis	Japanese umbrella	C	
Paxillus involutus	Brown roll rim	C	
Peniophora quercina		C	lilac-coloured thin crusty bracket on Oak
Peziza sp.	a cup fungus	C	delete
Piptoporus betulinus	Birch bracket,razor strop fungus	C	confined to Birch
Pleurotus dryinus	Veiled oyster fungus	O	here growing on Oak stump, a favourite host 1994
Pluteus cervinus		C	grows on wood
Pluteus leoninus		0-U	slightly suspect record, as this and *P. chrysophaeus* now more accurately defined.
Psathyrella candolleana		C	
Psathyrella piluliformis (hydrophila)		C	tuftys on stumps
Psathyrella sp.			Delete
Pseudoboletus parasiticus		O	Grows on *Scleroderma citrinum* found mainly in the south. Prolific in some years, absent in many
Psilocybe cyanescens		O	Contains Psilocybin – on Home Office banned list! ID confirmed Brian Spooner. Grows on wood and woodchips.
Rhodocollybia (Collybia) butyracea	Butter cap	C	genus name change
Rhodocollybia (Collybia) maculata	Foxy spot	C	genus name change
Rhytisma acerinum	Tar spot	C	grows on Sycamore leaves. Very prolific
Russula aeruginea		C	
Russula atropurpurea	Common purple russula	C	
Russula betularum		C	under Birch
Russula claroflava	Yellow swamp russula	O	
Russula cyanoxantha	Charcoal burner	O	
Russula ochroleuca	Common yellow russula	C	
Russula sororia		O	under Oak
Russula sp.			Delete
Scleroderma citrinum	Common earthball	C	'host' to *Pseudoboletus parasiticus*
Stereum gausapatum		C	on oak twigs, branches
Stereum hirsutum	Hairy stereum	C	
Stereum rameale		O	Identified Brian Spooner

Timberhill	Common_name	Frequency	Comments
Trametes (Coriolus) versicolor	Many-coloured bracket	C	
Tremella foliacea		O	grows on dead Stereums and Peniophoras, (appears to be growing on wood)
Trichaptum (Hirschioporus) abietinum		C	prolific thin bracket with purple pores on fallen conifer trunks, branches. Found 1995 on BL wood, ID confirmed Brian Spooner
Tricholoma fulvum		C	
Tricholoma sulphureum		C	yellow throughout, and with sulphur smell (gasworks!)
Tubaria furfuracea		C	
Xylaria hypoxylon	Candle-snuff fungus	C	on rotting stumps

Status: (Frequency) **C**ommon, **O**ccasional, **U**ncommon, **R**are.

Nothing very noteworthy or rare, but supports quite a range of species, some of interest. I have highlighted in RED what I (subjectively!) find the most interesting.

Ray Tantram 9th. February 2014

Appendix 9 Additional Survey data – Birds

Scientific Name	Common Name
Accipiter nisus	Sparrowhawk
Aegithalos caudatus	Long-Tailed Tit
Aix galericulata	Mandarin
Carduelis carduelis	Goldfinch
Carduelis chloris	Greenfinch
Carduelis flammea	Redpoll
Carduelis spinus	Siskin
Certhia familiaris	Treecreeper
Columba oenas	Stock Dove
Columba palumbus	Woodpigeon
Corvus corone agg.	Carrion Crow
Corvus monedula	Jackdaw
Cuculus canorus	Cuckoo
Cyanistes caeruleus	Blue Tit
Dendrocopos major	Great Spotted Woodpecker
Dendrocopos minor	Lesser Spotted Woodpecker
Erithacus rubecula	Robin
Falco tinnunculus	Kestrel
Fringilla coelebs	Chaffinch
Fringilla montifringilla	Brambling
Garrulus glandarius	Jay
Muscicapa striata	Spotted Flycatcher
Parus major	Great Tit
Passer domesticus	House Sparrow
Periparus ater	Coal Tit
Phylloscopus collybita	Chiffchaff
Phylloscopus sibilatrix	Wood Warbler
Phylloscopus trochilus	Willow Warbler
Pica pica	Magpie
Picus viridis	Green Woodpecker
Poecile montanus	Willow Tit
Poecile palustris	Marsh Tit
Prunella modularis	Dunnock
Pyrrhula pyrrhula	Bullfinch
Regulus regulus	Goldcrest
Scolopax rusticola	Woodcock
Sitta europaea	Nuthatch
Streptopelia decaocto	Collared Dove
Strix aluco	Tawny Owl
Sturnus vulgaris	Starling
Sylvia atricapilla	Blackcap
Sylvia borin	Garden Warbler
Troglodytes troglodytes	Wren
Turdus iliacus	Redwing
Turdus merula	Blackbird
Turdus philomelos	Song Thrush
Turdus pilaris	Fieldfare
Turdus viscivorus	Mistle Thrush