Date	22 August 2023
Client	This Land Development Ltd.
Site	Land East of Rayleigh Road, Thundersley, Essex
Author	Darren Denmead ACIEEM (Senior Ecologist & Head of Rail)
Reviewed by	Sean Crossland CEcol MCIEEM (Technical Director)
Title	Ecology Technical Note – Great crested newt
Appendices	Appendix1 – Site plans Appendix 2 – eDNA results

Introduction and Aims

SES were instructed to prepare a Technical Note to show results of updated eDNA surveys undertaken in June 2023 for Land East of Rayleigh Road, Thundersley, in Essex (Ordnance Survey Grid Reference TQ 80381 89140) (hereafter referred to as the site). In 2020, Southern Ecological Solutions Ltd. (SES) was commissioned by This Land Development Ltd. to undertake a suite of ecological surveys and produce an ecological impact assessment (EcIA) report. A plan showing the approximate application site boundary is provided in Appendix 1.

The site is subject to an outline planning application (reference 23/0085/OUT) for the development of up to 455 new homes, a new multi-use community hall, land for the provision of a healthcare facility land for a stand-alone early years and childcare nursery, new vehicular/pedestrian access points from Stadium Way in the north and Daws Heath Road in the south, new greenways and green links, multi-functional open space, green infrastructure, surface water attenuation, landscaping and associated infrastructure. All matters reserved except for access.

An EcIA report was produced following the 2020/2021 ecological surveys (SES, January 2023), however since this report was completed ecological surveys have been updated across the site to provide the most up to date information regarding ecological constraints and opportunities.

These results can be seen within an Addendum EcIA (SES, April 2023) to the original EcIA (SES, January 2023). These two reports should be referred to for details of survey purpose, methods, results, mitigation and limitations for the full range of species/habitats.

The purpose of this report is to review and outline the results of the updated great crested newt *Triturus cristatus* (GCN) eDNA surveys which were not included as part of the Addendum EcIA (SES, April 2023).

Site Description

The site is located to the east of Rayleigh Road, Thundersley, Essex. It comprised of seven grassland fields with associated boundary hedgerows and ditches, with small fragments of broadleaved woodland and scrub. There were 13 buildings on site, used for a mixture of agricultural, equine, fishing and industrial purposes. A stream ran through the site, and a fishing lake was present in the north of the site. The site is designated as greenbelt land and is bordered by residential development to the west and south-west, a business park to the north, and further areas of grassland and woodland within further green-belt land to the south-east and east. There were two access points from Daws Heath Road to the south, with the site bordering Rayleigh Road to the west and Stadium Way to the north.

Legislation

GCN are protected under Section9 of the Wildlife and Countryside Act (1981) and regulation 41 of The Conservation of Habitats and Species Regulations (2017). Taken together offences relevant to this project are likely to be:

- Deliberately kill, injure or capture any wild animal of European protected species;
- Deliberately disturb wild animals of any European protected species in such a way to be likely to significantly affect:
  - The ability of any significant groups of animals of that species to survive, breed, rear or nurture their young; or
  - The local distribution of that species.
- Intentionally or recklessly disturb an animal while occupying a place used for shelter or protection;
- Damage or destroys breed sites or resting places of such animals;
- Deliberately takes or destroys the eggs of such an animal;
- Possess or transport any part of a European protected species, unless acquired legally.

Please note that this has not been prepared by a qualified legal professional and therefore should not be relied upon.

Method

eDNA Sampling

Water samples were collected from two ponds (Ponds 1 & 4) in June 2023 and sent to an approved laboratory for analysis in accordance with approved field laboratory protocols (Briggs et al. 2014). Full methods of eDNA can be seen within original EcIA (SES, January 2023). Pond location plan is in Appendix 1.

Results

Updated eDNA surveys were undertaken on Pond 1 and 4, both ponds returned a negative result (i.e. GCN were not recorded in these ponds) and GCN were considered likely absent from the site. Details of the eDNA analysis are presented in Appendix 2. These are consistent with that of 2021 surveys. Details of which are shown below in Table 1. Given the negative eDNA results associated with these ponds, as well as the location of Pond 4, over 300m to the south beyond a main road considered a partial barrier to dispersal, this species is considered to be likely absent from the site.

Table 1. Summary of changes between 2020-2021 and 2022-2023 ecological survey results / assessments

Ecological feature	Summary of 2020/2021 results	Summary of 2022/2023 results	Evaluation of changes
GCN	Aquatic habitat on site was limited to a single large reservoir (pond 1) stocked with large numbers of fish and a dry basin (pond 2) within the south-west of the site. An additional two ponds were present within 500m of the site (pond 3 and 4), the closest of which was pond 3 at 110m to the east (although this pond was noted as dry). eDNA surveys were undertaken on pond 1 and 4, both ponds returned a negative result (i.e. GCN were not recorded in these ponds) and GCN were considered absent from the site.	The site walkover confirmed that the ponds remained in the same condition as previously recorded, validating the 2021 survey results and GCN are still considered absent from the site. Further eDNA surveys were undertaken in 2023 to further conclude results. eDNA surveys were undertaken on pond 1 and 4, both ponds returned a negative result (i.e. GCN were not recorded in these ponds) and GCN were considered absent from the site.	N/A

Conclusion

SES were instructed to prepare a Technical Note to show results of updated eDNA surveys undertaken in June 2023. An EcIA report was produced following the 2020/2021 ecological surveys (SES, January 2023), however since this report was completed ecological surveys have been updated across the site to provide the most up to date information regarding ecological constraints and opportunities.

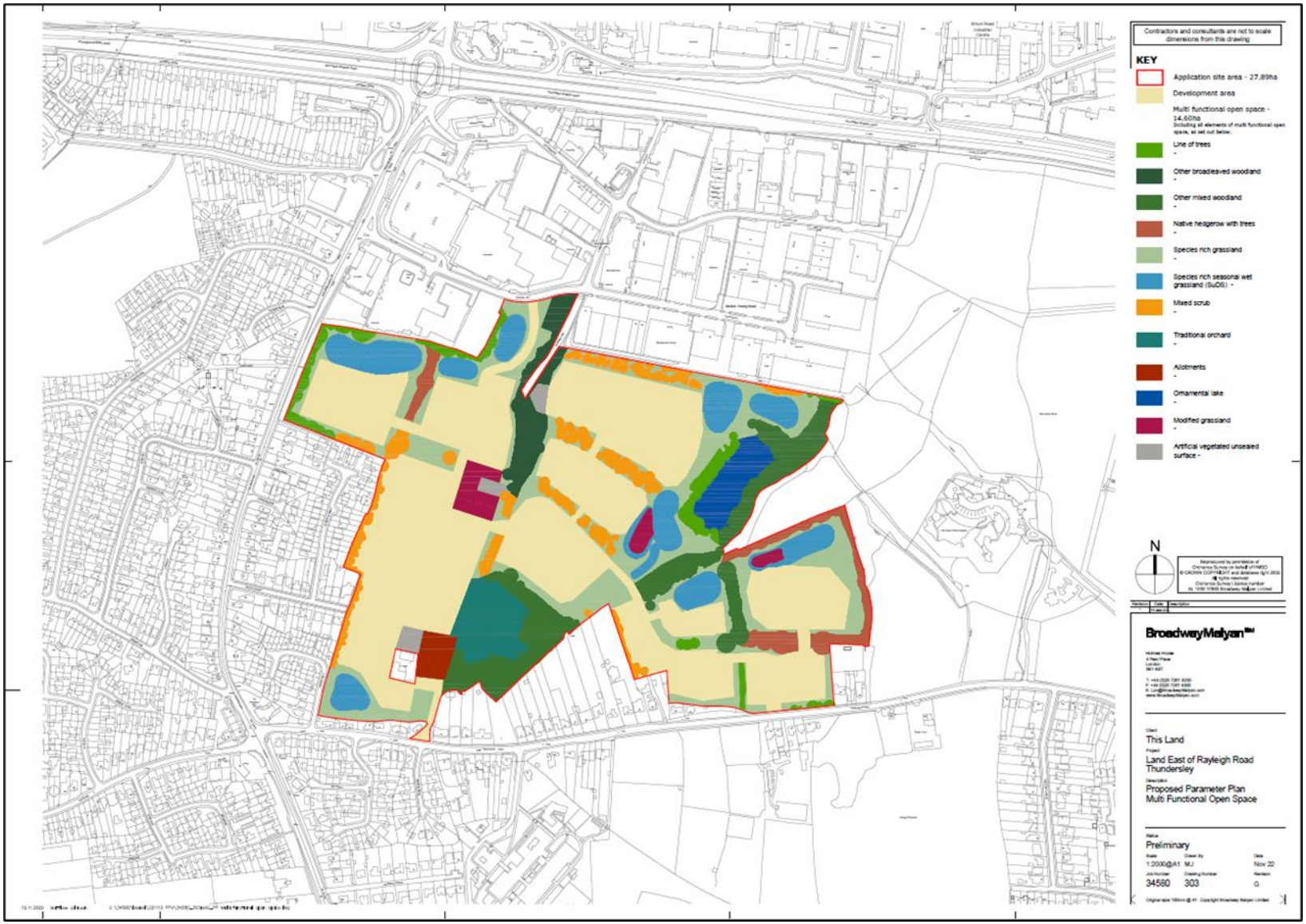
These results can be seen within an Addendum EcIA (SES, April 2023) to the original EcIA (SES, January 2023). These two reports should be referred to for survey purpose, methods, results, mitigation and limitations.

A summary of the updated eDNA surveys and assessments has been provided in this Technical note (Table 1 above) along with an evaluation of any changes.

As shown in Table 1, no changes have occurred since the original surveys were undertaken, and it is considered that the mitigation provided within the original EcIA (SES, January 2023) is still appropriate and proportionate.

Appendix 1 – Site Plans

Site location plan



Pond location plan

Appendix 2 – eDNA results

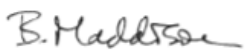
Client: Ailsa Roberts,
SES-Eco

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 229249
Email: Helen.Rees@adas.co.uk

www.adas.uk

Sample ID: ADAS-1875	Condition on Receipt: High Sediment	Volume: Passed
Client Identifier: Pond 4	Description: pond water samples in preservative	
Date of Receipt: 30/06/2023	Material Tested: eDNA from pond water samples	

Determinant	Result	Method	Date of Analysis
Inhibition Control†	0 of 2	Real Time PCR	04/07/2023
Degradation Control§	Within Limits	Real Time PCR	04/07/2023
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	04/07/2023
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)#	4 of 4	Real Time PCR	As above for GCN
Report Prepared by:	Dr Helen Rees	Report Issued by:	Dr Ben Maddison
Signed:		Signed:	
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	06/07/2023	Date of issue:	06/07/2023

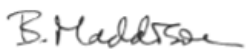
Client: Ailsa Roberts,
SES-Eco

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 229249
Email: Helen.Rees@adas.co.uk

www.adas.uk

Sample ID: ADAS-1876	Condition on Receipt: Good	Volume: Passed
Client Identifier: Pond 1	Description: pond water samples in preservative	
Date of Receipt: 30/06/2023	Material Tested: eDNA from pond water samples	

Determinant	Result	Method	Date of Analysis
Inhibition Control[†]	2 of 2	Real Time PCR	05/07/2023
Degradation Control[§]	Within Limits	Real Time PCR	05/07/2023
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	05/07/2023
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)[#]	4 of 4	Real Time PCR	As above for GCN
Report Prepared by:	Dr Helen Rees	Report Issued by:	Dr Ben Maddison
Signed:		Signed:	
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	06/07/2023	Date of issue:	06/07/2023