Preliminary Ecological Appraisal

Dobroyd Mills, Hepworth

Report reference: R-2513-01

May 2016

Report Title:	Dobroyd Mills, Hepworth
Report Reference:	R-2513-01
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The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report does not constitute legal advice.

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Non-technical Summary

Purpose of report

This report is produced to present an initial assessment of the potential ecological constraints and opportunities relating to a Site known as Dobroyd Mill, Hepworth; to inform the site's potential for development.

The report has been prepared to advise the client of potential ecological constraints and opportunities, in preparing an application for planning permission.

This survey and report will require the support of further bat surveys before submission to planning.

This report in its current form contains information provided as 'advice to the developer' and will require revision prior to its submission to planning, once a final layout is established.

Methodology

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

Findings Key-Points

This report forms an update to earlier Preliminary Ecological Appraisals carried out at the site. The Site is found in a very similar condition to that recorded in 2012, with the development area of the Site occupied by habitats of low ecological value (buildings, hardstanding and amenity grassland); the presence of these habitats is not likely to pose a constraint to development.

Bat roosts have previously been recorded at the Site. Updating these surveys to clarify the position and nature of roosts on Site will be an essential element of any planning application.

A small area of the Kirklees Wildlife Habitat Network is likely to be lost to development. This should be compensated for through focused landscaping elsewhere on Site which will aim to enhance this network.

Introduction

1. Brooks Ecological Ltd was commissioned by Robert Halstead Chartered Surveyors & Town Planners to carry out a Preliminary Ecological Appraisal of Dobroyd Mills and associated land, off Butt Lane, Hepworth, West Yorkshire, SE 163 071.

2. Land covered by this report was subject to previous Ecological Appraisal, carried out by Brooks Ecological on 17th August 2012, reported as R-1352-01 and R-1352-02, to which this report forms an update. These reports should be read in conjunction for full context.

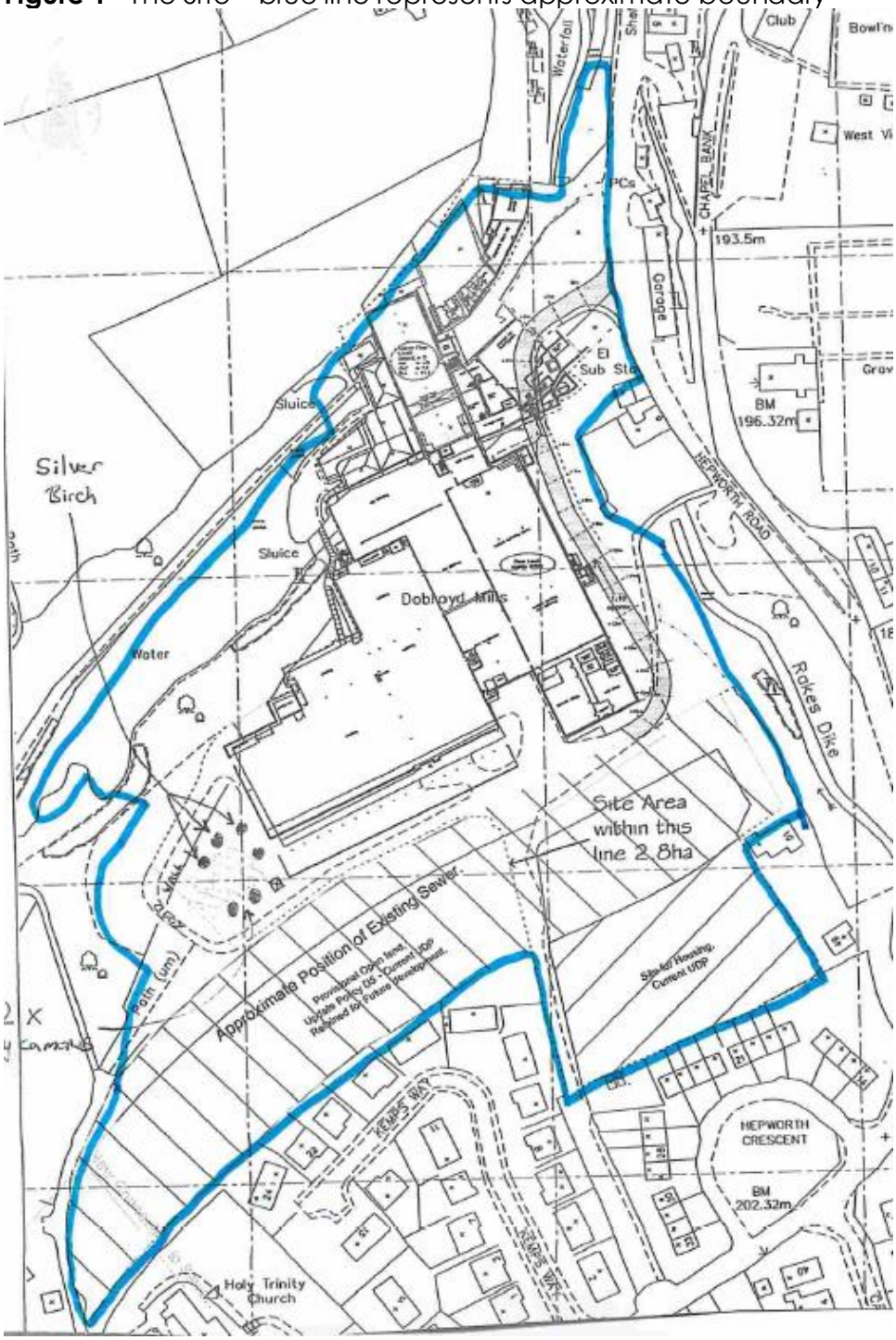
3. This report is produced with reference to British Standard BS42020 'Biodiversity Code of Practice for Planning and Development' and the CIEEM (2013) Guidelines for Preliminary Ecological Appraisal.

Scope

4. The application site 'the Site' includes the former Dobroyd Mill complex, some of which is now abandoned, as well as a section of the associated mill race, hard standing, and surrounding habitats. It is defined in figure 1 below.

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

Figure 1 The Site – blue line represents approximate boundary



Proposals

6. Proposals for the Site detail its redevelopment for residential use. As yet, no detailed plans have been provided, the scheme is therefore assessed against generic impacts of this development type.

Site context

7. The site is located on the northern edge of the small village of Hepworth. Hepworth is found in the bottom of a steep sided valley, formed by a tributary to the River Holme, which runs through the Holmfirth valley, to the north. The Site is found on sandstone bedrock, with the alternating stratigraphy of sandstone, coal measures and mudstone leading to the formation of numerous valleys in the area.

8. Immediate boundaries include a wooded valley to the north west with pasture beyond this. Hepworth Road and a small section of woodland are found to the east, scattered properties are found beyond this road, before the steep, wooded, valley side rises. The small area of existing residential development which makes up Hepworth is found to the south.

9. Beyond these boundaries the landscape is characterised by small grazing pastures, with scattered small development throughout the area. Steeper sections of the valley sides are often wooded with small streams eventually feeding the River Holme, which flows north to the River Colne.

Wildlife corridors

10. The Site occupies a position close to the central node of several minor corridors. This includes Dean Dyke to the south west, Mole Clough to the south east, Jackson Bridge Dike to the north, and an unnamed water course to the east, all of which are found within wooded valleys.

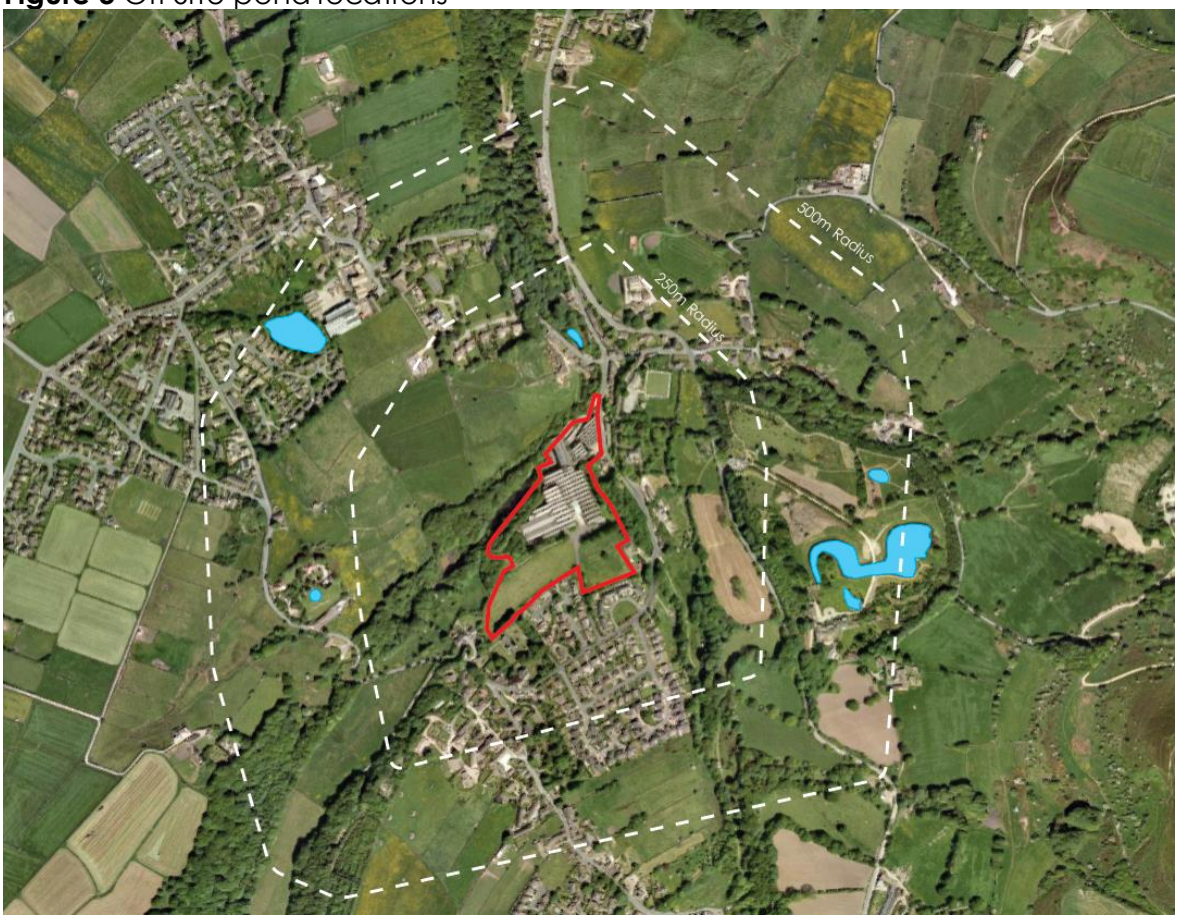
11. Features such as this are relatively important for the movement of wildlife through areas such as this where open pasture dominates the landscape. Much of the land occupied by these corridors is covered in the Kirklees Wildlife Habitat Network. Development at the Site is unlikely to negatively impact the functionality of these corridors given the existing Site use. Instead, there is an opportunity to bolster this network.

Figure 2 Analysis of wildlife corridors (white dashed lines) and higher value habitat (orange) in relation to the Site.

Water bodies

12. Mapping shows five standing water bodies within 500m of the Site boundary. The locations of which are shown on Figure 4 below. Only one of these features is found within 250m, that being a pond adjacent to Jackson Bridge Dike, c.75m north of the northern tip of the site.

Figure 3 Off Site pond locations



Designated Sites

Statutory Designations

Site name	Distance from Site	Designation	Summary Interest
South Pennine Moors	3.2km south west	SAC	Habitats included as primary reason for designation include European dry heath, Blanket bog and old sessile oak woods
Peak District Moors (South Pennine Moors Phase 1)	3.2km south west	SPA	Qualifying species for the SPA include golden plover, merlin and dunlin during the breeding season.

SSSI Impact Risk Zones (IRZs)

13. The site lies within the 5km IRZ for Dark Peak SSSI, but does not fall into one of the highlighted categories which requires consultation between the Local Planning Authority (LPA) and Natural England (NE). The development is of a scale and nature which is unlikely to impact on this SSSI.

Non-Statutory Designations

14. There are seven locally designated sites within 2km of the Site, these are covered by three designation types – Site of Scientific Interest (SSI), Local Wildlife Site (LWS) and Site of Wildlife Significance (SWS). These are:

- Holme House Grasslands SSI & LWS, 1.4km north east,
- Morton Wood SSI & LWS, 280m south west,
- Holme House Wood LWS, 1.4km north east,
- Rakes Wood LWS, 570m south east,
- Wild Boar Clough LWS,1.6km south west,
- Boshaw Whams Reservoir SWS, 1.6km south west ,and
- Mill Shaw Lane SWS, 1.1km south east.

15. All of these sites, with the exception of Morton Wood, are considered sufficiently distant, and found without functional links to the Site, to conclude impacts from development are unlikely.

16. Morton Wood SSI & LWS is found a short distance south of the woodland which runs along, and within, the sites north western boundary, with the two woodlands broken by a minor road.

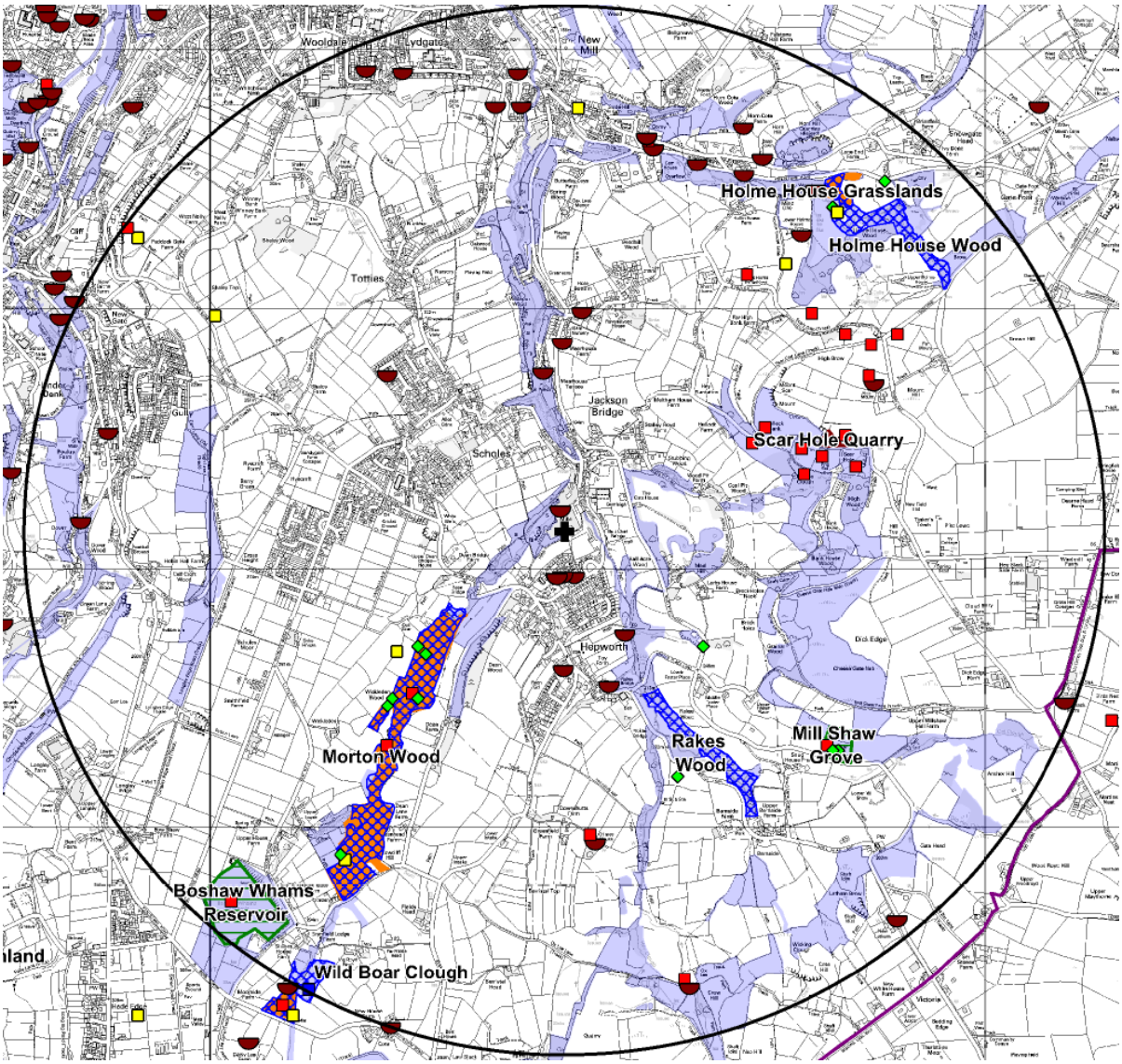
17. Despite this link, Morton Wood occupies a position at a higher elevation than the Site suggesting it will not be impacted upon by run off or pollutants during the development phase. The steep sided valleys in which these woodlands are located mean they will be used infrequently for recreational purposes therefore a potential increase in footfall within Morton Wood from new housing is considered unlikely.

Kirklees Wildlife Habitat Network

18. Many of the wooded valleys in the area are included within the Kirklees Wildlife Habitat Network (WHN), this includes the woodland to the west of the Site, which is found within the Site boundary in places. This section of the WHN links to, and includes, Morton Wood to the south and Wildspur Wood to the north.

19. To facilitate development at the Site a small section of the KWHN which extends into the Site covering an area occupied by scattered broad leafed trees is likely to be lost. However, development of the site provides an opportunity to enhance the WHN through targeted landscaping to the north of the Site where proper links between this woodland and Wildspur Wood to the north can be established. It is felt that the benefits to the WHN of creating these links will outweigh the loss of a small area of scattered trees. This can be secured through the production of a Biodiversity Enhancement and Management Plan.

Figure 4 Locally designated sites and areas covered by KWHN provided by West Yorkshire Ecology



Habitats

Method

20. The survey was carried out during March 2016[1] and followed Phase 1 habitat survey methodology (JNCC, 2010).

Limitations

21. The survey was carried out in March before many perennial plant species have emerged, however the habitat type and likelihood of supporting notable species or communities could still be assessed at this time by the experienced surveyor.

22. Small areas of the Site are inaccessible to survey, including the densest areas of scrub and sections of very steep topography. Despite this, sufficient assessment could be made from the edges of these areas.

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

Results

24. The Site includes a range of habitats typical of former mill complexes such as this, habitats present and their spread were found to be little changed since the previous surveys carried out in 2012. The exceptions to this include a slight increase in areas occupied by scrub and a small section of building has been demolished. The following habitats were identified within the Site and on its immediate boundaries:

- Buildings and hard standing
- Tall herb/scrub
- Woodland/scattered trees
- Watercourse and standing water
- Rock face
- Amenity grassland
- Landscape planting

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

Buildings and hard standing

25. Just over half the Site area is occupied by existing built development and hard standing reflecting its former use as a mill. Many of these buildings are now disused and falling into disrepair, though some of the units have been converted to alternative use. Buildings are described in greater detail in the faunal appraisal section of this report.

26. Access roads, parking and loading bays occupy the majority of the space between buildings. Hard standing is primarily of bitmac construction and found in sound repair, only colonised around the margins and between sections. Species present are limited to common, opportunistic species such cocksfoot (Dactylis glomerata), dandelion (Taraxacum vulgare agg.), herb robert (Geranium robertianum) willowherb (Epilobium sp.), wavy bittercress (Cardamine flexuosa) and acrocarpous mosses.

Figure 5

Typical view of hard standing and buildings around the site

Tall herb / Scrub

27. This habitat type is found in various areas around the Site, its extent having increased since the time of the previous surveys as shown on the updated phase 1 habitat plan. It most frequently occupies areas of the Site where management has ceased or where topography or access prohibits it.

28. Common species, typical of this habitat type were encountered including areas of dense bramble (Rubus fruiticosus agg.), supported by stands of tall ruderal species such as nettle (Urtica dioica), hogweed (Heracleum sphondylium), broad leaved dock (Rumex obtusifolius) and ragwort (Senecio jacobaea), male fern (Dryopteris filix-mas), herb robert (Geranium robertianum) and small willowherbs (Epilobium spp.) also being present. Common coarse grasses are fund in association with this habitat type

including Yorkshire fog (Holcus lanatus), cocksfoot (Dactylis glomerata) and false oat grass (Arrhenatherum elatius).

29. In addition to these species, a range of self sett young trees are present including ash (Fraxinus excelsior), hawthorn (Crataegus monogyna) and sycamore (Acer pseudoplatanus).

30. This updating survey was carried out at a time of year before Himalayan balsam would be expected to have started germinating, or be in its extreme infancy. Although this species was not found on this occasion, we are not aware of any efforts having been made to oversee its removal from the Site suggesting it will still be present.

Figure 6

Scrub habitat in close proximity to mill building.

Woodland/ Scattered Trees

31. Bands of mature broad leaf woodland extend into the Site from the south spreading up parts of both the east and west boundaries, flanking water courses in these areas. This reflects the spread of this habitat type as seen during the first survey.

32. The canopy layer of these woodlands consisting of ash, silver birch (Betula pendula), sycamore, oak (Quercus sp.) and occasional beech (Fagus sylvatica). Holly (Ilex aquifolium), elder (Sambucus nigra), rowan (Sorbus aucuparia), willow (Salix sp.), yew (Taxus baccata) and rhododendron form additional species within the under storey, in association with younger specimens of the canopy layer species.

Figure 7

Looking down valley slope vegetated with mature woodland

33. Steep topography on which much of this woodland is found limits access to closely inspect the ground flora and field layer. However, it was apparent from the safely accessible margins that the heavy shade of the canopy has restricted much of this growth. Species identifiable include shade tolerant plants such as bramble, willowherb, male fern (Dryopteris filix-mas), and ivy (Hedera helix), with harts tongue fern (Phyllitis scolopendrium) found sporadically.

34. Formal tree lines are found following the mill frontage (south) and within the amenity grassland which dominates the southern portion of the Site. Again, this reflects the spread seen during the first survey.

Figure 8

Example of formal tree lines within amenity grassland

35. Species in these areas include Norway maple (Acer platanoides), Lombardy poplar (Populus nigra 'italica'), small leaved lime (Tilia cordata), horse chestnut (Aesculus hippocastanum), cherry (Prunus sp.), ash and oak.

Watercourse and standing water

36. Dean Dike enters the Site in the south west corner. Within the Site boundary only a short section of this watercourse takes a natural profile, before opening out into a concrete lined section where the flow is much reduced. From this point water either flows through a culvert passing below the mill, leaving the Site to the north or enters a sluice pond associated with the mill, again, ultimately flowing under the mill to the north.

Figure 9

Dean Dike at the point it opens out prior to entering sluice or culvert, wooded valley sides within the site boundary seen in background.

37. The open, natural channel of Rakes Dike flows in close proximity to the eastern boundary of the Site. This then enters a culvert passing beneath the northern section of the Site, again leaving the Site to the north and flowing into New Mill Dike.

38. The watercourses and standing water on Site remain as found during the previous survey. Aquatic vegetation is absent from watercourses and standing water on Site, this reflects the channelised and lined nature of these features. Bankside vegetation, much of which is found on steep rock faces and valley sides, reflects adjacent habitats such as the woodland and associated ground flora, as described above, and areas of scrub on more open flat sections in close proximity to the mill buildings.

Rock face

39. A small section of exposed rock face remains present on Site, located close to the eastern boundary.

40. Given the lack of disturbance to this rock face since quarrying ceased it has been well colonised by vegetation. As previously described, a number of saplings have

taken root in cracks and crevices including ash, sycamore, beech, birch and leylandii, with scrub/tall ruderal developing in patches characterised by bramble, willowherb, male fern, comfry (Symphytum officinale), creeping thistle (Cirsium arvense), herb robert, dandelion and London pride (Saxifraga urbinum), with abundant coarse grass species such as cocksfoot and Yorkshire fog.

Amenity grassland

41. The southern half of the Site is occupied by large areas of amenity grassland. This reflects the spread of this habitat type as seen during previous surveys and shows a similar, species poor, sward composition.

42. Common grasses dominate, principally perennial rye grass (Lolium perenne), with frequent bent (Agrostis sp.), fescue (Festuce sp.) and Yorkshire fog. Forbs present reflect similarly common species, including ribwort plantain (Plantago lanceolata), creeping buttercup (Ranunculus repens) and chickweed (Stellaria media).

Landscape planting

43. Organised beds of landscape planting remain present around buildings as seen previously, however, an absence of management has seen an increase in the presence of "weeds" within these areas, with bramble, thistle, nettle all frequent.

Fauna

Bats

45. The Site includes numerous former mill buildings, many of which are now disused. Typical of sites such as this dating from the 1800, the majority of the buildings are large, stone built structures with slate roofs. Given the age of the buildings, a number of areas of damage or disrepair are noted around the Site, many of which provide, or lead to crevices suitable for use by roosting bats.

46. Detailed descriptions of these buildings, and information on the local and legal status of bats is provided in our previous report, R-1352-01, and is not repeated here.

47. Summary of this assessment is shown below, with buildings referred to as labelled in figure 10.

Building No.	Roost potential assessment [2]	Notes
1	Moderate roost potential	As previously seen
2	Limited roost potential	As previously seen
3	Moderate roost potential	Glass section demolished – level of potential remains the same.
4	Moderate roost potential	Large crack appearing in chimney - level of potential remains the same.
5	Very limited roost potential	As previously seen
6	Moderate roost potential	As previously seen
7	Very limited roost potential	As previously seen

[2] Initial inspection was carried out in 2012, in reference to the Bat Conservations Trusts Good Practice Guidelines, 2nd edition. This has since been updated with the 3rd edition released in 2016, though assessments made remain relevant.

Figure 10 Building references in relation to bat roost potential

48. Following the initial assessment of the Site, emergence survey was undertaken on all buildings with Limited or higher potential during August 2012. Throughout the course of these surveys activity was noted to be relatively limited given the availability of good habitat within and around the Site.

49. One occurrence of a potential emergence was noted, with a single bat seen flying from west to east, close to the tower on building 3 from where it potentially emerged.

50. Surveys were also carried out by a third party earlier in July 2012. During these surveys five common pipistrelles were seen to emerge from a location below the eaves on the eastern elevation of building three. During a separate visit, up to 13 common pipistrelles were seen emerging from various locations around window frames, also on the eastern elevation of building 3.

51. As would be expected, general activity during these surveys was highest around habitat associated with Deans Dike, where the watercourse and woodland habitat provide high value commuting routes and foraging grounds. All bats recorded during

surveys were common pipistrelle, though a range of other widespread species would be expected to inhabit the area.

52. The redline boundary has been slightly extended since the time of the initial survey, this now includes the culvert outfall to the north of the Site. Inspection of this feature from distance suggests it is constructed using stone block and brick walls which include a number of cracks and fissures. These features are likely to provide suitable roost crevices and if present further into the culvert may provide potential hibernation roosts.

Amphibians

53. Water bodies at the Site remain as found during the previous survey. This is limited to a sluice pond in which water flow is restricted but remains present. Aquatic vegetation is absent from this feature.

54. The sluice pond found on Site is assessed as being of very limited value to breeding amphibians, though may be suited to frog – the only amphibian recorded in the search radius. The majority of the site area is occupied by built development, hard standing and closely cut amenity grassland. This provides low value amphibian terrestrial habitat.

55. Beyond the Site boundaries the closest standing water body is located adjacent to Jackson Bridge Dike, c.75m north of the site boundary. This water body is surrounded by high value terrestrial habitat which extends to the north but is cut off from the Site to the south by a road. Should amphibians be breeding in this water body it is concluded that they would remain within this terrestrial habitat, unlikely to move into land within the Site.

56. No records of great crested newt are held within the search radius and their likely absence from Site is concluded.

Birds

57. The majority of the site is occupied by built development, and, considering the age and condition of the buildings it should be assumed that species which make use of cracks and holes in buildings will be present during the nesting season. The presence of these species is not likely to pose a material constraint to development but should be considered when planning the timetable of works given it is an offence to damage or destroy any active nest.

58. In addition to built development, the Site provides areas of habitat which are likely to support a greater range of species associated with the woodland and riparian corridor. However, these habitats on Site are relatively small, and abundant in the

wider area. Considering the topography around which these habitats are located it is likely they will be retained through development and impacts on species using them will be minimal.

White Clawed Crayfish

59. As Dean Dike flows into the Site in the south west corner its channel provides suitable habitat for this species. Although not recorded within the search radius white clawed crayfish are known to be present within the Holme Valley.

60. At present it is assumed that development will not impact upon the watercourse or indeed the steep valley sides, the presence of which will provide sufficient stand off from the water course. Assuming this is the case, impacts on this species would not be anticipated, and providing appropriate plans are put in place to ensure the water course is not polluted.

Otter and water vole

61. As the watercourse approaches the mill buildings the channel becomes concrete lined and therefore unsuitable in supporting water vole burrows. However, further upstream, to the south of the site, suitable substrate is present though, relatively shallow slopes around the water mark and the presence of rocks make this habitat suboptimal. Water vole are not recorded within the search radius, their likely absence from Site is concluded, and should they be present the valley slopes will provide a suitable stand off from development to ensure water vole are not disturbed.

62. Otter are not recorded within the search radius and no evidence of this species was noted at the time of survey. Though Dean Dike provides suitable habitat, albeit, with the mill terminating this habitat, separating it from other suitable water courses in the area. Once again, the valley sides provide sufficient standoff between the watercourse and future development to minimise any impacts on this species.

Badger

63. A number of dated badger records have been returned from within the search radius. These include a field record from 1997 and four sett records from 1986 and 87. All records are over 1.5km from the site and relate to habitat which does not share functional links to the site.

64. No evidence of badger could be found within the small areas of suitable habitat on Site, a likely absence of this species is concluded.

Invasive Species

65. Three species of plant listed on Schedule 9 of the Wildlife and Countryside Act (1981), making it an offence to cause or allow their spread in the wild have been identified within the Site boundary.

Himalayan Balsam

66. Himalayan balsam (Impatiens glandulifera) was found scattered around the Site during the previous survey, most frequently associated with the riparian corridor but also in close proximity to buildings and around areas of gravel hard standing. This updating survey has been carried out at a time of year where Himalayan balsam would not yet be apparent, its ongoing presence is therefore assumed. This species is easy to eradicate from most areas, however it is very capable of spreading, and is very successful along watercourses.

Cotoneaster / Monbretia.

67. Ornamental planting around mill frontages includes these species. Whilst listed on Schedule 9 of the Wildlife and Countryside Act (1981) (as amended). They are not considered to present a significant risk in this location. Whilst we are not aware of specific guidelines relating to the disposal of these plants it would be a sensible precaution to dispose of it through burning on Site or disposal at approved landfill. The plant, berries, seeds or bulbs should not be buried, mulched or added to rot piles as this is likely to lead to its spread.

Key Findings

68. The Site is found largely unchanged since the previous surveys. It is therefore concluded that the initial assessment of ecological value at the Site still stands. That being; the area of proposed development supports common habitats of poor species diversity, much affected by the sites former use, such as being occupied by built development. These are assessed as being of low ecological value, their presence is unlikely to pose a constraint to development, notwithstanding bats, discussed below, the Site is unlikely to support any protected or notable species.

Constraints

69. Dean Dike and associated woodland within the Site boundary to the west provide areas of higher value habitat, which is included within the Kirklees Wildlife Habitat Network (KWHN). Currently, proposals will not affect this corridor, and the steep, wooded valley sides provide sufficient buffer the water course to mitigate the potential for impacts on the protected species which it may support. As such further survey is not required, unless proposals change and the woodland or water course is to be affected.

70. A small spur of the KWHN extends further into the site to cover a small group of trees at the edge of the mill complex. This is likely to be lost to development, thus impacting upon the area covered by the KWHN.

71. However, development at the Site provides the opportunity to bolster this network in other areas meaning the key aims of the habitat network are achievable/will not be detrimentally impacted upon. Enhancing this network, and compensating for areas lost can be best achieved through incorporating heavy green infrastructure such as areas of tree planting, tree lines, and hedges along the sites east and west boundaries. This will serve to increase links within the habitat network between areas covering Dean Dike, Jackson Bridge Dike and Mole Clough, all of which are at present separated.

72. Three species of plant listed on Schedule 9 of the Wildlife and Countryside Act have been identified on Site. Appropriate efforts should be made to enact the removal of these species prior to the start of works on Site.

Ecological Enhancement

73. The requirement for development to make a positive contribution to biodiversity is clearly set out guidance such as the NPPF and BS:42020 - beyond mitigating or compensating any potential impacts.

74. The following themes were highlighted in the previous report which provide opportunities for the proposals to deliver such a contribution:

75. It is recommended that where possible, existing trees are retained, especially the older specimens along the western edge of the current mill. Where removal of trees is required, new trees should be planted using locally relevant species such as oak (Quercus sp), ash (Fraxinus excelsior), field maple (Acer campestre), birch (Betula sp.), rowan (Sorbus aucuparia) and holly (Ilex aquifolium).

76. The site could be enhanced in terms of providing roosting opportunities for bats. Up to 10 features providing artificial bat roosting could be incorporated into the southeast and south-western facing elevations of new builds.

77. Additional nesting sites could be provided for local bird species; the remaining mill buildings could be fitted with swift boxes (suggest Envisage code: 0114 or similar) while general purpose nest boxes could be fitted in suitable locations on trees or new buildings (suggest Envisage code: 0105 or equivalent).

78. The habitat along Dean Dike currently links with Morton Wood, a Site of Scientific Interest, some 500m to the south. Enhancement of this could best be achieved by production of a habitat management plan for this area, to improve current value for wildlife and provide valuable connectivity with the habitat to the south.

Further ecological input required

79. Guidance provided by Clause 8 BS:42020 and ODPM circular 06/05 (2005) makes it clear that proposals and planning decisions should be informed by sufficient information - this is particularly the case in respect of European Protected Species (EPS).

80. Additional surveys will be required in terms of confirming and supporting this preliminary assessment. These are summarised in the tables below:

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

Survey	Rationale	Timing
Bat Survey	Disturbance or destruction of roosts being a criminal offence*. Bat roosts have been identified in the past at the Site, clarity on the location and use of these or any other roosts is required to inform a detailed Planning application and a support a European Protected Species Mitigation Licence application.	Emergence surveys during summer, likely to require a minimum of three surveys. Hibernation survey of culvert during winter may be required depending on finalised proposals.

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

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

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

Survey	Rationale	Timing
Nesting bird surveys	Destruction of active nests is prohibited by law* Survey will be needed prior to the Site clearance of only if carried out during the period March - August (inclusive). This would allow and active nests to be identified and protected.	Immediately prior to clearance

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

Issues to be addressed in layout or project design

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

Table 3 Issues to be addressed in layout or project design

Feature	Rationale / Comments
The layout of the site should retain as much of the existing network of trees as possible, and use native species planting to enhance green corridors through and around the site. Any tree loss should be over-compensated through high quality native planting on site.	Compliance with NPPF (including) Para 109 and Para 118. Kirklees policy DLP 31:12.1
Incorporating proposals for habitat enhancement into the proposals plans can avoid the need for these to be conditioned later. Specifically this should include landscaping aimed at enhancing the KWHN.	NPPF Para 114. Kirklees policy DLP 31: 12.1
All retained trees and hedgerows and plantation should be protected to BS 5837:2012.	Good practice requirement. BS 5837:2012 / BS 42020:2013 Should be informed by detailed topographical and arboricultural surveys.
The Site layout should be designed to ensure the corridor of Dean Dike and associated woodland are not detrimentally impacted upon. The primary consideration being that the corridor is not subject to excessive illumination.	To ensure detrimental impacts on protected species using this corridor are avoided. See Appendix 3 for further detail

Appendices

1. Extended Phase 1 Habitat Plan
2. Explanatory Notes and Resources
3. Bat Activity Survey Rationale
4. Information on legislation / protection

References

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Appendix 1 – Extended Phase 1 Habitat Plan

Target notes:

1 Cotoneaster and montbretia within ornamnetal planting

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Grounded advice

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Project: Dobroyd Mills, Hepworth

Title: Extended Phase 1 Habitat Plan

Drawing Number: D-2513-01.1

Scale: Do not scale Date: May 2016

Revision:

Appendix 2 – Explanatory Notes and Resources Used

Site context

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

Designated Sites

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

Functional linkage with off-Site habitats

85. When assessing these we consider whether the Site could be functionally linked to them, considering links such as;

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

Kirklees Wildlife Habitat Network

86. The Kirklees Habitat Network is referred to in Policy DLP 31:Section 12.1 – so is afforded a level of protection - but this should be in relation to being able to maintain physical linkages for wildlife.

Policy DLP 31 View Comments (30) Add Comments

Biodiversity & Geodiversity

The council will seek to protect and enhance the biodiversity and geodiversity value of the range of international, national and locally designated wildlife and geological sites, the Wildlife Habitat Network, Habitats and Species of Principal Importance in Kirklees.

Proposals which may directly or indirectly compromise achieving the conservation objectives of a designated or candidate European protected site will not be permitted unless the proposal meets the conditions specified in Article 6 (3) - (4) of the Habitats Directive.

Development proposed within or outside a designated Site of Special Scientific Interest, likely to have an adverse effect on the site's special conservation features, will not normally be permitted. Exceptionally, development will be allowed where the benefits of the development clearly outweigh the impacts on the site's special conservation features and measures are provided to mitigate harmful impacts.

Proposals having an adverse effect on a Local Wildlife Site or Local Geological Site, Ancient Semi-natural Woodland, Veteran Tree or other important tree, will not be permitted unless the development can be shown to be of an overriding public interest and there is no alternative means to deliver the proposal. In all cases, full compensatory measures would be required and secured in the long term.

Proposals will be required to protect the Wildlife Habitat Network, Habitats of Principal Importance, Species of Principal Importance unless:

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

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

Method

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

Faunal appraisal

88. 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').

89. Records of notable species supplied from a 2km area of search by West Yorkshire Ecology (WYE) are used to inform this appraisal.

90. We discuss further only notable species or groups which could be a potential constraint due to the presence of suitable habitat and their presence (or potential presence) in the wider area. We screen out and do not present accounts of notable species or groups which do not meet these criteria – in some cases it may be necessary to explain this reasoning.

Evaluation

91. 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.

92. 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.

93. 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

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

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

Appendix 3 – Bat Activity Survey Rationale

95. 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.

96. 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.

97. 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. '*

98. 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.

99. At this site clear conclusions can be drawn regarding which areas of habitat are of value to local bat populations. This is supported by observations made during previous emergence surveys. These habitats – Dean Dike and associated corridor, will be retained through development. To ensure the absence of impacts a specific lighting plan should be developed for this area of the site.

100. This lighting plan should demonstrates that light spill will be minimised. Impacts can be minimised by implementing the following (Stone, E.L. (2013):

- Use of narrow spectrum lights with no UV or warm white light;
- Direct lighting downwards;

- Use of low level lighting (given that much of the corridor is found at a lower topography than the developable area lighting around the woodland edge should be installed no higher than 2m above ground level);
- Use of hoods and cowls to direct lighting onto required areas and not onto adjacent habitats;
- Restrict hours of light.

Appendix 4 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 published in 27 March 2012 replacing the majority of previous Planning Policy Guidance notes (PPGs) and Planning Policy Statements (PPSs). The most relevant paragraphs from the NPPF are set out below.

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

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

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

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

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

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

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

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

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

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

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

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