

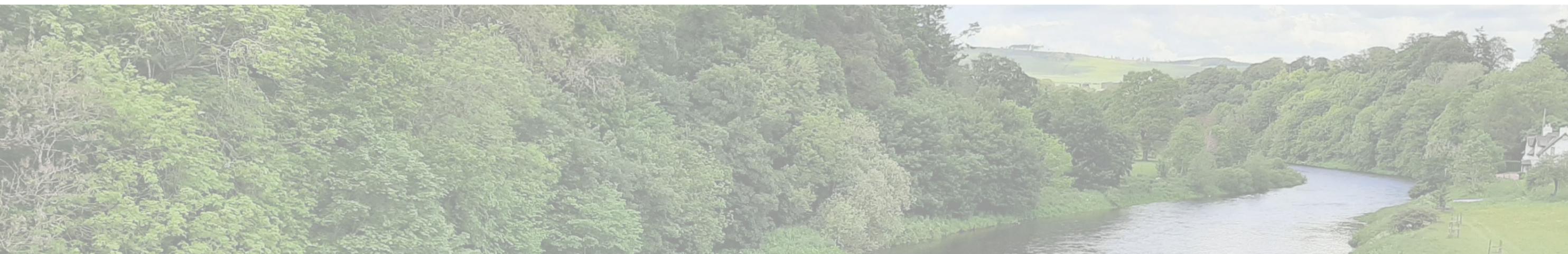
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# Appendices

**A.1 Tree and Woodland Assessment**

**A.2 Ecological Appraisal**

**A.3 Consultation Responses**



# A.1 Tree and Woodland Assessment

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## Tree and Woodland Assessment

### Lowood, Tweedbank

For

### LUC and Scottish Borders Council

06 August 2019



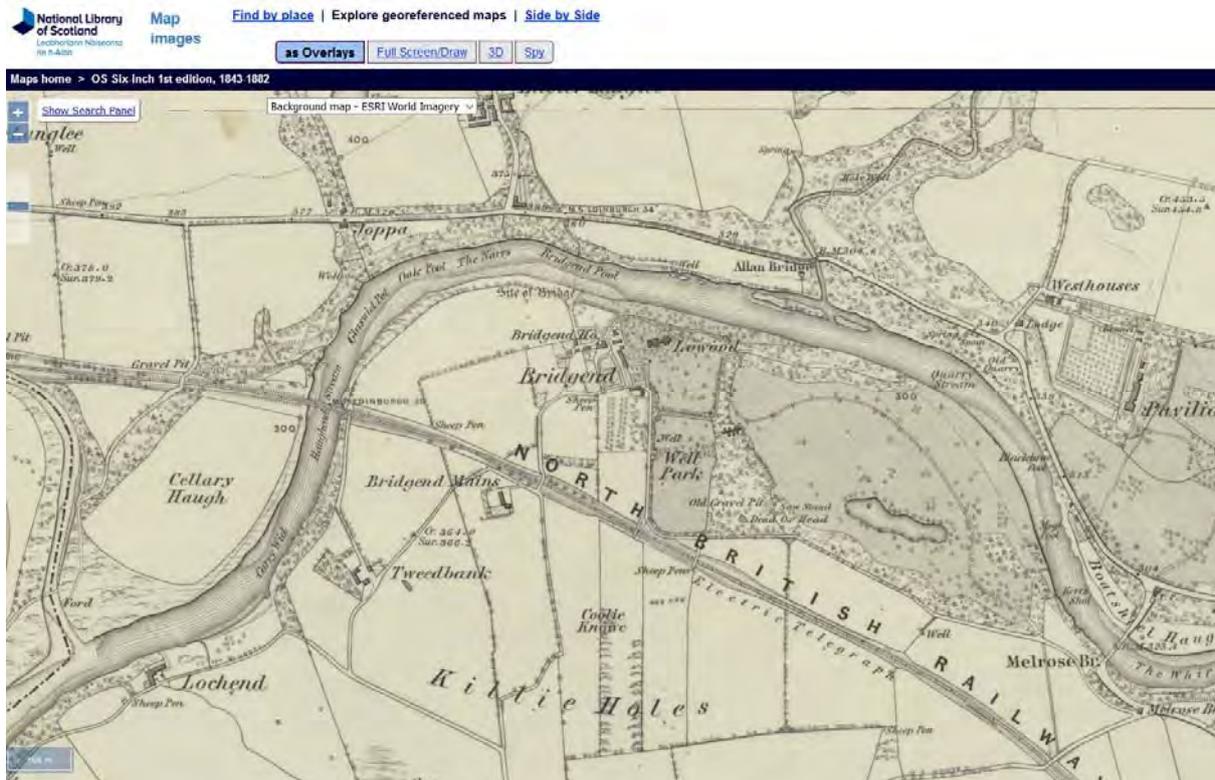
## **1. GENERAL INTRODUCTION**

- 1.1. Alan Motion Tree Consulting Ltd has undertaken a brief overview of existing trees and woodlands within Lowood Estate at Tweedbank, for LUC on behalf of Scottish Borders Council, in connection with proposed mixed use development.
- 1.2. This initial survey and report provides a description of the broad categories of tree and woodland cover, their distribution, and relative arboricultural/silvicultural value, and highlights those areas where future development has the potential to impact adversely on tree cover. It identifies areas where future development might proceed with little or no impact on existing trees and woodlands.
- 1.3. This report has been prepared in order to inform the masterplanning process. It does not provide the level of detail that would be required to inform detailed design considerations. A full, detailed tree survey in accordance with the recommendations of BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations" will be required as detailed designs emerge.

## **2. SITE DESCRIPTION**

- 2.1. Lowood Estate lies to the north of the Borders Railway at Tweedbank Station, and is enclosed to the west, north and east by the River Tweed. The estate is a mixture of pasture and policy woodland, with a few scattered parkland trees. The land has a generally northerly aspect, sloping down to the river.
  - 2.2. Lowood House is towards the river within mature, ornamental gardens. Long-established woodlands provide good enclosure and seclusion for the house. Lying to the west of the house are further houses, cottages and buildings at Bridgend.
  - 2.3. The earliest edition Ordnance Survey maps (Six Inch First Edition 1843-1882) shows the gardens and parkland extending to the south and east of the house. A stone wall forms the southern site boundary, and a linear woodland of beech and Scots pine provides a more-or-less continuous screen along this edge. A row of mature beech
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trees lines the estate access road beyond the boundary wall. A pond is present within the open parkland, and individual trees are shown throughout the parkland, and along field boundaries to the west of Bridgend.



Ordnance Survey 6 Inch 1<sup>st</sup> Edition, 1843-1882. National Library of Scotland

- 2.4. The southern woodland edge remains today, and is dominated by mature beech and Scots pine, but becoming more diverse towards its western end, where ash and sycamore become more obvious. Although not recorded as such in the Ancient Woodland Inventory Scotland, these woodlands are Long-established of Plantation Origin.
- 2.5. A section of mature conifer plantation, comprising Sitka spruce and larch, now grows over much of the area at Well Park on the former gravel pit. This area is suffering from wind damage and is in a poor condition. It will need to be felled in the near future.

- 2.6. The original woodlands to the east of Lowood House also remain, containing a mix of species including beech, oak, Scots pine and sycamore. These extend down a steep bank towards the river.
- 2.7. More recent areas of woodland are also present within the estate. A mixed woodland containing Douglas fir and Scots pine, with underplanting of beech, gean and western hemlock, grows on the slope rising north from the pond. Along the northern edge of this is a narrow strip of mature European larch.
- 2.8. In the west of the site, west of Bridgend, there are blocks of woodland including young broadleaved planting; a central block of early-mature broadleaved woodland consisting of oak, alder and gean; and an early-mature block of Sitka spruce and larch lying to the west of this.
- 2.9. Established tree cover extends along the north-west edge of the estate along the edge of river walkway.
- 2.10. Within the open areas of pasture around the pond; and to the north-east of the internal estate road, there are scattered remnants of the original parkland trees including beech, sycamore, horse chestnut and oak. There are some good early-mature specimens of common walnut to the north-west of the pond.

### **3. POTENTIAL DEVELOPMENT IMPACTS**

- 3.1. The site has been identified for a mixed development of commercial and residential. Potential access routes into the site include utilising the existing road serving Tweedbank Station; and a new bridge and access from Tweedbank Drive, joining the access road to Bridgend.
- 3.2. Commercial development is likely to be located in the open ground to the south and east of the pond, with residential development to the north and west of the pond; and to the west of Bridgend.
- 3.3. It would be possible to form a new access road through an existing gap in the southern boundary woodland, with only minimal impact on existing trees (one
-

Category B Scot spine removed). Road alignment would need to avoid impact on existing high-quality parkland oak and beech trees which are located close to the south-east corner of the pond, although a few of the mature beech trees here are in poor and declining condition.

- 3.4. Residential development to the north of the southern boundary woodland can be accommodated with minimal impact on tree cover. A sufficient buffer will be needed to minimise potential impact on the very large, edge trees which are dominated by beech with low and spreading canopies. The impact of shading from these trees will have a significant impact on any adjacent development.
  - 3.5. The poor and unstable conifer crop at Well Park in the former gravel pit will need to be clear-felled. This could provide an opportunity for some limited residential development. The line of oak trees along the edge of the existing small field would need to be retained and protected.
  - 3.6. Land to the west of Bridgend provides considerably greater scope for development. It could be acceptable to remove the existing young plantation, and the spruce/larch plantation to accommodate development. The central broadleaved woodland is well-established and could be retained, with a new road located along its northern edge to access the western section. Alternatively, a new road could cut through the central woodland block without compromising stability and longevity of the retained tree cover.
  - 3.7. In order to comply with current Scottish Government policy on the control of woodland removal, any loss of woodland area should be compensated with replacement planting. It may be possible and acceptable to provide compensatory planting on the arable field in the north-west of the estate, part of which lies in the floodplain. Further planting could be accommodated in the existing meadow pasture in the north-east of the estate, extending to the river corridor. Any planting here would need to be of smaller scale, group planting in order to maintain the open parkland/meadow character. New planting that extended along the northern edge of the estate road, on the higher ground, would provide benefit in screening long-
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distance views of any development from the B6374 road, on the east side of the river valley.

3.8. The plans accompanying this report show the broad woodland areas, prominent tree groups, and significant individual specimen trees. Based on these features, the second plan indicates potential development areas, access points, and areas that might accommodate compensatory planting.

#### **4. SCOTTISH GOVERNMENT POLICY ON CONTROL OF WOODLAND REMOVAL**

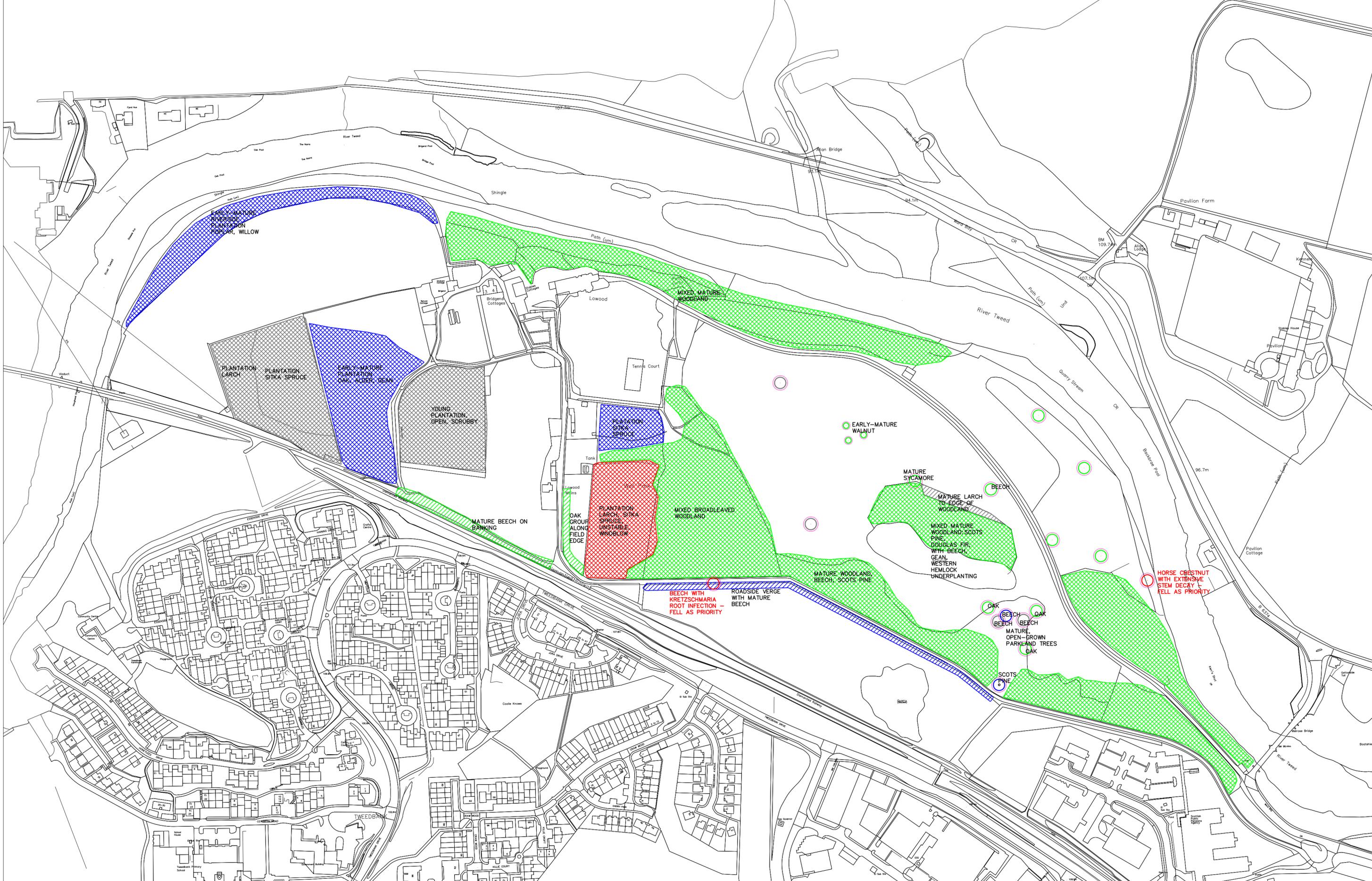
4.1. The guiding principles of the Scottish Government's policy are:

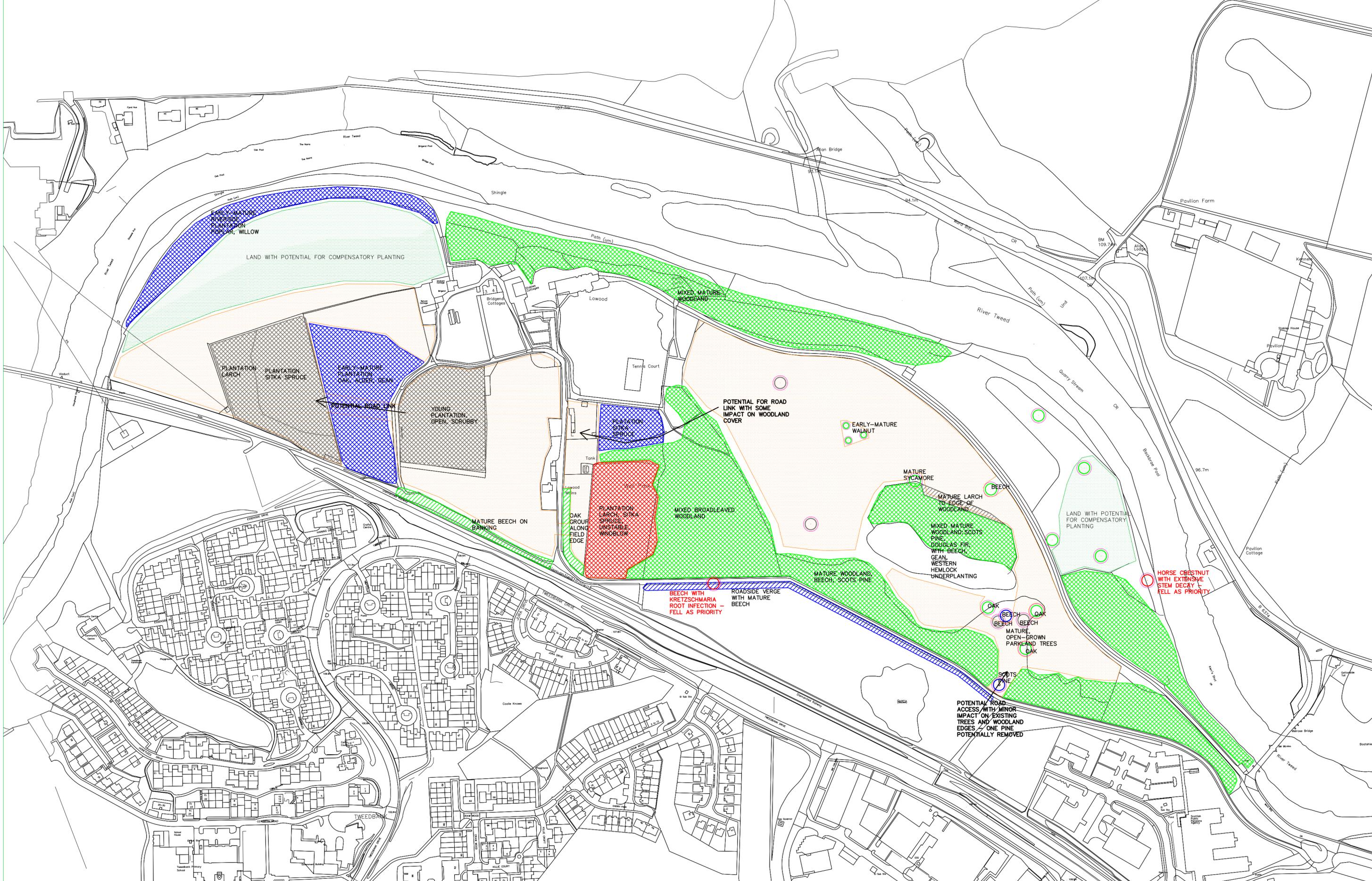
- There is a strong presumption in favour of protecting Scotland's woodland resources.
- Woodland removal should be allowed only where it would achieve significant and clearly defined additional public benefits (note that public benefits include social, economic and environmental benefits). In appropriate cases a proposal for compensatory planting may form part of this balance.
- Approval for woodland removal should be conditional on the undertaking of actions to ensure full delivery of the defined additional public benefits.
- Planning conditions and agreements are used to mitigate the environmental impacts arising from development and Forestry Scotland will also encourage their application to development-related woodland removal.
- Where felling is permitted but woodland removal is not supported, conditions conducive to woodland regeneration should be maintained through adherence to good forestry practice as defined in the UK Forestry Standard.

4.2. Woodland removal, with compensatory planting, is most likely to be appropriate where it would contribute significantly to:

- helping Scotland mitigate and adapt to climate change;
  - enhancing sustainable economic growth or rural/community development;
  - supporting Scotland as a tourist destination;
  - encouraging recreational activities and public enjoyment of the outdoor environment;
  - reducing natural threats to forests or other land; or
-

- increasing the social, economic or environmental quality of Scotland's woodland cover.
- 4.3. The policy states that there will be a strong presumption against removing, amongst other designations, ancient semi-natural woodland; areas supporting priority habitats and species listed in the UK Biodiversity Action Plan; and woodlands critical to water catchment management or erosion control.
- 4.4. Where compensatory planting is stipulated as a requirement of planning permission, specifications of that planting will be determined by the relevant planning authority.
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- 3895 TREES CATEGORY A
- 3895 TREES CATEGORY B
- 3895 TREES CATEGORY C
- 3895 TREES CATEGORY U

  ROOT PROTECTION AREA  
 BS5837:2012 S4.6.

- TREE GROUP
- WOODLAND
- HEDGEROW OR SCRUB

NOTE: hatch colour denotes BS5837  
 Category:  
 Cat A - Green  
 Cat B - Blue  
 Cat C - Grey  
 Cat U - Red

  POTENTIAL DEVELOPMENT ZONES

  POTENTIAL COMPENSATORY PLANTING

# A.2 Ecological Appraisal

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## Lowood

### Preliminary Ecological Appraisal Report

Prepared by LUC  
September 2019

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**Project Title:** Lowood. Preliminary Ecological Appraisal

**Client:** Scottish Borders Council

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2	21/10/19	Amended Draft	JT		TM

Project Code: 10833

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# 1 Chapter 1

## Executive Summary

- 1.1 LUC was commissioned by the Scottish Borders Council in August 2019 to undertake an Extended Phase 1 Habitat Survey of the Lowood Estate and provide a Preliminary Ecological Appraisal report, to provide input for Supplementary Planning Guidance.
- 1.2 Key findings of the survey are summarised in **Table 1.1** below.

**Table 1.1: Summary of Findings**

Ecological Feature	Key Findings
Habitats	<p>The site is primarily comprised of grazed parkland, consisting of semi-improved neutral grassland and improved grassland surrounded by broadleaved woodland.</p> <p>The site is bounded to the north, west and east by the River Tweed and to the south by the new Borders Railway line and station, residential properties and an industrial estate.</p> <p>The centre of the site consists of Lowood House, historically associated residential properties and a plant nursery.</p>
Protected Species	<p>Badger setts were recorded at two locations within the site; both main setts and outlier setts were recorded.</p> <p>Evidence of squirrel was found at two locations within the woodland areas. We cannot confirm whether these were red or grey squirrel signs as no individuals were seen, though both species have been recorded in the area.</p>

## 2 Introduction

- 2.1 LUC was appointed by the Scottish Borders Council in August 2019 to undertake an Extended Phase 1 Habitat Survey on the Lowood Estate, Tweedbank. The survey was commissioned to inform the council as they draft Supplementary Planning Guidance (SPG) and to help inform future requirements for detailed surveys, mitigation requirements, enhancement opportunities, and a possible strategic-level Habitat Risk Assessment (HRA) for future development proposals.
- 2.2 This report sets out the methods adopted and the baseline findings of the Extended Phase 1 Habitat Survey. It also details potential constraints which may be imposed on future developments and enhancement opportunities which could be adopted for this site.

### Site description

- 2.3 The site is located immediately north of Tweedbank in the Borders; between Melrose and Galashiels. The site consists mainly of parkland used for the grazing of cows and sheep, with large areas of broadleaf woodland and smaller areas of coniferous woodland throughout. There are a small number of buildings within the site which consist of the main Lowood House, residential properties and a plant nursery which is made up of wooden sheds and poly tunnels. To the north, west and east the site is bound by the River Tweed and to the south is bordered by the new Borders Railway line and end terminus. Further south are residential buildings and a small industrial estate.
- 2.4 Photographs of the site and are provided in **Appendix 1**.

### Proposed Development

- 2.5 Though no specific development has been planned, the site has been identified by the Council as having development potential and an Extended Phase 1 Habitat Survey has been sought to determine the baseline environmental data for the site.

### Policy and legislation

- 2.6 The report has been prepared in cognisance of relevant legislation and policy, including European and domestic environmental legislation, UK nature conservation policy and local biodiversity guidance.
- 2.7 European and National legislation along with Planning Policy and guidance relevant to the site is listed below:
- The Conservation (Natural Habitats, &c,) Regulations 1994 as amended;
  - The Wildlife and Countryside Act 1981 (as amended);
  - Protection of Badger Act 1992 (as amended); and
  - Scottish Planning Policy.

## 3 Methods

### Overview

- 3.1 The Extended Phase 1 Habitat Survey was undertaken by LUC and comprised of a field survey conducted by qualified ecologists. A desk study was completed using data supplied by the Scottish Borders Council, which was undertaken by The Wildland Information Centre (TWIC).
- 3.2 Each of the survey components is set out as such;
- 3.3 **Desk Study** – a review of existing records of designated sites and protected species activity at the site and in its vicinity; and
- 3.4 **Field Study** - based on an Extended Phase 1 Habitat Survey, the field study comprised various elements, including an assessment of the site's potential to support protected species.

### Desk Study

- 3.5 The desk study involved a review of the records (supplied by TWIC) of protected species activity at the site and in a 2 km vicinity. Applications to Scottish Badgers and the Borders Bat Group were also placed for further historical data.
- 3.6 Designated sites were searched for using SNH Sitelink<sup>1</sup> and non-designated sites through the Scottish Borders Council Local Development Plan interactive mapping tool<sup>2</sup>.

### Field Study

- 3.7 An Extended Phase 1 Habitat Survey of the site was completed in accordance with JNCC<sup>3</sup>, Bat Conservation Trust<sup>4</sup> and SNH<sup>5</sup> methodology. The survey was conducted on 19 September 2019 during warm, dry and sunny weather conditions.
- 3.8 The survey methods provide a rapid and standardised approach to documenting and classifying habitats together with any evidence of, and potential for, legally protected and notable fauna.
- 3.9 The following were searched for within the site boundary, as informed by the Scottish Borders Council Ecologist and our understanding of protected species in southern Scotland:
  - signs of otter activity including spraints, tracks, feeding remains and holts along any watercourses within or adjacent to the site;
  - signs of water vole including latrines, feeding remains, tracks and burrows along any watercourses within or adjacent to the site;
  - signs of badger activity including setts, tracks, snuffle holes and latrines;
  - features which may provide suitable roosting opportunities for bats within trees and buildings;

<sup>1</sup> Available online at SNH website. Search conducted 24/09/2019

<sup>2</sup> Available online through Borders Council website. Search conducted 24/09/2019

<sup>3</sup> JNCC. Handbook for Phase 1 habitat survey. 2010

<sup>4</sup> Collins, J.(ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> edn).

<sup>5</sup> Protected Species Survey Advice for Developers. Badgers, Great Crested Newt, Otter, Pine Marten, Red Squirrel and Water Vole.

- the most common non-native invasive species (Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, rhododendron and Himalayan balsam) which are subject to strict legal control.

3.10 The bat roosting potential survey takes into account the range of roosting conditions required by bats throughout the year and followed assessment criteria set out by standard guidance prepared by the Bat Conservation Trust<sup>4</sup>.

3.11 The criteria used to categorise bat roost potential (BRP) are summarised in **Table 3.1**. The table also summarises what actions, if any, are required following classification.

**Table 3.1: Bat Roost Potential Categories.**

BRP Category	Roosting Habitat Features	Commuting and Foraging Habitat Features	Survey Requirement
<b>Negligible</b>	Negligible habitat features likely to support roosting, commuting or foraging bats		No surveys required
<b>Low</b>	<p>Structures in this category offer one or more potential roost sites for individual, opportunistically roosting bats. These sites do not offer the space, shelter or appropriate conditions to support large numbers of bats or maternity roosts.</p> <p>Tree in this category include those of sufficient size and age to support suitable roosting features, but none are visible from the ground</p>	Habitat on and around the site could be used by a small number of commuting bats. This category includes densely urbanised landscapes or linear vegetation features poorly connected to the wider landscape (e.g. gappy hedges in an agricultural context).	<p>1 dusk or dawn survey required for structures.</p> <p>No surveys required for trees.</p>
<b>Moderate</b>	Structures and trees in this category offer one or more roost site that, due to their space, shelter or conditions, offer roosting potential for a range of species. Roosts may be more permanent, rather than opportunistic. Small maternity roosts of common species may form in one of these roost sites.	Habitat on and around the site is well-connected to wider continuous habitat and offers commuting and foraging habitat to a larger number of bats across a number of species. (e.g. tree lines or linked gardens in the urban context, or continuous hedge/ tree lines and watercourses in an agricultural setting)	<p>1 dusk and 1 dawn survey required for both structures and trees.</p> <p>Tree-climbing may be an appropriate alternative to dusk and dawn surveys.</p>
<b>High</b>	Structures and trees in this category have one or more potential roost sites that are suitable for large number of bats. Roosts are likely to be permanent and include maternity roosts. Potential roost sites exist for a wide range of species or species of particular conservation interest.	<p>Habitat on and around the site is diverse, continuous and linked to extensive suitable habitat. This category includes well-vegetated rivers, streams, hedgerows and woodland edge.</p> <p>Habitat is sufficiently diverse to offer opportunities to a wide</p>	<p>3 surveys, including both dusk and dawn elements.</p> <p>Tree-climbing may be an appropriate alternative to dusk and dawn surveys.</p>

BRP Category	Roosting Habitat Features	Commuting and Foraging Habitat Features	Survey Requirement
		range of species or those of particular conservation interest.	

## Constraints to methods

- 3.12 Evidence of protected species is not always discovered during a survey. This does not mean that a species is not present, hence the surveys also record and assess the ability of habitats to support protected species. The time frame in which the survey is implemented provides a 'snapshot' of activity within the survey area and cannot necessarily detect all evidence of use by a species.
- 3.13 All non-native species are legally controlled under of the Wildlife and Countryside Act 1981 (as amended by the Wildlife and Natural Environment (Scotland) Act 2011). The Extended Phase 1 Habitat Survey checked, in particular, for the presence of Japanese knotweed (as well as giant knotweed and hybrid knotweed), giant hogweed, rhododendron and Himalayan balsam. There may be other invasive plant species present within the survey area which were not recorded, but it is considered that this survey is sufficient to identify any significant constraints posed by invasive plants.
- 3.14 It is important to note that the survey was carried out at towards the end of the recognised survey season for undertaking habitat surveys. However, plants were still identifiable and it was not felt to be a significant constraint to the study.
- 3.15 A large proportion of the banks of the River Tweed were not accessible due to the steepness of the land or thick vegetation. As such not all suitable habitat was able to be surveyed in detail for evidence of otter.

## 4 Results

### Desk Study

4.1 The desk study identified the following protected species within the 2 km buffer:

- Otter *Lutra lutra*;
- Badger *Meles meles*;
- Red squirrel *Sciurus vulgaris*;
- Daubenton's Bat *Myotis daubentonii*;
- Noctule *Nyctalus noctula*;
- Common pipistrelle Bat *Pipistrellus pipistrellus*; and
- Soprano pipistrelle Bat *Pipistrellus pygmaeus*.

4.2 No historical records (excluding Badgers) were found for within the site.

4.3 Information provided by Scottish Badgers shows a high number of badger evidence within the site and the 2 km buffer. Eighty-one incidences of badger road traffic accidents and 20 accounts of setts and activity were recorded in the site and 2 km buffer.

4.4 No records were held by the Borders Bat Group.

4.5 Statutory designated sites within 2 km of the site are listed in **Table 4.1**, below.

**Table 4.1: Designated Sites**

Name of Site	Designation	Qualifying Features	Proximity to Site
River Tweed	Site of Special Scientific Interest	<ul style="list-style-type: none"> <li>• Atlantic salmon (<i>Salmo salar</i>)</li> <li>• Brook lamprey (<i>Lempetra planeri</i>)</li> <li>• River lamprey (<i>Lampetra fluviatilis</i>)</li> <li>• Otter (<i>Lutra lutra</i>)</li> <li>• Beetle assemblage</li> <li>• Fly assemblage</li> </ul>	Borders site at north
River Tweed	Special Area of Conservation	<ul style="list-style-type: none"> <li>• Atlantic salmon (<i>Salmo salar</i>)</li> <li>• Brook lamprey (<i>Lempetra planeri</i>)</li> <li>• River lamprey (<i>Lampetra fluviatilis</i>)</li> <li>• Sea lamprey (<i>Petromyzon marinus</i>)</li> <li>• Otter (<i>Lutra lutra</i>)</li> <li>• Rivers with floating vegetation often dominated by water-crowfoot</li> </ul>	Borders sight at north
Avenel Hill and Gorge	Site of Special Scientific Interest	<ul style="list-style-type: none"> <li>• Green hairstreak (<i>Callophyrus rubi</i>)</li> <li>• Upland oak woodland</li> </ul>	Approx. 1.4 km north

4.6 Non-statutory designated sites within 2 km of the site are listed in **Table 4.2**, below.

**Table 4.2: Non-designated Sites**

Name of Site	Designation	Qualifying Features	Proximity to Site
Eildon and Leaderfoot	National Scenic Area	N/A	Borders site at eastern edge
Tweed, Ettrick and Yarrow Confluences	Special Landscape Area	N/A	Approx. 750 m south

## Field Study

### Habitats

- 4.7 The site consists of a small number of common and widespread habitats, detailed below along with their JNCC codes. When considering these descriptions, please also refer to site photographs in **Appendix 1** and the Phase 1 Habitat Map in **Appendix 2**.

#### *Semi-improved neutral grassland (B2.1)*

- 4.8 There are two large areas of this habitat in the centre and the east of the site. It is periodically, though not intensively, grazed by cattle and sheep and parts of it appeared to have been mown. Species found in this habitat were Yorkshire fog *Holcus lanatus*, sweet vernal grass *Anthoxanthum odoratum*, cock's foot *Dactylis glomerta*, thistle *Cirsium* sp. and common bent *Agrostis capillaris*.

#### *Improved grassland (B4)*

- 4.9 This habitat was found in two fields, one to the northeast of the site and one to the west. They are similar to the semi-improved neutral grassland in species composition however, the overall species diversity is lower, due to heavy usage of fertilisers and/or heavy grazing. The dominant species were perennial rye grass *Lolium perenne*, white clover *Trifolium repens* and creeping buttercup *Ranunculus repens*. Like the grassland above it is periodically, though not intensively, grazed by cattle and sheep and parts appeared to have been mown.

#### *Parkland (A3.1)*

- 4.10 There are scattered trees within the semi-improved neutral grassland and improved grassland at the east end of the site. These were mostly large mature individuals, though some semi-mature trees were recorded. The majority of species found were sycamore *Acer pseudoplatanus*, oak *Quercus* sp., ash *Fraxinus* sp. and beech *Fagus sylvatica*.

#### *Semi-natural broadleaved woodland (A1.1.1)*

- 4.11 This is an abundant habitat within the survey boundary and runs through the centre of the site, with small areas bordering the river to the north. Dominant species in the majority of the site were beech, sycamore and oak. In the small section to the northwest which borders the river the dominant species was black poplar *Populus nigra*.

#### *Mixed Woodland (A1.3.1)*

- 4.12 There are three areas of mixed woodland within the site. The dominant broadleaf species in each were beech, cherry *Prunus avium* and sycamore. The coniferous portion of the woodlands consisted of Norway spruce *Picea abies* and larch *Larix decidua*.

#### *Coniferous Plantation (A1.2.2)*

- 4.13 There was one small area of conifer plantation in the centre of the site, made up of tall mature Norway spruce.

#### *Hard Standing (HS)*

- 4.14 This habitat comprises of roads which traverse the length of the site and parking areas outside of houses and the plant nursery.

### *Buildings (J3.6)*

- 4.15 There are several buildings in the centre of the site, comprising residential properties, Lowood House and the plant nursery.

### *Ornamental Planting (OP) and Amenity Grassland (J1.2)*

- 4.16 These habitats make up the small areas of garden and lawn associated with the buildings described above.

## **Protected Species**

### *Otter and Water Vole*

- 4.17 The River Tweed and the pond on site were searched as thoroughly as possible; however, no signs of otter or water vole were recorded.
- 4.18 The River Tweed provides suitable habitat for otter; as evident from the SAC designation it has been given. The river does not provide suitable water vole habitat due to the fast flowing and deep river and shallow, stony banks which are unsuitable for burrowing.
- 4.19 The pond within the site was not deemed optimal for water vole due to lack of suitable foraging vegetation for water voles. It was also deemed suboptimal for otter due to the lack of resting site opportunities as the area surrounding the pond was heavily impacted by cattle and is also used as a recreational area.
- 4.20 Water voles will not be considered further during this study due to lack of evidence and historical records.

### *Badger*

- 4.21 Two main and four outlier setts were recorded within the site, with multiple dung pits and foraging signs recorded throughout. The habitats found in the site are optimal for badger foraging and sett creation, with plentiful grassland for foraging and woodland with soft soil in which to safely dig setts.
- 4.22 Due to the sensitive nature of the information, a confidential map of badger evidence is provided separately.

### *Red Squirrel*

- 4.23 The broadleaf, mixed and coniferous woodlands found extensively on the site offer excellent foraging and habitation opportunities for red squirrel. Evidence of squirrel, including foraged cones and dreys were found on the site; however, as no sightings were recorded it is not possible to determine whether these are red or grey.

### *Great Crested Newt*

- 4.24 No signs of great crested newt were recorded during the survey. The single pond on the site was scored for habitat suitability following published guidance<sup>6</sup> and was assessed as having poor suitability, which is the lowest rating a water body can receive. No other water bodies were identified within the site.
- 4.25 Great crested newts will not be considered further in this report due to lack of evidence and historical records.

## **Nesting birds**

- 4.26 Active bird nests are not common at the end of September and as expected, none were recorded.

<sup>6</sup> ARG UK (2010). ARG UK Advice Note5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom

- 4.27 Many small passerines (e.g. robins *Erithacus rubecula* and sparrows *Passer domesticus*) and common species such as pigeon *Columba livia* were encountered during the survey.
- 4.28 Six grey herons *Ardea cinerea* were seen roosting in the large Norway spruce which border the northern edge of the pond.

#### Non-Native Invasive Species

- 4.29 Himalayan Balsam *Impatiens glandulifera* was recorded at many areas in the site. The densest areas were along the northern border of the site, on the banks of the River Tweed.

#### Bat Roost Potential (BRP)

- 4.30 There were many large and mature trees identified on the site with features suitable for supporting bat roosts. Features included woodpecker holes, knot holes, and damaged and rotten limbs. Single large trees with BRP were recorded separately; where multiple trees were identified as having BRP, in the same area a 50 m<sup>2</sup> grid was applied and given a rating based on the guidelines in **Table 3.1**. A map of the BRP grid for woodland on the site can be found in **Appendix 2**.
- 4.31 The buildings on the site were also surveyed for BRP and given a corresponding score. The majority of buildings were deemed to have moderate potential, with one scored as high due to the surplus of entrance points seen. Lowood House was not accessible for surveys and as such has no score.
- 4.32 Surveyors also received a personal communication from a resident of the site indicating bats were roosting in their building, in the roof or walls of their apartment (No. 4). He reported that "hundreds of bats", possibly young staying close to the roost, were observed emerging and foraging this year. The access point of this roost had appeared to move from one side of the roof to another over the course of recent years.
- 4.33 The mixture of habitats found within the site (woodland, grassland and river) provide optimal foraging for a variety of bat species. The river and bordering trees supply a commuting corridor for bats to move to the east and west of the site into the surrounding farmland.

## 5 Discussion

### Desk Study

- 5.1 Records of bats, otter, badger and red squirrel were found within the site and the 2 km buffer, suggesting that the site and vicinity provides suitable habitat for these protected species and acts in conjunction with the wider environment. Enhancement opportunities for these species will be considered in the following section.
- 5.2 The River Tweed is a statutorily designated site which borders more than half of the site and as such, enhancement opportunities and possible constraints will be considered in the following section.

### Field Study

- 5.3 No evidence of otter was recorded in our survey. This could be due, at the pond, to a lack of suitable resting sites or holt options and also the area being used for recreation. The River Tweed is designated for otter and as such it was expected that signs of otter would be recorded on the river bank. No evidence was documented on the southern bank, which borders the site; this could be explained by the public footpath, popular with dog walkers, and lack of habitat suitable for holt use. The northern bank may appear more attractive to otters due to the improved security presented by lack of disturbance and habitat diversity, with the presence of large rocks which provide crevices.
- 5.4 A number of badger setts were identified on the site and prior to any planned development a badger protection plan should be created to explain the likely impact on badgers caused by the development and any mitigation measures which will be implemented to limit or avoid these impacts. Impacts to be considered should include both legal offences and general potential for clashes between human and badger use of the wider areas.
- 5.5 Both red and grey squirrel have been recorded historically in the area and further detailed studies would be required prior to development to determine if the dreys recorded belong to the protected red squirrels or not.

## 6 Enhancement opportunities and constraints

### Trees and woodland

- 6.1 There is a variety of woodland found across the site, all of which adds value in the form of biodiversity and habitat for faunal species or for visual amenity and character. Generally speaking, retaining woodland and trees is preferable to removal in order to retain these services. The value of developed and varied woodland cannot be easily replaced by replanting individual trees as the value of the woodland includes the mature soil habitat and ground flora also associated.
- 6.2 Where trees are to be removed or cut back for safety or due to the health of the trees, alternatives to full removal should be considered. For example, should a tree need to be cut back to avoid diseased or damaged limbs from falling, retention of the tree itself should be the first consideration, as opposed to wholesale removal and replanting. Only cut back to where necessary and try to retain splits or cracks where safe to do so. Where a tree is severely diseased or dead, consideration should be given to cutting the tree back to make it safe and leave it standing to permit invertebrates, birds and mammals to continue using it. It may be possible to make new slices into branches to create crevices for wildlife. Where this is not possible and the tree offers potential bat roosting features, or similar, consideration should be given to strapping the relevant section of the tree to another healthier, but younger, tree nearby; this would allow the retention of those features whilst slightly immature trees have a chance to mature.
- 6.3 Where trees are removed and logs and branches are stacked nearby, ensure these are left in site to offer refugia to local invertebrates and mammals. If any stockpiling is to be removed, do so quickly (after forming the pile) and make sure it's done at an appropriate time of year to prevent disturbance to sheltering animals.
- 6.4 Comparatively young plantations, such as in the western part of the site, if retained, would benefit from careful thinning and integration of paths to allow more open canopy and encourage better ground flora growth.
- 6.5 Mature treelines around the margins of the site should be retained to provide screening. However, they can also be planted up further (e.g. hedging and scrub) to create wildlife corridors around the site to allow wildlife a safe path to avoid future development obstacles. Taller planting or a 'greenwall' type approach in the south would help screen noise from the railway line and reduce light pollution. These new green tree/hedge corridors should remain unlit or only have low-level lighting. Planting along footpaths should be denser to provide a buffer between human and wild fauna users.
- 6.6 The vegetated areas closer to the river are remarkably dry and not currently displaying evidence of a wet woodland (one of the proposed landscape options); therefore, it could continue to provide parkland tree compensation opportunities by just supplementing what is already there.
- 6.7 The woodland located in RZ 3 is dominated by very tall broadleaved species with some conifers mixed in. Care must be taken for any development within this woodland, as keyholing could open up vulnerability to wind throw, as already evidenced on site. Where tree removal is required for development, the impact assessment must consider this possibility.
- 6.8 Wherever new trees or scrub species are planted, they must be native species, preferably of local provenance, to avoid offences under the Wildland and Countryside Act and to offer more value to local wildlife.

## Open spaces

- 6.9 As mentioned above, planting up the open spaces between mature trees at the margins of the site could offering screening and help create a safe, green corridor for wildlife. More flowering species would offer foraging for birds, bats and invertebrates, such as bees and butterflies.
- 6.10 The floodplain areas, at the western end of the site and at the northeast, could be utilised for playground or free play in a new parkland setting without removing its service as a flood storage. Planting trees and hedges in this area could provide shade, soil security, and some compensation for tree-loss elsewhere. Mixed with wildflower meadows, meandering mown footpaths (as opposed to gravel), and benches, the area could help make these areas attractive in order to avoid fly-tipping and anti-social behaviour. With the correct planting schedule, management of these areas could be minimal, with less mowing (to retain long swards) and no formal paths to maintain.
- 6.11 The River Tweed banks are dominated by non-native plants, such as the invasive Himalayan balsam and many garden escapees. This is a common problem on watercourse and requires landscape scale solutions. Consideration will be required to avoid offences during development and perhaps to help mitigate or control the problem in this area.

## Dementia hub and pond

- 6.12 The existing pond at the proposed dementia hub location could benefit from sensitive planting of marginal plants to improve biodiversity and act as a buffer or barrier to people (potentially reducing risk of drowning). The mature wood stand north of the pond should be retained and protected, as it is used by roosting herons and badgers, though some work would be required to improve its amenity. A careful path through the pond woodland, with extra plants to create a buffer between the path and rest of the wood would offer some protection to the wildlife but allow walks by local residents and users of the Hub. Selected thinning and soil preparation could open up potential for ground flora.
- 6.13 With proposed development surrounding this pond and wood, careful landscape design will be required to avoid habitat severance and movement of, for example, badger through the site. The planting schedules for the proposed Hub, business park and dwellings will also need to consider species type and subsequent management to avoid pollution and nutrient loading into the pond, which can result in algal blooms as well as expensive and damaging maintenance.

## Business Park (RZ4)

- 6.14 The proposed access road, below RZ 4, is currently at the site of a former field gate through a historic wall. The species currently present are typical of gate points in grazed fields (e.g. nettle, thistle, sorrel). However, any road through this area will need to avoid the mature trees scattered in this parkland. Any buffer applied to the individuals must be sufficient to not only protect the root zone, but also avoid future health and safety risks which could result in felling after planning consent is granted. This is very important to note in any planning conditions, as the potential root protection zone could be very large and could require thoughtful and creative construction approaches, beyond standard methods. The retention of these trees, and the addition of more will be key to avoid severance across the site and to retain its historic and rural character.

## Protected species

- 6.15 As there are no detailed development plans for this site yet, it is not possible to assess impacts on any bat habitat or roosts. As mentioned above, they are clearly present on site and the mixed habitats present both in site and adjacent make it likely bats are thriving at Lowood. Targeted surveys will be required on trees and buildings to be affected by developments. Any development impacts on bat roosts should result in good quality like-for-like replacement, rather than

miscellaneous bat boxes in trees. Adjacent to the existing road into the nursery is a large historic stone wall. Within the woodland, on the east face of the wall, are several defunct outbuildings, at least one being thatched. These buildings could be retained and restored to create bespoke bat houses to act as compensation for any roost loss nearby. This would help to retain historic features of the park whilst offering a good alternative for bats.

- 6.16 At the moment, human presence, along with associated lighting, disturbance, and hard standing, is minimal. Proposed development would result in the loss of edge and woodland habitats and will likely include significantly more lighting. Connectivity across the site, especially between woodlands will help allow bats to continue using the site effectively. Hedgerows, more trees, and flowering scrub species could be used for creating these corridors. Cutting-edge lighting design should be incorporated into any landscape plan as a forethought. Lighting should consider LEDs, bollard lights, timers, and user buttons in order to minimise impacts. Published good practice guidance is available, for example from the Bat Conservation Trust: *Artificial lighting and wildlife* and *Bats and artificial lighting in the UK*.
- 6.17 Badgers are present on site and using it for shelter and foraging (see the confidential figure for details). Connectivity through the landscape is just as important for badgers as for bats. Although the legislation doesn't require as rigorous consideration for badgers, avoiding human conflict once the development is operational should be a consideration for any developer. Creating the green corridors for bats and as described further above, would lend itself to badger use with little extra effort. Where corridors are required, thorny species, such as hawthorn, could help keep the wildlife paths separate from humans, reducing conflict and harassment. Large areas of foraging especially in proximity to main setts, will help to reduce the risk of badgers using future gardens. Again, forethought during masterplanning can help address future conflict and reduce impacts.
- 6.18 It is not certain if red squirrels are present on site. Detailed surveys, e.g. hair tube deployment, could answer this key question. If red squirrels are present, then retention of drey trees and woodland and improved connectivity could help this species cope with future development. However, red squirrels can be shy and careful animals and depending on the level and type of development proposed at Lowood, this species may still be displaced. The planning authority should consider off-site locations nearby for habitat enhancement and protection to help offset impacts at Lowood.
- 6.19 Otters have become fairly ubiquitous across Scotland after concerted efforts to improve watercourses and protect habitats. The adjacent River Tweed is designated as a Special Area of Conservation, in part because of its otter population. However, there were no signs of otter on the Lowood bank. It is possible current levels of disturbance discourage use by otters or the lack of sufficient sheltering opportunities. There are certainly areas which could be used at couches, but no potential holts or hovers were recorded. The northern (left) bank appeared less disturbed, more significantly buffered, and more diverse in habitat type. It is possible otter prefer the left bank to the right. Any development will need updated baseline surveys and pre-works surveys, as a minimum, on both banks to ensure otter shelters are not disturbed and direct impacts can be avoided.

# Appendix 1: Photographs

	
<p>Mature Broadleaved Woodland</p>	<p>Young Broadleaved Woodland</p>
	
<p>Tall Ruderal</p>	<p>Improved Grassland and Large, Mature Oaks</p>



Improved Grassland



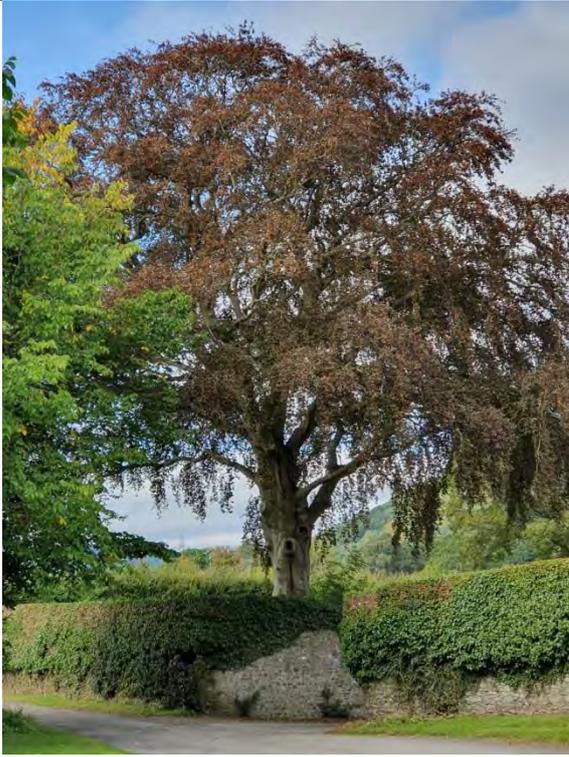
Improved Grassland with Scattered Broadleaf Trees (Parkland)



Pond



Semi-improved Neutral Grassland



Mature Beech



Himalyan Balsam on River Edge



Mature Beech Tree with Woodpecker Holes



Mature Sycamore Tree with Limb Damage



Building with High BRP. Gaps under roof

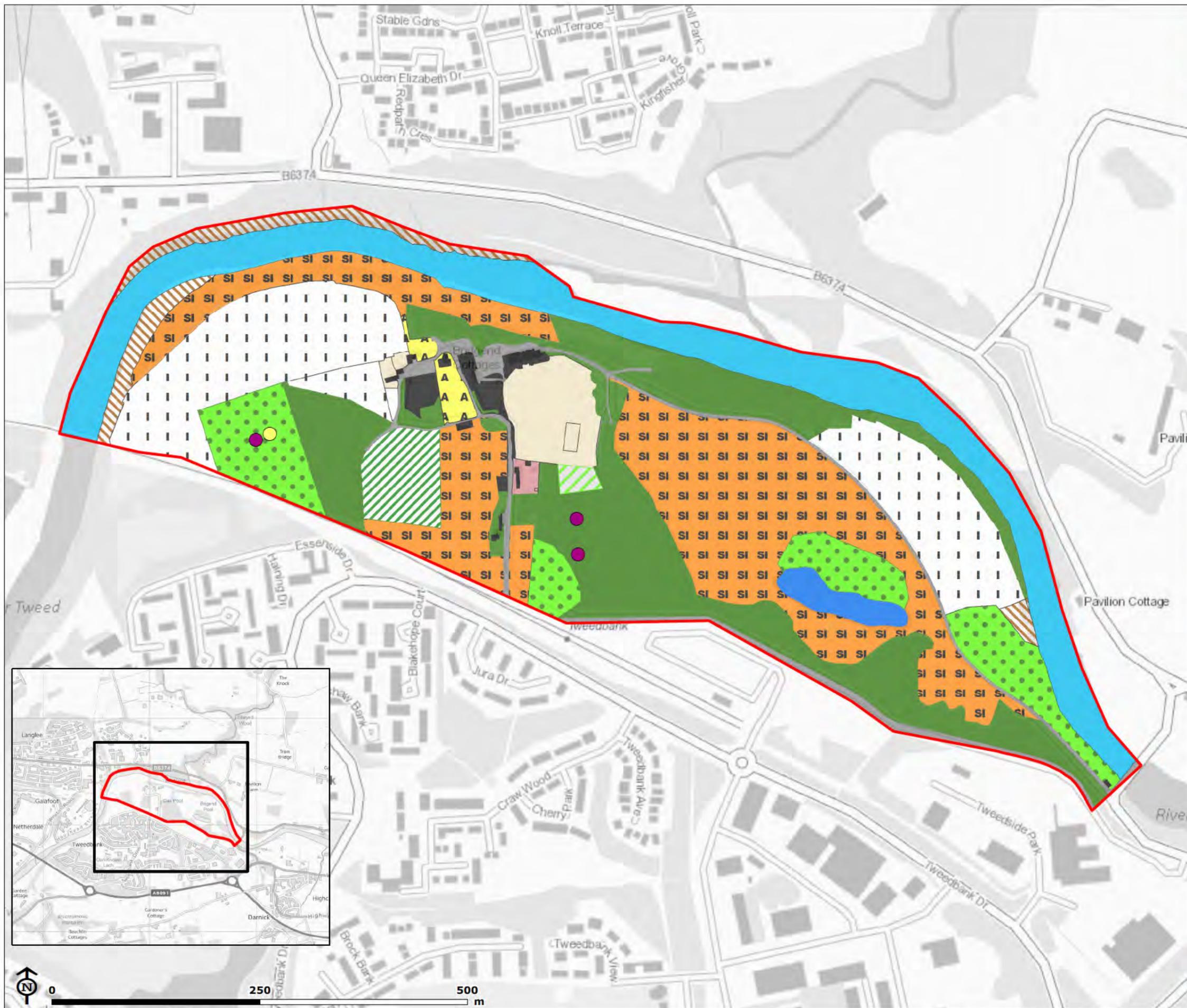


Building with Moderate BRP

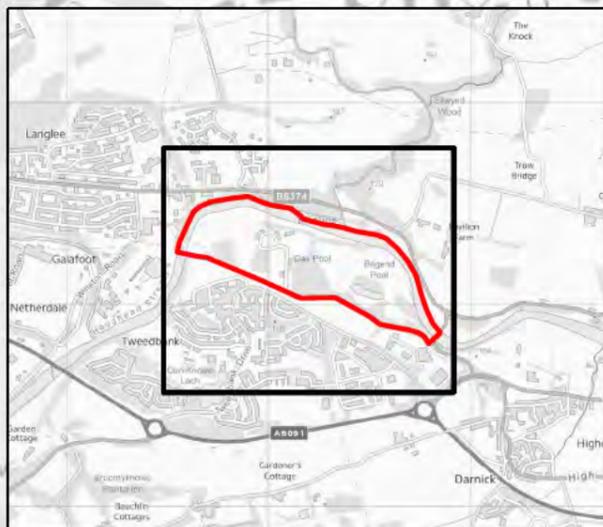
# Appendix 2: Survey Results Maps

# Lowood Preliminary Ecological Appraisal

**Figure 1: Extended Phase 1 Habitat**



- Survey area
- Squirrel Drey
- Squirrel Foraging Remains
- A1.1.1 Broadleaved woodland (semi-natural)
- A1.1.2 Broadleaved woodland (plantation)
- A1.2.2 Coniferous woodland (plantation)
- A1.3.1 Mixed woodland (semi-natural)
- AL Allotment
- B2.2 Neutral grassland (semi-improved)
- B4 Improved grassland
- C3.1 Other tall herb and fern (ruderal)
- G1 Standing water
- G2 Running water
- HS Hard standing
- J1.2 Amenity grassland
- J3.6 Buildings
- OP Ornamental planting

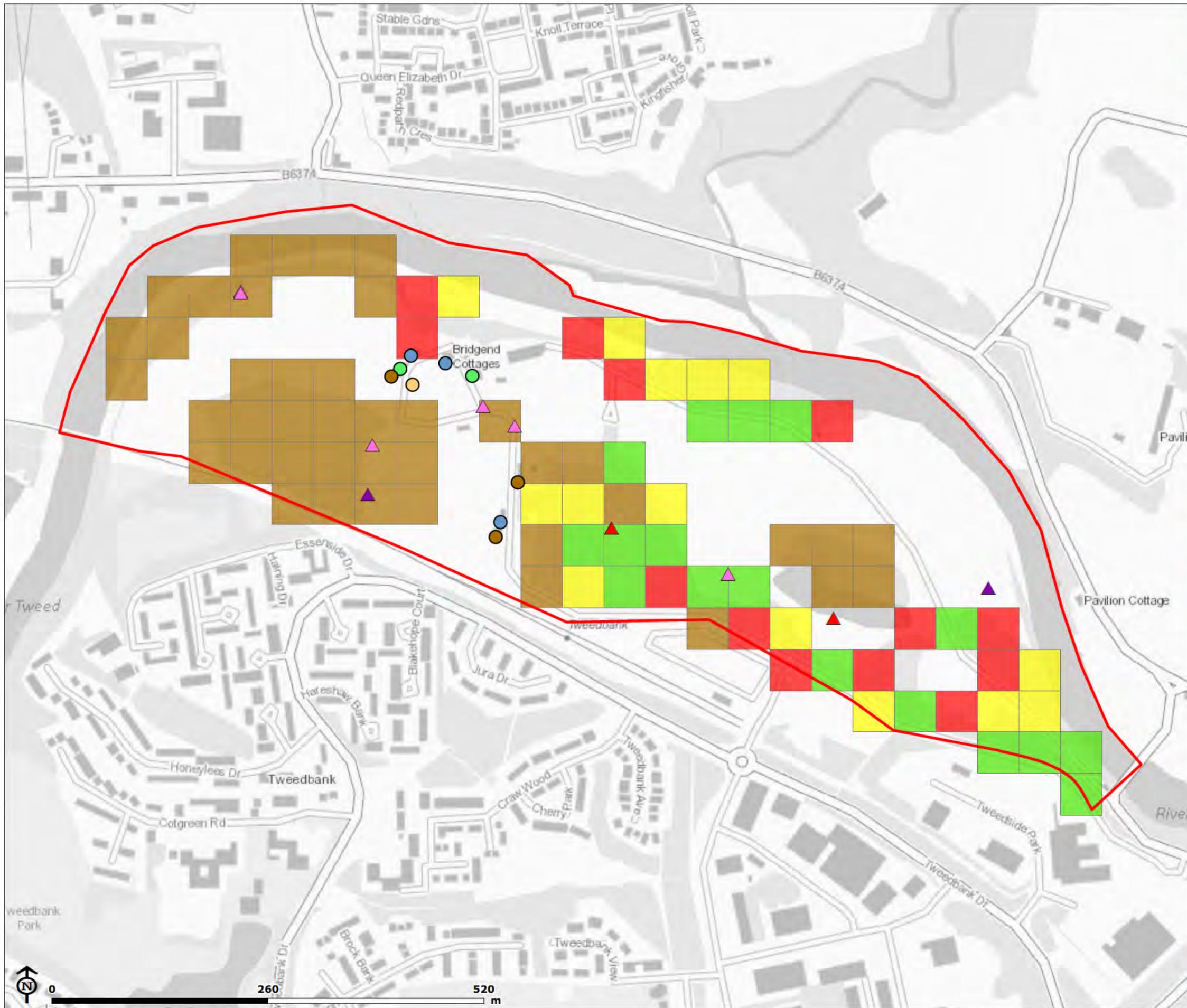


Map Scale @A3: 1:4,500



# Lowood Preliminary Ecological Appraisal

**Figure 2: Bat Roost Potential**



Survey area

**Bat Roost Potential Structures**

- High
- Moderate
- Low
- Negligible

**Bat Roost Potential Trees**

- High
- Moderate
- Low

- BRP1- High
- BRP2- Moderate
- BRP3- Low
- BRP4- Negligible

Map Scale @A3: 1:4,500



CONFIDENTIAL

**CONFIDENTIAL**  
Lowood Preliminary  
Ecological Appraisal

**Figure 3: Badgers**

 Survey area

Map Scale @A3: 1:4,500



# A.3 Consultation Responses

**Comments:**  
 Please make the development exceptional. A Showcase of how residential and commercial developments should be. Not just another lump of concrete on our land. Housing should start with affordable housing, not have it as an afterthought. Affordable housing should be desirable, energy efficient, well being enhancing. All of the latest technologies (renewable) should be adopted throughout the development. The layout of the development should work the most of the fantastic natural environment it is located in. As much as possible cars should be hidden away and walkways being prominent. Lots of views from residential & commercial should be considered. Again, thinking of the wellbeing of everyone.

**Would you like to be added to our Lowood SPG mailing list?**  
 Yes  No

**Name:** development should work the most of the fantastic natural environment it is located in. As much as possible cars should be hidden away and walkways being prominent. Lots of views from residential & commercial should be considered. Again, thinking of the wellbeing of everyone.

**Address:**

**Tel No:** | **Email:**

**Comments:** using the space commercial units for small businesses should be considered (as well as larger units/offices). This needs to be the new benchmark for future developments. Let's learn from the best of other countries, for example Vienna's social housing approach. Scandinavia's hygge approach to life. Japan's blend of architecture and natural environment. This is everyone's chance to leave a legacy.

**Comments:**  
 GOOD IDEA.

**Would you like to be added to our Lowood SPG mailing list?**  
 Yes  No

**Comments:**  
 Return walk areas a green space. Retain as much vegetation as possible. Planning done to consider everybody. No walkway restrictions. Consider wildlife - Birds, otters, Rabbits etc. Ensure roads can handle traffic flow. Enhance the existing area.

"KEEP TWEEDBANK RESIDENTS INFORMED"

**Would you like to be added to our Lowood SPG mailing list?**  
 Yes  No

**Comments:**  
 I am definitely all for it.

**Would you like to be added to our Lowood SPG mailing list?**  
 Yes  No

**Comments:**  
 I WOULD LIKE TO SEE THE NATURAL ENVIRONMENT BEING PRESERVED AS MUCH AS POSSIBLE - ESPECIALLY MATURE TREES etc.

**Would you like to be added to our Lowood SPG mailing list?**  
 Yes  No

# A.3 Consultation Responses

Comments: btinternet.com  
 we understand the need for housing but please retain as much as possible of the natural environment to ensure it reflects Tweedbank as it currently is. Land retains some of the current wildlife & bird population.

Would you like to be added to our Lowood SPG mailing list?  
 Yes/No

Comments: Understandable development - Only concerns regarding environmental impact on flora / fauna -

Would you like to be added to our Lowood SPG mailing list?  
 Yes/No

Comments: Great idea! Bold and visionary step by SBC to be proactive and stimulate investment to create new jobs, training and housing

Would you like to be added to our Lowood SPG mailing list?  
 Yes/No Yes

Comments: I HOPE SBC & DEVELOPERS SEE THIS AS AN OPPORTUNITY TO BE FORWARD THINKING AND INNOVATIVE REGARDING HOUSING THAT BLENDS WELL INTO THE ENVIRONMENT, BUILT TO HIGH STANDARDS REGARDING ENERGY EFFICIENCY AND ALSO TO BE AHEAD OF THE CURVE AND INCORPORATE SOME NO VEHICLE PARTS OF THE DEVELOPMENT.

Would you like to be added to our Lowood SPG mailing list?  
 Yes/No

Comments: WELCOME SOME PARTS EG. RAILHEAD DEVELOPMENT, PROPOSAL FOR CARE/DEMENTIA UNIT, POSSIBLE HOTEL ACCOMMODATION. HOWEVER HAVE SERIOUS RESERVATIONS RE ACCESS OPTIONS AND MATTERS SUCH AS SCHOOL PLACES, GP SERVICES ETC.

Would you like to be added to our Lowood SPG mailing list?  
 Yes/No

Comments: LOOKING FORWARD TO SEEING THIS PROJECT COMPLETED.

Would you like to be added to our Lowood SPG mailing list?  
 Yes/No YES

LUC

