

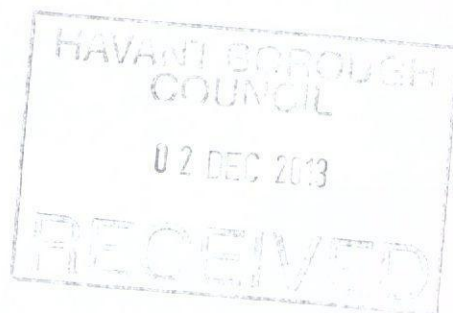


Hampshire
County Council

**Phase 1 Ecological Survey
and Phase 2 Bat Survey**

Report for:

**Hampshire County Council –
HCC Property Services**



**13.0206 Park Community School,
Middle Park Way, Havant,
Hampshire PO9 4BU**

The proposal is to construct a full-sized synthetic turf pitch with floodlighting.

18th October 2013

Revisions:	
Written by:	T Norton
Approved by:	MO
Client ref:	
Ecology ref:	13.0206

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Map 1 Proposed Site Layout

This report constitutes an assessment of the potential ecological impacts arising from the proposal and site as set out below and provides recommendations to ensure that this proposal can reasonably avoid or mitigate any such impacts identified. If the proposal differs from that set out below, then this assessment and recommendations may not be applicable. Furthermore, the assessment and recommendations are based on surveys which may only be considered valid for up to two years following the date of this report.

SUMMARY

- A desk-based assessment and Phase 1 and Phase 2 bat surveys have been carried out in relation to proposed development works at Park Community School, Havant, Hampshire.
- The proposals entail the construction of a new full-sized synthetic sports pitch and floodlighting.
- The site comprises an extensive sports field of well-managed improved grassland which is surrounded by areas of mature vegetation in the form of planted trees and scrub. The application site is adjacent to the Hermitage Stream, a small watercourse which is to be subject to restoration by the Environment Agency.
- Habitat to be directly impacted by the proposed works is predominantly species-poor managed grassland. In addition, a single ash tree will require felling to accommodate the proposed drainage system. Therefore, ecological assessments have been concentrated on likely impacts to bat species utilising the site and adjacent stream.
- A Phase 2 bat transect survey was undertaken in August 2012 and a Phase 1 tree inspection survey was carried out in April 2013. A second Phase 1 tree inspection was undertaken on 17th October 2013. No bats were recorded roosting within the site although the site does support small numbers of foraging bats of two species. The stream habitat bordering the site is likely to be of local importance for foraging bats.
- The ash tree scheduled for removal offers negligible bat roosting potential.
- No impacts to roosting bats are anticipated and no further bat survey works are required in relation to the proposed STP.
- In order to address the issue of artificial light spillage and its impact on foraging bats, it is recommended that vegetation screening is installed and serious consideration is given to a light curfew.

1 INTRODUCTION

1.1 Project Description

Hampshire County Council Ecology Team (HCCET) has been commissioned to carry out an assessment of the ecological implications in relation to a planning application at Park Community School, Middle Park Way, Havant PO9 4BU.

1.1.1 Proposal

Hampshire County Council (HCC) proposes to construct a new, full-sized synthetic turf pitch (STP) with floodlighting at the south-eastern end of an existing sports field at Park Community School, necessitating the loss of areas of existing improved grassland and a single ash tree. Part of the proposed floodlighting, comprising the installation of a series of 15 metre (m) high lighting columns, is situated in close proximity to the highly-modified Hermitage Stream watercourse.

1.1.2 Requirement for Ecological Survey/Assessment

Consultation with HCCET has identified that due to the removal of a single ash tree and the potential for light spillage onto the adjacent Hermitage Stream there is potential for impacts to legally-protected bat species. This report is atypical in that it draws upon detailed ecological survey works undertaken by a third-party, the Environment Agency (EA), in relation to their proposed restoration of the Hermitage Stream which lies immediately adjacent to the site. The EA's long-term plans for the Hermitage Stream include, as part of a much wider scheme, physical engineering works on the stretch of the stream adjacent to the Park Community School: it is understood that the proposals are now on hold due to lack of funding. In summary, HCCET have undertaken minimal site-based survey works for the STP proposals but have kindly been allowed access to the EA data relevant to the school site in order that the ecological implications of the STP can be assessed.

In addition, a desk-based assessment was undertaken by HCCET on 3rd July 2013.

1.1.3 Site Description

Park Community School is situated in the Leigh Park area of Havant, approximately 2.25 kilometres (km) north-west of Havant town centre. The school lies to the west of Middle Park Way and is surrounded on all sides by dense residential development.

The site of the proposed STP comprises the south-eastern end of the existing sports playing field and is bordered to the south by the Hermitage Stream, beyond which lies residential housing associated with Keyhaven Drive. The new STP will lie immediately south of an existing floodlit Multi-Use Games Area (MUGA).

2 METHODS

2.1 Desk-based Assessment

A desk-based assessment was carried out by HCCET on 3rd July 2013. Geographical Information Systems (GIS) mapping was used in order to identify all records of protected species and habitats within a 500 metre (m) radius of the site. In addition, records were obtained of all statutory and non-statutory designated nature conservation sites within the search radius. HBIC holds information on all Sites of Importance for Nature Conservation (SINC), a non-statutory local designation.

HCCET had full access to the extensive biological database held by the Hampshire Biodiversity Information Centre (HBIC). The data is aggregated to meet the HBIC Data Users Agreement and attention is drawn to paragraph 5 of the agreement which states: *'Whilst every reasonable effort is made to validate information supplied to and by the Hampshire Biodiversity Information Centre, owing to the dynamic and judgmental nature of information relating to wildlife, HBIC disclaims any responsibility for the accuracy or comprehensiveness of the information supplied, and accepts no liability for any indirect, consequential, or incidental damages or losses arising from use of the information'.*

2.2 Field-based Assessment

The majority of field surveys have been undertaken on behalf of the EA by commercial ecological consultants. Given the relatively limited nature of the STP proposals (i.e. resulting in direct impacts to predominantly improved grassland, plus the felling of one tree and the indirect impacts of light spillage), the ecological information of key relevance relates to bats: the proposed floodlighting has the potential to result in impacts to bats associated with the Hermitage Stream corridor and the felling of the tree has potential to impact roosting bats.

Therefore, this assessment is based primarily upon Phase 1 and Phase 2 bat survey works undertaken by Ecological Consultancy Services (ECS) Limited during 2012 and 2013. ECS were commissioned by the EA to undertake an assessment of the importance of a 2.5km stretch of the Hermitage Stream for bats: part of this survey area includes the land immediately adjacent to Park Community School (known as Reach C) and thus includes land close to the proposed STP location. The following paragraphs briefly describe the survey methods used.

2.2.1 Phase 1 Bat Survey – Trees

A Phase 1 bat survey site visit was undertaken on 11th April 2013. All trees within the surveyed area site were subject to visual inspection from ground level in order to identify features which may offer suitable roosting opportunities for bats. These features include: ivy cladding; woodpecker holes; rot holes; limb stubs; cavities; flaking bark; cracks and splits. The methods used were in accordance with those described in Hundt (2012).

The potential (ranging from high to low) for each surveyed tree to provide suitable habitat for roosting bats was assessed using the criteria presented in Table 1.

Table 1 Bat Roost Tree Grading Criteria
(ECS Ltd)

Roost feature	High	medium	low
Flaking bark on a tree which is within a hedgerow or woodland setting	✓		
Flaking bark which is on an exposed tree or on very young trees such as groups of elm saplings		✓	
Woodpecker hole - open aspect	✓		
Woodpecker hole – covered with ivy or with resident wasp/hornet nest		✓	
Split or tear in branch of oak or ash in sunny aspect. Split tapers to narrow crevice and is at more than 50% height of the tree	✓		
Split or tear on shaded side of tree in a woodland setting	✓		
Split or tear on shaded side of tree in an exposed situation		✓	
Calloused split or hole with potential bat access at any height or aspect including just above ground level	✓		
Rot hole		✓	
Ivy covering – where a base matt has been created which is similar to the effect of flaking bark		✓	
Ivy – not particularly matted, either very large stems or very small, mostly leaves			✓
Potential roost feature with staining, droppings or flies	✓		

Further to this, each tree was assessed in terms of its requirement for further survey works using the following criteria (summarised from ECS, April 2013):

SE: *Felling to be supervised by ecologist*

A1: *Climbing inspection needed to inspect potential features and consider whether further evening/dawn surveys are required. This should be supervised by ecologist as mentioned above.*

A2: *If advanced climbing survey confirms potential then anticipate the need for further evening/dawn surveys to adequately assess the tree. Up to three evening and one dawn survey may be required across the active bat season.*

A3: *Evening/dawn surveys essential (not possible to climb or inspect any other way).*

B1: *Climbing inspection (supervised by ecologist) to inspect potential roost feature just prior to felling as a precautionary measure*

B2: *Climbing inspection (supervised by ecologist) to inspect ivy just prior to felling as a precautionary measure*

The full results of the tree inspection are presented within the report 'Assessment of Trees with Bat Roosting Potential at Hermitage Stream' (ECS, 15th April 2013).

In addition to the ECS work, HCCET undertook a Phase 1 bat survey on the single ash tree on 17th October 2013. It was not clear from the ECS report whether this individual tree had been inspected and therefore it was decided to make a separate site visit. The methods used were identical to those described above.

2.2.2 Phase 2 Bat Survey

Unusually, Phase 2 bat surveys (assessing the levels of bat activity) were undertaken in advance of the Phase 1 bat survey. A total of two Phase 2 bat transect surveys were carried out by ECS in August 2012. The methods used are detailed fully within the 'Hermitage Stream Bat Activity Survey' report (Environment Agency, November 2012) and summarised below:

Transect surveys were conducted on the 27th August and 5th September 2012, although only the 27th August survey encompassed Reach C. Each survey was carried out by one experienced ECS ecologist accompanied by one EA employee. Transects commenced 15 minutes prior to sunset and continued for 2.5 hours and comprised a slow, methodical walk of the survey area. The location of any bats seen or heard commuting within the first 30 minutes post-sunset were recorded onto a map of the survey area as a means of identifying the presence of roosting locations.

Surveyors used both time-expansion (Petterson D240x) and heterodyne/frequency-division (Bat Box Duet) detectors. Recordings of bat echolocations made in time-expansion were analysed and, where possible, identified to species-level using Batsound version 3.31 software (Petterson Elektronik, Sweden).

After the initial 30 minutes, surveyors recorded the levels of bat activity, using the number of bat passes as a means of estimating intensity of bat activity.

3 RESULTS

3.1 Introduction

This section provides details of the results of the desk-based assessment (undertaken by HCCET) and Phase 1 and Phase 2 bat surveys (undertaken for the EA). A map showing the proposed site layout is provided in Appendix 1.

3.2 Desk-based Assessment

3.2.1 Designated Sites

The desk-based assessment highlighted the presence of one non-statutory Site of Importance for Nature Conservation (SINC) situated within the 500m search radius. Details of these sites are presented in Table 2.

Table 2 Designated Sites within 500m of Park Community School

Designated Site Name	Distance and Direction from Site	Details
Bushy Lease SINC	500m NW	Area of semi-natural woodland containing a good variety of ancient woodland vascular plants.

Park Community School is not in close proximity to any statutory or non-statutory designated sites and, given the nature of the proposed works, it is considered that there will be no impacts to any designated sites in the surrounding landscape.

3.2.2 Protected Species

The HBIC database holds records for the following protected species within the 500m search radius.

Table 3 Protected species records within 500m of Park Community School

Species	Details	Distance and Direction from Site
Common pipistrelle <i>Pipistrellus pipistrellus</i>	2003 record of an injured bat from a convenience store off Middle Park Way, Havant.	300m S

The results of the HBIC data search reveal that there are no known protected species issues at the application site.

3.3 Field-based Assessment

3.3.1 Phase 1 Bat Survey - Trees

None of the trees within proximity of the proposed STP have been assessed as offering bat roosting potential. A single limb stub scar on the ash tree (known as tree T4) was inspected visually and found to be superficial, with no hole or cavity present. The tree scheduled for removal therefore exhibits no features considered suitable for supporting roosting bats and it is considered that there will be no direct impacts to roosting bats.

3.3.2 Phase 2 Bat Survey

No bats were recorded emerging from any of the trees within Reach C, although this reach was highlighted as supporting common pipistrelle *Pipistrellus pipistrellus* foraging activity "intermittently" and a single mouse-eared bat, considered to be Daubenton's bat *Myotis daubentoni*, was recorded once.

Surveys of the wider Hermitage Stream (i.e. off-site) recorded an additional two bat species, soprano pipistrelle *Pipistrellus pygmaeus* and a long-eared species, highly likely to be brown long-eared *Plecotus auritus*.

Based on the combined results of the Phase 1 and Phase 2 surveys, it is concluded that the site does not support roosting bats. However, as expected, there is bat foraging activity at the site although there was no noticeable commuting activity noted. This foraging activity was chiefly restricted to intermittent common pipistrelle activity.

In the context of the results of bat surveys on the wider Hermitage Stream it is considered that the level of bat activity adjacent to the proposed STP site is likely to be typical of the immediate landscape. The stream is likely to be an attractive linear habitat for bats, both as a source of invertebrate prey and a navigational aid. It is highly likely that small roosts will be present within residential dwellings within the local landscape and that bats from these will utilise any areas of unlit vegetation nearby for foraging.

4 IMPACTS

4.1 Introduction

This section provides an assessment of the likely impacts (in the absence of mitigation measures) of the proposed works on the ecological features identified on/adjacent to the site.

4.2 Designated Sites

Due to the nature of the proposed works at the site it is considered that there will be no impacts to any of the designated sites situated within the 500m search radius.

4.3 Bats

The proposed works will not result in direct impacts to roosting bats as no roost is considered to be present within the site. There will not be a significant reduction in the extent of structured vegetation (trees, scrub etc.) and therefore the key potential impact will be as a result of light spillage onto adjacent vegetation, and the Hermitage Stream corridor, from the proposed STP. Unmitigated, any significant increase in lux levels onto the currently-unlit habitat at the site is highly likely to deter bats from foraging/commuting, resulting in a reduction of the site's importance for bat species: lighting can result in significant reductions in bats' use of a site and, in all instances, a reduction in the potential effect of lighting should be sought.

Although the level of bat activity at the site was not high, the proposed restoration works to the Hermitage Stream (which may occur in future years despite current funding issues) would result in a more ecologically-valuable habitat which should be more attractive to bat species: the potential impacts of the STP must therefore take account of the future use of the site by bats.

The proposals for the lighting of the STP demonstrate that there are projected lux levels of up to 10-25 lux over a section of the stream situated at the southern end of the STP (luminaire M4 is within approximately 10m of the stream). It is clear that, unmitigated, such light levels could have the potential to deter bats from using these habitats. There is abundant scientific evidence to suggest that artificial light levels can and do result in changes to bat behaviour (Fure, 2006, 2012) and lead to the avoidance (by some species) of sites where light levels are as low as 2 lux. It is generally considered that lux levels greater than 14 will deter even the least-sensitive species such as pipistrelles, which were the most frequently-observed species at this site.

5 RECOMMENDATIONS

5.1 Introduction

This section provides details of recommendations considered necessary in order to ensure that legally-protected species are considered fully. This includes recommendations for additional survey works and for mitigation, compensation or enhancement measures to avoid, lessen or offset the identified impacts to ecological features arising from the proposed works.

5.2 Bats

At present, the STP proposals have the potential to result in impacts to foraging and commuting bats as there will be potentially-significant artificial light spillage onto habitat which has been demonstrated to support bats.

Whilst the proposed lighting columns are fitted with 'overspill limiting backshields' (an integral baffle on each lighting unit which minimises backwards and vertical spillage), and the two columns closest to the stream are also fitted with 'side shields', there is still an unacceptable (to bats) level of light spillage onto a short stretch of the stream adjacent to the southern edge of the STP.

In order to further reduce or minimise light spillage it will be necessary to find a pragmatic solution which serves both the ecological integrity of the stream and the functional requirements of the STP – there is an identified need for this community facility. In this instance, it is considered that the use of vegetation screening (this will provide benefits in the longer term as vegetation matures) is the most achievable solution. It may be feasible to introduce a light curfew during the most sensitive summer months although it is understood that this may jeopardise funding for the project.

5.2.1 Vegetation Planting

The proposed 'landscape proposals - general arrangement' for the STP (see Appendix 1 - HCC Dwg P10178-L-102) show that there is some proposed tree planting in proximity to the southern edge of the STP. Whereas the existing trees (excluding T4) will provide a degree of screening which will be strengthened by the proposed planting, there is still an essentially open stretch of bank immediately south of luminaire M4, allowing high lux levels to spill onto the stream.

Therefore, it is recommended that a continuous screen of native shrubs is planted. A fast-growing species such as goat willow *Salix caprea* or grey willow *S. cinerea* would provide an attractive and effective screen within several years and would be readily manageable. In addition (or as an alternative) a fast-growing non-native coniferous species such as Leyland cypress *Cupressocyparis leylandii* could be effective as a screen, although the ecological benefits of this species are negligible at best. It is

recommended that the EA are consulted as to whether any screen planting could be used to compliment any future restoration plans.

5.2.2 Lighting Restrictions

The use of a light curfew could ensure that demonstrable bat habitat is not artificially-lit during the key periods of bat activity. It is considered that two options for this are available, both of which could be secured via a suitably-worded planning condition, depending on whether such a restriction is acceptable to funding organisations.

Option A

No artificial lighting should be allowed during the period 1st May to 30th September. Outside this period artificial lighting should be restricted to between the hours of 0600 and 2100.

The restriction of lighting to avoid the entire period May to September inclusive would ensure that no impact would occur during the period of highest sensitivity (i.e. encompassing the entire breeding season and the post-breeding swarming/mating period). Outside of this period bats are still active (and may even emerge to feed on winter evenings) but at much reduced levels and therefore the impacts of lighting will be minimised. This example has recently been approved (and secured via condition) at a school STP site in Southampton (see Test Valley Borough Council application 12/02668/FULLS).

Option B

During the period 1st May to 30th September inclusive, lighting should not be used beyond 30 minutes post-sunset. This would allow lighting to be used until approximately 21.00 hours in May, 22.00 hours in June and 19.15 hours in late September.

This option would allow the use of lighting throughout the year but would ensure that lighting is switched off prior to most bat emergence times (generally c.30 minutes post-sunset for the earlier-emerging species such as pipistrelles). Clearly this option would require the programming of lighting to accommodate the variation in sunset times *throughout the year but this is technically achievable*. Even during mid-summer this option would provide at least an additional hour of usable light once natural light levels have reduced.

6 REFERENCES

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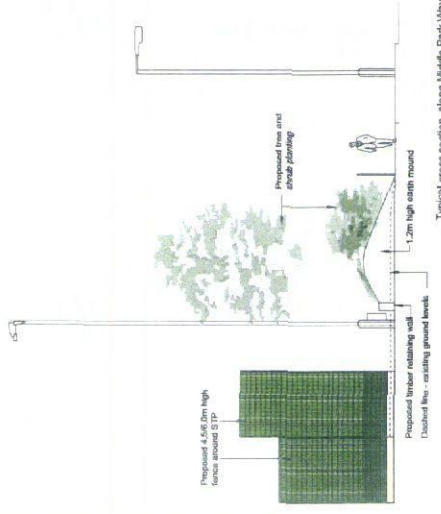
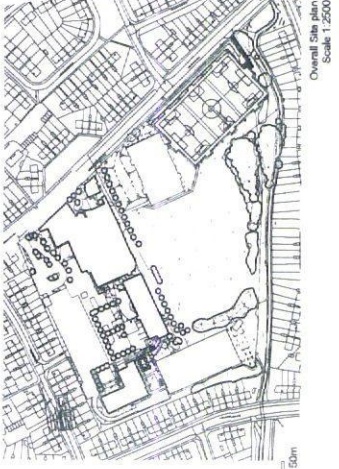
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Map 1 Proposed Site Layout



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Three Minsters House,
78 High Street, Winchester SO3 8UL.
Tel: (01962) 847801



planning

PROJECT	Park Community School, Middle Park Way Havant				SHEET CONTENTS		Hermitage Stream Landscape Proposals General Arrangement	Drawing No. P10178-L-102	FILE REF. CAD2/P10178 ParkSTP	REVISION B
	SCALE	DATE	DRAWN.	CHD.						
1:500@ A1	17/04/13	ARCTMR								
1:1000@ A3										
Property Services										
										

HAVANT BOROUGH COUNCIL
02 DEC 2013
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Ms Louise Forder
Environment Agency
Romsey Office
Canal Walk
Romsey

SO51 7LP

15/4/2013

Dear Louise,



Assessment of Trees with Bat Roosting Potential at Hermitage Stream

Please find below the results of the tree assessment we conducted on 11/4/2013. I have included the following categories in a table:

Tree ref no

This column identifies each tree using reference numbers provided by the Environment Agency which link to your previous arboriculture report.

Species

The tree species and any other identifying notes are listed where there is potential for confusion identifying individual trees in the field (e.g. 'T' refers to an individual tree whereas 'S' refers to a group of trees/shrubs).

Work required

This describes the extent of work likely to be required (if this is known). In some cases the works are restricted to the removal of some of the side branches. If this is the case but the tree has high potential to support a bat roost (particularly if this is potentially of high value) it has been included in the report. Trees which do not require further work or where no potential roost features were found have not been included.

Original bat category

This refers to the assessment in your original arboriculture report. The following criteria were assigned: 2A high potential, 2B medium, 3 low potential.

Potential roost feature, height and aspect

This details each of the potential roost features, its height above ground level in metres m/agl and aspect (N, S, E, W etc). Any potentially high value roost sites are also identified (see ECS Guidance Note).

Recommendations

This section provides advice on any further surveys required. This will need to be considered in the light of your final proposals for each tree.

If a bat roost is eventually found in a tree then a European Protected Species (EPS) licence will be required to fell it. In order to apply for a licence a number of surveys will need to have been conducted on the tree/s. Some of these are seasonally constrained (e.g. evening emergence and dawn re-entry surveys). It will also be necessary to demonstrate why felling a tree with a bat roost is 'absolutely necessary' and there is 'no alternative'.

Because some of the features cannot be properly seen from ground level the climbing inspection is also useful in confirming whether a potential feature can be discounted or not¹ (and therefore also removing the need to conduct further surveys). Consequently where a recommendation is made to climb and inspect a tree in advance this should be done in time to conduct further evening or dawn surveys if they are then required.

The following categories appear in the recommendations:

- SE: Felling to be supervised by ecologist

Advance surveys required:

- A1: Climbing inspection needed to inspect potential features and consider whether further evening/dawn surveys are required. This should be supervised by ecologist as mentioned above.
- A2: If advanced climbing survey confirms potential then anticipate the need for further evening/dawn surveys to adequately assess the tree. Up to three evening and one dawn survey may be required across the active bat season.
- A3: Evening/dawn surveys essential (not possible to climb or inspect any other way).

There is some cross-over between categories A1 & A2 but this enables you to quickly identify where trees may need further evening/dawn surveys.

¹ Gaps and shadows cannot always be distinguished from a ground level survey and some gaps may be 'blind ended'.

Surveys which can be done just prior to felling:

- B1: Climbing inspection (supervised by ecologist) to inspect potential roost feature just prior to felling as a precautionary measure
- B2: Climbing inspection (supervised by ecologist) to inspect ivy just prior to felling as a precautionary measure

Each tree should be re-evaluated and the recommendations updated after the advanced climbing inspection.

General Information

ECS's 'Guidance Note on Assessing Bat Roosts in Trees' provides a good practice methodology for felling trees. Operatives should be aware of this good practice and what to do in the unlikely event that a bat (or roost) is found. In general the precautionary principal should be followed and if a potential roost feature is found during works on trees not included in the table then operational staff should stop work on that tree and contact ECS for advice.

Where supervision is included in the recommendations it should be by a suitably qualified (licenced, experienced and insured) ecologist. They should follow the guidance in this report and ensure that the appropriate checks are conducted on site. They may work with the tree surgeon and/or climber. Where trees are climbed equipment such as small torches, mirrors and an endoscope are essential. The use of an endoscope on a known roost site requires a survey licence. The ecologist must therefore be covered for the use of endoscopes on their licence, supervise the tree climber and ensure they conduct any searches appropriately.

regards,



Colleen Hope
Ecologist, BSc, CMIEEM

Assessment of Bat Roosting Potential in Trees at Hermitage Stream

Tree ref no	Tree species & work required	Original bat potential category	Potential roost feature, height and aspect	Potential for roost to be present	Recommendations
Reach B Left Bank					
S1	Group of willow. One multi-stemmed tree fire damaged at base Clear felling Group of ash north of S7 C10 stems Side limbs may need pruning for access	2A	Small split in limb on NE aspect	Low	B1
S1		2A	N/A but included at EA's request	Negligible	
Reach B Right Bank					
S10	Field maple, alder, willow Clear felling	2A	Ivy covering has limited potential to support roost sites	Low /Negligible	B2
T38 (4)	3 stemmed Ash Side limbs may need pruning for access	2A/B	Ivy covering has limited potential to support roost sites	Low	B2
T38 (1)	Ash Side limbs may need pruning for access	2A	Dead wood in crown, ivy covering. Flaking bark on upper 3-4m of tree (breaking from main stem) Numerous rot holes but possibly to rotten to support roost sites.	Low	SE if to be felled If possible (safe) climb and section fell upper 4m and lower to floor with rope. If not safe then fell whole tree onto previously cleared brash to cushion fall and then check when on the ground. Sight lines would be obscured by surrounding foliage so emergence/dawn surveys not

Tree ref no	Tree species & work required	Original bat potential category	Potential roost feature, height and aspect	Potential for roost to be present	Recommendations
					possible.
T35	Oak Unlikely to be affected as more than 10m from bank	2A	Ivy may obscure potential roost features. Calloused split on west side 8magl	Medium	A1, A2
T14	Oak	2A	Ivy covering has limited potential to support roost sites	Low	B2
T13	Oak Side limbs may need pruning for access	2A	Split in side branch SW aspect 9m agl Split in side branch 8m agl	Medium Low	A1, A2
T16	Oak Side limbs may need pruning for access	2A	Ivy may offer limited potential Rotten limb 4m agl with small area of flaking bark	Low Low	A3 if these limbs are to be removed (not safe to climb and inspect)
T17	Oak Side limbs may need pruning for access	2A	Flaking bark on limb north west aspect 6m agl Ivy has potential to support roost sites Side limbs have no potential bat roost features	Medium Low Negligible	Ivy on main trunk has some potential so care to be exercised climbing this tree to reach side limbs B1
T18	Ash Side limbs may need pruning for access	2A	Splits in limb NW aspect between 5-10m agl 3 cavities near base on NW and W aspects	Low 2 x High 1 x medium	The 2 holes can be inspected with endoscope. 3 rd hole needs fine endoscope in advance. No emergence/dawn surveys required B1
T20	Oak Side limbs may need pruning	2A	Ivy clad limb over stream Ivy has potential to support roost sites.	Low Low	A3 If this limb needs to be removed Emergence/dawn surveys may be compromised by

Assessment of Bat Roosting Potential in Trees at Hermitage Stream
Ecological Consultancy Services Ltd April 2013

Tree ref no	Tree species & work required	Original bat potential category	Potential roost feature, height and aspect	Potential for roost to be present	Recommendations
	for access				foliage although partial view possible
T21	Oak-large cavity at base Side limbs may need pruning for access although these may be above clearance height	2A	Small area split bark on end of short cut limb (unlikely to need removing) Split/flaking barn side limb NE 7-9agl	Low Medium	A1 & A2 If tree to be felled or these limbs removed
T22	Ash Side limbs may need pruning for access	2B	Ivy has potential to support roost sites	Low	A1 (Low enough to reach with ladder.)
T23	Oak Side limbs may need pruning for access	2A	Ivy offers limited roost potential 1 dead limb over stream N aspect 1 large limb over stream 5-10 m agl with ivy covering and small area of deadwood on tip	Low Low Low	Upper side of limb not visible therefore A1 A2 A2
T?	Ash Side limbs may need pruning for access		2 x rot holes on west side 7 & 9 m agl	Low /Medium	A1, A2
Reach C Left Bank					
T23/2?	Willow enclosed by palisade fencing Clear fell		Minor damage split limb and small piece of flaking bark SE 2m agl	Low	B1
T12	Most one of most southerly grey poplar trees in this group Clear fell	2B	Rot hole on NW aspect 5m agl	Medium	A1 (may reach with ladder) A2
T11	Various (ash)	2A	Ivy offers limited potential roosting sites on 5 ash trees	Low /Negligible	SE

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	Clear fell				
T8	Various in group Willow	3	Split on E aspect 2.5m agl Split adjacent although this is exposed	Low Low	B1
	Clear fell				
T8	Willow immediately adjacent to T10	3	Split on NE aspect at 2.5m	Low	B1
	Clear fell				
Reach D Left Bank					
T65	5 stemmed willow May need to be removed for stream diversion	2B	Rot hole on NE aspect 2.5m agl (only extends upwards c 70mm)	Low	B1 (may be reached by ladder)
T?	Oak immediately north of T65 and next to bridge Unlikely to be impacted This tree has potential to support a high value roost site	2A	Woodpecker hole on NW aspect 6m agl	High	A1, A3 If tree to be felled
T51	Oak Side limbs may need pruning for access	2A	Split in main stem N aspect 2.5-3.5m agl Small cavity at base of old limb injury E aspect 6m agl	Low Medium	A1, A2
S47	Oak south of group S47 immediately north of pipe	2A/B	Split in main stem on W aspect 2.5m agl (slugs)	Low	B1 (may be reached by ladder)
Reach D Right Bank					
T85	Oak	2A	3 x rot holes NE aspect 4m agl (upturned)	Low	A1, A3 If tree to be felled If just removing limb over stream

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			Possible rot cavity on upper limb 11m agl Limb over stream on NE aspect 11m agl with rot hole at base	Low Low	then climb and check hole at base prior to felling (B1). Aim to leave cavity unaffected if limb felled.
T91	Ash This tree has potential to support a high value roost site	2A	Numerous rot holes in upper part of main stem and subsidiary stem on all aspects 13-16m agl	High	A1, A2 If tree to be felled
T35	Oak This tree has potential to support a high value roost site	2A	Calloused split in upper limb NW aspect 12m agl 2 x Woodpecker holes on N & NW aspects 10m agl	High High	A1, A3 If tree to be felled
T23	Oak To be clear felled	2A	Split limb 9.5m agl Upturned hole in limb 7m agl Calloused edge to bark on split on main limb E aspect 9-11m agl	Medium Low Low	A1, A2 If tree to be felled
T27	Oak Side limbs may need pruning for access This tree has potential to support a high value roost site	2A	Ditto on limb N aspect 10-12 m agl Rot around branch on S aspect 6m agl Calloused split main stem S aspect 9m agl but exposed Rot hole NE aspect 5m agl	Low Low Low Low Medium	A1, A2 If tree to be felled
T20	Oak To be clear felled	2A	Some callusing around wound on limb over stream on W aspect 7m agl	High	A1, A2 If tree to be felled

Tree ref no	Tree species & work required	Original bat potential category	Potential roost feature, height and aspect	Potential for roost to be present	Recommendations
	This tree has potential to support a high value roost site				
T15	Oak	2A	Hole on N aspect 4m agl (maybe blind hole) Split in stem (very narrow) N side 7.5-8m agl Calloused end to side branch W aspect 7.5m agl Hole main trunk 5m agl Calloused side branch S aspect 9m agl Rot hole S aspect 5m agl	Medium Medium Medium Medium Low Medium	A1, A2 If tree to be felled
Reach E Right Bank					
T55	Ash	2A/B	Small 4m section of ash limb fallen out of top of tree with calloused split in it. N aspect	Medium	B1 SE If not safe then limb should be roped and then lowered carefully and inspected
S57	Ash Willow	2A	Split in one of a number of limbs on N aspect 2-10m agl Flaking bark on willow	Low Low	B1 (can reach with ladder) SE B1
T59	Oak Unlikely to be felled This tree has potential to support a high value roost site	2A	Calloused split in side branch W aspect 8m agl Ditto central branch 10m agl Ditto E aspect	Medium High Medium	A1, A2 If tree to be felled

Tree ref no	Tree species & work required	Original bat potential category	Potential roost feature, height and aspect	Potential for roost to be present	Recommendations
T65	Oak Unlikely to be affected	2A	Calloused split on limb over stream NW aspect 9m agl with split end to branch Ditto E aspect with flaking bark at 7-8magl	Medium Medium	A1, A2 If tree to be felled
T86	Oak Unlikely to be affected	2A	Small hole E aspect 5magl (though exposed) Rot to cut end of branch NE aspect 6m agl	Low Low	A1, A2 If tree to be felled Removal of side limbs should not affect this so if tree not being felled then advanced surveys not required.
T87	Oak Unlikely to be affected This tree has potential to support a high value roost site	2A	Flaking bark near old cut limb N aspect 5-6magl Rot hole near above (may be blind ended) split limb S aspect 8m agl Calloused wound S aspect 8m agl (though exposed) Rear of tree not fully visible because of garden	High Low High Low	A1, A3 If tree to be felled

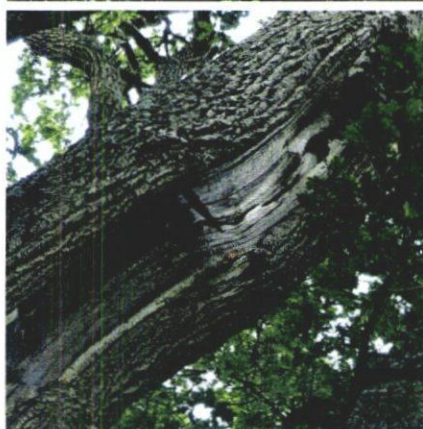
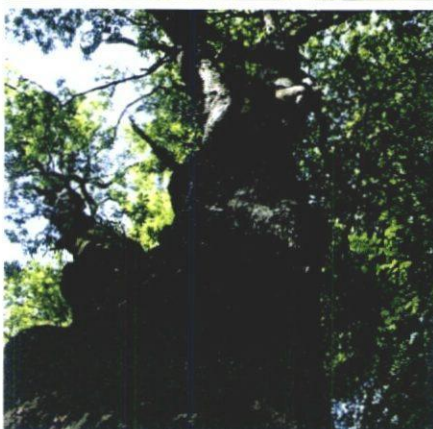
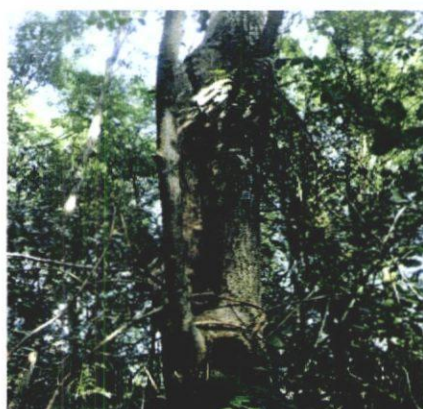
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**ECOLOGICAL CONSULTANCY SERVICES (ECS)
GUIDANCE NOTE ON ASSESSING POTENTIAL BAT ROOST
SITES IN TREES**



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ECOLOGICAL CONSULTANCY SERVICES (ECS) GUIDANCE NOTE ON BATS AND TREES

Evaluating Trees for Bats

A distinction is made between considering the potential a tree has to support a bat roost and where a roost is present assessing the value of that roost.

Evaluating the Potential a Tree has for Supporting a Bat Roost Site

Roost feature	High	medium	low
Flaking bark on a tree which is within a hedgerow or woodland setting	✓		
Flaking bark which is on an exposed tree or on very young trees such as groups of elm saplings		✓	
Woodpecker hole - open aspect	✓		
Woodpecker hole – covered with ivy or with resident wasp/hornet nest		✓	
Split or tear in branch of oak or ash in sunny aspect. Split tapers to narrow crevice and is at more than 50% height of the tree	✓		
Split or tear on shaded side of tree in a woodland setting	✓		
Split or tear on shaded side of tree in an exposed situation		✓	
Calloused split or hole with potential bat access at any height or aspect including just above ground level	✓		
Rot hole		✓	
Ivy covering – where a base matt has been created which is similar to the effect of flaking bark		✓	
Ivy – not particularly matted, either very large stems or very small, mostly leaves			✓
Potential roost feature with staining, droppings or flies	✓		

Considering the Value of a Bat Roost Site

Roost description	High	medium	low
Single bat common species			✓
Single bat widespread or scarce species		✓	
2- 5 bats of a common species		✓	
1- 5 bats of a rare, widespread or scarce species	✓		
More than 5 bats of a common species	✓		
More than 5 bats of a rare, widespread or scarce species	✓		
Maternity roost – all species	✓		
Hibernation roost, > 5 bats (all species)	✓		
Mating roost common species		✓	
Mating roost all uncommon/rare species	✓		

Safe Felling Protocol

This method should be used where adequate surveys have been undertaken to reduce the likelihood of a roost site being present to 'low' or 'negligible'. It is generally a precautionary approach to felling a tree where appropriate methods of evaluation have been undertaken and all practicable efforts to eliminate the possible presence of a bat roost site have been made². Individual recommendations made for each individual tree should be referred to.

- Inspect the tree before felling by the appropriate means (this will be identified in the individual tree assessment and recommendations).
- If still no signs of bats are found then fell the tree by one of two methods:
 - I. Ivy clad trees are normally best felled intact so that the ivy can to some extent cushion the impact of the fall.
 - II. Some trees may require section felling where individual limbs with potential are first searched during a tree climbing inspection and then cut and lowered using ropes.
- The tree or limbs should then be examined closely at ground level and then left in situ for at least 24 hours before chipping, removal or burning;
- If at any time any bats are found then all works must stop until the advice of the ecological consultant or Natural England has been received.

² For example tree climbing, emergence and or dawn surveys, activity surveys