

Heckington Fen Solar Park

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Appendix 8.13– Further Extended Phase 1 Habitat Survey Report– Bicker Fen Substation

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**APPENDIX 8.13: FURTHER EXTENDED PHASE 1 HABITAT SURVEY
REPORT – BICKER FEN SUBSTATION**

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Glossary

AW1 – Additional Work 1 - new section of NGET infrastructure at the substation comprising a busbar extension including a section breaker, a bus coupler and a feeder circuit on land to the south of Bicker Fen Substation, which is owned by NGET

AW2 – Additional Work 2 - a new cable sealing end ("CSE") compound on land to the west of Bicker Fen Substation, which is owned by NGET

BOCC – Birds of Conservation Concern

NGET - National Grid Electricity Transmission

SSSI – Site of special scientific interest

1. SUMMARY

1.1 This report presents the results of a further targeted extended phase 1 survey conducted at the National Grid Bicker Fen Substation near Boston, Lincolnshire.

1.2 The Order Limits have been extended (Figure 8.13.1) to encompass a small area of plantation woodland to the south of the substation (AW1), and a further section to the west to facilitate the installation of a cable sealing end (AW2). This extended phase 1 survey was conducted to assess the habitat present within the woodland and semi-improved grassland, and the potential for protected species and the need for further detailed survey.

1.3 The Order Limit amendment covers approximately 0.9ha. It comprises approximately 0.4ha of plantation woodland, 0.13ha of rough grassland/scrub, a short section of roadside ditch (less than 0.1ha) and 0.3ha of semi-improved grassland to the west of the main substation. There were a number of common birds singing in the boundary of woodland but no evidence of other protected species.

2. INTRODUCTION

2.1 This report summarises the results of the further extended phase 1 survey carried out in May 2023 as part of Heckington Fen Energy Park at Bicker Fen Substation. This work has been carried out to provide additional information to support the Environment Impact Assessment in relation to a Development Consent Order application for the construction, operation (including maintenance), and decommissioning of a ground mounted solar photovoltaic electricity generation and energy storage facility (hereafter referred to as “the Energy Park”), cable route to, and above ground works at, the National Grid Bicker Fen Substation (hereafter referred to as “the Proposed Development” (inclusive of Energy Park)) on land at Six Hundreds Farm, Six Hundreds Drove, East Heckington, Sleaford, Lincolnshire.

2.2 A number of ecological surveys have been carried out on the Energy Park and Off-site Grid Connection including:

- **Appendix 8.3- Phase 1 Habitat Survey Report - Energy Park** (document reference 6.3.8.3, APP-192)
- **Appendix 8.4- Further Extended Phase 1 Habitat Survey Report - Energy Park** (document reference 6.3.8.4, APP-193)
- **Appendix 8.5- Extended Phase 1 Survey Report – Cable Route Corridor** (document reference 6.3.8.5, APP-194)
- **Appendix 8.6- Botany Report including Aquatic Plants and Rare Arable Plants – Energy Park and Cable Route Corridor** (document reference 6.3.8.6, APP-195)
- **Appendix 8.7- Confidential Badger Report** (document reference 6.3.8.7, APP-196)
- **Appendix 8.8- Bat Survey Report - Energy Park** (document reference 6.3.8.8, APP-197)
- **Appendix 8.9- Water Vole Report - Cable Route Corridor** (document reference 6.3.8.9, APP-198)
- **Appendix 8.10- Ornithological Survey – Energy Park and Cable Route Corridor** (document reference 6.3.8.10, APP-200) – **Figure 3 is confidential (APP-199)**, Figures 1, 2, 4a, 4b and 4c are available.
- **Appendix 8.11- Great Crested Newts – Energy Park and Cable Route Corridor** (document reference 6.3.8.11, APP-201)

- **Appendix 6.3- Arboricultural Impact Assessment** (document reference 6.3.6.3, APP-179) – a subsequent update has been provided with the August 2023 Change Request, Revision 2.

2.3 The Study Area (Figure 8.13.1) was viewed from the boundary during the previous phase 1 survey (Extended Phase Survey - Cable Route Corridor **Appendix 8.5** (document reference 6.3.8.5, APP-194)) and classified as plantation woodland. The area was included in the breeding bird surveys and the small wetland directly to the east was surveyed for great crested newt. This extended phase 1 survey was conducted to assess the habitat present within the woodland, the potential for protected species and the need for further detailed survey.

2.4 This extra area of land also includes a small area of semi-improved grassland previously surveyed (Extended Phase Survey - Cable Route Corridor **Appendix 8.5** (document reference 6.3.8.5, APP-194)). This was previously arable land prior to the creation of the Bicker Fen Substation and appears to have been created by use of a standard wildflower mix and management by regular mowing. Areas not mown regularly are developing into scrub habitat.

3. METHODS

Habitat survey

3.1 The habitat survey was conducted adopting the methods outlined in the Handbook for Phase 1 Habitat Survey published by the Nature Conservancy Council (2010)¹. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential that might warrant further study.

3.2 The walkover survey was carried out by Dr Simon Pickering, an ecologist with over 30 years' experience as professional ecologist and particular experience in surveying, assessment, and mitigation for rare and protected species. He has considerable knowledge of the development and planning process including Ecological Impact Assessments, sustainable ecological design and as an expert witness at public inquiries.

3.3 The surveys were conducted 4th May 2023. The weather was warm and dry 8-14°C, 10% cloud cover, wind from southwest 3-4mph.

3.4 Previous reports have included desk surveys and obtained records from the Lincolnshire Environmental Records Centre (**Appendix 8.2- Data search LERC** (document reference 6.3.8.2, APP-191)) and Extended Phase 1 Survey report - Cable Route Corridor (**Appendix 8.5** (document reference 6.3.8.5, APP-194)). Figure 8.4 (document reference 6.2.8, APP-155) shows the previous Phase 1 Survey data which cover these additional work areas.

Fauna Survey

3.5 This further targeted phase 1 survey also incorporated an ecological assessment of the potential of the Study Area for use by protected species including amphibians, reptiles,

¹ Handbook for Phase 1 habitat survey. A technique for environmental audit. JNCC (2016)

mammals, and birds. Evidence of the presence of these species and evidence of suitable habitat for them was noted.

3.6 The trees were assessed for their potential to support bat roosts by visually inspecting them from the ground using binoculars. Potential roosting features such as gaps, holes, enclosed roof voids, holes, cavities, or splits were recorded and then inspected where possible for signs of bats, which including grease/urine stains, scratch marks, droppings or the bats themselves.

3.7 The Site and surroundings, for a minimum distance of 50m where access was available, were searched for signs of Badgers. These include setts, latrines, dung pits, snuffle marks or hairs caught in hedges or on fencing.

3.8 Incidental observations of invertebrates and birds were recorded, and a search made for any signs of current or previous nesting.

3.9 Any refugia on site such as logs or other debris were lifted and inspected for reptiles and amphibians.

3.10 The roadside ditch surveyed for evidence of water vole activity were carried out following standard methods from Dean *et al.* (2016)². All the suitable bankside and water-edge habitats were thoroughly searched for field signs including burrows; feeding platforms and evidence of feeding; food remains; latrines; and footprints.

4. RESULTS

Designated site

4.1 The plantation woodland is not within any local or nationally designed site for nature conservation. The closest SSSI is Horbling Fen, 4.8km to the southwest. The closest non-statutory site is the South Forty Foot Drain 1.4km to the west.

Habitat

4.2 The area being considered covers approximately 0.9ha. It comprises approximately 0.4ha of plantation woodland, 0.13ha of rough grassland/scrub, short section of ditch (30m) and a further 0.3ha for the cable sealing end which is also rough grassland/scrub.

A1.1.1 Broadleaved Woodland – Semi-Natural

4.3 The majority of the area (AW1) is mixed deciduous plantation woodland. There are some 600-700 trees in this block approximately 1.5m apart. This is mixed species plantation of 15 species (see Table 1 for list and approximate proportions). This area is part of a larger planting block of 0.76ha planted on farmland in 2006 as part of the construction and landscaping of the Bicker Fen Substation.

² Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The. Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)

4.4 The plantation woodland appears to have limited management since the area was planted. Whilst there is evidence of the use of tree guards it appears that a number of trees have recovered from grazing at an early age with short pollard/coppice growth. Tree growth is variable with trees on the outer edges stronger (goat willow max trunk 1.5m diameter) that much of the interior of the plantation (sycamore trunk diameter 0.3m). The ash trees within the plantation appear to be suffering Ash die back. The ground flora is sparse. Including Nettle (*Urtica dioica*) Herb-robert (*Geranium robertianum*) Lesser Celandine (*Ficaria verna*) Dog rose (*Rosa canina*), and Hog weed (*Heracleum sphondylium*).

Table 1 - list and approximate proportions of woodland block to be removed

Species present in plantation woodland	Approx. % composition
Hawthorn <i>Crataegus monogyna</i>	20
Silver Birch <i>Betula pendula</i>	15
Hazel <i>Corylus avellana</i>	12
Ash <i>Fraxinus excelsior</i>	7
Goat willow <i>Salix caprea</i>	7
Blackthorn <i>Prunus spinosa</i>	6
Guelder rose <i>Viburnum opulus</i>	6
Oak <i>Quercus Robur</i>	6
Sycamore <i>Acer pseudoplatanus</i>	4
Grey poplar <i>Populus x canescens</i>	4
Bird Cherry <i>Prunus padus</i>	3
Field Maple <i>Acer campestre</i>	3
Dogwood <i>Cornus sanguinea</i>	3
Alder <i>Alnus glutinosa</i>	3
Holly <i>Ilex aquifolium</i>	1

B2.2 Neutral Grassland – Semi-Improved

4.5 There is a narrow 4-6m strip of rough semi-improved grassland between the edge of the plantation and the boundary fence of the semi-improved meadow to the north of the plantation. This is being colonised by Hawthorn, Bramble and Blackthorn. There is a 6m rough grassland strip between the fence of the southern boundary of plantation woodland and the bank of the roadside drainage ditch (the highway verge is outside of the Order Limits). It appears that this has not been mown for a number of years and is being colonised by Hawthorn, Bramble and Blackthorn.

4.6 These grasslands include includes Perennial Rye-grass (*Lolium perenne*), Cocksfoot (*Dactylis glomerata*) Crested Dog's-tail (*Cynosurus cristatus*) and Red Fescue (*Festuca rubra*) as the dominant grass species, with some Broad-leaved Dock (*Rumex obtusifolius*), Clustered Dock (*Rumex conglomeratus*), Common Ragwort (*Jacobaea vulgaris*), Common Knapweed (*Centaurea nigra* agg.), White Clover (*Trifolium repens*), Meadow buttercup (*Ranunculus acris*) Cowslip (*Primula Veris*), Selfheal (*Prunella vulgaris*) and Common Mouse-ear (*Cerastium fontanum*).

4.7 Outside, but adjacent to the Order Limits, are seven semi mature oak (*Quercus robur*) tree on the highway verge. A total of 15 oak trees are planted in a row on the highway verge, likely in the late 1990's.

4.8 The Bicker Fen Substation has been improved from arable land prior to the construction of the Bicker Fen Substation in 2005/06, with the Cable Sealing End area appearing to have been created with a standard general-purpose meadow mix.

4.9 The Cable Sealing End area (AW2) has not been cut regularly and is developing into an area of Hawthorn (*Crataegus monogyna*) Goat willow (*Salix caprea*) and Blackthorn (*Prunus spinos*) as scrub. The grasslands include Perennial Rye-grass (*Lolium perenne*), Crested Dog's-tail (*Cynosurus cristatus*) and Red Fescue (*Festuca rubra*) as the dominant grass species, with some Broad-leaved Dock (*Rumex obtusifolius*), Clustered Dock (*Rumex conglomeratus*), Common Ragwort (*Jacobaea vulgaris*), Common Knapweed (*Centaurea nigra* agg.), White Clover (*Trifolium repens*), Meadow buttercup (*Ranunculus acris*) Cowslip (*Primula Veris*), Selfheal (*Prunella vulgaris*) and Common Mouse-ear (*Cerastium fontanum*).

J2.6 / G2 Roadside Ditch

4.10 The roadside ditch was largely dry at the time of the survey, although there was evidence that it holds shallow water during the winter. The ditch is gradually being overgrown with Bramble and Blackthorn and Hawthorn. Towards the western end of the ditch, the base was wetter with growth Common Reed (*Phragmites australis*), False Fox-sedge (*Carex otrubaea*) and Reed Canary-grass (*Phalaris arundinacea*).

Species: mammals

4.11 There were no features within any of the trees that would be potentially suitable as a bat roost. The plantation was planted in 2006 and the trees are of insufficient age to have developed cracks, crevices, or holes suitable for bat roosts.

4.12 There are well used roe deer tracks leading into the plantation and evidence of areas where deer has been lying.

4.13 There was no evidence of badgers using the plantation or adjacent habitat. The drainage ditch was largely unsuitable for water vole, being mostly dry and growing over with scrub vegetation and brambles. The eastern end was slightly wetter with common reed and canary grass. There is evidence of field vole activity in the rough grassland between the woodland and the roadside ditches and in the rough grassland field to the east of the plantation. A recently used European hare form³ was found in the rough grassland to the east of the plantation.

4.14 There were a number of farmland birds recorded singing within or adjacent to the woodland including Blackcap, Chaffinch, Robin, Wren, Goldfinch, Blackbird and Reedwarbler (within the reeds on the edge of the wetland). There were two farmland bird species, Yellowhammer and Linnet, singing from hawthorn bushes just outside the boundary of the plantation. A Marsh Harrier was recorded over the open grassland and wetland directly to the east of the plantation woodland. The ornithological surveys (**Appendix 8.10** (document reference 6.3.8.2, APP-200)) previously record two BOCC red listed species singing in the boundary of the woodland, Yellowhammer and Linnet. The presence of Marsh Harrier in the

³ During the daytime, hares hide in a depression in the ground called a "form" where they are partially hidden.

vicinity and mitigation measures has been considered in the ornithology survey report (**Appendix 8.10**) and **Chapter 8** (document reference 6.1.8, APP-061).

Invertebrates

4.15 No formal invertebrate surveys were conducted however four butterfly species were observed Red Admiral (*Vanessa atalanta*), Peacock (*Aglais io*), Orange tip (*Anthocharis cardamines*) and Brimstone (*Gonepteryx rhamni*).

5. EVALUATION AND CONCLUSIONS

5.1 This is an area of young mixed woodland species plantation with sparse ground flora. The plantation provides cover for roe deer and boundary habitats support a number of common bird species. Overall the woodland is considered to be of local importance.

5.2 Standard Good Practice to avoid impacts to nesting birds during works, including disturbance to Schedule 1 species nesting in building, should be implemented which will include:

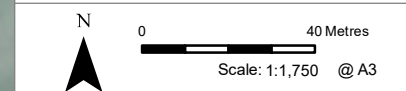
- Appropriate timing of clearance works (i.e., outside of the breeding season between October and February inclusive); and pre-clearance nesting bird checks if required.
- In the event that any active bird nest would be impacted by clearance/installation works, it would be necessary to defer works within a minimum 5m radius of the nest until the nest is no longer active.
- No development activities should be undertaken within 500m of any of the Schedule 1 / Annex I species' nest-sites during the breeding season (March-July).

Legend

- Proposed Order Limits
- Additional Works Area 1
- Additional Works Area 2
- Submitted DCO Order Limits



Figure 8.13.1
Title: Study Area



Drawn by: MW	Checked by: LW	Approved by: SP
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