

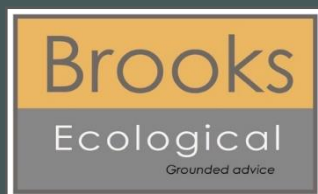
River Dearne Active Travel Route, Barnsley



Preliminary Ecological Appraisal Report

24/01/2023

Barnsley Metropolitan Borough Council



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Date	24/01/2023
Report duration	In accordance with CIEEM (2019), unless otherwise stated the findings of this report remain valid for a period of 18 months. After this period advice should be sought on the scope of any updating work required.



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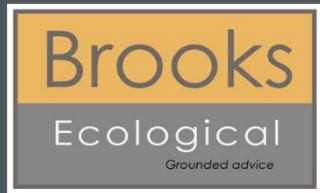
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Summary

This report is produced to inform Barnsley Metropolitan Borough Council of potential ecological constraints associated with their proposed development to widen the River Dearne Active Travel Route 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 December 2022.

Key Findings

The development has a small construction footprint and minimal impacts on the habitats are expected. Adjacent higher value retained habitats should be protected through measures outlined in a Construction Environmental Management Plan.

Bat Roost Suitability surveys should be undertaken on trees to be removed once these trees have been determined.

Biodiversity Net Gain

The Site has an overall score of 11.94 Habitat Units and 0.86 River Units.

Introduction

1. Brooks Ecological Ltd was commissioned by Barnsley Metropolitan Borough Council to carry out a Preliminary Ecological Appraisal (PEA) of land along the River Dearne Active Travel Route, Barnsley.
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.
3. The proposals are to widen the current path running through the Dearne Valley Country Park to increase accessibility.

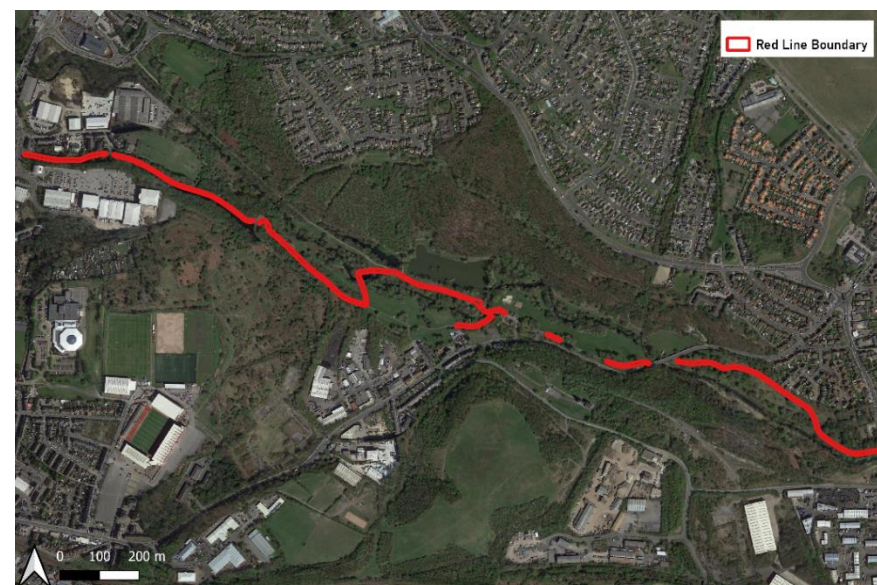
Purpose of a PEA

4. 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.
5. 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.
6. 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.
7. 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

8. The application site 'the Site' comprises an approximately 2km long stretch of path, the Active Travel Route running through the Dearne Valley Country Park. The path currently varies in width, with development proposed to standardise the path to 4.5m along the length. A further buffer of 2m has been added into the red line boundary to account for vehicle tracking and disturbance.
9. 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 (red line boundary).



Desk Study

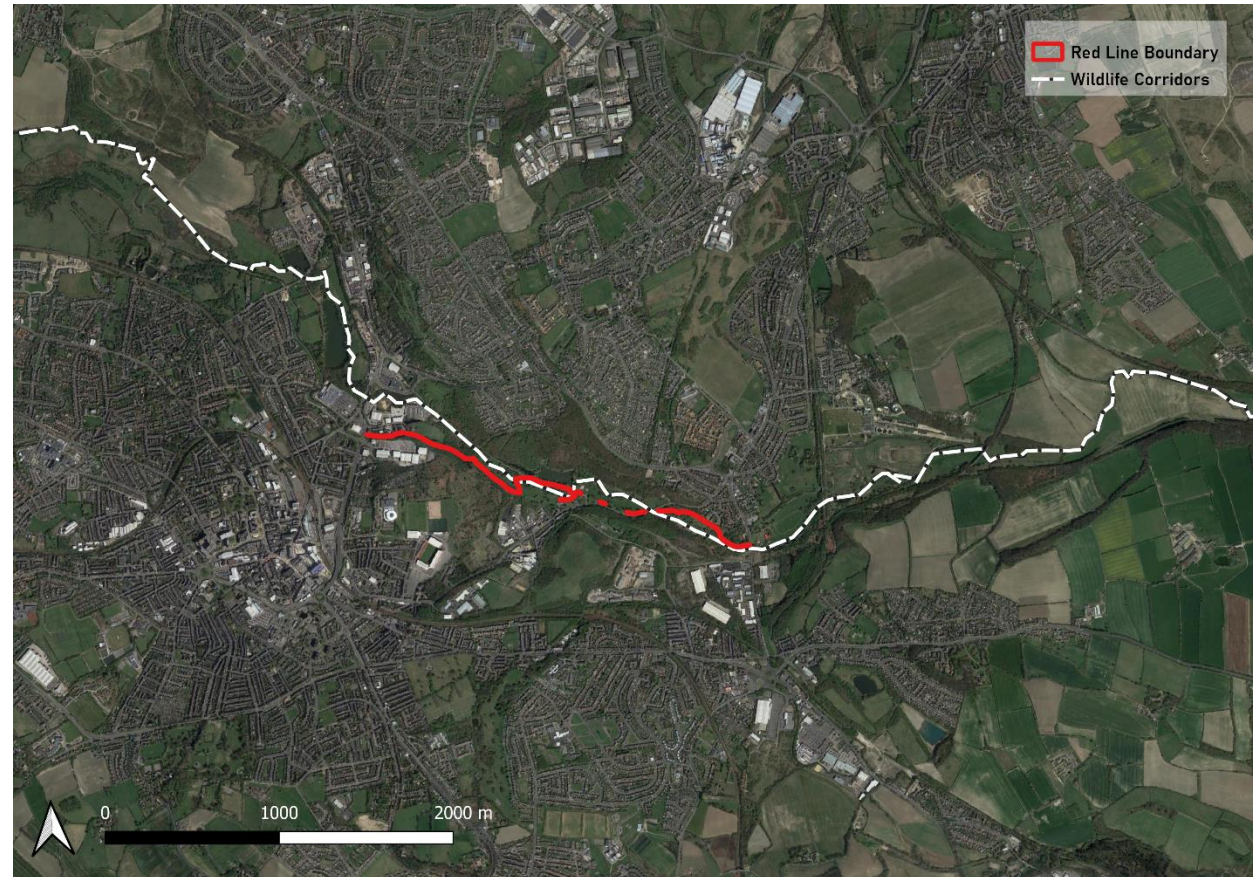
Landscape

10. The Site is located within Dearne Valley Country Park, a pocket of green space within the otherwise heavily urbanised outskirts of Barnsley, South Yorkshire.
11. Much of the Site is bordered by broadleaved woodland, with areas of grassland and road. The site runs adjacent to the River Dearne and Barnsley Canal, crossing over the river at points.
12. The broader landscape includes woodland blocks, amenity grassland, ponds, rivers and developed land.

Wildlife Corridors

13. The River Dearne runs alongside the Site for much of the length, west to east and represents the most significant wildlife corridor in the area. The river is heavily wooded, providing valuable connectivity between the green spaces to the northwest and east of Barnsley.
14. A small section of the Barnsley Canal is situated to the east of the Site. The canal was abandoned in 1953, leaving this isolated section of canal, unconnected to the east and west and providing little use as a wildlife corridor.

Figure 2 Analysis of wildlife corridors visible on mapping in relation to the Site.



Designated Sites

Statutory Designations

15. 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 Table 1, below.

Table 1 Statutory Designated Sites.

Site Name	Distance from Site	Designation	Summary Interest
Dearne Valley Park	Within	Local Nature Reserve (LNR)	The primary reason for designation is the River Dearne and surrounding habitats. River specialist birds and mammals.
Stairfoot Brickworks	1.6 km SE	Site of Special Scientific Interest (SSSI)	A small SSSI designated for geological features only.

16. The development is located within the Dearne Valley Park and all works will have a direct impact on the Site; however, these impacts will be minimal, and measures laid out within a dedicated Construction Environmental Management Plan (CEMP) to protect all retained adjacent habitats within the LNR.
17. Direct and indirect impacts on Stairfoot Brickworks as a result of this development are unlikely due to the Site's distance and designation as purely geological.

SSSI Impact Risk Zones (IRZs)

18. The Site lies within the IRZ for 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 (LWSs) in the search area. All four are of potential relevance to the application.
20. A section of the Site runs through the Cliff Wood LWS, however the proposed works to widen an existing footpath should cause minimal direct impacts on the woodland and retained habitats will be protected through a CEMP.
21. The Site is connected directly to Cliff Wood and Public Rights of Way connect the Site with further LWSs (Stairfoot Disused Railway, Old Mill Lane, Barnsley Canal and Sunny Bank). The aim of the development is to increase the accessibility of the Active Travel Route through the Dearne Valley Park. The increase in visitors could lead to a slight increase in recreational pressure to these connected sites. However, these sites are currently used as recreational areas and these impacts are not expected to be significant. It is also possible that the increased accessibility of the path should keep visitors on the path and reduce trespassing / trampling.

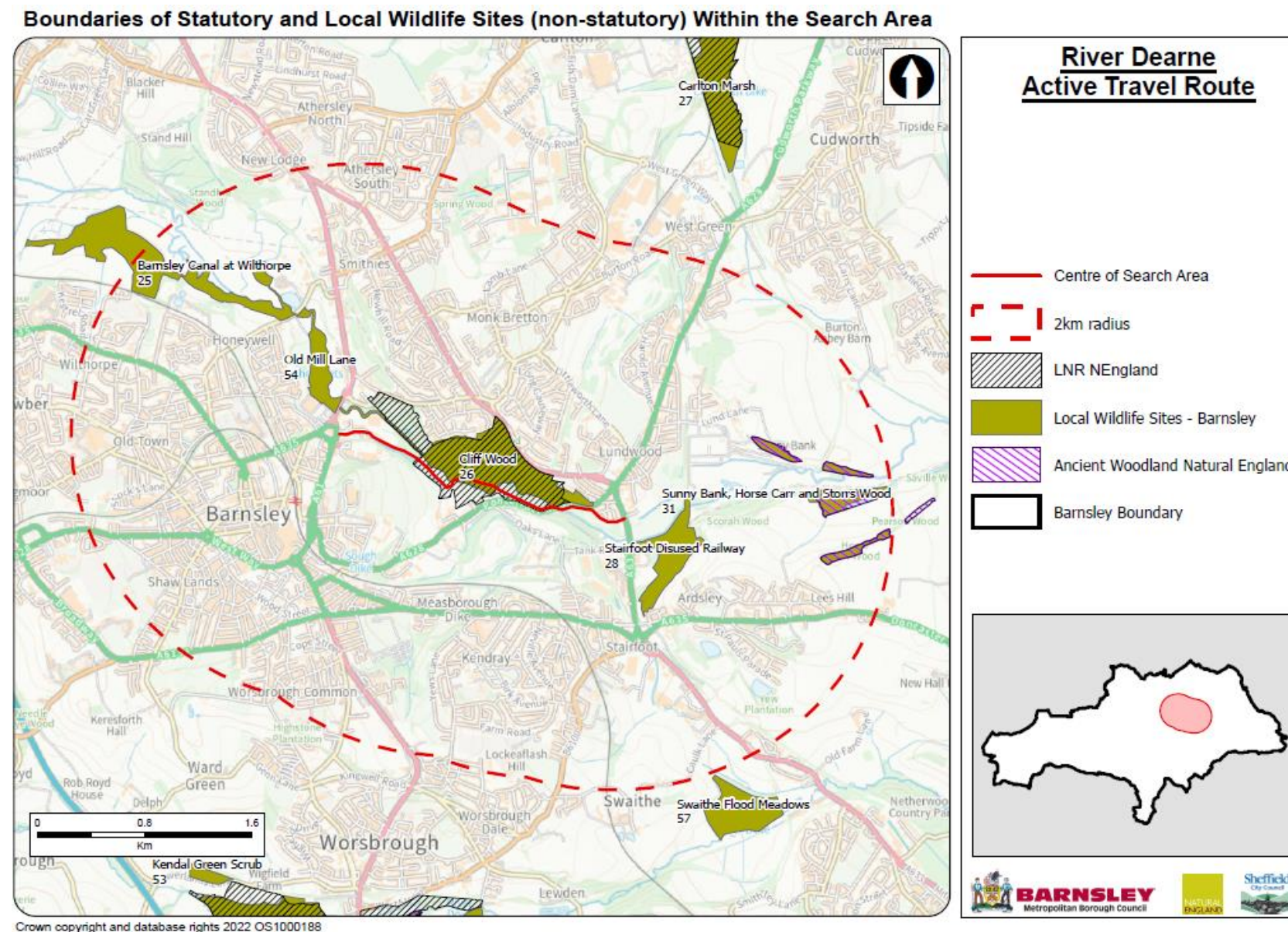
Nature Improvement Area

22. The entire Site is located within the Dearne Valley Green Heart Nature Improvement Area. The NIA aims to restore and enhance the Dearne Valley river and floodplain habitats and improve community engagement with the Site. These aims should be taken into consideration through the development.

Granted EPSM Licenses

23. Two granted bat licenses show up within 1km of the Site. Both are located 750-950m east of the Site and refer to the destruction of a common pipistrelle resting place.

Figure 3 Sheffield Biological Records Centre; Designated Sites.



Survey

24. The survey was carried out during December 2022¹ and followed the principles of Extended Phase 1 Habitat Survey methodology (JNCC, 2010).
25. Enough time was afforded the surveyor to carry out the survey. The survey was not constrained by poor weather.
26. Whilst the majority of the Site was accessible, at least 3% 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

27. 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 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.
28. 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

29. 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 include in calculation, but mitigation or compensation is not required.

Low Distinctiveness Habitats

30. 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 include in calculations, but compensation / mitigation needs only to provide habitat of similar or higher distinctiveness.

Medium Distinctiveness Habitats

31. 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.

High Distinctiveness Habitats

32. Habitats which are more natural and contain more important assemblages of plants and potentially species which are rare in their own right. They will provide good 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

33. 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.
34. Each habitat is mapped and an area for each type is provided in the format of the DEFRA Biodiversity Metric 3.1 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

35. Our condition assessment for each habitat described references where available the criteria set out in DEFRA (2021) Biodiversity Metric 3.1 Technical Supplement (1).
36. 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. 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.

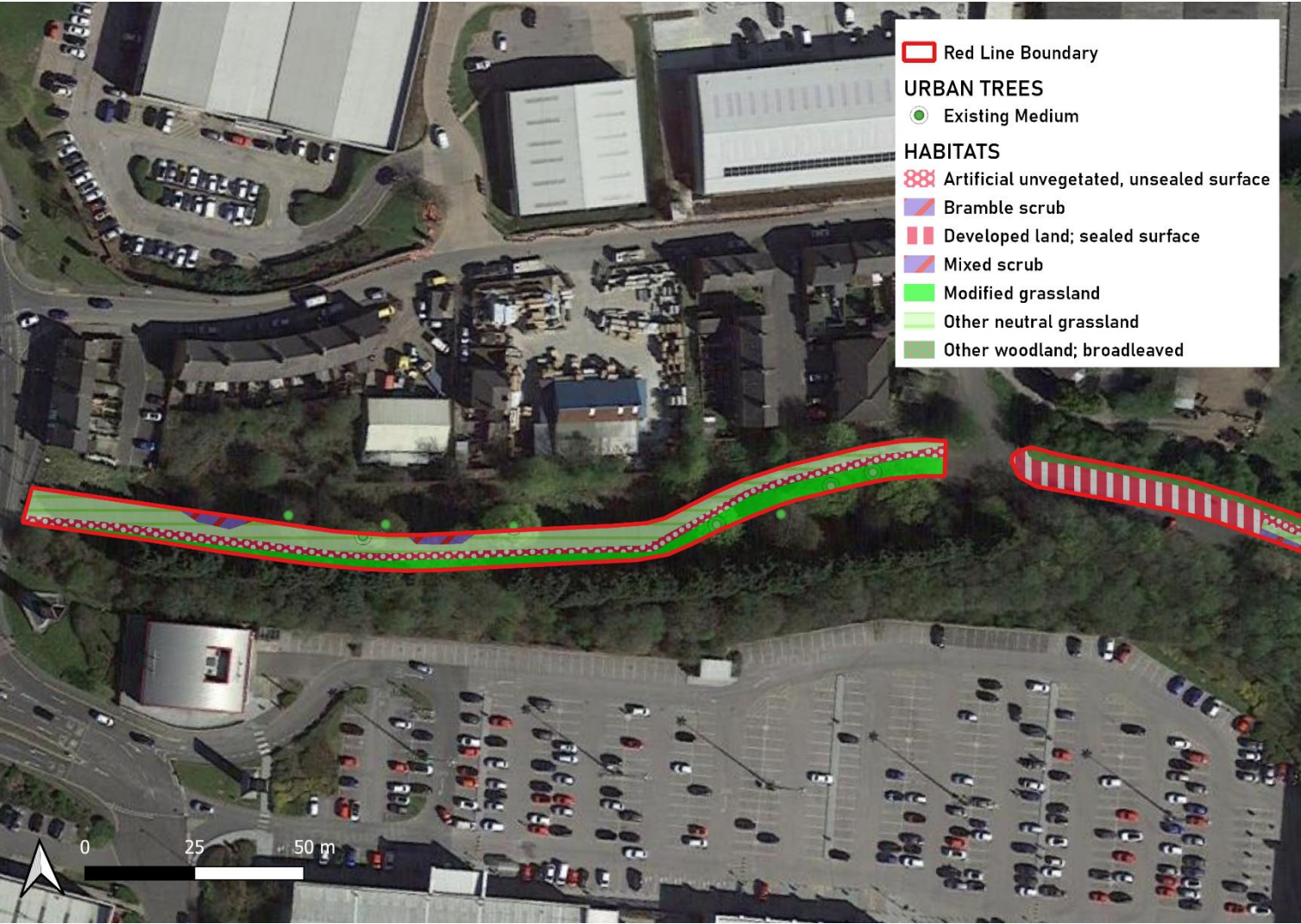
¹ This Report has been prepared during January 2023 following a visit to the site in December 2022 and our findings are based on the conditions of the site that were reasonably visible and accessible at that date. We accept no liability for any areas that

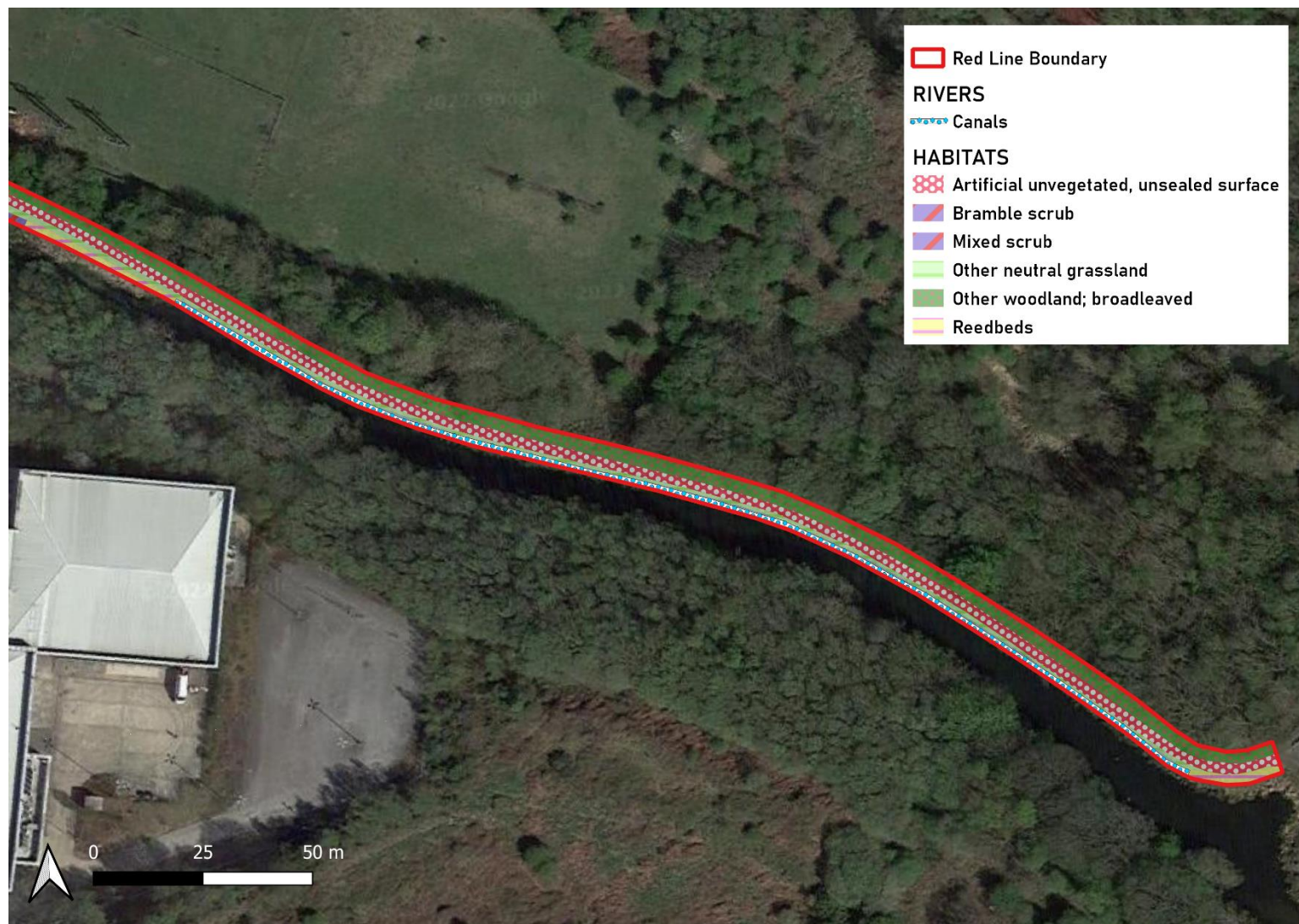
were not reasonably visible or accessible, nor for any subsequent alteration, variation or deviation from the site conditions which affect the conclusions set out in this report.

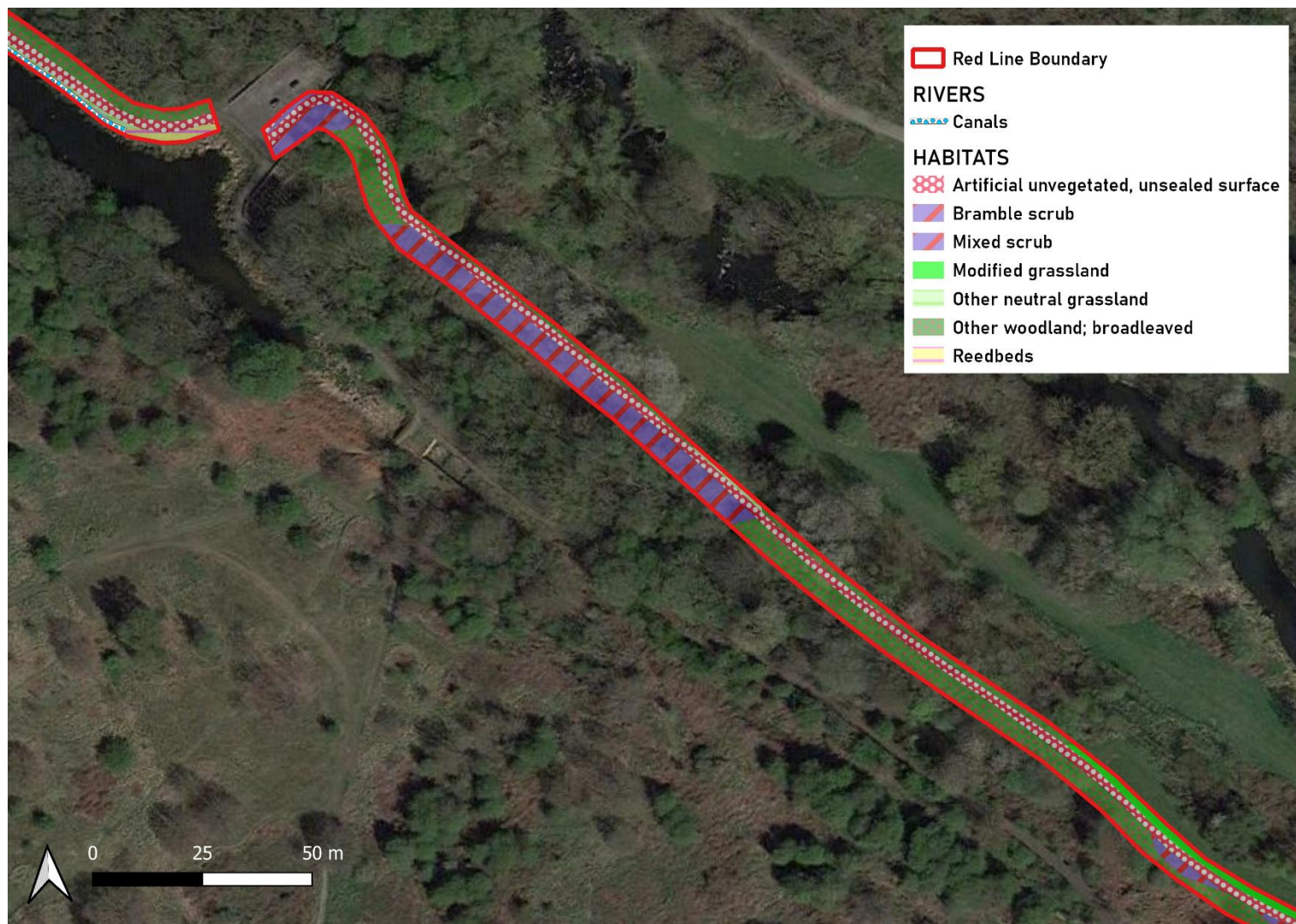
Baseline Habitats

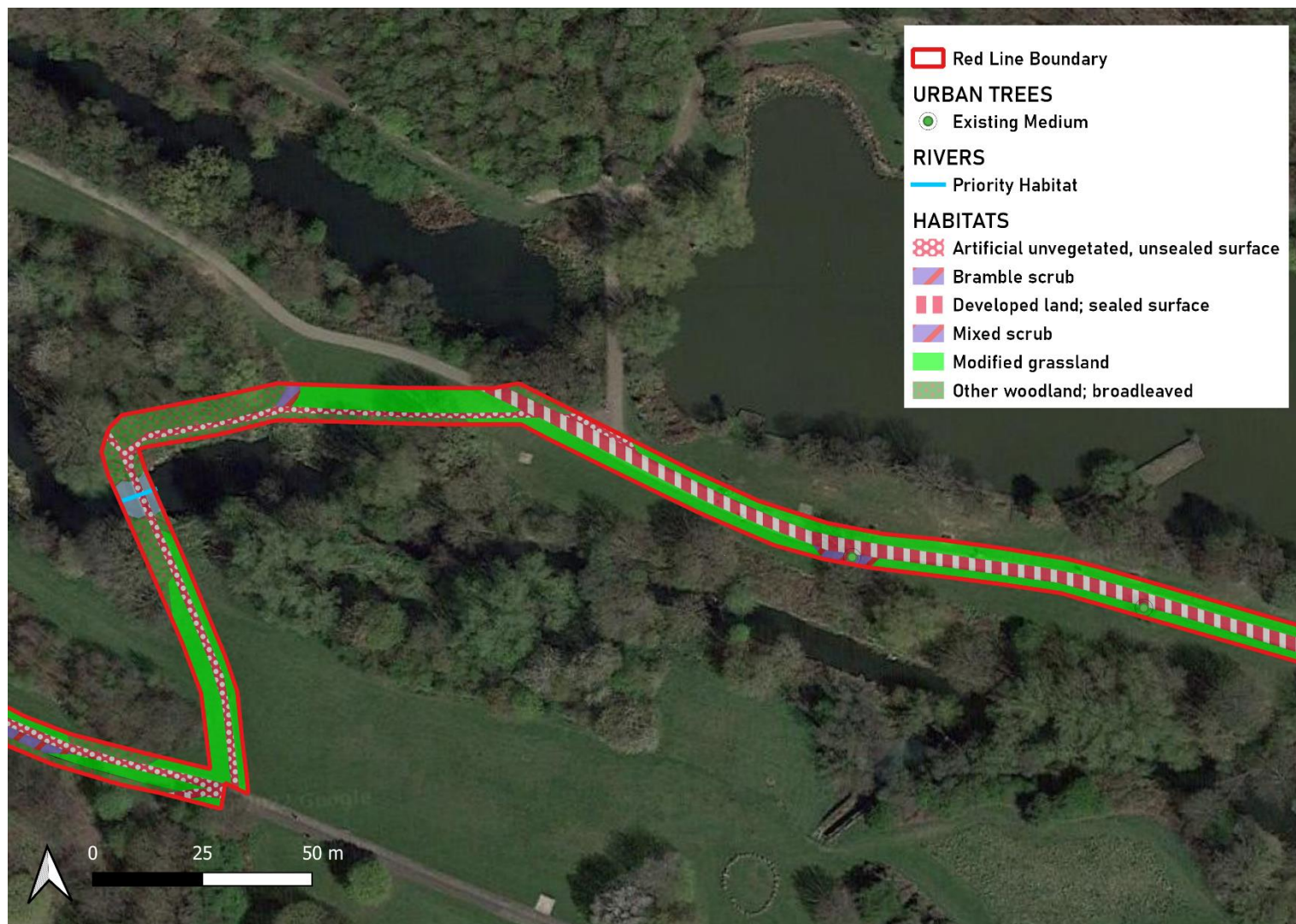
37. The habitats on Site can be found mapped in the following pages and a table of all habitats and their relevance are summarised in Table 2. The condition assessment tables for each habitat can be found in Appendix 1.

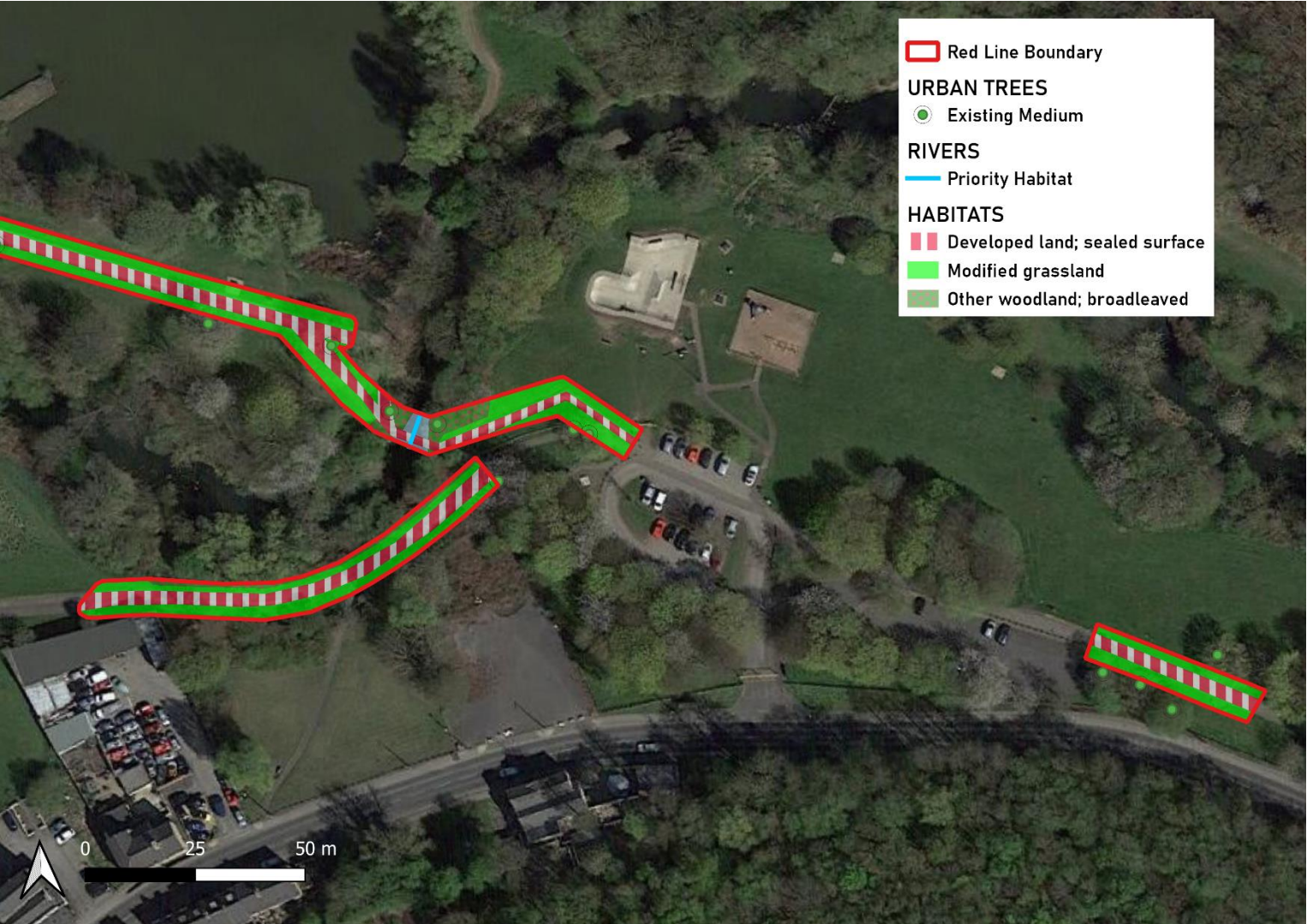
Figures 4-12 Approximate location and extent of the habitats on Site; maps created from west to east.

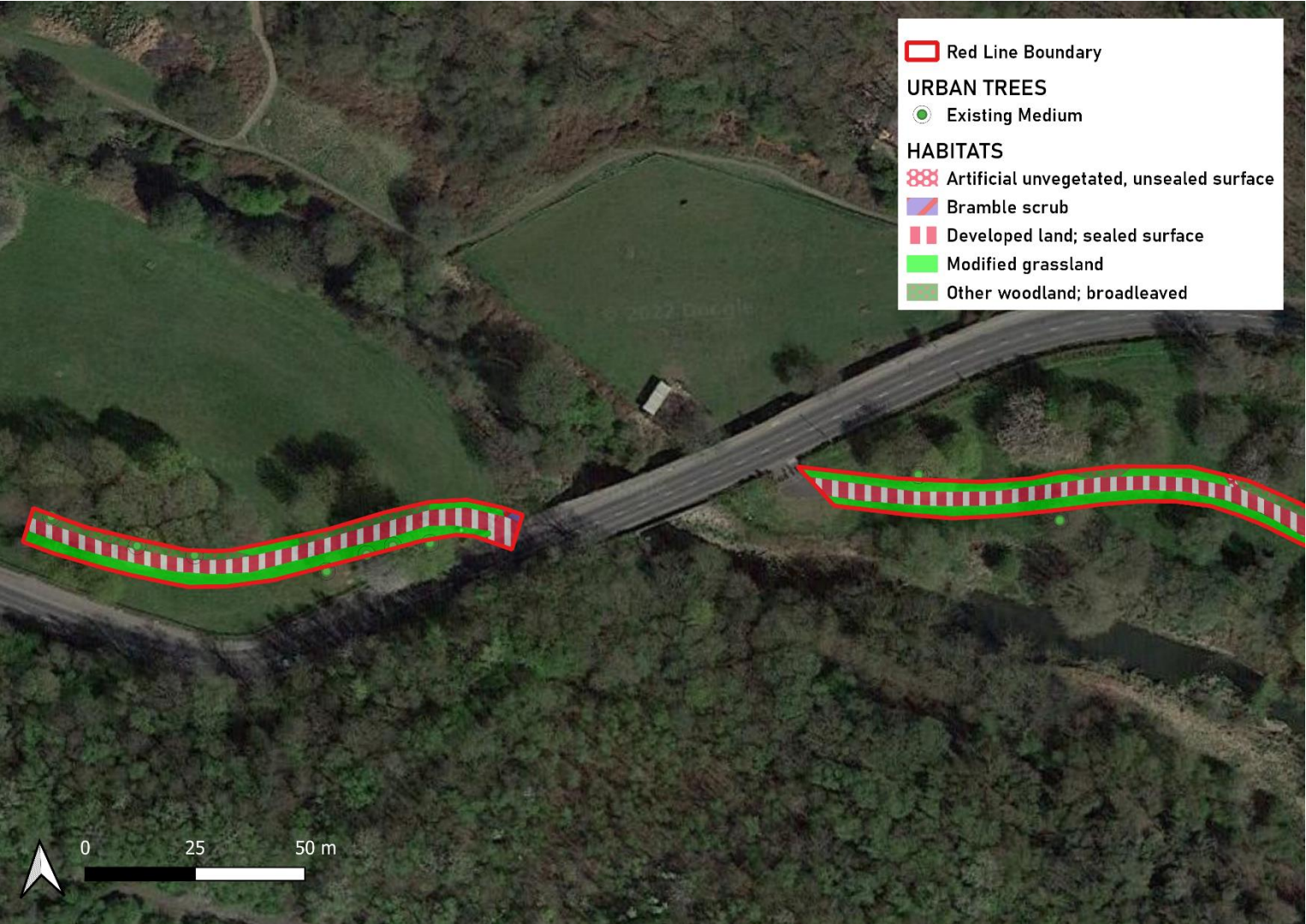


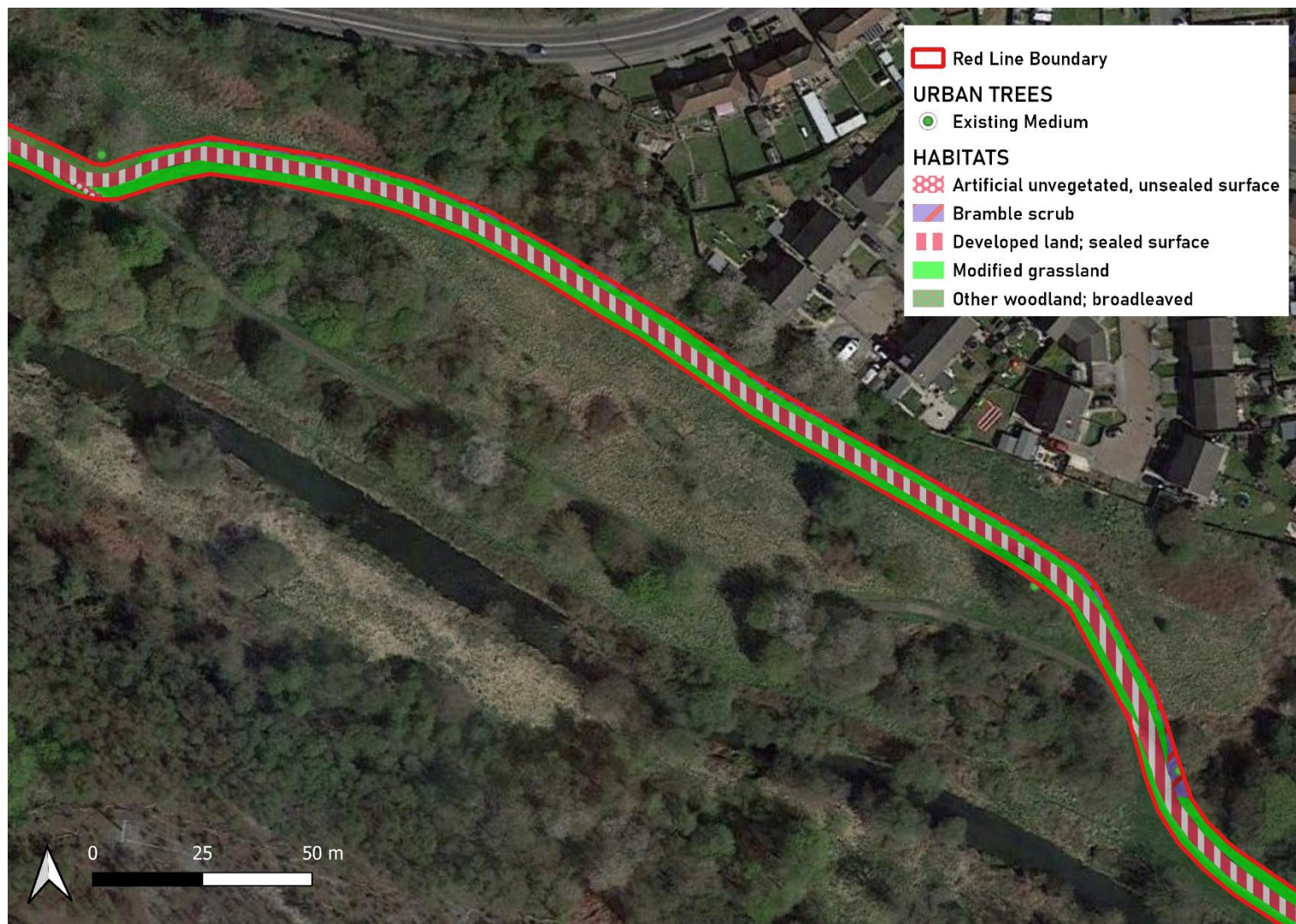












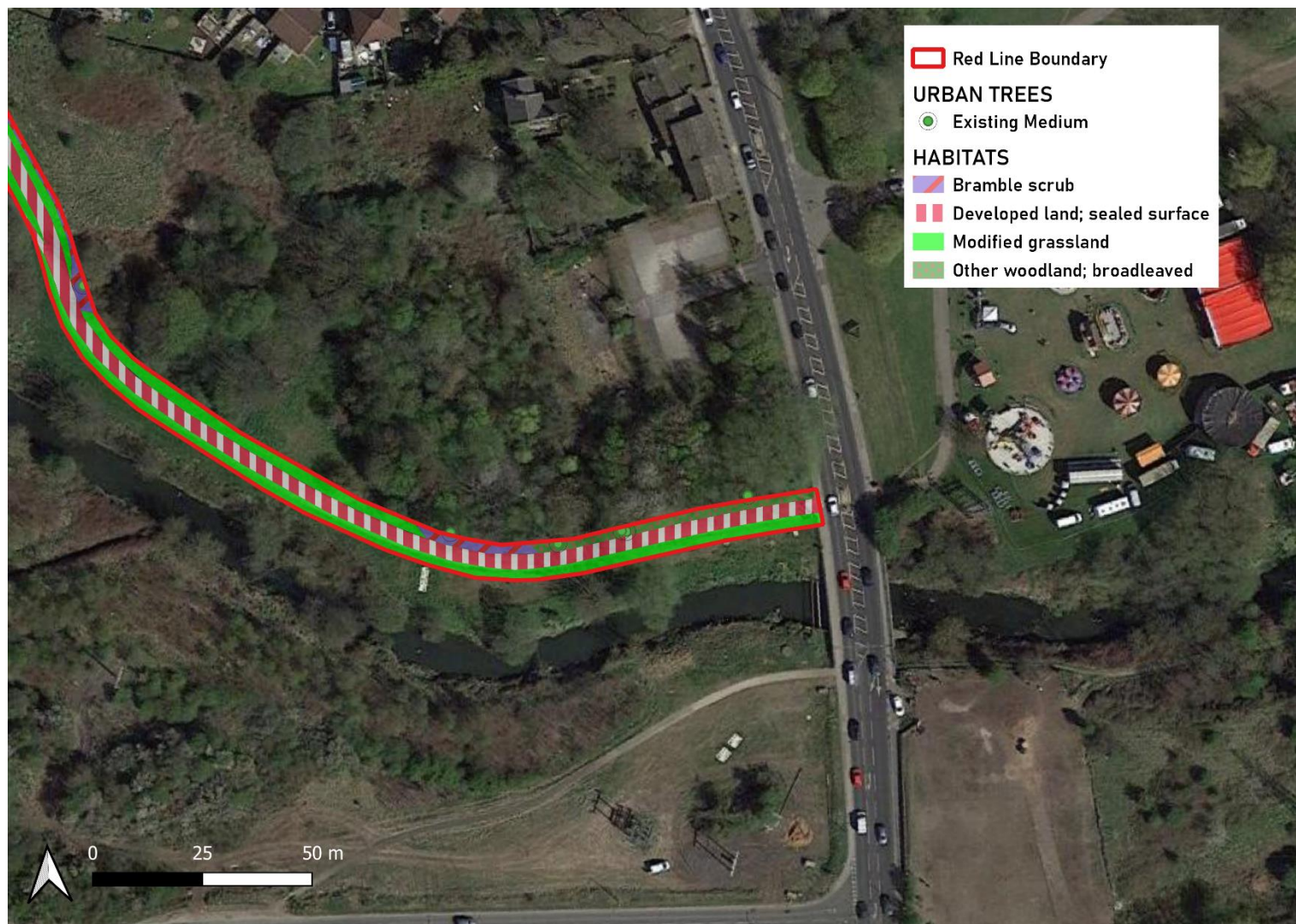


Table 2 Summary of Habitat categories, distinctiveness and condition assessments present on-Site.

Habitat Feature	Notes	Distinctiveness	Condition assessment
Developed land; sealed surface	Parts of the existing footpaths and some car parks are comprised of developed tarmacked land, covering the length of the Site.	Very Low	N/A - Other
Artificial unvegetated, unsealed surface	Sections of the existing footpath are comprised of compacted gravel and bare ground with no vegetation.	Very Low	N/A - Other
Modified grassland	Heavily managed and regularly mown areas of amenity grassland are present across much of the Site, particularly to the east. The grassland is a uniform height and dominated by perennial rye-grass with some red fescue and creeping bent. Common forb species are present including daisy, creeping buttercup, white clover and ribwort plantain.	Low	Poor
Other neutral grassland	Unmanaged and overgrown other neutral grassland is present in some areas. The grass species include perennial rye-grass, red fescue, Yorkshire fog and cock's-foot, with a high proportion of tall herb species such as broad-leaved dock, common ragwort, common hogweed and spear thistle.	Medium	Poor
Bramble scrub	Low-lying bramble-dominated scrub is present in patches along the path. Additional species include cock's-foot, hedge bindweed, nettle and cleavers.	Medium	Condition Assessment N/A
Mixed scrub	Woody mixed scrub is present to the east end of the blocked canal. The species include goat willow, young alder, young sycamore, dogwood and hawthorn with lower-lying bramble, nettle, willowherb and cleavers also present.	Medium	Poor
Other broadleaved woodland	Broadleaved woodland covers much of the northern side of the existing path. The canopy consists of sycamore, beech, and oak, with some ash, and occasional lime and cherry. Understorey is sparse, consisting of saplings and holly.	Medium	Moderate
Urban trees	Stands of mature urban trees are present within the amenity grassland on-Site. Species include hazel, sycamore, field maple, Norway maple, silver birch, hornbeam and lime. These stands of trees bear little resemblance to a woodland as there is no vertical structure, no age range, no understorey and the grass is heavily managed.	Medium	Good
Reedbeds	Two distinct patches of reedbed are present to the eastern and western ends of the blocked canal on Site. These are unmanaged and in a late successional stage, with a high percentage of scrub and undesirable species. The reedbeds are dominated by common reed with some bulrush and willow saplings. Bramble, willowherb, spear thistle, nettle and common ragwort were also present.	High	Poor
Canals	The Barnsley Canal runs through a section of Site towards the east. The canal is approximately 250m long and blocked at both ends, meaning there is no flow to the water. The blocked ends of the canal are overgrown with reedbeds and mixed scrub. Much of the water surface is obscured by carpets of duckweed.	Medium	Poor

Other rivers and streams	The Site intersects the River Dearne at two points, crossing over the river on narrow footbridges. Proposals are for the footbridges to be widened on existing abutments in the river, meaning the impacts to the river will be minimal. As infrastructure and development across the river already exists, the encroachment on the river and riparian habitats will remain unchanged through the development. Therefore, post-development the River Units will remain the same and a further Modular River Physical (MoRPh) survey is not deemed necessary.	High	Poor
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Habitat Photos

Figure 13 View of bramble scrub.



Figure 14 View of urban trees.



Figure 15 View of modified grassland.



Figure 16 View of canal.



Figure 17 View of other neutral grassland.



Figure 18 View of other woodland; broadleaved.



Figure 19 View of other woodland; broadleaved.



Figure 20 View of reedbed.



Figure 21 View of developed land; sealed surface.



Figure 22 View of river.



Figure 23 View of urban trees.



Figure 24 View of artificial unvegetated, unsealed surface.



DEFRA Metric (Baseline)²

38. 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					
Ref	Habitats and areas			Distinctiveness	Condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline
	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Condition	Strategic significance		Total habitat units
1	Grassland	Modified grassland	0.6193	Low	Poor	Formally identified in local strategy	Same distinctiveness or better habitat required ≥	1.42
2	Grassland	Other neutral grassland	0.1105	Medium	Poor	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.51
3	Heathland and shrub	Bramble scrub	0.1047	Medium	Condition Assessment N/A	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.48
4	Heathland and shrub	Mixed scrub	0.0196	Medium	Poor	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.09
5	Urban	Artificial unvegetated, unsealed surface	0.2229	V.Low	N/A - Other	Formally identified in local strategy	Compensation Not Required	0.00
6	Urban	Developed land; sealed surface	0.4149	V.Low	N/A - Other	Formally identified in local strategy	Compensation Not Required	0.00
7	Wetland	Reedbeds	0.0113	High	Poor	Formally identified in local strategy	Same habitat required =	0.08
8	Woodland and forest	Other woodland; broadleaved	0.3326	Medium	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	3.06
9	Woodland and forest	Other woodland; broadleaved	0.001	Medium	Poor	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	0.00
10	Urban	Urban Tree	0.456	Medium	Good	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required	6.29
11								
12								
13								
14								
15								
Total habitat area			2.29					11.94

² Our report provides an estimate of the Site's 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.

C-1 Site River Baseline									
Condense / Show Columns			Condense / Show Rows						
Main Menu			Instructions						
Existing river type			Habitat distinctiveness	Habitat condition	Strategic significance	Watercourse encroachment	Riparian encroachment	Suggested action	Ecological baseline
Baseline ref	River type	Length (km)	Distinctiveness	Condition	Strategic significance	Extent of encroachment	Extent of encroachment		Total river units
1	Canals	0.257	Medium	Poor	Low potential/action not identified any plan	No Encroachment	Major	Restore	0.77
2	Priority Habitat	0.016	V.High	Poor	Within Priority Habitats for Restoration	Minor	Major	Restore	0.09
3									
4									
5									
6									
7									
		0.27							0.86

Faunal Appraisal

39. 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

40. There are seven records of great crested newt (GCN) returned for an area 2km northwest of the Site. Common frog records were returned within Dearne Valley Park.
41. Ponds are present within 500m of Site. The River Dearne separates ponds A, B and C from Site, acting as a significant barrier due to its size and fast flow.

Field Evidence

42. All three off-Site ponds are heavily shaded, with low suitability for GCN.

Summary Evaluation

43. It is unlikely that GCN will be present on-Site due to the significant barrier of the River Dearne. The Site is likely to be used by a small number of common amphibian species, but not expected to be of importance to local populations.

Further Surveys and Recommendations

44. No further surveys or precautions are considered necessary.

Figure 25 Ponds mapped in relation to the Site.



Bats

Desk evidence

45. Multiple records of bats were returned for the area, with only one record pertaining to a roost, a Daubenton's bat roost within the Old Mill Lane bridge 230m north of the Site. Additional species recorded but not associated with a roost include common pipistrelle, soprano pipistrelle, brown long-eared bat and noctule. Only one record of a common pipistrelle was recorded within Dearne Valley Park.

Field Evidence (roosting)

46. No buildings are present on-Site with roosting potential.
47. There are many trees within the Site boundary, with the proposed route 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 such as rot cavities and peeling bark.

Field Evidence (foraging and commuting)

48. The Site is of high suitability for foraging and commuting bats with linear rivers, woodland blocks and canal all providing opportunities for foraging and commuting.

Summary Evaluation

49. The development is not expected to impact on the foraging and commuting suitability of the Site due to the linear shape and minimal impacts of the works. All features suitable for foraging and commuting will remain intact with only short-term minor disturbance. No additional lighting is proposed for the path.

Further Surveys and Recommendations

50. 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.

Birds

Desk Evidence

51. As the Site is located within the Dearne Valley Country Park and well connected to other wildlife sites, there is a wide range of habitats in the local area. Predictably, many records of birds were returned for the area including river, woodland, and farmland specialists, waterfowl, common garden birds and urban fringe species.
52. Within the footprint of the Site species include kingfisher, moorhen, shoveler duck, dunnoek, bullfinch and wren.
53. Other important species within 2km include barn owl, bittern, cuckoo, grasshopper warbler, house martin and lapwing.

Field Evidence

54. Suitable nesting habitat such as scrub, reedbed, canal, river bank, and woodland are all present within the Site in small amounts and lining the existing footpath. Vegetation clearance works will be minimal and short term and are not expected to significantly impact local bird populations.
55. A small number of common bird species were noted during the survey including chaffinch, great tit and carrion crow.

Summary Evaluation

56. Even though key species are found in the area, the Site is not expected to be significant to those species, being used mostly by common garden birds and urban fringe specialists as the habitats line an existing footpath. Where possible, vegetation works should be timed to avoid the nesting bird season (March-August inclusive).

Further Surveys and Recommendations

57. No further surveys are considered necessary to demonstrate current baseline in respect of birds.
58. Standard precautions apply in respect of restrictions on clearing vegetation during the nesting season.
59. Construction across the river points will be conducted on existing abutments, works along the river are expected to be minimal, not affecting the banks and not expected to be a significant impact on kingfishers. The river habitats should be protected through a dedicated CEMP.

Riparian Mammals

Desk evidence

60. Multiple records of otter were returned for the area along the River Dearne.

Field Evidence

61. The Site crosses the River Dearne at two points. The River has some suitability for Otter.

Summary Evaluation

62. It is likely otter are using the River Dearne. However, the works affecting the river are using existing abutments, and so significant impacts are not expected.
63. If the scope of works changes to include direct or indirect impacts on the river habitats such as increased lighting, this evaluation will have to be re-assessed.

Further Surveys and Recommendations

64. Further survey is not recommended.

Badgers

Desk evidence

65. Badger records were returned for the search area.

Field Evidence

66. The Site has some suitable habitat for badger, though no evidence of badger was found within the Site or its immediate vicinity.

Summary Evaluation

67. It is likely badger are in the wider area and could move onto Site before vegetation clearance works commence.

Further Surveys and Recommendations

68. Given the presence of badgers nearby, a pre-works check for setts is recommended.

Hedgehogs / NERC Act 2006 / Local BAP

Desk evidence

69. Hedgehogs are recorded within the search area.

Field Evidence

70. No evidence of hedgehogs was found on-Site.

Summary Evaluation

71. The Site provides suitable habitat for this species but long-term impacts are not expected.

Further Surveys and Recommendations

72. Presence assumed; no further surveys are considered necessary.

Reptiles

Desk evidence

73. Two records of grass snake were returned for the area, located 2km northeast of the Site.

Field Evidence

74. No suitable habitat was present on-Site within the construction footprint.

Summary Evaluation

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

Further Surveys and Recommendations

76. No further surveys or precautions are considered necessary.

White-clawed crayfish

Desk evidence

77. No records in search area.

Field Evidence

78. No access was available to any riparian habitats; the river could only be assessed from afar due to steep inaccessible banks.

Summary Evaluation

79. Absence of records from the adjacent River Dearne, and the known presence of invasive signal crayfish within the river, makes it very unlikely that this species is present or is at risk from development activities.

Further Surveys and Recommendations

80. Works over the river will take place above the water on existing abutments and are not expected to impact the river bed/watercourse or banks.

Invasive Non-Native Species (INNS)

81. 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.
82. Although no species were noted³ on-Site, Japanese Knotweed is known to be prevalent in the area, particularly along the River Dearne, and the survey was constrained by the time of year.
83. 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.
84. This Site presents a high risk of supporting undetected INNS based on the following factors:
 - Suboptimal survey season
 - Proximity to nearby potential sources of infection
 - Potential for tipping of material
85. 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 & Opportunities

86. Most LPAs now require developments to demonstrate a 'no net loss' in biodiversity, or in some cases a 10% net gain. The Site has been assessed as having a Biodiversity Metric score of 11.94 Habitat Units and 0.86 River Units.
87. Most of the Biodiversity Units here relate to the urban trees, canal, woodland, river and reedbed habitats on and adjacent to the Site. The construction footprint should be minimised where possible. Any retained adjacent habitats should be protected through a dedicated Construction Environmental Management Plan.
88. The scheme should seek to minimise biodiversity loss by retaining as much existing vegetation as possible, and maximising the Site's biodiversity value post-development by either creating new high-quality habitats on cleared ground, or by enhancing retained vegetation.
89. Any timber created by the felling/pruning of trees along the route should remain *in situ* and used to create log piles which will provide habitat for amphibians and invertebrates.
90. 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 river.
91. A suitable Biodiversity Management Plan would be useful in defining these enhancements and can be secured by standard condition.

Faunal constraints

92. 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.

93. 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.

Figure 26 Constraints and Opportunities Plan.



Conclusions and Recommendations

Planning considerations		
Recommendation	Rationale	When
R1 Additional Surveys	Bats – roost assessment of trees.	Anytime, but autumn/winter/early spring allows easier viewing of features
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. The LPA is likely to be seeking at least a no-net-loss situation and could request that a contribution is made to address any residual loss here, off-Site. 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 quantify net gain/loss of biodiversity.	After a fixed design is agreed.
R6 Produce a CEMP (Biodiversity)	To show how the works will be conducted 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. Protected/notable species method statements where licensing is not needed. 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 will be maintained in the condition that the Biodiversity Calculations were based on.	Delivery report Suitable for planning condition.

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Appendix 1 Habitats and Ecological Features

Grassland (medium, high & very high distinctiveness)

Criteria	Pass/Fail	Condition Poor
Close match	Fail	5 out of 6 = Good / 5 out of 5 for non-acid grassland = Good 3 - 4 = Moderate, including 6 for non-acid grassland 1-2 = Poor *Criterion 6 is essential to meet Good condition (only applies to non acid grassland)
Varied sward	Pass	
Bare ground 1-5%	Fail	
Bracken < 20% and scrub < 5%	Pass	
Absence of invasives	Fail	
> 9 species per square meter	Fail	
Score	Poor	

Grassland (low distinctiveness)

Criteria	Pass/Fail	Condition
6-8 species? (NB - essential to achieve moderate condition)	Fail	6 or 7 including criterion 1 = Good 4 or 5 including criterion 1 = Moderate 0-3, or 4-6 excluding criterion 1 = Poor
Varied sward height?	Fail	
Scrub < 20%	Pass	
Damage < 5%	Pass	
Bare ground 1-10%?	Fail	
Bracken < 20%	Pass	
Absence of invasives	Pass	
Score	Poor	

Woodland

Criteria	Score	Condition
Age distr.	3	33-39 = Good 26-32 = Moderate 13-25 = Poor
Grazing	1	
Invasives	3	
Number natives	2	
Cover natives	3	
Open space	3	
Regen	1	
Tree health	3	
Ground flora	1	
Vertical structure	2	
Veteran trees	3	
Deadwood	2	
Disturbance	1	
Score	28	

Scrub

Criteria	Pass/Fail	Condition
Representative and 3 plus woody spp.	Pass	5 = Good 3-4 = Moderate 0-2 = Poor
Good age range	Fail	
Absence of invasives	Pass	
Well-developed edge	Fail	
Clearings and glades present	Fail	
Score	Poor	

Urban trees (including street trees)

Criteria	Pass/Fail	Condition
> 70% natives	Pass	5-6 = Good 3-4 = Moderate 0-2 = Poor
Continuous canopy gaps < 10%	Pass	
Mature or veteran tree or 50% of block is	Pass	
No pruning evidence	Pass	
Deadwood, cavities etc. for birds	Fail	
> 20% canopy oversailing vegetation	Pass	
Score	Good	

Wetland

Criteria	Pass/Fail	Condition
Water table at surface	Pass	0-3 = Poor 4 - 5 = Moderate excluding criterion 1 5-6 Including criterion 1 = Good
Close match for UK habitat type	Fail	
Good water quality	Fail	
Scrub < 10%	Fail	
Bare ground < 5%	Pass	
Absence of INNS and indicators of poor quality < 5%	Fail	
Additional Reedbeds		
Diverse structure 60-80% reeds	Fail	
Score	Poor	

Appendix 2 List of species recorded

Field maple	<i>Acer campestre</i>	Red fescue	<i>Festuca rubra</i> agg.
Norway maple	<i>Acer platanoides</i>	Ash	<i>Fraxinus excelsior</i>
Sycamore	<i>Acer pseudoplatanus</i>	Common fumitory	<i>Fumaria officinalis</i>
Maple	<i>Acer</i> sp.	Cleavers	<i>Galium aparine</i>
Yarrow	<i>Achillea millefolium</i>	Herb robert	<i>Geranium robertianum</i>
Ground elder	<i>Aegopodium podagraria</i>	Ground ivy	<i>Glechoma hederacea</i>
Common bent	<i>Agrostis capillaris</i>	Common ivy	<i>Hedera helix</i>
Bent	<i>Agrostis</i> sp.	Hogweed	<i>Heracleum sphondylium</i>
Creeping bent	<i>Agrostis stolonifera</i>	Yorkshire fog	<i>Holcus lanatus</i>
Common alder	<i>Alnus glutinosa</i>	St John's wort	<i>Hypericum</i> sp.
Cow parsley	<i>Anthriscus sylvestris</i>	Catsear	<i>Hypochaeris radicata</i>
Silverweed	<i>Argentina anserina</i>	Holly	<i>Ilex aquifolium</i>
False oat grass	<i>Arrhenatherum elatius</i>	Common Ragwort	<i>Jacobaea vulgaris</i>
Mugwort	<i>Artemisia vulgaris</i>	Soft rush	<i>Juncus effusus</i>
Daisy	<i>Bellis perennis</i>	White deadnettle	<i>Lamium album</i>
Silver birch	<i>Betula pendula</i>	Red deadnettle	<i>Lamium purpureum</i>
Downy birch	<i>Betula pubescens</i>	Nipplewort	<i>Lapsana communis</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>	Meadow vetchling	<i>Lathyrus pratensis</i>
Hornbeam	<i>Carpinus betulus</i>	Common toadflax	<i>Linaria vulgaris</i>
Rosebay willowherb	<i>Chamerion angustifolium</i>	Perennial rye grass	<i>Lolium perenne</i>
Fat hen/ goosefoot	<i>Chenopodium album</i>	Bird's-foot trefoil	<i>Lotus corniculatus</i>
Creeping thistle	<i>Cirsium arvense</i>	Creeping Jenny	<i>Lysimachia nummularia</i>
Spear thistle	<i>Cirsium vulgare</i>	Common reed	<i>Phragmites australis</i>
Dogwood	<i>Cornus sanguinea</i>	Ribwort plantain	<i>Plantago lanceolata</i>
Hazel	<i>Corylus avellana</i>	Rat's tail/ greater plantain	<i>Plantago major</i>
Hawthorn	<i>Crataegus monogyna</i>	Common moss	<i>Polytrichum commune</i>
Cock's-foot	<i>Dactylis glomerata</i>	Creeping cinquefoil	<i>Potentilla reptans</i>
Teasel	<i>Dipsacus fullonum</i>	Cherry	<i>Prunus</i> sp.
Greater willowherb	<i>Epilobium hirsutum</i>	Blackthorn	<i>Prunus spinosa</i>
Beech	<i>Fagus sylvatica</i>	Bracken	<i>Pteridium aquilinum</i>
		Oak	<i>Quercus</i> sp.
		Creeping buttercup	<i>Ranunculus repens</i>
		Bramble	<i>Rubus fruticosus</i>

Common sorrel	<i>Rumex acetosa</i>
Broad leaved dock	<i>Rumex obtusifolius</i>
Weeping willow	<i>Salix babylonica</i>
Goat willow	<i>Salix caprea</i>
Elder	<i>Sambucus nigra</i>
Groundsel	<i>Senecio vulgaris</i>
Rowan/mountain ash	<i>Sorbus aucuparia</i>
Dandelion	<i>Taraxacum officinale</i> agg.

Common lime	<i>Tilia × europaea</i>
White clover	<i>Trifolium repens</i>
Coltsfoot	<i>Tussilago farfara</i>
Reedmace	<i>Typha latifolia</i>
Nettle	<i>Urtica dioica</i>
Field speedwell	<i>Veronica persica</i>
Common vetch/tare	<i>Vicia sativa</i>

Appendix 3 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 South Yorkshire Ecology 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 Local BAP'.

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 4 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 or 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.

This assessment was made by Joanna Bertwistle BSc (Hons) ACIEEM. Joanna has over 5 years carrying out bat surveys in a professional capacity.

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 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.