



# **Preliminary Ecological Appraisal**

**Westwood Mills, Linthwaite**

Report reference: R-2506-01

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Report Title:	Preliminary Ecological Appraisal, Westwood Mills, Linthwaite
Report Reference:	R-2506-01
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The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report does not constitute legal advice.



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## Summary

### Purpose of report

This report is produced to present an initial assessment of the potential ecological constraints and opportunities relating to the Site; to inform its potential for development.

This report is intended to provide advice to the developer, and will require modification prior to submission in support of a planning application. Further surveys will be required in support of a planning application.

### Methodology

The report is based on a Desk Study of designated wildlife sites and records of protected or notable species, and an extended Phase 1 Habitat Survey carried out in March 2016.

### Findings Key-Points

Although habitats on Site are common and species poor, the Site is considered to be of relatively high value due to its location within the wider landscape.

The Site's contribution to the Kirklees Wildlife Habitat Network is significant and as much of this is lost in the assessed proposals, early dialogue with Kirklees is recommended. There may not be support for the amount of new buildings currently shown but a balance can be negotiated to accommodate significant new build set against positive compensatory enhancement measures.

Low Westwood Pond Local Wildlife Site (LWS) and The River Colne will require specific consideration through the development to avoid negative impacts. Low Westwood Pond has previously been found to support floating water-plantain (*Luronium natans*). A licence will be required for further survey for this species to assess the status of this species on Site, and to inform potential mitigation / enhancements.

Further survey will also be required with respect to bats (roost & activity survey), reptiles, otter, water vole, breeding birds & potentially crayfish in order to establish a baseline for the Site and determine any specific mitigation required.

The invasive species' Japanese knotweed and Himalayan balsam are found on Site – removal will be required to prevent their spread in the wild.

## Introduction

1. Brooks Ecological Ltd was commissioned by Westwood Wilson Ltd. to carry out a Preliminary Ecological Appraisal of Land at Westwood Mills, Low Westwood Lane, Linthwaite (SE 094 145).
2. This report is produced with reference to British Standard BS42020 'Biodiversity Code of Practice for Planning and Development' and the CIEEM (2013) *Guidelines for Preliminary Ecological Appraisal*.

### Scope

3. The application site 'the Site' encompasses a former mill, and associated curtilage located in the town of Linthwaite, between the River Colne and the Huddersfield Narrow Canal.
4. The 'Study Area' includes a 2km area of search around the site for records of protected and notable species and locally or nationally designated wildlife sites.

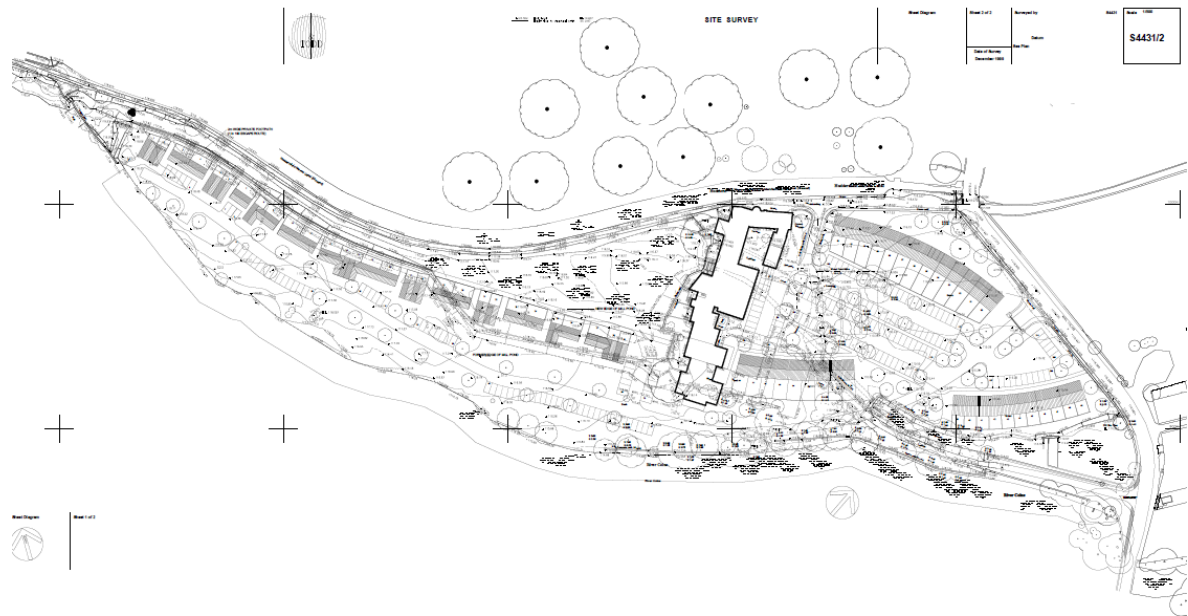
**Figure 1** Survey Site boundary



## Proposals

- Outline proposals for the site detail the refurbishment, and conversion of the existing mill building, demolition of modern additions, and erection of new residential units.

**Figure 2** Outline Proposals for the development taken from dwg no. 538.1/PL01T



## Site context

- The Site is Found on the western edge of the town of Linthwaite. Immediate boundaries comprise the River Colne and the Huddersfield Narrow Canal which border the Site to the South and North respectively, and Low Westwood Lane which runs along the eastern boundary. The Site tapers to the east until its eastern point, where the river and the canal almost meet.
- The Wider landscape is dominated by the conurbation of Huddersfield, the centre of which is c.5km to the north east, along with smaller towns / villages concentrated along the River Colne. These become increasingly numerous from the its source in the Pennines to the west, to the Centre of Huddersfield to the north-east.

## Wildlife corridors

- Three prominent features run through the Colne Valley, which along with areas of woodland, farmland, and a number of reservoirs form a strong habitat corridor through the wider landscape from Huddersfield to the Pennines. These features are as follows –

- The River Colne
  - The Huddersfield Narrow Canal
  - Colne Valley Railway Line
9. The Site is closely associated with the river and the canal, and can be seen as contributing to the function of these features as corridors facilitating the movement of wildlife through the valley.

**Figure 3** Analysis of wildlife corridors and higher value habitat in relation to the Site.



### Water bodies

10. No still water bodies are located within 500m, although a single old mill pond (Low Westwood Mill Pond) is found at the south eastern corner of the Site. This feature is discussed further later in the report.

## Designated Sites

### Statutory Designations

11. There are no statutory designations within 2km of the Site; 3 international designations are found within 10km, these being –
  - South Pennine Moors Special Area of Conservation (SAC)
  - South Pennine Moors phase 2 Special Protection Area (SPA)
  - Peak District Moors (South Pennine Moors Phase 1) Special Protection Area (SPA)
12. The above contribute to an area of continuous moorland c.4.3km to the west at its closest point. These designations are considered sufficiently separated from the Site for potential impacts caused by the proposed development to be considered negligible.
13. The Site does not support habitat on which the qualifying species of the SPA are likely to rely, and likely impacts from the development on these European designations are scoped out.

### *SSSI Impact Risk Zones (IRZs)*

14. The site lies within the IRZ for Dark Peak, and South Pennine Moors Site of Special Scientific Interest (SSSI), but the development does not fall into one of the highlighted categories which requires consultation between the Local Planning Authority (LPA) and Natural England (NE). The development is of a scale and nature which is unlikely to impact on this SSSI.

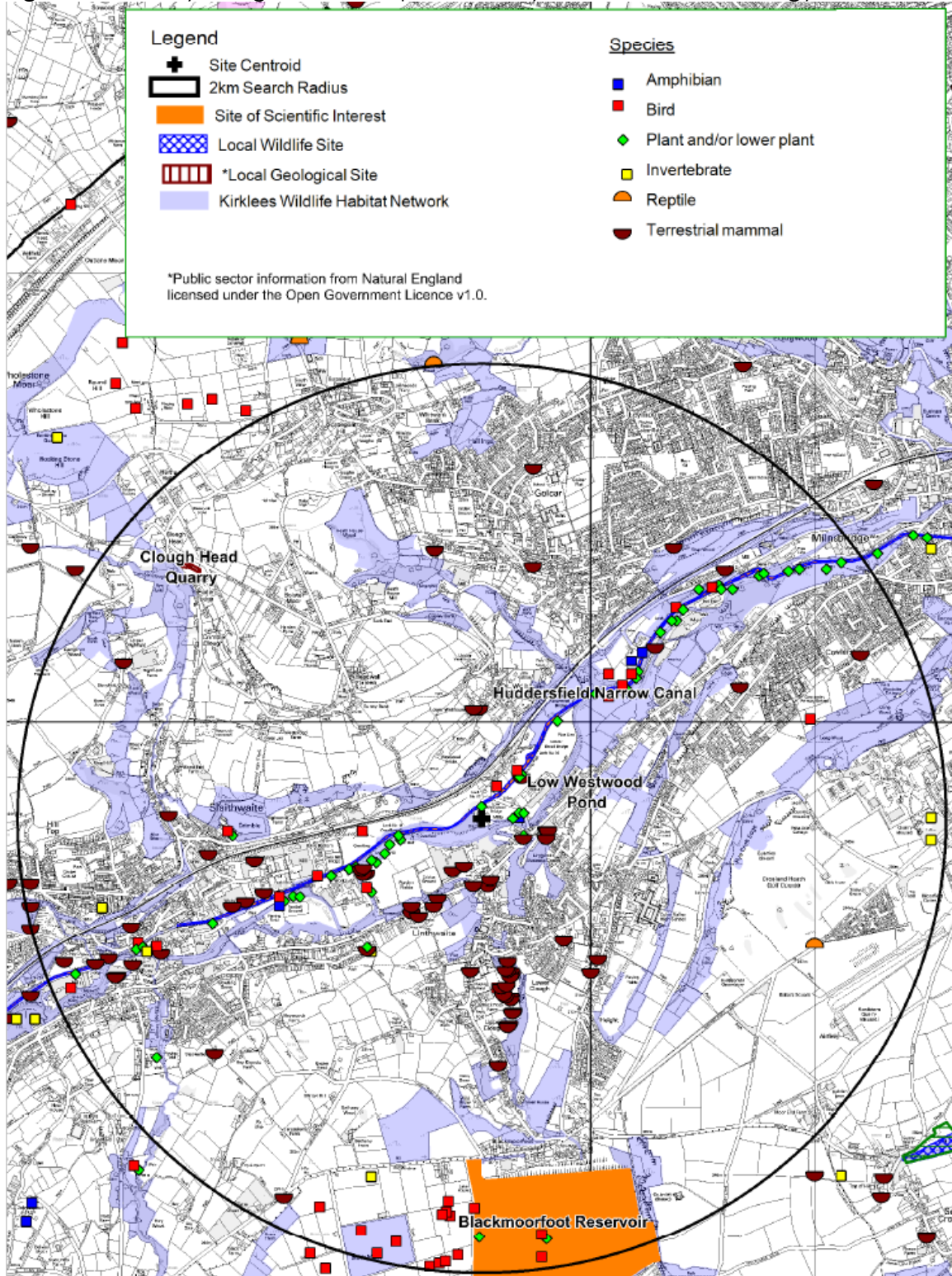
### Non-Statutory Designations

15. There are 6 local designations within 2km, covering 4 sites. These are –
  - Blackmoorfoot Reservoir Site of Scientific Interest (SSI) c.1.6km to the south – this is sufficiently separated from the Site to be considered outside of the sphere of influence of the development.
  - Huddersfield Narrow Canal SSI & Local Wildlife Site (LWS) which runs along the Site northern boundary. Although adjacent to the Site, the canal is located on high ground and does not share any hydrological connections, making impacts from the development relatively unlikely, and easily avoided through the production and adherence to a Construction Environment Management Plan (CEMP).



- Clough Head Quarry Regionally Important Geological Site (RIGS) c.1.6km to the north-west. This Site is designated based on its geological as opposed to its ecological value, and as such is not considered further.
- Low Westwood pond SSI & LWS located at the south-eastern corner of the Site. This former mill pond is designated based on it meeting the criteria to qualify as 'Species Rich Standing Water (Sw1)'. It has also, during previous assessment by West Yorkshire Ecology (1996 & 2001), been found to support populations of floating water plantain (*Luronium natans*). *Luronium natans* is listed under Annexes II and IV of the Habitats Directive, Appendix I of the Bern Convention, Schedule 4 of the Conservation (Natural Habitats, etc.) Regulations 1994, and Schedule 8 of the Wildlife and Countryside Act, 1981.

**Figure 4** Locally designated sites provided by West Yorkshire Ecology



### Kirklees Wildlife Habitat Network (KWHN)

16. A large proportion of the Site is included in the KWHN, as shown in the figure below. At present the proposals leave scope for meaningful enhancements through the reinstatement of the large former mill pond and retention of the Mill Race. However, with the majority of the available space being occupied by buildings / hardstanding, some sacrifices may be required in the layout in order to create sufficient space to maintain / improve the Sites contribution to the KWHN in line with local policy.
17. It is recommended that a dialogue is opened with the Local Authority ecologist who will be considering the application in order to ascertain what level of development and enhancement is likely to be acceptable. Given the amount of the site which falls into the KWHN it may be advisable to seek out pre-application advice from Kirklees.

**Figure 5** KWHN in relation to the Site



## Extended Phase 1 Habitat Survey

### Method

18. The survey was carried out during March 2016<sup>1</sup> and followed Phase 1 habitat survey methodology (JNCC, 2010).

### Limitations

19. The survey was carried out in March before many plant species are expressed, however the habitat type and likelihood of supporting notable species or communities could still be assessed at this time by the surveyor.
20. The vast majority of the Site was accessible with exceptions being the densest bramble scrub which accounts for no more than 5 % of the site by area.
21. Inspection of the banks of the River Colne was limited by heavy rainfall and increased flow.

### Results

22. The Site consists of a former mill, and surrounding curtilage which has been abandoned and left unmanaged for a number of years. Habitats on Site have arisen as a consequence of this abandonment, and represent a limited range of relatively species poor habitats which support a typical array of colonising species.
23. Evidence of the former usage is apparent by the presence of mill ponds, and what was previously the intake from the River Colne. The large mill pond has now terrestrialised, and it would seem the Site only supports flowing water in times of elevated rainfall.
24. The following habitats were identified within the Site and on its immediate boundaries:
  - Buildings
  - Semi-improved neutral grassland
  - Hard-standing
  - Scrub / Tall Ruderal

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<sup>1</sup> This Report has been prepared during March 2016 following a visit to the site in March 2016 and our findings are based on the conditions of the site that were reasonably visible and accessible at that date. We accept no liability for any areas that were not reasonably visible or accessible, nor for any subsequent alteration, variation or deviation from the site conditions which affect the conclusions set out in this report.

- Secondary Woodland
- Trees
- Standing water
- Flowing Water

### *Buildings*

25. The former mill building dominates the built structure on Site. This comprises a complex of stone and brick cavity walled structures over multiple storeys. Due to the condition of the building, with many sections of roof fallen through, full inspection of the mill complex was not possible, instead the property was assessed with binoculars from ground level.
26. The walls of the mill are in a poor condition, with multiple gaps in masonry, and vertical fissures leading to internal cavities. It is noted that much of the length of the wall tops is exposed to rainfall, and therefore likely to be subject to water ingress.

**Figure 6** General views of the mill building



27. Much of the roof structure is collapsed, however some areas where it remains intact are accessible via window openings, and are likely to present a sheltered internal environment.



**Figure 7**

Area of mill with roof intact and window opening allowing access to the interior.

28. Detached from the original mill building there are occasional more modern, simple structures constructed from a combination of stone, brick and metal. These are, relative to the original mill, in good condition, however they still present multiple crevices and gaps potentially leading to sheltered cavity space's, for instance via gaps in the masonry, or along the verges.

**Figure 8** General views of detached buildings



29. Due to the condition of the buildings, internal inspection was not possible for health and safety reasons.

*Semi-improved neutral grassland*

30. This runs through the centre of the Site in open areas which are frequently disturbed by walkers preventing the establishment of scrub. Species include a range of common grasses such as perennial rye (*Lolium perenne*), yorkshire fog (*Holcus lanatus*) and fescues (*Festuca rubra* agg.), with occasional cocksfoot and false oat (*Arrhenatherum elatius*) more apparent towards fringes. Forb diversity is low,

comprising a limited range of common species such as dandelion (*Taraxacum officinale*), creeping buttercup (*Ranunculus repens*), creeping thistle (*Cirsium arvense*), ragwort (*Senecio jacobaea*) daisy (*Bellis perennis*), and a competitive herb element with species such as nettle (*Urtica dioica*) and cow parsley (*Anthriscus sylvestris*) and broad-leaved dock (*Rumex obtusifolius*).



**Figure 9**

Typical view of strip of rough grassland

*Hard-standing*

31. Comprising access roads, and former car parks for the mill. These areas are largely devoid of vegetation, apart from occasional common grasses / mosses.



**Figure 10**

Hardstanding typical of Site, looking east from mill.

*Scrub / Tall Ruderal*

32. Areas of the Site which are not frequently disturbed are characterised by areas of scrub, consisting of a combination of bramble (*Rubus fruticosus*), as well as tall competitive herbs such as nettle (*Urtica dioica*), broad-leaved dock (*Rumex obtusifolius*), raspberry (*Rubus* sp.) and willowherb (*Epilobium* sp.). Elsewhere are areas of self-set trees including sycamore (*Acer pseudoplatanus*), birch (*Betula pendula*) and willow (*Salix* sp.) forming dense scrub, particularly at the northern boundary, adjacent to the mill.



**Figure 11**

Area of bramble scrub alongside the River Colne at the southern boundary.



**Figure 12**

Scrub comprising self-set trees along the northern boundary.

33. Scrub comprising dense stands of Japanese knotweed is also noted in areas marked indicatively on D-2506.01.1.



### *Secondary Woodland*

34. The site of the former large mill pond has now terrestrialised and subsequently succeeded to secondary woodland, dominated by birch, with other occasional species including willow, and oak (*Quercus* sp.).
35. The ground layer in this woodland is species poor, with himalayan balsam (*Impatiens glandulifera*) present in high concentrations, and occasional bramble, and ivy (*Hedera Helix*). Common ferns such as broad buckler fern (*Dryopteris dilatata*), male fern (*Dryopteris filix-mas*), and hart's-tongue fern (*Asplenium scolopendrium*), as well as frequent common mosses such as *Kindbergia praelonga*, and *Polytrichum commune* are present within the ground flora and field layer.



**Figure 13**

Typical view of secondary woodland on the site of the former mill pond.

### *Trees*

36. Apart from secondary woodland and immature self-set trees, more mature trees are scattered across the site, particularly along the banks of the River Colne, predominantly comprising sycamore.



**Figure 14**

View of early-mature trees along the River Colne.

*Low Westwood Pond*

37. This pond is located at the south eastern corner of the Site, and was historically fed by a mill race which ran through the Site west – East from the River Colne. This will have run into a large, now terrestrialised Mill Pond, which in turn would have serviced the mill and flowed out into Low Westwood Pond. Areas at the top of the mill race have become blocked with debris and vegetation, and the large mill pond is now terrestrialised. This has left a small section of the former mill race, concrete holding tanks, and Low Westwood Pond as a continuous area of standing water.



**Figure 15**

Low Westwood Pond at the south east of the Site.



**Figure 16**

Remaining section of mill race which now holds standing water, connected to Low Westwood Pond.

38. The pond is bordered on three sides by vertical concrete / stone walls, and a sloping bank to the north. Emergent vegetation noted included common bulrush (*Typha latifolia*) and reed canary grass (*Phalaris arundinacea*). The Mill race to which the pond is connected is heavily shaded by scrub, with no aquatic vegetation noted and its banks sparsely vegetated with self-set trees, tall competitive herbs and bramble.

*Flowing Water*

39. The River Colne flows along the southern boundary of the Site. The banks of the River along the site vary between stone retaining walls, and mud banks, with vegetation predominantly comprising bramble scrub, with areas of dense Japanese knotweed and mature trees.
40. To the north The Huddersfield Narrow Canal is separated by a public footpath / towpath.



**Figure 17**

View looking east along the canal.

## Faunal Appraisal

### Bats

#### Roosting

41. The suitability of buildings / trees for supporting roosting bats is assessed in accordance with Collins (2016).
42. The original mill building offers a network of structures with multiple potential roost features (PRF's) suitable for supporting bats. The poor state of repair of the building likely reduces the suitability of many of these features, for instance due to water ingress or exposure to wind, however given the complexity of the structure, and its proximity to high value habitat there is a high likelihood that the building supports reasonable numbers of individual non-breeding bats.
43. Occasional areas are noted, particularly where the roof structure remains intact, which may present a more sheltered and stable internal environment. These areas may be suitable for supporting maternity roosts, especially considering the proximity to high value habitat.
44. The large number of PRF's both visible during survey and likely present within the mill complex, in combination with the Site's location in close proximity to high value habitat and potential foraging / commuting corridors, leads to the Site being assessed as having *High Suitability* for roosting bats.
45. More modern buildings lack significant large sheltered internal cavities, but do have some features which could support low numbers of non-breeding bats on a transient basis. These buildings are assessed as having *low suitability* for roosting.
46. Only a single mature tree was noted during the survey on which features with potential to support roosting were found, this being a vertical fissure in the trunk. This could potentially support low numbers of non-breeding bats during the active season, and is therefore classified as having *low suitability* for roosting. The location of this tree is marked on D-2506-01.1. Other trees on Site are classified as having negligible suitability for roosting bats.

**Figure 18** View looking east along the canal.



### Foraging

47. The Site occupies a node between two features which are likely to be of high value for foraging and commuting bats in the local area; the River Colne, and the Huddersfield Narrow Canal. Habitats on Site are likely to support high numbers of bats of multiple species foraging along tree lines, over still water bodies, and along the river and the canal.
48. Additionally, given the likelihood of bats roosting within on Site buildings, it is likely to be used as a transitional foraging resource during emergence and re-entry to these roosts.
49. Activity surveys will be required to assess the level of activity on Site, and its relative importance in the context of the wider habitat present. This will allow an assessment of the potential impacts of the Site's development on the function of the River Colne, and Huddersfield Narrow Canal for foraging and commuting bats.

### **Amphibians**

50. Records of common toad and common frog have been returned from within the 2km search radius, with no records being returned of the protected great crested newt (GCN).

51. Apart from a single pond (Low Westwood Pond LWS / SSI) located on Site at the south eastern corner, no other water bodies are located within 500m of the Sites boundaries. Assessment of this water body by WYE when considering it as a LWS in 1996 and 2001 made no reference to newt populations. Additionally, the movement of amphibians is restricted to the north and south, and to some extent the west by the River Colne and Huddersfield Narrow Canal, preventing colonisation from any populations in the wider landscape.
52. As well as a paucity of records returned from WYE within 2km, no records of GCN are apparent on the National Biodiversity Network (NBN) gateway within 10km of the Site.
53. Based on the above the likely absence of GCN from the Site can be reasonably concluded.
54. Populations of common frog, and common toad (a NERC Act species) are likely to be present within this pond. As this pond will be retained impacts on these species are likely to be low.

### **Birds**

55. A wide range of records have been returned, the majority of which originate from the area around Blackfootmoor Reservoir c.1.8km to the south. The paucity of records in the areas is likely due to a lack of recording effort as appose to limited populations, and the Sites relatively undisturbed location between two prominent wildlife corridors lends it high value for birds, particular with regards to commuting.
56. The mill building represents a large, complex, relatively undisturbed area which is likely to offer a number of potential nest sites for common garden / urban species.
57. The river does not represent potential for nesting riverine species such as sand martin or kingfisher, due to the lack of steep side banks for burrow creation. It may however represent potential foraging habitat for species such as dipper and grey wagtail, and facilitate the movement of local populations through the area, and as such proposals will need to demonstrate the value of the river can be maintained.

### **Riparian mammals**

#### *Water Vole*

58. No records of water vole were returned from along the river / canal within 2km, with a single record being returned from Slaithwaite Reservoir c.1.7km to the west. The section of the canal running alongside the Site has steep sided stone banks and therefore is unsuitable for water vole along this section, thus direct impacts from any works alongside the canal are considered unlikely.

59. The river bank along the Site's southern boundary represents marginal habitat which has some potential to support water vole.

#### *Otter*

60. No records of otter were returned from within 2km of the Site, and no records were found on the NBN gateway in waterways connected to the River Colne. However, given the recent expansion in otter numbers it is accepted that they are likely to be present along the River. Additionally, surveys by WYE on the adjacent section of canal found evidence of otter activity, populations which could easily move between the canal and the river.

#### **White Clawed Crayfish**

64. Three records of this species have been returned from c.1.6km to the west, dating from 1988, and 1970. It is unclear whether these records originate from the River Colne, or the Huddersfield Narrow canal.
65. Negative impacts on the river / canal can be avoided through the production of a Construction Environment Management Plan (CEMP). Full survey will only be required should the river bed is impacted.

#### **Reptiles**

66. The Site represents relatively valuable potential habitat for reptiles, with a mosaic of scrub cover and open basking areas, and well as contributing to a potential dispersal route for this group along the Colne Valley. Multiple features were also noted around the mill building, in particular rubble piles, which could act as refuge or hibernacula.



## Invasive Species

67. Two species listed on Schedule 9 of the Wildlife and Countryside Act were found on Site. Listing on this Schedule makes it an offence to cause or allow the spread of these species in the wild.

### *Himalayan Balsam*

68. Himalayan balsam (*Impatiens glandulifera*) was found across large parts of the Site - this species is easy to eradicate from most areas, however it is very capable of spreading, and is very successful along watercourses.

### *Japanese Knotweed*

69. Japanese knotweed (*Fallopia japonica*) has been found in the areas marked indicatively on plan D-2506-01.1

## Key Findings

### *Constraints to Development*

70. The habitats on Site, although relatively common, occupy a position between the River Colne and The Huddersfield Narrow Canal which increases the Site's ecological significance. Much of the Site is included within the Kirklees Wildlife Habitat Network (KWHN), which includes areas targeted for enhancement and protection through the planning process. Proposals for the development will need to ensure the function of this corridor is maintained. This can be achieved through targeted landscaping and enhancement though potential sacrifices may be required with regards to the current masterplan.
71. The River Colne is directly connected to the Site, and the development has the potential to result in contamination of the river, and downstream habitats. Rivers are listed as Habitats of Principle Importance under the NERC Act, and also listed as a Kirklees BAP habitat. A Construction Environment Management Plan (CEMP) will need to be produced and strictly adhered to in order to prevent negatively impacting on the river. The elevated position of the canal suggests this water body will avoid potential impacts. The CEMP is likely to be produced as a Condition of Planning.
72. Japanese Knotweed and Himalayan Balsam have been identified on Site and will require removal prior to site preparation, and a long term commitment to their control. Measures for the ongoing control of these is likely to be included in the CEMP.

### *Low Westwood Pond*

73. The development has the potential to significantly impact on Low Westwood Pond SSI / LWS via its contamination during the construction process. Additionally, should floating water plantain still be present within the water body, the development could risk damage / destruction of the plant, and therefore result in an offense under European law. In order to assess whether the pond still supports this species, further survey will be required. Due to the nature of this survey, which can potentially damage the plant, a survey licence will need to be sought from Natural England. Measures to prevent contamination of this pond will need to be set out in the CEMP.

### *Fauna*

74. With regards to faunal assemblages and protected species, the surveys set out in table 1 will be required prior to a planning application being made, given that if the species in question are present, there is potential for significantly impacts on proposals.

### *Ecological Enhancement*

75. The requirement for development to make a positive contribution to biodiversity is clearly set out in guidance such as the NPPF and BS:42020 - beyond mitigating or compensating any potential impacts.
76. Biodiversity enhancements will be best secured through the production of a Biodiversity Enhancement & Management Plan (BEMP) which will outline a method and timetable for the implementation of enhancements.
77. The following themes provide opportunities for the proposals to deliver such a contribution:
  - Incorporation of a dedicated roost space in to the converted mill building, as well as integral boxes into new builds.
  - Enhancement of Low Westwood Pond, and the planting of a range of submerged / emergent vegetation in the reinstated mill pond.
  - Installation of bird boxes across the Site catering for a range of species likely to be found in the locality.
  - Buffering of the river edge with native planting.
  - Control of invasive species
78. The Ecological Constraints and Opportunities Plan (Appendix 2) suggests a framework for the layout of the Site. It is recommended that discussions are opened with the council ecologist who will be considering the application, to determine the level of mitigation which will be expected, particularly in relation to the loss of areas of the KWHN.

## **Further ecological input required**

79. Guidance provided by Clause 8 BS:42020 and ODPM circular 06/05 (2005) makes it clear that proposals and planning decisions should be informed by sufficient information.
80. Additional surveys will be required in terms of confirming and supporting this preliminary assessment. These are summarised in the tables below:

**Table 1** Additional survey required **pre-planning**

Survey	Rationale	Timing
Bat Activity	<p>Our approach to bat activity surveys is set out in Appendix 4 of the report.</p> <p>The level of mitigation required will need to be informed by the value of the bat assemblage using them.</p> <p>Information on bat assemblages will inform proposals for habitat enhancement.</p>	Monthly transects from April to October with remote monitoring of key features.
Bat Roost Survey	Would identify any conflicts between bat roosts and the proposals. Disturbance or destruction of roosts being a criminal offence*.	3 surveys between May – September, with at least one between May – August.
Riparian Mammal	<p>Impacts on otter / water vole and their habitat are prohibited by law*</p> <p>Clause 8 BS:42020 requires decisions to be made based on adequate information.</p>	Walkover surveys the River Colne frontage during low water in March – April.
Reptile	<p>Widespread reptile species (common lizard, grass snake, slowworm, adder) are protected from killing / injuring under the wildlife and countryside act (1981).</p> <p>The Site represents habitat which may be capable of supporting these species, and the sites clearance could potentially result in an offence.</p>	7 Visits in April / May / September
Breeding Birds	<p>The Site represents a range of habitats which could be of importance to local bird populations.</p> <p>This survey is required to characterise the assemblages using the Site, in order to characterise use of the Kirklees Wildlife Habitat Network and direct any required mitigation, or enhancements.</p>	Three surveys in the Period March – June.
Floating water-plantain	This species is listed on Schedule 8 of the Wildlife & Countryside Act (1981) and as such it is an offence to intentionally or recklessly cause its destruction.	July – The time required to secure a licence for this survey

Survey	Rationale	Timing
	<p>Site activities, and any works on the pond (i.e. re-profiling) has the potential to result in an offence.</p> <p>Survey is required to determine its current status, and inform mitigation / enhancements.</p>	<p>will need to be considered.</p> <p>Recommend applying for a licence ASAP to avoid delays.</p>

\* Information on relevant legislation is provided in Appendix 5 of the report

81. Some further surveys will inform precautions taken during the Site's development, but will not impact on the layout or planning decisions. These are best carried out once development timescales are known. They can be time constrained and information on those required at this Site is provided below to aid project planning.

**Table 2** Additional survey required **pre-commencement**

Survey	Rationale	Timing
Invasive plant surveys	Causing or allowing the spread of invasive plant species is prohibited by law*  Surveys by a specialist contractor will inform plans to eradicate/ control himalayan balsam and Japanese knotweed.	No restrictions
Nesting bird surveys	Destruction of active nests is prohibited by law*  Survey will be needed prior to the clearance of vegetation and demolition <u>only if carried out during the period March - August (inclusive)</u> . This would allow and active nests to be identified and protected.	Immediately prior to clearance

\* Information on relevant legislation is provided in Appendix 5 of the report

## Issues to be addressed in layout or project design

82. The following features should be incorporated into the project in relation to the protection of ecology and compliance with Policy and best practice.

**Table 3** Issues to be addressed in layout or project design

Requirement	Rationale / Comments
<p>A large proportion of the Site lies within the Kirklees Wildlife Habitat Network (KWHN).</p> <p>Discussions should be opened with the council ecologist in order to determine the level of development to mitigation / enhancement required.</p>	<p>Compliance with NPPF (including) Para 109 and Para 118.</p> <p>Kirklees Council policy DLP31</p>
<p><u>A Construction Environment Management Plan (CEMP) should be provided</u> by the projects main contractor. This would include a chapter on biodiversity with specific input from and ecologist and would set out (amongst other issues) the protection of watercourses and still water bodies.</p>	<p>Good practice requirement BS 42020:2013 (Clause 10).</p> <p>There may be advantages to presenting this in illustrative form as part of any application package.</p>
<p><u>A drainage plan for the operational site should be produced</u> which shows the settlement and retention of surface water on site and the suitable control of sediment and pollution prior to discharge.</p>	<p>Good practice requirement BS 8582:2013</p>
<p><u>A Biodiversity Enhancement and Management Plan should be produced.</u></p>	<p>Good practice requirement BS 42020:2013. This will be particularly useful in showing that the Kirklees Wildlife Habitat Network can be protected.</p> <p>There may be advantages to presenting this in illustrative form as part of any application package to demonstrate that the scheme can present biodiversity gains.</p>

## Appendices

1. Extended Phase 1 Habitat Plan D-250614-01.1
2. Ecological Constraints and Opportunities Plan D-2506-01.2
3. Explanatory Notes and Resources
4. Bat Activity Survey Rationale
5. Information on legislation / protection



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## Appendix 1 – Extended Phase 1 Habitat Plan



Target notes:

-  Japanese knotweed
-  Himalayan balsam
-  Potential Floating water-plantain
-  Tree with low suitability for roosting Bats

Project: **Westwood Mills, Linthwaite**

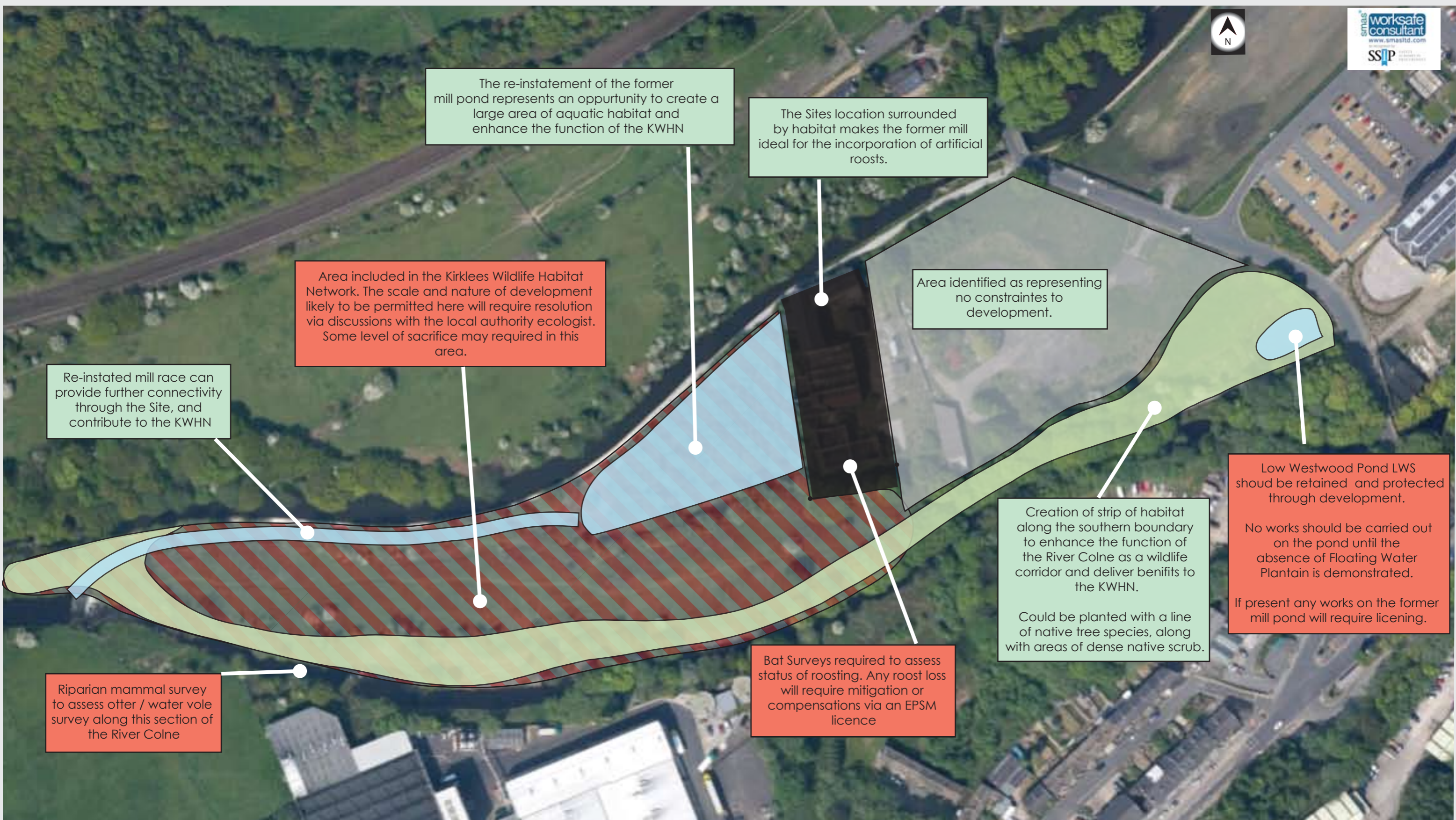
Title: **Extended Phase 1 Habitat Plan**

Drawing Number: **D-2506-01.1**

Scale: Do not scale Date: March 2016

Revision: \_\_\_\_\_  
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## **Appendix 2 – Ecological Constraints and Opportunities Plan**



## Appendix 3 – Explanatory Notes and Resources Used

### Site context

83. Aerial photographs published on commonly used websites were studied to place the site in its wider context and to look for ecological features that would not be evident on the ground during the walkover survey. This approach can be very useful in determining if a site is potentially a key part of a wider wildlife corridor or an important node of habitat in an otherwise ecologically poor landscape. It can also identify potentially important faunal habitat (in particular ponds) which could have a bearing on the ecology of the application site. Ponds may sometimes not be apparent on aerial photographs so we also refer to close detailed maps that identify all ponds issues and drains. We use Promap Street + scale maps for this purpose.

### Designated Sites

84. A search of the MAGIC (Multi-Agency Geographic Information for the Countryside) website was undertaken. The MAGIC site is a Geographical Information System that contains all statutory (e.g. Sites of Special Scientific Interest [SSSI's]) as well as many non-statutory listed habitats (e.g. ancient woodlands and grassland inventory sites). It is a valuable tool when considering the relationship of a potential development site with nearby important habitats. In addition, information from the local record holders was referred to on locally designated sites.

### *Functional linkage with off-Site habitats*

85. When assessing these we consider whether the Site could be functionally linked to them, considering links such as;
- Hydrological links - is the Site upstream downstream, or could ground water issues affect it?
  - Physical links - is the site in close proximity and could it be directly or indirectly affected by construction and operational effects? Conversely it may be that despite proximity major barriers separate the two.
  - Recreational links - Do footpaths and roads make it likely that increased recreational pressure could be felt?
  - Habitat links - Is the site part of a network of similar habitat types in the wider area? These could be joined by linear corridors or could simply be 'stepping stones of habitat of similar form or function.

### Kirklees Wildlife Habitat Network

86. West Yorkshire Ecology have identified the Kirklees Wildlife Habitat Network which connects designated sites of biodiversity and geological importance and notable habitat links within the district, such as woodlands, watercourses, natural and semi-natural areas. The identification of the Wildlife Habitat Network is intended to protect and strengthen ecological links within the district. The purpose of the network is to enable species populations to be sustained by protecting and enhancing the ecological corridors and linkages within the wider environment, including links to adjoining districts. Development within the Wildlife Habitat Network will not necessarily be prevented but the council will seek to ensure that development proposals maintain the continuity of the network and protect the nature conservation of the land affected.
87. Proposals will be required to protect the Wildlife Habitat Network, Habitats of Principal Importance, Species of Principal Importance unless:

- the benefits of the development clearly outweigh the importance of the biodiversity interest; and
- the loss of the site and its functional role within the Wildlife Habitat Network can be fully maintained or compensated for in the long term; and
- compensatory measures will be secured through the establishment of a legally binding agreement.

88. All new development shall be designed to incorporate and enhance biodiversity and geodiversity interest where relevant to these interests. Proposals shall safeguard, enhance and develop a robust and functional Wildlife Habitat Network at a local and wider landscape scale. Biodiversity enhancement measures shall be designed to reflect the priority habitats and species listed for the relevant Biodiversity Opportunity Zone (Kirklees policy DLP31)

#### **Bat suitability Assessment**

89. The suitability of buildings, trees and habitat to support either roosting or foraging birds is classified according to Bat Conservation Trust (BCT) Good Practice Guidelines (Collins 2016). The table below is extracted from this document.

**Table A1** Bat Roost Suitability in buildings / trees.

<b>Suitability</b>	<b>Criteria</b>
<i>High</i>	A structure or tree with one or more potential roost sites that are obviously suitable for use by a larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
<i>Moderate</i>	A structure or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and / or suitably surrounding habitat to be used on a regular basis or by large numbers of bats.
<i>Low</i>	A structure with a low number potential features which have the potential to support individual bats opportunistically, but lacking features capable of supporting maternity / hibernations roosts.
<i>Negligible</i>	Negligible habitat features on site likely to be used by roosting bats.

#### **Method**

90. Phase 1 habitat survey methodology (JNCC, 2010). This involves walking the site, mapping and describing different habitats (for example: woodland, grassland, scrub). The survey method was "Extended" in that evidence of fauna and faunal habitat was also recorded (for example droppings, tracks or specialist habitat such as ponds for breeding amphibians). This modified approach to the Phase 1 survey is in accordance with the approach recommended by the Guidelines for Baseline Ecological Assessment (IEA, 1995) and Guidelines for Preliminary Ecological Appraisal (CIEEM 2012).

### Faunal appraisal

91. This section first looks at the types of habitat found on Site or within the sphere of influence of potential development, then considers whether these could support protected, scarce or NERC Act 2006 Section 41 species (referred to collectively as 'notable species').
92. Records of notable species supplied from a 2km area of search by West Yorkshire Ecology(WYE) are used to inform this appraisal.
93. We discuss further only notable species or groups which could be a potential constraint due to the presence of suitable habitat and their presence (or potential presence) in the wider area. We screen out and do not present accounts of notable species or groups which do not meet these criteria – in some cases it may be necessary to explain this reasoning.

### Evaluation

94. In evaluating the Site, the ecologist will take into account a number of factors in combination, such as:
  - the baseline presented above,
  - the site's position in the local landscape,
  - its current management and
  - its size, rarity or threats to its integrity.
95. There are a number of tools available to aid this consideration, including established frameworks such as Ratcliffe Criteria or concepts such as Favourable Conservation Status. Also of help is reference to Biodiversity Action Plans in the form of the Local BAP and Section 41 of the NERC Act (2006) to determine if the site supports any Priority habitats or presents any opportunities in this respect.
96. The assessment of impacts considers the generic development proposals from which potential effects include:
  - Vegetation and habitat removal
  - Direct effects on significant faunal groups or protected species
  - Effects on adjacent habitats or species such as disturbance, pollution and severance
  - Operation effects on wildlife such as noise and light disturbance
97. Consideration is given to the Local Biodiversity Action Plan (LBAP), which for this site is the '**Kirklees Biodiversity Action Plan**'.

<b>Species/group</b> Action Plans	<b>Habitat</b> Action Plans
Floating water plantain	Semi-natural pasture
Great-crested newt	Lowland and upland meadows
Marsh helleborine	Lowland dry acid grassland
Northern wood ant	Blanket bog
Twite	Upland heathland
Watervole	Upland flushes
White-clawed crayfish	Lowland heathland
	Upland oak woodland
	Lowland deciduous and other woodland
	Upland mixed ashwoods
	Wet woodland
	Arable field margins
	Hedgerows
	Rivers, riverine corridors and associated habitats
	Reedbeds
	Scrub and habitat mosaics on previously developed land



## Appendix 4 – Bat Activity Survey Rationale

98. The Bat Conservation Trust Guidelines (BCTG) (Hundt 2012) is now widely accepted as providing a basis and rationale for scoping and conducting bat surveys. It is acknowledged that the guidelines provide a wealth of background and are a very useful tool in standardising approaches to survey, it is also felt that an over reliance on some of the tables (such as Table 7.2) within this document can result in the provision of complicated surveys where they have significant consequences for the cost, or timescale of a large project, but could never deliver positives for bat conservation.
99. Taking the BCTG document as a whole, Chapter 2 helps the reader understand whether or not surveys are required, and that in the context of planning and development survey is required in relation to ensure;
- the avoidance of legal offences, and;
  - the provision of a sufficient level of information - such that will allow the Local Planning Authority to make an informed decision on the proposals and their potential impacts on the Favourable Conservation Status (FCS) of bats.
100. Attendance at seminars presented by, and discussions with, those involved in production of the BCTG document has emphasised the point that it is within the remit of the consultant ecologist to make a decision on the necessity and scope of surveys - they will use the guidelines in doing so but are not in any way bound by them: this is reflected in Section 1.1 of the guidelines.

The guidance should be interpreted and adapted on a case-by-case basis, according to the expert judgement of those involved. There is no substitute for knowledge and experience in survey planning, methodology and interpretation of findings, and these guidelines are intended to support these. Where examples are given they are descriptive rather than prescriptive.

101. Such decisions require a consideration of the potential of the project to impact on bat habitat, alongside analysis of the value of habitat on and around the site and of local records and the likelihood that bats might occur in significant numbers. Our reports aim to present information on how we have arrived at our decision on the site, what assumptions we have based this on, and where further survey is recommended we indicate what the objective of this survey should be and how best this would be achieved.
102. This Site represents an important node between two landscape level features which are likely to facilitate the movement of bats through the wider area, and support high numbers of foraging bats. Full survey is therefore recommended to assess the level of usage and potential impacts of the development.
103. Objectives of these surveys should be:
- confirm levels of use and the assemblage of bats present on the site generally
  - confirm patterns of activity and identify key features
  - identify levels of use of the affected foraging or commuting features to be and inform levels of mitigation require (if any).

## Appendix 5 Wildlife Legislation, Policy and Guidance

This is not an exhaustive list but sets out briefly the relevance of Legislation, Policy and Guidance in terms of planning applications and this assessment.

### Legislation

#### **Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (EC Habitats Directive).**

Provides framework at an international (EU) level for the consideration / protection of European Protected Species (EPS), and habitats through the designation of sites.

#### **Council Directive 79/409/EEC on the Conservation of wild birds (EC Birds Directive) and The Ramsar Convention on Wetlands of International Importance (1971)**

Provides framework at an international (EU) level for the consideration / protection of important bird populations and the sites on which they are dependant.

#### **The Conservation of Habitats and Species Regulations (2010)**

This transposes 1) into UK law and provides the basis on which all EPS are protected and impacts on them can be licensed in the UK.

#### **The Wildlife and Countryside Act (1981) as amended**

This provides the basis on which UK species are legally protected or restricted and confers protection on Sites of Special Scientific Interest SSSIs. It contains annexes of plants and animals which are legally protected as well as those which are considered to be invasive or harmful. It provides the basis on which impacts on such species can be licensed in the UK and provides controls on work on or near SSSIs.

#### **The Countryside and Rights of Way Act 2000 (CRoW)**

Provides a statutory basis for nature conservation, strengthens the protection of SSSIs and UK protected species and requires the consideration of habitats and species listed on the UK and Local Biodiversity Action Plans (UKBAP / LBAP).

#### **Natural Environment and Rural Communities Act 2006 (NERC)**

Sets out the responsibilities of Local Authorities in conserving biodiversity. Section 41 of the Act requires the publishing of lists of habitats and species which are "of principal importance for the purpose of conserving biodiversity". At present these largely reflect those making up the UKBAP lists.

#### **Hedgerows Regulations (1997)**

Define and provide protection for Important Hedgerows.

#### **Protection of Badgers Act (1992)**

Protects badgers from persecution, this includes excavation / development in the proximity of setts.

### Protected Sites

#### **Statutory EU / International Protected Sites**

Special Areas of Conservation (SACs); and Special Protection Areas (SPAs) and Ramsar Sites contain examples of some of the most important natural ecosystems in Europe. Work on or near these sites is strictly protected and Local Authorities will be expected to carry out 'Appropriate Assessment' of development in proximity of them. In this case there is often an increased burden on the developer in relation to provision of information and assessment.

### **Statutory UK Protected Sites**

Local Nature Reserves (LNRs); National Nature Reserves (NNRs); Sites of Special Scientific Interest (SSSIs) all receive strict protection under UK legislation. Work in or in proximity to these sites would be restricted with any needing to be agreed with Natural England. Natural England now provide guidance on the nature of development which could impact on SSSIs through Impact Risk Zones.

### **Locally Protected Sites**

Local Authorities have a variety of protected wildlife sites designated at a local or regional level. These are gradually being brought under the banner of Local Wildlife Sites (LWS) but at present a plethora of different designations exist - all subject to local policy.

## **Protected Species**

### **European Protected Species**

A number of species (most relevantly bats, great crested newts [GCN], and otters) receive strict protection from killing, injury and disturbance under The Conservation of Habitats and Species Regulations (2010). Protection is also conferred on the habitats on which they rely such as roost space in the case of bats and ponds and fields etc. in the case of GCN.

### **UK Protected Species**

A number of species (including bats, GCN, water vole and white clawed crayfish) are strictly protected under The Wildlife and Countryside Act (1981) as amended, from killing, injury, disturbance and damage or destruction of their resting places etc. Certain species (such as reptiles) and some birds (such as barn owl) receive partial protection e.g. at certain times of the year or from certain activities only. All nesting bird species are protected from damage or destruction of their nests - whilst active.

### **Invasive species**

Schedule 9 of the Wildlife and Countryside Act (1981) as amended, lists these species and makes it an offence to cause or allow their spread in the wild. This often has impacts on development and planning in relation to the presence of invasive plant species such as: himalayan balsam (*Impatiens glandulifera*), japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*).

## **Planning Policy / Guidance**

### **The National Planning Policy Framework (NPPF)**

The National Planning Policy Framework was published in 27 March 2012 replacing the majority of previous Planning Policy Guidance notes (PPGs) and Planning Policy Statements (PPSs). The most relevant paragraphs from the NPPF are set out below.

The general approach to assessing the natural environment is now embedded within the definition of what 'sustainable development' is. Paragraph 7 (P7) of the NPPF states that sustainable development should "contribute to protecting and enhancing our natural environment" and "help to improve biodiversity". There is also a need for positive inclusion of the natural environment in development design and "moving from a net loss of bio-diversity to achieving net gains for nature" (P9). P14 sets out the Frameworks presumption in favour of sustainable development.

The natural environment is stated within the NPPF core principles: development should "recognise the intrinsic character and beauty of the countryside" and contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should, "prefer land of lesser environmental value, where consistent with other policies in this Framework" (P17).

Section 11 of the NPPF details the approach to the natural environment. The Framework states that development should “*minimise impacts on biodiversity and provide net gains in biodiversity, where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*” (P109).

The Framework sets out ways to minimise the impacts on biodiversity through “*promoting the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets*” (P117).

The NPPF requires the consideration of the impacts of development on the natural environment. The Framework also encourages “*opportunities to incorporate biodiversity in and around developments*” (P118). Importantly this paragraph (P118) sets out the hierarchy of avoiding, mitigating and compensating harm from development - plans should ensure that they can demonstrate engagement with this hierarchy when required.

***Biodiversity 2020: A Strategy for England’s Wildlife and Ecosystem Services.***

This strategy builds on the Natural Environment White Paper (June 2011) - The Natural Choice: securing the value of nature. Setting out the current UK Government’s approach to nature conservation. It promotes a more coherent and inclusive approach to conservation and the valuing in economic and social terms of economic resources.

The strategy promotes initiatives such as Biodiversity Offsetting, Nature Improvement Areas and a focus on well-connected natural networks and introduces the concept of securing a 'no net loss' situation with regard to UKBAP / Section 41 habitats and species.

***ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System***

Provides guidance to Local Authorities on their obligations to biodiversity – particularly in relation to assessing planning applications and ensuring the adequacy of information.

***BSI (2013) British Standards Institute BS 42020:2013 Biodiversity — Code of Practice for Planning and Development.***

Provides a standard for the biodiversity assessment and development industries and decision makers such as Local Planning Authorities to work to.