

Meadow School, Royal Ln, Uxbridge UB8 3QU.

Biodiversity Net Gain and Landscape & Ecology Management Plan Report



Meadow School – BNG Report
EHM Ltd

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Executive Summary

EHM Ltd has been commissioned to carry out a Biodiversity Net Gain (BNG) assessment of part of a School located in Hillingdon, Uxbridge. This assessment is based on a previous Preliminary Ecological Assessment (PEA) conducted by EHM. A Landscape Ecology Management Plan (LEMP) has also been produced to ensure effective long term management of the site.



The site is split into two sections, east and west, and are part of an active school site. The surrounding school is in the process of being re developed. The east section of the site is the main school area containing several prefabricated buildings and hardstanding. The west section has a part of the newly constructed running track and sports field, to the north of which lies a small grass and scrub area with several mature trees. Just outside the west-most boundary there is a strip of scrub and mostly young trees, beyond which lies a large amenity grass field.

A small wildlife garden is located in the northeast corner. This has been recently mown. Comprised mostly of short amenity grass. There is a rotten tree stump here, as well as a small brash pile to the north of B6, a soil and vegetation pile northeast of B7 with the remnants of a pond next to this. There appear to be foxes commuting under the fence in the northeast-most corner, likely going under buildings B6 and B7 where substantial holes were seen

Directly north, east and south there are residential areas and a hospital. Directly west lies Philpots Farm open space and the River Pinn beyond this (290m west). The Grand Union Canal lies 1.3km west and beyond this is the River Colne. Colham Green lies 200m to the east

Results

The headline results of the DEFERA Matrix 3.1 calculations are shown below. More detailed results are available in the appendix. As can be seen the on-site net change in Habitat units is a 10.36% net gain. This meets the desired 10% net gain target.

The hedgerow units have increased by 100%, this is achieved because there are no hedgerows existing on site.

On-site baseline	<i>Habitat units</i>	2.21
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	2.44
	<i>Hedgerow units</i>	0.23
	<i>River units</i>	0.00
On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	10.36%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.23
	<i>Hedgerow units</i>	0.23
	<i>River units</i>	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	10.36%
	<i>Hedgerow units</i>	100.00%
	<i>River units</i>	0.00%
Trading rules Satisfied?	Yes ✓	

Landscape Ecology Management Plan

The following objectives and targets have been set out in the LEMP.

Site:	The Avenue School
Objective:	Maintain and enhance new and existing habitats on site to meet required BNG habitat condition
Target 1:	Increase floral diversity on site
Target 2:	Install and maintain at least 2 bat boxes
Target 3:	Install and maintain at least 2 house sparrow nest box
Length of plan:	5 years

1. Introduction

EHM Ltd has been commissioned to carry out a Biodiversity Net Gain (BNG) assessment of part of a School located in Hillingdon, Uxbridge. This assessment is based on a previous Preliminary Ecological Assessment (PEA) conducted by EHM¹. A Landscape Ecology Management Plan (LEMP) has also been produced to ensure effective long term management of the site.

1.1. Project outline

EHM Ltd understands that the proposed development will involve the demolition of the existing school buildings and development of new school buildings and landscaping.

1.2 Site Description

The site is split into two sections, east and west, and are part of an active school site. The surrounding school is in the process of being re developed. The east section of the site is the main school area containing several prefabricated buildings and hardstanding. The west section has a part of the newly constructed running track and sports field, to the north of which lies a small grass and scrub area with several mature trees. Just outside the west-most boundary there is a strip of scrub and mostly young trees, beyond which lies a large amenity grass field.

A small wildlife garden is located in the northeast corner. This has been recently mown. Comprised mostly of short amenity grass. There is a rotten tree stump here, as well as a small brash pile to the north of B6, a soil and vegetation pile northeast of B7 with the remnants of a pond next to this. There appear to be foxes commuting under the fence in the northeast-most corner, likely going under buildings B6 and B7 where substantial holes were seen

Directly north, east and south there are residential areas and a hospital. Directly west lies Philpots Farm open space and the River Pinn beyond this (290m west). The Grand Union Canal lies 1.3km west and beyond this is the River Colne. Colham Green lies 200m to the east.

The site (as shown on figure 1) is located in Uxbridge, London; TQ 06425 81686 and TQ 06544 81710. The area shown in figure 1 is larger than the development area and varies slightly from the BNG assessment area.

1.3 Aims of PEA

- Provide a baseline assessment of the habitats on site using the DEFRA metric
- Provide a predicted score based on proposed habitat creation and enhancement using DEFRA metric
- Provide suitable long term management recommendations to ensure habitats reach and maintain their desired condition.

¹ Meadow School, Royal Ln, Uxbridge UB8 3QU. PEA & Mitigation. RP-HED-063. EHM Ltd. 15/12/2022.



Figure 1: Approximate boundary of the site (image from Google).

1.4 limitations

The habitat assessments in this report are based on the findings of the preliminary ecological assessment. The area measurements have been estimated based on plans and drawings issued to EHM Ltd. Though the calculations have been carried out by a competent ecologist it is possible an error occurs. All calculations and recommendations have been carried out in good faith.

1.5 Relevant Legislation and Planning policies

A full list of UK wildlife legislation and designations can be seen in the appendix. Relevant legislation implications for this site include;

- The Conservation of Habitats and Species Regulations 2010 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- The Countryside and Rights of Way Act 2000;
- The Natural Environment and Rural Communities Act (NERC Act) 2006;
- Environment Act (2022)

Planning policies, both local and national, may affect any proposed development. Relevant planning policies to this development include;

- National Planning Policy Framework (NPPF)

2. Methods

A Biodiversity Net Gain Assessment has been conducted using the DEFERA Biodiversity Metric 3.1. This was conducted by a competent and qualified ecologist. The methodology set out the Biodiversity Metric 3.1 User guide was followed². Biodiversity metric 3.1 uses habitats, the places in which species live, as a proxy to describe biodiversity. These habitats are converted into 'biodiversity units'. These biodiversity units are the 'currency' of the metric.

2.1 Mitigation Hierarchy

Biodiversity metric 3.1 supports and reinforces the application of the mitigation hierarchy which is an important principle of ecological good practice. Applying the mitigation hierarchy means aiming to retain habitats in situ and avoiding or minimising habitat damage so far as possible, before looking to enhance or recreate habitats. This sequential approach is encouraged by biodiversity metric 3.1 because it allows overall biodiversity gains to be achieved more easily through the avoidance of on-site habitat losses, rather than relying solely on the creation of new habitat or the enhancement of existing habitat. It works this way because the metric applies multipliers that are based on the risks inherent in creating or restoring habitat, and which are not applicable when existing habitat is safeguarded.

2.1.1 Statutory Obligations

The use of the biodiversity metric does not negate the projects statutory obligations in relation to protected species and habitats. The PEA should be referenced for details of these obligations in particular the potential impact to protected species such as nesting birds, bats and reptiles.

2.2 Calculating Units

Biodiversity units are calculated using the size of a parcel of habitat and its quality. The metric uses habitat area (measured in hectares) as its core measurement, except for linear habitats (hedgerows and lines of trees and rivers and streams) where habitat length (measured in kilometres) is used.

To assess the quality of a habitat biodiversity metric 3.1 scores:

- Habitats of different types, such as woodland or grassland, according to their relative biodiversity value or distinctiveness. Habitats that are scarce or declining typically score highly relative to habitats that are more common and widespread.
- The condition of a habitat. Scoring the biodiversity value of the habitat relative to others of the same type.
- Being 'better' and 'more joined-up' are important facets of habitats that can contribute to halting and reversing biodiversity declines, so the metric also accounts for whether or

² STEPHEN PANKS A, NICK WHITE A, AMANDA NEWSOME A, MUNGO NASH A, JACK POTTER A, MATT HEYDON A, EDWARD MAYHEW A, MARIA ALVAREZ A, TRUDY RUSSELL A, CLARE CASHON A, FINN GODDARD A, SARAH J. SCOTT B, MAX HEAVER C, SARAH H. SCOTT C, JO TREWEEK D, BILL BUTCHER E AND DAVE STONE A 2022. Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England.

not the habitat is sited in an area identified, typically in a relevant local strategy or plan, as being of strategic significance for nature.

2.3 Principles and Rules of the Biodiversity Matrix

2.3.1 Principles

The Biodiversity matrix works under the following principles;

- **Principle 1:** The metric does not change the protection afforded to biodiversity. Existing levels of protection afforded to protected species and habitats are not changed by use of this or any other metric. Statutory obligations will still need to be satisfied.
- **Principle 2:** Biodiversity metric calculations can inform decision-making where application of the mitigation hierarchy and good practice principles¹⁴ conclude that compensation for habitat losses is justified.
- **Principle 3:** The metric's biodiversity units are only a proxy for biodiversity and should be treated as relative values. While it is underpinned by ecological evidence the units generated by the metric are only a proxy for biodiversity and, to be of practical use, it has been kept deliberately simple. The numerical values generated by the metric represent relative, not absolute, values.
- **Principle 4:** The metric focuses on typical habitats and widespread species; important or protected habitats and features should be given broader consideration.
 - Protected and locally important species needs are not considered through the metric, they should be addressed through existing policy and legislation.
 - Impacts on protected sites (e.g. SSSIs) and irreplaceable habitats are not adequately measured by this metric. They will require separate consideration which must comply with existing national and local policy and legislation. Data relating to these can be entered into the metric, so as to give an indicative picture of the biodiversity value of the habitats present on a site, but this should be supported by bespoke advice.
- **Principle 5:** The metric design aims to encourage enhancement, not transformation, of the natural environment. Proper consideration should be given to the habitats being lost in favour of higher-scoring habitats, and whether the retention of less distinctive but well-established habitats may sometimes be a better option for local biodiversity. Habitat created to compensate for loss of natural or semi-natural habitat should be of the same broad habitat type (e.g. new woodland to replace lost woodland) unless there is a good ecological reason to do otherwise (e.g. to restore a heathland habitat that was converted to woodland for timber in the past).
- **Principle 6:** The metric is designed to inform decisions, not to override expert opinion. Management interventions should be guided by appropriate expert ecological advice and not just the biodiversity unit outputs of the metric. Ecological principles still need to be applied to ensure that what is being proposed is realistic and deliverable based on local conditions such as geology, hydrology, nutrient levels, etc. and the complexity of future management requirements.

- **Principle 7:** Compensation habitats should seek, where practical, to be local to the impact. They should aim to replicate the characteristics of the habitats that have been lost, taking account of the structure and species composition that give habitats their local distinctiveness. Where possible compensation habitats should contribute towards nature recovery in England by creating ‘more, bigger, better and joined up’ areas for biodiversity.
- **Principle 8:** The metric does not enforce a mandatory minimum 1:1 habitat size ratio for losses and compensation but consideration should be given to maintaining habitat extent and habitat parcels of sufficient size for ecological function. A difference can occur because of a difference in quality between the habitat impacted and the compensation provided. For example, if a habitat of low distinctiveness is impacted and is compensated for by the creation of habitat of higher distinctiveness or better condition, the area needed to compensate for losses can potentially be less than the area impacted. However, consideration should be given to whether reducing the area or length of habitat provided as compensation is an appropriate outcome.

2.3.2 Rules

The following rules apply to the biodiversity matrix;

- **Rule 1:** Where the metric is used to measure change, biodiversity unit values need to be calculated prior to the intervention and post-intervention for all parcels of land / linear features affected.
- **Rule 2:** Compensation for habitat losses can be provided by creating new habitats, or by restoring or enhancing existing habitats. Measures to enhance existing habitats must provide a significant and demonstrable uplift in distinctiveness and/or condition to record additional biodiversity units.
- **Rule 3:** ‘Trading down’ must be avoided. Losses of habitat are to be compensated for on a “like for like” or “like for better” basis. New or restored habitats should aim to achieve a higher distinctiveness and/or condition than those lost. Losses of irreplaceable or very high distinctiveness habitat cannot adequately be accounted for through the metric.
- **Rule 4:** Biodiversity unit values generated by biodiversity metric 3.0 are unique to this metric and cannot be compared to unit outputs from version 2.0, the original Defra metric or any other biodiversity metric. Furthermore, the three types of biodiversity units generated by this metric (for area, hedgerow and river habitats) are unique and cannot be summed.
- **Rule 5:** It is not the area/length of habitat created that determines whether ecological equivalence or better has been achieved but the net change in biodiversity units. Risks associated with creating or enhancing habitats mean that it may be necessary to create or enhance a larger area of habitat than that lost, to fully compensate for impacts on biodiversity.
- **Rule 6:** Deviations from the published methodology of biodiversity metric 3.0 need to be ecologically justified and agreed with relevant decision makers. While the methodology is expected to be suitable in the majority of circumstances it is recognised that there

may be exceptions. Any local or project-specific adaptations of the metric must be transparent and fully justified.

3. Habitats Present

3.1 Habitat Description (on-site)

The following habitat descriptions are taken from the PEA report. The location and extent of the habitats are shown in the figure in appendix 1. TN refers to a target note, and the habitat codes refer to the Phase I habitat classification. The UKHAB habitat description has been added following the habitat translation table set out in the DEFRA matrix.

The area used for the BNG assessment varies slightly to that outlined in the PEA being smaller and excluding the majority of trees and scrub to the west of the site.

CIEEM guidance recommends that the value or potential value of an ecological resource or feature should be determined within a defined geographical context³. It recommends the following frame of reference;

- International;
- UK;
- National (i.e. England/Northern Ireland/Scotland/Wales);
- Regional;
- County (or Metropolitan - e.g. in London);
- District (or Unitary Authority, City, or Borough);
- Local or Parish; and
- Site
- Within zone of influence (of habitat) only

The habitats will be assessed based on these criteria.

Building (J3.6)/ Developed land; sealed surface

The assessment area contains 9 buildings and structures, nine in the west section and two on the east section. These are described below:

- B1: Two small plastic storage sheds adjacent to watch other. Both have a pitched roof, but unlikely to have roof voids.
- B2: Single level prefabricated raised building with a slight pitch to the roof for water runoff. The roof appears to be metal material.
- B3: A single level log cabin style structure with a pitched roof lined with roofing felt. No roof void (seen through a window).

³ GUIDELINES FOR ECOLOGICAL IMPACT ASSESSMENT IN THE UNITED KINGDOM. IEEM. June 2006.

- B4: A single level log cabin style structure with a pitched roof lined with roofing felt. No internal inspection and the windows were covered so it is not known if there is a roof void - it is unlikely as this is a similar structure to B3.
- B5: A prefabricated single level raised building with a slight pitch to the roof cladded using several different types of plastic materials.
- B6: Single level prefab building with a flat roof lined with roofing felt.
- B7: Single level green prefab raised building with a slight pitch to the roof, which appears to be metal lined.
- B8: A single level green prefab raised building with a flat roof lined with metal. The outside layer has been damaged and the wood beneath has become like a sponge.
- B9: Small storage structure made with breeze blocks with a flat roof lined with roofing felt.

Part of an existing school building is located to the south of the western section. The buildings are considered as having a benefit at a site level.

Amenity Grass (J1.2)/ Modified grassland

Several patches of amenity grass are located across the site. The newly created sports field to the southwest was kept short. To the north of the sports field was an area of amenity grass that wasn't recently mown, but was still relatively short at the time of the survey. Several other small patches of amenity grass are located across the site.

Species include perennial ryegrass (*Lolium perenne*), dock (*Rumex sp.*), narrow leaved plantain (*Plantago lanceolata*), sow thistle (*Sonchus* species and Creeping buttercup (*Ranunculus repens*).

The grassland contains a relatively short sward that provides little opportunity for protected and notable species. The amenity grassland is considered as having a benefit at a site level.

Introduced Shrub (J1.4)/ Introduced shrub

Small areas of introduced shrubs are located around the buildings at the centre and northeast of the site. Species include bamboo and laurel with some yew in between

The denser areas may provide some nesting bird opportunities. The introduced shrubs are considered as having a benefit at a site level.

Mixed Scattered Trees (A3.3)/ Urban tree

The site contains several scattered trees. Species include Oak (*Quercus robur*), common beech (*Fagus sylvatica*), Silver Birch (*Betula pendula*), Yew (*Taxus baccata*) and cherry (*Prunus sp.*). There were also several mature and young trees across the eastern section. There is also a mature tree along the eastern boundary, three young trees to the north of the eastern boundary, and a single mature tree in the garden to the northeast. Two young Hornbeam (*Carpinus betulus*) have been newly planted in the planted areas to the northwest of the eastern section. Species noted where cherry (six of the trees), hornbeam and a single ash.

Some of the larger trees have the potential to support protected and notable species and provide connectivity across the local landscape. The scattered trees are considered as having a benefit at a local level.

Scrub (A2.2)/ Mixed scrub

Several small areas of scrub, mostly between buildings B2 and B3,. Species included bramble, nettle (*Urtica dioica*), Ivy (*Hedera helix*), Blackthorn (*Prunus spinosa*) and Field Maple (*Acer campestre*). The scrub is likely to provide nesting bird opportunities and provides an increase in native plant species on site. The scrub is considered as having a benefit at a site level.

Summary

The table below summaries the habitats on site and their value within a geographical context.

Habitat	Value	Comments
Hardstanding	Zone of Influence	The areas of hard standing provide little opportunities for wildlife.
Building	Site	Several buildings and structures on site.
Amenity grassland	Site	Several areas of short mown grassland with limited opportunities for protected and notable species.
Scattered trees	Local	A number of trees scattered across the site, some of which are mature. Some of the trees may support protected and notable species.
Introduced shrubs	Site	Small sections of ornamental shrubs.
Scrub	Site	Sections of mostly sparse scrub.

Table 1: Summary of value of habitats present on site.

5. Biodiversity Net Gain (BNG) Assessment

5.1 Net Gain Assessment

The local planning authority requires the development to demonstrate a net gain in biodiversity. Mandatory Biodiversity Net Gain, as part of the Environment Act (2022), is likely to come into place in late 2022/ early 2023. The National Planning Policy Framework (NPPF) states that planning policy should identify and pursue opportunities for securing measurable gains for biodiversity. The mandatory net gain requirement is likely to be set at 10% therefore the aim for this project will be to demonstrate at least a 10% net gain in biodiversity.

The measurement for assessing biodiversity net gain will be the Natural England Biodiversity Metric 3.1⁴. This will be used to provide a baseline assessment of habitats on site and a projected value of habitats post development following the proposed enhancements.

The Biodiversity Metric 3.1 includes a rule that requires that lost habitats must be compensated for like for like” or “like for better” basis. New or restored habitats should aim to achieve a higher distinctiveness and/or condition than those lost.

5.2 Baseline Assessment

The baseline assessment is calculated by categorising the broad habitat and habitat type, the Phase I habitat category is converted into the corresponding UK Habitat Classification. This is based on the assessment carried out in section 3.1. The matrix then assigns the habitat distinctiveness, the distinctiveness of a habitat is considered as a component of the quality of a habitat parcel. The distinctiveness band of each habitat has been preassigned in biodiversity metric 3.1.

A strategic significance is also assigned to each habitat type. Strategic significance relates to the spatial location of a habitat parcel and works at a landscape scale. It gives additional biodiversity unit value to habitats that have been identified as habitats of strategic importance to that local area. For this assessment the London Biodiversity Action Plan will be used.

Biodiversity metric 3.1 uses habitat condition as one of the measures of habitat quality. The condition assessment approach used in biodiversity metric 3.0 measures a habitat parcel against the ecological optimum state for that particular habitat. The biodiversity matrix provides a list of assessment criteria for each habitat type. The condition of the habitat is then assessed against these criteria; the more criteria present within the habitat the higher the assessed condition.

⁴ STEPHEN PANKS A, NICK WHITE A, AMANDA NEWSOME A, MUNGO NASH A, JACK POTTER A, MATT HEYDON A, EDWARD MAYHEW A, MARIA ALVAREZ A, TRUDY RUSSELL A, CLARE CASHON A, FINN GODDARD A, SARAH J. SCOTT B, MAX HEAVER C, SARAH H. SCOTT C, JO TREWEEK D, BILL BUTCHER E AND DAVE STONE A 2022. Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England.

5.2.1 Baseline assessment scores

The table below summarises the baseline habitat assessment. The plan in appendix 2 shows the location of the habitats used for the BNG baseline.

Most of the existing trees on site have been classed as urban tree as they best suit this categorisation. The area of the urban tree has been calculated using the Urban Tree helper within the matrix.

Broad habitat	Habitat type	Area (ha)	Distinctiveness	Condition	Strategic Significance
On Site Area					
Urban	Developed land; sealed surface	0.536	V. Low	N/A	Low Strategic Significance
Urban	Introduced shrub	0.0185	Low	N/A	Low Strategic Significance
Heathland and shrub	Mixed Scrub	0.0032	Low	Poor	Low strategic significance
Grassland	Modified Grassland	0.0578	Low	Moderate	Low strategic significance
Urban	Urban Tree	0.2197	Medium	Moderate	Medium Strategic Significance
On-site Baseline					2.21 Habitat Units

Table 2: Summary of BNG baseline assessment.

5.3 Proposed Enhancements and Post development assessment

It is understood that the project needs to achieve a 10% net gain in biodiversity. To help achieve this several discussions within the design team have been carried out to develop a suitable design that allows the project to achieve a net gain in biodiversity. The final design includes retaining and enhancing habitats on site and the creation of new habitats.

Plans showing the approximate layout of the habitats can be seen in appendix 3. The tables below summarise the enhanced and created habitats based on the habitat classification used in the BNG calculations, the planting mixes shown in appendix 3 that each habitat classification represents are shown in parenthesis.

The proposed enhancements and planting are outlined in the PEA and mitigation report conducted by EHM⁵.

Details of long term management are set out in the LEMP.

⁵ Meadow School, Royal Ln, Uxbridge UB8 3QU. PEA & Mitigation. RP-HED-063. EHM Ltd. 15/12/2022.

The scattered trees will be retained on site along with a section of amenity grassland. The plan in appendix 3 shows the proposed landscaping enhancements for the site post development. The reference in the landscape plan is shown in parentheses next to the habitat description used in the BNG calculations.

Habitat	Area (ha)	Distinctiveness	Desired condition	Strategic Significance	Required Enhancements/ Management
Developed land; sealed surface	0.0448	V.Low	N/A - Other	Low Strategic Significance	<ul style="list-style-type: none"> Erect Bird and Bat boxes within fabric and on the building.
Urban Tree/ retained tree (trees)	0.9423	Medium	Moderate	Medium strategic significance	<ul style="list-style-type: none"> Plant trees across site Plant to required horticultural standards. Manage to horticultural standard Allow dead wood to be retained where possible Manage to horticultural standard Allow canopy to develop and micro habitats to develop.
Introduced shrub (large shrubs, ornamental planting mix, sensory planting, low hedge)	0.0146	Low	Poor	Low Strategic Significance	<ul style="list-style-type: none"> Condition fixed as 'poor' Plant per horticultural standards
Rain Garden (Rain garden mix)	0.0067	Low	Moderate	Low Strategic Significance	<ul style="list-style-type: none"> Plant a diverse range of species using native and species with wildlife benefit Create varied structure with different ecotones (i.e. scrub, grassland, herbs)
Mixed scrub (woodland edge planting mix)	0.0082	Medium	Moderate	Medium strategic significance	<ul style="list-style-type: none"> Plant mixed native scrub species- At least 4 species, no species more than 75%. Control invasive species Manage with a varied structure
Other neutral grassland (grass seed for long meadow grass area)	0.0075	Medium	Moderate	Medium strategic significance	<ul style="list-style-type: none"> Sow wildflower mix with 9-15 species/ m². Example mix EL1 Varied sward height- >20% <7cm and >20% <7cm. Maintain Bracken <20% and scrub <5%. Maintain an absence of non native species and <5% undesirable species/ damage. Allow sward to grow through spring/ summer then cut and collect in autumn.
Retained amenity grassland- enhanced	0.02				
Modified grassland (grass seed for general grass area)	0.0049	Low	Moderate	Low strategic significance	<ul style="list-style-type: none"> Sow low grow meadow mix with at least 6-8 species/ m². Varied sward height- >20% <7cm and >20% <7cm. Maintain Bracken <20% and scrub <5%. Maintain an absence of non-native species and <5% undesirable species/ damage.
Native hedgerow (Native hedge mix)	0.062km	Low	Moderate	Medium strategic significance	<ul style="list-style-type: none"> Maintain an average height of at least 1.5m along its length. Maintain an average width of at least 1.5m along its length. Ensure there are no gaps present Limit trimming to winter months, where possible, and trim sections on rotation to maintain a diversity of structure.

Table 3: Summary of enhancement of new habitats.

5.4 BNG Results

5.4.1 BNG Matrix Results

The headline results of the DEFERA Matrix 3.1 calculations are shown below. More detailed results are available in the appendix. As can be seen the on-site net change in Habitat units is a 10.36% net gain. This meets the desired 10% net gain target.

The hedgerow units have increased by 100%, this is achieved because there are no hedgerows existing on site.

On-site baseline	<i>Habitat units</i>	2.21
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	2.44
	<i>Hedgerow units</i>	0.23
	<i>River units</i>	0.00
On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	10.36%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.23
	<i>Hedgerow units</i>	0.23
	<i>River units</i>	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	10.36%
	<i>Hedgerow units</i>	100.00%
	<i>River units</i>	0.00%
Trading rules Satisfied?	Yes ✓	

Figure 4: Headline BNG results.

5.4.2 BNG Trading Rules summary

Rule 3 of the BNG (section 2.3.2) requires that trading down be avoided to ensure losses of habitat are to be compensated for on a “like for like” or “like for better” basis. The option above is able to meet the trading rules.

6. Landscape Ecology Management Plan

6.1 Objectives & Targets

As set out in the PEA and mitigation report the proposed planting will contain habitats that will provide a benefit for wildlife. These habitats will require appropriate management to ensure they reach and retain the desired condition for the BNG assessment.

To monitor progress towards targets it is important that reasonable targets are set.

The inclusion of pollinator friendly species will help meet local biodiversity targets. The current London Environment Strategy lists London's priority species and habitats and sets out objectives to conserve and enhance these⁶. The objectives and targets listed below takes these strategies in to consideration.

The targets have also been compiled to reflect the BNG calculations and the proposed condition (Poor, Medium or High) of each created or enhanced habitat. The species targets reflect a way monitoring progress towards the required habitat condition as well as reflecting local and regional biodiversity plans.

By seeking to increase the native floral diversity on site this will create opportunities for a number of invertebrates which will help to attract species of birds, mammals as well as foraging bats. This is also a target that should be reactively simple for the school to monitor and deliver.

Site:	The Avenue School
Objective:	Maintain and enhance new and existing habitats on site to meet required BNG habitat condition
Target 1:	Increase floral diversity on site
Target 2:	Install and maintain at least 2 bat boxes
Target 3:	Install and maintain at least 2 house sparrow nest box
Length of plan:	5 years

Table 5: Summary of Objectives and Targets

6.2 Actions and Responsibilities at Handover

The fully ensure habitats meet the BNG condition it is important that the site is in a suitable condition at handover. The table below summarises the actions and responsibilities required prior to hand over of the site.

⁶ https://www.london.gov.uk/sites/default/files/london_environment_strategy.pdf

Action	Detail	Timescale	Responsibility
Implement relevant habitat creation and enhancement measures	Following the guidance set out in this management plan and the mitigation plan ⁷ . Ensure habitats are created and enhanced appropriately to meet the desired condition. Follow best practice. The ecologist will oversee the implementation of the enhancement measures and sign this off prior to hand over.	After hard construction completed prior to handover.	Developer/ ecologist/ Landscape architect
Assess condition of habitats.	Assess the condition of newly created habitats and those areas that have been enhanced.	After habitats created/ enhanced. Prior to hand over	Developer/ ecologist
Assess establishment of habitats.	Assess habitats periodically post development to ensure they are developing in the required way. Suggest and implement remedial actions as required	Post-handover	Ecologist
Ecological Monitoring	Conduct relevant ecological monitoring to assess progress towards management objectives & targets.	Post-handover. Follow schedule set out in action plan	Occupier/ Ecologist
Periodic review	Periodically review plan to ensure it is in line with local and regional strategic plans. This review should also assess progress towards targets and any remedial actions that are required.	Post-handover	Occupier.
Update Management Plan	Following the periodic review update the management plan as necessary. Management plan should be reviewed and updated after 5 years.	Post-handover	Occupier.

Table 6: Summary of Objectives and Targets

6.2 Action plan

The action table below sets out the key actions for the habitats that will be on site following the construction. Actions should be carried out by a competent ground maintenance or landscape professional that holds all necessary and relevant qualifications. More details on the actions and proposed monitoring are set out below. The responsibilities of the actions are highlighted in bold in the table.

⁷ Meadow School, Royal Ln, Uxbridge UB8 3QU. PEA & Mitigation. RP-HED-063. EHM Ltd. 15/12/2022.

Habitat	Time scale:	Installation	Year 1	Year 2	Year 3	Year 4	Year 5
Shrub/ rain garden Planting		Plant shrubs/ climbers (as per recommendations) <u>Late Winter</u> Developer	Monitor establishment in first year. Watering may be required <u>All year</u> Developer	Annually monitor establishment of newly planted plants. Ensuring actions such as weeding around plants and watering are taken as necessary. Replace any dead plants as necessary (see table Below). Occupier			
Hedgerow planting		Plant hedgerow trees (as per recommendations) <u>Late Winter</u> Developer	Monitor establishment in first year. Watering may be required <u>All year</u> Developer	In initial years after establishment; trim all stock down by 30-50% to encourage the plants to bush and trim to same shape the following year to further encourage the plants to bush. <u>Autumn/ winter</u> Occupier		Trim to shape. It is recommended that trimming not be conducted on the entire hedgerow each year; trim a different section each year. <u>February</u> Occupier	
Tree Planting		Plant trees as per recommendations <u>Over winter</u> Developer	Monitor establishment in first year. Watering may be required <u>All year</u> Developer	Annually monitor establishment of newly planted trees. Ensuring actions such as weeding around plants and watering are taken as necessary. Replace any dead plants as necessary (see table Below). Occupier			
Woodland edge planting		Plant trees as per recommendations <u>Over winter</u> Developer	Monitor establishment in first year. Watering may be required <u>All year</u> Developer	Once plants established cut back small sections periodically to encourage structural diversity. <u>Winter</u> Occupier			
Enhanced and new Grassland Areas		Sow seed <u>Autumn</u> Developer	Monitor establishment of seed in first year. Cut if necessary and established. <u>All year</u> Occupier	Leave grass to grow through spring/ summer. Cut and collect in autumn. <u>Autumn</u> Occupier			

Habitat	Time scale:	Installation	Year 1	Year 2	Year 3	Year 4	Year 5
Bird Nest Boxes		Install Bird Boxes <u>Anytime</u> Developer/ ecologist		Check and clean Boxes <u>Winter</u> Ecologist		Check and clean Boxes <u>Winter</u> Ecologist	
Bat boxes		Install Bat Boxes <u>Anytime</u> Developer/ ecologist		Check and clean Boxes <u>Winter</u> Ecologist		Check and clean Boxes <u>Winter</u> Ecologist	
Log pile Create small log pile in northern west section		Install log pile <u>Anytime</u> Developer/ ecologist	Add to log pile periodically from site tree work. Ecologist				
Monitoring Conduct Floral Surveys of the site.		Ecologist monitor installation of enhancements	Base line surveys <u>Spring/ summer</u> SQE		Assessment Surveys <u>Spring/ summer</u> SQE		Final Surveys <u>Spring/ summer</u> SQE
Management plan review Ecologist to review management		Monitor implementation of planting.			Review habitat establishment		Review habitats and management plan

6.3 Action Information

The table below provides details on the required management actions.

Action type	Methodology	Ecological Benefit
Shrub Maintenance	<p>During the first year or two, weed around the plants to help them establish quicker. Weeding can be reduced by mulching</p> <p>Where weeding is necessary, carry it out sparingly to reduce soil disturbance and minimise moisture loss.</p> <p>After a few years (usually five to ten, but sooner for some species), shrubs start to require cutting back.</p> <p>Cut and prune established shrubs over a period of a few years to create a range of ages and structures from bare ground, through young and old growth to decaying wood.</p> <p>Decaying wood is an important part of any wildlife garden as it has great value as shelter and food for wildlife. Wherever possible, retain dead stems on plants and leave standing or fallen dead shrubs.</p> <p>For maximum benefit to wildlife, carry out management in late winter. This is particularly true for native species, such as hawthorn, hazel and dogwood. The best time for pruning and coppicing is during January and early February after birds have eaten the berries and before they start to nest.</p> <p>Avoid trimming and cutting shrubs between late February and the end of August, as this is the main breeding season for birds in the UK.</p> <p>After thinning, allow some plants to re-grow from the stumps to create a thick lower shrub layer and understory.</p>	Maintaining the shrubs will ensure they have a continued benefit for wildlife.
Monitoring establishment of trees	<p>Hand weed around saplings or use suitable herbicide.</p> <p>Water- only if during very dry spell to help trees establish</p>	Weeding in spring can help ensure saplings are not out competed ⁸
Leaving areas of grow to grow-cutting once per annum	<p>Leave un cut through spring and early summer</p> <p>Cut and collect in mid-late summer. Arising's must be removed- these can be piled on site (out of the way)</p>	<p>By only cutting once a year a different floral species should establish. This will help butterfly species. Removing the arising will ensure that vigorous species do not dominate.</p> <p>Putting grass cuttings into piles(s) will provide a benefit for additional species.</p>
Floral Surveys	Floral surveys should be conducted by a suitably qualified ecologist. Local wildlife groups or wildlife trusts may be able to assist with this.	Surveying the floral species on site will help monitor progress towards management targets. By aiming to improve the floral diversity management will help create a more diverse habitat for local wildlife.
Log piles	Add small log piles to the north area. These should be created from cut logs.	This will provide an additional habitat feature and help attract invertebrates to site. This will in turn provide forage for bat species.

⁸ <http://www.woodlandtrust.org.uk/mediafile/100152626/Caring-for-your-trees.pdf>

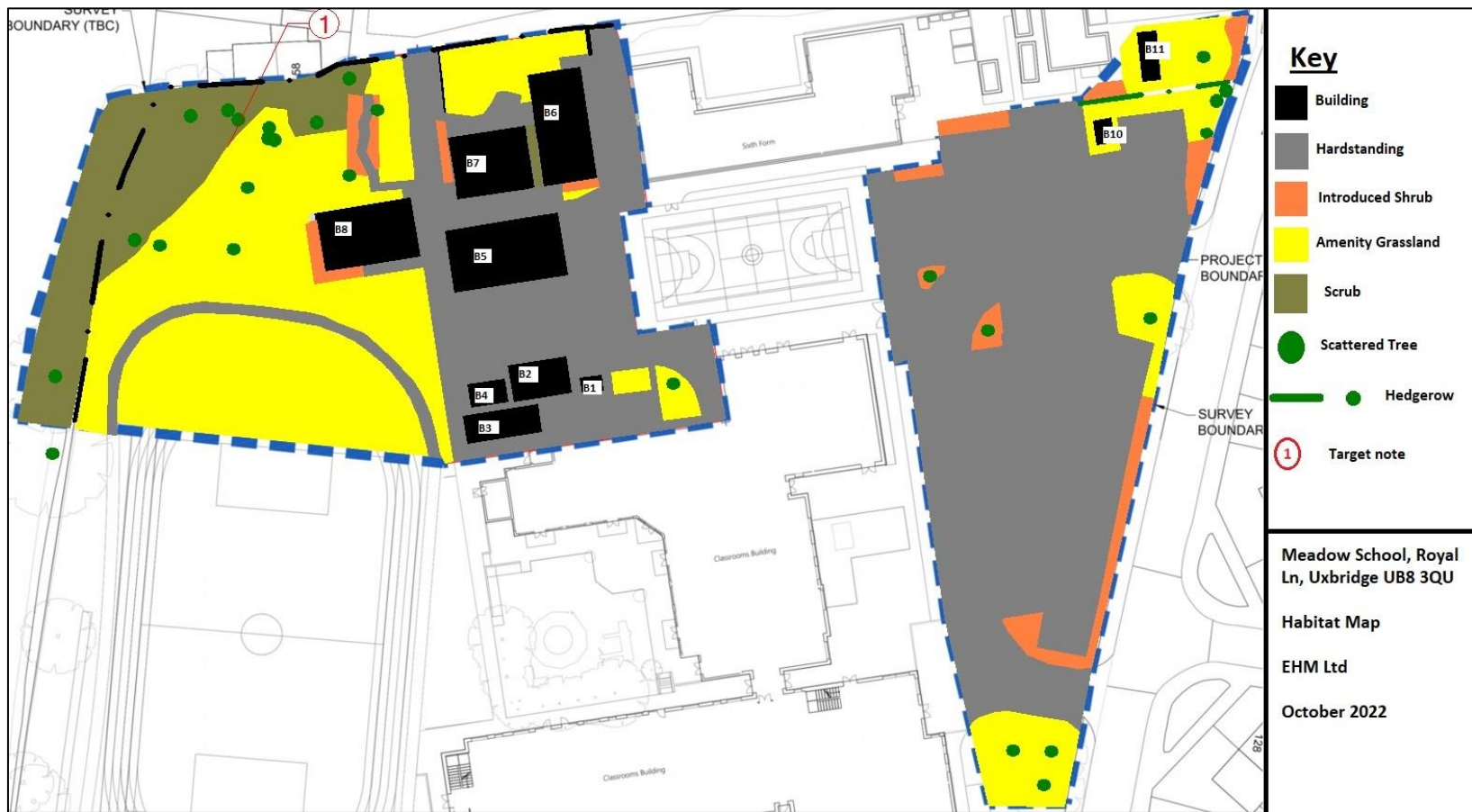
Action type	Methodology	Ecological Benefit
Install Bird boxes	Install 2 x house sparrow boxes in north area.	This will provide an additional ecological resource to the site.
Cleaning bird boxes	We recommend that old nests be removed in the autumn, from September onwards once the birds have stopped using the box. Use boiling water to kill any remaining parasites, and let the box dry out thoroughly before replacing the lid. Insecticides and flea powders must not be used ⁹ .	This will ensure the bird boxes are more attractive and likely to be used by birds each year.
Inspect bat boxes	The bat boxes should be inspected by a licenced bat worker.	This will provide information on whether the bat boxes are being used and will provide an opportunity for maintenance.
General	Reduce or eliminate the use of herbicides and pesticides.	This will have a benefit for wildlife on site.

Table 4: Summary of action information

⁹ <https://www.rspb.org.uk/birds-and-wildlife/advice/how-you-can-help-birds/nestboxes/nestboxes-for-small-birds/cleaning-nestboxes/>

7 APPENDIX

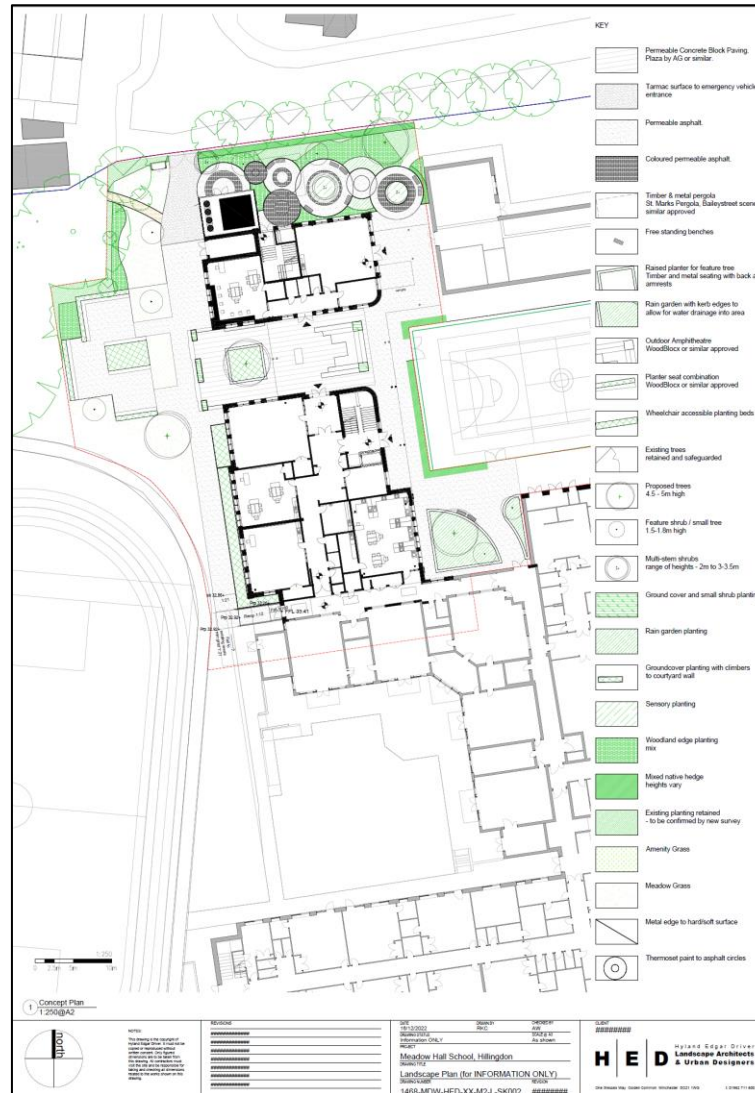
7.1 Appendix 1: PEA Habitat Map



7.2 Appendix 2: BNG Assessment area



7.3 Appendix 3: Proposed Development and landscape layout



Habitat Enhancement on site

Baseline habitats	Proposed Habitat (Pre-populated but can be overridden)		Change in distinctiveness and condition		Area (hectares)	Distinctiveness	Condition	Strategic significance	Temporal risk multiplier		Difficulty risk multipliers	Habitat units delivered
Baseline habitat	Proposed Broad Habitat	Proposed habitat	Distinctiveness change	Condition change				Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of enhancement	
Grassland - Modified grassland	Grassland	Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Moderate	0.02	Medium	Moderate	Formally identified in local strategy	Standard time to target condition applied	10	Low	0.16
					0.02							0.16

Hedgerow Creation on site

Proposed habitats		Habitat distinctiveness	Habitat condition	Strategic significance	Temporal multiplier		Difficulty risk multipliers	Hedge units delivered
Habitat type	Length (km)	Distinctiveness	Condition	Strategic significance	Standard or adjusted time to target condition	Final time to target condition/years	Final difficulty of creation	
Native Hedgerow	0.062	Low	Moderate	Location ecologically desirable but not in local strategy	Standard time to target condition applied	5	Low	0.23
		0.06						0.23

7.5 appendix 5: Legislation

Protected species have protection under national legislation such as the Wildlife and Countryside Act 1981 and European legislation such as the Habitats Directive.

Please note the following:

- (1) If there is no record of a particular protected species, this does not signify that the species is absent from the site in question. It may mean that it has not been recorded, that the site has not been surveyed for this species, or that data relating to its presence has not been made available to us.
- (2) The presence of a protected species record does not mean that the species is still present. It means that the species was recorded at that time and place. The implications of the record should be further evaluated, and a survey to establish the current status may be required.
- (3) The following summary of legislation is designed purely as a basic guide, if any action is to be taken regarding any of the protected species listed, then it is imperative that the full relevant legislation be consulted.

WILDLIFE PROTECTION LEGISLATION IN ENGLAND

Legislation that protects wildlife in England exists at the European and national level.

European Law

The Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979) was aimed at ensuring conservation and protection of all wild plants and animals, increasing cooperation between states, and affording special protection to the most vulnerable or threatened species. It was implemented by the EC Birds Directive (Council Directive 79/409/EEC) and the EC Habitats Directive (Council Directive 92/43/EEC).

The Bonn Convention on Migratory Species of Wild Animals (1979 & 1994) requires the protection of migratory animals. It was implemented by the EC Birds Directive (Council Directive 79/409/EEC) and the EC Habitats Directive (Council Directive 92/43/EEC).

The EC Habitats Directive aims to establish a network of protected areas in order to maintain the distribution and the abundance of threatened species and habitats. A number of species are listed in the annexes.

Annex II lists animals and plants whose conservation requires the designation of Special Areas of Conservation (SACs).

Annex IV lists animals and plants in need of strict protection. For the animals, this prohibits deliberate capture, killing, disturbance (especially during breeding period), destruction or taking of eggs from wild, and destruction or deterioration of breeding sites or resting places. For the plants, this prohibits deliberate picking, collecting, uprooting, cutting, destruction, and trade in entire plants or parts, at all stages of life.

Annex V lists animals and plants for which taking in the wild may be subject to management measures

National Law

Wildlife and Countryside Act The Wildlife and Countryside Act 1981 (as amended) is the main source of legal protection for wildlife in England and was strengthened by the Countryside and Rights of Way Act 2000. A statutory five-yearly review of Schedules 5 and 8 (protected wild animals and plants) is undertaken by the relevant authorities. Species protection is provided under Schedules 1, 5, 6 and 8:

Schedule 1 lists bird species that are rare, endangered, declining or vulnerable. The Schedule is divided into two parts. Part I lists birds which receive special protection; these birds receive additional protection from disturbance at the nest. Part II lists birds that receive the same level of special protection, but only during the breeding season.

Schedule 5 protects animal (other than bird) species from certain actions, according to the sections of the Act under which they are listed:

S9 (1) prohibits the intentional killing, injury or taking. S9 (2) protection is limited to possessing and controlling. S9 (4a) prohibits the damaging, destroying or obstructing access to any place used by the animal for shelter or protection. S9 (4b) prohibits disturbing the animal while it is occupying any structure or place which it uses for shelter or protection. S9(5) prohibits the selling, offering for sale, possessing or transporting for purpose of sale, or advertising for sale, any live or dead animal, or any part of, or anything derived from such an animal. Species on this Schedule do not appear on the PSI.

Schedule 6 lists animals that may not be killed by certain methods. Even humane trapping for research requires a licence.

Schedule 8 lists plant species for which it is prohibited to intentionally pick, uproot, destroy, trade in, or possess (for the purposes of trade).

Under the Wildlife and Countryside Act, all wild plants in Britain are protected from intentional uprooting by an unauthorised person. Landowners, land occupiers, persons authorised by either of these, or persons authorised in writing by the Local Authority for the area are exempt from this, except for Schedule 8 species.

Conservation Regulations the Conservation of Habitats and Species Regulations 2010 (as amended) transpose the EC Habitats Directive into national law. In addition to enabling the designation of SACs, the regulations also provide species protection:

Schedule 2 protects the listed animals from deliberate capture, killing, disturbance or trading in.

Schedule 4 protects the listed plants from picking, collecting, uprooting, destroying or trading in.

These actions can be made lawful through the granting of licences by the appropriate authorities. Licences may be granted for a number of purposes, but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild the population of the species concerned.

Protection of Badgers Act the Protection of the Badgers Act prohibits the killing, injuring or taking of badgers and damage or interference with a badger sett, unless licensed to do so by a statutory authority.

International and European Obligations

In the UK, species receiving protection under international legislation and agreements are protected through the Wildlife and Countryside Act, so are not shown separately in the BMERC notable species lists. For reference, the relevant categories are shown below.

Bern Convention on the Conservation of European Wildlife and Natural Habitats the Bern Convention aims to ensure the conservation of wild flora and fauna species and their habitats.

- Appendix 1 (strictly protected flora) - Plants for which contracting parties will prohibit deliberate picking, collecting, cutting or uprooting.
- Appendix 2 (strictly protected fauna) - Animals for which contracting parties will prohibit deliberate capture, possession, killing, damage to or destruction of breeding or resting sites, disturbance or destruction or taking of eggs. Appendix 3 (protected fauna) - Animals for which contracting parties will include closed seasons and regulate their sale, keeping for sale, and transport for sale or offering for sale of live and dead wild animals. (Not included in Notable Species List).

Bonn Convention on Migratory Species the Bonn Convention aims to conserve terrestrial, marine and avian migratory species throughout their range.

- Appendix 1 (migratory species threatened with extinction) - Species for which contracting parties will strictly protect and endeavour to conserve or restore the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them.
- Appendix 2 (migratory species that need or would benefit from international co-operation) - Species for which contracting parties will be encouraged to conclude global or regional agreements for the conservation and management of individual species or, more often, of a group of species. (Not included in Notable Species List).

The EC Council Directive on the Conservation of Wild Birds the Birds Directive provides a framework for the conservation and management of all wild birds in Europe. As well as designating important sites for birds as Special Protection Areas, birds are generally protected from deliberate killing or capture and destruction of or damage to their nests or eggs, and deliberate disturbance. Allowances are made for game birds.

UK BAP & notable species

UK Biodiversity Action Plan and Section 41 Species

Biodiversity, or biological diversity, is the whole variety of life on Earth. The Convention on Biological Diversity (CBD) came about as a result of the 1992 Earth Summit. As one of 168 countries to sign up to the CBD, the UK was required to develop a national strategy for the conservation of biodiversity; the UK Biodiversity Action Plan (UKBAP) was born.

The UKBAP is the result of contributions involving a wide range of people and organisations, enabling the identification of species and habitats that are listed as priorities for conservation action. A 2007 review of the UKBAP has resulted in 1149 species and 65 habitats being listed as conservation priorities. For more information see www.ukbap.org.uk.

In addition to the national priorities and targets, action is also being taken at local level. The Essex Biodiversity Project is responsible for implementing the Essex Biodiversity Action Plan, which has 28 priority species and 15 priority habitats currently listed. For more information see www.essexbiodiversity.org.uk.

The UK BAP

(From Explanatory Note by Defra and Natural England on Section 41 of the Natural Environment and Rural Communities

(NERC) Act 2006 - Habitats and Species of Principal Importance in England)

The England Biodiversity List has been developed to meet the requirements of Section 41 of the Natural Environment and Rural Communities Act (2006). This legislation requires the Secretary of State to publish a list of species of flora and fauna and habitats considered to be of principal importance for the purpose of conserving biodiversity.

The S41 list will be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006 'to have regard' to the conservation of biodiversity in England, when carrying out their normal functions. In particular:

- Regional Planning Bodies and Local Planning Authorities will use it to identify the species and habitats that should be afforded priority when applying the requirements of National Planning Policy framework (NPPF) and PPS9 Circular to maintain, restore and enhance species and habitats.
- Local Planning Authorities will use it to identify the species and habitats that require specific consideration in dealing with planning and development control, recognising that under NPPF and PPS9 Circular the aim of planning decisions should be to avoid harm to all biodiversity.
- All Public Bodies will use it to identify species or habitats that should be given priority when implementing the NERC Section 40 duty.

Habitats of Principal Importance Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that have been identified as requiring action in the UK Biodiversity Action Plan (UK BAP). They range from habitats such as upland hay meadows to lowland mixed deciduous woodland and from freshwater habitats such as ponds to marine habitats such as subtidal sands and gravels.

Species of Principal Importance There are 943 species of principal importance included on the S41 list. These are the species founding England which have been identified as requiring action under the UK BAP. In addition, the Hen Harrier has also been included on the List because without continued conservation action it is unlikely that the Hen Harrier population will increase from its current very low levels in England.

Relationship with the UK Biodiversity List of Species and Habitats the UK BAP list of priority species and habitats is an important reference source and will be the focus for conservation action across the UK over the next decade. It has been used to draw up the species and habitats of principal importance in England under S41 of the NERC Act.

The revised UK BAP list of priority species and habitats can be downloaded from the UK Biodiversity Website: <http://www.ukbap.org.uk/NewPriorityList.aspx>

Relationship with the biodiversity duty under Section 40 of the NERC Act There is a general biodiversity duty in the NERC Act (Section 40) which requires every public body in the exercising of its functions to 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'.

There is no direct relationship between the Section 41 duty on the Secretary of State to publish the list and promote the taking of steps to conserve the habitats and species on it, and the Section 40 duty on public bodies to have regard to the purpose of conserving biodiversity. Importantly:

(a) Biodiversity, as covered by the Section 40 duty includes all biodiversity and not just the habitats and species of principal importance. However, there is an expectation that public bodies would refer to the S41 list when complying with the section 40 duty.

(b) The duty on the Secretary of State to promote the taking of steps by others is not restricted to public bodies.

Defra guidance for local authorities and public bodies on implementing the biodiversity duty in the NERC Act draws attention to the S41 list, emphasising that local authorities and public bodies have a role to play in ensuring the protection of these species and habitats. Copies of the guidance can be downloaded from:

<http://archive.defra.gov.uk/environment/biodiversity/documents/pa-guid-english.pdf>

The overall aim of the Essex Biodiversity Project is to protect, conserve and enhance the variety of wildlife species and habitats in Essex through the successful implementation of the Essex Biodiversity Action Plan.

