

**MIRA TECHNOLOGY PARK SOUTH SITE,
WATLING STREET, WARWICKSHIRE**

**GREAT CRESTED NEWT HABITAT
SUITABILITY INDEX ASSESSMENT AND
eDNA SURVEY**

A Report to: ERI MTP Limited

Report No: RT-MME-154920-02 Rev B

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Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ

Tel: 01676 525880 Fax: 01676 521400

E-mail: admin@middlemarch-environmental.com Web: www.middlemarch-environmental.com

REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

Report Version	Date	Completed by:	Checked and approved by:
Final	29/10/2021	Hannah Lewis MCIEEM (Senior Ecological Consultant)	Tim Hextell MCIEEM (Principal Technical Ecological Consultant)
Rev A	17/03/2022	James Calow MPhil, CEnv, MCIEEM (Senior Biodiversity Consultant)	Tim Hextell MCIEEM (Principal Technical Ecological Consultant)
Rev B	09/08/2022	Asija Zeidakis BSc (Hons) (Ecological Project Officer) and Helen Griffin ACIEEM (Senior Ecological Consultant)	Tim Hextell MCIEEM (Principal Technical Ecological Consultant)

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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VALIDITY OF DATA

The findings of this study are valid for a period of two to four years, depending upon the nature of works proposed and the potential for these works to impact upon great crested newts. If works have not commenced within two years of this study, it may be necessary to undertake an updated survey to allow any changes in the status of great crested newts onsite to be assessed, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In May 2021, ERI MTP Limited commissioned Middlemarch Environmental Ltd to undertake a Habitat Suitability Index Assessment and eDNA Survey for great crested newts *Triturus cristatus* at the site of a proposed development south of Watling Street near Caldecote, Nuneaton. This assessment is required to inform a planning application associated with the construction of commercial units and associated infrastructure.

A Preliminary Ecological Appraisal (Middlemarch Environmental Ltd Report Number RT-MME-1054920-01 Rev B) conducted at this site identified the potential for great crested newts to be present and therefore potentially impacted by the proposed development. Great crested newts are a legally protected species and are a material consideration in the planning process.

To assess risk to great crested newts at the MIRA Technology Park South Site, an ecological desk study, habitat suitability index assessments and eDNA surveys were undertaken.

Two ponds are located within the site boundary. Reference to Ordnance Survey mapping and online aerial imagery indicates the potential presence of up to twenty-one additional ponds within a 500 m radius of the site. Nine of these ponds were scoped out of this assessment as it was considered unlikely that newts from those ponds would use the habitat in the proposed development site. This was due to a combination of considerations including the proximity of the ponds to the development, the availability of suitable foraging habitat in the core and intermediate terrestrial zones for those ponds and the presence of barriers to newt movements in the landscape.

Three ponds were found to support great crested newts, including the two ponds situated within the development site. As such, there is a high risk of great crested newts being killed or injured during site clearance. A Natural England Development Licence is therefore required prior to any site clearance or construction work commencing.

A mitigation strategy will be required to ensure that harm to individual animals is avoided during construction and that the population status of this species is protected in the long-term. The current masterplan indicates that a number of ponds and areas of semi-natural habitats will be created on site that may continue to support a population of this species and to preserve habitat connectivity in the landscape.

Providing roads and soft landscaping are appropriately designed and new wildlife ponds are incorporated into the design it is considered that the development site could be significantly beneficial to amphibians and long-term impacts on the great crested newt population are therefore likely to be minimised.

Two ponds within the development site (Ponds P1 and P2) have both been identified as supporting great crested newt by eDNA survey. This survey was subject to constraints that must be addressed to inform the mitigation strategy and licence application. The initial analysis is based on eDNA evidence must be updated with GCN population assessment surveys. These will be undertaken during the 2022 field season between March and June and will be reported on afterwards. This work must be completed to more accurately predict the distribution of great crested newts within the development site. This approach has now been agreed with North Warwickshire District Council.

Should Warwickshire be granted a District Level Licence for great crested newts, the survey and mitigation requirements for this project are likely to change. As such, it is recommended that the conclusions in this report are re-visited prior to any additional survey work commencing.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In May 2021, ERI MTP Limited commissioned Middlemarch Environmental Ltd to undertake a Habitat Suitability Index Assessment and eDNA Survey for great crested newts *Triturus cristatus* at the site of a proposed development south of Watling Street near Caldecote, Nuneaton. This assessment is required to inform a planning application associated with the construction of commercial units and associated infrastructure.

A Preliminary Ecological Appraisal (Middlemarch Environmental Ltd Report Number RT-MME-1054920-01 Rev B) conducted at this site identified the potential for great crested newts to be present and therefore potentially impacted by the proposed development. Great crested newts are a legally protected species and are a material consideration in the planning process. A summary of the legislation protecting great crested newts is included within Appendix 3. This section also provides some brief information on the ecology of great crested newts.

To assess risk to great crested newts at the MIRA Technology Park South Site south of Watling Street an ecological desk study was undertaken and habitat suitability index assessments and eDNA surveys were undertaken of relevant ponds on 24th June 2021. In addition to the great crested newt assessment, Middlemarch Environmental Ltd has been commissioned to undertake the following assessments:

- Badger Survey (RT-MME-1054920-03 Rev B);
- Bat Surveys (RT-MME-1054920-04 Rev B);
- Bat Activity Surveys (RT-MME-1054920-05 Rev B);
- Breeding Bird Survey (RT-MME-1054920-06 Rev A); and,
- Reptile Survey (RT-MME-1054920-07 Rev A).

Middlemarch Environmental Ltd has also previously carried out ecological surveys at a site north of Watling Street. The findings of the Preliminary Ecological Appraisal and Great Crested Newt Survey are detailed in Reports RT-MME-151432-01 and RT-MME-154919-03 respectively. Bat, badger and reptile surveys are also being undertaken in 2021 at the site north of Watling Street.

1.2 DEVELOPMENT SITE DESCRIPTION AND CONTEXT

The proposed development site is located to the south of Watling Street near Caldecote in Warwickshire. Its central grid reference is approximately SP 358 951. The surrounding landscape is predominantly agricultural although the town of Nuneaton lies nearby to the south and the village of Caldecote is situated to the west. The northern boundary of the site is formed by Watling Street (the A5) and the south-western boundary by Weddington Lane (the A444). The south-eastern boundary abuts other fields, but a dismantled railway line, now the Weddington Way, is situated nearby, joining the proposed development site in the north-eastern corner of the site.

The site is approximately 69 Ha in size and dominated by arable fields. Field margins comprise hedgerows and a stream flows from north to south through the centre of the site. The Elms Farm is also situated within the site. This comprises a residential dwelling and a complex of barns and associated gardens. Two farm ponds are also present on site.

1.3 SURVEY AREA AND JUSTIFICATION

Two ponds are located within the site boundary. Reference to Ordnance Survey mapping and online aerial imagery indicates the potential presence of up to twenty-one additional ponds within a 500 m radius of the site. The locations of these ponds in relation to the proposed development site are shown on Middlemarch Environmental Ltd Drawing C154920-02-01 in Chapter 7.

Watling Street (the A5), which forms the northern boundary of the site, is a busy dual carriageway and is considered to form a significant barrier to newt movements. Whilst occasional newts may cross this feature, it is considered to be a deterrent to most amphibian movements. As such, the majority of ponds to the north of the A5 have been discounted from this survey. The exceptions to this are those ponds situated close to the disused railway line at the east of the survey area. This provides a corridor of suitable habitat for newts

that may pass under the A5. Those ponds that are linked to the development area in under 500 m via the disused railway line are included in this assessment.

Three other ponds have also been scoped out of this assessment as it is considered unlikely that newts from those ponds would be likely to be present in the proposed development site. Table 1.1 provides a summary of the ponds surveyed and the level of survey that has been undertaken at each.

Pond Reference	Proximity	Survey Level	Justification
Ponds not scoped out of assessment			
P1	Within site	eDNA	Pond to be removed by proposals. Time of year limited this to eDNA presence/absence survey only.
P2	Within site	eDNA	
P3	Within 10 m	No	Ponds close to the site with high levels of habitat connectivity. Full assessment required but access not obtained by client in time.
P4	70 m	No	
P5	230 m	eDNA	Development within intermediate foraging area for this pond with good habitat connectivity. Time of year limits this to eDNA survey only.
P6	300 m	eDNA	Development just outside intermediate foraging area for this pond with good habitat connectivity. Time of year limits this to eDNA survey only.
P7	440 m	HSI only	Dense bankside vegetation restricted further survey, but as this pond had below average suitability for newts and is situated over 400 m from the development site, separated from it by a minor road (considered a deterrent for newts but not a barrier) this is considered an appropriate level of survey.
P8	450 m	eDNA	Although the site would be distant terrestrial habitat for newts in this pond, the pond had excellent suitability for great crested newts with no significant barriers to dispersal, therefore a presence/absence survey was deemed appropriate. Time of year limits this to eDNA survey only.
P10	210 m	eDNA	Development is within the intermediate terrestrial zone for newts in this pond and whilst the Weddington Road is situated between the pond and the development site, this is likely to be a deterrent to newt movements rather than a barrier. Time of year limited this to eDNA survey only.
P18	180 m	Full survey	Pond surveyed for a separate proposal. Despite being on the opposing side of the A5, there is habitat connectivity via the disused railway line.
P20	80 m	No	Pond dry at the time of survey.
P21	100 m	No	Pond dry at the time of survey.
P22	320 m	eDNA	Despite being on the opposing side of the A5, there is habitat connectivity to the site along the disused railway.
P23	350 m	No	There is habitat connectivity between the pond and the site via the disused railway line; however, the risk to newts from this pond is considered low. As the external site boundary features are to be retained, the only habitat to be affected by the proposal within 500 m of this pond comprises arable habitat. It is considered unlikely that newts would be present in this low value foraging habitat situated so far from aquatic habitat.
Ponds scoped out of assessment			
P9	390 m	No	These ponds are scoped out of the survey as it is considered unlikely that newts from these ponds would use the proposed development site. The development is situated in the distant terrestrial habitat zone for these ponds, Weddington Lane forms a deterrent (but not a barrier) to newt movement and the site is dominated by habitats of low quality for foraging newts, whereas these ponds have high connectivity to more suitable woodland foraging habitat. P11 is also considered unlikely to be suitable for newts as it appears to be a lake located on a stream and is therefore likely to have low suitability for newts due to presence of fish and wildfowl.
P11	280 m	No	
P12	310 m*	No	
P13	200 m	No	These ponds have been scoped out of the survey as it is considered unlikely that newts from these ponds would use the proposed development site due to the intervening presence of the A5. Three of these ponds have been subject to assessment in 2021 by Middlemarch Environmental Ltd for a separate study.
P14	380 m	No	
P15	130 m	Full survey	
P16	300 m	HSI only	
P17	470 m	HSI only	
P19	500 m	Full survey	

* Whilst this pond is within 500m of the study area, the site layout plans do not show any development within 500m of this pond.

Table 1.1: Distance of Ponds from the Development Boundary

1.4 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Masterplan Option 10 B / 21092 SGP XX 00 DR A 111010 Rev M	SGP Architects + Masterplanners

Table 1.2: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal (Report RT-MME-154920-01 Rev B) an ecological data search was undertaken. The consultees for the desk study were Warwickshire Biological Records Centre (in August 2020) and Leicestershire and Rutland Environmental Record Centre (in October 2021). Middlemarch Environmental Ltd have also undertaken great crested newt surveys in 2021 on land adjacent to the Mira South site. The results can be found in Middlemarch Environmental Ltd Report Number RT-MME-154919-03 Rev B and are discussed in the desk study.

2.2 HABITAT SUITABILITY INDEX ASSESSMENT

All surveyed ponds were visually assessed for their suitability to support great crested newts by a suitably qualified ecologist. Ponds were assessed utilising the great crested newt Habitat Suitability Index (HSI) developed by Oldham *et al* in 2000 and revised by ARG UK in 2010. The HSI is a numerical index between 0 and 1, wherein a score of 1 represents optimal habitat for great crested newts. The HSI score is used to define the suitability of the pond on a categorical scale (Table 2.1). It should be noted, however, that the system is not precise enough to allow the conclusion that a pond with a high score will definitely support great crested newts whilst those with a low score will not.

HSI Score	Pond Suitability to Support Breeding Great Crested Newts
< 0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
> 0.8	Excellent

Table 2.1: Great Crested Newt HSI Scoring

The HSI is given by assigning a quantitative figure to each of 10 variables, including pond area, water quality and level of shading, which are all factors thought to affect great crested newts. The tenth root of the product of these variables is then calculated, giving a figure for habitat suitability.

2.3 SITE SUITABILITY AND CONNECTIVITY ASSESSMENT

As part of the Preliminary Ecological Appraisal (Report RT-MME-154920-01 Rev B) a Phase 1 Habitat Survey was undertaken of the proposed development site/works area. Middlemarch Environmental Ltd used this habitat survey data to undertake an assessment of the suitability of the proposed development site to support great crested newts. An assessment was also made of the habitat connectivity between ponds and the site, based on a review of habitat survey data (if available), aerial imagery and mapped sources.

2.4 eDNA SURVEY

When great crested newts inhabit a pond, they deposit traces of their DNA in the water as evidence of their presence. By sampling the water present within the ponds using a specific protocol, it is possible to analyse these small environmental traces in order to detect great crested newt presence.

The protocol involves collecting 20 x 30ml samples of water from a surveyed pond using strict protocols to prevent cross-contamination. These 20 samples are then combined and separated into 6 tubes, containing a preservative liquid that prevents the sample degrading in transit. Laboratory analysis is then carried out and involves pooling of the six samples to extract as much eDNA as possible and testing the pooled sample. A full description of the methodology can be found in the eDNA report from SureScreen Scientifics in Appendix 1.

2.5 SURVEY CONSTRAINTS

Access was not provided to eight of the ponds within 500 m of the proposed development site. Five of these were ponds that have been scoped out of the assessment (Ponds P9, P11, P12, P13 and P14) and this is not considered to be a constraint to the assessment.

Two of these ponds, P3 and P4 are located 10 m and 70 m from the proposed development. As such the development is located within the core terrestrial habitat zone (0-50 m) and intermediate terrestrial habitat zone (50-250 m) for any newt population within these ponds. Given the scale of the proposed development, presence/absence surveys (and population assessments if present) are necessary to inform a Natural England licence application. As such, their omission from this survey is a constraint to this assessment. This is considered further in Section 5 and recommendations are provided in Section 6.

The final pond for which access was not arranged, Pond P23 has not been scoped out of the assessment. The development site is situated within the distant terrestrial habitat zone for this pond on the opposing side of the A5, but it was not scoped out of the assessment as it was considered likely that newts from that pond might use the terrestrial habitat on the disused railway line. This is due to there being low levels of foraging habitat around the pond and the presence of other known great crested newt ponds around and over the railway line. As such impacts on newts that may be in this pond are considered further in Section 5 and recommendations made in Section 6.

Pond P7 has been subject to HSI survey only. Dense bankside vegetation restricted further survey, but as this pond had below average suitability for newts and is situated over 400 m from the development site, separated from it by a minor road (considered a deterrent for newts but not a barrier) this is not considered to be a constraint to this assessment of risk to great crested newts from the proposed development.

The time of year at which this assessment was commissioned (late May) made eDNA surveys the most appropriate method of assessing presence/likely absence of great crested newts. This cannot provide an assessment of population levels at the ponds. Population assessments are required by Natural England for licence applications where no District Level Licence Agreements are in place if ponds are being lost or terrestrial habitat is being lost in the core or intermediate zones around ponds. Warwickshire does not, at the time of writing, have a District Level Licence for great crested newts. As such, the level of survey is likely to be insufficient to support a Natural England Development Licence Application.

3. DESK STUDY RESULTS

3.1 BIOLOGICAL RECORDS

As part of the Preliminary Ecological Appraisal (RT-MME-154920-01) completed by Middlemarch Environmental Ltd, a desk study for records of protected species was completed. Twenty-nine records of great crested newts were identified within 1 km of the site during this study and are summarised in Table 3.1.

Date	Grid Reference	Proximity of Record	Additional Information
2017	SP367950	50 m east	-
2010	SP3656095170	100 m north-east	-
2013	SP3656095170	100 m north-east	3 individuals
2018-2019	SP3641294751	100 m south-east	Peak count of 23 individuals recorded.
Before 2015	SP36769500	110 m east	228 individuals translocated to this site.
2010	SP366952	150 m north-east	Breeding confirmed in two ponds and individuals were found in terrestrial habitats close to two other ponds. Maximum of 13 individuals in one survey visit.
2016	SP366952	150 m north-east	Individuals found in terrestrial habitat.
Before 2015	SP365953	190 m north-east	228 translocated from here.
2016	SP36699520	200 m north-east	1 female
2010	SP3671095210	210 m north-east	
2013	SP3671095210	210 m north-east	3 individuals.
2017	SP3671195209	210 m north-east	Maximum of 7 individuals.
2020	SP3671195209	210 m north-east	19 males, 2 females, and eggs.
2018	SP3550094687	220 m south-west	
2010	SP3493495683	330 m west	1 count of eggs.
2010	SP3493895680	330 m west	Breeding/eggs.
2019	SP3511694974	340 m south-west	-
2010	SP366955	410 m north-east	-
2010	SP366955	410 m north-east	-
2013	SP363942	440 m south	1 female and 5 males.
2013	SP363942	440 m south	1 male.
2013	SP363942	440 m south	4 males and 5 females.
2013	SP363942	440 m south	17 males and 6 females.
2013	SP363942	440 m south	11 males and 3 females.
2013	SP363942	440 m south	38 males and 4 females.
2013	SP3668095550	490 m north-east	1 individual.
2017	SP3668795549	490 m north-east	2 males and 2 females. Max count over 4 surveys
2013	SP365939	790 m south-east	14 individuals.
2016	SP3716394237	890 m south-east	1 individual

Table 3.1: Great Crested Newt Records Within 1 km of the Development Boundary

3.2 PREVIOUS GREAT CRESTED NEWT SURVEYS

Seven of the Ponds within 500 m of the proposed development site had already been assessed in 2021. Middlemarch Environmental Ltd Report Number RT-MME-154919-03 should be referred to for full details of the survey. A summary is provided below using the pond references relevant to the Mira South site rather than the Pond numbers in the original report.

Ponds P16 and P17 had been subject to Habitat Suitability Index Assessments. This determined that both had poor suitability habitat for great crested newt. Pond 16 was noted to dry annually and contained very little water at the time of the surveys rendering it poor habitat for breeding great crested newts. Pond P17 was deemed to have extensive fish populations which is considered to be a major factor in the ability of a pond to support breeding great crested newt populations (fish are known to be effective predators of young great crested newts).

Ponds P15, P18 and P19 had been subject to full presence/absence surveys and population assessment surveys. These ponds were considered likely to support separate populations and Ponds P15 and P19 contained small populations and P18 supported a medium population.

4. RESULTS

4.1 INTRODUCTION

The HSI Assessment and eDNA Survey were undertaken on 24th June 2021 by Hannah Lewis (Senior Ecologist) and Emily Priest (Ecological Project Officer).

Table 4.1 details the weather conditions at the time of the site visit.

Parameter	Condition
Temperature (°C)	17
Cloud (%)	50
Wind (Beaufort)	3
Precipitation	None

Table 4.1: Weather Conditions During Field Assessment

The findings of the HSI Assessment and eDNA Survey are provided within Sections 4.3, 4.4 and 4.5.

4.3 HABITAT SUITABILITY INDEX ASSESSMENT

Ponds P1, P2, P5, P6, P7, P8, P10 and P22 were assessed against the habitat suitability index assessment criteria. The locations of these ponds are shown on Middlemarch Environmental Ltd Drawing C154920-02-01 in the Chapter 7. Photographs of surveyed ponds are provided in Chapter 8. The HSI score for each of the ponds assessed is detailed in Table 4.2. More detailed descriptions of each of the surveyed ponds with reference to the presence or absence of habitat features favoured by great crested newts are provided in Appendix 1.

Pond Ref.	HSI Category										HSI Score	Suitability category
	SI 1	SI 2	SI 3	SI 4	SI 5	SI 6	SI 7	SI 8	SI 9	SI 10		
P1	1	0.2	0.5	0.33	0.2	1	1	1	0.33	0.3	0.48	Poor
P2	1	1	0.9	0.67	0.8	1	1	1	0.33	0.6	0.74	Good
P5	1	0.8	0.9	0.67	1	0.67	1	1	0.67	0.4	0.78	Good
P6	1	0.5	0.5	0.67	1	1	1	1	0.67	0.8	0.79	Good
P7	1	0.6	0.5	0.33	0.4	1	1	0.8	0.33	0.3	0.56	Below Average
P8	1	0.95	0.9	0.67	1	0.67	1	0.95	0.67	0.7	0.84	Excellent
P10	1	0.6	1	0.67	1	1	1	0.8	0.33	0.7	0.77	Good
P22	1	0.2	0.5	0.33	1	1	1	1	1	0.3	0.62	Average
Key: SI 1 – Location SI 2 – Pond Area SI 3 – Pond Drying SI 4 – Water Quality SI 5 – Shade SI 6 – Waterfowl SI 7 – Fish SI 8 – Ponds Within 1km SI 9 – Terrestrial Habitat SI 10 – Macrophytes												

Table 4.2: Habitat Suitability Index of Accessible Ponds Within 500 m of Study Area

4.4 SITE TERRESTRIAL HABITAT SUITABILITY ASSESSMENT

The development site is dominated by arable land (Plates 8.8 and 8.9). This is considered to be low quality terrestrial habitat for great crested newts. However, the field boundaries and semi-natural habitats immediately surrounding the farm building complex (Plate 8.10) provide foraging opportunities for amphibians.

4.5 eDNA SURVEY

Ponds P1, P2, P5, P, P8, P10 and P22 were surveyed for great crested newt eDNA. A summary of the eDNA analysis results provided by SureScreen Scientifics is given in Table 4.4.

Pond Ref.	SIC	DC	IC	Result
P1	Pass	Pass	Pass	Positive
P2	Pass	Pass	Pass	Positive
P5	Pass	Pass	Pass	Negative
P6	Pass	Pass	Pass	Negative
P8	Pass	Pass	Pass	Negative
P10	Pass	Pass	Pass	Negative
P22	Pass	Pass	Pass	Negative

Key:

SIC- Sample Integrity Check. Refers to quality of packaging, absence of tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to results errors. Inspection upon receipt of sample at the laboratory. To check if the sample is of adequate integrity when received. Pass or Fail.

DC- Degradation Check. Analysis of the spiked DNA marker to see if there has been degradation of the kit since made in the laboratory to sampling to analysis. Pass or Fail.

IC- Inhibition Check- PCR inhibitors can cause false results. Inhibitors are analysed to check the quality of the result. Every effort is made to clean the sample pre-analysis however some inhibitors cannot be extracted. An unacceptable inhibition check will cause an indeterminate sample and must be sampled again.

Result- NEGATIVE means that GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as no evidence of GCN presence. POSITIVE means that GCN eDNA was found at or above the threshold level and the presence of GCN at this location at the time of sampling or in the recent past is confirmed. Positive or Negative.

Table 4.4: eDNA Analysis Results

All samples passed the integrity, degradation and inhibition tests. Great crested newts were found to be present in Ponds P1 and P2 and likely to be absent from Ponds P5, P6, P8, P10 and P22.

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF SITE PROPOSALS

The proposal is for the construction of seven commercial units with associated access and parking. The entrance to the site from the A5 will utilise the existing site entrance on the roundabout to the existing Horiba MIRA site to the north. The exit onto the Weddington Lane will require the creation of a new site entrance and junction. The stream that runs centrally through the site will be retained in situ. A new crossing will be created over this to allow vehicular access to the western half of the site. Two internal hedgerows will be lost, but the external site boundary features will be preserved intact except the new entrance proposed onto Weddington Lane. Pedestrian and cycle access is proposed onto the site via the Weddington Walk on the disused railway line at the northeast corner of the site. A band of soft landscaping with planting and pools is proposed along this pedestrian walkway, around the eastern, western and southern boundaries of the site, and along the west of the stream. Whilst some of these pools are proposed for site drainage, it is understood that some are proposed for ornamental and wildlife purposes. No construction work is currently proposed on the westernmost field included in the survey area for this study.

5.2 STATUS OF GREAT CRESTED NEWTS WITHIN THE SURVEY AREA

The two ponds within the development site (Ponds P1 and P2) have both been identified as supporting great crested newt by eDNA survey. Pond P2 provides 'good' habitat for this species, Pond P1 provides 'poor' habitat suitability.

Ponds P3 and P4 are located 10 m and 70 m from the proposed development. These ponds have not been accessed to determine great crested newt presence, although desk study records indicate that they have been present as recently as 2019.

Ponds P5, P6, P8 and P10 provide good or excellent suitability habitat for great crested newt. Records of great crested newt were present in Pond P10 from 2018 and records were present in the Weddington area near Ponds P5, P6 and P8. Despite this, the eDNA surveys indicate that this species was absent from those ponds in the 2021 breeding season. Pond P7 was determined to have below average suitability habitat for great crested newts. Whilst this does not indicate that great crested newts are absent, it does suggest that they are less likely to be present.

On the opposing side of the A5, great crested newts have been found in ponds within the existing Mira site in 2021 including a medium population in Pond P18. A group of ponds are present around the disused railway line (Ponds P18, P20, P21, P22 and P23) and it was anticipated that newts from these ponds might travel to the proposed development site along the railway. The two closest ponds, P20 and P21, were a receptor site for over 200 translocated great crested newts prior to 2015 and a record was provided from this location in 2017, however, at the time of the survey these waterbodies were dry. An eDNA survey of Pond P22 found great crested newts to be absent and no access was arranged to Pond P23.

5.3 SUMMARY OF POTENTIAL IMPACTS

Pre- and Mid-Development Impacts

Two ponds which were confirmed to support great crested newts in the 2021 breeding season will be lost as part of the proposal. One of these provides good habitat for newts and is likely to be used for breeding and foraging. The other provides poor quality habitat but may also be used for breeding and foraging. The destruction of these ponds and the surrounding habitat, which includes brash and rubble piles is highly likely to result in injury or death of great crested newts in contravention of current legislation.

The majority of habitat to be lost on site comprises arable land. This is considered to be low quality foraging habitat for newts, however the area to be lost, approximately 59 Ha, is significant, particularly as it contains two great crested newt ponds. Newts could be killed and injured during the clearance of this habitat.

Newts from the ponds are considered most likely to use the terrestrial habitats along the A5 road verge, the eastern site boundary and habitats around The Elms Farm complex for foraging. Smaller numbers may cross the large arable field to use hedgerows to the west for foraging and commuting.

Two internal field boundary hedgerows will be lost. These total approximately 0.9 km of hedgerow. Whilst they do not have significant basal verges, they may be used by foraging and commuting newts. The Elms Farm and surrounding habitats will be demolished. Clearance of these habitats could result in death of injury to newts and will reduce the foraging habitat available within the site, although the A5 Road verge and eastern site boundary will be retained.

Given the risk to great crested newts, work may only proceed under licence. At the current time the development site is not situated within a District Licencing area and as such a Natural England Development Licence will be required. A mitigation strategy will be required that details how risk of harm to individual newts will be avoided or reduced and how the population will be protected in the long-term.

Long-Term Impacts

Whilst buildings and hardstanding will dominate the site post-development, the majority of the habitat to be lost is arable, a low quality habitat for foraging newts. The areas of soft landscaping proposed have potential to create wide margins of semi-natural habitats along the watercourse and western, southern and eastern boundaries. The exact nature of the habitats proposed is yet to be determined but if appropriately designed have potential to increase the quantity of suitable foraging habitat post-development and habitat connectivity in the landscape will not be severed.

The masterplan indicates that a number of drainage features will be created on site, including a series of ponds. Whilst the majority of these are proposed for sustainable drainage and cannot be considered to be appropriate ponds for amphibians, the Scheme Architect has stated that at least one of the ponds, at the entrance to the site from the A5, is proposed for visual and wildlife purposes (Ian Yallop of SGP Architects and Masterplanners, pers.comm.). If appropriately designed and located, any ponds not proposed for drainage could provide replacement breeding and foraging habitats for newts.

It is important that any replacement wildlife ponds are situated in locations that allow dispersal to other ponds in the meta-population. Newts travelling from the proposed wildlife pond at the entrance from the A5 to the disused railway corridor or any of the other ponds included in this assessment would need to cross the main trunk road through the site. This road may be a deterrent to amphibian movements and could pose risk of fatalities from traffic. Locating wildlife ponds along the eastern boundary would be preferred.

As ponds and potential foraging habitats are situated throughout the site it is also vital the fatalities on the roads and other hard surfaces are minimised through appropriate kerb and drainage solutions.

The provision of suitable breeding and foraging habitat for great crested newts, measures to protect newts on site during the operational phase of the development and connectivity with the wider metapopulation will all be considered in the great crested newt mitigation strategy required for a Natural England Development licence.

Providing roads and soft landscaping are appropriately designed and new wildlife ponds are incorporated into the design it is considered that the development site could be significantly beneficial to amphibians and long-term impacts on the great crested newt population are therefore likely to be minimised.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

At the current time, the development site is not situated within a District Licencing area. As such a Natural England Development Licence will be required. The following recommendations are made based on those licencing requirements. Should Warwickshire be granted a District Licence, the survey and mitigation requirements are likely to change. As such, these recommendations should be checked and confirmed prior to any additional survey work commencing.

R1 Great Crested Newt Survey

Further survey is required for Ponds P1, P2, P3, P4 and P23 to determine the distribution and population class of great crested newts that may be affected by the proposal. Population assessment surveys require 6 visits to each pond between March and June, with 3 visits required between mid-April and mid-May. Two fewer visits will be required where great crested newts are found to be absent in the un-surveyed ponds. If Ponds P20 and P21 are subsequently found to hold water, these must also be surveyed.

The GCN population assessment has been scheduled to be undertaken between March and May 2022. A planning statement will be submitted to the Local Planning Authority outlining the GCN DNA survey work to date together with proposals for additional surveys and draft mitigation proposals due to confirmed DNA presence of GCN in the two ponds on site. This information will be updated as the GCN population(s) size(s) are confirmed on completion of the surveys in May 2022 when a formal GCN Development Licence will be submitted to Natural England (see R2).

Should more than 2 years elapse prior to a licence application being made, the presence/absence surveys for other ponds in this study will also need to be updated.

R2 Great Crested Newt Mitigation Strategy and Licence Application

No construction work can commence on site until a Natural England Development Licence is obtained. To inform the licence application a mitigation strategy must be compiled that details how risk of harm to individual newts will be avoided or reduced in the construction phase of this proposal and how the population will be protected in the long-term.

7. DRAWINGS

Drawing C154920-02-01 – Pond Location Plan



C154920-02-01

Legend

Site boundary

250m from site boundary

500m from site boundary

Pond subject to full survey - GCN positive

Pond subject to eDNA survey - GCN positive

Pond subject to eDNA survey - GCN negative

Pond subject to HSI assessment

Pond not surveyed - no access

Pond not surveyed - scoped out

Project

MIRA SMS, Watling Street

Drawing

Pond Location Map

Client

Horiba MIRA Ltd

Drawing Number

C154920-02-01

Revision

00

Scale @ A3

1:8,000

Date

October 2021

Approved By

HL

Drawn By

RP

MIDDLEMARCH ENVIRONMENTAL

Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ

T:01676 525880

E:admin@middlemarch-environmental.com

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8. PHOTOGRAPHS



Plate 8.1: Pond 1



Plate 8.2: Pond 2



Plate 8.3: Pond 5



Plate 8.4: Pond 6



Plate 8.5: Pond 7



Plate 8.6: Pond 8



Plate 8.7: Pond 10



Plate 8.8: Ponds 1 and 2 within Site



Plate 8.9: Proposed Development Site



Plate 8.10: Proposed Development Site

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APPENDIX 1

Pond Descriptions

Tables A1.1 – A1.8 provide a brief description of ponds assessed against the Habitat Suitability Index Assessment Criteria.

Attribute	Description
Pond P1	
Description	A field pond shaded by trees and filled with brash. No aquatic vegetation present with a small open area of water in the centre, considered likely to dry out most years.
Grid Reference	SP 3630 9512
Pond Area	150 m ² (including area clogged with brash – open area of water more like 12m ²).
Distance from Development	Within site.
Permanence	It is considered likely that this will dry out most years.
Water Quality	The pond may be subject to agricultural run off. The water had no aquatic vegetation and an odour and film that suggested poor water quality.
Shade	The pond is completely shaded by overhanging trees and shrubs.
Macrophytes	No aquatic macrophytes were present.
Egg Laying Habitat	Leaf litter is present that could be used for egg laying.
Open Courtship Area	The pond had a very small area of open water at the time of the survey.
Wildfowl	None
Fish	None
Surrounding Terrestrial Habitat	The pond has a narrow margin of scrub and trees, with rubble piles and brash present. It is otherwise situated within a large arable field. A hedgerow and field margin are present within 250 m of the pond but terrestrial habitat is considered to be poor.
Photo Reference	Plate 8.1 (Chapter 8)

Table A1.1: Pond 1 Description and Assessment of Habitat Features for Great Crested Newts

Attribute	Description
Pond P2	
Description	A large field pond mostly shaded by trees but with a more open area supporting emergent vegetation.
Grid Reference	SP 3622 9501
Pond Area	850 m ²
Distance from Development	Within site.
Permanence	Likely to be permanent, never drying out.
Water Quality	No assessment of invertebrate assemblage has been undertaken. Submerged plants were not noted but may be present in the unshaded areas. The pond may be subject to agricultural run off, however, there were not clear signs of pollution therefore this pond is classed as having moderate water quality without further evidence.
Shade	70% of pond shaded by overhanging trees and scrub.
Macrophytes	Reedmace <i>Typha latifolia</i> , bittersweet <i>Solanum dulcamara</i> and celery-leaved buttercup <i>Ranunculus sceleratus</i> were present in the unshaded area of the pond. Submerged species may be present but were not recorded. Duckweed <i>Lemna</i> sp. was present but did not dominate the water surface.
Egg Laying Habitat	Leaf litter and submerged leaves of emergent species.
Open Courtship Area	Present
Wildfowl	None
Fish	None
Surrounding Terrestrial Habitat	The pond has a narrow margin of scrub and trees, with rubble piles and brash present. It is otherwise situated within a large arable field. Hedgerows and field margin are present within 250 m of the pond and an area of semi-improved grassland is present around the farm building complex 70m south-west of the pond. Suitable terrestrial habitat comprises less than 25% of the land within 250 m and is therefore considered to be poor.
Photo Reference	Plate 8.2 (Chapter 8)

Table A1.2: Pond 2 Description and Assessment of Habitat Features for Great Crested Newts

Attribute	Description
Pond P5	
Description	A large balancing pond at the edge of a residential development.
Grid Reference	SP 3633 9452
Pond Area	2000 m ²
Distance from Development	230 m
Permanence	Likely to be permanent.
Water Quality	No assessment of invertebrate assemblage has been undertaken. The is likely to receive surface run off from roads, however, there were not clear signs of pollution therefore this pond is classed as having moderate water quality without further evidence.
Shade	None.
Macrophytes	A variety of emergent species present including reedmace <i>Typha latifolia</i> , rushes <i>Juncus spp.</i> and reed sweet grass <i>Phalaris arundinacea</i>
Egg Laying Habitat	Present
Open Courtship Area	Present
Wildfowl	Ducks present.
Fish	None
Surrounding Terrestrial Habitat	Land within 250m includes residential development with houses and small gardens and agricultural grassland. The pond is situated within a narrow band of semi-improved grassland that extends around the periphery of the residential development and adjacent to both a stream and a disused railway line which may provide high quality foraging opportunities. Although good foraging opportunities are present, including within the core terrestrial zone for newts, these comprise less than 75% of the land cover within 250m and so the terrestrial habitat is deemed to be 'moderate'.
Photo Reference	Plate 8.3 (Chapter 8)

Table A1.3: Pond 5 Description and Assessment of Habitat Features for Great Crested Newts

Attribute	Description
Pond P6	
Description	A small, linear, heavily vegetated balancing pond at the edge of a residential development.
Grid Reference	SP 3644 9451
Pond Area	230 m ²
Distance from Development	300 m
Permanence	Sometimes dries.
Water Quality	No assessment of invertebrate assemblage has been undertaken. The is likely to receive surface run off from roads, however, there were not clear signs of pollution therefore this pond is classed as having moderate water quality without further evidence.
Shade	0%
Macrophytes	Heavily vegetated with aquatic species such as reedmace and ruderal species such as greater willowherb <i>Epilobium hirsutum</i> .
Egg Laying Habitat	Present
Open Courtship Area	A very small open area present around an inflow structure.
Wildfowl	Absent
Fish	Likely absent.
Surrounding Terrestrial Habitat	Land within 250 m includes residential development with houses and small gardens, arable fields and agricultural grassland. The pond is situated within a narrow band of semi-improved grassland that extends around the periphery of the residential development and adjacent to both a stream and a disused railway line which may provide high quality foraging opportunities. Although good foraging opportunities are present, including within the core terrestrial zone for newts, these comprise less than 75% of the land cover within 250 m and so the terrestrial habitat is deemed to be 'moderate'.
Photo Reference	Plate 8.4 (Chapter 8)

Table A1.4: Pond 6 Description and Assessment of Habitat Features for Great Crested Newts

Attribute	Description
Pond P7	
Description	Farm pond surrounded by a narrow border of dense vegetation.
Grid Reference	SP 3551 9422
Pond Area	300 m ²
Distance from Development	440 m
Permanence	Occasionally dries.
Water Quality	The pond may be subject to agricultural run off, and where the water could be observed, thick blanket weed was present suggesting high levels of nitrification. Water quality therefore deemed poor.
Shade	90% shaded.
Macrophytes	None
Egg Laying Habitat	Leaf litter.
Open Courtship Area	Present
Wildfowl	None noted.
Fish	Likely absent.
Surrounding Terrestrial Habitat	Poor. Only narrow field margins and arable land within 250 m.
Photo Reference	Plate 8.5 (Chapter 8)

Table A1.5: Pond 7 Description and Assessment of Habitat Features for Great Crested Newts

Attribute	Description
Pond P8	
Description	A large balancing pond at the edge of a residential development.
Grid Reference	SP 3612 9416
Pond Area	1100 m ²
Distance from Development	450 m
Permanence	Likely permanent.
Water Quality	No assessment of invertebrate assemblage has been undertaken. The is likely to receive surface run off from roads, however, there were not clear signs of pollution therefore this pond is classed as having moderate water quality without further evidence.
Shade	0%
Macrophytes	Approximate cover of 40% macrophytes including common reed <i>Phragmites australis</i> , yellow flag iris and rushes <i>Juncus</i> spp.
Egg Laying Habitat	Present
Open Courtship Area	Present
Wildfowl	Minor impact from wildfowl.
Fish	Likely absent.
Surrounding Terrestrial Habitat	Land within 250 m includes residential development with houses and small gardens and agricultural grassland. The pond is situated within a narrow band of semi-improved grassland that extends around the periphery of the residential development and adjacent to both a stream and a disused railway line which may provide high quality foraging opportunities. Although good foraging opportunities are present, including within the core terrestrial zone for newts, these comprise less than 75% of the land cover within 250 m and so the terrestrial habitat is deemed to be 'moderate'.
Photo Reference	Plate 8.6 (Chapter 8)

Table A1.6: Pond 8 Description and Assessment of Habitat Features for Great Crested Newts

Attribute	Description
Pond P10	
Description	Farm pond partially shaded by overhanging scrub.
Grid Reference	SP 3550 9468
Pond Area	300 m ²
Distance from Development	210 m
Permanence	Rarely drying.
Water Quality	No assessment of invertebrate assemblage has been undertaken. Submerged plants were not noted but may be present in the unshaded areas. The pond may be subject to agricultural run off, however, there were not clear signs of pollution therefore this pond is classed as having moderate water quality without further evidence.
Shade	50%
Macrophytes	Approximate 40% cover of macrophytes, dominated by yellow flag iris <i>Iris psuedacorus</i> .
Egg Laying Habitat	Present
Open Courtship Area	Present
Wildfowl	None
Fish	None
Surrounding Terrestrial Habitat	Situated within an arable field. Hedgerows and field margins present within 250 m. A 2 ha area of rough grassland is present 70 m to the south. Although this offers suitable foraging habitat, it comprises less than 25% of the habitat within 250 m of the pond, which is largely unsuitable. As such the terrestrial habitat is deemed poor.
Photo Reference	Plate 8.7 (Chapter 8)

Table A1.7: Pond 10 Description and Assessment of Habitat Features for Great Crested Newts

Attribute	Description
Pond P22	
Description	A small circular pond that is lined with limited quantities of vegetation and appears recently created. It is located within a field.
Grid Reference	SP 3695 9513
Pond Area	80 m ²
Distance from Development	320 m
Permanence	Rarely dries out.
Water Quality	Algae content of water high and macrophyte content low but no obvious signs of pollution therefore deemed poor at the current time but likely to improve as the pond establishes.
Shade	None
Macrophytes	Water lily present on less than 5% of pond surface.
Egg Laying Habitat	Limited opportunities for egg laying.
Open Courtship Area	Yes
Wildfowl	None
Fish	None
Surrounding Terrestrial Habitat	Good: Extensive semi-improved grassland surrounds the pond and a wooded disused railway line located within 50 m.

Table A1.8: Pond 22 Description and Assessment of Habitat Features for Great Crested Newts

APPENDIX 2

eDNA Survey Report – SureScreen Scientifics

APPENDIX 3

LEGISLATION

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. Great crested newt are listed as a priority species on the Warwickshire Biodiversity Action Plan. A revision of the plan for this species is in progress in 2021.

ECOLOGY

The great crested newt is the largest of the three newt species in the UK. Like all UK amphibians, they breed within ponds but great crested newts spend the majority of the year on land. Great crested newts prefer to breed in medium to large ponds without fish or significant numbers of waterfowl. Ponds which lack shade on the southern margins appeared to be favoured. Newts enter the ponds to breed in the spring, immediately after they come out of their winter dormancy. The females lay eggs individually on the leaves of

aquatic vegetation, and these generally hatch within four weeks, although the exact timing is dependent on environmental conditions. The larvae then stay in the water until the metamorphosing into adult newts (when they lose their external gills) between August and October and are now able to leave the water. Great crested newts can live up to 14 years in the wild and spend most of their lives out of the ponds, foraging at night in areas of undisturbed habitat, favouring rough grassland, scrub and woodland areas. Newts may travel up to 1 km from a breeding pond, but most tend to travel no more than 250 m if the ponds are close to suitable terrestrial habitat. Great crested newts are predators from birth, taking a variety of live prey including aquatic invertebrates, frog tadpoles, slugs, earthworms, spiders and other land invertebrates. Great crested newt hibernate during the winter months in underground crevices, such as gaps between tree roots, or under piles of logs, rubble etc.

Great crested newt populations have declined significantly in Britain, and continental Europe, since the 1940s as a result of habitat loss.