

Construction Ecological Management Plan

Twycross Zoo, Burton Road, Atherstone

A Report To: Henry Brothers Construction Ltd
Report Number: RT-MME-180537-02
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Quality Assurance

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Declaration of Compliance

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of Practice for Planning and Development". The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Disclaimer

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

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1. Introduction

1.1 Project Background

Henry Brother Construction Ltd commissioned Middlemarch to produce a Construction Ecological Management Plan (CEcMP) associated with a proposed development at Twycross Zoo, Atherstone.

Full planning permission was granted by Hinkley and Bosworth Borough Council on 14th February 2024 (Application No. 23/00948/FUL). This management plan is required to discharge a planning condition associated with the proposed development. Condition 21 states:

'The development shall be carried out in full accordance with the recommendations within Section 7 (Recommendations) of the Preliminary Ecological Appraisal (submitted 27.10.2023).

Reason: In order to protect the protected wildlife species and their habitats that are known to exist on site to accord with Policy DM6 of the adopted Site Allocations and Development Management Policies Development Plan Document (2016).'

Middlemarch has previously completed a number of ecological surveys for Henry Brothers Construction Ltd associated with other proposals within Twycross Zoo. The findings of these surveys are detailed in the following reports:

- Preliminary Arboricultural Assessment, 2022, report RT-MME-159277-01;
- Arboricultural Impact Assessment, 2024, report RT-MME-159277-02 Rev A;
- Arboricultural Method Statement, 2024, report RT-MME-159277-03 Rev A;
- Preliminary Ecological Appraisal, 2022, report RT-MME-159277-04;
- Preliminary Bat Roost Assessment, 2022, report RT-MME-159277-05;
- Report to Inform Habitats Regulations Assessment, 2023, report RT-MME-160474-01;
- Preliminary Ecological Appraisal, 2023, report RT-MME-160474-02 Rev A;
- Preliminary Bat Roost Assessment, 2023, report RT-MME-160474-03 Rev A;
- Biodiversity Metric Assessment, 2024, report, RT-MME-160474-04 Rev D;
- Habitats Suitability Index Assessment for Great Crested Newts, 2023, RT-MME-160474-05 Rev A;
- Great Crested Newt eDNA, 2024, report, RT-MME-162321-01 Rev A;
- Bat Surveys, 2024, report, RT-MME-162321-02 Rev A; and,
- Badger Pre-works check and Monitoring, 2024, report, RT-MME-181541.

Middlemarch has also been commissioned to produce a Lighting Strategy Review (Report RT-MME-180537-03) and Ecological Management and Monitoring Plans (Reports RT-MME-181945-01 and RT-MME-181945-02) in connection to this project.

The overall aim of the CEcMP is to minimise the potential impact of the construction phase of the development on the existing ecology of the site, and ensure works proceed in accordance with current wildlife legislation. It is designed specifically for implementation during the construction phase of the proposed development. This report contains the following information:

- Chapter 2: Assessment of Impacts
- Chapter 3: General Control of Works

- Chapter 4: Avoidance and Mitigation
- Chapter 5: Drawings.

1.2 Site Description and Context

Table 1.1 provides a brief summary of the site and its surroundings.

Attribute	Description
Location	Twycross Zoo, Burton Road, Atherstone
National Grid Reference	SK 31559 06068
Site Area (ha)	2.19
Topography	Generally flat, slightly sloping to the south.
Land Cover (on site)	The site forms the south-west corner of the larger site of Twycross Zoo and a stretch of land immediately south of the active zoo boundary. At the time of the Preliminary Ecological Appraisal, approximately one third of the site was composed of semi-improved grassland with scattered scrub. The remaining land comprised a mosaic of dense scrub, amenity grass, conifer plantation, broad-leaved woodland, scattered and groups of planted trees, hedgerow, pond, hardstanding paths and animal enclosures, the latter mainly containing bark chippings and grasses.
Land Cover (site surrounds)	Twycross Zoo dominates the landscape to the north/north-east of the proposed development area with the wider area comprising intensively managed arable farmland dotted with small farmsteads and residential properties. The M42 lies around 3 km to the west.

Table 1.1: Summary of Site and Surroundings

1.3 Summary of Proposals

It is understood that the development proposals are to include the demolition of the existing lemur house, removal of several animal enclosures and clearance of trees and vegetation to make way for the construction of a National Science Conservation Centre (NSCC). This development will comprise a new orangutan enclosure, higher education campus building with educational, research, ancillary facilities and associated hard and soft landscaping. Documentation made available by the client is listed in Table 1.2.

Document / Drawing Number	Author
Soft Landscape Strategy / TWZ-DZU-00-00-DR-L-00400-P05	Dearadh Zú
Proposed Site Plan / TWZ-HLM-00-00-DR-L-00001	HLM Architects
Flood Risk Assessment and Drainage Strategy / 21440-CCL-XX-XX-RP-C-001-REV-0	Clancy Consulting Ltd
231078-CPW-ZZ-XX-DR-E-307001 PO5 / Electrical Services External Lighting & CCTV Philosophies	CPW

Table 1.2: Documentation Provided by Client

2. Assessment of Impacts

2.1 Overview of Construction Activities and Impact Pathways

The following activities are likely to be required during the works:

- Use of site by construction vehicles;
- Use of site by personnel;
- Use of machinery;
- Vegetation clearance and groundworks;
- Use of lighting for work compounds; and,
- Storage of materials on site.

In the absence of mitigation, these activities have the potential to adversely affect ecological features via the following impact pathways:

- Direct loss or damage to habitats scheduled for retention, in the event that areas outside the construction zone are accessed by vehicles, machinery or people;
- Increased noise and/or visual disturbance from vehicles, people, machinery and lighting;
- Air, ground and water pollution on and adjacent to the site due to emissions from vehicles and machinery;
- Release of dust from machinery and stored materials; and
- Killing, injury or disturbance to fauna during vegetation clearance and groundworks.

2.2 Summary of Potential Impacts in the Absence of Mitigation

Table 2.1 details the key ecological features identified during baseline surveys (refer to Section 1.1) and assesses the potential for adverse impacts in the absence of mitigation or control measures. Legislation relevant to the ecological features identified is provided in Appendix 1.

Ecological Feature	Source to inform baseline	Potential for Impacts?	Description/Justification
Statutory Nature Conservation Sites			
River Mease SAC, SSSI	PEA (Report RT-MME-160474-02 Rev A, 2023) and Report to Inform Habitats Regulations Assessment (Report RT-MME-160474-01).	No (if there are no material changes in the currently proposed drainage strategy)	The River Mease SAC, SSSI is situated 4,385 m north-east of the proposed development site. A Stage 1 Screening Report to inform a Habitats Regulations Assessment was undertaken by Middlemarch in 2023 (see Report RT-MME-160474-01 for full details), which identified that due to the site's geographic proximity to the fluvial catchment of the River Mease SAC (13 m north of the development boundary) there was potential for the developments operational phase to increase levels of pollution via foul water disposal.

Table 2.1: Summary of Potential Impacts on Ecological Features from Proposed Works (continues)

Ecological Feature	Source to inform baseline	Potential for Impacts?	Description/Justification
Statutory Nature Conservation Sites (continued)			
River Mease SAC, SSSI (continued)	PEA (Report RT-MME-160474-02 Rev A, 2023) and Report to Inform Habitats Regulations Assessment (Report RT-MME-160474-01).	No (if there are no material changes in the currently proposed drainage strategy)	However, review of the proposed Flood Risk Assessment and Drainage Strategy (21440-CCL-XX-XX-RP-C-001-REV-0) concluded that there was not a likely significant impact, either in isolation, or in combination, on the designated site.
Non-statutory Nature Conservation Sites			
Twycross Zoo Oak, Norton Lane Hedgerow, and four other cLWS sites	PEA (Report RT-MME-160474-02 Rev A, 2023)	No	The proposed development site is situated within a 1 km radius of five cLWS sites with the closest being Twycross Zoo Oak, located 240 m to the north-east. Due to the location of the works and the nature of intervening habitats, it is not anticipated that this nature conservation feature will be directly or indirectly impacted by the works. The remaining cLWS sites are located in excess of 600 m from the proposed development site, and it is therefore considered unlikely that these nature conservation sites will be affected by the works.
Habitats			
Pond (to be retained)	PEA (Report RT-MME-160474-02 Rev A, 2023) and Great Crested Newt eDNA (Report RT-MME-162321-01 Rev A, 2023)	Yes	The pond located within the proposed development is to be retained. This pond was considered to have 'Good' suitability for great crested newt; however, eDNA surveys returned a negative result for the presence of great crested newt DNA. The retained pond could be subject to habitat damage or disturbance due to encroachment of construction vehicles/machinery and water pollution.
Plantation broad-leaved woodland (majority to be retained)	PEA (Report RT-MME-160474-02 Rev A, 2023)	Yes	The plantation broad-leaved woodland situated within the proposed development area is to be largely retained. In the absence of appropriate protection measures, there is a potential for the retained areas of woodland to be impacted during the construction phase of the development. Examples of impacts include root compaction, dust pollution and light spill from any new temporary/permanent lighting.

Table (continued) 2.1: Summary of Potential Impacts on Ecological Features from Proposed Works (continues)

Ecological Feature	Source to inform baseline	Potential for Impacts?	Description/Justification
Habitats (continued)			
Hedgerows (to be retained/ partially retained)	PEA (Report RT-MME-160474-02 Rev A, 2023)	Yes	Large sections of some hedgerows will be lost to facilitate the proposed development. Retained sections of hedgerow could also subject to further habitat damage/degradation, including root compaction due to encroachment of vehicles/machinery and light spill from new temporary/permanent lighting.
Line of coniferous trees		Yes	A line of coniferous trees scheduled for retention which could be subject to damage or degradation, including root compaction due to the encroachment of construction vehicles/ machinery, and light spill due to new lighting either temporary or permanent.
Scattered trees (majority to be retained)		Yes	Scattered trees that are planned to be retained could be subject to habitat damage or degradation, including root compaction due to the encroachment of construction vehicles/ machinery, and light spill due to new lighting either temporary or permanent.
Amenity and semi-improved neutral grasslands, line of trees, dry and wet ditches, fence, plantation coniferous woodland, dense scrub, introduced shrub, animal enclosures and bare ground	PEA (Report RT-MME-160474-02 Rev A, 2023)	Yes	Unavoidable loss of habitats in order to facilitate the proposed development. Compensation and enhancement will be provided through the creation of new habitats both on and off-site. Details of where these habitats will be created, their establishment and how they will be maintained can be found in Ecological Management and Monitoring Reports RT-MME-181945-01 and RT-MME-181945-02.
Buildings and hardstanding	PEA (Report RT-MME-160474-02 Rev A, 2023)	Yes	All the existing buildings within the development area will be removed/demolished and areas of hardstanding will be redeveloped. These habitats hold negligible ecological value.

Table (continued) 2.1: Summary of Potential Impacts on Ecological Features from Proposed Works (continues)

Ecological Feature	Source to inform baseline	Potential for Impacts?	Description/Justification
Species			
Amphibians, including great crested newt	PEA (Report RT-MME-160474-02 Rev A, 2023) and Great Crested Newt eDNA (Report RT-MME-162321-01 Rev A, 2023)	Yes	Loss of terrestrial habitats; risk of killing or injury during vegetation clearance of grassland, scrub, woodland habitats, removal of hibernacula woodland habitats and groundworks. Potential for breach of wildlife legislation.
Badger and other terrestrial mammals	PEA (Report RT-MME-160474-02 Rev A, 2023) and Pre-works Badger Check and Monitoring (Report RT-MME-181541, 2024)	Yes	Risk of killing/injury of individual badger and other terrestrial mammals during vegetation clearance and groundworks. Fragmentation of habitats due to lighting and disturbance due to noise and vibration. Potential for breach of wildlife legislation.
Bats	PRA (Report RT-MME-160474-03 Rev A, 2023) and Bat Surveys (Report RT-MME-162321-02 Rev A, 2024)	Yes	Demolition of buildings 1 and 4 which have high and low potential for roosting bats respectively, and removal of tree T21 which has high potential to support roosting bats. Dusk emergence surveys and aerial inspection surveys revealed that no bat roosts were present within the buildings and tree. Loss and fragmentation of foraging and commuting habitats associated with woodland, hedgerow, lines of trees, scrub and grasslands. Further fragmentation of retained habitats resulting from any new temporary/permanent lighting.
Birds	PEA (Report RT-MME-160474-02 Rev A, 2023)	Yes	Loss of nesting and foraging habitats; risk of killing, injury and disturbance of nests during vegetation clearance of scrub, hedgerow, woodland, scattered trees, line of trees and demolition of buildings. Potential for breach of wildlife legislation.
Other species (aquatic mammals, reptiles and invertebrates)		No	Other species/species groups were scoped out due to lack of desk study records and absence of suitable habitats within the proposed development area/surroundings.

Table 2.1: Summary of Potential Impacts on Ecological Features from Proposed Works

Control measures to prevent and manage potentially adverse impacts on ecological features during the construction phase of the development are provided in Chapters 3 and 4.

3. General Control of Works

This section of the report provides information with respect to the methods that will be implemented during the construction phase, in order to ensure the protection of ecologically sensitive habitats within the site and to prevent significant adverse impacts on any protected/notable species present.

3.1 Ecological Management Team

The overall responsibility for ensuring construction works proceed in accordance with the CECMP will lie with Henry Brothers Construction Ltd.

Henry Brothers Construction Ltd will appoint an Ecological Manager. The responsibilities of the Ecological Manager will include developing method statements and site protocols as required, providing guidance for the site team in dealing with environmental matters, and liaising with contractors/sub-contractors and any statutory or third party with an ecological interest in the scheme. The Ecological Manager will ensure that all site personnel are appropriately briefed on the ecological issues within the site. This will be undertaken through inclusion of ecological briefings within the 'toolbox' talks given to all staff as part of the site induction process.

A suitably qualified Ecological Clerk of Works will be appointed by Henry Brothers Construction Ltd to advise and oversee construction activities where appropriate and ensure the site team and sub-contractors comply with site protocols and control/mitigation measures. Any failings will be reported to the Project Manager immediately, who will be responsible for ensuring that remedial action is implemented.

The Ecological Clerk of Works will be responsible to the Ecological Manager and will approve all method statements, in addition to ensuring that any relevant site ecological protocols are appended and that these controls are adhered to.

The ecological management team for this project is summarised in Table 3.1.

Role	Persons Responsible
Project Manager / Site Manager	Stuart Rowles, Henry Brothers Construction
Ecological Manager	Charline Hue, Middlemarch
Ecological Clerk of Works	Thomas Weston, Middlemarch

Table 3.1: Ecological Management Team

3.2 Identification of Biodiversity Protection Zones

In order to categorise the site according to ecological risk and to identify areas where certain construction activities are prohibited or restricted, a traffic light system will be implemented. The site has been divided into Red, Amber and Green Zones, with Red Zones being those areas of highest biodiversity interest and of greatest risk from construction.

The areas of the site falling into each of the Biodiversity Protection Zones are detailed below and are shown on Drawing C180537-02-01 in Chapter 5.

Red Zones / Features

Red Zones are defined as the most ecologically sensitive parts of the development site, or the areas most vulnerable to ecological damage. The following features on site are included in this category:

- Pond;
- Plantation broad-leaved woodland (area scheduled for retention);
- Dense scrub (area scheduled for retention);
- Sections of hedgerow (scheduled for retention);
- Scattered trees (scheduled for retention); and,
- Line of coniferous trees.

Red Zones are the areas that will be retained and protected throughout the development, and works will be subject to ongoing monitoring by the Ecological Clerk of the Works. No works can be undertaken within the Red Zones without prior consent from the Ecological Manager. Measures that will be implemented to ensure that Red Zones are protected are summarised in Chapter 4.

Amber Zones / Features

Amber Zones are defined as areas of moderate to high ecological value that may be subject to direct or indirect impacts as a result of the proposed development. The following features on site are included in this category:

- Sections of hedgerow;
- Semi-improved neutral grassland;
- Plantation broad-leaved woodland (small area scheduled to be removed);
- Buildings;
- Introduced shrub;
- Lines of trees;
- Wet and dry ditches;
- Plantation coniferous woodland; and,
- Dense scrub.

Any works impacting upon Amber Zones will be subject to control measures (see Chapter 4) and will be undertaken under the supervision or guidance of the Ecological Clerk of Works. Once works within the Amber Zones have been completed, the Ecological Clerk of Works may downgrade these areas to Green Zones.

All works within Amber Zones will proceed with caution and will be subject to regular monitoring by the Ecological Clerk of Works. Specific mitigation and control proposals that will be implemented to minimise the ecological impact of work in Amber Zones are detailed in Chapter 4.

Green Zones / Features

Green Zones are areas identified as having low ecological interest where breaches of wildlife legislation are unlikely to occur. They are of low intrinsic value, and do not offer any key habitat for notable or protected species. These habitats include:

- Hardstanding;
- Buildings;

- Animal enclosures; and,
- Bare ground.

Works within Green Zones are permitted to proceed without supervision by the Ecological Clerk of Works, provided that ecological best practice is adhered to at all times. Should any ecological issues be identified, works will cease and the Ecological Clerk of Works will be contacted for advice.

3.3 Quality Control

Site Inductions / Toolbox Talks

All personnel on site will receive a site induction prior to commencing any work activities. The site induction will highlight key issues, operations, times of year and areas in relation to ecology. The induction will include:

- Awareness of the Biodiversity Protection Zones Map (see Drawing C180537-02-01 in Chapter 5);
- Site activity method statements;
- Reporting hierarchy; and,
- Permit system.

Role of the Ecological Clerk of Works

The Ecological Clerk of Works will sign-off on works within Red/Amber Zones and will keep a record of works completed under their supervision. Following any supervision, a letter report detailing the results and observations will be produced.

Revisions to Scheme

Should the need to amend any details of the scheme arise, such as the proposed methods of working or the extent of the works, the proposed changes will be approved in writing by the Ecological Clerk of Works prior to implementation, and also by the Local Planning Authority if required.

4. Avoidance and Mitigation

4.1 Use of Protective Fencing/Barriers

Appropriate protective fencing will be installed around any retained scattered trees, plantation broad-leaved woodland, sections of hedgerow, scrub and the line of coniferous trees. This fencing should ensure the integrity of the Root Protection Area of the trees and should meet the requirements of British Standard 5837: 2012 "Trees in relation to design, demolition and construction – recommendations". Please refer to the Arboricultural Method Statement, Report RT-MME-159277-03RevA for further details.

4.2 Site Compound and Storage of Materials

All areas to be used for site compounds / material storage will be agreed with the Ecological Clerk of Works and will be within habitats of negligible ecological value (green zones). No storage of materials will be permitted in close proximity to habitats that are proposed to be retained. This will include the pond, plantation broad-leaved woodland, retained sections of hedgerow, retained sections of scrub, retained scattered trees and the line of coniferous trees.

4.3 Pollution Prevention

Environment Agency Pollution Prevention Guidelines were formerly withdrawn in December 2015, although do provide a useful framework for the design of working practices. Guidance on Pollution Prevention for Businesses is provided at <https://www.gov.uk/guidance/pollution-prevention-for-businesses>. These guidelines include details for the design of working practices to avoid pollution during construction and will be followed throughout the construction period.

No bulk storage of fuel and other liquids will be permitted on site. Fuels and other liquids which must be stored on site will be kept in bunded containers within habitats of negligible value. Spill kits will be available on site and procedures will be in place to deal with any incidents efficiently and quickly.

Refuelling of plant/machinery on site will be avoided. If refuelling is required, then it will be undertaken as far away from notable habitats and river catchment as possible, over a drip tray.

Appropriate dust suppression measures will be put in place to reduce impacts to habitats and species outside of the works area. The 'Construction Dust Information Sheet' issued by the Health and Safety Executive (2020¹) provides guidance on controlling construction dust and will be followed throughout the construction period.

4.4 Lighting

It is not anticipated that working at night would be necessary. However, if any security lighting or lighting at night is required, then it will be low level and directional, ensuring that there is no increased illumination of key ecological features including the pond, retained broad-leaved plantation woodland, areas of scrub, sections of hedgerow and scattered trees.

¹ Health and Safety Executive (2020) *Construction Dust – Construction Information Sheet No 36 (Revision 3)*. March 2020.

4.5 Noise and Vibration

Reasonable measures will be taken to avoid significant increases in noise and vibration during the construction phase of the development. Any construction works on site will be carried out in accordance with British Standard 5228:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites².

Engines of construction vehicles will be turned off when these vehicles are stationary to minimise noise and vibration disturbance.

4.6 Fire Prevention

During construction, fires will not be permitted on site and the work force will be made aware of the risks of accidental fires on surrounding retained habitats.

4.7 Mitigation Measures for Notable Habitats

The retained pond, plantation broad-leaved woodland, sections of hedgerow, scattered trees, and areas of scrub will be protected according to the measures outlined in Section 4.1. Where construction works require the loss, damage or management of these habitats then vegetation clearance will need to be undertaken in accordance with specific species mitigation strategies outlined in Section 4.8 below.

4.8 Mitigation Measures for Protected and Notable Species

Amphibians

Vegetation clearance/removal and dismantling of potential refugia will be undertaken in a sensitive manner to avoid harming amphibians. If any are found during the course of the site-based works, they will be removed carefully to a suitably undisturbed location within the near vicinity. This will be completed when these species are active. This is weather dependent but generally extends between March and October.

Should a great crested newt *Triturus cristatus* be encountered on site, all works should cease, and a suitably qualified ecologist contacted to determine the most pragmatic measures going forward.

Amphibians will use stacked material such as wood, stone, boards and metal sheets as refuges. To avoid creation of potential refuges during the construction phase, active works areas will be kept tidy, and materials will be stored on areas of hardstanding and off the ground – for example on pallets where possible.

Bats

Foraging and commuting bats

In order to reduce the impact of the works on foraging and commuting bats, the following mitigation measures will be implemented:

- The pond, woodland, sections of hedgerow, scattered trees and scrub scheduled for retention will be protected according to measures outlined in Section 4.1.

² British Standards Institution (2009) *BS 5228-2:2009 Code of practice for noise and vibration control on construction and open sites*.

- Construction phase lighting, noise and vibration will be kept to a minimum, in line with the measures outlined in Sections 4.4 and 4.5.

Roosting bats

- Buildings B1 and B3 were identified to have high and low potential to support roosting bats respectively. These buildings were subject to dusk emergence surveys between June and July 2024 which did not identify any bat roosts. If demolition works have not commenced within 12 months of these surveys, an updated survey will be required before demolition works can start.
- Tree T21 was assessed as having high potential to support roosting bats. This tree was subject to a suite of aerial inspection surveys which did not identify any bats or evidence of bats utilising any of the potential roosting features present on the tree. If tree removal works have not commenced within 12 months of these surveys, an updated survey will be required before demolition works can start.

Birds

In order to avoid any breach of legislation with regard to nesting birds, the following measures will be implemented:

- Vegetation management/clearance and the demolition of building B1 will be undertaken outside of the bird nesting season. The bird nesting season is weather dependent but generally extends between March and September inclusive (peak period March-August). If this is not possible, then any vegetation to be removed or disturbed or buildings to be demolished will be checked by an experienced ecologist for nesting birds immediately prior to works commencing. If birds are found to be nesting, any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally, for example via the implementation of an appropriate buffer zone (species dependent) around the nest in which no disturbance is permitted until the nest is no longer in use.
- The woodland, sections of hedgerow, scattered trees and scrub to be retained will be protected according to measures outlined in Section 4.1.
- Noise and vibration will be kept to a minimum, in line with the measures outlined in Section 4.5.

Terrestrial mammals (including badger, rabbit and hedgehogs)

During a pre-works badger *Meles meles* check and following vegetation clearance works in November 2024, two entrances were discovered with Entrance 1 being of a size and shape indicative of badger with nearby evidence such as badger hair and foraging signs. Both entrances were subject to a full suite of monitoring surveys, and it was concluded that Entrance 1 was not in current use by badger and Entrance 2 was in current use by rabbit *Oryctolagus cuniculus*.

To discourage recolonisation by badger before construction works begin, vegetation in the area should be kept to ground level.

If works have not been commenced within 12 months of the completion of the monitoring surveys in December 2024, then an updated pre-works badger check will be undertaken to ensure the status of badger on site has not changed since then.

Should any new potential badger setts/entrances be identified, all works will stop, and a suitably experienced ecologist will be contacted for advice.

Any steep-sided open excavations that are part of the works will be covered overnight, or where this is not possible, a ramp will be placed within each hole at an angle no steeper than 45°, to ensure that any animals that fall in can escape. Any open pipework with an outside diameter of or greater than 120 mm must be covered at the end of each workday to prevent animals entering/becoming trapped.

Vegetation clearance will be undertaken in a sensitive manner to avoid harming small mammals such as hedgehogs *Erinaceus europaeus*. Any removal of woody debris will be undertaken by hand. If hedgehogs are found during the course of the site-based works, they will be removed carefully to a suitably undisturbed location within the near vicinity. This will be completed when this species is active which generally extends between March and October inclusive.

Contractors will remain vigilant for the presence of terrestrial mammals during vegetation clearance works, particularly the removal of dense scrub.

No works will be undertaken on excavations that might lead to the entrapment or suffocation of rabbits.

4.9 Control Measures for Non-Native Invasive Plant Species

No invasive plant species have been recorded within the site during ecological survey work. However, reference to PEA (report RT-MME-160474-02 Rev A) desk study data indicates that three cornered garlic *Allium triquetrum* has been recorded within the proposed development area. Vigilance for three cornered garlic and any new invasive plant species should be maintained throughout the duration of the works. Should three cornered garlic or any other invasive plant species be found; the Ecological Manager will be contacted for advice.

4.10 Timing Restrictions

Table 4.1 details a master timetable of works constrained by timing restrictions in order to minimise the ecological impact of the works within Amber Zones.

Protected Species	Time of Year											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>Building demolition</i>												
Nesting birds	✓	✓	*	*	*	*	*	*	*	✓	✓	✓
<i>Clearance of above ground vegetation i.e., above 150 mm</i>												
Amphibians/ small mammals (including hedgehog)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nesting birds	✓	✓	*	*	*	*	*	*	*	✓	✓	✓

Table 4.1: Master Timetable of Timing Restricted Work Activities (continues)

Protected Species	Time of Year											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>Clearance of vegetation below 150 mm / potential hibernacula and refuges</i>												
Amphibians/ small mammals (including hedgehog)	x	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x
Key: ✓ Suitable time for activity to be undertaken (subject to approval from Ecological Clerk of Works) * Possible time for activity to be undertaken. All vegetation clearance must proceed in accordance with methodologies detailed in Section 4.8. x: No works permitted.												

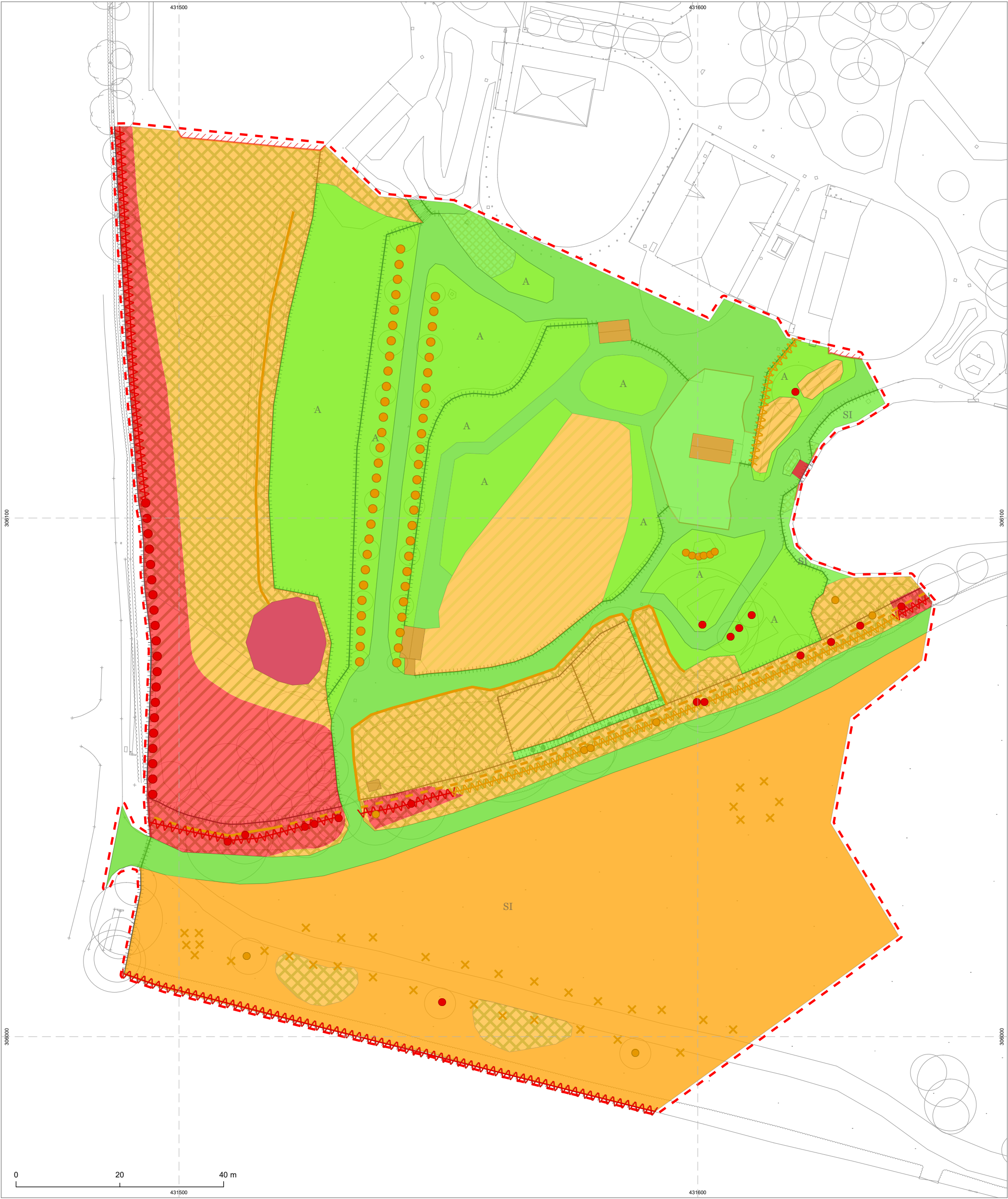
Table 4.1 (continued): Master Timetable of Timing Restricted Work Activities

4.11 Contingency Measures

Should any unexpected events occur, e.g. the discovery of unexpected species on site, work will cease and the Ecological Manager/Clerk of Works will be contacted to determine the most appropriate way to proceed.

5. Drawings

Drawing C180537-02-01 – Biodiversity Protection Zones



Legend

- Area to be protected and maintained
- Area subject to control measures/supervision
- Works permitted without supervision
- No access

Project		Twycross Zoo, Burton Road, Atherstone	
Drawing		Biodiversity Protection Zone Map	
Client		Baker Mallett LLP	
Drawing Number	C180537-02-01	Revision	00
Scale @ A3	1:700	Date	January 2025
Approved By	TW	Drawn By	KB
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C180537-02-01

Appendix 1

Summary of Relevant Wildlife Legislation

The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (the Habitats Regulations 2019)

The Habitats Regulations 2017 (as amended) transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) (known as the Nature Directives) into English and Welsh law. Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1 January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of sites or species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

The Habitats Regulations 2019 have created a 'National Site Network' on land and at sea, including both the inshore and offshore marine areas in the UK. The National Site Network includes:

- Existing Special Areas of Conservation (SACs), which are designated due to their importance to the habitats and species listed in Annexes I and II of the Habitats Directive;
- Existing Special Protection Areas (SPAs), which are designated due to their importance for wild birds in accordance with the Wild Birds Directive; and,
- New SACs and SPAs designated under these Regulations.

SACs and SPAs in the UK no longer form part of the European Union's Natura 2000 ecological network. Any references to Natura 2000 in the 2017 Regulations and in guidance now refers to the new National Site Network. However, guidance provided by Freeths (2020)³ recommends that SACs and SPAs can continue to be referred to as "European sites" / "European marine sites".

Designated Wetlands of International Importance (known as Ramsar sites) do not form part of the National Site Network. Many Ramsar sites overlap with SACs and SPAs and may be designated for the same or different species and habitats. All Ramsar sites remain protected in the same way as SACs and SPAs.

The 2019 Regulations establish management objectives for the National Site Network. The network objectives are to:

- Maintain or, where appropriate, restore habitats and species listed in Annexes I and II of the Habitats Directive to a favourable conservation status; and,

³ Freeths (2020). *The Habitats Regulations Assessment regime after 31 December 2020 – how will it look?* Available: <https://www.freeths.co.uk/2020/10/22/the-habitats-regulations-assessment-regime-after-31-december-2020-how-will-it-look/?cmpredirect>

- Contribute to ensuring, in their area of distribution, the survival and reproduction of wild birds and securing compliance with the overarching aims of the Wild Birds Directive.

The appropriate authorities must also have regard to the:

- Importance of protected sites;
- Coherence of the National Site Network; and,
- Threats of degradation or destruction (including deterioration and disturbance of protected features) on SPAs and SACs.

The network objectives contribute to the conservation of UK habitats and species that are also of pan-European importance, and to the achievement of their favourable conservation status within the UK.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Habitat Regulations 2017 and the Habitats Regulations 2019, offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species.

The Countryside and Rights of Way (CROW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs. The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

Badger

Badgers and their setts are protected under the Protection of Badgers Act 1992. The Protection of Badgers Act 1992 is based primarily on the need to protect badgers from baiting and deliberate harm or injury, badgers are not protected for conservation reasons. The following are criminal offences:

- To intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.
- To wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so.

A badger sett is defined in the legislation as:

- 'Any structure or place that displays signs indicating current use by a badger'.

'Current use' is not synonymous with current occupation and a sett is defined as such (and thus protected) as long as signs of current usage are present. Therefore, a sett is protected until such a time as the field signs deteriorate to such an extent that they no longer indicate 'current usage'.

Badger sett interference can result from a multitude of operations including excavation and coring, even if there is no direct damage to the sett, such as through the disturbance of badgers whilst

occupying the sett. Any intentional or reckless work that results in the interference of badger setts is illegal without a licence from Natural England. In England a licence must be obtained from Natural England before any interference with a badger sett occurs.

The reader should refer to the original legislation for the definitive interpretation.

Bats

Bats and the places they use for shelter or protection (i.e. roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The reader should refer to the original legislation for the definitive interpretation.

Common amphibians

Common frogs, common toad, smooth newt and palmate newt are protected in Britain under Schedule 5 of the Wildlife and Countryside Act (1981, as amended) with respect to sale only. They are also listed under Annex III of the Bern Convention 1979. Any exploitation of wild fauna specified in Appendix III shall be regulated in order to keep the populations out of danger. The convention seeks to prohibit the use of all indiscriminate means of capture and killing and the use of all means capable of causing local disappearance of, or serious disturbance to, populations of a species.

Common toad is listed as a Species of Principal Importance for Nature Conservation in England.

Great crested newt

Great crested newts (GCN) and the places they use for shelter or protection receive legal protection under the Conservation of Habitats and Species Regulations 2017, (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that GCN, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a GCN;
- deliberately disturb GCN;
- deliberately take or destroy eggs of a GCN; or
- damage or destroy a GCN breeding site or resting place.

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead GCN, part of a GCN or anything derived from GCN, which has been unlawfully taken from the wild. This legislation applies to all life stages of GCN.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to intentionally kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to intentionally or recklessly* damage or destroy, or obstruct access to, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to intentionally or recklessly* disturb any protected species while it is occupying a structure or place which it uses for shelter or protection.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

The reader should refer to the original legislation for the definitive interpretation.

GCN are listed a Species of Principal Importance for Nature Conservation in England which means they are a material consideration in the planning process. The list of species is derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006.

Hedgehog

Hedgehogs receive some protection under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended); this section of the Act lists animals which may not be killed or taken by certain methods, namely traps and nets, poisons, automatic weapons, electrical devices, smokes/gases and various others. Humane trapping for research purposes requires a licence.

Hedgehogs are a Species of Principal Importance for Nature Conservation in England and are thus capable of being material considerations in the planning process.

Nesting Birds

The Conservation of Habitats and Species Regulations 2017, (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019) places a duty on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds.

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended).

Subject to the provisions of the act, if any person intentionally:

- kills, injures or takes any wild bird;
- takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- takes or destroys an egg of any wild bird, he shall be guilty of an offence.

Some species (listed in Schedule 1 of the WCA) are protected by special penalties. Subject to the provisions of the act, if any person intentionally or recklessly:

- disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependent young of such a bird, he shall be guilty of an offence.

Several bird species are Species of Principal Importance for Nature Conservation in England, making them capable of being material considerations in the planning process.

Wild Mammal (Protection) Act 1996

All wild mammals, including rabbits, are afforded protection from acts of cruelty or that inflict unnecessary suffering, which includes impaling, stabbing, crushing, or asphyxiating.