



**Stables at Glebe Farm, Northcroft, Weedon,
Buckinghamshire HP22 4NR**

Protected Species Survey Report

January 2023

on behalf of Sally Jones

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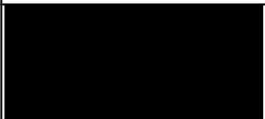
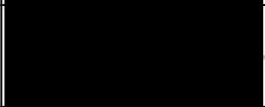
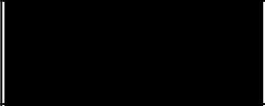
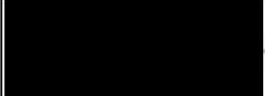
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Client	Sally Jones
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SS

	Signed	Name	Position	Date
Prepared by		Oliver Bevan <i>MEnvSci</i>	Ecologist	22/06/2020
Reviewed by		Edward Bodsworth <i>MA (Cantab)</i> <i>PhD MCIEEM</i>	Director	22/06/2020
Updated by		Catrin Farrell <i>BSc (Hons)</i>	Assistant Ecologist	06/10/2022
Reviewed by		Edward Bodsworth <i>MA (Cantab)</i> <i>PhD MCIEEM</i>	Director	10/01/2023

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1 Introduction

1.1 Site Description

The stables at Glebe Farm are located approximately 130m to the north-east of the dwelling of Glebe Farm, on the edge of the village of Weedon in Buckinghamshire HP22 4NR. The approximate Ordnance Survey grid reference for the stable building is SP 8172 1855.

The stables are a single storey building, arranged in a U-shape, and are constructed from concrete blockwork, with some wood and metal to the walls. The shallow pitched roof has a covering of corrugated felt sheeting, with some corrugated metal and plastic. There are no separate or enclosed lofts or attics within the building.

The stables are in use for the stabling of horses, as well as being used as a store. The building is located within the open countryside to the north-east of the village of Weedon, and surrounded on all sides by improved grassland (pasture) and arable farmland, within a network of hedgerows.

1.2 Proposals

There is a proposal to erect a dwelling within the site, with associated garden and wildlife pond. A plan of the proposals can be found in Appendix 3.

1.3 Aims of Study

The aims of this study are to survey the stable building for bats and/or evidence of bats, and other protected species including nesting birds, such as the barn owl *Tyto alba*. The study assesses the overall potential of the building to support roosting bats, and other protected species, and discusses the likely impact of the proposed conversion on bats, other protected species and their habitats.

The report makes recommendations for appropriate mitigation, compensation and enhancement measure and the potential impacts are assessed in accordance with the legal protection afforded to bats under The Conservation of Habitats & Species Regulations 2017. The need for a European Protected Species (Bat) Licence is also discussed in light of the impact assessment.

1.4 Bat Ecology

Bats are the only mammals to have developed the ability of true flight. At present, over 1,100 species of bat are recognised worldwide, making bats the second largest mammal group after rodents. As well as flight, bats have evolved a system of navigation and orientation using echolocation which has allowed many species to become nocturnal. There are 18 species of bat that occur within the British Isles, of which 17 are known to breed here. More species occur in the south and west of the country, with species numbers declining towards the north and into Scotland.

All bat species in the UK are nocturnal and feed exclusively on insects (they are insectivorous) which they catch in flight during their night-time activity, using echolocation to locate and home-in on their prey. Bats will roost during the daytime and seek out dark, enclosed and undisturbed places in which to do so, often using a variety of roosting sites within their home range. Different roost sites are used for different purposes (such as mating, giving birth and hibernation) and at different periods of a bat's life cycle.

During the summer, female bats will gather together in a maternity or breeding roost. In the UK, this starts to occur towards the end of May and the females will seek out a warm and undisturbed site in which to give birth. Because maternity roosts require a particular set of environmental attributes (such as location, temperature, orientation and size), breeding bats tend to return to roost and breed in the same locations year after year. Given that bats live a relatively long time (anywhere from 10-20 years),

and only give birth to one pup a year, maternity colonies are crucial to the reproduction and survival of the local population and can be very sensitive to environmental change.

Relatively little is known about hibernation roosts, as tracking and locating hibernating bats is very difficult. However, many species (particularly those within the genera *Myotis* and *Rhinolophus*) have been found within underground sites such as caves, mines and cellars, where the temperature remains constant and low throughout the winter allowing the bats to remain in a state of torpor. The spring and autumn are periods of transition and bats can use a number of different locations on a temporary basis, often moving between roosts as environmental conditions change and temperatures fluctuate. In the autumn, bats will mate, and it has been shown that male and female bats will gather at particular locations (such as a building, cave or tree) to meet, socialise and mate.

Bats choose to roost in a number of different locations, depending on the species, their activity pattern and the period of their lifecycle. Certain species, such as the pipistrelles, favour crevices and small cavities for roosting and will use features such as cracks, crevices and small rot holes in the boughs and trunks of trees and within certain features of buildings such as boxed eaves, gaps under roof tiles, hanging tiles and soffit boards. Other species favour large, uncluttered roof spaces and lofts within buildings where they can hang up on the underside of the roof and use the interior space for flying prior to emergence. Hollow trees, cellars, caves, barns, churches and cavity walls can also all be used for roosting, given suitable access. Certain species, such as the noctule, favour roosting sites within trees whilst others tend to favour buildings. Roost sites may be used by only a very small number of bats, such as solitary males, or may offer shelter to tens or hundreds of bats within maternity and hibernation roost sites.

The suitability of roosting sites is also highly influenced by the location or context of a tree, building or cave. Roost sites are most often favoured when they are within close proximity to foraging habitats and where those habitats are connected to one another within the landscape by features such as hedgerows, woodlands, rivers or sunken lanes along which bats disperse and 'commute' from place to place. Suitable foraging habitats are any places where insect prey is diverse and abundant such as woodlands, ponds, lakes, rivers, scrub, hedgerows and unimproved grassland or pasture. Thus, the ecological context of a site is very important for determining if bats may be present within a roost and the potential for a roost to be present tends to be much higher within rural or village locations.

1.5 Barn Owl Ecology

Although nesting by barn owls has been recorded in every month of the year, most pairs lay eggs only in the spring. Recent studies suggest that the first eggs are generally laid in early April. However, eggs in March are now quite frequent so the main breeding season is normally quoted as March to August (inclusive). Early laying females are generally those with the best food supply. Barn owls do not build a nest, but use a shallow scrape in the previous years' nest debris and/or the female breaks up a few recent pellets to create a soft layer for egg laying. In buildings, nests usually occupy a loft space, ledge or platform where there is a 'free-flight' route to the outside.

In Britain, the vast majority of nesting sites are in agricultural buildings, particularly old stone or brick-built barns and sheds. The buildings must have suitable, undisturbed areas for nesting and the birds must be able to fly into the buildings. The proximity of a good foraging area is also important, and the birds must have easy access to suitable foraging habitats from any nest site. The barn owl's main prey is the field vole and the favoured foraging habitat for barn owls in Britain is rough tussocky grassland containing a high density of field voles and other small mammals.

The barn owl is afforded legal protection under Schedule 1 of the Wildlife and Countryside Act 1981. This means that the species is protected from the destruction of its nests, the killing and injury of its eggs and young and from disturbance to active nest sites.

2 Methodology

2.1 Initial Bat Survey & Preliminary Roost Assessment

An initial bat survey (daytime building inspection) and preliminary roost assessment (PRA) were undertaken on 18th June 2020, by Edward Bodsworth *MA (Cantab) PhD MCIEEM*. Dr Bodsworth holds a licence from Natural England to survey for bats within all counties of England (Natural England Level 3 and Level 4 Licence nos. 2020-45379-CLS-CLS & 2020-45382-CLS-CLS).

A detailed internal and external survey of the stables was undertaken using a 1 million candle-power torch in order to look for bats and/or evidence of bats and to assess the potential of the building to support roosting bats. Internal rooms, loft spaces (if present) and external elevations were inspected for evidence of bats including, bat droppings, urine stains, feeding remains (such as moth wings) and characteristic fur staining around access points.

The bat survey was undertaken according to best practice guidelines published by the Bat Conservation Trust (Collins, 2016) and the *Bat Workers Manual* (JNCC, 2010).

The study also takes into account the nature of the building and the ecological context of the site, including the following factors which may increase the likelihood of roosting bats being present (Collins, 2016):

- Age of the building (pre-20th Century or early 20th Century construction)
- Nature of construction; traditional brick, stone or timber construction
- Large and complicated roof void with unobstructed flying spaces
- Large (>20 cm) roof timbers with mortise joints, cracks and holes
- Entrances and gaps for bats to fly and crawl through
- Poorly maintained fabric providing ready access points for bats into roofs, walls; but at the same time not being too draughty and cool
- Roof warmed by the sun, south-facing roofs in particular
- Weatherboarding and/or hanging tiles with gaps
- Undisturbed roof voids
- Buildings and built structures in proximity to each other providing a variety of roosting opportunities throughout the year
- Buildings or built structures close to good foraging habitat, in particular mature trees, parkland, woodland or wetland, especially in a rural setting

The following criteria are used to determine the level of 'bat roost potential' within buildings (Collins, 2016):

Negligible: Negligible habitat features on site likely to be used by roosting bats.

Low: A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).

Moderate: A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.

High: A structure with one or potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitats.

The survey also included observation for nesting birds, such as swallows and barn owls (including droppings, owl pellets, feathers, nests and eggs), and an assessment of the suitability of the building for barn owls.

2.1.1 *Survey Update September 2022*

An update to the protected species survey was conducted on the 27th September 2022 by Catrin Farrell BSc (Hons). The above survey protocol was repeated, with an updated internal and external inspection of the stable building.

This updated survey also included an evaluation of the habitats that surround the building, as well as assessment of the presence, or likely presence, or protected species and/or species of nature conservation concern from these habitats.

3 Results

3.1 Habitats

3.1.1 *Building*

Photographs are presented in Appendix 1. Appendix 2 illustrates the location of the site and provides an aerial photograph of the site within the surrounding landscape.

The stables are a single storey building, arranged in a U-shape, and are constructed from concrete blockwork, with some wood and metal to the walls. There are side 'wings' to the north and south of a central section. The majority of the walls are of solid concrete blockwork, with some vertical wooden slatted sections, most notably to the upper eastern gable ends of both wings. Some wooden ply and metal have been used to form walls to the eastern elevation of the central section.

The shallow pitched roof has a covering of corrugated felt sheeting, with some corrugated metal and plastic held over a simple wooden frame. Eleven plastic skylights are present along the roof, bringing light to the internal spaces. There are also glazed windows to the southern and northern wings. There are no separate or enclosed lofts or attics within the building, and the underside of the roof can be seen throughout. The internal spaces of the building are not considered to be suitable for bats due to the light from the glazed windows and skylights, and the lack of lofts/attics.

The concrete blockwork of the walls is solid and intact, and there are no cavity walls. The corrugated felt sheeting of the roof is in a relatively bad state of repair, with a number of gaps and areas of deterioration. The stables are assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats. This is due to the lack of suitable loft/attic spaces for bats, and the lack of features that crevice-dwelling species of bat could use for shelter.

3.1.2 *Improved Grassland*

The majority of the surrounding area comprises a field of agriculturally improved grassland, currently grazed by horses. The improved grassland has a very short sward height due to grazing and is dominated by grass species including cock's foot *Dactylis glomerata*, perennial rye grass *Lolium perenne* and false oat grass *Arrhenatherum elatius*. The grassland is species-poor and typical of grasslands that have been agriculturally improved.

Improved grassland does not meet the criteria for a grassland habitat of 'principal importance' as listed within Section 41 of the NERC Act 2006, and is considered to be of low ecological value.

3.1.2 Bare Ground

The areas immediately surrounding the stable building are clear of vegetation and are bare ground.

Areas of bare ground are considered to be on negligible ecological value.

3.1.2 Ponds

There are two ponds within the boundary of Glebe Farm that were assessed for their suitability to support breeding great crested newts *Triturus cristatus*.

The closest of these ponds (Pond 1) is located approximately 25m north-east of the stable building. The second of these (Pond 2) is located approximately 150m south-west of the stable building.

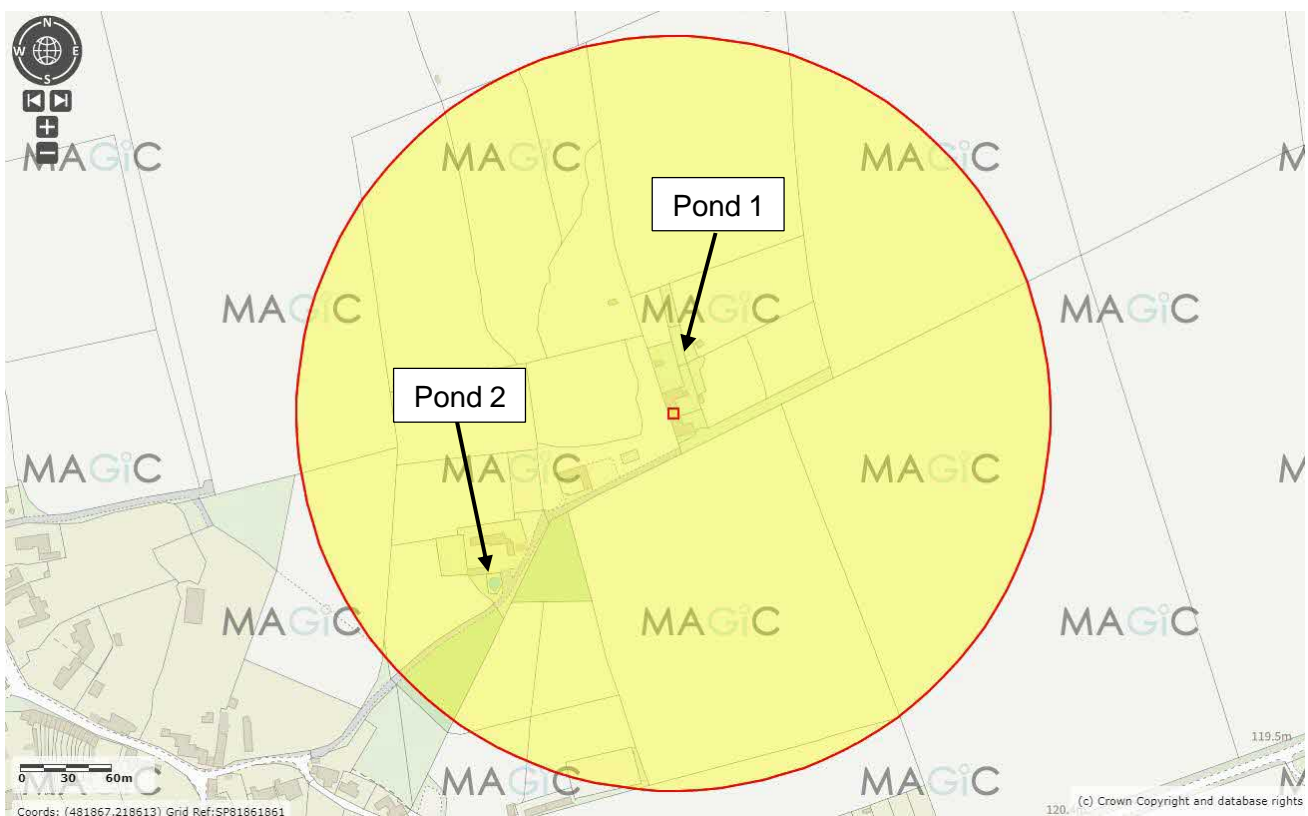


Figure 1. Plan showing the location of the ponds within a 250m radius of the stable building (building indicated by the red square).

3.2 Species

3.1.1 Bats

No bats or evidence of bats were found within the building in 2020 or 2022.

As discussed above, the building is considered to be unsuitable for roosting bats.

3.1.2 Nesting Birds

There is no evidence of barn owls *Tyto alba* within the building and the interior space is not suitable for barn owls, as there are no ledges or platforms that could offer nesting sites.

Although there is 'free-flight' access for swallows *Hirundo rustica* into the building, no active or inactive swallows' nests were observed, and there was no swallow activity either inside or outside of the building.

There are two inactive wood pigeon *Columba palumbus* nests within the stable building (see Figure 2 and Figure 3).



Figure 2. Inactive birds' nest.



Figure 3. Inactive birds' nest.

3.1.2 Great Crested Newts

There are two ponds within 250m of the site (please refer to Figure 1). Pond 1 was found to be dry on 27th September 2022 and the pond is understood to be ephemeral and likely to dry out annually in summer. Pond 1 is therefore considered to be unsuitable as a breeding habitat for great crested newts.

It is understood that Pond 2 is known to support great crested newts. When considering great crested newts, one must take into account the potential for newts to move onto a site during the terrestrial phase of their lifecycle. It is believed that great crested newts can disperse up to 500m from a breeding pond, with the majority of individuals being found within 250m of the pond. Research by Creswell and Whitworth (2004) found that the majority of great crested newts are found within approximately 50m of a breeding pond, given suitable habitat in close proximity to the pond, and that there is a significant drop-off in capture of newts beyond 100m of a pond.

Given that Pond 2 is located approximately 150m from the stable building, and the fact that Pond 2 is surrounded by suitable terrestrial habitat it is considered unlikely that great crested newts will be specifically dispersing to the stable building or the habitats that surround it. Bare ground and improved grassland (grazed short by horses) are not considered to offer potential shelter and protection to great crested newts whilst on land and there are no specific habitat features, such as log piles or stone piles, that would provide suitable shelter for amphibians.

Given this discussion, it is considered likely that great crested newts are absent from the site, and there is no reason to believe that great crested newts will be specifically dispersing to the stable building, or the habitats that surround it.

3.1.2 Other Protected Species

No evidence of other protected species, including badgers *Meles meles*, was noted during the survey.

The bare ground and improved grassland which surrounds the building are not considered to be suitable habitats for reptiles.

4 Discussion

4.1 Legislative Guidance

2.1.1 Bats

As with many animal species within the UK, declines in the abundance and distribution of many bat species have been documented through recent decades. The reasons for these declines are various and complex but it is considered that the major factors are changes in landuse and agriculture, the loss of woodlands and hedgerows and the loss of suitable roosting sites.

Bats are particularly sensitive to human activity due to the fact that they roost within buildings, trees and underground structures such as mines, and the availability of suitable roost sites is considered to be a key factor in the conservation of bats within the UK. As a consequence, all species of bat and their roost sites are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and under The Conservation of Habitats and Species Regulations 2017. Taken together, these make it an offence to:

- (a) Deliberately capture or intentionally take a bat
- (b) Deliberately or intentionally kill or injure a bat
- (c) To be in possession or control of any live or dead wild bat or any part of, or anything derived from a wild bat
- (d) Damage or destroy a breeding site or resting place of such an animal or intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection
- (e) Intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection
- (f) Deliberately disturb any bat, in particular any disturbance which is likely
 - to impair their ability;
 - (i) to survive, breed, reproduce or to rear or nurture their young; or
 - (ii) in the case of hibernating or migratory species, to hibernate or migrate; or
 - to affect significantly the local distribution or abundance of the species to which they belong

A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected whether or not the bats are present at the time.

Although the law provides strict protection to bats, it also allows this protection to be set aside (derogation) under The Conservation of Habitats and Species Regulations 2017 through the issuing of licences. Where a lawful operation is required to be carried out but which is likely to result in one of the above offences, a licence may be obtained from Natural England (the statutory body in England with responsibility for nature conservation) to allow the operation to proceed. However, in accordance with the requirements of The Conservation of Habitats and Species Regulations 2017, a licence can only be issued where the following requirements are satisfied:

The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';
'There is no satisfactory alternative';

The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

These three criteria are often referred to as the 'three tests' of the Regulations. All three must be satisfied in order for a licence to be granted.

4.1.2 Nesting Birds

Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The nesting season for most species is between March and August inclusive.

3.1.2 Great Crested Newts

Great crested newts and their habitat are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and under The Conservation of Habitats and Species Regulations 2017. Taken together, these make it an offence to:

- (a) Deliberately capture or intentionally take a great crested newt
- (b) Deliberately or intentionally kill or injure a great crested newt
- (c) To be in possession or control of any live or dead wild great crested newt or any part of, or anything derived from a wild newt
- (d) Damage or destroy a breeding site or resting place of such an animal or intentionally or recklessly damage, destroy or obstruct access to any place that a wild great crested newt uses for shelter or protection
- (e) Intentionally or recklessly disturb any wild great crested newt while it is occupying a structure or place that it uses for shelter or protection
- (f) Deliberately disturb great crested newts, in particular any disturbance which is likely
 - to impair their ability;
 - (i) to survive, breed, reproduce or to rear or nurture their young;
 - (ii) to hibernate;
 - to affect significantly the local distribution or abundance of the species to which they belong

Although the law provides strict protection to great crested newts, it also allows this protection to be set aside (derogation) under The Conservation of Habitats and Species Regulations 2017 through the issuing of licences (referred to as European Protected Species Licences or EPSL). Where a lawful operation is required to be carried out but which is likely to result in one of the above offences, a licence may be obtained from Natural England (the statutory body in England with responsibility for nature conservation) to allow the operation to proceed.

However, in accordance with the requirements of The Conservation of Habitats and Species Regulations 2017, a licence can only be issued where the following requirements are satisfied:

- The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';
- 'There is no satisfactory alternative';
- The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

These three criteria are often referred to as the 'three tests' of the Regulations. All three must be satisfied in order for a licence to be granted

4.2 Impact Assessment

4.2.1 Habitats

Loss of the existing building, and works affecting surrounding areas of bare ground will result in no significant ecological impacts with regard to habitats. Improved grassland is also considered to be of low ecological value and temporary disturbance of this habitat during construction is unlikely to result in any significant ecological impacts.

There are no foreseeable impacts on habitats of 'principal importance'.

4.2.2 Species

The surveys indicate that roosting bats are absent from the stables at Glebe Farm, Weedon. No bats were found during the building inspection. In particular, the roof, the internal space and the internal/external walls are not considered to offer any opportunities to roosting bats.

There is no evidence to indicate that the stables are being used as a place of shelter/protection by roosting bats. Works to the building are unlikely to result in any significant impacts on bats or the places that they use for breeding, shelter and/or protection (roosts) and no specific compensation measures are considered necessary (Mitchell-Jones 2004).

Since no significant impacts on bats are predicted under The Conservation of Habitats and Species Regulations 2017, a European Protected Species (Bat) Licence will not be required for the proposed works to proceed. Since there are no predicted impacts on bats or their habitats, it is not necessary to consider the 'three tests' of The Conservation of Habitats and Species Regulations 2017 in this instance.

4.2.2.1 Birds

Works to the stable building during the bird nesting season (March to August, inclusive) could result in the damage and destruction of active nests and the killing and/or injury of eggs and young, if active nests sites are present at the time the works are undertaken.

This is likely to affect only small numbers of pigeons. There are no foreseeable impacts on barn owls, swallows or house sparrows.

4.2.2.2 Great Crested Newts

It is considered that that great crested newts are absent from the site, and there are therefore no foreseeable impacts on the species or its habitats.

Habitats that may be affected by the works include bare ground and improved grassland (currently grazed by horses). These habitats do not offer shelter or protection to great crested newts.

Since no significant impacts on great crested newts are predicted under The Conservation of Habitats and Species Regulations 2017, a European Protected Species (Great Crested Newt) Licence will not be required for the proposed works to proceed. Since there are no predicted impacts on great crested newts or their habitats, it is not necessary to consider the 'three tests' of The Conservation of Habitats and Species Regulations 2017 in this instance.

4.2.2.3 Other Species

There are no foreseeable impacts on other species, including reptiles 

5 Recommendations

5.1 Further Surveys

No further surveys are considered to be necessary at present.

5.2 Habitats

The proposals are for the creation of a garden, with native planting (including new hedgerows) and a wildlife pond. It is considered that these measures will result in an ecological enhancement, delivering a net gain in biodiversity.

Species recommended for the proposed native planting and hedgerows include:

Wild privet *Ligustrum vulgare*
Hawthorn *Crataegus monogyna*
Blackthorn *Prunus spinosa*
Field maple *Acer campestre*
Hazel *Corylus avellana*
Dogwood *Cornus sanguinea*
Spindle *Euonymus europaeus*
Guelder rose *Viburnum opulus*
Wayfaring tree *Viburnum lantana*

A wildlife pond is also proposed. It is recommended that the pond has shallow, convoluted edges to encourage invertebrates and aquatic plants. Please see Figure 4 below, taken from the Great Crested Newt Conservation Handbook (Langton *et al.*, 2001), showing a cross-section of a pond with convoluted edges and showing suitable aquatic and marginal plant species.

Figure 5 shows a full cross-section of a pond, upon which the ponds should be based. The deepest areas of the pond should measure between 1 and 2m (to stop the deepest areas from freezing in winter) with small bays or shallows at the pond's edges (0.3m-1m). The shallow areas will provide other small newt species and frogs within breeding sites.

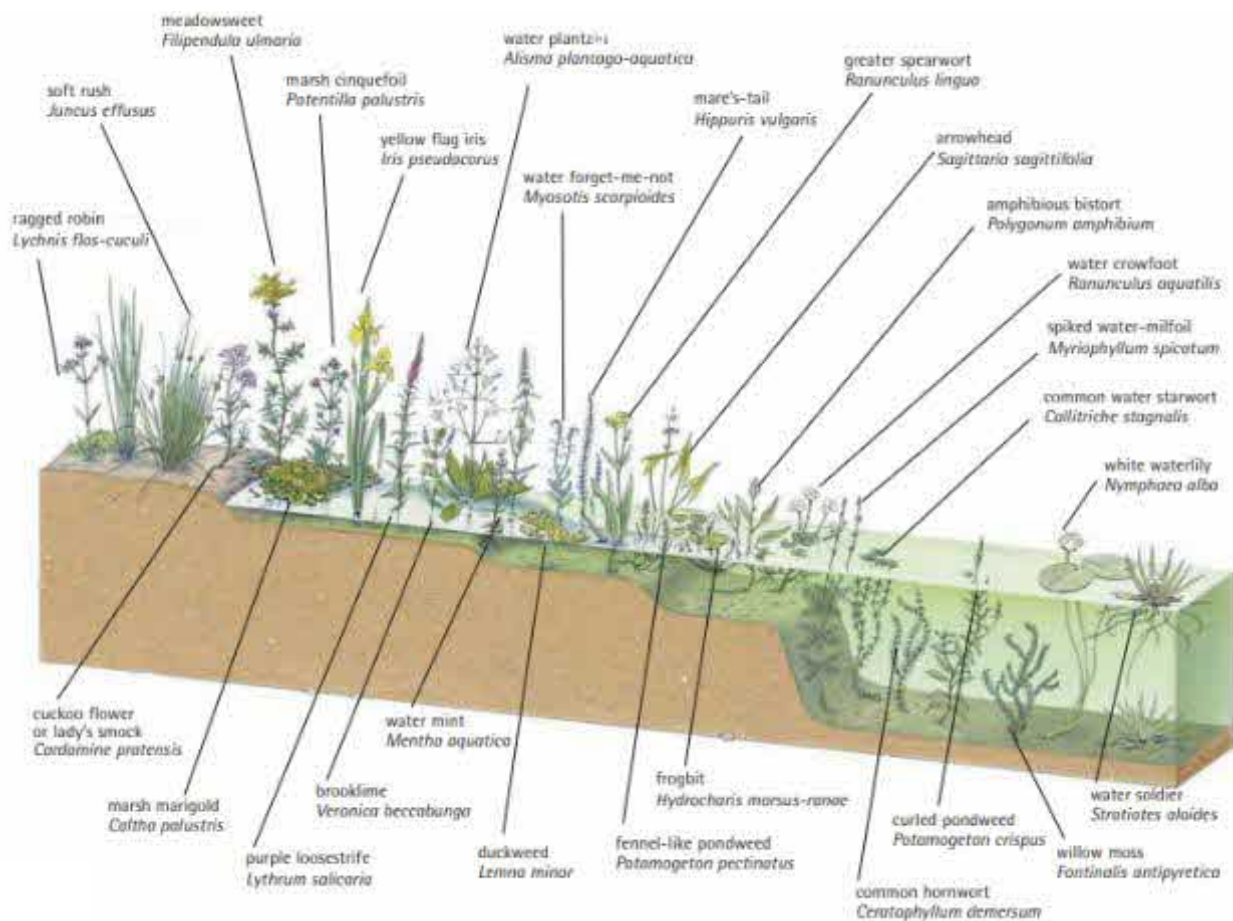


Figure 4. Diagram showing a cross-section of a pond with convoluted edges with native marginal and aquatic planting.

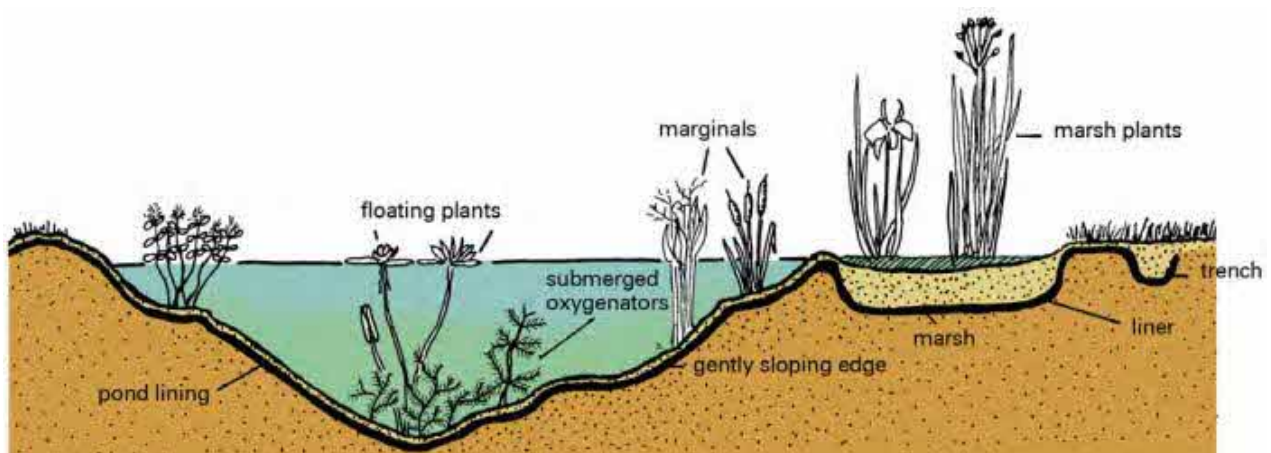


Figure 5. Diagram of a pond cross-section that is highly suitable as a wildlife pond. Source: Avon Wildlife Trust.

A number of suitable aquatic plant species suitable for the pond(s) are recommended in Table 1. This list includes species which are adapted to the margins and boggy edges of ponds, as well as submerged species of deeper water and emergent plants of the shallows. By adding plant biodiversity, the pond will also become suitable habitat for a diversity of invertebrates and the emergent planting will offer nesting sites and cover for amphibians.

Table 1. Native species for pond planting

Common Name	Botanical Name
Ragged robin	<i>Lychnis flos-cuculi</i>
Watercress	<i>Nasturtium officinale</i>
Brooklime	<i>Veronica beccabunga</i>
Yellow iris	<i>Iris pseudacorus</i>
Branched bur-reed	<i>Sparganium erectum</i>
Flowering rush	<i>Butomus umbellatus</i>
Water plantain	<i>Alisma plantago-aquatica</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Yellow loosestrife	<i>Lysimachia punctata</i>
Water mint	<i>Mentha aquatica</i>
Frogbit	<i>Hydrocharis morsus-ranae</i>
Amphibious bistort	<i>Persicaria amphibia</i>
Water forget-me-not	<i>Myosotis scorpiodes</i>
Water starwort	<i>Callitriche stagnalis</i>
Curled pondweed	<i>Potamogeton crispus</i>
Water crowfoot	<i>Ranunculus aquatilis</i>
Marsh marigold	<i>Caltha palustris</i>
Cuckoo flower	<i>Cardamine pratensis</i>
Marsh woundwort	<i>Stachys palustris</i>
Hemp agrimony	<i>Eupatorium cannabinum</i>
Gipsywort	<i>Lycopus europaeus</i>

Certain non-native aquatic plants should be strictly avoided, and they can cause serious damage to ponds and natural watercourses as they spread very quickly and easily, forming dense mats of vegetation. A reputable supplier of aquatic plants should be used, and the plants should be checked thoroughly prior to planting for any evidence of the following invasive, non-native species. The following non-native species should be absolutely avoided.

Australian Swamp stonecrop / New Zealand Pygmyweed *Crassula helmsii* / *Tillaea recurva*
 Fairy Fern *Azolla filiculoides*
 Parrots feather *Myriophyllum aquaticum*
 Floating pennywort *Hydrocotyle ranunculoides*
 Himalayan balsam *Impatiens glandulifera*
 Canadian pondweed / Nuttall's pondweed *Elodea canadensis* / *Elodea nuttalli*
 Curly waterweed *Lagarosiphon major*

5.3 Species

3.1.1 Bats

As previously discussed, a European Protected Species (Bat) Licence is not considered to be necessary for works to proceed. This is due to the fact that roosting bats are considered to be absent from the building.

5.3.1.1 Timing

No timing constraints are considered necessary.

5.3.1.2 Careful Work Practices

As bats are a highly mobile species, contractors should be briefed with regard to the fact that individual bats can often exploit very small crevices as roost sites (such as gaps in stonework) and that bats can move between roost sites on a regular basis.

In the very unlikely event that bats or significant evidence of bats (for example large accumulations of fresh bat droppings) are encountered, works should stop immediately, and advice sought from a suitably qualified ecologist.

5.3.1.3 Enhancement

Although it is not necessary from a legal perspective, consideration should be given to the erection of bat boxes on nearby trees, or on new buildings. These features would be considered as an enhancement to the existing situation.

It is recommended that a conventional bat box is installed; this could be a traditional wooden box, or longer-lasting woodcrete box (such as a Schwegler box 1FF or 2F). The box should be erected between 3-4m above ground level, on a mature tree with a clear trunk or on a south-facing elevation of a building. Two boxes would be seen as an appropriate number for an enhancement.

3.1.2 Birds

It is recommended that any clearance of woody vegetation and the works to the stable building are undertaken outside of the breeding bird period, avoiding March to August inclusive. This will protect active birds' nests from damage and destruction.

If works to the building are required between March and August, it is recommended that the building is checked for active birds' nests prior to works commencing. If nesting birds were present within building, work would need to be delayed until the nest is inactive, with the young having fledged.

5.3.2.1 Enhancement

The erection of bird nesting boxes is also recommended in order to provide suitable nest sites for species within the local area, as nest boxes can be excellent substitutes for the holes found in old trees. Over 60 species are known to adopt nest boxes including blue tits, great tits, starlings, robins and sparrows.

The location and nature of the nest box depends on the species it is designed for; boxes for tits, sparrows or starlings should be fixed two to four metres up a tree or a wall; open-fronted boxes for robins and wrens need to be low down, below 2m, and well-hidden in vegetation. Unless there are trees or buildings which shade the box during the day, boxes should be faced between north and east, thus avoiding strong sunlight and the wettest winds.

On dwellings, the integration of bird boxes is particularly recommended as species such as house sparrow and swift will readily adopt such features as nest sites. One of the following bird nesting features is recommended for integration into the new dwelling:

Vivara Pro WoodStone House Sparrow Nest Box
Schwegler House Sparrow Brick Box Type 24
Schwegler Sparrow Terrace 1SP

Bird boxes, such as the Schwegler Avianex, can also be erected on trees.

3.1.2 Great Crested Newts

The site owner/site manager will ensure that anyone undertaking construction works on the site (including sub-contractors) is made aware of the protected status of great crested newts and the procedure to follow in the unlikely event that a great crested newt is discovered during works.

Should a great crested newt be discovered during construction, works will cease immediately, and advice sought from a suitably experienced ecologist.

During the preparation of the construction zone, the following methods of working should be adopted as a precautionary measure:

Improved grassland should be maintained as a short sward, and should not be allowed to grow long as this may provide cover for great crested newts.

Clearance of any tall vegetation (if it is allowed to grow up) should be undertaken using a strimmer or brush cutter with all cuttings raked and removed the same day. Cutting will only be undertaken in a phased way which may either include:

Cutting vegetation to a height of no less than 30mm, clearing no more than one third of the site in anyone day or;

Cutting vegetation over three consecutive days to a height of no less than 150mm at the first cut, 75mm at the second cut and 30mm at the third cut;

Following removal of tall vegetation using the methods above, remaining vegetation should be maintained at a height of approximately 30mm through regular mowing or strimming.

Ground clearance of any remaining low vegetation (if required) and any ground works should only be undertaken following the works above.

Any deep trenches or excavations (>50cm deep) left overnight should be covered or provided with ramps to prevent small mammals from becoming trapped.

Building materials such as bricks, stone etc. should be stored on pallets to discourage amphibians from using them as shelter. Any demolition materials should be stored in skips or similar containers rather than in piles on the ground, or removed immediately from site.

6 References

Altringham, J., 2003. *British Bats*. Harper Collins.

Collins, J. 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.

Mitchell-Jones, A., 2004. *Bat Mitigation Guidelines*. English Nature.

7 Appendix 1. Photographs



Photograph 1. The northern section of the stable building at Glebe Farm.



Photograph 2. Areas of bare ground around the stable building.



Photograph 3. Detail of the internal space.



Photograph 4. Internal detail of the roof and wooden beams.



Photograph 5. The middle section of the stable building.



Photograph 6. The southern section of the stable building.

8 Appendix 2. Site Location Plans



Ordnance Survey map showing the stables (indicated by the red arrow) at Glebe Farm within the local area. (Source: www.bing.com/maps)



Aerial photograph showing the location of the stables at Glebe Farm, with the stables indicated by the red arrow. (Source: www.google.co.uk/maps)

