Haycock & Jay Associates Ltd

CONSULTANT ECOLOGISTS

Land at Symphony, Grimethorpe

Great Crested Newt Survey Report

Submitted to:

The Symphony Group plc
Pen Hill Estate
Park Spring Road
Barnsley
S72 7EZ

June 2020 ELG001

Contact Gordon Haycock: 10 Boroughgate, Otley, West Yorkshire LS21 3AL
Tel: 01943 850276
gordon.haycock@haycockandjay.co.uk

Company registered in England No. 7119787
Registered Office: Haycock and Jay Associates Ltd., 14 Beech Hill, Otley LS21 3AX

TABLE OF CONTENTS

SECTION **PAGE**

1.0 INTRODUCTION 1
1.1 Background 1
1.2 Site Context 1
2.0 LEGISLATION AND POLICY 2
2.1 Great Crested Newt 2
2.2 National Planning Policy Framework 3
2.3 Local Planning Policy 3
3.0 METHODOLOGY 5
3.1 Habitat Suitability Index 5
3.2 Great Crested Newt Survey 5
3.3 Covid-19 6
3.4 Constraints 6
RESULTS 8
3.1 Pond Descriptions & HSI 8
3.2 Great Crested Newt Survey 9
3.3 Incidental Observations 11
4.0 CONCLUSIONS 13

FIGURES

Figure 1 Ponds Map

APPENDICES

Appendix 1 Pond HSI Details
Appendix 2 Great Crested Survey Results
Appendix 3 Photographs

SUMMARY

Great crested newt surveys were undertaken at seven ponds within 500m of land at Symphony, Grimethorpe, during the period April to June 2020.

The surveys identified small populations of great crested newts at five ponds within 500m of the site (Ponds P2, P4, P5, P6 and Pylon Ditch).

Great crested newt eggs or larvae were also identified in Ponds P4, P5 and P6, confirming breeding at these water bodies.

1.0 INTRODUCTION

1.1 Background

1.1.1 Haycock and Jay Associates Ltd was commissioned by the Symphony Group plc to undertake great crested newt (*Triturus cristatus*) survey of land at Symphony, Grimethorpe, ahead of the proposed development of land at the Symphony factory site.

1.1.2 The requirement for the surveys was identified during a Preliminary Ecological Assessment undertaken at the site in 2019 by Gray's Ecology[1].

1.1.3 This Great Crested Newt Survey Report is written by Robyn Guppy BSc (Hons) ACIEEM. It outlines the methods, results and conclusions of great crested newt surveys carried out at the land at Symphony during the period April to June 2020.

1.2 Site Context

1.2.1 The land at Symphony is located to the south-west of Grimethorpe, Barnsley. The approximate central Ordnance Survey grid reference is SE 401 086, and access is via Ferrymoor Way on the north-east of the site.

1.2.2 The former Grimethorpe Colliery site is directly adjacent to the west of the land at Symphony. The survey area now supports large areas of bare earth, species-rich neutral grassland, broad-leaved woodland, wet woodland and scrub habitats, as well as a number of ponds and drainage ditches.

1.2.3 In the wider area, Grimethorpe is surrounded by arable land with areas of broad-leaved woodland and semi-improved grassland and scrub, as well as the residential and industrial areas of Cudworth, Brierley and Shafton. An active quarry is located ~700m south-east of the site and the town of Barnsley is ~5km to the south-west.

[1] Megson, G. (December 2019). '*Land at Symphony, Grimethorpe: Preliminary Ecological Assessment Report*. Gray's Ecology.

2.0 LEGISLATION AND POLICY

2.1 Great Crested Newt

2.1.1 Great crested newt are listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. They are protected under Schedule 2 of The Conservation of Habitats and Species Regulations 2017, and Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Great crested newt are also listed under the Natural Environment and Rural Communities Act (2006).

2.1.2 Taken together, this legislation makes it an offence to:

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

2.1.3 Great crested newt are also listed as a priority species in the UKBAP and a Species of Principal Importance under Section 41 of NERC Act.

2.1.4 A Species Action Plan for great crested newts is included in the Barnsley Biodiversity Action Plan.

2.2 National Planning Policy Framework

2.2.1 Section 15 of the National Planning Policy Framework is titled 'Conserving and enhancing the natural environment' and sets out how planning authorities should endeavour to contribute to and enhance the natural and local environment:

2.2.2 "Planning policies and decisions should contribute to and enhance the natural and local environment by … minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures".

2.3 Local Planning Policy

2.3.1 All county councils are required to have a plan for development in the local area, which is known as a Local Plan. The relevant Local Plan for the site is the 'Barnsley Local Plan'. A summary of the relevant policies included in the plan is given below:

2.3.2 "***Policy GI1 Green Infrastructure*** *- We will protect, maintain, enhance and create an integrated network of connected and multi-functional Green Infrastructure assets that:*

- *Provides attractive environments where people want to live, work, learn, play, visit and invest;*
- *Meets the environmental, social and economic needs of communities across the borough and the wider City Regions;*
- *Enhances the quality of life for present and future residents and visitors;*
- *Helps to meet the challenge of climate change;*
- *Enhances biodiversity and landscape character;*
- *Improves opportunities for recreation and tourism;*
- *Respects local distinctiveness and historical and cultural heritage;*
- *Maximises potential economic and social benefits; and*
- *Secures and improves linkages between green and blue spaces."*

*2.3.3 "****Policy GS1 Green Space*** *- We will work with partners to improve existing green space to meet the standards in our Green Space Strategy. Green Spaces are green open areas which are valuable for amenity, recreation, wildlife or biodiversity and include types such as village greens, local open spaces, country parks, formal*

gardens, cemeteries, allotments, woodlands, recreation grounds, sports pitches and parks. Proposals that result in the loss of green space, or land that was last used as green space, will not normally be allowed unless:

- *An assessment shows that there is too much of that particular type of green space in the area which it serves and its loss would not affect the existing and potential green space needs of the borough; or*
- *The proposal is for small scale facilities needed to support or improve the proper function of the green space; or*
- *An appropriate replacement green space of equivalent or improved quality, quantity and accessibility is provided which would outweigh the loss."*

2.3.4 *"**Policy BIO1 Biodiversity and Geodiversity -** Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:*

- *Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan.*
- *Maximising biodiversity and geodiversity opportunities in and around new developments.*
- *Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors.*
- *Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest.*
- *Protecting ancient and veteran trees where identified.*
- *Encouraging provision of biodiversity enhancements.*

2.3.5 Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured."

3.0 METHODOLOGY

3.1 Habitat Suitability Index

3.1.1 In order to assess their potential to support great crested newt and to determine the requirement for further targeted species surveys, ponds were 'screened' using the Habitat Suitability Index[2] (HSI).

3.1.2 The HSI is a quantitative figure indicating a pond's likely suitability for supporting great crested newt, ranging from excellent to poor. The HSI is calculated by allocating indices to a number of different features of the pond and surrounding area, including the number of ponds within 1km, percentage shade, water quality, presence of waterfowl, presence of fish, surrounding terrestrial habitats and macrophyte cover.

3.2 Great Crested Newt Survey

3.2.1 Great crested newt surveys were led by Principal Ecologist Gordon Haycock (Natural England Class Licence 2016 - 19 CL-09 Level 2) with one additional surveyor present during each of the visits for reasons of Health and Safety. Additional surveyors included: Rachel Midgley BSc (Hons) MCIEEM (Natural England Class Licence no. 2015-16771-CLS-CLS), Robyn Guppy BSc (Hons) ACIEEM (Natural England Class Licence no. 2019-39172-CLS-CLS) and Clare Cashon BSc (Hons) ACIEEM (Natural England Class Licence no. 2019-38912-CLS-CLS).

3.2.2 The surveys were carried out in the period April to June 2020 and in accordance with Natural England guidelines, which recommend at least three survey techniques are employed during each visit, to include:

- Bottle trapping - Bottle traps constructed from two litre plastic bottles were set out around the margin of each water body overnight and any great crested newt caught were recorded and released early the following morning;

- Torch-light survey - Each pond was illuminated with a powerful torch after dusk, and the presence of any great crested newt was recorded;

- Egg search - Suitable aquatic vegetation was checked for the presence of great crested newt eggs;

- Netting - A search of the ponds at regular intervals around the pond edge, particularly areas of dense vegetation or deep water, were searched using nets. Any great crested newt caught were recorded and released immediately; and,

[2] Oldham, R. S., Keeble, J., Swan, M. J. S. and Jeffcote, M. (2000). '*Evaluating the suitability of habitat for the great crested newt (Triturus cristatus)*'. Herpetological Journal Vol 10 pp143-155.

- Refuge search – Lifting and searching under logs, bark, rocks and artificial refugia for the presence of refuging newts.

3.2.3 Survey methods used were selected dependant on a number of factors including the accessibility of pond margins, the amount of vegetation (which could hamper torch-light surveys), presence of a pond liner etc.

3.2.4 Detailed results including the survey methods utilised during each survey visit are provided in Appendix 2.

3.3 Covid-19

3.3.1 To ensure the safety of staff and members of the public during the Covid-19 pandemic, the following precautions were undertaken by field surveyors during the survey:

- Social distancing measures with all field staff maintaining a distance of at least 2 metres apart from each other and from members of the public during surveys, except in emergency situations;
- Use of hand sanitiser gel before and after survey visits;
- No over-night stays away from home during surveys;
- No un-necessary travel with field staff travelling separately straight to site and returning home immediately after completing fieldwork, diverting only for essential supplies such as fuel; and
- Handwashing with soap after surveys for at least 20 seconds.

3.4 Constraints

3.4.1 In line with the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance[3] following the Covid-19 pandemic, no bottle-trapping was undertaken during the surveys. As a result, only two survey methods could be undertaken at Pond P6 during surveys 2-6 due to an absence of suitable material for refuge searches.

3.4.2 During the first survey of Pond P1 and the second surveys for Ponds P5, P6 and Pylon Ditch conditions became unsafe for surveyors, due to the presence of off-roading vehicles after dark, and so torch-light surveys were abandoned and undertaken the following night.

[3] CIEEM (2020). *Guidance on Ecological Survey and Assessment in the UK During the Covid-19 Outbreak*. Version 1, published 7 May 2020. Chartered Institute of Ecology and Environmental Management, Winchester, UK

3.4.3 Survey at Ponds P2 and P4 was delayed to prevent disturbance to breeding lapwing and as such the majority of surveys undertaken at these ponds were towards the end of the survey period. Prolonged hot dry weather at this time resulted in Pond P2 drying out completely from the fifth survey.

3.4.4 Pond P3 was completely dry throughout the duration of the survey and so could not be surveyed for great crested newts.

3.4.5 Pond P4 supports very dense New Zealand pygmyweed (*Crassula helmsii*) which significantly restricted visibility into the waterbody during torch-light surveys, and as a result it is possible that individual great crested newts may have been missed during the surveys.

3.4.6 Large portions of the wet woodland area in Pond P6 were unsafe to access due to deep mud, as such only ~50% of the shoreline could be surveyed. Water along the ditch at this pond was very turbid during the final three surveys so it is possible that individual great crested newts may have been missed.

3.4.7 Pond P8 could not be accessed for the duration of the survey period due to furloughing of staff at Sash Windows and so could not be surveyed.

3.4.8 Wet woodland functionally linked to the Pylon Ditch could not be safely accessed due to deep mud, and the steep sides of the ditch prevented safe access to some areas of the shoreline. As such only ~30% of the shoreline of this waterbody could be surveyed. During surveys five and six water levels at the ditch had dropped substantially, further reducing the area of shoreline surveyed to ~20%.

RESULTS

3.1 Pond Descriptions & HSI

3.1.1 Ten waterbodies are present within 500m of the area of proposed development at Symphony, seven of which were surveyed for great crested newts. Ponds are labelled P1-9 and "Pylon Ditch" in accordance with previous ecological reports for the site[4], with descriptions given below. The locations of the ponds are illustrated in Figure 1, the HSI details for the ponds are provided at Appendix 1 and photographs are provided at Appendix 3.

Table 4.1 – Pond Locations, Descriptions and Habitat Suitability Indices (HSI).

Pond Name	OS Grid Reference	Description	HSI Score
P1 (Photo 1)	SE 3973 0874	A circular pond ~700m^2 in size, fringed with common reedmace (*Typha latifolia*) and a large patch of common reed (*Phragmites australis*) on the southern edge. Emergent vegetation includes dense floating pennywort (*Hydrocotyle ranunculoides*) around the margins of the pond, with clearer water towards the centre. The pond is connected to P7 via a drainage ditch which was partially dry during the survey, and another ditch adjoins the pond to the west. Surrounding habitat includes neutral grassland and small areas of hawthorn scrub.	0.83 "Excellent"
P2 (Photo 2)	SE 3993 0855	An ovoid pond ~1,000 m^2 in size supporting shallow and very turbid water. New Zealand pygmyweed is present in the pond, along with common spike-rush (*Eleocharis palustris*) and water-plantain (*Alisma plantago-aquatica*). There was evidence of frequent disturbance from off-roading vehicles with deep tyre tracks running through the pond, which has resulted in a large area devoid of vegetation. Surrounding habitats include neutral grassland and young broad-leaved woodland and trees.	0.69 "Average"
P3 (Photo 3)	SE 3987 0857	Pond completely dry at time of survey.	NA
P4 (Photos 4 & 5)	SE 3990 0851	A large pond ~2,700m^2 in size, bisected by a narrow strip of grassland with young silver birch (*Betula pendula*) and grey willow (*Salix cinerea*). The pond supports extensive and very dense New Zealand pygmyweed, with clear water remaining only in areas disturbed by off-roading vehicles where deep tyre tracks are present. Other emergent vegetation includes jointed rush (*Juncus articulates*), common club-rush (*Schoenoplectus lacustris*), common spike-rush, water-plantain, hard rush (*Juncus inflexus*), false fox sedge (*Carex otrubae*), common cotton-grass (*Eriophorum angustifolium*), and common reedmace.	0.94 "Excellent"

[4] Megson, G. (December 2019). '*Land at Symphony, Grimethorpe: Preliminary Ecological Assessment Report*. Gray's Ecology.

P5 (Photo 6)	SE 3979 0827	A small circular pond ~80m^2 in size, surrounded by young grey willow shrubs. Emergent vegetation includes water plantain, tufted sedge (*Carex elata*) and common spike-rush. Submerged vegetation includes a moss species.	0.74 "Good"
P6 (Photos 7, 8 & 9)	SE 3975 0838	A complex of wet woodland comprising semi-mature willow carr; a blocked drainage ditch bordering an arable field; and a small circular pond bordered by dense grey willow shrubs, all of which interlink with one another to cover an area of ~5,000m^2. The water is very shaded by willow scrub and very little aquatic vegetation is present, with only a small number of water-plantain plants were observed. Surrounding habitats include arable land, bramble scrub and tall ruderal vegetation.	0.64 "Average"
P7 (Photos 10 & 11)	SE 3990 0876	A wetland complex ~29,300m^2 in size comprising a network of interlinking ditches and moats and large central islands supporting grassland, hawthorn scrub and young silver birch trees. Dense New Zealand pygmyweed is present in places as well as floating pennywort, common spike-rush, water forget-me-not (*Myosotis scorpioides*) and water-plantain, with areas of dense marginal common reed and common reedmace. There was evidence of frequent disturbance by vehicles which has resulted in large areas of turbid water devoid of aquatic vegetation. The pond supports a variety of waterfowl including gadwall, mallard, mute swan, little grebe, coot and moorhen.	0.52 "Below average"
P8	SE 4035 0890	Pond could not be accessed during survey.	NA
P9 (Photo 12)	SE 4052 0881	A large waterbody ~25,000m^2 in size supporting large numbers of waterfowl. Wooded islands are present and the water is turbid and supports little aquatic vegetation. The pond connects with two small watercourses.	0.38 "Poor"
Pylon Ditch (Photos 13 & 14)	SE 3985 0816	A blocked drainage ditch holding deep water, bordered by dense hawthorn scrub and mature willow trees. The ditch is functionally linked to an area of waterlogged willow carr to the south which appears to be seasonally flooded. The water is very shaded along much of its length and little aquatic vegetation is present.	0.62 "Average"

3.1.2 Large numbers of small fish were observed in the northern and eastern portions of Pond 7 and so these areas were considered to be unsuitable for great crested newts. As such the survey was restricted to the perimeter ditches and moats along the southern and eastern sides.

3.1.3 Pond 9 was considered to be unsuitable for great crested newt due to its very low HSI score, indicating "Poor" suitability for the species, and so was not surveyed.

3.2 Great Crested Newt Survey

3.2.1 Pond survey dates are detailed in Table 4.2 below.

Table 4.2 Pond Survey Visits

Pond No./ Visit No.	1	2	3	4	5	6
P1	22/04/2020 – 23/04/2020	28/04/2020	05/05/2020	12/05/2020	X	X
P2	16/04/2020	23/04/2020	19/05/2020	26/05/2020	01/06/2020	02/06/2020
P4	16/04/2020	18/05/2020	19/05/2020	26/05/2020	01/06/2020	02/06/2020
P5	16/04/2020	22/04/2020 – 23/04/2020	28/04/2020	05/05/2020	18/05/2020	26/05/2020
P6	16/04/2020	22/04/2020 – 23/04/2020	28/04/2020	05/05/2020	18/05/2020	26/05/2020
P7	23/04/2020	30/04/2020	06/05/2020	12/05/2020	X	X
Pylon Ditch	16/04/2020	22/04/2020 – 23/04/2020	28/04/2020	05/05/2020	18/05/2020	26/05/2020

3.2.2 Full survey details are provided at Appendix 2, and are summarised in Table 4.3 and text below.

3.2.3 In accordance with English Nature (2001), great crested newt population sizes can be classed by using the maximum number of adult animals seen in each pond during one visit, using the following scale:

- Small = maximum count of up to 10;
- Medium = maximum count between 11 and 100; and,
- Large = maximum count of over 100.

Table 4.3 Great Crested Newt Survey Results Summary

Pond No	Population Size Class	Breeding
P1	Absent	n/a
P2	Small	No evidence found
P4	Small	Confirmed
P5	Small	Confirmed
P6	Small	Confirmed
P7	Absent	n/a

Pond No	Population Size Class	Breeding
Pylon Ditch	Small	No evidence found

3.2.4 No great crested newts or great crested newt eggs were identified at P1, however smooth newt (*Lissotriton vulgaris*) were recorded, as well as common frog (*Rana temporaria*), common toad (*Bufo bufo*) and toad tadpoles.

3.2.5 A small population of great crested newts was identified at P2, with a peak count of one (one female). Smooth newt, common toad and common frog were also recorded, as well as a toad tadpole.

3.2.6 A small population of great crested newts was identified at P4, with a peak count of four (one male and three females). A great crested newt larva was also identified, confirming breeding at the pond. Smooth newt, common toad and common frog were also recorded, as well as frog tadpoles and a number of small newt species larvae.

3.2.7 A small population of great crested newts was identified at P5, with a peak count of one (one male). Great crested newt eggs were also identified at the pond, confirming breeding. Smooth newt and common toad were also recorded, as well as a number of small newt species larvae.

3.2.8 A small population of great crested newts was identified at P6, with a peak count of four (two males and two females). Great crested newt eggs were also identified at the pond, confirming breeding. Smooth newt, common toad and common frog were also recorded.

3.2.9 No great crested newts or great crested newts eggs were identified at P7, although a single juvenile great crested newt was identified on a nearby footpath during the fourth survey, which was not considered to be associated with the pond. Smooth newt, common toad and common frog were observed, as well as toad tadpoles and small newt species eggs.

3.2.10 A small population of great crested newts was identified at Pylon Ditch, with a peak count of one (one male). A single female small newt species was also identified.

3.3 Incidental Observations

3.3.1 A number of different bird species were heard and / or observed during the survey, including common cuckoo (*Cuculus canorus*), lapwing (*Vanellus vanellus*), redshank (*Tringa totanus*), song thrush (*Turdus philomelos*), grey partridge (*Perdix perdix*), tawny owl (*Strix aluco*), common kestrel (*Falco tinnunculus*), reed bunting (*Emberiza*

schoeniclus), reed warbler (*Acrocephalus scirpaceus*), willow warbler (*Phylloscopus trochilus*), linnet (*Linaria cannabina*), yellowhammer (*Emberiza citrinella*), gadwall (*Mareca strepera*), mallard (*Anas platyrhynchos*), mute swan (*Cygnus olor*), little grebe (*Tachybaptus ruficollis*), coot (*Fulica atra*), moorhen (*Gallinula chloropus*), green woodpecker (*Picus viridis*), blackcap (*Sylvia atricapilla*) and whitethroat (*Sylvia communis*).

3.3.2 Brown hare were observed at Ordnance Survey (OS) grid reference SE 3999 0868 on 06/05/2020.

3.3.3 A hedgehog was observed at OS grid reference SE 3990 0849 on 18/05/2020.

3.3.4 There are anecdotal reports from a local resident of grass-snake (*Natrix natrix*) occurring within the site.

3.3.5 Ponds P4 and P7 were noted to be rich in invertebrate life with species observed including water stick insect (*Ranatra linearis*), water scorpion (*Nepa cinereal*), great diving beetle (*Dytiscus marginalis*), whirligig beetle (*Gyrinus substriatus*), pond skater species (Gerridae sp.), backswimmer species (*Notonecta* sp.), waterboatman species (Corixidae sp.), and several species of diving beetle, dragonfly larvae, damselfly larvae and water-snails.

4.0 CONCLUSIONS

4.1.1 Following six great crested newt survey visits, a small populations of great crested newts were identified at Ponds P2, P4, P5, P6 and Pylon Ditch within 500m of the Symphony site.

4.1.2 Great crested newt eggs or larvae were identified at Ponds P4, P5 and P6, confirming breeding at these water bodies. No great crested newt eggs were identified at Ponds P2 or Pylon Ditch.

4.1.3 The results suggest that Ponds P2, P4, P5, P6 and Pylon Ditch form a metapopulation of great crested newts in the local area.

4.1.4 In addition, terrestrial habitats present within the site offer foraging, resting and hibernating opportunities for great crested newt during their terrestrial phase.

FIGURE 1

PONDS MAP

(SUPPLIED AS SEPERATE DOCUMENT)

APPENDIX 1

POND HSI DETAILS

Pond Name/Number:		1	
Grid Ref:		SE 3973 0874	
Date:		16/04/2020	
Surveyor:		Gordon Haycock & Rachel Midgley	
SI No	SI Description	Actual Value	SI Value
1	Geographic location	Zone A	*1.00*
2	Pond area (m2)	900	*0.97*
3	Pond permanence	Never dries	*0.90*
4	Water quality	Good	*1.00*
5	Shade	0%	*1.00*
6	Water fowl effect	Minor	*0.67*
7	Fish presence	Minor	*0.33*
8	No. of ponds in 1km	8	*0.88*
9	Terrestrial habitat	Good	*1.00*
10	Macrophyte cover	65%	*0.95*
HSI Score			**0.83**
Pond suitability			Excellent

Pond Name/Number:		2	
Grid Ref:		SE 3993 0855	
Date:		16/04/2020	
Surveyor:		Gordon Haycock & Rachel Midgley	
SI No	SI Description	Actual Value	SI Value
1	Geographic location	Zone A	*1.00*
2	Pond area (m2)	200	*0.40*
3	Pond permanence	Sometimes dries	*0.50*
4	Water quality	Poor	*0.33*
5	Shade	5%	*1.00*
6	Water fowl effect	Absent	*1.00*
7	Fish presence	Absent	*1.00*
8	No. of ponds in 1km	9	*0.92*
9	Terrestrial habitat	Good	*1.00*
10	Macropyhyte cover	10%	*0.40*
HSI Score			**0.69**
Pond suitability			Average

	Pond Name/Number:	4	
	Grid Ref:	SE 3990 0851	
	Date:	16/04/2020	
	Surveyor:	Gordon Haycock & Rachel Midgley	
SI No	SI Description	Actual Value	SI Value
1	Geographic location	Zone A	*1.00*
2	Pond area (m2)	>2000	
3	Pond permanence	Rarely dries	*1.00*
4	Water quality	Good	*1.00*
5	Shade	5%	*1.00*
6	Water fowl effect	Minor	*0.67*
7	Fish presence	Absent	*1.00*
8	No. of ponds in 1km	9	*0.92*
9	Terrestrial habitat	Good	*1.00*
10	Macropyhyte cover	90%	*0.90*
HSI Score			**0.94**
Pond suitability			Excellent

	Pond Name/Number:	5	
	Grid Ref:	SE 3979 0827	
	Date:	16/04/2020	
	Surveyor:	Gordon Haycock & Rachel Midgley	
SI No	SI Description	Actual Value	SI Value
1	Geographic location	Zone A	*1.00*
2	Pond area (m2)	100	*0.20*
3	Pond permanence	Never dries	*0.90*
4	Water quality	Good	*1.00*
5	Shade	40%	*1.00*
6	Water fowl effect	Minor	*0.67*
7	Fish presence	Absent	*1.00*
8	No. of ponds in 1km	9	*0.92*
9	Terrestrial habitat	Good	*1.00*
10	Macropyhyte cover	15%	*0.45*
HSI Score			**0.74**
Pond suitability			Good

Pond Name/Number:	6		
Grid Ref:	SE 3975 0838		
Date:	16/04/2020		
Surveyor:	Gordon Haycock & Rachel Midgley		
SI No	SI Description	Actual Value	SI Value
1	Geographic location	Zone A	*1.00*
2	Pond area (m2)	100	*0.20*
3	Pond permanence	Never dries	*0.90*
4	Water quality	Good	*1.00*
5	Shade	95%	*0.30*
6	Water fowl effect	Minor	*0.67*
7	Fish presence	Absent	*1.00*
8	No. of ponds in 1km	9	*0.92*
9	Terrestrial habitat	Good	*1.00*
10	Macropyhyte cover	5%	*0.35*
HSI Score			**0.64**
Pond suitability			Average

Pond Name/Number:	7		
Grid Ref:	SE 3990 0876		
Date:	16/04/2020		
Surveyor:	Gordon Haycock & Rachel Midgley		
SI No	SI Description	Actual Value	SI Value
1	Geographic location	Zone A	*1.00*
2	Pond area (m2)	>2000	
3	Pond permanence	Never dries	*0.90*
4	Water quality	Moderate	*0.67*
5	Shade	10%	*1.00*
6	Water fowl effect	Major	*0.01*
7	Fish presence	Possible	*0.67*
8	No. of ponds in 1km	9	*0.92*
9	Terrestrial habitat	Good	*1.00*
10	Macropyhyte cover	45%	*0.75*
HSI Score			**0.52**
Pond suitability			Below average

Pond Name/Number:		9	
Grid Ref:		SE 4052 0881	
Date:		16/04/2020	
Surveyor:		Gordon Haycock & Rachel Midgley	
SI No	SI Description	Actual Value	SI Value
1	Geographic location	Zone A	*1.00*
2	Pond area (m2)	>2000	
3	Pond permanence	Never dries	*0.90*
4	Water quality	Poor	*0.33*
5	Shade	20%	*1.00*
6	Water fowl effect	Major	*0.01*
7	Fish presence	Minor	*0.33*
8	No. of ponds in 1km	10	*0.94*
9	Terrestrial habitat	Moderate	*0.67*
10	Macropyhyte cover	0%	*0.30*
HSI Score			**0.38**
Pond suitability			Poor

Pond Name/Number:		Pylon Ditch	
Grid Ref:		SE 3985 0816	
Date:		16/04/2020	
Surveyor:		Gordon Haycock & Rachel Midgley	
SI No	SI Description	Actual Value	SI Value
1	Geographic location	Zone A	*1.00*
2	Pond area (m2)	150	*0.30*
3	Pond permanence	Rarely dries	*1.00*
4	Water quality	Poor	*0.33*
5	Shade	90%	*0.40*
6	Water fowl effect	Minor	*0.67*
7	Fish presence	Absent	*1.00*
8	No. of ponds in 1km	11	*0.95*
9	Terrestrial habitat	Good	*1.00*
10	Macropyhyte cover	5%	*0.35*
HSI Score			**0.62**
Pond suitability			Average

APPENDIX 2

GREAT CRESTED NEWT SURVEY RESULTS

Pond No.	Visit No.	Date	Minimum Air Temperature	Max No. GCN	Torching*	Netting*	Egg Searches*	Refuge Search*	Notes
P1	1	22/04/2020 - 23/04/2020	6.1	**0**	3SF, 1Fr, 1JFr, many TL	1MSN, many TL	No eggs found.	X	Sticklebacks observed. A large number of bats seen foraging over pond.
	2	28/04/2020	6	**0**	3T, 1Fr	No amphibians	No eggs found.	X	Sticklebacks and water scorpion observed. Reed warbler in Phragmites. Light rain disturbing water.
	3	05/05/2020	7	**0**	1SF, 1Fr, 1JFr, many TL	Many TL	No eggs found.	X	Many small fish fry, Gammarus, many damselfly larvae.
	4	12/05/2020	9	**0**	1SF, 1TL	No amphibians	No eggs found.	X	Many small fish fry.
	5	X	X	**X**	X	X	X	X	
	6	X	X	**X**	X	X	X	X	
P2	1	16/04/2020	7	**0**	1SF	No amphibians	No eggs seen.	X	
	2	23/04/2020	7.8	**1**	1FGCN, 1MSN, 3SF, 2T	1TL	No eggs seen.	X	Netting finished early (5mins duration) to avoid disturbance to nesting lapwing.
	3	19/05/2020	15	**0**	No amphibians	No amphibians	No eggs seen.	X	Pond quite dry now with standing water mostly remaining in deep runnels caused by off-roading vehicles. Diving beetles and a bat observed.
	4	26/05/2020	16	**0**	1Fr	No amphibians	No eggs seen.	X	Now very dry with standing water remaining only in deepest vehicle tracks, significantly reducing area available for netting.

Pond No.	Visit No.	Date	Minimum Air Temperature	Max No. GCN	Torching*	Netting*	Egg Searches*	Refuge Search*	Notes
	5	01/06/2020	15	**0**	No amphibians	X	No eggs seen.	X	No standing water remains so unable to net pond.
	6	02/06/2020	16	0	No amphibians	X	No eggs seen.	X	Still no standing water in pond.
P4	1	16/04/2020	7	**1**	1MGCN, 8MSN, 17FSN, 1Fr	1MSN, 1SL, 1Fr	No eggs found.	X	
	2	18/05/2020	15	**0**	8MSN, 7SF, 1MPN, 2T	1FSN	No eggs found.	X	Water level low so restricted area for available for netting. Crassula has formed a very dense carpet restricting visibility. Rich in invertebrate life with many water stick insects, dragonfly larvae of several species, water snails and water beetles.
	3	19/05/2020	15	**1**	1FGCN, 4MSN, 13SF, 5SL, 2Fr, 1FrL	1FSN, 10SL, 2FrL	No eggs found.	X	Water level low with open water only remaining in deep vehicle tracks. Very choked with Crassula.
	4	26/05/2020	16	**3**	3FGCN, 14MSN, 16SF, 4Fr, 2FrL	Many SL, 4FrL	No eggs found.	X	Water level very low restricting area available for netting. Rich in invertebrate life.
	5	01/06/2020	15	**3**	1MGCN, 2FGCN, 6MSN, 1FSN, 6SF, 1FrL	Many SL, 8FrL	No eggs found.	X	

Pond No.	Visit No.	Date	Minimum Air Temperature	Max No. GCN	Torching*	Netting*	Egg Searches*	Refuge Search*	Notes
	6	02/06/2020	16	0	1MSN, 3SF, 7Fr, 1FrL	1GCNL, 1SF, 1JFr, 3FrL, many SL	No eggs found.	X	
P5	1	16/04/2020	7	**0**	2FSN	No amphibians	GCN eggs found.	X	
	2	22/04/2020	7.8	**0**	No amphibians	No amphibians	X	1T	
	3	28/04/2020	6	**1**	1MGCN, 1T	No amphibians	X	1T	Many egg folds observed. Light rain disturbing water.
	4	05/05/2020	7	**0**	No amphibians	No amphibians	X	No amphibians	Great diving beetle larvae, small diving beetle species.
	5	18/05/2020	15	**0**	1SF	8SL	X	No amphibians	Dragonfly larvae, small diving beetle species, *Notonecta* sp. Several very young newt efts but too small to confidently identify.
	6	26/05/2020	16	**0**	1SF	Many SL	X	No amphibians	Lots of invertebrate larvae and diving beetles of multiple species. Bat observed foraging over pond.
P6	1	16/04/2020	7	**0**	No amphibians	1FSN, 1JF	GCN eggs found	X	

Pond No.	Visit No.	Date	Minimum Air Temperature	Max No. GCN	Torching*	Netting*	Egg Searches*	Refuge Search*	Notes
	2	22/04/2020 - 23/04/2020	10	**3**	2MGCN, 1FGCN, 1MSN	No amphibians	X	X	Suitable refugia for terrestrial searches could not be found so two survey methods only.
	3	28/04/2020	6	**3**	1MGCN, 2FGCN, 1JF, 1JT	No amphibians	X	X	Female GCN observed egg laying. Gammarus and small water beetle species observed. Light rain disturbing water.
	4	05/05/2020	7	**0**	No amphibians	1F	X	X	Water very turbid along ditch where GCN are usually observed so GCN will likely have been missed.
	5	18/05/2020	15	**0**	No amphibians	No amphibians	X	X	Water still quite turbid so GCN may have been missed.
	6	26/05/2020	16	**0**	No amphibians	No amphibians	X	X	Water level has significantly dropped, especially in wet woodland and along the drainage ditch. Gammarus species observed.
P7	1	23/04/2020	7.8	**0**	1MSN, 1SF, 5F, many TL	Many TL	Small newt species eggs	X	Water stick insect, water scorpion, diving beetles, many small fish.
	2	30/04/2020	7	**0**	2MSN, 3SF, 1T, many TL	Many TL	Small newt species eggs	X	Area surveyed reduced to peripheral ditches which contain fewer fish. Sticklebacks, great diving beetle and brown rat observed, and large numbers of bats foraging over the pond.
	3	06/05/2020	10	**0**	7MSN, 10SF, 2T, 3TL	Many TL	No eggs found.	X	Rich in invertebrate life; Gammarus, several species of water beetle, dragonfly larvae, damselfly larvae. Fish fry.

Pond No.	Visit No.	Date	Minimum Air Temperature	Max No. GCN	Torching*	Netting*	Egg Searches*	Refuge Search*	Notes
	4	12/05/2020	7	**0**	1MSN, 2SF, 2T	1FL, 4TL	No eggs found.	X	Many sticklebacks netted including gravid females and fry. Juvenile GCN identified on nearby footpath during torching but not considered to be associated with the pond.
	5	X	X	**X**	X	X	X	X	
	6	X	X	**X**	X	X	X	X	
Pylon Ditch	1	16/04/2020	7	**1**	1MGCN	No amphibians	No eggs found.	X	GCN observed in southern part of ditch.
	2	22/04/2020 - 23/04/2020	10	**0**	1SF	No amphibians	No eggs found.	X	
	3	28/04/2020	6	**1**	1MGCN	No amphibians	No eggs found.	X	GCN observed in southern part of ditch. Light rain disturbing water.
	4	05/05/2020	7	**0**	No amphibians	No amphibians	No eggs found.	X	Water boatman and Gammarus.
	5	18/05/2020	16	**0**	No amphibians	No amphibians	No eggs found.	X	Water level quite low, becoming difficult to access water's edge at northern end, torched from the top but limited visibility. Thick litter from willow trees on water surface.

Pond No.	Visit No.	Date	Minimum Air Temperature	Max No. GCN	Torching*	Netting*	Egg Searches*	Refuge Search*	Notes
	6	26/05/2020	16	**0**	No amphibians	No amphibians	No eggs found.	X	Water level has significantly dropped limiting accessibility to water's edge due to steep banks. Oily film over pond surface and fallen willow catkins and leaves impeding visibility.

* GCN = great crested newt, SN = smooth newt, SF = "small female" (it is not always possible to distinguish between female palmate and female smooth newts without handling), S = small newt species, Fr= frog, T= toad, M = adult male, F= adult female, J= juvenile, L= larvae, SL= small newt species larvae.

APPENDIX 3

PHOTOGRAPHS



Photo 1 – Pond P1.



Photo 2 – Pond P2.



Photo 3 –Pond P3.



Photo 4 – Pond P4 (looking north-east).



Photo 5 – Pond P4 (looking north-west).



Photo 6 – Pond P5.



Photo 7 – Pond P6.



Photo 8 – Pond P6 (wet woodland).



Photo 9 – Pond P6 (blocked drainage ditch).



Photo 10 – Pond P7, western side looking east.



Photo 11 – Pond P7, southern side looking north-east.



Photo 12 – Pond P9.



Photo 13 – Pylon Ditch.



Photo 14 – Pylon Ditch (wet woodland).