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# PROTECTED SPECIES SURVEYS AT LAND OFF A617, RAINWORTH, NOTTINGHAMSHIRE

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2020



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## APPENDIX 1 – REPTILE MITIGATION PLAN (INDICATIVE) (BASE PLAN COURTESY OF FPCR)



## 1.0 INTRODUCTION

### Site Information

- 1.1 Rachel Hacking Ecology Limited was commissioned in 2020 by Aspbury Planning Limited to carry out various protected species surveys at a site off the A617 in Rainworth, Nottinghamshire. The site is situated to the south of the A617 (O.S. grid reference: SK 59032 58675 – see Figure 1). The proposed development site currently comprises an area of semi-improved grassland, ruderal vegetation, scrub and broad-leaved woodland. A pond and a brook exist on the site. The site is bordered by broad-leaved woodland to the north-west and south-west. In the wider context the site is nearby to a developed area, comprising residential dwellings, commercial units and amenity space.
- 1.2 An Extended Phase 1 Habitat Survey was undertaken by FPCR (see *Ecological Appraisal at Land to the South of A617, Rainworth – FPCR 2020*). The report recommended numerous protected species surveys be undertaken on the site. This report covers the reptile presence/absence survey, Great Crested Newt assessment, bat transect surveys and breeding bird assessment, all undertaken in Summer/Autumn 2020.

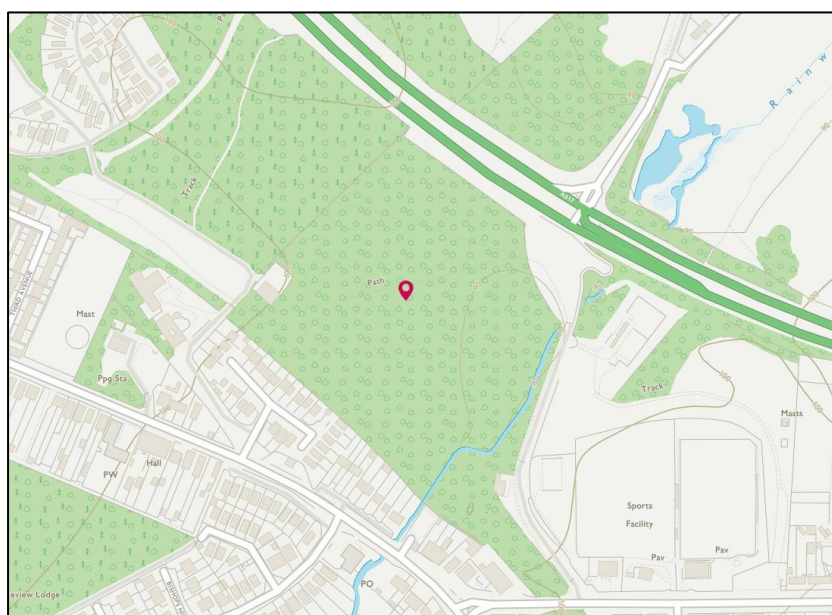


Figure 1 showing the location of the site

### Description of Development

- 1.3 The site will be the subject of an outline planning application for the construction of up to 95 dwellings.

### Biodiversity in Planning

- 1.4 Biodiversity is a material consideration, and Local Planning Authorities (LPAs) have a requirement to consider biodiversity and protected species when determining planning applications. Section 15 of the National Planning Policy Framework (February 2019) gives specific reference to minimising the impacts of development on biodiversity. Local and Neighbourhood plans also provide guidance towards protecting and enhancing biodiversity, including priority habitats and notable species.



## 2.0 METHODOLOGIES

### Reptile Presence/Absence Survey

2.1 The reptile survey was undertaken in accordance with Froglife (1999) and Gent & Gibson (1998) guidelines. One visit was made to place artificial refugia and undertake a transect of the site, followed by six survey visits to the site. All survey visits were carried out within the optimum reptile survey season, which is March to October. The visits were undertaken in late afternoon or early morning, in suitable weather conditions.

2.2 Two methodologies were used on each survey visit. The methodologies included:

- *Direct Observation*

Visual searches for basking reptiles were carried out, at an appropriate time of the day. These involved walking quietly, downwind of suitable habitats, scanning 3-4 metres ahead with binoculars for basking reptiles.

- *Artificial Refugia*

40 artificial refugia were strategically placed throughout the site approximately 10m apart, in positions likely to be preferred by reptiles. For example, on the edge of tall vegetation at some distance from any disturbance such as footpaths or where the public access. The refugia were 0.5m by 0.5m squares of roofing felt. The mats were left for at least 14 days to 'bed-in' after which they are checked at six times over a period of several weeks. The mats were approached quietly and observed from a distance, to records any reptiles basking on top of the mats. The mat was then lifted slowly to observe any reptiles sheltering under the mat.

### Great Crested Newt Assessment

2.3 The waterbody on the site was re-assessed for its potential to offer suitable breeding habitat for Great Crested Newt. This involved assessing the waterbody for its aquatic flora and other features that would make it suitable for Great Crested Newt. A heavy-duty pond net was also used to sample the water for evidence of amphibians.

### Bat Transects

2.4 The bat activity transect surveys were undertaken in accordance with the Bat Conservation Trust 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' 2016 (3rd Edition).

2.5 The bat transect survey was carried out on the site to ascertain important bat commuting and foraging habitat on the proposed development site. The surveys aim to determine where the key parts of the site are in terms of importance to bats, and to inform construction and post-construction mitigation plans, including the provision of a sensitive lighting scheme.

2.6 The site was walked by two surveyors in a circular route around the site, stopping every 20-30 metres (approx.) recording bat passes (waypoints). The transects followed a



circular route across the site. The transects had ten waypoints, at which the surveyors paused and recorded bat passes.

- 2.7 The transects began just after sunset and continued for two hours after sunset. The surveyors used Echometer Touch bat detectors to record the echolocation calls of foraging bats.

#### Water Vole Survey

- 2.8 Rainworth Water, which runs through the site, was surveyed for the presence of Water Vole, following the guidelines in Strachan, Moorhouse & Gelling, 2011. The banks of the stream were searched for evidence of Water Vole activity including:

- latrines,
- feeding remains or feeding stations,
- burrows and feeding 'lawns',
- footprints,
- the sound of Water Voles entering the water.

- 2.9 The aim of the survey was to identify the presence or potential presence of Water Vole within the development footprint.

#### Breeding Bird Assessment

- 2.10 The site was assessed for its likelihood to support a good assemblage of breeding birds, with particular focus on searching for suitable breeding habitat for Nightjar *Caprimulgus europaeus* and Woodlark *Lullula arborea*, both of which are known from the locality. The site was walked over and assessed for suitable habitat. The ecologist used a pair of close-focussing binoculars to survey the site.

#### Personnel and Timing

- 2.11 The Great Crested Newt, Water Vole and breeding bird assessments were carried out by Joel Hacking (Senior Ecologist) and Joe Cooper (Ecologist) on 26<sup>th</sup> August 2020. The reptile mats were laid on 26<sup>th</sup> August 2020, with a reptile transect survey of the site undertaken first using direct observation techniques. The subsequent seven survey reptile visits were undertaken between 8<sup>th</sup> September and 29<sup>th</sup> October 2020 by Joe Cooper and Elise Irvine. Bat transect surveys were undertaken on 17<sup>th</sup> September 2020 and 14<sup>th</sup> October 2020 by Joel Hacking, Joe Cooper, Sam Harmer, Eleanor Randall and Elise Irvine. All surveyors are fully trained and have over years of experience in protected species identification and survey techniques. Joel and Sam hold a Natural England Level 2 Class Survey Licence for bats (ref: 2016-24701-CLS-CLS & 2020-49406-CLS-CLS respectively).

#### Survey Constraints

- 2.12 The site was mostly fully accessible. Small parts of Rainworth Water were inaccessible due to dense vegetation. There were no other constraints to the surveys. All of the visits were conducted at an appropriate time of the day and time of the year, under suitable weather conditions. With the exception of one mat, all of the reptile mats remained in-situ and undisturbed throughout the survey period.



## 3.0 RESULTS

### Reptiles

- 3.1 A total of 40 reptile refugia mats were placed on the site, and positioned in a loop around the site, with several also placed in the centre. The peripheries of the site were too densely vegetated for the positioning of the mats, and the each of the mats was placed to avoid human disturbance. One of the mats went missing, with the other 39 remaining in-situ throughout the survey period. Figure 2 shows the approximate location of each of the reptile mats.
- 3.2 A maximum of two Common Lizards *Zootoca vivipara* were found during the seven survey visits (see Photograph 1). Two juvenile Common Lizards were found at mats within the north-western part of the site on 8<sup>th</sup> September 2020 (see Figure 2). An adult Common Lizard and a juvenile Common Lizard were found at separate mats on the south-western and south-eastern part of the site respectively, on 21<sup>st</sup> September 2020. No other species of reptile were recorded on site and no further sightings of Common Lizard were made on the subsequent visits.



Figure 2 showing the approximate location of the reptile mats (purple), with blue mats indicating where Common Lizard was found. The red line denotes the reptile survey boundary only.





Photograph 1 showing the Common Lizard found on the site

3.3 During the reptile surveys, small numbers of Common Frog *Rana temporaria* and Common Toad *Bufo bufo* were found beneath the mats (see Table 1).

3.4 Table 1 below details the results of each of the reptile visits.

Table 1. Dates of reptile survey visits, weather conditions and results						
Date	Time	Weather	Temperature	Reptiles	Amphibians	Notes
26/08/20	AM	Mild, light showers	16°C	0	0	Laying Mats
08/09/20	AM	Sunny Intervals	18°C	2 x juvenile Common Lizards (Mats 22 and 26)	1 juvenile Common Toad (Mat 20)	N/A
21/09/20	PM	Overcast	17°C	1 x juvenile and 1 x adult Common Lizard (Mats 4 and 13)	1 x juvenile and 1 x adult Common Toad (Mats 4 and 20)	N/A
09/10/20	AM	Overcast	20°C	0	1 Common Frog	N/A
14/10/20	PM	Overcast	15°C	0	0	N/A
22/10/20	AM	Overcast	13°C	0	0	N/A
29/10/20	PM	Overcast	14°C	0	0	N/A



### Great Crested Newt

- 3.5 The pond on site was re-assessed for its suitability to support a breeding population of Great Crested Newt *Triturus cristatus* (GCN). The ecological appraisal undertaken by FPCR concluded that the pond (surveyed in early 2020) offered sub-optimal suitable breeding habitat for GCN, due to the 'below average' Habitat Suitability Index (HSI) score of 0.58. FPCR suggested that no further GCN survey was required. During the August 2020 survey visit, the pond was found to be heavily vegetated (see Photograph 2), with only the outer margins exhibiting open water (see Photograph 3). Here the pond is shaded and the water column extremely shallow. Much leaf litter exists. The pond is connected to Rainworth Water, which flows northwards, with a drainage pipe running underneath the adjacent access road. Parts of the pond therefore are associated with running water, further reducing the viability of the pond for GCN. The available water was netted and no evidence of amphibians was found.



Photograph 2 showing the pond on the site







*Photograph 3 showing the pond on the site*

- 3.6 Rainworth Water itself was fast flowing at the time of the survey and supports no suitable aquatic vegetation for GCN egg-laying (see Photograph 4).



*Photograph 5 showing Rainworth Water*

- 3.7 The pond has been re-assessed and is considered to offer sub-optimal breeding habitat for GCN. Two ponds exist within 250 metres of the site to the north but these hold no connectivity to the pond on site, due to the A617. Therefore GCN recruitment to the site is unlikely.

### Water Vole

- 3.8 No field signs of Water Vole were found in the accessible parts of Rainworth Water on site. The banks of Rainworth Water are relatively shallow throughout, with very limited opportunities for burrows (see Photograph 5). The water column is also shallow with no aquatic vegetation (see Photograph 6). No footprints or feeding remains were found.



*Photograph 5 showing the banks of Rainworth Water*



*Photograph 6 showing the water column*



### Bat Transects

3.9 Figure 3 shows the bat transect route and locations of the ten waypoints.

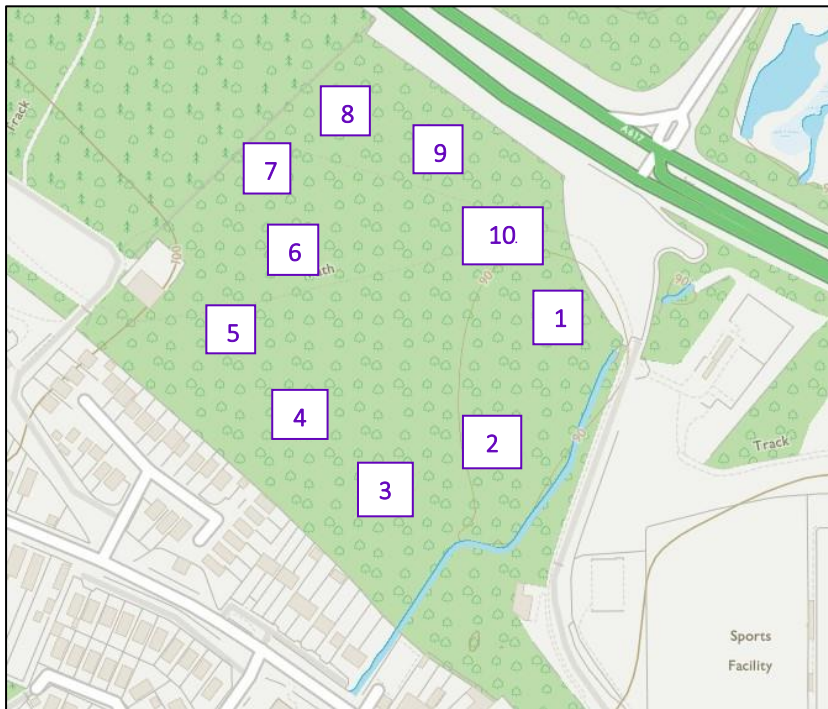


Figure 3 showing the approximate waypoints of the bat transects.

3.10 The two transect surveys recorded low levels of bat activity, with five species recorded throughout in low number of passes. The bat species recorded were Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *P. pygmaeus*, Noctule *Nyctalus noctule*, Brown Long-eared *Plecotus auritus*, and a *Myotis* species. Tables 2 and 3 detail the results of the bat transects.

Table 2. Results from Transect Survey					
Land South of A617, Rainworth		Date	Average Temp (°C)	Sunset/Sunrise	Weather
		17/09/2020	14°C	19:15	Dry, Overcast
Way point	Time	Results			
1	19:55-20:00	Common Pipistrelle and Soprano Pipistrelle recorded foraging along the edge of the trees. <i>Myotis</i> sp. recorded foraging over the site.			
2	20:03-20:08	Noctule heard at 20:03. Common Pipistrelle recorded foraging over the scrub and trees.			
3	20:12-20:20	No bats recorded.			
4	20:22-20:28	Common Pipistrelle recorded foraging over the trees. Four passes recorded. <i>Myotis</i> sp. recorded foraging nearby, not seen.			
5	20:33-20:40	Common Pipistrelle recorded foraging along the western edge of the site. Two passes recorded.			

6	20:45-20:50	Common Pipistrelle recorded foraging across the site.
7	20:51-20:56	Common Pipistrelle recorded foraging along the western edge. Brown Long-eared bat recorded faintly, not seen.
8	21:00-21:05	Noctule heard commuting over the site at 21:04.
9	21:08-21:14	Common Pipistrelle recorded foraging nearby but not seen.
10	21:16-21:20	No bats recorded.

<i>Table 3. Results from Transect Survey</i>					
Land South of A617, Rainworth		<i>Date</i>	<i>Average Temp (°C)</i>	<i>Sunset/Sunrise</i>	<i>Weather</i>
		14/10/2020	10°C	18:10	Dry, Overcast
<i>Waypoint</i>	<i>Time</i>	<i>Results</i>			
1	18:32-18:37	No bats recorded.			
2	18:39-18:44	No bats recorded.			
3	18:46-18:51	No bats recorded.			
4	18:53-18:58	No bats recorded.			
5	19:04-19:09	Common Pipistrelle recorded foraging along south-western edge. Two passes recorded.			
6	19:10-19:15	Common Pipistrelle recorded foraging along western edge. Two passes recorded.			
7	19:16-19:21	No bats recorded. Noctule heard commuting nearby, not seen.			
8	19:23-19:28	No bats recorded.			
9	19:30-19:35	No bats recorded.			
10	19:37-19:45	No bats recorded.			

3.11 The transect surveys indicate that the main bat foraging and commuting habitats on the site are the tree belt on the south-western edge, and the dense vegetation at the south-eastern part of the site (see Figure 4). These habitats are due to be retained. A very low number of bats were seen flying directly over the site and others were heard off-site but not seen.



*Figure 4 showing the key bat foraging habitats*

### Breeding Birds

- 3.12 The site supports rough grassland, woodland and scrub, all of which offer valuable habitat for breeding birds. However, the most valuable bird breeding habitat lies on the south-eastern, south-western and western edges, i.e. the woodland and dense scrub, and these habitats are to be mostly retained.
- 3.13 The proposed development will result in the loss of mainly rank grassland and ruderal vegetation, as well as scattered scrub (see Photograph 7). These types of habitat are less valuable to nesting birds than the denser habitats to be retained.



*Photograph 7 showing the grassland and scattered scrub on site*

3.14 The site is considered to be sub-optimal for ground nesting birds such as Woodlark and Nightjar. This is because of the public access across the site, with tracks used for dog walking. The level of disturbance would deter ground-nesting birds.

#### Badger

3.15 No evidence of Badger *Meles meles* activity was found during the site visits undertaken in 2020. No Badger sett was found on site or adjacent to the site. This aligns with the FPCR survey results.

## 4.0 ASSESSMENT

### Reptiles

- 4.1 A maximum of two Common Lizards was found during the reptile presence/absence surveys. The sightings took place early in the survey visits, with no reptiles seen from early October onwards, despite the weather being favourable. The site is frequently disturbed, with limited basking opportunities. It is considered that the site supports a **low** population of Common Lizard. The survey effort is considered to be adequate to robustly characterise the usage of the site by reptiles.
- 4.2 Mitigation will be required to protect the Common Lizard population during development. This will be through a translocation exercise to safe retained habitat (see Section 5.0 – Recommendations).
- 4.3 The reptile mitigation scheme will also benefit Common Toad, which is a UK Priority Species. Common Toads will also be translocated during the capture exercise.

### Great Crested Newt

- 4.4 The pond on site offers sub-optimal breeding habitat for Great Crested Newt (GCN). This is the same result as the previous assessment. There are no ponds within 250 metres of the site that are connected to the on-site pond. Therefore, whilst the site supports suitable terrestrial habitat for Great Crested Newt, the lack of breeding habitat on site or connected to the site indicates it is reasonably unlikely that Great Crested Newt occurs on site. No further amphibian survey work is required.

### Water Voles

- 4.5 Rainworth Water is considered to be sub-optimal habitat for Water Vole. The banks are shallow and the stream supports little aquatic vegetation. The water column is shallow which would deter Water Voles from using the stream. No field signs were found during the Water Vole survey. Rainworth Water is to be retained on site. No Water Vole mitigation is required.

### Bats

- 4.6 The bat transects show that a number of bat species are mainly foraging and commuting over the dense vegetation along the south-western and south-eastern parts of the site. This vegetation is to be retained. The bat species recorded are all common in the locality and across the UK. It is recommended that the retained vegetation is protected as a bat foraging route by the implementation of a sensitive lighting scheme. There should be no artificial lightspill onto the retained habitats. There is expected to be no deleterious impact on the bat foraging and commuting habitat and no further survey work is considered to be necessary.
- 4.7 Soft landscaping will be included as part of the scheme and this should include a variety of flowering species of herbaceous plants and woody plants, to attract invertebrates which will then attract bats. A number of bat boxes will be erected onto retained

mature trees and where possible, bat bricks/tiles should be incorporated into the new dwellings.

#### Breeding Birds

- 4.8 The site supports suitable nesting habitat for birds such as passerines but is unlikely to support ground-nesting birds. The most valuable bird nesting habitats are to be retained (the dense scrub and woodland on the edges of the site). It is likely that the development zone of the site supports common bird species.
- 4.9 It is recommended that the construction zone is cleared outside of the bird nesting season (the nesting season is generally 1<sup>st</sup> March to 31<sup>st</sup> August inclusive) or a nesting bird survey is undertaken within 48 hours prior to the work commencing.
- 4.10 Whilst a large amount of bird nesting habitat is to be retained, soft landscaping across the site will include new tree planting which will encourage birds. Bird boxes, of various types, will be erected onto retained trees and, where possible, new dwellings.

#### Badger

- 4.11 No evidence of Badger activity was found during the site visits. The site currently does not support a Badger sett. FPCR recommended a pre-commencement Badger survey and this recommendation is still relevant. Badgers are active in the wider area and could move onto the site prior to the development commencing.



## 5.0 RECOMMENDATIONS

### Further Surveys

- 5.1 Protected species are a material consideration when a planning authority is considering a planning application. The presence of protected species, the effect of the proposed development and suitable mitigation, if required, must be established before planning permission can be granted. No further protected species surveys are considered to be necessary.
- 5.2 Depending on the timings of the vegetation clearance, the following survey may be required:
- **Nesting Birds** - If any work to the woodland or scrub needs to be carried out within the bird nesting season (which is generally March to August), then a nesting bird survey will be required immediately prior to work commencing.

### Reptiles

- 5.3 A reptile mitigation scheme will be required, to protect Common Lizard during the construction phase. This will involve the following methods.
- 5.4 The Common Lizards will be trapped from the development zone and moved to the retained habitat along the south-eastern and south-western edges of the site. To prevent Common Lizard from entering the construction zone, the construction zone will be fenced off with temporary reptile fencing. The translocation will include placing multiple refugia within the development zone, to attract and enable capture of Common Lizard (see Appendix 1 – Reptile Mitigation Plan).
- 5.5 Prior to the fencing and translocation commencing, the development zone will be systematically searched and the vegetation removed/strimmed to less than 5cm, to make the zone less attractive to Common Lizard. This will be undertaken under strict ecological supervision and will take place from west to east, to encourage reptiles to move into the retained habitats. The fencing will also be erected under ecological supervision. The optimum time to trap and relocate the Common Lizards is mid-summer (to avoid gravid females).
- 5.6 Once the construction is complete, the reptile fencing can be removed. This will allow Common Lizard to move into and across greenspace elsewhere on the site.

### Badger

- 5.7 A pre-commencement Badger survey is recommended, to check for signs of Badger activity and Badger setts across the site and within 30 metres of the site.

### Habitat Enhancement

- 5.8 The following measures should be implemented to enhance the biodiversity value of the site and achieve no net loss of biodiversity:

- Soft landscaping should include the provision of a large variety of native and non-native flowering perennial, annual and shrub species, to provide a pollen and nectar source for invertebrates.
- Bird boxes and bat boxes will be erected onto retained trees. Bat bricks/tiles will be incorporated into the new dwellings.
- Where practical, native tree species should be planted.
- The SUDS should aim to be as attractive to wildlife as possible.

## 6.0 REFERENCES

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APPENDIX 1 – REPTILE MITIGATION PLAN (INDICATIVE) (Base Plan courtesy of FPCR)

