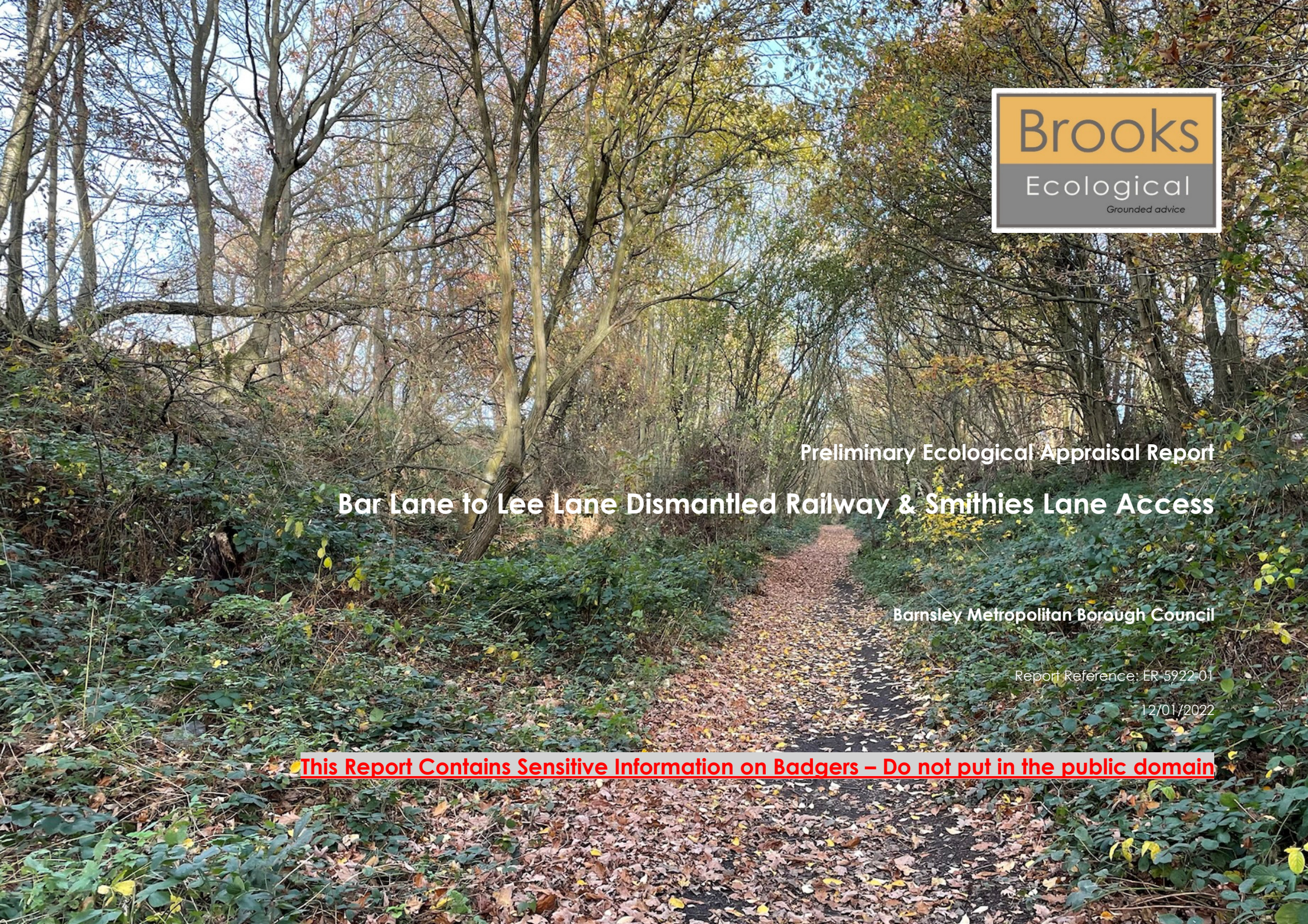


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Preliminary Ecological Appraisal Report

Bar Lane to Lee Lane Dismantled Railway & Smithies Lane Access

Barnsley Metropolitan Borough Council

Report Reference: ER-5922-01

12/01/2022

This Report Contains Sensitive Information on Badgers – Do not put in the public domain

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Summary

This report is produced to inform Barnsley Metropolitan Borough Council of potential ecological constraints associated with their proposed development site and the need for further reporting or output to support a planning application.

This 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 November 2021.

Key Findings

The Site supports common and widespread habitats, though the large amount of broadleaved woodland present along the disused railway line leads to the Site overall assessed as being of moderate ecological value.

Further species surveys are recommended in relation to roosting bats, once working areas and proposals have been formalised. A pre-works check for badgers is also recommended.

The Site has been assessed as having a Biodiversity Unit score of 28.21 Habitat Units. Proposals will need to consider the NPPF hierarchy of Avoid-Mitigate-Compensate in minimising any loss of biodiversity. In line with the Environment Act, the project should deliver gains for biodiversity. Efforts should be made to achieve this on-site, but where this is not feasible offsetting on additional land or a financial contribution to address any residual shortfall in biodiversity gain may be required.

Due to the nature of the proposals, on-site gain in biodiversity is unlikely to be achieved and off-site contributions will be required.

Proposals should be supported by a CEMP and BMP, which may be conditioned, to show how biodiversity on-site will be protected and enhanced.

Further surveys recommended.

Bat roost suitability assessment surveys will be required on trees identified as being subject to pruning works and/or removal.

A pre-works check for badgers is recommended.

Introduction

1. Brooks Ecological Ltd was commissioned by Barnsley Metropolitan Borough Council to carry out a Preliminary Ecological Appraisal (PEA) of land at Bar Lane to Lee Lane Dismantled Railway & Smithies Lane Access.

2. This report is produced with reference to British Standard BS:42020 'Biodiversity Code of Practice for Planning and Development' and the CIEEM (2017) Guidelines for Preliminary Ecological Appraisal.

Purpose of a PEA

3. A PEA is an *initial assessment* of the baseline for a proposed development site and establishes whether the Site is likely to be constrained by ecology, and whether more information is needed to identify the ecological baseline.

4. The subsequent Preliminary Ecological Appraisal Report (PEAR) is intended to give guidance to a developer and assist with the early stages of project planning and design. Where a site is not complex or constrained, and no additional ecological input is necessary the PEAR *may* be sufficient, and suitable to support a planning application.

5. Biodiversity Accounting metrics are used to quantify the value of a Site in Biodiversity Units - which helps in the later stage of assessing the ecological impacts of the proposed development.

6. Biodiversity Units can help to inform avoidance, or on-site mitigation levels required; or as a last resort can translate to a direct monetary value where compensation (off-site) is required. Please be aware that they *can* significantly impact on costs and viability.

The Site

7. The application site 'the Site' comprises a section of dismantled railway. The section carries a public right of way for the entire length of the Site. Also included is a small field with public right of way running through it. Whilst the footpaths are well-used and generally clear of vegetation, the other areas of the Site are not managed.

8. The assessment uses a 2km area of search around the Site for records of protected and notable species and locally or nationally designated wildlife sites.

Figure 1 The Site – access point (red line boundary).



Figure 2 The Site – dismantled railway (red line boundary).



Desk Study

Landscape

9. The Site is situated between the suburbs of Staincross and Royston, which are approximately 3km north of Barnsley town centre.
10. The dismantled railway runs through a mixture of arable farmland and developed residential areas. The new access point is bound by developed areas to the north, with parts of the Dearne floodplain to the south.
11. The wider landscape includes a mix of more suburban residential areas, farmland, scattered woodland and wetland associated with the Dearne Valley.
12. The Site lies over slowly permeable seasonally wet acid loamy and clayey soils.

Wildlife Corridors

13. The Site itself acts as a corridor for wildlife, linking areas of the Dearne Valley in the south to habitat in the north, such as Notton Wood.
14. The dismantled railway continues running north-east from the end of the scheme, through more farmland and is linked to the Barnsley Canal further east.
15. There is also connectivity in the south to an active railway, which provides further links to the wider landscape.

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



Designated Sites

Statutory Designations

16. A search has been made to identify any nationally designated sites within a 2km radius of the Site, or internationally designated sites within a 10km radius. The results are shown in the below table.

Table 1 Statutory Designated Sites.

Site Name	Distance from Site	Designation	Summary Interest
Notton Wood	Approx. 300m north	Local Nature Reserve (LNR)	Supports mixed woodland as well as a stream and pond.
Dearne Valley Park	Approx. 850m south-east	LNR	Supports acidic oak woodland with a mosaic of wetland habitats.
Denby Grange Colliery Ponds	Approx. 8.3km north-west	Special Area of Conservation (SAC)	Supports a large population of great crested newts

17. Direct and indirect impacts on all statutory designated sites as a result of this development are unlikely due to the Sites separation and distance.

SSSI Impact Risk Zones (IRZs)

18. The Site lies within the IRZ for the Seckar Wood SSSI and the Dearne Valley Wetlands SSSI but does not fall into any of the highlighted categories which require the LPA to consult with Natural England in relation to potential impacts.

Non-Statutory Designations

19. There are four Local Wildlife Sites in the search area. Three are located within 2km of the Smithies Lane access area: Barnsley Canal at Wilthorpe, Old Mill Lane and Cliff Wood. Barnsley Canal at Wilthorpe is also within 2km of the Bar Lane to Lee Lane section of the proposed works, as well as Mapplewell Tip.

20. Of these LWS's, Old Mill Lane is located close to the Smithies Lane access area (approximately 80m to the south). Despite the proximity, no impacts on the LWS are expected due to the two areas being separated.

21. Direct and indirect impacts on all remaining non-statutory designated sites as a result of this development are also unlikely due to the Sites separation and distance.

Nature Improvement Area

22. The Site is not located within a Nature Improvement Area (NIA). The access point at Smithies Lane is located approximately 530m north-west of the Dearne Valley Green Heart NIA.

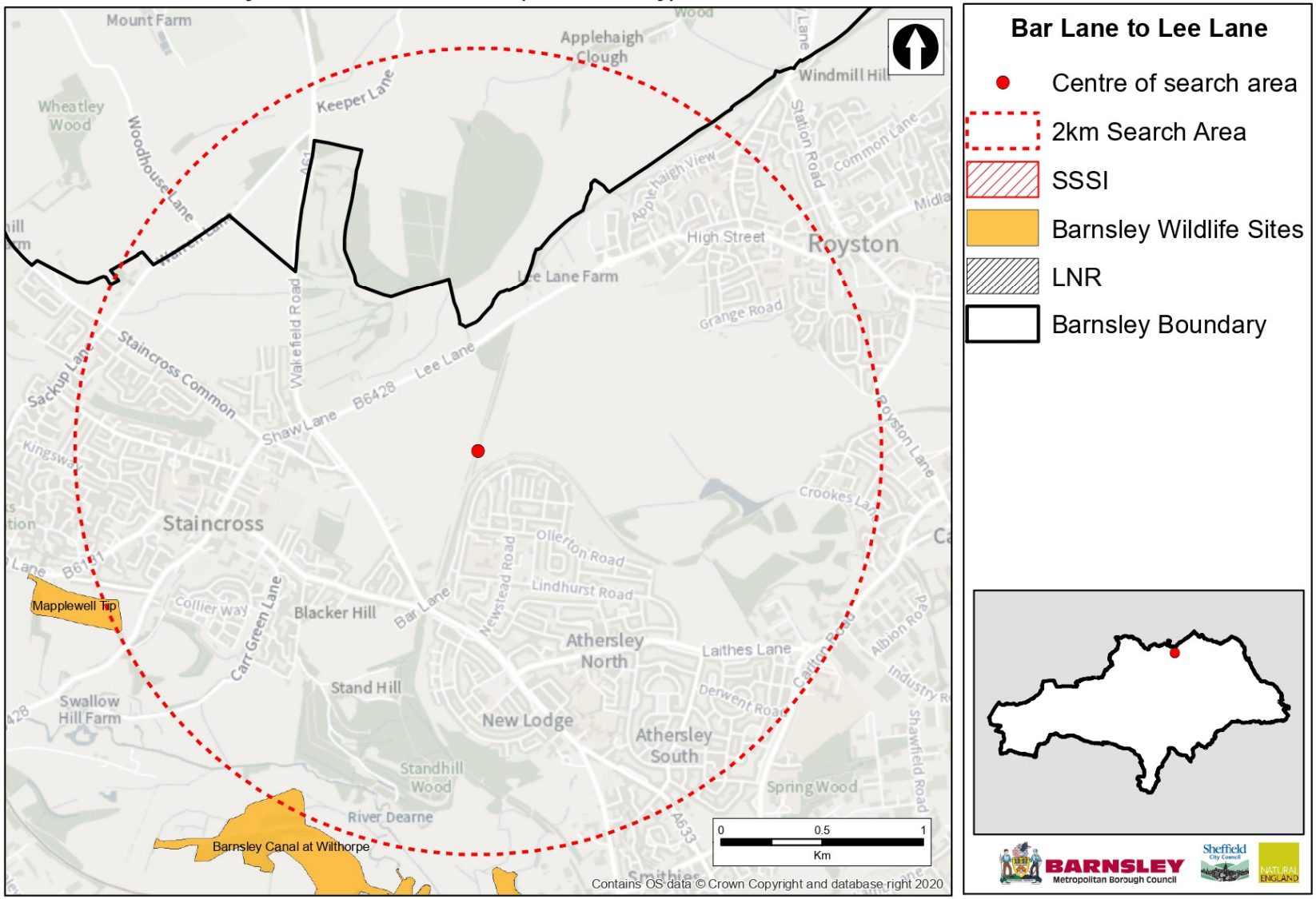
Granted EPSM Licenses

23. A single granted European protected species mitigation license is shown within 1km of the Site boundary.

24. A single licence for the destruction of a common pipistrelle resting place was granted in 2013, approximately 1km south-west of the Smithies Lane access point.

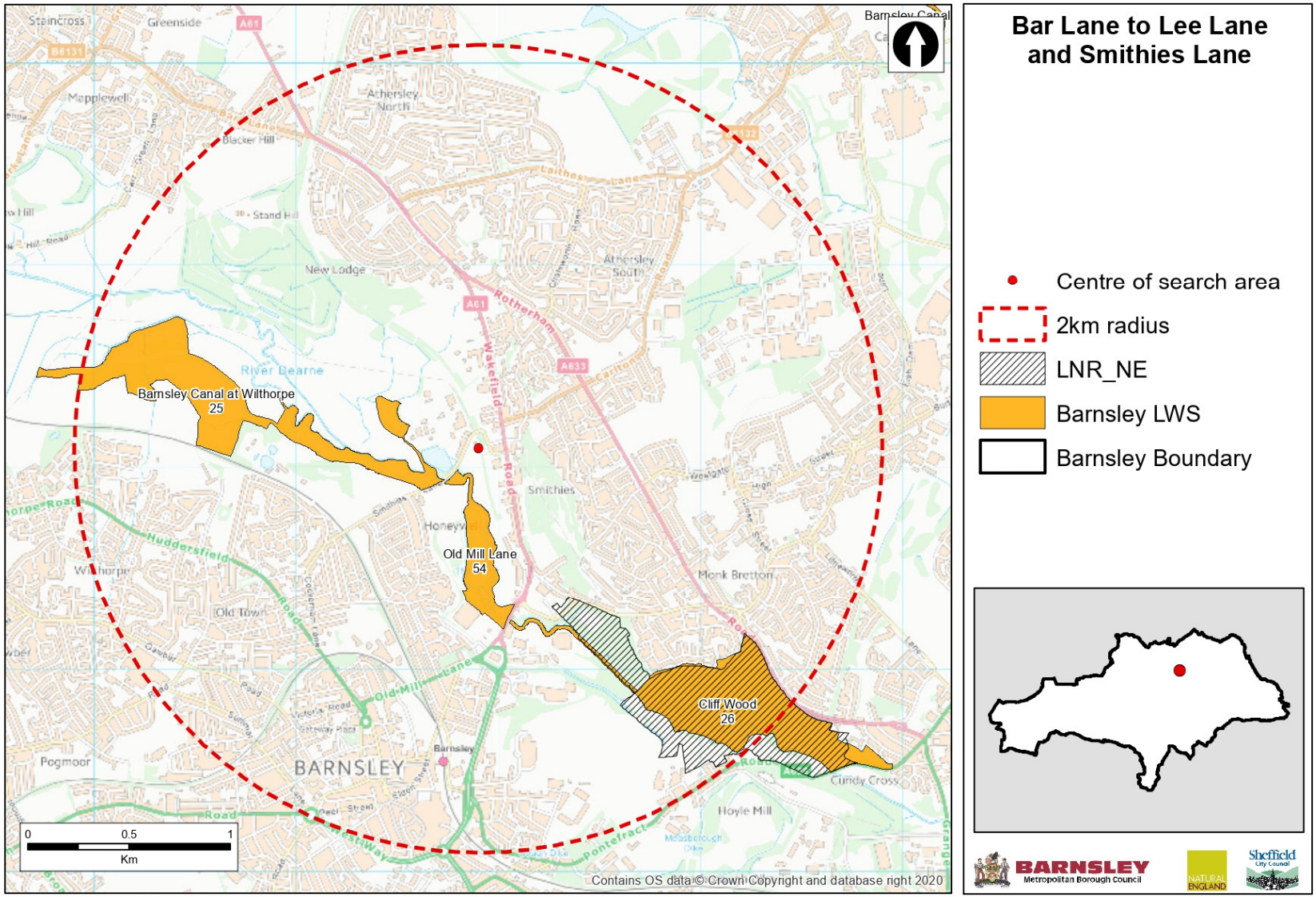
Figure 4 Sheffield Biological Records Centre; Designated Sites.

Boundaries of Statutory and Local Wildlife Sites (non-statutory) Within the Search Area



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Boundaries of Statutory and Local Wildlife Sites (non-statutory) Within the Search Area



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Survey

Method

25. The survey was carried out during November 2021[1] and followed the principles of Extended Phase 1 Habitat Survey methodology (JNCC, 2010).

Limitations

26. Enough time was afforded the surveyor to carry out the survey. The survey was not constrained by poor weather.

27. Whilst the majority of the Site was accessible, at least 15% of the Site was inaccessible due to very dense vegetation, which could not be closely inspected. This could have concealed invasive species or protected species evidence.

Habitat Appraisal

Habitats Identified

28. The Site's habitats are described in order on the following pages. In line with the requirement to provide information on **Biodiversity Net Gain (BNG**), habitats are named in accordance with the UK Habitats classification system - we have used the relevant UK Habs guidance referenced at the back of the report in identifying habitats. Habitat descriptions are divided into the 'distinctiveness' categories used in the calculations - with more weight being afforded the more distinctive / important habitats.

29. Generally, the following apply to each tier of distinctiveness; although some authorities might highlight some lower distinctiveness habitats as having a higher importance locally. Where relevant we have highlighted these.

Very Low Distinctiveness Habitats

30. Habitats of little or no habitat value i.e., lacking any significant native vegetation, but could still provide supporting habitat for protected or notable fauna such as birds or bats. In the context of BNG - their areas are included in calculation, but mitigation or compensation is not required.

Low Distinctiveness Habitats

31. Habitats which are ubiquitous, often which have been created or modified by man. They tend to lack diversity of species and structure. They are unlikely to support notable flora but could still provide supporting habitat for protected or notable fauna. In the context of BNG they are included in calculations, but compensation / mitigation needs only to provide habitat of similar or higher distinctiveness.

Moderate Distinctiveness Habitats

32. Habitats which are common but provide a higher level of structural and species diversity, though unlikely to support more notable assemblages, species of interest could be present here and they are more likely to be important supporting habitat to fauna. In the context of BNG mitigation needs to provide habitat of the same broad habitat type, or that of higher distinctiveness.

[1] This Report has been prepared during January 2022 following a visit to the site in November 2021 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.

High Distinctiveness Habitats

33. These are habitats which are more natural and by definition contain more important assemblages of plants and potentially species which are rare in their own right. They will provide good supporting habitat for fauna. These habitats are likely to be targeted as conservation priorities and will be the subject of additional policy guidance or legislation. In the context of BNG whilst mitigation or compensation for loss or damage is possible, provision of more of the same type of habitat would be required – which (with a few exceptions) is likely to be difficult.

Very High Distinctiveness Habitats

34. These are the UKs rarest / best habitats. They will be present in very particular locations and a range of rare or important plant and animal species will depend on the particular conditions they provide. These habitats will be the subject of restrictive policy guidance or legislation. Whilst the BNG metric does not preclude mitigation or compensation in respect of these habitats, creation of the same habitat type would be required and this would range between very difficult/expensive and impossible.

35. Each habitat is mapped and an area for each type is provided in the format of the DEFRA Biodiversity Metric 3.0 Calculation Tool. The areas can be used to quantify the impacts of development in an Ecological Impact Assessment if this is required by the Local Planning Authority.

Condition Assessment

36. Our condition assessment for each habitat described references where available the criteria set out in DEFRA (2021) Biodiversity Metric 3.0 Technical Supplement (1).

37. Habitats in the Very Low Distinctiveness tier do not require a condition assessment.

38. Habitats in the Low Distinctiveness tier tend to fall into the poor condition category by default. Where we feel this is not the case, we have explained our reasoning.

39. Habitats within the other higher tiers can fall into a range of conditions. We set out our reasoning based on the given criteria and guidelines.

Habitats of Low/Very Low Distinctiveness

Figure 5 Approximate location and extent of these habitats.



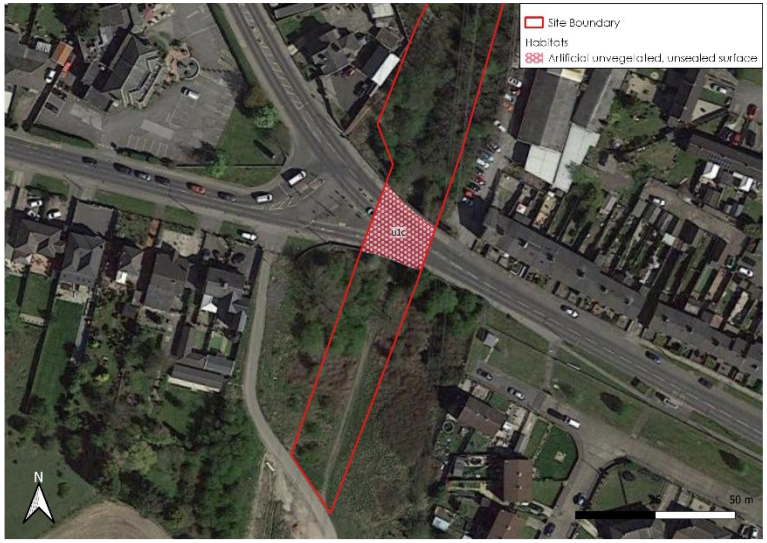


Table 2 Summary – Habitats of Low / Very Low Distinctiveness.

Habitat Code / Name	Summary Description	Condition
g4 modified grassland	Areas within the proposed new access point are covered by modified grassland, either as part of a public footpath or an area currently grazed by horses. Grass species such as perennial rye-grass and red fescue are dominant, with common forb species such as daisy, white clover, dandelion, ribwort plantain and broad-leaved dock also present.	Poor
u1c artificial unvegetated, unsealed surface	The section of the disused railway footpath that runs beneath a bridge carrying the A61 road is clear of vegetation due to the lack of light, with bare ground left exposed.	N/A
u1b developed land; sealed surface	A part of the disused railway line that has already been covered with tarmac.	N/A

Figure 6 View of modified grassland habitat.



Figure 7 View of artificial unvegetated, unsealed surface



Figure 8 View of developed land; sealed surface habitat



Habitats of Medium Distinctiveness – Other Woodland; Broadleaved

Figure 9 Approximate location and extent of broadleaved woodland along the disused railway line.



Figure 10 Approximate location and extent of broadleaved woodland within the proposed new access Site.



w1g Other Woodland; broadleaved

40. Woodland covers much of the length of the disused railway line. The most common trees species are sycamore and oak, though silver birch, wild cherry, elm, elder, hawthorn, goat willow and hazel are also present.

41. The ground flora and understorey along the railway is full of common species. Bramble is frequent, alongside common nettle, cleavers, ivy, bracken, rosebay willowherb and grasses such as Yorkshire fog, red fescue and tufted hair grass.

42. Broadleaved woodland is also present within the area of the proposed new access Site. Here the species is a more even mix, though the species present are similar, with sycamore, wild cherry, silver birch and hawthorn all noted. The ground flora is also similar, with bramble, male-fern, common sow thistle and common nettle all present. In both cases, seasonality may have impacted the ground flora species composition.

Defra Metric Condition Assessment – Railway Line – Moderate

Defra Metric Condition Assessment – Access Site - Poor

Woodland			
	Railway Site	Access Site	
	Good/Moderate/Poor		Condition
1	Good	Moderate	33-39 = Good
2	Good	Good	26-32 = Moderate
3	Good	Good	13-25 = Poor
4	Good	Good	
5	Good	Good	
6	Moderate	Poor	
7	Moderate	Moderate	
8	Good	Good	
9	Poor	Poor	
10	Good	Moderate	
11	Poor	Poor	
12	Poor	Poor	
13	Poor	Poor	
	Moderate	Poor	

Figure 11 Example of broadleaved woodland along the disused railway line.



Figure 12 View of broadleaved woodland around the new access Site.



Habitats of Medium Distinctiveness – Other Neutral Grassland

Figure 13 Approximate location and extent of other neutral grassland along the disused railway line.



g3c Other Neutral Grassland

43. Other neutral grassland occurs in three distinct areas along the disused railway line: one at the southern end and two towards the northern end.

44. The southern area (Area 1) is dominated by grass species of Yorkshire fog, cock's foot, perennial ryegrass and tufted hairgrass. Ubiquitous competitive forb species such as hogweed, creeping buttercup, creeping thistle, broad-leaved dock and white clover are also common here.

45. Area 2 close to the northern end of the railway has a greater variety of species, with lesser knapweed, mugwort, cow parsley, yarrow and common vetch in addition.

46. Area 3 at the northern end of the railway is similar to area 1, with grass species dominant, with a shorter sward height. Other species found here include field horsetail, ox-eye daisy and greater plantain.

Defra Metric Condition Assessment – Area 1: Poor, Area 2: Moderate, Area 3: Poor

Grassland (medium, high & very high distinctiveness)				
	Area 1	Area 2	Area 3	
	Pass/Fail	Pass/Fail	Pass/Fail	Condition Poor
1	Fail	Fail	Fail	5 = Good 3-4 = Moderate 0-2 = Poor
2	Fail	Fail	Fail	
3	Pass	Pass	Pass	
4	Pass	Pass	Pass	
5	Fail	Pass	Fail	
	Poor	Moderate	Poor	

Figure 14 View of other neutral grassland in area 1.



Figure 15 View of other neutral grassland in area 2

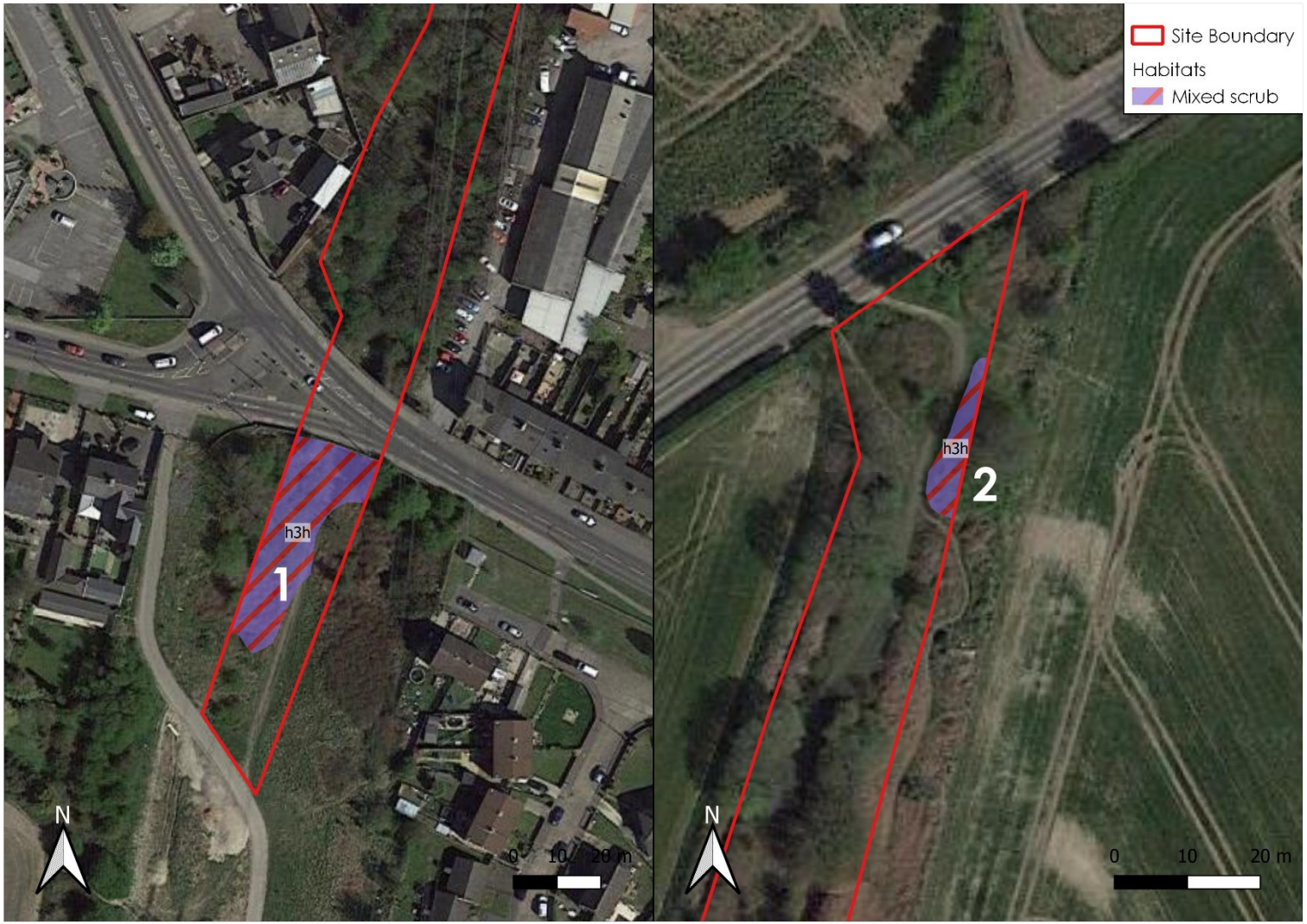


Figure 16 View of other neutral grassland in area 3.



Habitats of Medium Distinctiveness – Mixed Scrub

Figure 17 Approximate location and extent of mixed scrub along the disused railway line.



h3h Mixed Scrub

47. Two areas of mixed scrub are present along the disused railway, one at the southern end and one at the northern.

48. The southern area (Area 1) is a mix of hawthorn, bramble and dog rose, with ground flora of nettles, rosebay willowherb and male-fern beneath the woody species.

49. The northern area (Area 2) is a mix of bramble and raspberry, with common grasses beneath.

Defra Metric Condition Assessment – Area 1: Poor, Area 2: Poor

Scrub			
	Area 1	Area 2	
	Pass/Fail	Pass/Fail	Condition
1	Fail	Fail	5 = Good
2	Fail	Fail	3-4 = Moderate
3	Pass	Pass	0-2 = Poor
4	Pass	Fail	
5	Fail	Fail	
	Poor	Poor	

Figure 18 View of mixed scrub at area 1



Figure 19 View of mixed scrub at area 2.



Habitats of Medium Distinctiveness – Bramble Scrub

Figure 20 Approximate location and extent of bramble scrub along the disused railway line.



Figure 21 Approximate location and extent of bramble scrub within the proposed new access Site.



h3d Bramble Scrub

50. Bramble scrub occurs in four areas along the disused railway and in two areas at the new access point.

51. In all cases, bramble is the dominant species with thick coverage, blocking the light and limiting the number of other species present.

52. Some species that are found coexisting with the bramble include creeping thistle, common nettle, rosebay willowherb, cleavers and poison hemlock.

Defra Metric Condition Assessment – Automatically assigned Poor

Figure 22 View of bramble scrub at area 1



Figure 23 View of bramble scrub at area 2



Figure 24 View of bramble scrub at area 3



Figure 25 View of bramble scrub at area 4



Figure 26 View of bramble scrub at area 5



Figure 27 View of bramble scrub at area 6



Habitats of Medium Distinctiveness- Blackthorn scrub

Figure 28 Approximate location and extent of these habitats.



h3a Blackthorn Scrub

53. A single area dominated by blackthorn is located close to the northern end of the disused railway line.

54. Blackthorn is growing thickly in this habitat with few other species noted. Bramble, nettles, creeping thistle and common grasses of the Site are present growing around the edges of the blackthorn stand.

Defra Metric Condition Assessment – Poor

Scrub		
	Pass/Fail	**Condition**
1	Fail	5 = Good
2	Fail	3-4 = Moderate
3	Pass	0-2 = Poor
4	Fail	
5	Fail	
	Poor	

Figure 29 View of blackthorn scrub habitat.



Habitats of Medium Distinctiveness- Hawthorn scrub

Figure 30 Approximate location and extent of these habitats.



h3a Blackthorn Scrub

55. A small stand of hawthorn is located at the northern end of the disused railway line.

56. Hawthorn is the dominate woody species, with nettles, creeping thistle and common grasses of the Site present growing around the edges of the stand.

Defra Metric Condition Assessment – Poor

Scrub		
	Pass/Fail	**Condition**
1	Fail	5 = Good
2	Fail	3-4 = Moderate
3	Pass	0-2 = Poor
4	Fail	
5	Fail	
	Poor	

Figure 31 View of hawthorn scrub habitat.



DEFRA Metric (Baseline)[2]

57. This metric sets out the baseline for the Site - proposals should seek to **Avoid** areas of higher value, **Mitigating** any loss on-Site through retention and enhancement, or habitat creation.

A-1 Site Habitat Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	Habitats and areas			Distinctiveness		Condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline
Ref	Broad habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier		Total habitat units
1	Grassland	Modified grassland	0.1299	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.26
2	Grassland	Other neutral grassland	0.0461	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.37
3	Grassland	Other neutral grassland	0.1203	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.48
4	Heathland and shrub	Blackthorn scrub	0.0201	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.08
5	Heathland and shrub	Bramble scrub	0.147	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.59
6	Heathland and shrub	Hawthorn scrub	0.006	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.02
7	Heathland and shrub	Mixed scrub	0.0771	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.31
8	Urban	Artificial unvegetated, unsealed surface	0.0346	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
9	Urban	Developed land; sealed surface	0.0197	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00
10	Woodland and forest	Other woodland; broadleaved	3.2128	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	25.70
11	Woodland and forest	Other woodland; broadleaved	0.0991	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.40
			3.91									28.21

[2] Our report provides an estimate of the sites value in Biodiversity Units. This is based on thorough assessment at the time of survey and using the information available at this time. In this assessment we have used the latest version of DEFRA's Biodiversity Metric Tool, the UK Habitats Classification and relevant guidance. This assessment requires subjective judgments to be made in terms of habitat type and condition and could be open to other interpretations. Reliance on the Unit Score, or conversion of this into a monetary value, would be at the developer's own risk. Where conversion to monetary value is required, it is always advisable to get calculations checked independently.

Faunal Appraisal

58. The following pages discuss only the groups and species that could be reasonably expected to be found on the type of habitats present on, or adjacent to, the site.

Amphibians

Desk evidence

59. Records have been returned for common frog, common toad, smooth newt and great crested newt (GCN). Twelve records were returned for GCN, all of which are from the Dearne Valley, approximately 1.1km west of the Smithies Lane access area of the Site.

60. None of the records for GCN are functionally linked to the Site

Field Evidence

61. No ponds are present within 500m of the proposed disused railway cycle lane.

62. Four ponds are present within 500m of the proposed new access site, shown opposite. Ponds 1 and 3 are separated from the Site by barriers to dispersal of roads and developed areas. Ponds 2 and 4 are functionally linked to the Site by suitable terrestrial habitat for great crested newts.

63. Both the Sites provide terrestrial habitat which is suitable for this group.

64. A habitat suitability index (HSI) survey was carried out on ponds 1, 2 and 4 (pond 3 was not accessible). The HSI method (Oldham *et al*. 2000) examines a range of criteria at each pond to produce an overall score between 0 (unsuitable) and 1 (optimal) which is indicative of the suitability of the pond to support breeding great crested newts. An HSI score below 0.6 is considered to indicate poor suitability, 0.61-0.7 indicates average, 0.71-0.8 is good and 0.81 and above is excellent suitability. The results of the HSI assessment are shown overleaf.

65. All ponds score less than 0.5. Ponds 1 and 2 are both large, stocked angling ponds which are generally unsuitable for breeding great crested newts, with pond 4 being a small and shaded pond, with poor quality water that is likely to dry out frequently, all traits that lower its suitability for great crested newts.

66. Pond 3 is separated from the Site by built-up urban areas, with only a small corridor of habitat linking the Site to the pond. The presence of suitable terrestrial habitat around pond 3 to the north and west reduces the likelihood of newts travelling from this pond to the Site when they are not breeding.

Summary Evaluation

67. Based on the low suitability of ponds 1, 2 and 4 close to the Site and the presence of better suited terrestrial habitat away from the Site around pond 3, as well as the presence of unsuitable habitat between pond 3 and the Site, great crested newts are expected to be absent from the Site.

68. Low numbers of common amphibians are expected to occur on the Site. However, the Site is unlikely to be of significant importance to any local populations.

Further Surveys and Recommendations

69. No further surveys or precautions are considered necessary.

Figure 32 Ponds mapped in relation to the Site.



Table 3 Habitat Suitability Index (HSI) scores for the ponds.

Ref.	S1 Location	S2 Pond area	S3 Drying	S4 Water Quality	S5 Shade	S6 Waterfowl	S7 Fish	S8 Pond count	S9 Terestrial	S10 Macrophytes	HSI Score
Pond 1	1	-	0.9	0.33	0.6	0.67	0.01	1	1	0.3	**0.45**
Pond 2	1	-	0.9	0.33	0.3	0.67	0.01	0.45	1	0.3	**0.39**
Pond 3											
Pond 4	1	1	0.1	0.01	0.2	1	0.67	0.98	1	0.4	**0.37**

Ponds Located near the Site

Pond 1



Pond 2



Pond 4



Bats

Desk evidence

70. Records have been returned for common and soprano pipistrelle, daubenton's, noctule, Leisler's and brown long-eared bats. None of these records relate to the Site itself, though one record of a common pipistrelle comes from immediately south of the Smithies Lane access area.

Field Evidence

Potential Roost Sites

Buildings: No buildings are present within the Site boundary.

Trees: There are many trees within the Site boundary, with the proposed cycle lane passing through woodland. Many of the trees are of a young age and small size, but there are some more mature specimens that are more likely to contain potential roost features.

Foraging and Commuting Habitat

71. Both the disused railway and the proposed new access route are well linked to the wider landscape, with woodland, open habitats and waterbodies nearby. The disused railway in particular is likely to be used by commuting bats moving through the landscape. Both areas are also expected to be used in small numbers by foraging bats.

Summary Evaluation

72. Trees are present with the potential to be used by roosting bats.

73. The Site is likely to be of value to foraging and commuting bats. The creation of a cycle route along the railway and new access tracks, whilst resulting in the loss of some vegetation, is not expected to create long-term changes to the value of the Site to foraging and commuting bats.

Further Surveys and Recommendations

74. It is expected that some tree removal/pruning work will be required as part of the plans. Once these works are determined and trees can be identified, targeted surveys to look for potential roost features that could be used by bats are recommended.

Bat Roost Suitability Assessment

Smaller trees close to current public footpath along the disused railway



More mature trees close to the current public footpath along the disused railway



Trees close to the current public footpath at the proposed new access point



Example of potential roost feature in a tree close to the current footpath



Birds

Desk Evidence

75. A large list of bird records has been returned. This includes many waterfowl and wading bird species, likely resulting from the Site's proximity to the Dearne Valley and its nature reserves.

Field Evidence

76. A variety of bird species were seen during the walkover survey including blackbird, goldfinch, robin, house sparrow, long-tailed tit, buzzard, bullfinch, starling, sparrowhawk and jay.

77. This assemblage is typical of the suburban/more rural location of the Site.

Summary Evaluation

78. The Site is likely to support a large number of bird territories, with the mix of scrub and woodland habitats present. As the Site is not expected to support key species, the significance of this is low.

Further Surveys and Recommendations

79. No further surveys are considered necessary to demonstrate current baseline in respect of birds.

80. Standard precautions apply in respect of restrictions on clearing vegetation during the nesting season.

Badgers

Desk evidence

81. A small number of records have been returned for the search area. None relate to the Site itself, with all records coming from Monk Bretton, with the closest being around 1km south-east of the Smithies Lane access area.

Field Evidence

82. No evidence of badger activity was identified on the Site.

83. The disused railway is generally suitable for both sett-building and foraging activities. The Smithies Lane access area, though more disturbed due to its location, also provides suitable foraging habitat for this species.

Summary Evaluation

84. Both areas of the Site provide habitat suitable for occupation by badger. Survey was constrained in some areas by dense vegetation.

Further Surveys and Recommendations

85. Given the suitability of the habitats present on-site, particularly along the disused railway part of the Site, a pre-works check for setts is recommended.

THIS PAGE CONTAINS SENSITIVE INFORMATION ON BADGERS – DO NOT PLACE IN THE PUBLIC DOMAIN

Hedgehogs / NERC Act 2006 / Local BAP

Desk evidence

86. Hedgehogs are recorded within the search area.

Field Evidence

87. No evidence of hedgehogs was found on site.

Summary Evaluation

88. The Site provides suitable habitat for this species and measures to allow them to access gardens need to be planned for.

Further Surveys and Recommendations

89. Presence assumed no further surveys are considered necessary.

Reptiles

Desk evidence

90. Two records of common lizard have been returned for the search area. These are both located approximately 1.5km south-east of the Smithies Lane access area.

Field Evidence

91. Across both of the Sites, much of the habitat is suboptimal for reptiles, with woodland and dense scrub not providing areas for basking. Some small areas of grassland and scrub edges do provide some more suitable habitat, however due to the Site's use, they are likely to be frequently disturbed by dog walkers.

92. No field evidence was found.

Summary Evaluation

93. Small areas of scrub/grassland could provide suitable habitat for reptiles. However, the location and use of the Site (with high levels of disturbance), as well as the lack of reptile populations in close proximity, mean that the Site is unlikely to support this group.

94. Reptiles are assessed as likely absent from the Site.

Further Surveys and Recommendations

95. No further surveys or precautions are considered necessary.

Invasive Non-Native Species (INNS)

96. INNS are species listed on Schedule 9 of the Wildlife and Countryside Act (1981), for which it is an offence to cause or allow it to grow in the wild. No INNS were noted[3]:

Survey constraints

97. This survey is constrained by the areas of the Site that were inaccessible due to the density of vegetation.

98. Although no INNS have been identified in this preliminary survey it is not always possible to conclude absence from preliminary survey alone due to factors such as season, accessibility, 3rd party attempts to hide evidence or undisclosed treatment programmes. For this reason, this report should not be relied upon as definitive evidence of absence of INNS.

99. This site presents a medium risk of supporting undetected INNS based on the following factors:

- Areas of site inaccessible to survey
- Suboptimal survey season
- Proximity to nearby potential sources of infection
- Potential for tipping of material

100. Should further assurances be needed in relations to INNS, a dedicated Invasive Weed Survey should be commissioned.

[3] Whilst our ecologists are trained in the identification of invasive species this report is not a dedicated invasive species survey. Detectability of invasive plant species can be affected by several factors, and conclusive determination status, or extent, is not possible through preliminary survey alone. As the presence of invasive species can generate significant costs to development, the client may wish to instruct a dedicated invasive species survey prior to entering into contracts.

Ecological Constraints

Habitat Value

101. The usual approach to development is to minimise any net loss of biodiversity – ideally working towards a gain in biodiversity value where this is possible on-Site.

102. The plans opposite and below show the Site in the context of mapped habitat distinctiveness. It shows that there are no target areas of higher distinctiveness which would need to be avoided by the proposals and that the Site is relatively uniform in terms of potential impact. Habitats do not impose any particular design constraints.

Faunal constraints

103. Any trees that are identified as requiring removal or pruning works to allow the construction of the cycle route will require assessing for their potential to support roosting bats.

104. Suitable habitat for badgers is present across the majority of the Site. A pre-works check to ensure that badger activity, such as a sett, is not present where it may be disturbed by the proposed works is recommended.

105. Measures to protect trees along the construction route from damage during creation of the cycle path should be in place. This would include the use of screened tree protection fencing during construction.

106. The Site provides a large amount of good habitat for nesting birds. As such, it is strongly recommended that any clearance work is undertaken outside of the bird breeding season (March to August inclusive) to avoid both disturbing nesting birds and creating delays for the development. If clearance does take place during the breeding season, any areas should be checked by a suitably qualified ecologist to determine if nests are present. Given the density of vegetation in some areas, it is expected that supervised clearance will likely be required for clearance works during the nesting season.

Figure 33 Distinctiveness of habitat.



Figure 34 Distinctiveness of habitat.



Figure 35 Constraints identifiable at the PEA stage



Ecological Opportunities

107. The key ecological opportunities here relate to providing enhancements to the Site's established habitats. Existing woodland should be entered into a proper management regime. Areas where bramble is the dominant scrub type could be thinned and planted to encourage a greater variety of ground flora and other scrub species to establish. This could be assisted with additional planting.

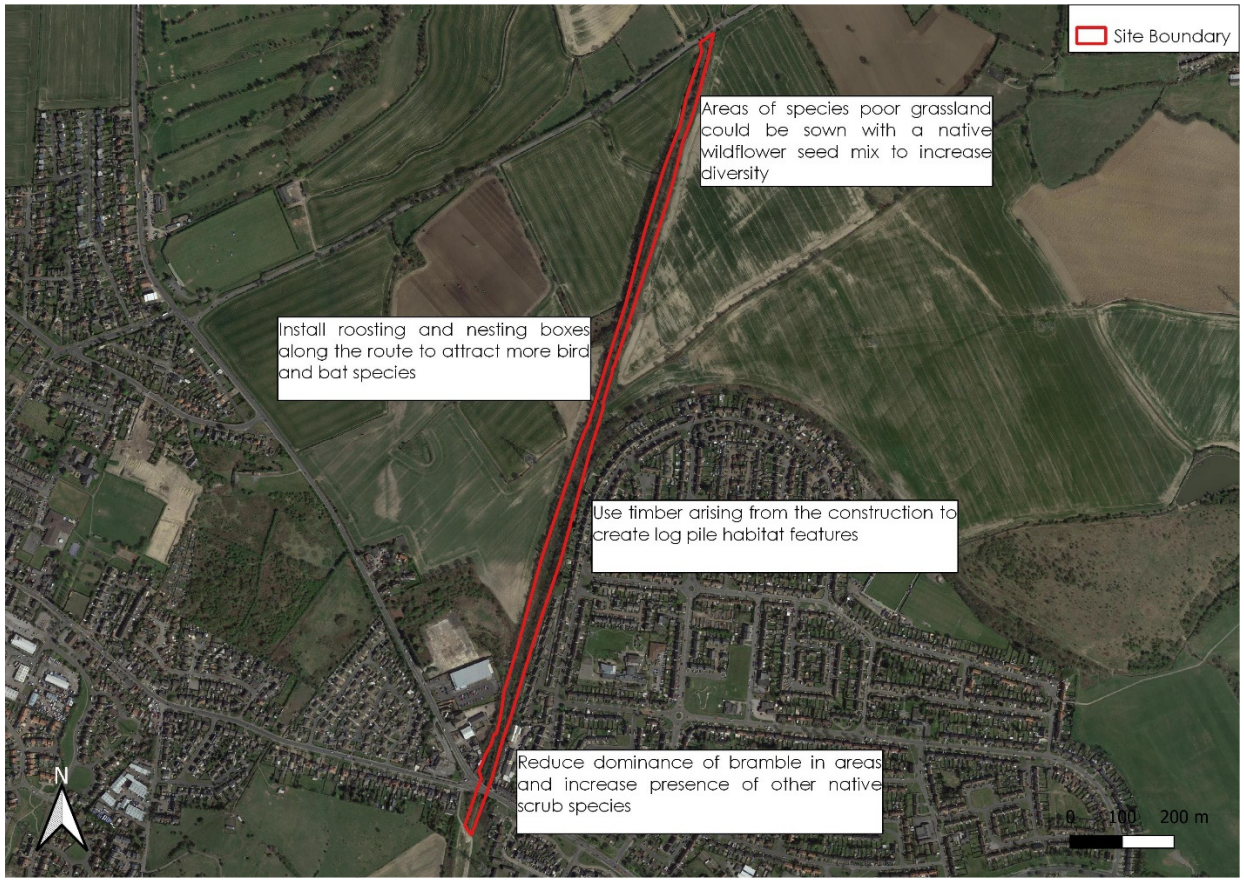
108. Areas of modified grassland could be sown with a wildflower mix, and managed appropriately to create a more diverse sward, which will provide a better habitat for insects, as well as species to feed on them.

109. Any timber created by the felling/pruning of trees along the route should remain in-situ and used to create habitat features of log piles which will provide habitat for amphibians and invertebrates.

110. Installing roosting or nesting features on trees along the proposed route will encourage bat and bird species to make use of the woodland around the railway line.

111. A suitable Biodiversity Management Plan would be useful in defining these enhancements and can be secured by standard condition.

Figure 36 Ecological Opportunities.



Conclusions and Recommendations

Planning considerations		
Recommendation	**Rationale**	**When**
R1 Additional Surveys	Bats – roost assessment of trees Badgers – walkover survey to check for signs of activity within and around the proposed works area	Bats – anytime, but autumn/winter/early spring allows easier viewing of features. Badger – pre-works commencement
R2 Produce a layout which minimises loss of biodiversity.	Engage with the Constraints and Opportunities set out above, involve your ecologist in designs at an early stage. The proposals will need to consider the NPPF hierarchy of Avoid - Mitigate – Compensate in minimising any loss of biodiversity. Development in Barnsley is expected to achieve a 10% gain in biodiversity either on-site or through off-site contributions. Your layout may need to change to accommodate your findings from R1 surveys.	During the design process
R3 Biodiversity Net Gain Strategy (BNS)	Engage an ecologist to work with the design team to maximise available Biodiversity Units on site.	During the design process
R4 Landscape Design	Make sure your landscape architect follows ecological advice or the BNS to maximise Biodiversity Units on site and make sure there are no design conflicts.	During the design process
R5 Calculate final Biodiversity Impact Score	Using DEFRA metric to quantity net gain/loss of biodiversity.	After a fixed design is agreed.
R6 Produce a CEMP (Biodiversity)	To show how the site will be built without affecting surrounding habitats and minimising risk of affecting protected or notable fauna. The CEMP will detail the following protection measures: • Location of Biodiversity Protection zones or fences • Dealing with known or discovered invasive species • Pre- or during- clearance ecology checks for protected species. • Nesting bird management	**Delivery report** Suitable for planning condition.
R7 Produce a Biodiversity Management Plan	To specify in detail how the development will cater for biodiversity on site and to show how habitats incorporated through the Biodiversity Net Gain Strategy be maintained in the condition that the Biodiversity Calculations were based on.	**Delivery report** Suitable for planning condition.

Outline Biodiversity Net Gain (BNG) Implications

139. The NPPF and most aligned local policies require that development achieves a 'no net loss' or unquantified 'net gain' situation for biodiversity. The forthcoming (2020/21) Environment Bill is likely to mandate a 10% net gain position and many LPA's have pre-empted this with revised policies and SPG's, some are providing a means of developers contributing to strategic off off-Site enhancement where BNG can't be secured on Site.

140. Pre-application discussions with the LPA should aim to identify their approach to BNG from an early stage.

141. Outline BNG Implications at this Site have been calculated below. This is based on *outline calculation from the plan provided. Figures are provided for habitat area units only.

142. **This is not the final calculation** but provides what is hoped is a useful illustration to work forward from. Proposals will still be required to work within the NPPFs mitigation hierarchy of Avoid, Mitigate, Compensate and by doing so losses are likely to reduce. Similarly, high quality landscaping proposals and provision of natural green space would also help to reduce any deficit.

Pre-development Baseline Units	Post Development Units *	Units still required to achieve No Net Loss	Units still required to achieve 10% Net Gain
28.21	20.43	7.78	10.391

143. BNG is very much an evolving situation and the importance of pre-application discussions is again emphasised. For purely illustrative purposes if this project was in our home district of Leeds the 'backstop' position of achieving BNG through the LPA's contribution scheme would incur a cost of £20,000 /unit plus 20% facilitation and monitoring fees https://www.leeds.gov.uk/planning/conservation-protection-and-heritage/achieving-net-gain-in-biodiversity-guidance-for-developers

References

Andrews H. L. (2011) *A habitat key for the assessment of potential bat roost features in trees.*

Bat Conservation Trust (2016) *Bat Surveys For Professional Ecologists – Good Practice Guidelines*

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

CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal*.

DEFRA (2021) Biodiversity Metric 3.0 Auditing and accounting for biodiversity Calculation tool macro free

DEFRA (2021) Biodiversity Metric 3.0 Technical Supplement (1)

DEFRA (2021) Biodiversity Metric 3.0 User Guide

English Nature (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.

English Nature (2001) *Great Crested Newt Mitigation Guidelines.* http://www.naturalengland.org.uk/Images/GreatCrestedNewts_tcm6-21705.pdf

Fay N. (2007) *Defining and Surveying Veteran and Ancient Trees* https://www.treeworks.co.uk/about-treework/publications

Gent T and Gibson S, 2003, *Herpetofauna Workers' Manual*, JNCC

Hill et al. 2005, *Handbook of Biodiversity Methods*. Cambridge

JNCC (2004) *The Bat Workers Manual*. 3rd Edition.

Ministry of Housing, Communities and Local Government (July 2018) *National Planning Policy Framework*

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10(4), 143-155.Ratcliffe, D.A. (1977) A Nature Conservation Review, Cambridge University Press

UK Habitats (2018) The UK Habitat Classification Habitat Definitions Version 1.0 UK Habitat Classification Working Group

Appendix 1 Habitats and Ecological Features




Site Boundary
Habitats
Bramble scrub
Developed land; sealed surface
Modified grassland
Other woodland; broadleaved
u1b
h3d
w1g
g4
g4
h3d
N
0
25
50 m

Appendix 2 Condition Assessment Criteria

Grassland

Condition Sheet: GRASSLAND Habitat Type (medium, high & very high distincti	
UKHab Habitat Type(s)	
Grassland - Lowland calcareous grassland Grassland - Lowland dry acid grassland Grassland - Lowland meadows Grassland - Other lowland acid grassland Grassland - Other neutral grassland Grassland - Tall herb communities* Grassland - Upland acid grassland Grassland - Upland calcareous grassland Grassland - Upland hay meadows Sparsely vegetated land - Calaminarian grassland	
Habitat Description	
See UKHab	
* Note Tall herb habitat that does not meet the definition of Annex 1 habitat 'Tall herb com (H6430)' should be recorded as "Other neutral grassland"	
Condition Assessment Criteria	
1	The appearance and composition of the vegetation closely characteristics of the specific grassland habitat type (see U Wildflowers, sedges and indicator species for the specific g type are very clearly and easily visible throughout the swar
2	Sward height is varied (at least 20% of the sward is less tha least 20 per cent is more than 7 cm) creating microclimates opportunities for insects, birds and small mammals to live
3	Cover of bare ground between 1% and 5%, including localis example, rabbit warrens.
4	Cover of bracken less than 20% and cover of scrub (includi than 5%.
5	There is an absence of invasive non-native species (as liste of WCA, 1981). Combined cover of undesirable species[1] an damage (such as excessive poaching, damage from machin storage, damaging levels of access, or any other damaging activities) accounts for less than 5% of total area.
Condition Assessment Result	**Condition Assessment Score**
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)
Notes	
Footnote 1 - Species considered undesirable for this habitat type include: Creeping thistle spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusif* nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago majo Trifolium repens*, cow parsley *Anthriscus sylvestris*.	

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)	
UKHab Habitat Type(s)	
Grassland - Modified grassland	
Habitat Description	
See UKHab	
Condition Assessment Criteria	
1	There must be 6-8 species per m^2. Note - if a grassland has 9 or more species per m^2 it should be classified as a moderate distinctiveness grassland habitat type. **NB - this criterion is non-negotiable for achieving good condition.**
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.
6	Cover of bracken less than 20%.
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.
Condition Assessment Result	**Condition Assessment Score**
Passes 6 or 7 of 7 criteria including non-negotiable criterion 7	Good (3)
Passes 4 or 5 of 7 criteria; OR Passes 6 of 7 criteria excluding non-negotiable criterion 7	Moderate (2)
Passes 0, 1, 2 or 3 of 7 criteria	Poor (1)
Notes	
Footnote 1 - Species considered undesirable for this habitat type include: Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, greater plantain Plantago major, white clover *Trifolium repens*, cow parsley *Anthriscus sylvestris*.	

Woodland

Condition Sheet: WOODLAND Habitat Type

This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here: https://woodlandwildlifetoolkit.sylva.org.uk/assess

UKHab Habitat Type(s)

Woodland and forest - Lowland beech and yew woodland
Woodland and forest - Lowland mixed deciduous woodland
Woodland and forest - Native pine woodlands
Woodland and forest - Other coniferous woodland
Woodland and forest - Other Scot's pine woodland
Woodland and forest - Other woodland; broadleaved
Woodland and forest - Other woodland; mixed
Woodland and forest - Upland birchwoods
Woodland and forest - Upland mixed ashwoods
Woodland and forest - Upland oakwood
Woodland and forest - Wet woodland

Habitat Description

See UKHab

Condition Assessment Criteria

	Indicator	Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
1	Age distribution of trees[1]	Three age classes present	Two age classes present	One age class present	
2	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland[2]	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	
3	Invasive plant species[3]	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	
4	Number of native tree species	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	
5	Cover of native tree and shrub species	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	
6	Open space within woodland[4]	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	
7	Woodland regeneration[5]	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	
8	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high risk pest or disease present	
9	Vegetation and ground flora	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	
10	Woodland vertical structure[6]	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	
11	Veteran trees[7]	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	
12	Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	
13	Woodland disturbance[8]	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	
				Total score (out of a possible 39)	

Condition Assessment Result	Condition Assessment Score
Total score >32 (33 to 39)	Good (3)
Total score 26 to 32	Moderate (2)
Total score <26 (13 to 25)	Poor (1)

Notes

Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch, cherry or Sorbus: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). A recognisable age class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age class' of young trees.

Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.

Footnote 3 - See EWBG method INDICATOR 3 for more information. Check for presence of the following invasive non-native species: American skunk cabbage *Lysichiton americanus;* Himalayan balsam *Impatiens glandulifera;* Japanese knotweed *Fallopia japonica;* Cherry Laurel *Prunus laurocerasus;* Shallon *Gaultheria shallon;* Snowberry *Symphoricarpos albus;* Variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum;* and Rhododendron *Rhododendron ponticum.*

Footnote 4 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (e.g. glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (e.g. tarmac, buildings, rivers). Area is at least 10m wide with less than 20% covered by shrubs or trees.

Footnote 5 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, the regeneration indicator is gathers additional information by considering regeneration potential i.e. if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 6 - This indicator is looking at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer.

Footnote 7- See EWBG method INDICATOR 12 for more information. All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400 cm^2;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

Footnote 8 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery or animal poaching; litter.

Scrub

Condition Sheet: SCRUB Habitat Type	
UKHab Habitat Type	
Heathland and shrub - Blackthorn scrub **Heathland and shrub - Bramble scrub** **Heathland and shrub - Gorse scrub** **Heathland and shrub - Hawthorn scrub** **Heathland and shrub - Hazel scrub** **Heathland and shrub - Mixed scrub** **Heathland and shrub - Sea buckthorn scrub (Annex 1)**	
Habitat Description	
See UKHab	
For sea buckthorn scrub use Habitats Directive Annex 1 definition	
Condition Assessment Criteria	
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.
Condition Assessment Result	**Condition Assessment Score**
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)
Notes	
Footnote 1 - Species considered undesirable for this habitat type include: creeping thistle *Cirsium arvense*, common nettle *Urtica dioica*, cherry laurel *Prunus laurocerasus*, snowberry *Symphoricarpos* spp., buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* (or hybrids).	

Appendix 3 List of species recorded

broad-leaved dock	*Rumex obtusifolius*
snowberry	*Symphoricarpos ablus*
blackthorn	*Prunus spinosa*
bramble	*Rubus fruticosus agg.*
perennial ryegrass	*Lolium perenne*
dandelion	*Taraxacum officinale*
white clover	*Trifolium repens*
ribwort plantain	*Plantago lanceolata*
greater plantain	*Plantago major*
poison hemlock	*Conium maculatum*
common nettle	*Urtica dioica*
wild cherry	*Prunus avium*
sycamore	*Acer pseudoplatanus*
ivy	*Hedera helix*
silver birch	*Betula pendula*
hawthorn	*Crataegus monogyna*
male-fern	*Dryopteris filix-mas*
elder	*Sambucus nigra*
yarrow	*Achillea millefolium*
springy turf-moss	*Rhytidiadelphus squarrosus*
white dead-nettle	*Lamium album*
creeping thistle	*Cirisium arvense*
red fescue	*Festuca rubra*
cock's foot	*Dactylis glomerata*
Yorkshire fog	*Holcus lanatus*
tufted hairgrass	*Deschampsia cespitosa*
hazel	*Corylus avellana*
lesser knapweed	*Centaurea nigra*
bush vetch	*Vicia sepium*
cow parsley	*Anthriscus sylvestris*
broom	*Cytisus scoparius*
mugwort	*Artemisia vulgaris*
common hogweed	*Heracleum sphondylium*
rosebay willowherb	*Chamaenerion angustifolium*
field horsetail	*Equisetum arvense*
oxeye daisy	*Leucanthemum vulgare*
red clover	*Trifolium pratense*
goat willow	*Salix caprea*
raspberry	*Rubus idaeus*
fleabane	*Pulicaria dysenterica*
elm	*Ulmus sp.*
Canada goldenrod	*Solidago canadensis*
coltsfoot	*Tussilago farfara*
dog rose	*Rosa canina*
creeping buttercup	*Ranunculus repens*
common sowthistle	*Sonchus oleraceus*
hart's tongue fern	*Asplenium scolopendrium*
cleavers	*Galium aparine*
greater stitchwort	*Rabelera holostea*
bracken	*Pteridium aquilinum*
black horehound	*Ballota nigra*
oak	*Quercus robur*
broad-leaved willowherb	*Epilobium montanum*

Appendix 4 Explanatory Notes and Resources Used

Site Context

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.

Designated Sites

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

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.

Method

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 2017).

Faunal Appraisal

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').

Records of notable species supplied from a 2km area of search by Sheffield Biological Records Centre are used to inform this appraisal.

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.

Consideration is given to the Local Biodiversity Action Plan (LBAP), which for this site is the 'Barnsley Biodiversity Action Plan'.

Priority Species	**Priority Habitats**
Hedgehog	Mixed deciduous woodland
Bats	Upland oakwood
Water Vole	Wet woodland
Otter	Parkland and veteran trees
Grey Partridge	Traditional orchard
Bittern	Scrub
Kestrel	Coniferous woodland
Little Ringed Plover	Hedgerows
Lapwing	Arable field margins
Barn Owl	Acid grassland
Skylark	Neutral grassland
Tree Sparrow	Floodplain grazing marsh
Twite	Amenity grassland
Great Crested Newt	Upland heathland
Salmon	Lowland heath
Bullhead	Reedbeds
White-clawed Crayfish	Lowland fen
Glow Worm	Upland flushes, fens and swamps
Dingy Skipper	Rush pasture
Bluebell	Blanket bog
	Standing water and ponds
	Running water, rivers & streams
	Open Mosaic Habitats on Previously Developed Land
	Built environment and gardens

Bats

Bat roosting potential is classified according to the following criteria set out below, taken from the Bat Conservation Trust Good Practice Guidelines (2016).

Bat Roosting Suitability of Buildings and Trees

Suitability	Criteria
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure 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 suitable surrounding habitat to be used on a regular basis or by a larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protections, conditions and surrounding habitats.

Evaluation

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.

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.

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

Appendix 5 Bat Activity Survey Rationale

The Bat Conservation Trust Guidelines (BCTG) (Collins 2016) 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 guidelines 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.

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.

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 Guidelines do not aim to either override of replace knowledge and experience. It is accepted that departures from the guidelines (e.g. either decreasing or increasing the number of surveys carried out or using alternative methods) are often appropriate. However, in this scenario an ecologist should provide documentary evidence of (a) their expertise in making this judgement and (b) the ecological rationale behind the judgement. '*

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.

The Site is likely to support both foraging and commuting bats due to the presence of a variety of vegetation types: woodland, scrub and grassland. However, the proposals for the Site are of a small scale, and the value of the Site to bats is not expected to change as a result of the proposals, with the same habitat types present post-development.

This assessment was made by David Lovett MBiolSci (Hons) ACIEEM, who has 8 years' experience of scoping and delivering bat surveys and has carried out many activity surveys.

Appendix 6 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, watervole 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 form 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 updated in July 2021. The most relevant paragraphs from the NPPF are set out below.

The approach to assessing the natural environment is now embedded within the definition of what 'sustainable development' is and this falls under one of three objectives of the planning system – the 'environmental objective' applying in this case. Paragraph 8c (P8c) of the NPPF states that sustainable development should "*protect and enhance our natural, built and historic environment*", including "*improving biodiversity*". P10 sets out the Framework's presumption in favour of sustainable development.

Section 11 of the NPPF details making effective use of land. The Framework states that planning policies and decisions should "*take opportunities to achieve net environmental gains – such as developments that would enable new habitat creation*" and should "*recognise that some undeveloped land can perform many functions, such as for wildlife*" (P120).

Section 15 details conserving and enhancing the natural environment; policies and decisions should be "*protecting and enhancing valued landscape [and] sites of biodiversity […] value*", "*recognise the intrinsic character and beauty of the countryside*" and contribute to conserving and enhancing the natural environment and reducing pollution (P174). Allocations of land for development should, "*allocate land with the least environmental or amenity value, where consistent with other policies in this Framework*" and "*take a strategic approach to maintaining and enhancing networks of habitats*" (P175).

The Framework sets out ways to minimise the impacts on biodiversity through plans which "*identify, map and safeguard components of local wildlife rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity*" and promote the "*conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity*" (P179).

It is made clear in P180 that local planning authorities should apply a set of principles when determining planning applications. Planning permission should be refused "*if significant harm to biodiversity resulting from development cannot be avoided […], adequately mitigated, or, as a last resort, compensated for*". Development should not normally be permitted where an adverse effect on a SSSI is likely, and "*opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity*".

Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services.
This strategy builds on the Natural Environment White Paper (June 2011) - 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.