

West Cumberland Hospital – Phase 2

Preliminary Ecological Appraisal for BREEAM

North Cumbria University NHS Trust

Project number: 60589170

November 2019

Quality information

<u>Prepared by</u>	<u>Checked by</u>	<u>Verified by</u>	<u>Approved by</u>
Jack Muskett Ecologist ACIEEM	Nicola Lewis Associate Director MCIEEM	Nicola Lewis Associate Director MCIEEM	Pam Swallow Principal Ecologist MCIEEM

Revision History

<u>Revision</u>	<u>Revision date</u>	<u>Details</u>	<u>Authorized</u>	<u>Name</u>	<u>Position</u>

Distribution List

<u># Hard Copies</u>	<u>PDF Required</u>	<u>Association / Company Name</u>

Prepared for:

North Cumbria University NHS Trust

Prepared by:

AECOM Limited
AECOM House, 179 Moss Lane
Altrincham WA15 8FH

T: +44 (0)161 927 8200
aecom.com

© 2019 AECOM Limited. All Rights Reserved.

AECOM Ltd. (“AECOM”) has prepared this Report for the sole use of North Cumbria University NHS Trust (“Client”) in accordance with the terms and conditions of appointment. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by AECOM. This Report may not be relied upon by any other party without the prior and express written agreement of AECOM.

Where any conclusions and recommendations contained in this Report are based upon information provided by others, it has been assumed that all relevant information has been provided by those parties and that such information is accurate. Any such information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report. AECOM accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to AECOM from others.

The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken in July 2019 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances. AECOM disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.

Table of Contents

1.	Introduction	1
1.1	Background.....	1
1.2	Site Location and Setting.....	1
1.3	Review of previous survey work	1
1.4	Report Objectives	1
1.5	Scope of the report	2
1.6	Limitations and Assumptions	2
1.7	Quality Assurance.....	2
2.	Wildlife Legislation and Planning Policy	3
2.1	Wildlife Legislation	3
2.2	National Planning Policy	3
2.3	UK Biodiversity Framework	3
2.4	Local Planning Policy	4
3.	Methods	6
3.1	Field Survey.....	6
3.1.1	Phase 1 Habitat Survey.....	6
3.1.2	Appraisal of Potential Suitability of Habitats to Support Protected and Notable Species ..	6
3.2	Limitations.....	6
4.	Results	7
4.1	Nature Conservation Designations.....	7
4.2	Phase 1 Habitat Survey.....	7
4.2.1	Ornamental landscape planting, trees and shrubs.....	7
4.2.2	Amenity grassland	7
4.2.3	Disturbed ground / bare ground.....	7
4.3	Protected and Notable Species	7
4.3.1	Great Crested Newts	7
4.3.2	Reptiles.....	8
4.3.3	Bats.....	8
4.3.4	Badger	8
4.3.5	Breeding Birds	8
5.	Identification of Ecological Constraints and Recommendations.....	9
5.1	Legislation and Planning Policy.....	9
5.2	Ecological Constraints and Site Value.....	9
5.3	Recommendations for Protection of Ecological Features	9
5.3.1	Habitats.....	9
5.3.2	Protected Species.....	10
5.3.2.1	Bats	10
5.3.2.2	Breeding Birds.....	10
5.3.2.3	Invasive Non-native Plant Species	11
5.3.3	General	11
6.	Ecological Mitigation and Enhancement.....	13
6.1	Introduction	13
6.2	Bats.....	13
6.3	Birds.....	13
6.4	Invertebrates.....	13
6.5	Planting	13
6.6	Biodiversity Champion	14
7.	References.....	15
	Appendix A Phase 1 Habitat Map	16

Appendix B Species lists per habitat type	17
Ornamental landscape planting, trees and shrubs	17
Amenity grassland	17
Disturbed ground / bare ground	18
Appendix C : Cumbria Biodiversity Action Plan	20
Appendix D : Example Habitat Boxes	22

1. Introduction

1.1 Background

In order to inform a Building Research Establishment Environmental Assessment Method (BREEAM), AECOM Limited (hereafter referred to as 'AECOM') was instructed by North Cumbria University NHS Trust to carry out a Preliminary Ecological Appraisal (PEA) within Phase 2 of West Cumberland Hospital, Homewood Road, Whitehaven, Cumbria (hereafter referred to as the 'Site'), as shown within **Appendix A**. The Site is part of a wider demolition and rebuilding programme.

The commissioned PEA provides the detailed information to inform the BREEAM R&FO 2014 Land Use and Ecology assessment. The PEA provides information to inform the following Land Use and Ecology credits:

- LE 02 Ecological Value of Site – this requires the site to be of low ecological value;
- LE 02 Protection of Ecological Features – requires any ecological features to be protected;
- LE 03 Minimising Impact on Existing Ecology – Not applicable to Bespoke mixed R&FO/New Construction projects;
- LE 04 Ecologist's Report and Recommendations; and
- LE 05 Long Term Impact on Biodiversity.

AECOM have not been appointed to support in determining the ecological outcomes/credits, calculating the change in biodiversity, completing a 5 year management plan, nor confirming that legislation has been adhered to.

1.2 Site Location and Setting

West Cumberland Hospital is located near Whitehaven on the west coast of Cumbria in the north west of England centred at national grid reference NX 989 160. The hospital is situated east of the A595 and to the south east of the town of Whitehaven. Agricultural land is situated directly to the east and south-east, with predominantly residential properties found to the north and west.

The existing hospital site comprises a range of buildings including various wards, workshops, laboratory, canteen and car parks, all of which are surrounded by patches of amenity grassland, hedgerow and scattered stands of native and non-native trees.

1.3 Review of previous survey work

The Site (Phase 2) was initially subject to a PEA and bat assessment in 2010, as part of the wider development, and bat surveys were undertaken on Phase 1 and Phase 1b (including daytime external and internal building inspections and dusk / dawn emergence and re-entry surveys) were undertaken in 2009 and 2010 (AECOM, 2010a). Updated bat roost appraisals and surveys were carried out on Phase 1b on 17th September 2018 (AECOM 2018), and 18th and 19th July 2019 (AECOM 2019). Additionally, a Building Research Establishment Assessment Method (BREEAM) study was undertaken (AECOM, 2010b) on Phase 1.

1.4 Report Objectives

The main aims of this report are to present the results of the site survey, to assess the ecological value of the proposed development site using the BREEAM R&FO 2014 criteria and identify measures that may be implemented to improve the potential BREEAM scores.

1.5 Scope of the report

This PEA was commissioned to identify whether there are known or potential ecological features (nature conservation designations, and protected and notable habitats and species) that may constrain or influence the design and implementation of the Proposed Scheme. It is a high level appraisal of the ecological risks and opportunities associated with the Proposed Scheme and includes recommendations for any additional survey required prior to the commencement of any works, and potential options for the avoidance, mitigation or compensation of the potential impacts of the Proposed Scheme (where known) on the identified relevant ecological features.

The approach applied when undertaking this PEA accords with the Guidelines for Preliminary Ecological Appraisal published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017). The PEA takes into account the relevant wildlife legislation and planning policy as summarised in Section 2 of this report and is consistent with the requirements of British Standard 42020:2013 Biodiversity, Code of Practice for Planning and Development (British Standards, 2013).

The purpose of the PEA and BREEAM assessment was to:

- Identify and categorise the habitats present within the Site (as shown in **Appendix A**) and any areas immediately outside of the Site where there may be potential for direct or indirect effects (the 'zone of influence'), providing species lists for each habitat;
- Carry out an appraisal of the potential for the habitats recorded to support protected or notable species of fauna and flora;
- Provide advice on any potential ecological constraints and opportunities in the zone of influence, including the identification (where relevant) of any requirements for follow-up habitat and species surveys and/or requirements for ecological mitigation;
- Provide a value for the Site for the BREEAM assessment;
- Provide a map showing the location of the identified ecological features of relevance; and
- Provide recommendations for the Site.

In order to deliver the PEA, a desk study and an extended Phase 1 habitat survey were undertaken by an appropriately experienced ecologist, to identify ecological features associated with the Proposed Scheme and in the wider potential zone of influence; additional details are provided in Section 3.

1.6 Limitations and Assumptions

The commission of AECOM does not include for a BREEAM R&FO 2014 Land Use and Ecology assessment, however this report provides the relevant information to be used to complete a Land Use and Ecology assessment. It is assumed that, where appropriate, the client will act upon our recommendations so that BREEAM Land Use credits can be awarded. It is also assumed that all contractors that work at the Site will adhere to the mitigation protection measures and best practice outlined in this report.

1.7 Quality Assurance

All AECOM Ecologists are members of, or under application for membership of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct when undertaking ecological work.

The survey was conducted by Mark Hampton, and the report has been verified by Nicola Lewis who are deemed as a "Suitably Qualified Ecologist" as they are practicing ecologists, who hold a relevant degree and are a full member of CIEEM as stipulated by the BREEAM criteria.

2. Wildlife Legislation and Planning Policy

2.1 Wildlife Legislation

The following wildlife legislation is potentially relevant to the Proposed Scheme:

- Wildlife and Countryside Act 1981 (as amended);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Conservation of Habitats & Species & Planning Regulations 2017 (as amended) (the Habitats Regulations);
- Protection of Badgers Act 1992; and
- The Hedgerows Regulations 1997.

2.2 National Planning Policy

The National Planning Policy Framework (NPPF), which was first published on 27th March 2012. The revised NPPF, published on 19th February 2019 (subsequently amended in June 2019), sets out the Government's planning policies for England and how these are expected to be applied. Promoting a strong theme of sustainable development, the Framework aims to strengthen local decision making and reinforce the importance of up-to-date plans. Core aims of the NPPF include:

- A presumption in favour of Sustainable Development;
- Delivering Sustainable Development – Building a strong competitive economy and ensuring the vitality of town centres;
- Promoting sustainable transport;
- Meeting the challenge of climate change, flooding and coastal change;
- Conserving and enhancing the natural environment; and
- Conserving and enhancing the historic environment.

The NPPF confirms the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. It specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

Section 15, paragraphs 170-177 of the NPPF includes provision for measurable net gain and creating/maintaining coherent ecological networks. These paragraphs are material considerations when making planning decisions, whether plans or specific development projects.

2.3 UK Biodiversity Framework

In July 2012 the UK Post-2010 Biodiversity Framework was published. This covers the period 2011 - 2020 and forms the UK Government's response to the UN convention on Biological Diversity held in Nagoya in 2010. This contained five strategic goals ("Aichi" Goals). The Framework recognised that the Biodiversity Action Plan should now be delivered through strategies for each of the four countries comprising United Kingdom and Northern Ireland. For England, this is Biodiversity 2020: A Strategy for England's wildlife and ecosystem services (Defra, 2011). Local Authorities have also prepared Local Biodiversity Action Plans (LBAP) for those species most in need of conservation consideration

2.4 Local Planning Policy

The Copeland Local Plan 2013-2028 Core Strategy and Development Management Policies DPD (2013) contains relevant environmental policies; 'ENV3 Biodiversity and Geodiversity' and 'Policy DM25 – Protecting Nature Conservation Sites, Habitats and Species' are particularly relevant to the Proposed Scheme.

Policy ENV3 states that:

“The Council will contribute to the implementation of the UK and Cumbria Biodiversity Action Plan within the plan area by seeking to:

- A. Improve the condition of internationally, nationally and locally designated sites;*
- B. Ensure that development incorporates measures to protect and enhance any biodiversity interest;*
- C. Enhance, extend and restore priority habitats and look for opportunities to create new habitat;*
- D. Protect and strengthen populations of priority or other protected species;*
- E. Boost the biodiversity value of existing wildlife corridors and create new corridors, and stepping stones that connect them, to develop a functional Ecological Network; and*
- F. Restrict access and usage where appropriate and necessary in order to conserve an area's biodiversity value.”*

Policy DM25 states that:

“All development proposals should:

- Protect the biodiversity value of land and buildings*
- Minimise fragmentation of habitats*
- Maximise opportunities for conservation, restoration, enhancement and connection of natural habitats and creation of habitats for species listed in UK and Cumbria Biodiversity Action Plans. Special consideration should also be given to those European habitats that lie outside the boundaries of European designated sites.*

Development proposals that would cause a direct or indirect adverse effect on locally recognised sites of biodiversity and geodiversity importance, including County Wildlife Sites, Local Nature Reserves and Regionally Important Geological/Geomorphological Sites or protected species will not be permitted unless:

- The benefits of the development clearly outweigh the impacts on the features of the site and the wider network of natural habitats, and;*
- Prevention, mitigation and/or compensation measures are provided. An appropriate long-term management plan will be sought and arrangements to provide adequate funding will be made in accordance with a formal planning agreement or obligation*

Where compensatory habitat is created, it should be of equal or greater size than the area lost as a result of the development.

Development proposals where the principal objective is to conserve or enhance biodiversity or geodiversity interests will be supported in principle.

Where there is evidence to suspect the presence of protected species any planning application should be accompanied by a survey assessing their presence and, if present, the proposal must be sensitive to, and make provision for, their needs.

All development proposals must take into account any likely significant effects on the internationally important sites both within the Borough and within a 20km radius of the Borough boundary as well as those that are hydrologically linked to the development plan area.”

The Cumbria BAP was published in 2001, by the Cumbria Biodiversity Partnership, and aims to raise public awareness and understanding of the natural environment and hopes to encourage local people and politicians to take a closer interest in biodiversity, in order to take action to help vulnerable wildlife and threatened habitats.

Twenty-one species and 18 habitats have been identified in the Cumbria BAP for priority action and a target set for recovery.

These planning policies have been considered when assessing potential ecological constraints and opportunities identified, and when assessing requirements for further survey, design options and ecological mitigation.

3. Methods

3.1 Field Survey

The field survey comprised an extended Phase 1 habitat survey on 18th July 2019, to provide an update to a survey conducted previously, during which an appraisal was made of the potential suitability of the habitats present to support protected and notable species. Any observations of such species were noted for inclusion in the results section of this report, along with records of any invasive non-native species observed. The extended Phase 1 habitat survey covered the Site, as shown in **Appendix A**.

3.1.1 Phase 1 Habitat Survey

The Phase 1 habitat survey was undertaken in accordance with the standard survey method (JNCC, 2010). A Phase 1 habitat survey is a standard method of environmental audit. It involves categorising different habitat types and habitat features within a survey area.

The survey was undertaken by a suitably experienced AECOM ecologist who recorded and mapped all habitat types present within the Site, along with any associated relevant ecological features observed.

A list of plant species were recorded for each habitat type (see **Appendix B**).

3.1.2 Appraisal of Potential Suitability of Habitats to Support Protected and Notable Species

An appraisal was made of the potential suitability of the habitats present to support protected and notable species of plants or animals. Field signs, habitat features with potential to support protected species and any sightings or auditory evidence were recorded when encountered. No detailed surveys were carried out for any particular species.

In addition, a note was made of visible instances of invasive non-native plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), such as Japanese knotweed (*Reynoutria japonica*) and Indian balsam (*Impatiens glandulifera*), previously known as Himalayan balsam.

Section 5 of this report identifies where further species surveys may be required based on the results of the habitat survey. These surveys should be completed at the appropriate time of year and in advance of any works starting on site so they can be taken into account by the detailed design, development of a construction method statement and scheme mitigation, and to ensure that the need for any protected species licences are identified.

3.2 Limitations

Where habitat boundaries coincide with physical boundaries recorded on OS maps, the resolution is as determined by the scale of mapping. Elsewhere, habitat mapping is as estimated in the field and/or recorded by hand-held Global Positioning System (GPS). Where areas of habitat are given, they are approximate and should be verified by measurement on site where required for design or construction. While indicative locations of trees are recorded this does not replace requirements for detailed specialist arboricultural survey to *British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction*.

A number of the ornamental species were not identified to species (or genus).

4. Results

4.1 Nature Conservation Designations

There are no statutory nature conservations designated sites within 2 km of the site. No SAC sites designated for bats were identified within 10 km of the Site.

There are no non-statutory nature conservations designations within 500 m of the site.

4.2 Phase 1 Habitat Survey

Habitats recorded during the Phase 1 habitat survey are described below and shown within **Appendix A.**

4.2.1 Ornamental landscape planting, trees and shrubs

Ornamental plantings comprised landscaped 'squares' within the hospital complex along with ornamental beds around the grounds. These were comprised of a variety of trees, shrubs, herbaceous plants and ornamental grasses, including: *Agave* sp., *Hosta* sp., common holly (*Ilex aquifolium*), cypress (*Cupressus* sp.) and dogwoods (*Cornus* sp.). **Appendix B** provides a species list for this habitat type.

4.2.2 Amenity grassland

There were various areas of amenity grassland around the Site and its buildings. This habitat supports a mix of coarse and fine grasses including smooth meadow grass (*Poa pratensis*), cock's-foot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), fescues (*Festuca* sp.) and bents (*Agrostis* sp.) together with herbs such as yarrow (*Achillea millefolium*), common daisy (*Bellis perennis*), rough hawkbit (*Leontodon hispidus*), selfheal (*Prunella vulgaris*) common mouse-ear (*Cerastium fontanum*) and lesser trefoil (*Trifolium dubium*). **Appendix B** provides a species list for this habitat type.

4.2.3 Disturbed ground / bare ground

Probably the most diverse areas were associated with the disturbed areas scattered around the site. Species recorded here included common ramping-fumitory (*Fumaria muralis*), chickweed (*Stellaria media*), wavy bittercress (*Cardamine flexuosa*), black knapweed (*Centaurea nigra*) and forget-me-not (*Myosotis* sp.).

Other opportunist species were found around the buildings and along pavements such as procumbent pearlwort (*Sagina procumbens*), pineapple-weed (*Matricaria discoidea*) and common knotgrass (*Polygonum aviculare*).

Appendix B provides a species list for this habitat type.

It was also noted that a variety of mosses and liverworts were present, but not specifically recorded.

4.3 Protected and Notable Species

4.3.1 Great Crested Newts

No ponds were identified within the Site or within 250 m of the site. Great crested newts use ponds for breeding purposes (between March to June inclusive, subject to temperature), in which females lay their eggs on the submerged leaves of aquatic plants. Newt larvae also spend approximately four months within these ponds to develop. Therefore, this site does not provide suitable habitat for breeding great crested newts. The terrestrial habitats on site are also unsuitable for foraging, resting and hibernating great crested newt.

4.3.2 Reptiles

The site is not considered to offer good reptile habitat. Reptiles prefer a mosaic of habitats; including open areas for basking, adjacent to more sheltered areas for refuge and hibernation. The hospital complex does not offer a good range of habitat types; largely consisting of maintained grassland and areas of hardstanding.

4.3.3 Bats

No trees with bat roost potential will be affected by the Proposed Scheme, although buildings and trees with bat potential are present on the wider hospital site and low levels of bat activity has been recorded on the site during dusk/dawn and activity surveys previously undertaken for Phase 1. The majority of the buildings in this Phase (2) have limited suitability for roosting bats due to their construction type, however there are still a small number of buildings within this Phase which have suitable features as they include tiled roofs and soffit/facia boards. Building Q (the square pitched roof building on the southwestern face of Phase 2), a point on the south western face of Building F, and a point on the south eastern face of Building M (facing Building J) showed some features in tiles, roof edge, missing brickwork, or gaps in soffits/facia boards. These three buildings at these locations are therefore classed as Low potential. The remaining areas of Phase 2 are classed as Negligible potential, or in the case of Building W1 and Building C Annex (AECOM 2018 and 2019), further surveys conducted in 2018 and 2019 ruled these buildings out as bat roosts following them being classified as Moderate potential. Some of the buildings will therefore require further surveys prior to planning submission, and demolition. This will go towards determining the ecological value of the site.

4.3.4 Badger

No evidence of badger (*Meles meles*) was found during the survey. The habitats present on Site (Phase 2) are not suitable, however there are habitats adjacent to the wider hospital area which are suitable for badger.

4.3.5 Breeding Birds

No species of conservation concern¹ were noted on site, and no previous records showed any species of importance on the main hospital complex. It is likely that vegetation and buildings within the wider area are used by breeding birds, including the scattered trees, scrub and hedgerow. In addition, it is clear that numerous jackdaws breed within roof voids of buildings on site, and also flock over the site in large numbers, along with swallows who nest on some of the buildings. Buildings and habitats within Phase 2 have been seen to be used by nesting birds including jackdaws within the buildings.

¹ Eaton *et al* (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746.

5. Identification of Ecological Constraints and Recommendations

5.1 Legislation and Planning Policy

The wildlife legislation and relevant planning policy framework specify requirements for the protection of features of importance for biodiversity.

Compliance with this legislation and planning policy framework requires that a Proposed Scheme considers and engages the following mitigation hierarchy where there is potential for impacts on relevant ecological receptors:

- Avoid features where possible;
- Minimise impact by design, method of working or other measures (mitigation) e.g. by enhancing existing features; and
- Compensate for significant residual impacts, e.g. by providing suitable habitats elsewhere (whether in the control of the hospital trust or otherwise legally enforceable through planning condition or Section 106 agreement).

This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. In such cases, the rationale for the proposed mitigation and/or compensation should be provided, including sufficient detail to show that these measures are feasible and would be provided.

5.2 Ecological Constraints and Site Value

The likelihood of the relevant ecological features constraining the Site has been appraised with reference to the habitats and species present/potentially present as identified during the Phase 1 habitat survey undertaken in July 2019.

The majority of the site is considered to have low ecological value however the buildings have been found to have some suitability for use by bats. This raises the ecological value of the site above low, unless subsequent surveys rule out any presence.

The outlined constraints will need to be reassessed if there is a significant change to the type, timing or scale of development proposed, or if there are any significant changes in the use or management of the land that would affect the habitats and species. If approval for development occurs two years or more after this PEA it is advisable to review and update the survey data.

5.3 Recommendations for Protection of Ecological Features

5.3.1 Habitats

5.3.1.1 Trees

Any scattered trees, including adjacent but not within Phase 2, that are likely to be affected during the works should be protected by post and 'Netlon' fluorescent mesh fencing and placed at the radius of the crown of the tree. BS 5837:2012 'Trees in relation to construction' should always be considered when working in proximity to trees. If the roots of any retained trees are damaged during the development, they should be treated with an appropriate fungicide to prevent the spread of disease. Any retained habitats on site should also be protected by mesh fencing or barriers.

The fencing should be maintained during the period of the works and checked on a regular basis. No machinery or materials should be stored within the fenced areas. Materials and machinery should be stored within a designated site compound. Fencing should be left until all the machinery and materials have been removed from the site.

5.3.1.2 Planting

Any areas of planting within the landscape design should only include species that are native and have some known value or benefit to wildlife, for example fruit or nut bearing species. A net gain of habitat areas and species present should be attained where possible. Please note that this is highlighted in the NPPF and could be a future requirement for all planning applications.

A management plan for the site has not yet been prepared. This can be produced at a later date once all the landscape designs and planting has been finalised for the site. The plan will include information on:

- management of any protected features on site;
- management of any new, existing or enhanced habitats;
- reference to any site level Biodiversity Action Plan, including basic targets to be met; and
- responsibilities for conducting the management works

5.3.2 Protected Species

To avoid disturbance to wildlife, lighting should avoid areas with trees/vegetation that may provide foraging areas for bats and birds.

5.3.2.1 Bats

No trees with bat roost potential will be affected by the Proposed Scheme, although buildings and trees with bat potential are present on the wider hospital site and bat activity on the site has been recorded during dusk/dawn and activity surveys previously undertaken for Phase 1. There are buildings with the potential to be suitable for bats which are present within Phase 2. All bat species within the UK are protected under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence for anyone to kill, take or injure a wild bat. It is also an offence to intentionally disturb a bat in its roost or disturb a group of bats, and also to damage, destroy or intentionally obstruct access to bat roost. These buildings have been assessed as having Negligible to Low suitability for bats and therefore some require one emergence/re-entry survey between mid May to Mid August, These surveys must be undertaken prior to the submission of any planning applications and prior to the start of works (including preparation of any buildings).

Emergence/re-entry surveys include dusk and/or dawn assessments to watch, listen for and record bats. The active flying season for bats is generally considered to be between April and September (inclusive), though surveys at different times within this survey period are recommended as may detect different roost types.

Demolition of buildings should not commence until further bat surveys are undertaken to determine whether bats are roosting on site. If bats are identified roosting on site, appropriate mitigation measures must be implemented. Should a roost be found to be present then a European Protected Species Licence would be required.

5.3.2.2 Breeding Birds

The habitats and buildings on Site offer potential habitat for breeding birds. All breeding birds are protected under part 1 of the Wildlife and Countryside Act, 1981 (as amended). It is an offence for anyone to kill, injure or take any wild bird. It is also illegal for anyone without a licence to damage or destroy the nest of any wild bird while that nest is in use or being built and it is also illegal to take or destroy an egg of any wild bird.

Where habitat (e.g trees, scrub or buildings) that may support breeding birds requires clearance, this should be removed outside the nesting season (typically considered to be March to August, inclusive) or under the watching brief of a suitably experienced ecologist. Should an occupied nest be found during the construction works, a buffer zone, the distance of which will need to be determined by the ecologist, will need to be incorporated to reduce the risk of the nest being abandoned by the birds, until the nest is no longer in use/dependent offspring have fledged.

5.3.2.3 Invasive Non-native Plant Species

Cotoneaster sp was noted on site, which are listed in Part II of Schedule 9 under Section 14 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to plant them in the wild or otherwise cause them to grow. The Environmental Protection Act 1990 also lists them as "controlled waste" to be disposed of properly. These provisions mean that if these species occur on a site proposed for development or other work which may disturb the ground, control measures may be required.

5.3.3 General

An appointed suitably qualified and experienced Environmental Clerk of Works (ECoW) will attend site as and when required during the construction period to ensure all environmental mitigation is delivered, and where applicable works are undertaken in compliance with any licences that may be required. The ECoW will undertake watching briefs and monitoring in areas known to have protected species or other ecologically sensitive areas, particularly during the initial phases of vegetation clearance.

Best practice should be followed regarding works on site to minimise any adverse impacts on habitats and species. It is recommended that the client should consider using contractors who are committed to the "Considerate Constructors Scheme" (<http://www.ccscheme.org.uk>). Furthermore, it is recommended that the site supervisor should have a copy of Working with Wildlife. A guidance for the construction industry (C691), (CIRIA, 2011).

All site staff will be briefed on any ecological issues affecting the site, the mitigation measures required and methods of working to be adopted as part of good practice including the procedure to follow if nesting birds, potential badger setts, or protected or invasive species are discovered once works have commenced.

The following best practice construction measures are recommended to be tailored as required to the works when further details are known:

- Lay down geotextile membrane where storage of materials is required;
- All works will be carried out in accordance with current Environment Agency Guidance for Pollution Prevention;
- Avoid unnecessary damage to habitats, for example movement of machinery during construction will need to avoid areas where trees are to be retained in order to prevent root compaction and accidental damage;
- Retain as much of the existing habitat as possible. The working footprint will need to be kept to a minimum and areas of trees retained wherever possible;
- Minimise working areas and site compounds and utilise existing access tracks wherever possible - these must be of the minimum size required for safe working. Fencing may be utilised to prevent encroachment of machinery and materials onto adjacent habitats;
- Waste materials will need to be removed from the site and disposed of at the earliest opportunity. This is particularly important during the bird breeding season in case items are used for nesting;
- Fuel, oil and other potential polluting substances will need to be stored appropriately in bunded areas/tanks in a designated compound area. Refuelling and servicing of vehicles/machinery will also need to be undertaken within this area with an impermeable base;
- An emergency procedure will need to be implemented by site workers if suspected signs of protected species are encountered. This will need to include ceasing works in this area contacting the ECoW for advice;
- Any temporarily exposed open pipe system will need to be capped in such a way as to prevent animals gaining access, as may happen when contractors are off-site;
- Should it be necessary to leave any excavations open overnight then minor mitigation measures should be implemented to prevent animals from becoming trapped within these excavations. This may include back filling trenches each day, covering excavations left open overnight, or providing simple escape routes out of excavations, for example planks of wood or a battered back side; and

- Adoption of good practices to avoid excessive noise and vibration will need to be implemented, together with reasonable steps taken to reduce any adverse effects of noise and vibration generated by the development works.

6. Ecological Mitigation and Enhancement

6.1 Introduction

Ecological enhancement measures should ideally target protected or Biodiversity Action Plan (BAP) priority habitats and species found in the local area. The BAP species present on the Cumbria LBAP are provided in the Appendix C and comprise 16 habitats and 20 species; however not all of these habitats and species are relevant to this site.

6.2 Bats

Bats are listed on the LBAP and *Pipistrellus* sp. have been recorded within the wider hospital site. There is also the chance that bats are using the buildings within Phase 2 as roosts. Should further surveys confirm this then additional mitigation will be required as part of the planning and appropriate licence (European Protected Species Licence). It is recommended that suitable bat boxes are placed on the proposed or retained trees if suitable around the Site, or alternatively bat bricks/tubes could be used in the construction of the new buildings on site. Please refer to Appendix D for an illustration of a suitable bat box and bat brick/tubes.

6.3 Birds

House sparrow and Starling are UK Bap species and bird boxes suitable for such bird species should be placed around the Site. A minimum of three boxes should be used around the Site. Refer to Appendix D for details on suitable bird boxes.

6.4 Invertebrates

One invertebrate box should be placed in a suitable around the site. This would offer food sources to a variety of birds and mammals. Refer to Appendix D for details on suitable invertebrate boxes.

6.5 Planting

The planting design should give a net gain of habitat areas and species numbers. Any areas of planting within the landscape design should only include species that are native and have some known value or benefit to wildlife, for example fruit or nut bearing species such as; rowan (*Sorbus eucuparia*), wild cherry (*Prunus avium*), holly (*Ilex aquifolium*) and crab apple (*Malus sylvestris*). It would be recommended to introduce some wildflower mixes to areas of amenity grassland to be included within the landscape proposals. This could potentially create a diverse wildflower meadow habitat attracting a variety of species.

This seed mix would greatly enhance the biodiversity of the site, both in terms of species diversity and provide a suitable habitat for birds, butterflies and other invertebrates, but also in providing contiguous habitats which will have greater potential for biodiversity gain in the long term.

The wildflower areas should be managed as nutrient poor grassland (i.e. with a low top soil component – possibly using soil inversion techniques to achieve this if there is currently a significant depth of topsoil). The wildflower area should (depending on environmental factors) be mown approximately twice a year, with the cut material removed from site.

To establish a diverse grassland sward the following is required;

- A nutrient poor sandy sub-soil to about 30cm depth;
- An appropriate seed mix;
- New low meadow is cut four times during the first growth season, followed by twice year (in April and September) thereafter; and

- All grass cuttings are removed.

6.6 Biodiversity Champion

A member of the site team should be appointed as a 'Biodiversity Champion', to be responsible, for example, for over-seeing the installation of fencing in order to protect the ecological features on site. They should make regular checks to ensure that the fencing is maintained and undertake repairs as necessary. They should help establish clear working areas and ensure everyone is aware of features that should be protected. Any issues from members of the site team regarding ecology should be reported to the Biodiversity Champion in the first instance, who may need to contact an experienced ecologist or Natural England for advice.

The contractor should provide a 'tool box talk' on ecology and protecting ecological features at the start of the site works, following guidance published by CIRIA – Working with Wildlife (2011). Details of the legislation that could be contravened should be provided to site workers including procedures if bats or breeding birds are discovered on site once site works have commenced.

A log of all actions taken to protect biodiversity on site should be kept; this could be done by the 'Biodiversity Champion'. This should be updated regularly and made available for inspection if publicly requested. Information that could be recorded would include:

- Installation of barriers around trees to protect them during works;
- Installation of protective fencing around features of ecological importance;
- Timing works to avoid breeding seasons of species so that disturbance is reduced, where applicable; and
- Contacting an ecologist to obtain advice on any issues arising.

7. References

AECOM (2010a) PEA and Bat Surveys

AECOM (2010b) West Cumberland Hospital BREEAM Report

AECOM (2018) West Cumberland Hospital: Phase 1b Demolition Bat Survey Report

AECOM (2019) West Cumberland Hospital: Phase 1b Demolition Bat Survey Report 2019

British Standards (2013) Biodiversity — Code of practice for planning and development. BS42020:2013

British Standards (2012) Trees in Relation to Design, Demolition and Construction. BS5837:2012

Chartered Institute for Ecology and Environmental Management (CIEEM) (2017) Guidelines for preliminary ecological appraisal.

<https://cieem.net/wp-content/uploads/2019/02/Guidelines-for-Preliminary-Ecological-Appraisal-Jan2018-1.pdf>

CIRIA (2011) Working with Wildlife: guidance for the construction industry (C691)

Joint Nature Conservation Committee (2010) Handbook for Phase 1 habitat survey – a technique for environmental audit. Joint Nature Conservation Committee, Peterborough

Websites

<https://magic.defra.gov.uk/MagicMap>

Appendix A Phase 1 Habitat Map

Project Title:

**WEST CUMBERLAND
 HOSPITAL BREEAM
 Client:**

**NORTH CUMBRIA
 UNIVERSITY NHS TRUST**

LEGEND

- OS Mastermap
- Scattered Trees
- ✕ Scrub
- Fence
- Hedgerow
- ▨ Amenity Removed
- Amenity grassland
- Building
- Car Park
- ▨ Other / Disturbed Ground
- Helipad
- ▨ Improved grassland
- ▨ Ornamental / Introduced Shrub
- Semi improved grassland

Copyright:

Reproduced from Ordnance Survey digital map data © Crown copyright 2019. All rights reserved. Licence number 0100031673

AECOM Internal Project No:

60589170

Drawing Title:

PHASE 2 BREEAM

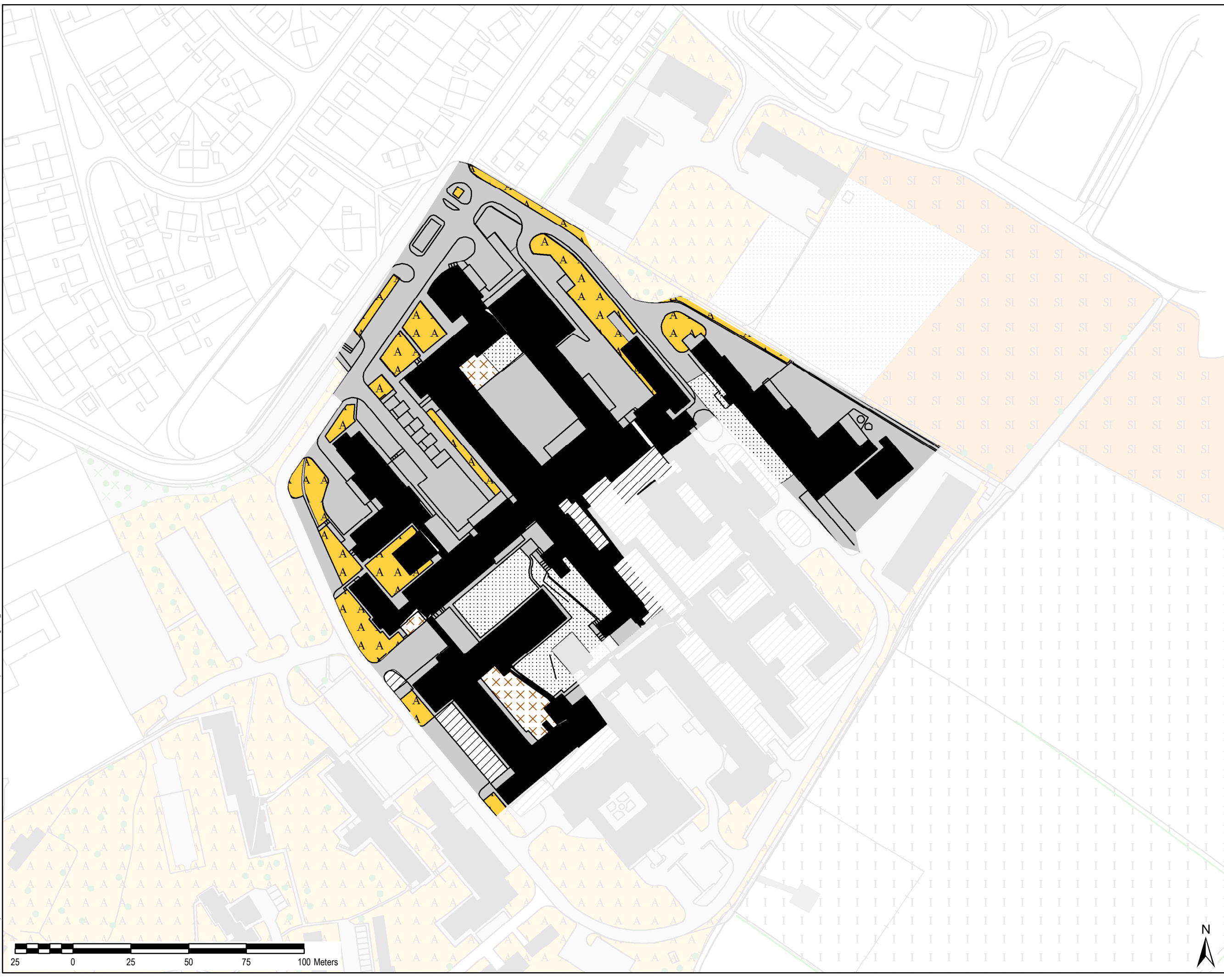
Scale at A3: 1:1,500

Drawing No: 1

PHASE 2

Drawn: Chk'd: App'd: Date:

DF XX NL 22/11/19



Filename: \\ukmcr1p02\ukmcr\F002\1\IE\PROJECTS\Environmental Services - West Cumberland Hospital\GIS\mxd\Figure1_Phase1.mxd

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or related upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

Appendix B Species lists per habitat type

Ornamental landscape planting, trees and shrubs

Common Name	Scientific Name
Fuchsia spp.	<i>Fuchsia spp.</i>
Hosta spp.	<i>Hosta spp.</i>
Oak spp.	<i>Quercus spp.</i>
Sorbus spp.	<i>Sorbus spp.</i>
Cypress spp.	<i>Cupressus spp.</i>
Cotoneaster spp.	<i>Cotoneaster spp.</i>
Dogwood spp.	<i>Cornus spp.</i>
Ash	<i>Fraxinus excelsior</i>
Hawthorn	<i>Crataegus monogyna</i>
Common broom	<i>Cytisus scoparius</i>
Holly spp.	<i>Ilex spp.</i>
Sycamore	<i>Acer pseudoplatanus</i>
Raspberry	<i>Rubus idaeus</i>
Hybrid Sallow	<i>Salix spp.</i>
Cherry Laurel	<i>Prunus laurocerasus</i>
Cherry	<i>Prunus sp.</i>
Dog Rose	<i>Rosa canina</i>

Amenity grassland

Common Name	Scientific Name
Yarrow	<i>Achillea millefolium</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Sweet Vernal-grass	<i>Anthoxanthum odoratum</i>
Common daisy	<i>Bellis perennis</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Common Mouse-ear	<i>Cerastium fontanum</i>
Creeping bent	<i>Agrostis stolonifera</i>
Crested Dog's-tail	<i>Cynosurus cristatus</i>
Yorkshire-fog	<i>Holcus lanatus</i>
Smooth Meadow Grass	<i>Poa pratensis</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Lesser Trefoil	<i>Trifolium dubium</i>
Silverweed	<i>Argentina anserina</i>
Ground Ivy	<i>Glechoma hederacea</i>
Common Bent	<i>Agrostis capillaris</i>
Creeping Cinquefoil	<i>Potentilla reptans</i>
Rough Hawkbit	<i>Leontodon hispidus</i>
Common Sorrel	<i>Rumex acetosa</i>
Red Fescue	<i>Festuca rubra</i>
Greater Plantain	<i>Plantago major</i>
Timothy Grass	<i>Phleum pratense</i>
Cat's-ear	<i>Hypochaeris radicata</i>
Cock's-foot	<i>Dactylis glomerata</i>
Perennial Rye-grass	<i>Lolium perenne</i>

Common Name	Scientific Name
Thyme-leaved Speedwell	<i>Veronica serpyllifolia</i>
White Clover	<i>Trifolium repens</i>
Dandelion agg.	<i>Taraxacum agg.</i>
Selfheal	<i>Prunella vulgaris</i>

Disturbed ground / bare ground

Common Name	Scientific Name
Yarrow	<i>Achillea millefolium</i>
Meadow Cranesbill	<i>Geranium pratense</i>
Lady's-mantle agg.	<i>Alchemilla vulgaris agg.</i>
Scarlet Pimpernel	<i>Anagallis arvensis</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Common Bistort	<i>Bistorta officinalis</i>
Common daisy	<i>Bellis perennis</i>
Pendulous Sedge	<i>Carex pendula</i>
Procumbent Pearlwort	<i>Sagina procumbens</i>
Common knapweed	<i>Centaurea nigra</i>
Curled Dock	<i>Rumex crispus</i>
Creeping Thistle	<i>Cirsium arvense</i>
Cleavers	<i>Galium aparine</i>
White Clover	<i>Trifolium repens</i>
Creeping bent	<i>Agrostis stolonifera</i>
Hedge Bindweed	<i>Calystegia sepium</i>
Annual meadow-grass	<i>Poa annua</i>
Ragwort	<i>Jacobaea vulgaris</i>
Yorkshire-fog	<i>Holcus lanatus</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Strawberry	<i>Fragaria x ananassa</i>
Greater Bird's-foot-trefoil	<i>Lotus pedunculatus</i>
Colt's-foot	<i>Tussilago farfara</i>
Field Horsetail	<i>Equisetum arvense</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Groundsel	<i>Senecio vulgaris</i>
Black Medick	<i>Medicago lupulina</i>
Lesser Trefoil	<i>Trifolium dubium</i>
Prickly Sow-thistle	<i>Sonchus asper</i>
Common Mouse-ear	<i>Cerastium fontanum</i>
Wavy Bittercress	<i>Cardamine flexuosa</i>
Tutsan	<i>Hypericum androsaemum</i>
Ground Ivy	<i>Glechoma hederacea</i>
Hedge Woundwort	<i>Stachys sylvatica</i>
Dandelion agg.	<i>Taraxacum agg.</i>
White Campion	<i>Silene latifolia</i>
Rough Meadow-grass	<i>Poa trivialis</i>
Creeping Buttercup	<i>Ranunculus repens</i>
American Willowherb	<i>Epilobium ciliatum</i>
Red Clover	<i>Trifolium pratense</i>
Chickweed	<i>Stellaria media</i>
Blackberry/Bramble	<i>Rubus fruticosus agg.</i>
Redshank	<i>Persicaria maculosa</i>
Male Fern	<i>Dryopteris filix-mas</i>

Common Name	Scientific Name
Ribwort Plantain	<i>Plantago lanceolata</i>
Red Fescue	<i>Festuca rubra</i>
Buddleja	<i>Buddleja davidii</i>
Hart's-tongue Fern	<i>Asplenium scolopendrium</i>
Spear Thistle	<i>Cirsium vulgare</i>
Ivy	<i>Hedera helix</i>
Perennial Sow-thistle	<i>Sonchus arvensis</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Stonecrop spp.	<i>Sedum spp.</i>
Germander speedwell	<i>Veronica chamaedrys</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Tufted Vetch	<i>Vicia cracca</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common Knotgrass	<i>Polygonum aviculare.</i>
Pineapple-weed	<i>Matricaria discoidea</i>
Foxglove	<i>Digitalis purpurea</i>
Hop Trefoil	<i>Trifolium campestre</i>
Rosebay Willowherb	<i>Chamaenerion angustifolium</i>
Forget-me-not spp.	<i>Myosotis spp.</i>
Maidenhair Spleenwort	<i>Asplenium trichomanes</i>
Greater Plantain	<i>Plantago major</i>
Scentless Mayweed	<i>Tripleurospermum inodorum</i>
Silverweed	<i>Argentina anserina</i>
Selfheal	<i>Prunella vulgaris</i>
Fern grass	
Nettles	<i>Urtica dioica</i>

Appendix C : Cumbria Biodiversity Action Plan

Species Action Plans

Mammals

Bats

Red Squirrel

Water Vole

Birds

Barn Owl

Song Thrush

Fish

Vendace

Amphibians

Great Crested Newt

Natterjack Toad

Snails

Geyer's Whorl Snail

Sandbowl Snail

Butterflies and Moths

High Brown Fritillary

Marsh Fritillary

Netted Carpet Moth

Dragonflies

Variable Damselfly

White-Faced Darter

Beetles

A Water Beetle *Hydroporus rufifrons*

Flies

A Caddisfly *Glossosoma intermedium*

Mosses

Slender Green Feather-Moss

Lichens

A Lichen *Lobaria amplissima*

Vascular Plants

Juniper

Habitat Action Plans

Aquatic

Mesotrophic Standing Waters

Rivers and Streams

Wildlife and People

Cities, Towns and Villages

Coastal

Coastal Habitats

Honeycomb Worm Reefs

Agricultural

Ancient and/or Species-Rich Hedgerows

Calcareous Grassland

Hay Meadows and Lowland Pasture

Upland

Blanket Bog

Upland Heathland

Wetland

Basin Mire

Lowland Raised Mire

Reedbed

Woodland



Upland Oak Woodland


Upland Mixed Ashwood

Wet Woodland

Appendix D : Example Habitat Boxes

Example Bat boxes

	
<p>2F Schwegler Bat Box (General Purpose).</p> <p>Designed as a summer roosting space for bats and has a simple entrance hole at the front.</p> <p>Can be sited on a tree or building and is best positioned at a height of between 3 to 6 metres in an open sunny position.</p>	<p>Schwegler 1FF bat box</p> <p>The rectangular shape of the 1FF bat box makes it suitable for hanging on either trees or buildings. Big enough for bats to use as a summer roost or maternity roost site.</p> <p>Made of natural WoodcretePLUS to provide a natural stable environment for roosting bats. The flatness of this box provides a narrow crevice-like internal space suitable for pipistrelle and noctule bats.</p> <p>This box is fairly low maintenance as its open bottom allows droppings to fall out and is designed to last for 20-25 years before it needs to be replaced.</p>

	
<p>The 2FR Bat Tube is designed for summer roosting bat species that prefer to inhabit buildings and is designed to be built into the masonry of an external wall. It can either be built flush with the wall or beneath a rendered surface. The tube is constructed from woodcrete (a tough, weather-resistant blend of wood and concrete that will last for years and won't rot, warp, crack or leak) and has an integrated wooden panel onto which bats can easily cling the bat box. This box requires no maintenance as droppings fall out of the entrance ramp.</p> <p>Install into facades of listed buildings, industrial buildings, bridges and buildings of slab-type construction, at least 3m above the ground on an aspect that receives sun during the day:</p> <ul style="list-style-type: none"> • it can either be bricked or rendered-in • set into concrete (for example, in bridge structures) • retrofitted under weather-boarding during renovation work <p>If fitted to a wall then brackets (not supplied) must be used.</p>	

Example Bird Boxes

	
<p><u>1B Schwegler Nest Box</u></p> <p>The 1B nest box will attract a wide range of species and is available with different entrance hole sizes:</p> <p>* 32mm entrance hole will attract great tit <i>Parus major</i>, blue tit <i>Cyanistes caeruleus</i>, tree sparrow <i>Passer montanus</i>, house sparrow <i>Passer domesticus</i> pied flycatcher <i>Ficedula hypoleuca</i>, and redstart <i>Phoenicurus phoenicurus</i>.</p> <p>* 26 mm entrance hole suits blue tit and possibly wren <i>Troglodytes troglodytes</i>. All other species are prevented from using the nest box due to the smaller entrance hole</p>	<p><u>Woodpecker / Starling Nest Box</u></p> <p>This woodpecker and starling <i>Sturnus vulgaris</i> box is purposefully designed with a large round aperture to be attractive to these birds. To attract great spotted woodpeckers <i>Dendrocopos major</i> it is advisable to fill the lower part of the box with a block of soft, safe (and preferably natural) material, such as compacted sawdust or balsawood. For other birds an empty box is acceptable.</p>

Example Invertebrate Boxes

	
<p><u>Insect Block</u></p> <p>A durable woodstone brick filled with bamboo canes of a variety of sizes to attract beneficial insects such as wild bees, lacewings and ladybirds</p>	<p><u>Schwegler Woodcrete Insect Block</u></p> <p>This insect nesting block made from Schwegler wood-concrete that ensures a balanced interior atmosphere and is air-permeable.</p> <p>Can be hung on fences, walls, pergolas, and balconies, in sheds, and anywhere sunny and sheltered in gardens. They should be left outside during winter; otherwise, the insects may hatch too early and die. None of the insects using these aids is aggressive</p>

