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Amphibian scoping survey at Nea Meadows Local Nature Reserve, Highcliffe, Christchurch, Dorset

CGO Ecology Ltd

Christchurch

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Produced for:

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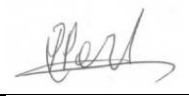
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Non-technical summary

Introduction

CGO Ecology Ltd (CGO) was instructed by Highcliffe and Walkford Parish Council (the Client) to conduct an amphibian scoping survey of the lake and wildlife pond at Nea Meadows Local Nature Reserve (LNR), Highcliffe, Dorset (the Site) at Ordnance Survey grid reference is SZ 2023 9381. The Client manages the Site on behalf of BCP Council, the owner. It is surrounded by private residential properties, mostly built in the latter half of the 20th century. It was previously farmed and managed as part of a private estate, then as a public park until its restoration to an LNR. The survey is to inform an updated Management Plan. No previous survey information is available. Newts have been seen in the pond previously, but the lake is unlikely to support amphibians, due to its fish population.

Methods

CGO conducted an evening torchlight survey on 22nd April 2025, walking the accessible shoreline of the lake and the pond. Any amphibians (frogs, toads, newts) seen were recorded. Aquatic plants were searched for newt eggs, and a newt 'Habitat Suitability Index' (HSI) assessment was conducted at both waterbodies. Lake turbidity made visibility poor, and torchlight survey was ineffective. Trees overhanging the pond meant access was only possible to 25% of the shore. A second torchlight survey was conducted at the pond on 4th May 2025, five 'bottle-traps' (plastic funnel-traps) were set, and retrieved the next morning. Pond water was low, and a film of pollen decreased visibility for torchlight survey.

Results

On 22nd April 2025, five adult smooth newts were observed in the pond. On 4th/5th May 2025, no amphibians or eggs/spawn were observed. A small diving beetle was captured in one bottle-trap. The HSI score for the lake is 'poor', the wildlife pond is 'below average'.

Conclusions and recommendations

A small population of smooth newts breeds in the pond. The pond is too small, shallow, and shaded to support a larger population. It was created primarily for wildlife, and should be restored by reducing tree shade, and desilting. Desilting should be spread over three years, affecting one third of the pond at a time, to mitigate loss of fauna and flora.

The lake is unattractive to amphibians due to its fish population. Angling is one of its primary amenity functions, but creation of fish-free lagoons for amphibians and other wildlife would be possible. Tree removal and desilting of the lake could provide opportunities for this. Smooth newts may already occupy fish-free areas of the lake, therefore bottle-trapping in April to May would be worthwhile.

Amphibians are scarce in Highcliffe, due to the scarcity of seminatural ponds and marshy areas, the built-up nature of the area, and the presence of fish and other predators in waterbodies. Therefore, this is an important local population. The author has observed smooth newts in a private garden 350m northwest of the Nea Meadows lake, near Highcliffe School which has a wildlife pond, but knows of no other records. Great crested newt is absent from the BCP Council area, and has only a few isolated occurrences in the New Forest. Palmate newt prefers heathland ponds with an acid pH.

The results are inconclusive for common frog and common toad. These are rare or absent in Highcliffe. Common toad can breed in waterbodies with fish (its toxic skin deters predators), but common frog generally avoids them. Whilst no frogs, toads, or spawn were seen on this survey, spawn search and torchlight survey earlier in the year is needed to reliably determine presence-absence. Further visits are therefore recommended to the lake and pond, in January and February for frogs, and March for toads.

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1. Introduction

CGO Ecology Ltd (CGO) was instructed by Highcliffe and Walkford Parish Council (the Client) to conduct an amphibian scoping survey of the lake and wildlife pond at Nea Meadows Local Nature Reserve (LNR), Highcliffe, Dorset (the Site). The Site is centred on Ordnance Survey grid reference SZ 2023 9381.

The Client manages the Site on behalf of BCP Council, the owner. It is surrounded by private residential properties, mostly built in the latter half of the 20th century. It was previously farmed and managed as part of a private estate, then as a public park until its restoration to an LNR. No previous amphibian survey information is available. Newts have been seen in the pond previously, but the lake is unlikely to support amphibians, due to its fish population.

The aim of the current survey is to inform an updated Management Plan, to replace the previous one which operated from 2012-2017 (CBC, 2012).



Figure 1 – Waterbodies surveyed for amphibians at Nea Meadows LNR.

2. Methods

CGO conducted an evening torchlight survey on 22nd April 2025 at 21:00-22:00 in suitable weather (12-11°C, 50-100% cloud cover, 80% relative humidity, light breeze from the south). The surveyor walked all accessible shoreline of the lake and the pond. Any amphibians (frogs, toads, newts) seen were recorded. Aquatic plants were searched for newt eggs, and a newt 'Habitat Suitability Index' (HSI) assessment (cf ARGUK, 2010) was conducted at both waterbodies.

Around 90% of the lake shore was accessible. Turbidity made visibility poor, and torchlight survey was ineffective.

At the pond, overhanging trees and shallow muddy banks prevented access to most of the shore, and only 25% of the shore was fully visible.

A second torchlight survey was conducted at the pond on 4th May 2025 at 22:15-22:45 in suitable weather (12°C, 0% cloud cover, 60% relative humidity, light northeast breeze). Five 'bottle-traps' (plastic funnel-traps) were set, and retrieved the next morning, 5th May 2025, 09:15-09:45 (10°C, 0% cloud cover, 65% relative humidity, moderate northeast breeze). Pond water was low, and a film of pollen decreased visibility for torchlight survey.

The surveyor was Dr Chris Gleed-Owen MCIEEM, Director and Principal Ecologist of CGO, ecological consultant since 2008 (17 years), and suitably-qualified and experienced surveyor. He was assisted by Jonathan Crewe ACIEEM on the first survey.

3. Results

On 22nd April 2025, five adult smooth newts (*Lissotriton vulgaris*) were observed in the pond: two male, two female, one unsexed. On 4th/5th May 2025, no amphibians or eggs/spawn were observed. A small diving beetle (*Dytiscus* sp) was captured in one of the bottle-traps. The HSI score for the lake is 'poor', the wildlife pond is 'below average'.

Lake SZ 2015 9385		**Wildlife pond** SZ 2021 9378	
SI factor result	**SI value**	**SI factor result**	**SI value**
A	1	A	1
5000m^2	n/a	100m^2	0.2
never dries	0.9	dries annually	0.1
poor	0.33	moderate	0.67
100%	0.2	85%	0.5
minor	0.67	minor	0.67
major	0.01	absent	1
6 <1km/3.14 = 1.91/km^2	0.8	6 <1km/3.14 = 1.91/km^2	0.8
good	1	good	1
10%	0.4	70%	1
HSI score	**0.37**	**HSI score**	**0.57**
Poor		Below average	

Figure 2 – Pond HSI results.

4. Conclusions and recommendations

A small population of smooth newts breeds in the wildlife pond. The pond is too small, shallow, and shaded to support a larger population. It was created primarily for wildlife, and should be restored by reducing tree shade, and desilting. Desilting should be spread over three years, affecting one third of the pond at a time, to mitigate loss of fauna and flora.

The lake is unattractive to amphibians due to its fish population, and amphibians are unlikely to breed in it. Angling is one of its primary amenity functions, but creation of fish-free lagoons for amphibians and other wildlife would be possible. Tree removal and desilting of the lake could provide opportunities for this. Smooth newts may already occupy fish-free areas of the lake, therefore bottle-trapping in April to May would be worthwhile.

Amphibians are scarce in Highcliffe, due to the scarcity of seminatural ponds and marshy areas, the built-up nature of the area, and the presence of fish and other predators in waterbodies. Therefore, this is an important local population. The author previously observed smooth newts in a private garden at Ridgefield Gardens, 350m northwest of the Nea Meadows lake. The source was most likely the wildlife pond at Highcliffe School, which is only 30m away. The author knows of no other newt records in Highcliffe.

Great crested newt is absent from the BCP Council area, and has only a few isolated occurrences in the New Forest. Palmate newt prefers seminatural heathland ponds with an acid pH, and is unlikely in garden ponds.

The survey did not target common frog and common toad specifically, so the results are inconclusive. These species are rare or absent in Highcliffe, and the author knows of no records or breeding ponds. Common toad can breed in waterbodies with fish (its toxic skin deters predators), but common frog generally avoids them. Both species are commonly introduced to private garden ponds.

Whilst no frogs, toads, or spawn were seen on this survey, spawn search and torchlight survey earlier in the year is needed to reliably determine presence-absence for these species. Further visits are therefore recommended to the lake and pond, in January and February for frogs, and March for toads.

5. References

ARGUK (2010) *ARG UK Advice Note 5 - Great Crested Newt Habitat Suitability Index.* Amphibian and Reptile Groups of the United Kingdom, Oxford.

CBC (2012) *Nea Meadows Local Nature Reserve – Management Plan 2012-2017.* Christchurch Borough Council, Christchurch.

6. Photographs



Plate 1 – Torch survey of lake, 22/04/2025.



Plate 2 – Torch survey of lake, 22/04/2025.



Plate 3 – Torch survey of pond, 22/04/2025.



Plate 4 – Bottle-trapping of pond, 04/05/2025.



Plate 5 – Torch survey of pond, 04/05/2025.



Plate 6 - Torch survey of pond, 04/05/2025.



Plate 7 – Retrieving pond bottle-traps, 05/05/2025.



Plate 8 – Bottle-trap *in situ* at pond, 05/05/2025.