

**Packhouse Facility and Car-Parking,
Sefter Farm, Pagham
Ecological Appraisal**



For
Barfoots of Barfoots Ltd, Sefter Farm,
Pagham, West Sussex

REPORT dated 3rd August 2021



**Proposed New Packhouse
and Car Park Relocation,
Sefter Farm, Pagham
Ecological Appraisal**

CONTENT

1.0 INTRODUCTION

- 1.1 Protected Species and Wildlife Legislation**
- 1.2 Planning Guidance**
- 1.3 Biodiversity Action Plans**

2.0 METHODOLOGY

3.0 SURVEY RESULTS, EVALUATIONS AND IMPACTS

- 3.1 Biodiversity Desk-Study**
 - 3.2 Habitat Evaluation and Impacts**
 - 3.2.1 Hedgerows**
 - 3.2.2 Arable and grass-verges**
 - 3.2.3 Hard-standing and buildings**
 - 3.3 Protected Species Evaluation and Impacts**
 - 3.3.1 Great Crested Newts**
 - 3.3.2 Birds, Badgers and Bats**
 - 3.3.3 Other protected and priority BAP species**
- ### **4.0 CONCLUSIONS AND RECOMMENDATIONS**
- 4.1 Mitigating and Enhancing Priority BAP and Other Habitats**
 - 4.2 Breeding Birds and Bats**
- ### **5.0 SUMMARY OF RECOMMENDATIONS**

Figure 1: Location and Habitat Plan

Figure 2: Proposal Plan

Photographs: Sefter Farm, Pagham (June 2021)

APPENDIX I: Sussex Biodiversity Record Centre Report

APPENDIX II: GCN Habitat Suitability and eDNA Survey Results

1.0 INTRODUCTION

Barfoots is seeking planning permission to develop a packhouse facility over an existing car park (**Cover Photo**), with a new car park to be constructed adjacent the packhouse, over an existing arable field (**Photos 1 to 3** SZ 8925 9965) about 2.5ha in area. GPM Ecology was commissioned to conduct an ecological assessment of the application site on 11th May 2021.

1.1 Protected Species and Wildlife Legislation

All species of bat are protected through the Wildlife and Countryside Act (1981) as amended, Countryside Rights of Way Act (2000) and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Other European Protected Species for which this legislation relates to include dormice and great crested newts. In essence this legislation prohibits the following:

- *intentional disturbance or harm,*
- *reckless damage to a breeding site or resting place or a place used for shelter and protection*
- *intentionally obstructing a place used as shelter*

Other relevant legislation includes the Hedgerow Regulations 1997 and the Protection of Badgers Act 1992. The Wildlife and Countryside Act 1981 also provides protection to species such as water voles and widespread reptiles (such as slow-worms and grass snake) protected from *harm only* and wild birds which are protected on the nest.

1.2 Planning Guidance

National Planning Policy Framework (NPPF, Feb 2019¹) provides guidance to Councils, to ensure protected species, statutorily (nationally protected Sites of Special Scientific Interest and internationally protected Special Areas of Conservation) and non-statutorily designated sites (e.g. Sites of Nature Conservation Importance, SNCI) are considered during the planning process. Guidance also requires '*wider benefits from natural capital and ecosystem services*' as well as '*providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*' and '*plans should:*

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks ...and*
- b) Promote the conservation, restoration and enhancement of priority habitats, ecological networks ...'*

1.3 Biodiversity Action Plans

The Natural Environment and Rural Communities (NERC) Act 2006 (S41) requires the State to consider habitats and species which are of principal importance for the conservation of biodiversity in England. This list relates to Priority Biodiversity Action Plan (BAP) Species and Habitats (BRIG ed. Ant Maddock 2008)², as listed in 2007 (revised 2008), including habitat features such as native hedgerows and species such as water-voles. Priority BAP species and habitats have been succeeded by UK Post-2010 Biodiversity Framework (JNCC 2012³), but this list still forms the basis of much biodiversity work in England.

¹ National Planning Policy Framework, Feb 2019, Ministry of Housing, Communities and Local Government

² BRIG ed. Ant Maddock (2008), UK Biodiversity Action Plan: Priority Habitats Description

³ JNCC (2012), UK Post-2010 Biodiversity Framework Published by JNCC and Defra on behalf of the Four Countries' Biodiversity Group

2.0 METHODOLOGY

Sussex Biodiversity Records Centre (SxBRC) was commissioned to conduct a biological desk-study within 1km of the proposed Facility (see **Appendix I**). Information was also sought from relevant websites (www.magic.gov.uk and www.old-maps.co.uk) and historical reports for the site, which included an ecological report for a recent Reservoir (GPM Ecology 2016⁴), which included an ecological appraisal of the field and ecological data-search, as well as reptile (GPM Ecology 2016⁵) and badger (GPM Ecology 2016⁶) surveys.

The site was visited on 3rd and 16th June 2021 to assess the ecological features present within the application site, with notes made on habitat features present and potential for protected and Biodiversity Action Plan species. Ecological features on site were assessed according to CIEEM guidelines (2017⁷), which evaluates ecological features according to their value within the geographical context (International importance; National; County; Borough; Parish or site value only), as well as other considerations such as legislation.

Two water-bodies in the vicinity of the site were surveyed and assessed for presence of great crested newts (GCN), by conducting environmental DNA surveys (Biggs et al 2014⁸), habitat suitability assessments and egg-searches, if considered practical. A habitat suitability index (HSI⁹) was also calculated for the two ponds. The HSI-index score a pond as 0 (unsuitable for GCN breeding) to 1 (ideal for GCN breeding) and should not be interpreted in isolation of GCN survey results. Newts lay individual eggs wrapped in the leaf of small aquatic plants. Conducting an egg search of plants in a pond is a quick method to identifying the presence of newts in a pond and GCN eggs are distinct (slightly larger and a different coloration) from other UK newts. However, this survey technique is not suitable for confirming absence.

A standard effort of 20 minutes egg search-time is conducted per pond, but only after any eDNA sampling has taken place. The eDNA samples were collected to the protocol described by ADAS (2019¹⁰). Analysis of the samples was conducted by ADAS Biotechnology, to confirm presence or absence of GCN eDNA. Survey work, pond assessments and water sampling were carried-out by Gareth Matthes BSc MSc MCIEEM, with over 20 years of experience conducting GCN surveys, protected species and preliminary ecological assessments. Other protected species including badgers, reptiles and nesting birds were also assessed and surveyed during site visits.

⁴ GPM Ecology (2016), Packing Facility and Associated Works, Sefter Farm, Pagham, Ecological Appraisal, For Barfoots of Barfoots Ltd, Sefter Farm, Pagham, West Sussex, FINAL REPORT dated 12th July 2016

⁵ GPM Ecology (2016), Glasshouse, Sefter Farm, Reptile Survey, for Barfoots Farms, Dated 4th Sept 2016.

⁶ GPM Ecology (2016) A Badger Survey of Sefter Farm, Pagham Rd, Bognor Regis, W. Sussex, 3rd May 2016 Field Report, by Andrew Rothwell Zoological Surveyor for and on behalf of GPM Ecology

⁷ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition, December 2017. Chartered Institute of Ecology and Environmental Management (CIEEM), Winchester.

⁸ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

⁹ Oldham RS, Keeble J, Swan MJS and Jeffcote M (2000). Evaluating the suitability of habitat for the great crested newt. The Herpetological Journal Vol.10, No. 4 (WITH REVISIONS)

¹⁰ ADAS 2019 - www.adas.uk/Portals/0/Documents/Services/eDNA/eDNA%20Protocol%202019.pdf

3.0 SURVEY RESULTS, EVALUATIONS AND IMPACTS

3.1 Biodiversity Desk-Study

The closest statutorily protected site (SSSI, SPA or SAC) to the proposed development is Pagham Harbour SPA, RAMSAR, SSSI and Local Nature Reserve about 2km south-west of the application site (www.magic.gov.uk). The LNR is described as including '*intertidal mudflats, saltmarsh, saline lagoons and vegetated shingle. Up to 10,000 waders and wildfowl winter in the harbour with Brent geese, pintail and black-tailed godwit present in national/international numbers. Spring and autumn bird migrations include osprey, marsh harrier, honey buzzard, hobby and Montagu's harrier. Passerines include redstart, wheatear, whinchat, ring ousel, pied flycatcher and occasional red backed shrike. Waders include curlew, sandpiper, little stint, wood sandpiper and little ringed plover.... Other wildlife includes purple hairstreak butterfly, Chidling pink, water voles and numerous species of dragonflies.*'

The site is located on the eastern limit of Chichester Coastal Plain Biodiversity Opportunity Area (see **Appendix I - Map 5**), with land east of the site formerly a damp meadow, as noted in GPM Ecology (2016⁴) ecological assessment of the current Packing Facility. The site lies outside and to the south-east of the proposed Westhampnett to Pagham Harbour Strategic Wildlife Corridor, recognised by Chichester District Council (CDC 2018¹¹, pp15-18).

The arable field within the application site is noted on www.magic.gov.uk and marked-up by SxBRC (June 2021, **Appendix I**) report, as part of a 609.30ha block under Entry and Higher Level Stewardship (dated from 2012, agreement reference AG00419968), managed by Barfoot Farms, which runs out at the end of 2023. There is a grass margin (EE1 & EE2) and Hedge Restoration and Management area next to the main road, which would continue to be managed under the current Stewardship scheme. There are no wild-flower margins as part of the scheme, although Barfoots are attempting to establish them around the reservoirs, which are not part of the scheme. The field and Pond 1 opposite Seftor Farm entrance, is within Lagness Farm holdings and there are no current Stewardship agreements on this land.

The Estate in general provides habitat features for a range of farmland and wetland birds with the following species noted on the farm, within the desk-study report (**Appendix I** and GPM Ecology 2016⁴): grey partridge *Perdix perdix*, lapwing *Vanellus vanellus*, skylark *Alauda arvensis*, cuckoo *Cuculus canorus* and gadwall *Anas strepera* (recorded at SZ 892 998 on 30/06/2000); black-tailed godwit *Limosa limosa* (SZ 892 998 on 20/02/2001); corn bunting *Emberiza calandra* (at SZ 890 998 on 13/05/2000); several records of barn owl *Tyto alba* nearby for example, at SU 888 002 on 01/07/2019 very nearby on the adjacent Bowley Farm Estate; and garganey *Anas querquedula* (at SU 890 004 on 02/04/2004). An assemblage of three arable and two grassland farmland bird species of Conservation Concern (grey partridge, snipe, lapwing and turtle dove) have been recorded (www.magic.gov.uk) in the wider landscape around the site.

Sussex Biodiversity Record Centre report notes a breeding slow-worm population at SZ 902 993 (May 2017) associated with an arable field north of Rose Green Road, about 0.75 to 1km east of the development (**Appendix I**). However, a reptile survey (GPM Ecology 2016⁴) associated with a recent reservoir development (**Photo 4**) constructed about 100m south of the of the application site (GPM Ecology 2016⁵) recorded no reptiles during seven visits. A

¹¹ Chichester District Council (CDC 2018), Strategic Wildlife Corridors Local Plan Review Background Paper www.chichester.gov.uk December 2018

main badger *Meles meles* sett was discovered during spring 2016 (GPM Ecology 2016⁶), associated with this development, just over 200m south of the current application site.

The previous ecological report (GPM Ecology 2016⁴) included a record of great crested newts at SU 880 003 (2002), about 1km west of the development and west of Pagham Rife. The only other European protected species recorded in the vicinity of the site are bats, with six species (dated 12/04/2018) recorded about 500m east of the site along Sefter Road (SZ 8991 9956), including a Barbastelle bat *Barbastella barbastellus*. Sefter Farmhouse (Grade II Listed building about 80m to the north) could provide opportunities for roosting bats.

There are 24 water vole records (from 2013 to 2021), mainly from the Pagham Rife on the western boundary of the Estate, with a regular recording site about 750 north of the proposed Packing Facility (at SU 8905 0049, most recently confirmed present on 15/02/2021). In addition to water voles the Pagham Rife that runs parallel with the Estate also supports European eel *Anguilla anguilla* (recorded at SU 89166 00324 by Environment Agency on 31/07/2015). The area is known generally to support notable communities of arable plants (with some recorded by SxBRC, June 2021, Appendix I), but few notable invertebrate records appear to have been recorded in the area. Hedgehog has been recorded just under 1km east of the site in Rose Green (SZ 9029 9937, on 09/05 and 01/06/2019).

Early edition OS Maps (www.old-maps.co.uk) show that the Rife and general field layout within Sefter Farm Estate appear to have changed little in 125 years, with similar field boundaries from 1877 to 1995. However, in recent years the area immediately around Sefter Farm has been developed from open arable fields into an intensive farm packing area, with several reservoirs constructed. The corn bunting record in 2000, within the field west of the farm-house, indicate a more open arable landscape on site about 20 years ago.

3.2 Habitat Evaluation and Impacts

The construction site covers an area of about 2.5ha, supporting about or just under 1ha of hard-standing (access road, existing car-parking (see **Cover Photo**), footpaths and a temporary cabin) and about or just over 1.5ha of conventional arable, with an associated hedge and grass-verge (see **Figure 1**). Chichester Plain BOA stretches along the western site boundary (see **Appendix I**), where there was formerly a damp meadow (now hard-standing). Habitats and ecological features recorded on or in the vicinity of the site are described in more detail below.

3.2.1 Hedgerows

It is understood that the main hedgerow, parallel to Pagham Road (currently under Stewardship, see **Photo 1**) is just outside of and along the eastern boundary of the application site. This hedge and grass-verge, runs along a 125m stretch of the application site boundary is to remain under Stewardship until at least the end of 2023. The hawthorn *Crataegus monogyna* hedge adjacent Pagham Road is 3m high, with a 0.5m verge and a 4m-wide grass-verge on the arable side of the field. Adjacent the hedge is planted-scrub supporting mainly hawthorn, as well as ash *Fraxinus excelsior* (with die-back), cherry *Prunus* spp., hazel *Corylus avellana*, oak *Quercus robur*, dogwood *Cornus sanguinea*, field maple *Acer campestre*, some non-natives such pines *Pinus* spp. and wild-rose *Rosa* spp. In addition to ash a lot of other tree species appeared to look unhealthy with die-back. Gaps within scrub supported meadow species such as oxeye daisy *Leucanthemum vulgare* and marjoram *Origanum vulgare* possibly suggesting a calcareous substrate. A cycle-footpath runs parallel with the hedgerow, between the hedge grass-verge

and arable-verge. A reptile survey along the southern section of this hedgerow (adjacent the new reservoir **Photo 4**) did not record the presence of any reptiles (GPM Ecology 2016⁵), along this field verge.

The access road within the site (see **Photo 2**), supports a wide tapering hedge, up to 10m wide towards the entrance, supporting hazel, cherry, field maple, ash, wayfarer *Viburnum lantana* and guelder-rose *Viburnum opulus*, with a very narrow verge (less than 0.5m) between the hedge and cycle/footpath. This hedge is about 80m from Sefter Farmhouse and could provide a foraging habitat for bats roosting at this property. All the hedgerows around the site are native and considered ecological features of Parish-value. It is understood that about 7m of this hedgerow may need to be removed to accommodate the proposed development.

3.2.2 Arable and grass-verges

A wheat arable crop grew in the field (**Photo 3** and **Cover Photo**) conventional managed, with some arable wildflowers growing within ~3m x 100m margins along the western boundary, including annual meadow-grass *Poa annua*, scented mayweed *Matricaria recutita*, smooth sow-thistle *Sonchus oleraceus*, groundsel *Senecio vulgaris*, cut-leaved crane's-bill *Geranium dissectum*, red and white clovers *Trifolium* spp., creeping thistle *Cirsium arvense*, dock *Rumex* spp., willowherb *Epilobium* spp., a non-native wildflower and at the northern end of the car-park edge was more permanent grassland verge supporting smooth meadow-grass *Poa pratensis*, Yorkshire fog *Holcus lanatus*, perennials such as lesser trefoil *Trifolium dubium*, yarrow *Achillea millefolium*, pineappleweed *Matricaria discoidea* and creeping buttercup *Ranunculus repens*.

To the east of the site arable grass-verge (perennial meadow and annual arable species also about 3m x 100m) species included brome *Bromus* spp., cock's-foot *Dactylis glomerata* with forbs including smooth tare *Vicia tetrasperma*, common vetchling *Lathyrus pratensis* and oxeye daisy (see **Photo 1**). The northern verge (see **Photo 2**), was bound by an improved-grassland strip.

3.2.3 Hard-standing and buildings

Part of the new facility will be built over an existing car-park (**Cover Photo**) on the edge of the arable field. The application site includes the access road into the site. A small temporary building (unsuitable for bats) will need to be removed.

3.3 Protected Species Evaluation and Impacts

In summary the site is considered to provide a feature of Parish-value for protected species in general, with breeding birds and bats the main protected species requiring consideration.

3.3.1 Great Crested Newts

GCN were confirmed as absent in both water-bodies surveyed during spring 2021. **Table 1** below provides a summary of the survey results, following visits conducted on 3rd and 16th June 2021 (see **Appendix II** for detailed survey data).

Table 1: Summary of Survey Results

Pond No.	Grid Reference	Distance from site	Habitat Suitability Index (2021)	GCN eDNA Results
1	SZ 8940 9977	<40m	0.83 (Excellent)	Absent
2	SZ 8920 9950	~50m	0.5 (Below Average)	Absent

Pond 1 is an historical pond (present on 1877 OS plans) and despite GCN eDNA absence this pond scores an excellent HSI (0.83) for GCN. It seems likely that a fish population is present in this pond and possibly eels, which have been recorded in Pagham Rife. Neither water-body supported GCN and therefore this species is considered likely to be absent from the application site.

3.3.2 Birds, Badgers and Bats

A range of red status farmland birds have been recorded by SxBRC (**Appendix I**). The arable field is considered too disturbed and small to support red-status arable and grassland birds. Other than the waterfowl recorded on the reservoir (Pond 2, **Appendix II**), no farmland species were observed or noted during the survey, however red-status hedgerow species such as house sparrow *Passer domestica* (a colony was recorded on a hedge 200m west of the site, GPM Ecology 2016⁴) could utilise hedges on site. All wild birds are protected from harm and disturbance at the nest under the Wildlife and Countryside Act 1981 and any scrub and hedge areas on the application site impacted or disturbed by development (such as the hedge parallel to the access road, **Photo 2**) could result in a breach of wildlife legislation.

The application site does not support any features suitable to roosting bats, although the Grade II listed Sefter Farm about 70m north of the site has potential to support a bat roost. A range of bat species were recorded during recent surveys about 500m east of the site (**Appendix I**). There were no EPS licences (www.magic.gov.uk) indicating works to a licensed bat roost within 2km of the site. The hedgerow adjacent Pagham Road (**Photo 1**) is likely to provide a dispersal and foraging corridor for bats. Lighting could potentially have an indirect impact upon foraging, where unsympathetic lighting is designed into a build.

No evidence of badger activity was recorded on site, despite an active main sett recorded over 250m south of the site (GPM Ecology 2016⁶). However, this mobile species could utilise temporary setts, currently not in use and therefore overlooked.

3.3.3 Other protected and BAP species

Reptiles were confirmed likely absent from the hedge-boundary to the same field, about 100m south of the application site in 2016 (GPM Ecology 2016⁵). The seasonal ditch running south of the site, did not hold water during this and previous 2016 surveys (though aquatic vegetation (*Iris* and *Typha*) present) and is considered unsuitable for water-voles. BAP species, such as hedgehogs, have been recorded nearby and could utilise the hedgerows around the site.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Approximately 1.5ha of arable, about 7m of hedgerow and potentially ~2m x 250m of grass-verge along the northern and western sides of the arable field (**Photos 2 and 3**). It is understood that the Stewardship verges on the eastern side of the site are to be retained. A landscape scheme will be designed to include a native hedge 130m long plus a 5m wildflower margin along the length of this hedge. A 2m x 100m wildflower margin running parallel to Pagham Road between the existing cycle track/ footpath and the proposed new car park will be re-stored once development is completed. The application will not inadvertently impact landscape features such as Chichester Coastal Plain BOA, although it could indirectly impact

bat foraging, where unsympathetic lighting is designed into the new car-park. In general, the development's associated Landscape Plan (to be incorporated into a Landscape and Ecological Maintenance Plan) will provide biodiversity opportunities for priority species, habitats and the Chichester Coastal Plain BOA, as outlined below.

4.1 Mitigating and Enhancing Priority BAP and Other Habitats

The following enhancement and mitigation will be included within the Landscape Plan, as annotated on **Figure 2**:

1. New hedge planting - A hedge about 130m in length, along the southern boundary of the site, will provide a biodiversity enhancement and in part mitigate for the impact on the priority BAP hedgerow adjacent the site entrance (see **Photo 2**). In addition, three to four standard oaks will be planted along this new hedge-line.

2. Arable grass-verge creation - This 130m length of hedgerow will be seeded with a 5m-wide grass-verge along the southern side of the hedge, using a suitable native seed-mix. This will mitigate for the loss of the ~2m x 250m (0.05ha) arable-grass verge, with the additional area of grass-verge creation providing a potential enhancement (0.065ha).

3. Landscape and Ecology Maintenance Plan (LEMP) - An LEMP will be agreed by Condition, with detailed design regarding the above features, should permission be granted.

4.2 Breeding Birds, Badgers and Bats

It is recommended that any tree, scrub or hedgerow removal is conducted outside of the bird-breeding season (October to February) and if they need to be removed during spring-summer period then a breeding bird survey will need to be conducted. As part of the LEMP external lighting associated with the new car-park will be designed to be sensitive to foraging bats. A badger survey should be conducted prior to works commencing in case this mobile species inadvertently opens-up a sett on the application site boundary.

5.0 SUMMARY OF RECOMMENDATIONS

Table 2: Summary of features, impacts, further surveys and outline mitigation / enhancement

Feature	Value	Impact	Mitigation / Enhancement	Further Surveys
Hedgerows	Parish (BAP Habitats)	Low negative	Plant about 130m new length of native hedge, with 3-4 standard oaks	Consider further assessment towards the LEMP, if required
Arable-grass verge	Site-value	Low negative	Create new 5m wide arable-grass verge	None required
Protected Species	Site-value	Low negative	Ensure lighting is sensitive to bat and remove trees, scrubs and hedgerows outside bird nesting season	Conduct a badger survey prior to site clearance and bird survey if required

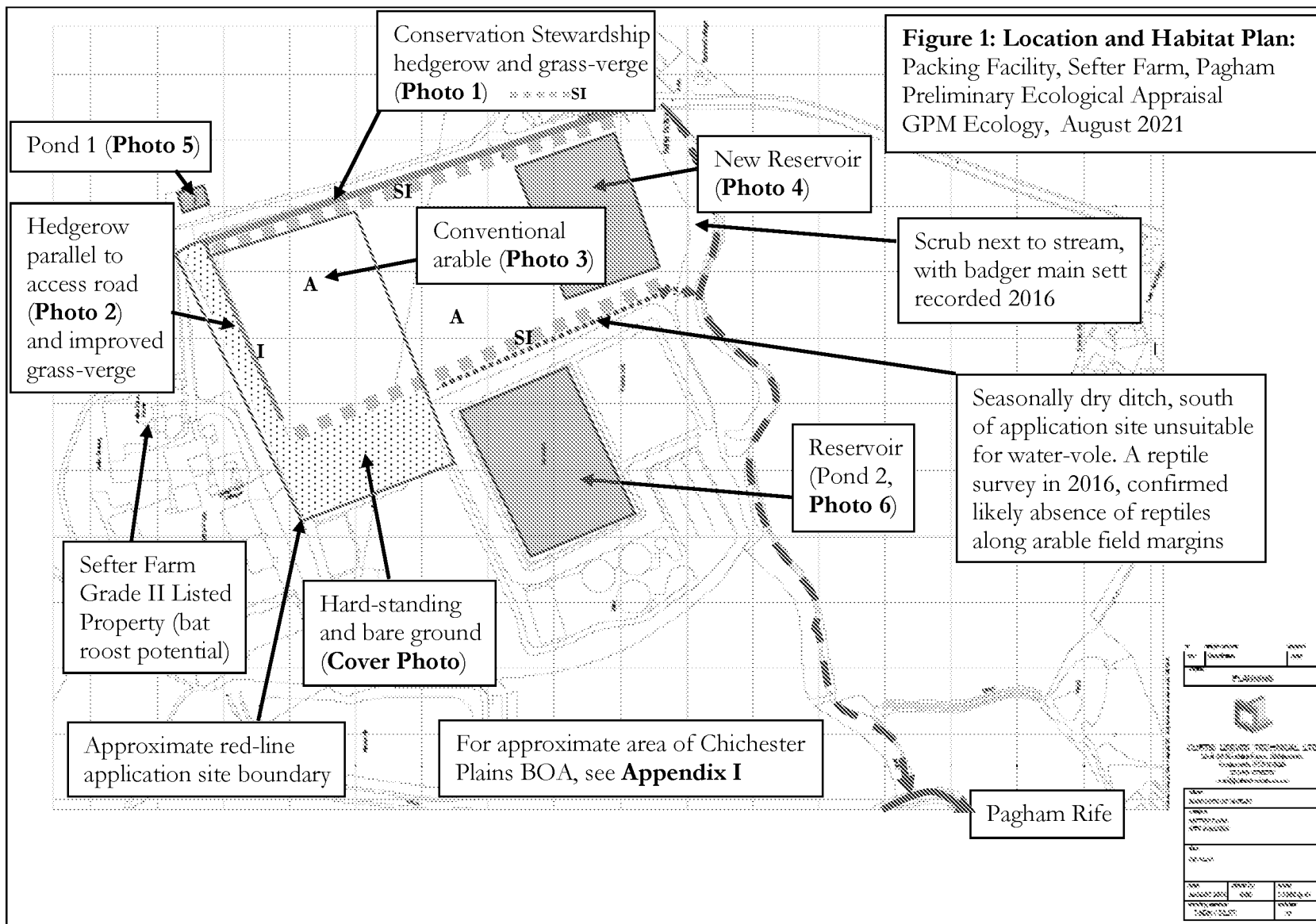
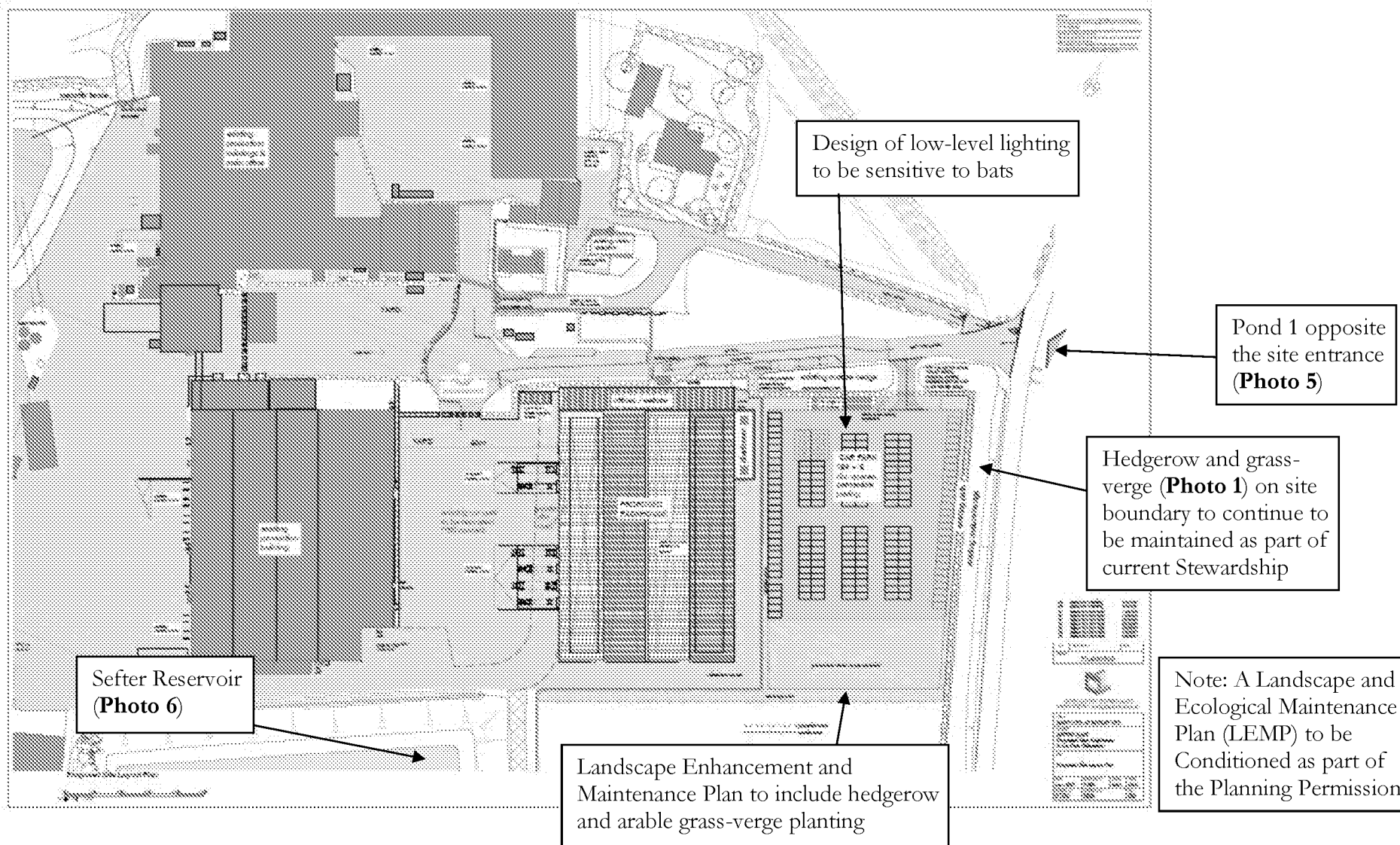


Figure 1: Development and Mitigation Proposals Plan
Packing Facility and Car-park, Sefter Farm, Pagham
Preliminary Ecological Assessment, GPM Ecology, Aug 2021



Photographs: Sefter Farm, New Packing and Car-park Facility (2021)



Photo 1: Hedge and grass-verge under stewardship on eastern boundary of application site, next to the proposed site for a new car-park. Stewardship maintenance to continue until at least end of 2023. Southern side of proposed car-park to be landscaped with native hedge and grass-verge planting.



Photo 2: Northern boundary of new car-park supporting planted hedgerow, running parallel with entrance access road, with sections of hedge (about 7m in total) to be removed. Southern side of application site to be planted with native hedging, to mitigate for hedge-loss.



Photo 3: Part of arable field (1.5ha), parallel to Pagham Road, near to the entrance of Sefter Farm is proposed a new car-parking facility. The arable field supported a wheat crop, with a narrow arable verge-margin.



Photo 4: Southern end of arable field supports a relatively new reservoir (constructed since 2017) just over 200m from the proposed car-park, with the scrubby field-edge in foreground supporting an active main badger sett in 2016.



Photo 5: Pond 1, opposite Sefter Farm entrance, within the Lagness Farm Estate. Tested for GCN eDNA confirmed, with GCN eDNA confirmed absent, despite an 'Excellent' Habitat Suitability score of 0.83. GCN absence could be due to presence of fish, such as Eels recorded on Pagham Rife.



Photo 6: Sefter Farm Reservoir (Pond 2), with no aquatic plants present and a large level of waterfowl activity, with GCN eDNA confirmed as absent and a 'Below Average' Habitat Suitability Index score of 0.5.

APPENDIX I: Sussex Biodiversity Record Centre Desk Search Sefter Farm, Pagham, 1km search radius, 7th June 2021



Ecological Data Search SxBRC/21/199 - Summary Report

An ecological data search was carried out for land at Sefter Farm, Pagham on behalf of Gareth Matthes (GPM Ecology) on 07/06/2021.

The following datasets were consulted for this report:

	Requested	Radius/buffer size
Designated sites, habitats & ownership maps	Yes	1km
Protected, designated and invasive species	Yes	1km

Summary of results

Sites and habitats

Statutory sites	None present
Non-statutory sites	None present
Section 41 habitats	1 habitat
Ancient and/or ghyll woodland	None present

Protected and designated species

International designations	29 species	156 records
National designations	65 species	3,079 records
Other designations	107 species	5,224 records
Total	123 species	5,475 records
Invasive non-native	20 species	41 records

The report is compiled using data held by Sussex Biodiversity Record Centre (SxBRC) at the time of the request. SxBRC does not hold comprehensive species data for all areas. Even where data are held, a lack of records for a species in a defined geographical area does not necessarily mean that the species does not occur there – the area may simply not have been surveyed.

This summary page may be published.
The full report and maps may not be published or otherwise shared.
The data search report is valid until 07/06/2022 for the site named above.

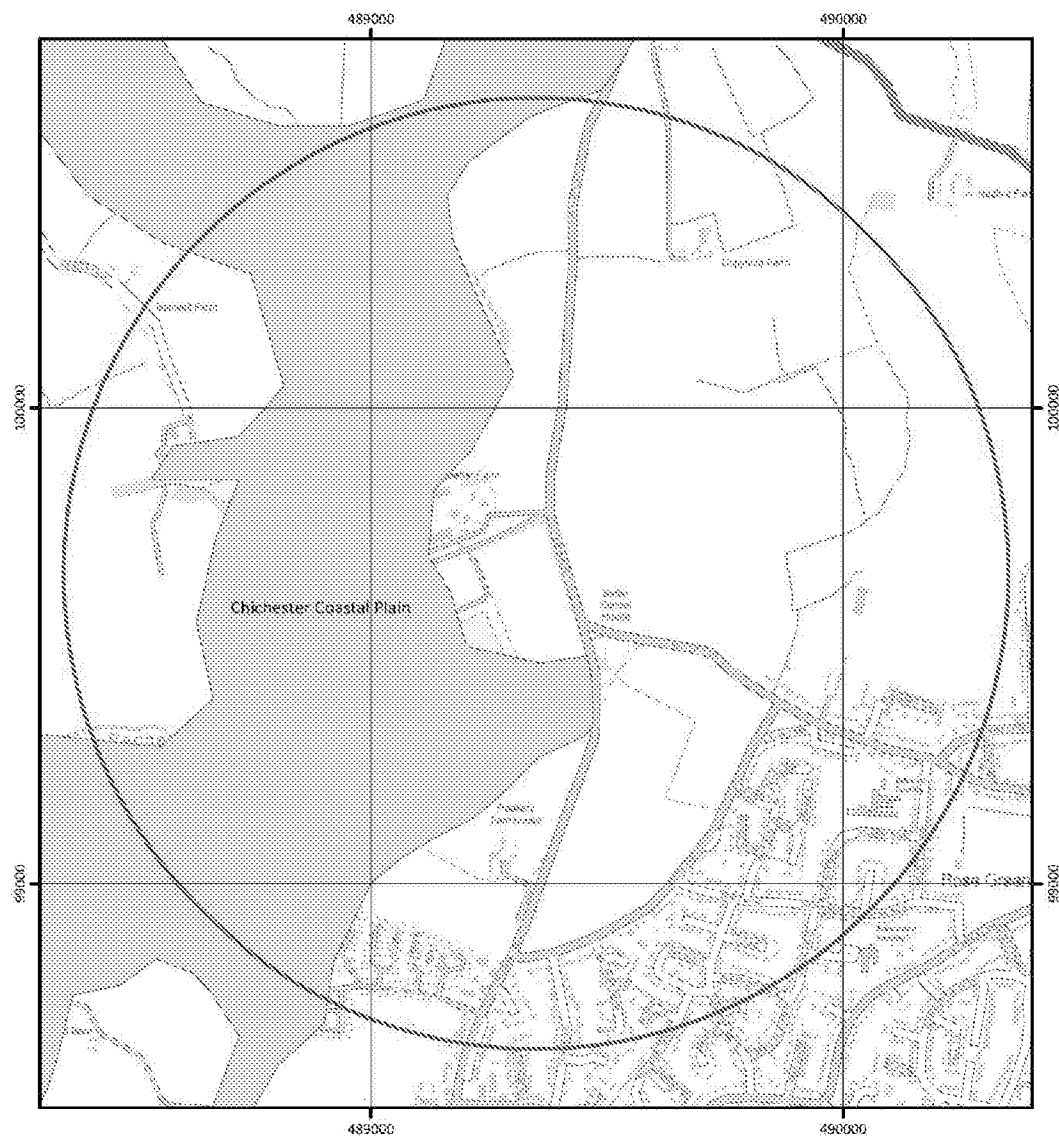
The Sussex Biodiversity Record Centre is managed by the Sussex Wildlife Trust as a partnership project. Sussex Wildlife Trust is a company limited by guarantee under the Companies Act, Registered in England, Company No. 698851, Registered Charity No. 207005, VAT Registration No. 191 3059 69.

EXTRACT OF MAP 5 ONLY (DATA SUMMARISED IN ECOLOGY REPORT)

Biodiversity Opportunity Area

Land at Seftor Farm, Pagham + 1km radius

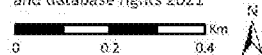
SXBRC/11/199 - 07/06/2021



Key to Map:

-  Search area
 BOA

Contains Ordnance Survey data © Crown copyright and database rights 2021



APPENDIX II: GCN Habitat Suitability and eDNA Survey Results

Background Information						
Pond Number:	1	Site name:	Sefter Farm			
National Grid Ref:	SZ 8940 9977					
Land owner:	Lagness Farm Estate					
Access:	Opposite entrance to Sefter Farm					
Distance from site:	<40m from proposed development					
Habitat Suitability						
Location (S ₁):	Good					Key reason waterbody screen out / HSI-value
Pond Area (S ₂):	Approximately 400m sq					1
Permanence (S ₃):	>1m deep, appears to remain					0.8
Water Quality (S ₄):	Moderate, good invertebrate, but farm inputs are like - Turbidity: 3					0.9
Shading (S ₅):	15% shade - mature oak on east side and edge to west, but a fairly open pond					0.67
Waterfowl (S ₆):	Minor-levels - morrhen observed and ducks seen using it in the past					0.8
Fish (S ₇):	No evidence, but maybe present. Could have Eels, which may preclude GCN!					0.67
Pond Density (S ₈):	2.2/km ²					0.67
Habitat (S ₉):	Good - mature hedge and ditch verges					0.67
Macrophytes (S ₁₀):	95% - Reed-bed, crow's-foot, curly-pondweed and starwort present and potential egg plants					0.8
Survey results:	Current HSI - "Excellent" suitability for GCN eDNA and egg-searches					1
Surveyor / Turbidity	Date	Eggs	Lamping	Traps	Min/max	Other information
GPM / 3	16/08/2021	None	N/A	N/A	N/A	eDNA sample: GCN absent
GCN - Great Crested Newt; PN - Palmate Newt; SN - Smooth Newt						
Presence / absence: Absent			Population class: Absent			
Despite Pond 1 having excellent suitability for GCN and a breeding pond located ~2km north west of this pond, no GCN eDNA or eggs were found in the pond following surveys and analysis. It maybe that there is un-recorded fish population present, possibly eels.						

Client: Gareth Matthes,
GPM Ecology



ADAS
Spring Lodge
172 Chester Road
Helsby
WAG 0AR



Sample ID: ADAS-2357 Condition on Receipt: Good Volume: Passed
Client Identifier: Pond opposite Description: pond water samples in preservative
Sefton farm
Date of Receipt: 24/06/2021 Material Tested: eDNA from pond water samples

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	28/06/2021
Degradation Control [‡]	Within Limits	Real Time PCR	28/06/2021
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	28/06/2021
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: 28/06/2021 Date of issue: 28/06/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1057 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

[†] Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

[‡] No degradation is expected within time frame of kit preparation, sample collection and analysis.

[§] Additional positive controls (10⁻¹, 10⁻², 10⁻³ ng/μL) are also routinely run, results not shown here.

Background Information	
Pond Number:	2
Site name:	Sefter Farm
National Grid Ref:	SZ 8920 9950
Land owner:	Barfoots Ltd
Access:	Opposite entrance to Sefter Farm
Distance from site:	~50m from proposed development
Habitat Suitability	
	Key reason waterbody screened-out (X) / HSI
Location (SI ₁):	Good
Pond Area (SI ₂):	Approximately 1ha (HSI scores only for ponds up to 0.2ha, therefore no score provided)
Permanence (SI ₃):	>1m deep, appears to remain
Water Quality (SI ₄):	Moderate, poor invertebrates but likely to be clean from pollutants - Turbidity: 1
Shading (SI ₅):	Raised resevoir - no shrubs, trees or shading
Waterfowl (SI ₆):	Major - 20 to 30 mallards, 5-10 coots, 6 shellducks (displaying), 2 tufted ducks, 2 gulls
Fish (SI ₇):	No evidence and fish unlikely
Pond Density (SI ₈):	2.2/km ²
Habitat (SI ₉):	Good - Bunds, scrub, hedge-ditches nearby
Macrophytes (SI ₁₀):	None present
Survey results:	Current HSI - 'Below Average' suitability for GCN eDNA survey only
Surveyor / Turbidity	Date
GPM / 3	03/06/2021
Eggs	Lamping
N/A	N/A
Traps	Min/max
N/A	N/A
Other information	
eDNA sample: GCN absent	
GCN - Great Crested Newt; PN - Palmate Newt; SN - Smooth Newt	
Presence / absence: Absent	
Population class: Absent	
Wildfowl and lack of macrophytes likely to preclude GCN from breeding in this pond	

Client: Gareth Matthes,
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ADAS
Spring Lodge
172 Chester Road
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WAS DAR

Sample ID: ADAS-2263 Condition on Receipt: Good Volume: Passed
Client Identifier: Sefton Reservoir Description: pond water samples in preservative
Date of Receipt: 07/06/2021 Material Tested: eDNA from pond water samples

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	09/06/2021
Degradation Control [‡]	Within Limits	Real Time PCR	09/06/2021
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	09/06/2021
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: 10/06/2021 Date of issue: 10/06/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (VC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

† Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

‡ No degradation is expected within time frame of kit preparation, sample collection and analysis.

**Additional positive controls (10⁻¹, 10⁻², 10⁻³ ng/μL) are also routinely run, results not shown here.*