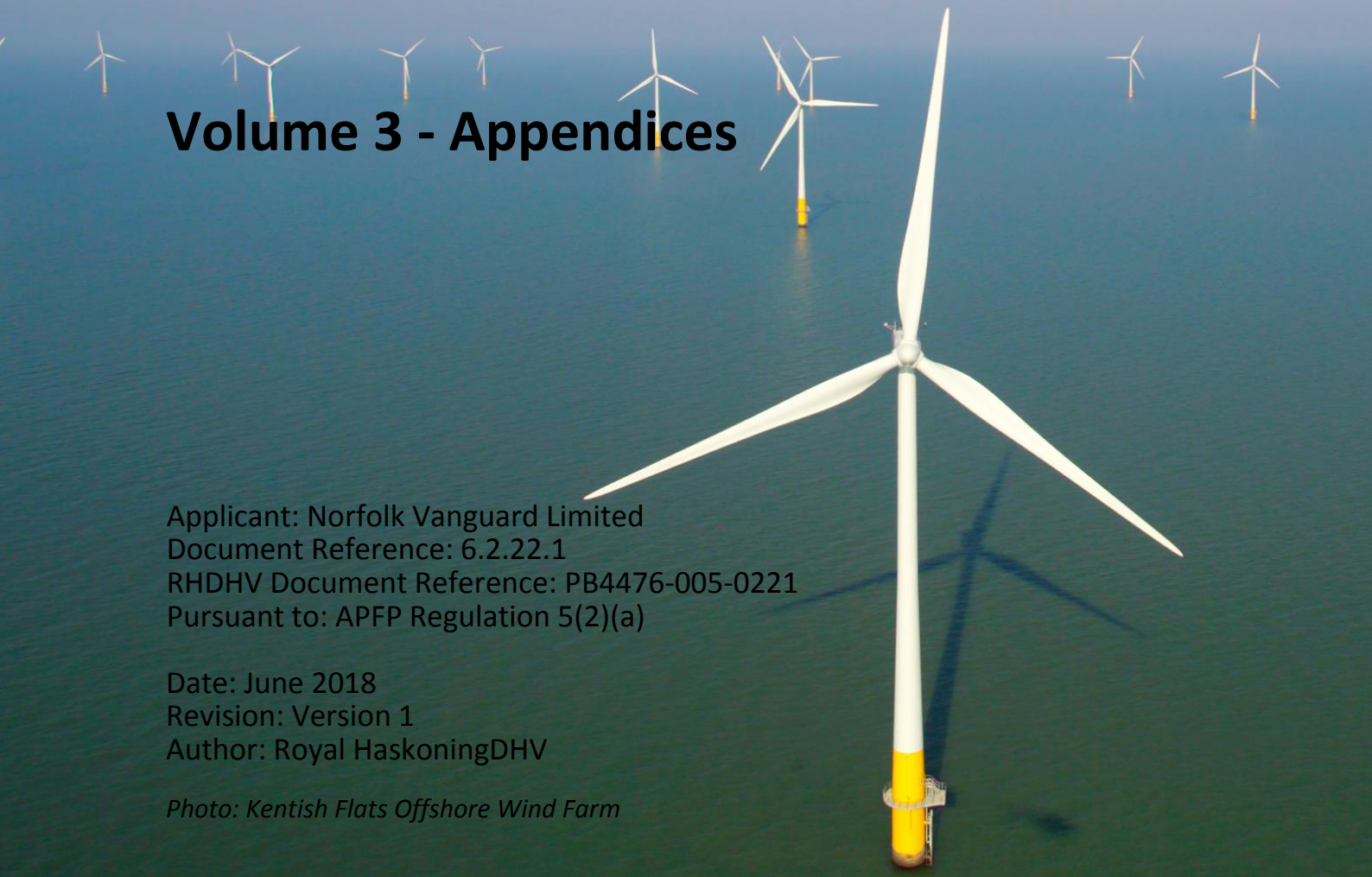
Norfolk Vanguard Offshore Wind Farm

Appendix 22.1

Extended Phase 1 Habitat Survey Report

Environmental Statement

Volume 3 - Appendices



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Environmental Impact Assessment
Environmental Statement

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For and on behalf of Norfolk Vanguard Limited

Approved by: Ruari Lean and Rebecca Sherwood

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Date: 8th June 2018

For and on behalf of Royal HaskoningDHV

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Glossary

AONB	Area of Outstanding Natural Beauty
BCT	Bat Conservation Trust
BoCC	Birds of Conservation Concern
CIEEM	Chartered Institute of Ecology and Environmental Management
CRS	Cable Relay Station
CWS	County Wildlife Sites
EIA	Environmental Impact Assessment
EU	European Union
HDD	Horizontal Directional Drilling
HSI	Habitat Suitability Index
IEMA	Institute of Environmental Assessment
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserves
NBIS	Norfolk Biodiversity information Service
NGR	National Grid Reference
NNR	national nature Reserves
RSPB	Royal Society for the Protection of Birds
SAC	Special Areas of Conservation
SSSI	Sites of Special Scientific Interest
TN	Target Notes
UK BAP	UK Biodiversity Action Plan

Terminology

Cable Relay Station	Primarily comprised of an outdoor compound containing reactors (also called inductors, or coils) and switchgear to increase the power transfer capability of the cables under the HVAC technology scenario as considered in the PEIR. This is no longer required for the project as the HVDC technology has been selected.
Landfall	Where the offshore cables come ashore at Happisburgh South
Mobilisation area	Areas approx. 100 x 100m used as access points to the running track for duct installation. Required to store equipment and provide welfare facilities. Located adjacent to the onshore cable route, accessible from local highways network suitable for the delivery of heavy and oversized materials and equipment.
Mobilisation zone	Area within which the mobilisation area will be located.
National Grid new / replacement overhead line tower	New overhead line towers to be installed at the National Grid substation.
National Grid overhead line modifications	The works to be undertaken to complete the necessary modification to the existing 400kV overhead lines

National Grid substation extension	The permanent footprint of the National Grid substation extension
National Grid temporary works area	Land adjacent to the Necton National Grid substation which would be temporarily required during construction of the National Grid substation extension.
Necton National Grid substation	The existing 400kV substation at Necton, which will be the grid connection location for Norfolk Vanguard
Onshore cable corridor	200m wide onshore corridor within which the onshore cable route would be located as submitted for PEIR.
Onshore cable route	The 45m easement which will contain the buried export cables as well as the temporary running track, topsoil storage and excavated material during construction.
Onshore cables	The cables which take the electricity from landfall to the onshore project substation
Onshore project area	All onshore electrical infrastructure (landfall; onshore cable route, accesses, trenchless crossing technique (e.g. Horizontal Directional Drilling (HDD)) zones and mobilisation areas; onshore project substation and extension to the Necton National Grid substation and overhead line modification)
Onshore project substation	A compound containing electrical equipment to enable connection to the National Grid. The substation will convert the exported power from HVDC to HVAC, to 400kV (grid voltage). This also contains equipment to help maintain stable grid voltage.
Onshore project substation temporary construction compound	Land adjacent to the onshore project substation which would be temporarily required during construction of the onshore project substation.
The project	Norfolk Vanguard Offshore Wind Farm, including the onshore and offshore infrastructure

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22 EXTENDED PHASE 1 HABITAT SURVEY

22.1 Introduction

1. The aim of this report is to provide information on habitats and their potential to support legally protected and notable species in relation to the proposed Norfolk Vanguard Offshore Wind Farm onshore electrical infrastructure (herein referred to as the 'project'). This report also identifies the requirement for any Phase 2 (i.e. species specific) surveys.

2. The Extended Phase 1 Habitat Survey area includes the onshore project area plus a 50m buffer each side. All water bodies within 250m of the temporary works and 500m of the permanent works were also surveyed. This collectively is herein referred to as the 'survey area'.

22.1.1 Site Description

3. The onshore project area at the time of the survey consisted of the following key elements:

- Landfall search zones along the North Norfolk coast at three locations between Bacton and Happisburgh;
- An approximately 60km, 200m wide long buried onshore cable corridor from these landfall search zones to the Necton National Grid substation;
- Onshore project substation, National Grid substation extension and National Grid overhead line temporary works near the existing Necton National Grid substation;
- A series of cable relay station (CRS) search areas along the cable corridors near the landfall search areas; and
- Trenchless crossing technique (e.g. Horizontal Directional Drilling (HDD)) zones, Mobilisation Zones located along the onshore cable corridor.

4. The location of the onshore electrical infrastructure is shown in Figure 1, Annex A: Figures. Collectively, the onshore electrical infrastructure is herein referred to as the 'onshore project area'. It should be noted that this Appendix presents the results of a survey which was undertaken in February and March 2017, and therefore the onshore project area as it was at the time. The onshore project area has been further refined since the survey and reporting was undertaken, however the data collected and presented as part of this assessment is still considered to be valid as it covers a wider area that has since been refined.

5. See Chapter 5 Project Description for details of the project.

22.2 Scope of Works

6. This report documents the results of an Extended Phase 1 Habitat Survey, which was undertaken by Royal HaskoningDHV ecologists in February and March 2017.

7. The Extended Phase 1 Habitat Survey comprises three components, which collectively has enabled a preliminary ecological assessment of the survey area to be undertaken. These components include:

- A desktop review that summarises information on existing protected species records and statutory and non-statutory nature conservation designations in the area;
- An assessment of the habitats recorded within the survey area obtained from the field survey; and
- An assessment of the survey area for its likelihood of supporting legally protected species or species of conservation concern.

8. This report has been prepared in line with the guidelines as set out in the Chartered Institute of Ecology and Environmental Management's (CIEEM) Guidelines on Ecological Report Writing (2nd Edition, December 2015).

22.2.1 Purpose of this Report

9. The purpose of this report is to present the findings of the Extended Phase 1 Habitat Survey and provide an overall understanding of the existing ecological value of the onshore project area.

10. This report also clearly identifies the potential for the onshore project area to support legally protected species, and hence the potential hazards, restrictions and obligations which may be required to ensure compliance with wildlife legislation. This report will also be used to inform the options appraisal process, ensuring that ecology is given appropriate consideration in the next stages of the project and as the detailed design of the onshore cable corridor is undertaken.

22.2.2 Project Background

11. A Scoping Report for the Norfolk Vanguard Environmental Impact Assessment (EIA) was submitted to the Planning Inspectorate on the 3rd October 2016. In addition to the site selection information provided within the Norfolk Vanguard Scoping Report (Royal HaskoningDHV, 2016), additional site selection work has been undertaken to further refine the locations of the onshore project area.

12. The offshore project area is located 47km offshore (at the closest point) and will have a generation capacity of 1.8GW, which will produce enough energy to power

1.3million UK households[1]. The offshore project area comprises of two distinct areas, Norfolk Vanguard East and Norfolk Vanguard West, and will be connected to the shore by offshore export cables installed within the provisional offshore cable corridor.

13. At the time of the survey there were three landfall options with associated CRS search zones as well as an onshore project substation search zone in proximity to the existing Necton National Grid substation (the grid connection point). A 200m wide onshore cable corridor has been identified, within which the onshore cable route will be located.

22.2.3 Consultation

14. The methodology set out in this report was discussed during a Norfolk Vanguard Expert Topic Group meeting on 24th January 2017 as part of the project Evidence Plan Process. At the meeting the methodology proposed for the Extended Phase 1 Habitat Survey was discussed and agreed with stakeholders from Natural England, Environment Agency, Breckland Council, Norfolk County Council and Norfolk Wildlife Trust.

22.3 Legislation and Policy

15. This section summarises the relevant information regarding the legal protection afforded to habitats and species mentioned in this report. However it should be noted that this is for information only and is not intended to be exhaustive or to replace specialised legal advice.

16. Table 22.1 below provides a brief summary of the key legislation and policy relevant to the project. Further information on the legislation listed below is provided in Annex H: Legislation.

Table 22.1 Summary of the key legislation and policy relevant to the project

Legislation	Relevance
Wildlife and Countryside Act 1981 (as amended)	Codifies the European Union (EU) Directive 2009/147/EC (the Birds Directive) into UK law; provides legal protection for European designated sites (Special Protection Areas (SPA), Ramsar sites) and Sites of Special Scientific Interest (SSSI); outlines legal offences in relation to wild birds, animals, and invasive species; provides lists of species which are protected under the Act.
The Conservation of Habitats and Species Regulations 2010 (as amended)	Codifies the EU Directive 92/43/EEC (The Habitats Directive) into UK law; provides legal protection for European designated sites (Special Areas of Conservation (SAC)).

[1] http://www.renewableuk.com/page/UKWEDExplained assuming a load factor of 34.88

Legislation	Relevance
Natural Environment and Rural Communities Act 2006	Details a list of UK habitats and species of 'principle importance' which require protection within the UK.
Protection of Badgers Act 1992	Outlines legal offences in relation to badgers, including taking, injuring or killing badgers, and interfering with badger setts.
The Hedgerow Regulations 1997	Outlines definition of 'important' hedgerows and legal offences in relation to their disturbance or removal.
Policy	**Relevance**
UK Post-2010 Biodiversity Framework	Supersedes the UK Biodiversity Action Plan (UK BAP), which fulfilled legal obligation under the Convention on Biological Diversity to identify and produce action plans for produce priority habitats and species.

22.4 Methodology

22.4.1 Survey Area

17. The Extended Phase 1 Habitat Survey covered all of the areas within the onshore project area plus a 50m buffer either side. In addition, all water bodies within 250m of the temporary works, and 500m of the permanent works was also included. Collectively, this comprises the survey area (as shown on Figure 1, Annex A: Figures.

22.4.2 Desk Based Review

22.4.2.1 Available data

18. An ecological desk-based assessment was undertaken in February 2017. The data sources used to inform this ecological desk-based assessment are summarised in Table 22.2.

Table 22.2 Data sources

Data	Source	Date obtained
European designated sites (SPA, SAC, Ramsar sites)	Joint Nature Conservation Committee (JNCC)	February 2017
UK designated sites (Sites of Special Scientific Interest (SSSI), national nature Reserves (NNR), Local Nature Reserves (LNR), Royal Society for the Protection of Birds (RSPB) Reserves)	JNCC; Natural England	February 2017
Norfolk County Wildlife Sites (CWS)	Norfolk Biodiversity information Service (NBIS)	February 2017

Data	Source	Date obtained
UK Habitats of Principal Importance	JNCC	February 2017
Protected species records	NBIS	February 2017
Norfolk 'Living Map'	NBIS	February 2017
Onshore aerial survey data	APEM Ltd.	March 2017
Pink-footed geese feeding distribution maps for Broadland SPA	Natural England	September 2016
Norfolk Local Biodiversity Species Action Plans	Norfolk Biodiversity Partnership	February 2017

19. The desk-based assessment was undertaken to provide information on statutory and non-statutory designated sites for nature conservation, and protected and notable species and habitats within 2km of the project area (within 5km for bat species).

20. Protected species records and details of local wildlife sites were requested from NBIS and local county recorders. NBIS also provided habitat mapping data from the Norfolk 'Living Map' project. Data from the Multi-Agency Geographic Information for the Countryside (MAGIC) website, Natural England, JNCC and specially-commissioned aerial photography data (collected during March 2017) were also reviewed to identify designated sites and protected habitats within a search area of within 2km of the project area. A search area of 500m surrounding the project area was used to identify water bodies. Additional information on selected protected species was also provided by Natural England, the Environment Agency and Norfolk County Council during the ongoing stakeholder consultation process, including the location of notable white-clawed crayfish *Austropotamobius pallipes* hotspots and wintering bird mapping.

21. The desk-based assessment included a review of Norfolk's Local Biodiversity Action Plan (LBAP).

22. Further data sources in addition to those listed above will be used to inform the ecological assessment process as they become available from stakeholders and local wildlife groups. These data sources include survey data regarding barbastelle bats, white-clawed crayfish, bats in churches and additional badger *Meles meles* records. These data sources are not yet available at the time of drafting.

22.4.2.2 Norfolk 'Living Map'

23. In order to supplement the field survey, data from the Norfolk Living Map has been used to provide high level spatial habitat data for the survey area.

24. The Norfolk Living Map project used remote sensing imagery for Norfolk to produce a habitat map for the county. Habitats were classified using remote sensing data on their vegetation cover, plus other spatial characteristics of habitats such as topography and distance from water, following the methodology set out in Metcalf et al. (2013). The data includes remote sensing datasets collected during 2012, and the habitats maps were published in 2013.

25. This habitat data has been used where field surveys were not possible due to access or other restrictions (see section 22.4.3.4). The data has been used to identify broad habitat types within the survey area, and to identify those habitats which require further assessment in order to identify whether they may support legally protected species. It should be noted that the Living Map data has not been used to replace field survey data, and that any areas within the survey area where field surveys were not possible due to access or other restrictions will be subject to field surveys either during the Phase 2 surveys or at a later date, when access becomes available.

22.4.2.3 Aerial survey data

26. In February 2017 Norfolk Vanguard Limited commissioned aerial photography surveys of the survey area. These surveys were undertaken from 17th – 21st February 2017 using a Britten Norman Islander twin-engine survey aircraft. The survey outputs include high resolution (5cm) Red-Green-Blue (RGB) photography.

27. This high resolution photography has been used to review the Living Map data received from NBIS. Where the Living Map data has been reviewed for unsurveyed areas (as set out in section 22.4.2.2), the aerial photography has been reviewed to check for habitat changes between 2013 and 2017. Where such changes have been picked up following the review of aerial survey data, the recommendations for those habitats which require further assessment as identified during the review of the Living Map data will be amended accordingly. For example, where the aerial survey data clearly shows a new hedgerow in a location not identified in the Living Map dataset, further surveys for this hedgerow will recommended when access becomes available (subject to a field assessment of the hedgerow).

22.4.3 Field Survey

22.4.3.1 Survey methodology

28. An Extended Phase 1 Habitat Survey was undertaken between 8th February and the 3rd March 2017, in order to record the habitats within the survey area and to identify the presence / likely presence of legally protected and notable species.

29. The Extended Phase 1 Habitat Survey followed the 'Extended Phase 1' methodology as set out in Guidelines for Baseline Ecological Assessment (Institute of Environmental Assessment (IEMA), 1995). This method of survey provides information on the habitats within the survey area and assesses the potential for legally protected species to occur on or adjacent to the survey area. Habitats have been recorded within the survey area using the system set out within the JNCC Handbook for Phase 1 habitat survey: A technique for environmental audit (2010).

30. All of the habitats within the survey area have been mapped and Target Notes (TN) have been used to provide details of characteristic habitats and species composition, and highlight any features of ecological interest.

31. Following the Guidelines for Baseline Ecological Assessment, the habitat survey was 'extended' to make preliminary investigations in respect to the following legally protected and/or notable species:

22.4.3.1.1 Birds

32. A search for all habitats with suitability to support breeding birds. In particular, habitats with the suitability to support birds listed on Schedule 1 of the Wildlife and Countryside Act and IUCN 'Red' and 'Amber' List species. These habitats include trees, hedgerows, water bodies, grazing marsh / fen, lowland heath and agricultural land. Section 22.6.1.11 provides further information in respect to wintering birds.

22.4.3.1.2 Badger

33. A search for signs of badger activity within and up to 50m from the survey area boundaries was undertaken. Signs such as setts, tracks, hairs, bedding and spoil heaps, snuffle holes and latrines, were checked for.

34. Where active setts were found, they were classified using the following categories (adapted from Scottish Natural Heritage *Best Practice Badger Survey Guidance Note* (2004)):

- **Main sett** (Several holes with large spoil heaps and obvious paths emanating from and between sett entrances)
- **Annexe sett** (Normally less than 150m from main sett, comprising several holes. May not be in use all the time, even if main sett is very active).
- **Subsidiary sett** (Usually at least 50m from main sett with no obvious paths connecting to other setts. May only be used intermittently).
- **Outlier sett** (Little spoil outside holes. No obvious paths connecting to other setts and only used sporadically. May be used by foxes and rabbits).

22.4.3.1.3 Bats

35. All trees, buildings and structures were assessed for their potential to support roosting bats. All trees, buildings and structures were classified as providing negligible, low, moderate or high suitability to support roosting bats following the guidelines set out in Table 4.1 of the Bat Conservation Trust's (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.) (2016).

36. All trees, waterbodies and hedgerows were also assessed for their potential to provide commuting and foraging habitat for bats following the same guidelines as above.

22.4.3.1.4 Water vole and otter

37. Standing and running water bodies within the survey area were assessed for their suitability to support water voles *Arvicola amphibious* and otters *Lutra lutra*.

38. During the Extended Phase 1 Habitat Survey, all water bodies were assessed as to whether they provide optimal or sub-optimal habitat for water voles and/or otters. Those assessed as being sub-optimal will be excluded from any further surveys and/or assessment. Sub-optimal water bodies are typically those with artificial banks, strong evidence of pollution, those which no longer support running water in any season, or where field signs of mink have been observed during the survey (Strachan, Moorhouse and Gelling, 2011). Those water bodies assessed as providing optimal habitat for water voles and/or otters will be subject to further surveys; however these surveys were not undertaken during the Extended Phase 1 Habitat Survey.

39. The margins of all water bodies within the survey area were searched for field signs of otter, specifically holts, couches, spraints, tracks, feeding remains and slides (Natural England, 2014).

22.4.3.1.5 Great crested newt

40. Standing water bodies which are identified to be within 250m of the onshore electrical infrastructure temporary works (i.e. the landfall and onshore cable corridor) and within 500m of the onshore project area permanent infrastructure (i.e. CRS and onshore project substation and extension to the National Grid substation) were subject to a Habitat Suitability Index (HSI) assessment (following Oldham et al., 2000), to assess their potential to support great crested newts *Triturus cristatus*.

22.4.3.1.6 Reptiles

41. Areas of potential reptile habitat were identified during the Extended Phase 1 Habitat Survey. Specifically, habitat mosaics were noted i.e. where a collection of suitable habitats for reptile hibernation, basking, and foraging occur together. Habitats comprising habitat mosaics which may support reptiles include habitats transitions (ecotones), rank grassland, lowland heath, piles of debris (hibernacula), or bare ground (Edgar, P., Foster, J. and Baker, J. 2010)).

22.4.3.1.7 Invertebrates

42. High quality and diverse habitats considered to provide suitable opportunities for terrestrial invertebrates were recorded. In particular (following consultation feedback during the project scoping phase), identification of suitable habitats for supporting the Desmoulin's whorl snail *Vertigo moulinsiana* was included.

22.4.3.1.8 Invasive non-native species

43. Where present, the location and extent of invasive non-native species was recorded during the Extended Phase 1 Habitat Survey. Due to the many invasive non-native species being present in the UK, the field survey focussed on the species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Following consultation feedback during the project scoping phase, particular attention will be paid to aquatic invasive species including invasive crayfish species, Chinese mitten crab *Eriocheir sinensis*, killer shrimp *Dikerogammarus villosus* and Himalayan balsam *Impatiens glandulifera*.

22.4.3.2 Surveyors

44. The Extended Phase 1 Habitat Surveys were conducted by a team of four Royal HaskoningDHV ecologists. The survey team was led by Gordon Campbell, BA. (Hons) MSc, Associate Member of CIEEM (ACIEEM). Gordon has 6 years' experience of Extended Phase 1 Habitat Surveying. The survey team included:

- Thomas Chillcott, BSc. MSc. Graduate Member of CIEEM (GradCIEEM);
- Maria Walentek BSc. MSc. Associate Member of the Institute of Environmental Assessment (AIEMA); and
- Charlotte Clements, BSc. Affiliate Member of IEMA.

22.4.3.3 Weather conditions

45. Table 22.3 summarises the weather conditions encountered during the survey period.

Table 22.3 Weather conditions

Date	Weather conditions
8th February 2017	Dry, cold (<4°C), overcast
9th February 2017	Dry, cold (<4°C), intermittent light sleet
10th February 2017	Light snow, cold (<4°C)
13th February 2017	Dry, cold (<4°C), clear
14th February 2017	Dry, cold (<4°C), clear
15th February 2017	Intermittent light drizzle, cold (<4°C), clear
16th February 2017	Dry, cold (<4°C), clear
17th February 2017	Dry, cold (<4°C), clear
20th February 2017	Dry, mild (5-10°C), clear, moderate wind (gusts)
21st February 2017	Dry, mild (5-10°C), clear, moderate wind (gusts)
22nd February 2017	Dry, mild (5-10°C), clear, light wind
1st March 2017	Dry, mild (5-10°C), clear, moderate wind (gusts)
2nd March 2017	Dry, mild (5-10°C), clear, light wind
3rd March 2017	Steady rain, mild (5-10°C)

22.4.3.4 Survey limitations

46. The survey team covered all land to which landowner access permission was granted. Where access was not granted, in some locations the habitats were surveyed from public access routes. The total area surveyed equates to approximately 50% of the onshore project area. Therefore leaving a remainder of 50% of the survey area which could not be accessed during the field survey. For this area, the information obtained from the Norfolk Living Map project and the aerial surveys was used to assess the area and identify which Phase 2 surveys may be required, as outlined in section 22.4.2.2. However it should be noted that the remaining 50% which was not surveyed during the field survey effort will be surveyed during future seasons, when full landowner access is obtained.

47. Some habitats could not be fully accessed during the survey, due to physical barriers preventing entry, for example complex field drain network, or dense scrub. However these areas were encountered infrequently and where they were, they were recorded as potentially providing field signs which could not be picked up during the field survey.

48. The survey was conducted during February 2017 and early March 2017, which is outside of the optimal survey period for identifying ground flora species and hence habitat communities. Despite this, sufficient evidence was found during the survey to successfully identify habitat communities, and a number of early season plant species were able to be identified. In order to ensure that rare plant species which may be present during the summer period are not overlooked, where sensitive habitats were identified, further botanical surveys have been recommended in the summer months. In addition, an invasive non-native species survey is required during the summer months to ensure that any invasive non-native flora species have not been missed (although some species, including Japanese knotweed *Fallopia japonica*, were successfully identified despite not being in leaf during the survey).

49. Whilst the survey team made the utmost effort to cover every habitat and pick up all field signs present during the field survey, on occasion due to human error some field signs can be missed or overlooked. However despite this, the data presented in this report is considered to provide an accurate description of the habitats within the survey area.

22.5 Results

22.5.1 Desk Study

22.5.1.1 Statutory designated sites

50. There are 39 statutory designated sites for nature conservation within 2km of the project area. Two of these sites are either crossed by the project area, or lie directly adjacent to the project area. These are the River Wensum Special Area of Conservation (SAC)/Site of Special Scientific Interest (SSSI) and Pigney's Wood Local Nature Reserve (LNR). All statutory designated sites are shown on Figure 1, Annex A: Figures.

22.5.1.1.1 River Wensum SAC/SSSI

51. The River Wensum is designated an SAC by fulfilling the following criteria:

52. Annex I habitats that are a primary reason for selection of this site:

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation.

53. Annex II species that are a primary reason for selection of this site:

- White-clawed crayfish *Austropotamobius pallipes.*

54. Annex II species present as a qualifying feature, but not a primary reason for site selection:

- Desmoulin`s whorl snail;
- Brook lamprey *Lampetra planeri*; and
- Bullhead *Cottus gobio*.

55. The River Wensum is designated as a SSSI as it is one of a national series of rivers of special interest as an example of an enriched, calcareous lowland river, supporting a diverse range of flora and fauna within a relatively natural river corridor. It is known to support populations of white-clawed crayfish.

22.5.1.1.2 Pigney's Wood LNR

56. Pigney's Wood LNR comprises of a mixture of woodland and low lying wet grassland, supporting a wide variety of flora and fauna. Features of the LNR include reed beds, a scrape to attract migratory and wading birds alongside amenities and walks for visitors.

57. The remaining 37 statutory designated sites located outside of, but within 2km of, the project area, comprise the following sites:

- Breckland Farmland SPA/SSSI;
- Litcham Common LNR;
- River Nar SSSI;
- Holly Farm Meadow Wendling SSSI;
- Honeypot Wood Wendling SSSI;
- Norfolk Valley Fens SAC;
- Dillington Carr, Gressenhall SSSI;
- Horningtoft Wood SSSI;
- Foxley Wood NNR/SSSI;
- Beetley & Hoe Meadows SSSI;
- Dereham Rush Meadow SSSI;
- Potter & Scarning Fens, East Dereham SSSI;
- Badley Moor SSSI;
- Mattishall Moor SSSI;
- Rosie Curston's Meadow, Mattishall SSSI;
- Hockering Wood SSSI;
- Whitwell Common SSSI;
- Booton Common SSSI;
- Norfolk Valley Fans SAC;
- Alderford Common SSSI;

- Swannington Upgate Common SSSI;
- Buxton Heath SSSI;
- Cawston and Marsham Heaths SSSI;
- Gunton Park Lake SSSI;
- Southrepps Common SSSI;
- Felmingham Cutting LNR;
- Westwich Lakes SSSI;
- Knapton Cutting LNR;
- Norfolk Coast Area of Outstanding Natural Beauty (AONB);
- The Broads National Park;
- Broadland SAC/SPA/Ramsar;
- Broad Fen, Dilham SSSI;
- Broadland SPA/Ramsar;
- Calthorpe Broad SSSI;
- The Broads SAC;
- Happisburgh Cliffs SSSI;
- Paston Great Barn SAC/SSSI;
- Mudesley Cliffs SSSI; and
- East Ruston Common SSSI.

22.5.1.2 Non-statutory designated sites

58. There are 63 County Wildlife Sites (CWS) within 2km of the project area. Of these, 14 are located either directly adjacent to or lie within the project area. These are:

- Necton Wood (inside the onshore project substation search area);
- Great Wood (inside the onshore project substation search area);
- North Grove (adjacent to the onshore project substation search area);
- Wendling Carr (inside the onshore cable corridor);
- Little Wood (adjacent to the onshore cable corridor);
- Land south of Dillington Carr (inside the onshore cable corridor);
- Earthworks Field, Park Farm (adjacent to the onshore cable corridor);
- Pits near Mill street (adjacent to the onshore cable corridor);
- Marriott's Way (inside the onshore cable corridor);
- Salle Park (adjacent to indicative mobilisation zone near Cawston);
- Long Hollands Clumb & Belt (adjacent to the onshore cable corridor);
- Holley's Grove (adjacent to the onshore cable corridor);
- Vernon Wood (adjacent to the onshore cable corridor); and
- Paston Way & Knapton Cutting (inside the onshore cable corridor).

59. The remaining 49 CWS are located outside of the project area and these are:

- Fox Covert;
- Necton Old Common;
- Land adjacent to River Wissey;
- Gravel Pit;
- Church Farm Meadow;
- Land near Podmore Farm;
- Bakers Wood;
- Longham Road Meadow;
- Old Carr;
- Dentford Wood;
- Land west of Gressenhall Green;
- Pond by Dillington Carr;
- Eel's Foot;
- Pump House Woods;
- Beetley & Hoe Meadows;
- Hoe Common;
- Hoe Gravel Pit;
- Hoe Marsh;
- Woodgate Meadow;
- Lake opposite Fustyweed;
- Lakes near Lyng;
- Sparham Wood;
- Sparham House Grounds;
- Whitewell Hall;
- Land adjacent to Disused Railway;
- Reepham Meadows;
- Salle Common & adjacent land
- Newhall Wood;
- Blackbridge Wood;
- Warren House Lake;
- Marsh Plantation Lake;
- Cawston College Grounds;
- Abel Heath;
- Pond Wood;
- Blickling Hall;
- The Tollands;
- Lodge Farm Meadows;
- Weaver's Way;

- David Hood's Meadow;
- Meadow at Rugg's Hall;
- Totter's Hill;
- The Warren;
- Antingham Ponds;
- Spa Common;
- Crostwight Common;
- Crostwight Heath;
- Alder Carr;
- Dyball's Allotment; and
- Fox Hill Allotment & Common.

60. All non-statutory designated sites are shown on Figure 2, Annex A: Figures.

22.5.1.3 UK Habitats of Principal Importance

61. There are four UK Habitats of Principal Importance located within the project area: coastal and floodplain grazing marsh, lowland fen, deciduous woodland, maritime cliffs and slopes. All UK Habitats of Principal Importance are shown on Figure 3, Annex A: Figures.

22.5.1.4 Protected species

62. This section summarises the records of all legally protected species which have been obtained during the desk based assessment.

22.5.1.4.1 Birds

63. NBIS hold records of 240 notable or protected bird species within 2km of the project area, of which 39 are listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), and 46 are listed on the Birds of Conservation Concern 4 (BoCC4) 'Red List' of threatened species (approximately 70% of the species included on the Red List).

64. The following species are subject to Norfolk Species Action Plans: barn owl Tyto *alba*, bittern *Botaurus stellaris*, common ringed plover *Charadrius hiaticula*, corn bunting, grey partridge *Perdix perdix*, little tern, *Sternula albifrons*, nightjar *Caprimulgus europaeus*, reed bunting *Emberiza schoeniclus*, skylark *Alauda arvensis*, spotted flycatcher *Muscicapa striata*, stone curlew *Burhinus oedicnemus*, song thrush *Turdus philomelos*, swift *Apus apus*, tree sparrow *Passer montanus*, turtle dove *Streptopelia turtur*, woodlark *Lullula arborea*.

65. Natural England have also advised that sand martins are known to nest in the sandbanks along the coastline around Happisburgh, between approximately National Grid Reference (NGR) TG 38578 30891 to TG 39256 30316.

22.5.1.4.2 Badger

66. Records provided in relation to badgers are provided in the confidential annex, Annex B: Badger Results.

22.5.1.4.3 Bats

67. NBIS hold records of eight species of bat within 2km of the project area, namely Western barbastelle *Barbastella barbastellus*, serotine *Eptesicus serotinus*, Natterer's bat *Myotis nattereri*, lesser noctule *Nyctalus leisleri*, Nathusius's pipistrelle *Pipistrellus nathusii*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bat *Plecotus auritus*, found at various locations including Witton Bridge, Ridlington, Edingthorpe, Brick Kiln Farm, Bacton, Blickling: Silvergate Village, Edingthorpe and Edingthorpe Green.

68. The following bat species are subject to Norfolk Species Action Plans: barbastelle, brown long-eared, noctule, soprano pipistrelle.

22.5.1.4.4 Water vole

69. NBIS holds six records for water vole within 2km of the project area. These records are located within the North Walsham and Dilham Canal and within the Pigney's Wood LNR.

70. Water vole are subject to a Norfolk Species Action Plan.

22.5.1.4.5 Otter

71. NBIS holds two records for otter within 2km of the project area. These records are shown within the North Walsham and Dilham Canal and within the Pigney's Wood LNR.

72. Otter are subject to a Norfolk Species Action Plan.

22.5.1.4.6 Great crested newts

73. NBIS returned no records of great crested newts within the 2km of the project area.

74. Great crested newts are subject to a Norfolk Species Action Plan.

22.5.1.4.7 Reptiles

75. There are three records for common lizard *Zootoca vivipara* and grass snake *Natrix natrix* within 2km of the project area, located near Necton and Bickling.

22.5.1.4.8 White-clawed crayfish

76. NBIS holds no records for white-clawed crayfish within 2km of the project area.

77. Following consultation with the Environment Agency conducted as part of the Evidence Plan Process, watercourses known to support white-clawed crayfish within the survey area have been identified by the Environment Agency. The details of these watercourses have not been made available at the time of issue of this Extended Phase 1 Habitat Survey Report.

78. White-clawed crayfish are subject to a Norfolk Species Action Plan.

22.5.1.4.9 Invertebrates

79. NBIS holds records for 64 invertebrates within 2km of the project area, including notable bee, dragonfly, butterfly, moth, cricket and beetle species.

80. The following invertebrate species are subject to Norfolk Species Action Plans: silver-studded blue butterfly *Plebejus argus*, little-whirlpool ram's-horn snail *Anisus vorticulus*, depressed river mussel *Pseudanodonta complanata*, shining ram's-horn snail *Segmentina nitida*, narrow-mouth whorl snail *Vertigo angustior*, Desmoulin's whorl snail, a ground beetle *Ophonus laticollis*, brush-thighed seed-eater beetle *Harpalus froelichii*, flixweed flea beetle *Psylliodes sophiae* and the Norfolk hawker dragonfly *Anaciaeschna isosceles*.

22.5.1.4.10 Invasive non-native species

81. NBIS returned records of a number of different invasive non-native species.

82. Japanese knotweed has been recorded at three locations, including Drabblegate, Aylsham and Burnt Fen Cottages.

83. American mink *Neovison vison* have been recorded at five locations along the River Wensum.

84. Signal crayfish *Pacifastacus leniuscu*lus have been recorded at two locations at Park Farm on the River Wensum and on Booton watercourse.

22.5.1.4.11 Other species

85. NBIS returned no records of hazel dormice *Muscardinus avellanarius* within the 2km of the project area.

86. Brown hare *Lepus europaeus* are subject to a Norfolk Species Action Plan.

22.5.2 Field Survey

22.5.2.1 Habitats

87. The habitats recorded during the field survey are summarised in this section and shown in Figure 4, Annex A: Figures. The full details of the Target Notes (TN) are provided in Annex C: Target Notes. All plate references are provided in Annex G.

22.5.2.1.1 Overview summary

88. Table 22.4 shows the key habitats within the survey area noted during the field survey. The majority of land was for arable use, broken up by intact and defunct species-rich and poor hedgerows with standards, dense scrub and ruderal vegetation, and pockets of woodland (primarily broadleaved semi-natural, with very small areas of coniferous and plantation woodland). Several water bodies fall within the survey area: a mixture of ponds in woodland, fields, private residences or ditches within hedgerows.

Table 22.4 JNCC Phase 1 habitat areas (area in km^2) and boundaries (length in km) recorded during the field survey

JNCC Phase 1 Habitat Survey Code	JNCC Phase 1 Habitat Survey description	Area in km^2
A1.1.1	Woodland broadleaved semi-natural	0.17
A1.1.2	Woodland broadleaved plantation	0.46
A1.2.2	Woodland coniferous plantation	0.18
A1.3.1	Woodland mixed semi-natural	0.01
A1.3.2	Woodland mixed plantation	0.05
A2.1	Scrub dense/continuous	0.05
A2.2	Scrub scattered	0.01
A3.1	Parkland/scattered trees broadleaved	0.02
A3.3	Parkland/scattered trees mixed	0.01
B2.2	Neutral grassland semi-improved	0.01
B4	Improved grassland	0.26

JNCC Phase 1 Habitat Survey Code	JNCC Phase 1 Habitat Survey description	Area in km^2
B5	Marsh/marshly grassland	0.31
B6	Poor semi-improved grassland	0.52
C3.1	Tall ruderal	0.01
G	Open water	0.05
H1.1	Intertidal mud/sand	0.15
H6.5	Dune grassland	0.02
H8.4	Coastal grassland	0.01
J1.1	Arable	18.68
J1.2	Amenity grassland	0.03
J3.5	Sea wall	0.01
J3.6	Buildings	0.01
J4	Bare ground	0.08
J5	Other habitat	0.02

JNCC Phase 1 Habitat Survey Code	JNCC Phase 1 Habitat Survey description	Length in km
J2.1.1	Hedge intact species-rich	5.62
J2.1.2	Hedge intact species-poor	19.01
J2.2.1	Hedge defunct species-rich	3.16
J2.2.2	Hedge defunct species-poor	5.59
J2.3.1	Hedge with trees species-rich	28.24
J2.3.2	Hedge with trees species-poor	19.96
J2.4	Fence	1.08
J2.6	Dry ditch	2.98
J2.7	Boundary removed	2.23

22.5.2.1.2 Arable land

89. The largest habitat by area within the survey area is arable land (JNCC Phase 1 Habitat code J1.1). Due to the time of year, crops were typical winter cover or ploughed field.

22.5.2.1.3 Boundary features

90. Field boundaries consisted primarily of hedgerows (310 of 341 boundary features recorded), of which the majority (89) are species-rich intact hedgerows with trees (J2.3.1). However intact hedgerows without trees (22), species-poor hedgerows (with trees 78, without trees 77), and defunct hedgerows (species-rich 16, species poor 26) are all common. Occasionally fields were bordered by fences (J2.4) or dry ditches (J2.6). Species-rich hedgerows (J2.1.1, J2.2.1, J2.3.1) typically consisted of shrub and tree species including field maple *Acer campestre*, elm *Ulmus procera*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, rose *Rosa canina*, hazel *Corylus avellana*, English oak *Quercus robur*, holly *Ilex spp*., ash *Fraxinus excelsior*, ivy *Hedera spp*., with ground flora typically including common nettle *Urtica dioica*, cleavers *Galium aparine,* broad-leaved dock *Rumex obtusifolius*, herb Robert *Geranium robertianum*, dog's mercury *Mercurialis perennis*, lords and ladies *Arum maculatum*, red dead nettle *Lamium purpureum*. Species-poor hedgerows (J2.1.2, J2.2.2, J2.3.2) were characterised by fewer than five species in a 30m stretch, and typically were dominated by hawthorn.

22.5.2.1.4 Semi-natural woodland

91. The survey area contained 45 small, isolated pockets of semi-natural woodland (A1.1.1), mostly around field margins. The largest is 'The Rookery' on the left-hand bank of the River Bure, approximately 2ha within the survey area.

92. Typical semi-natural woodland composition recorded was common oak and ash woodland, with alder *Alnus glutinosa* and goat willow *Salix caprea* with an understorey dominated by hazel, hawthorn and elder *Sambucus nigra*. Ground flora typically comprised of dog's mercury, nettle dominated, lords and ladies, wood avens *Geum urbanum*, ground ivy *Glechoma hederacea*.

93. Mixed semi-natural woodland present within the survey area (A1.3.1) typically consisted of: beech *Fagus sylvatica*, ash, English oak, sweet chestnut *Castanea sativa,* larch *Larix decidua*, cherry laurel *Prunus laurocerasus*.

22.5.2.1.5 Plantation woodland

94. Broadleaved, coniferous or mixed plantation (A1.1.2, A1.2.2, A1.3.2) woodland was noted in 40 locations noted during the field survey. The areas of broadleaved

plantation consisted of monocultures of hybrid poplar *Populus x Canadensis*, crack willow *Salix fragilis* or a species mix including English oak, ash, cherry *Prunus padus*, silver birch *Betula pendula*, sycamore *Acer pseudoplatanus*. Coniferous plantations recorded were Scot's pine *Pinus sylvestris*, larch or Norway spruce *Picea abies* monocultures. Mixed plantations woodlands recorded comprised a species mix, including both of these species compositions detailed above.

22.5.2.1.6 Parkland

95. Small areas within the survey area were classified as parkland, typically where oak standards in hedgelines had become overgrown and remained after the hedgeline had been removed. Two areas of typical parkland habitat – mature oak trees with grazing beneath – were recorded within the survey area.

22.5.2.1.7 Isolated trees

96. Within hedgerows with trees or along field boundaries, many isolated trees were identified and assessed for their bat roost potential.

97. Two veteran trees (one English oak, one alder) were noted during the field survey at TN168 and TN288.

22.5.2.1.8 Scrub

98. A total of 40 areas of scrub or transitional habitats were present within the survey area. The areas where scrub was recorded represented a range of habitat sub-types, including transitional habitat between woodland and grassland, boundary features, waste ground, watercourse margins or field margins. Species composition varied, with elder and crack willow common in wood scrub and bramble dominating where no woody species were present.

22.5.2.1.9 Grassland

22.5.2.1.10 Improved grassland

99. Improved grassland subject to regular grazing was the most common grassland type found within the survey area. This habitat type was recorded in 19 separate locations within the survey area. Typically the sward was short and grazed, and of low diversity, dominated by cock's foot *Dactylus glomerata* and perennial rye-grass *Lolium perenne* with broad-leaved dock *Rumex acetosa*, sorrel *Rumex acetosa*, and patches of nettle *Urtica diotica*, ragwort *Senecio jacobaea* and thistle species *Cirsiurn sp*.

22.5.2.1.11 Unimproved and Semi-improved neutral grassland

100. Semi-improved grassland was recorded in 27 separate locations within the survey area. Most areas of semi-improved grassland located within the survey area comprise coarse, ruderal grass species and ruderal herbs. Cock's foot, rough meadow grass *Poa trivialis*, meadow foxtail *Alopecurus pratensis*, ribwort plantain *Plantago lanceolata*, creeping buttercup *Ranunculus repens*, white clover *Trifolium repens* and red dead-nettle *Lamium purpureum* are common in these habitats. No species-rich grasslands were noted within the survey area.

22.5.2.1.12 Marshy grassland

101. A total of 14 areas of marshy grassland were recorded adjacent to watercourses at the River Wensum, River Bure, Dilham Canal and the Wendling Beck (a tributary of the River Wensum) within the survey area. Patches of common rush *Juncus effuses* in the wet areas are typical, with pendulous sedge *Carex pendula*, common vetch *Agrostis capillaris*, common bent, cranesbill *Geranium pratense*. A single area of wet woodland is located within the survey area adjacent to marshy grassland habitat at Dillington.

22.5.2.1.13 Tall ruderal

102. Five areas of tall ruderal habitat were recorded within the survey area, typically along roads or track boundaries, or adjacent to scrub land. The typical species recorded include common nettle *Urtica diotica*, common hogweed *Heracleum sphondylium*, broad-leaved dock, ribwort plantain *Plantago lanceolata*.

22.5.2.1.14 Standing water

103. In total, 420 water bodies are located within 250m of the proposed temporary infrastructure and 500m of the permanent infrastructure. Of these, 208 water bodies were accessed during the field survey. A summary of the water bodies surveyed can be found in Annex F: Full HSI Results. The remaining 212 water bodies identified within 250m of the proposed temporary infrastructure and 500m of the permanent infrastructure were not surveyed due to access restrictions.

22.5.2.1.15 Coastland

104. Three coastland habitat types, intertidal mud/sand (H1.1), dune grassland (H6.5) and coastal grassland (H8.4) were recorded within the landfalls search areas within the survey area in narrow linear strips along the coastline.

22.5.2.1.16 Buildings

105. Several built up areas were noted within the survey area. These areas consisted of residential villages, towns, and farms. All buildings were assessed for their suitability to support roosting bats, the results of which are provided in section 22.5.2.

22.5.2.1.17 Living Map habitats

106. A review of the Living Map dataset identified 23 habitats located within the survey area.

107. Table 22.5 summarises the habitats identified using the Livings Map dataset.

Table 22.5 Living Map habitat areas located with the survey area

Living Maps habitat type	Area in km^2
Arable	31.71
Beach	0.08
Bracken	0.01
Coastal floodplain grazing marsh (high productivity)	0.02
Coastal floodplain grazing marsh (medium productivity)	0.11
Coastal sand dunes	0.01
Coastal sediment	0.06
Coniferous plantation	0.02
Dune grassland	0.00
Gardens	0.32
Hedgerow or field margin	0.43
Improved grassland	0.86
Lowland heathland	0.00
Lowland mixed deciduous woodland	0.95
Maritime cliff and slopes	0.01
Scrub	0.12
Semi-improved (poor condition)	0.33
Semi-improved (scrub)	0.29

Living Maps habitat type	Area in km^2
Semi-improved grassland	0.30
Semi-improved grassland (wet)	0.00
Urban	1.01
Waterbodies	0.67
Woodland rides	0.00

22.5.2.2 Protected species potential

22.5.2.2.1 Birds

108. Wader species were observed at five locations within the survey area. Species observed included snipe *Gallinago gallinago*, common sandpiper *Actitis hypoleucos* and woodcock *Scolopax rusticola*, of which the latter is a BoCC4 Red List species. Woodcock was observed within hedgerows at TN313 and TN394, while snipe and common sandpiper were observed in wet grassland habitat at TN148, TN205 and TN233.

109. BoCC4 Red List species skylark, starling *Sturnus vulgaris* and lapwing *Vanellus vanellus* were observed during the field survey. Skylarks were observed in songflight over arable fields in 13 locations within the survey area. Murmurations of starling were observed in and around the survey area and a flock (approximately 200 in number) of lapwing were observed loafing in an arable field at TN166.

110. Woodpecker were heard drilling in two locations within the survey area, and woodpecker holes were observed in a further five locations. No individuals were observed in order to confirm which woodpecker species. Lesser spotted woodpecker *Dendrocopos minor* is a BoCC4 Red List species. Two owl nests were also observed at TN326 and TN329, although the species was not confirmed, they are likely to be barn owl (a species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

111. A number of other common bird species birds were also observed during the ecological walkover including egret *Egretta garzetta*, goldfinch *Carduelis carduelis*, cormorant *Phalacrocorax carbo*, robin *Erithacus rubecula*, chaffinch *Fringilla coelebs*, siskin *Spinus spinus*, long tailed tit *Aegithalos caudatus*, blue tit *Cyanistes caeruleus*, great tit *Parus major*, blackbird *Turdus merula*, bullfinch *Pyrrhula pyrrhula*, wren *Troglodytes troglodytes*, woodpidgeon *Columba palumbus*, rook *Corvus frugilegus*, buzzard *Buteo buteo*, herring gull *Larus argentatus*, kestrel *Falco tinnunculus*,

Egyptian goose *Alopochen aegyptiaca*, goldcrest *Regulus regulus*, tree creeper *Certhia familiaris*, tawny owl *Strix aluco*.

112. All hedgerow, parkland, isolated trees and woodland (all types) habitats were identified as potentially providing suitable nesting habitat for common species nesting birds. The wet grassland observed adjacent to the River Bure, River Wensum and Dilham Canal may provide suitable breeding habitat for wader species including snipe. Arable fields provide habitat for breeding skylark.

113. A review of the Living Map dataset identified 31 additional locations which may support nesting or foraging birds within areas which were not accessible during the 2017 field survey. Of these, 30 locations were identified as providing potential nesting habitat for common bird species, and one was identified as potentially providing suitable habitat for waders and wildfowl (coastal flooding plain grazing marsh on the left-hand bank of the River Wensum). These are shown on Figure 4, Annex A: Figures.

Table 22.6 Potential bird nesting / foraging locations identified using Living Map data

Reference Number	Location	Habitat type	Habitat function
1	Hedgerows around Top Farm, Necton	Hedgerow	Nesting
2	Mixed woodland north of Gatehouse Farm	Mixed woodland	Nesting
3	Mixed woodland south of Old Brigg	Mixed woodland	Nesting
4	Scrub east of Woodgate	Scrub	Nesting
5	Hedgerow east of Woodgate	Hedgerow	Nesting
6	Hedgerow east of Woodgate	Hedgerow	Nesting
7	Hedgerow east of Woodgate	Hedgerow	Nesting
8	Coastal flooding plain grazing marsh in River Wensum floodplain	Coastal flooding plain grazing marsh	Nesting / foraging
9	Mixed woodland at The Grove, west of Reepham	Mixed woodland	Nesting
10	Vegetation along Marriott Way	Hedgerow	Nesting
11	Hedgerow east of Silvergate, west of Aylsham	Hedgerow	Nesting
12	Hedgerow at Blickling Road, north of Aylsham	Hedgerow	Nesting
13	Hedgerow east of Cromer Road, north of Aylsham	Hedgerow	Nesting
14	Mixed woodland at Vernon Wood, Suffield	Mixed woodland	Nesting

Reference Number	Location	Habitat type	Habitat function
15	Mixed woodland south of Brick Kiln lane, Suffield	Mixed woodland	Nesting
16	Hedgerow at Cooke's Bottoms, Suffield	Hedgerow	Nesting
17	Hedgerow west of Cromer Road (A149)	Hedgerow	Nesting
18	Vegetation along Cromer Road (A149)	Hedgerow	Nesting
19	Vegetation along railway line north of North Walsham	Hedgerow	Nesting
20	Mixed woodland north of Lyngate Road	Mixed woodland	Nesting
21	Hedgerow at The Street, Swafield	Hedgerow	Nesting
22	Hedgerow at Little London Road, Swafield	Hedgerow	Nesting
23	Hedgerow network west of School Lane, Edingthorpe	Hedgerow	Nesting
24	Scrub north of Rectory Road, Edingthorpe	Scrub	Nesting
25	Hedgerow south of Lowlands Farmhouse, Bacton	Hedgerow	Nesting
26	Hedgerow network north of North Walsham Lane, Pollard Street	Hedgerow	Nesting
27	Hedgerow network south of Edingthorpe Green	Hedgerow	Nesting
28	Hedgerow network west of Edingthorpe Green	Hedgerow	Nesting
29	Hedgerow on north North Walsham Road, south of Ridlington	Hedgerow	Nesting
30	Hedgerow south of North Walsham Road, south of Ridlington	Hedgerow	Nesting
31	Hedgerow and mixed woodland north of Ridlington Street	Mixed woodland / Hedgerow	Nesting

22.5.2.2.2 Badger

114. Field survey results in relation to badgers are provided in the confidential annex, Annex B: Badger Results.

22.5.2.2.3 Bats

115. All trees and structures noted during the field survey were assessed for their suitability to support roosting bats. In total, 358 features were assessed for their suitability to support roosting bats. Of these, 300 were assessed as providing low

suitability for roosting bats, 52 as having moderate suitability and 1 as having high suitability. Full details of each feature and their assessments are provided in Annex D: Full Bat Roost Assessment Results. Plates of each tree and structure are provided in Annex G: Plates.

116. In addition to trees and structures, all linear features (e.g. watercourses, hedgerows) were categorised in terms of their suitability to support commuting or foraging bats. This categorisation was based on the habitat type, qualified by how well connected to surrounding habitat the habitat feature was. The categorisation used was as follows:

- Defunct hedgerows and field drains typically provided low suitability for commuting and foraging bats.
- Intact species rich hedgerows, areas of scrub and small watercourses typically provided moderate suitability for commuting and foraging bats.
- Species-rich hedgerows with trees and large watercourses well connected to the wider landscape typically provided moderate suitability for commuting and foraging bats.

117. In total, 266 features were assessed for their suitability to support commuting or foraging bats. Of these, 99 were assessed as providing low suitability to support commuting or foraging bats, 78 moderate suitability and 89 high suitability. These commuting and foraging features are shown on Figure 4, Annex A: Figures.

118. A review of the Living Map dataset has identified 37 additional locations which may support roosting bats or commuting or foraging bats located in land which was not accessible during the field survey. Of these, eight locations were identified as potentially providing roosting habitat for bats due to the presence of trees or structures, and 31 were identified as potentially providing suitable habitat for commuting or foraging bats due to the presence of intact hedgerows, watercourses, scrub, and other linear features. These are shown on Figure 4, Annex A: Figures.

Table 22.7 Potential bat roosting / commuting or foraging locations identified using Living Map data

Reference Number	Location	Habitat type	Habitat function
1	Hedgerows around Top Farm, Necton	Hedgerow	Commuting / foraging
2	Mixed woodland north of Gatehouse Farm	Mixed woodland	Roosting
3	Watercourse north of Gatehouse Farm (A47)	Watercourse	Commuting / foraging
4	Hedgerow east of White House Farm	Hedgerow	Commuting / foraging

Reference Number	Location	Habitat type	Habitat function
5	Mixed woodland south of Old Brigg	Mixed woodland	Roosting
6	Watercourse south-east of Old Brigg	Watercourse	Commuting / foraging
7	Hedgerow east of Woodgate	Hedgerow	Commuting / foraging
8	Hedgerow east of Woodgate	Hedgerow	Commuting / foraging
9	Hedgerow east of Woodgate	Hedgerow	Commuting / foraging
10	Mixed woodland at The Grove, west of Reepham	Mixed woodland	Roosting
11	Vegetation along Marriott Way	Hedgerow	Commuting / foraging
12	Field drain network east of Kerdiston Road, Reepham	Watercourse	Commuting / foraging
13	Field drain network at Silvergate, west of Aylsham	Watercourse	Commuting / foraging
14	Hedgerow east of Silvergate, west of Aylsham	Hedgerow	Commuting / foraging
15	Hedgerow at Blickling Road, north of Aylsham	Hedgerow	Commuting / foraging
16	Hedgerow east of Cromer Road, north of Aylsham	Hedgerow	Commuting / foraging
17	Field drain network in floodplain west of R Bure	Watercourse	Commuting / foraging
18	Field drain at east of Suffield Beck at Colby Corner	Watercourse	Commuting / foraging
19	Mixed woodland at Vernon Wood, Suffield	Mixed woodland	Roosting
20	Mixed woodland south of Brick Kiln lane, Suffield	Mixed woodland	Roosting
21	Hedgerow at Cooke's Bottoms, Suffield	Hedgerow	Commuting / foraging
22	Hedgerow west of Cromer Road (A149)	Hedgerow	Commuting / foraging
23	Vegetation along Cromer Road (A149)	Hedgerow	Commuting / foraging
24	Vegetation along railway line north of North Walsham	Hedgerow	Commuting / foraging
25	Field drain north of Lyngate Road	Watercourse	Commuting / foraging

Reference Number	Location	Habitat type	Habitat function
26	Mixed woodland north of Lyngate Road	Mixed woodland	Roosting, Commuting / foraging
27	Hedgerow at The Street, Swafield	Hedgerow	Commuting / foraging
28	Hedgerow at Little London Road, Swafield	Hedgerow	Commuting / foraging
29	Hedgerow network west of School Lane, Edingthorpe	Hedgerow	Commuting / foraging
30	Scrub north of Rectory Road, Edingthorpe	Scrub	Roosting
31	Hedgerow south of Lowlands Farmhouse, Bacton	Hedgerow	Commuting / foraging
32	Hedgerow network north of North Walsham Lane, Pollard Street	Hedgerow	Commuting / foraging
33	Hedgerow network south of Edingthorpe Green	Hedgerow	Commuting / foraging
34	Hedgerow network west of Edingthorpe Green	Hedgerow	Commuting / foraging
35	Hedgerow on north North Walsham Road, south of Ridlington	Hedgerow	Commuting / foraging
36	Hedgerow south of North Walsham Road, south of Ridlington	Hedgerow	Commuting / foraging
37	Hedgerow, mixed woodland and field drain network north of Ridlington Street	Mixed woodland / Hedgerow / watercourse	Roosting, Commuting / foraging

22.5.2.2.4 Water vole

119. During the field survey, 38 watercourses were assessed for their suitability to support water voles. Of these, 31 were assessed as being of optimal habitat and the remaining seven were assessed as being sub-optimal. Those assessed as sub-optimal was primarily due to the water course having very little bank for burrowing, very poor water quality observed, very shallow banks, low flows, evidence of regular channel maintenance or isolation from any connecting habitat. Full details of the watercourse assessment are shown in Annex E: Full Watercourse Assessment Results. The locations of these watercourses can be seen on Figure 4, Annex A: Figures and plates of these waterbodies are shown in Annex G: Plates.

120. No water vole field signs were observed during the 2017 field survey, although the field survey was undertaken outside of the active season. No field signs of invasive non-native American mink, a key predator of water vole, were observed in any location.

121. A review of the Living Map dataset has identified 10 additional watercourses which may support water voles located in land which was not accessible during the field survey. These are shown on Figure 4, Annex A: Figures.

Table 22.8 Potential water vole habitats identified using Living Map data

Reference Number	Location	Habitat type	Habitat function	Notes
1	Watercourse north of Gatehouse Farm (A47)	Watercourse	Burrows and holts	Tributary of the River Wensum
2	Watercourse south-east of Old Brigg	Watercourse	Burrows and holts	Tributary of the River Wensum
3	Field drain at The Grove, west of Reepham	Field drain	Burrows	
4	Field drain west of Kerdiston Road, Reepham	Field drain	Burrows	
5	Field drain network east of Kerdiston Road, Reepham	Field drain	Burrows	
6	Field drain network at Silvergate, west of Aylsham	Field drain	Burrows	
7	Field drain network in floodplain west of R Bure	Field drain	Burrows and holts	R Bure
8	Field drain at east of Suffield Beck at Colby Corner	Field drain	Burrows	
9	Field drain north of Lyngate Road	Field drain	Burrows	Connected to Dilham Canal
10	Field drain network north of Ridlington Street	Field drain	Burrows	Connected to Hundred Stream

22.5.2.2.5 Otter

122. Of the 38 watercourses assessed for their suitability to support water voles, 12 were also suitable for commuting and foraging otter as they were running watercourses of sufficient depth and size, functionally connected to the local river network. Suitable otter resting habitat was also observed in the woodland on the left hand bank of the

River Bure, within the survey area (TN283). Potential otter resting sites were also noted at TN12 and TN254.

123. No otter field signs were observed during the field survey.

124. A review of the Living Map dataset has identified three additional watercourses which may support otter located in land which was not accessible during the field survey. These are shown on Figure 4, Annex A: Figures.

Table 22.9 Potential otter habitats identified using Living Map data

Reference Number	Location	Habitat type	Habitat function	Notes
1	Watercourse north of Gatehouse Farm (A47)	Watercourse	Burrows and holts	Tributary of the River Wensum
2	Watercourse south-east of Old Brigg	Watercourse	Burrows and holts	Tributary of the River Wensum
3	Field drain network in floodplain west of R Bure	Watercourse	Burrows and holts	R Bure

22.5.2.2.6 Great crested newts

125. During the field survey, a total of 208 standing water bodies were subject to HSI to determine their habitat suitability. Of these, 25 were no longer present, are now part of another pond or dry at the time of the survey. In these instances, these water bodies were discounted. The remaining 183 were subject to HSI assessment. The results of which are summarised in Table 22.10. Full details of these water bodies are provided in Annex F: Full HSI Results. The locations of these water bodies are shown on Figure 4, Annex A: Figures; plates of these waterbodies are shown in Annex G: Plates.

Table 22.10 Habitat Suitability Index summary table

Habitat suitability index score	Habitat Suitability	No. of standing water bodies
<0.5	Poor	47
0.5 – 0.59	Below average	59
0.6 – 0.69	Average	36
0.7 – 0.79	Good	25
> 0.8	Excellent	16

126. Suitable terrestrial habitat for supporting foraging and hibernating great crested newts was observed throughout the survey area. Part of the habitat suitability assessment includes an assessment of the habitat surrounding a potential breeding ponds for it suitability to support foraging and hibernating newts.

22.5.2.2.7 Reptiles

127. During the field survey, 16 suitable habitat mosaics were identified as potentially being suitable to support common species of reptiles. These are located at TN117, TN140, TN141, TN163, TN173, TN196, TN199, TN204, TN224, TN231, TN277, TN289, TN315, TN358, TN374 and TN399. The location of these habitat mosaics are shown on Figure 4, Annex A: Figures; plates can be found in Annex G: Plates. These mosaics contain a range of habitats, including wet and tussocky grassland with long sward, watercourses, debris piles and leaf litter, woodland edges and scrub.

128. A review of the Living Map dataset has identified six additional habitat areas which may support common reptiles located in land which was not accessible during the field survey. These were identified due to the presence of a mosaic of woodland, semi-improved grassland, watercourses and heathland habitat. These are shown on Figure 4, Annex A: Figures.

Table 22.11 Potential reptile habitat area identified using Living Map data

Reference Number	Location	Habitat type	Habitat function
1	Scrub east of Woodgate	Scrub	Scrub, with potential ecotone. Needs to be surveyed to assess whether habitat is suitable to support reptiles.
2	Coastal floodplain grazing marsh in River Wensum floodplain	Coastal flooding plain grazing marsh	Good mosaic with River, ditches, tussocky grassland and woodland.
3	Field drain network at Silvergate, west of Aylsham	Watercourse	Good mosaic with semi-improved grassland, watercourses, nearby heathland and woodland
4	Grassland area east of Suffield Beck, at Colby Corner	Semi-improved grassland	Good mosaic with semi-improved grassland, watercourses, nearby woodland. NB: this area is covered by the habitat mosaic for the reptile habitat at Colby corner woodland (field survey).
5	Mixed woodland north of Lyngate Road	Mixed woodland	Good mosaic of woodland, near to watercourses and unimproved grassland. This habitat is likely on the edge of any reptile territory (superior

Reference Number	Location	Habitat type	Habitat function
			habitat to the north, along the canal).
6	Grassland and mixed woodland north of Ridlington Street	Mixed woodland / Hedgerow / watercourse	Good mosaic of grassland, woodland, watercourses.

22.5.2.2.8 White-clawed crayfish

129. Suitable habitat to support white-clawed crayfish was identified at the River Wensum and River Bure during the field survey. These watercourses supported a diverse bed structure and provided deep, fast-flowing water.

22.5.2.2.9 Invertebrates

130. No particular habitats were noted for their potential to support legally protected or notable invertebrates during the field survey.

22.5.2.2.10 Invasive non-native species

131. One established patch of Japanese knotweed, approximately 30m^2 in area, was identified within the survey area at TN291. A potential stand of giant hogweed *Heracleum mantegazzianum* was recorded at TN29.

132. The survey was conducted outside the optimum season for identifying other invasive flora species, there they may have been present and not picked up during the field survey.

22.6 Recommendations

133. Section 22.5 identified those habitats which have the potential to support legally protected or notable species, and also sightings / field signs for selected legally protected species. In light of these findings, in order to characterise the ecological baseline for the survey area, further Phase 2 surveys are recommended for selected legally protected or notable species. The remainder of this section identifies these Phase 2 surveys and sets out the scope and methodology to be adhered to during these surveys.

22.6.1 Species-specific Phase 2 Surveys

22.6.1.1 Breeding bird surveys

134. Section 22.5 identifies those statutory designated sites for nature conservation within 2km of the onshore electrical infrastructure search area. Of these, three SSSI

located within a precautionary 1km disturbance buffer of the project area are notified for the breeding bird assemblage they support. These sites are:

- Booton Common;
- Dillington Carr; and
- Dereham Rush Meadows.

135. A CWS associated with Dillington Carr, Land South of Dillington Carr, extends into the project area.

136. In addition, there are no notified breeding birds associated with the River Wensum SSSI, however the Wensum valley is known to support a range of breeding birds along the habitats adjacent to the River. Coastal floodplain grazing marsh habitat has been identified along the habitats adjacent to the river within the survey area.

137. One LNR which includes suitable habitats for breeding birds, Pigney's Wood, is located within the project area.

138. Breeding bird surveys of the habitat areas identified above will be undertaken. This includes surveys of the statutory and non-statutory designated sites listed above, and the coastal floodplain grazing marsh adjacent to the River Wensum.

139. A single transect is required to survey each habitat / site. The transect will run from one boundary of the habitat / site to the opposite boundary, as far as possible through the centre of the habitat / site. The exact location of the transect will be determined by the survey team on site during the first transect survey.

140. The transect survey will be conducted following the Methodology in Bibby et al. (2000) and Gregory, Gibbons and Donald (2004). All birds observed or heard whilst walking the transect are to be recorded following the established British Trust for Ornithology (BTO) hierarchical coding scheme (Crick, 1992). This includes all other species, not only snipe. Distance and direction of species from the transect when first detected will also be recorded. Birds that are seen flying over the survey area (aerial species) are recorded separately. Individual birds should not be double-counted. The exact location of the transects will be determined by the survey team on site during the first transect survey.

141. This survey will be conducted once a month from April to August inclusive to provide a good degree of coverage over the breeding period (SNH, 2014). Exacts dates for the survey should be determined based on the prevailing weather conditions and on landowner access restrictions. Surveys should not take place in heavy rain, poor visibility or strong wind. This survey should be undertaken during daylight hours.

22.6.1.2 Bat roost emergence / re-entry surveys

142. Section 22.5 identified trees and structures with the potential to support bat roosts within the survey area. Following the BCT's Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.) (2016), all trees and structures assessed as providing moderate or high suitability to support roosting bats would require additional surveys (i.e. emergence / re-entry surveys) in order to confirm the likely presence and/or absence of a bat roost.

143. The 2017 survey identified a total of 53 separate features as being within this category. The locations of these potential roosts are shown on Figure 4, Annex A: Figures.

144. The emergence / re-entry surveys would be undertaken in accordance with the methodology outlined in the BCT's Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.) (2016). For each tree/structure, two survey visits (i.e. one dusk emergence survey and one dawn re-entry survey) would be required. Each dusk emergence survey will commence 15 minutes before sunset, and cease 1.5-2 hours after sunset; whereas the dawn re-entry survey will commence 1.5-2 hours before sunrise, and cease 15 minutes after sunrise. The surveys will be at least two weeks apart, and will be undertaken between May and September with one survey visit between May and August.

145. Bat detectors (any type) and recording equipment to record any echolocation calls will be used for each survey. Laboratory sound-analysis will be used to identify the calls of any bat species picked up using the bat detectors. Species, timing, and activity will be noted for each bat picked up during the survey.

146. Weather conditions including temperature, wind speed and precipitation, will be recorded at the start and end of each survey visit. Surveys will not be carried out when the temperature is below 10°C at sunset, or during heavy rain or strong wind unless justified by the surveying ecologist.

147. All surveyors will hold BCT Professional Training Standard Level One, as set out in the BCT's Professional Training Standards for Ecological Consultants (2012). All surveyors will also adhere to the CIEEM's Professional Code of Conduct.

148. Analysis of the Norfolk Living Map also identified a further eight habitat areas which may contain trees or structures suitable to support roosting bats and which were inaccessible during the 2017 field survey. If access to these habitat areas is granted during the bat activity survey period (April to October inclusive), these areas will be visited to assess the suitability of any trees or structures for roosting bats. If they are assessed as providing moderate or high suitability, bat emergence / re-entry surveys,

following the protocol set out above will be undertaken. These areas are shown on Figure 4, Annex A: Figures.

149. All trees and structures classified as potentially providing low suitability to support roosting bats will still be considered as potentially supporting opportunistic roosts in the future, but further surveys are not necessary to confirm presence or absence, following the guidelines set out by the BCT in Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.) (2016).

22.6.1.3 Bat activity surveys

150. Section 22.5 identified linear habitats (hedgerows and watercourses) with the potential to support commuting and foraging bats within the survey area. Following the BCT's Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.) (2016), all habitats assessed as providing moderate or high suitability to support roosting bats will require further bat activity surveys in order to confirm whether or not they are used by foraging and/or commuting bats, and which species and in what numbers. Particular attention will be paid to the linear features within 10km of Paston Great Barn, a SAC designated for its barbastelle roost.

151. The bat activity surveys will be undertaken in accordance with the Bat Conservation Trust (BCT)'s Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.) (2016). For all habitats scoped into the assessment, bat activity transect surveys and static detector surveys will be undertaken. Transect surveys will involve walking at a constant speed along each linear bat habitat (or the one edge of the two-dimensional bat habitat) recording observations such as number of bats, flight direction, flight height, behaviour, appearance and relative speed. Static detector surveys will involve placement of a static detector at locations identified as suitable through judgement of the surveying ecologist whilst on site. Data from these surveys will be recorded and subject to laboratory sound-analysis to identify species and pass numbers following the survey. Each habitat scoped into the survey assessed as providing moderate suitability for commuting or foraging bats will be subject to one transect survey visit per month from April to October (eight visits), including one dusk and pre-dawn survey within a 24-hour period, AND static bat detector surveys at two locations within each habitat collected on five consecutive nights per month. Each habitat scoped into the survey assessed as providing high suitability for commuting or foraging bats will be subject to two survey visit per month from April to October (16 visits), including one dusk and pre-dawn survey within a 24-hour period, AND static bat detector surveys at three locations within each habitat collected on five consecutive nights per month. The transect surveys will commence at sunset, and cease 2-3 hours after sunset; static detector surveys will commence 30 minutes before sunset, and cease 15 minutes after sunrise.

152. The surveyors will use bat detectors (any type) and recording equipment to record any echolocation calls picked up during the survey. The same model of detector should be used for all surveys. Laboratory sound-analysis will be used to identify the calls of any bat species picked up using the bat detectors.

153. Weather conditions including temperature, wind speed and precipitation, should be recorded for at the start and end of each survey visit. Surveys should not be carried out when the temperature is below 10°C at sunset, or during heavy rain or strong wind, unless justified by the surveying ecologist.

154. All surveyors will hold BCT Professional Training Standard Level One, as set out in the BCT's Professional Training Standards for Ecological Consultants (2012). All surveyors will also adhere to the CIEEM's Professional Code of Conduct.

155. Analysis of the Norfolk Living Map also identified a further 31 features which may be suitable to support commuting or foraging bats located within land which was not accessible during the field survey. If access to these features is granted during the bat activity survey period, these features will be visited to assess their suitability to support commuting or foraging bats, and if found to provide moderate or high suitability, a bat activity survey following the protocol set out above will be undertaken. The location of these can be seen on Figure 4, Annex A: Figures.

156. All habitats classified as potentially providing low suitability to support roosting bats will not be subject to further survey given the data collection programme proposed for those features of moderate or greater suitability. All features providing low suitability will be considered as potentially providing commuting or foraging routes for small numbers of common bat species.

22.6.1.4 Water vole surveys

157. 31 watercourses with the potential to support water vole within the survey area were identified during the Extended Phase 1 Habitat Survey. These included all watercourses except those assessed as sub-optimal with artificial banks, strong evidence of pollution, those which no longer support running water in any season, or field signs of mink observed during the survey (Strachan, Moorhouse and Gelling, 2011). All watercourses assessed as optimal will be subject to water vole activity surveys in order to confirm whether or not water vole are present. Particular attention will be paid to Dilham Canal, where water vole have been recorded previously.

158. The water vole surveys will follow the protocol for Environmental Assessment Surveys set out in the Water Vole Conservation Handbook (3rd Ed.) (Strachan, Moorhouse and Gelling, 2011). Surveys will be conducted on one bank for the full

length of each optimal watercourse within the survey area (i.e. within the project area, plus 50m upstream and 50m downstream). Each watercourse will be assessed in 100m sections. Each 100m section will be walked by an ecologist, and all field signs of water vole will be recorded. This will include sightings, burrows, latrines, feeding stations, lawns, nests, footprints and runways. The field sign and its location will be recorded. The survey will involve one visit during mid-April – June.

159. Habitat information has already been recorded for these watercourses during the field survey, and this data can be referred to during the survey. Weather conditions will be recorded during the survey.

160. Analysis of the Norfolk Living Map also identified a further 10 watercourses which may be suitable to support water voles located within land which was not accessible during the field survey. If access to these features is granted during the water vole survey period, these watercourses will be visited to assess their suitability to water vole, and if found to provide optimal suitability, a water vole survey following the protocol set out above will be undertaken. The location of these can be seen on Figure 4, Annex A: Figures.

22.6.1.5 Otter surveys

161. Section 22.5 identified 12 watercourses with the potential to support otter within the survey area. These included a smaller subset of those watercourses which have been assessed as optimal to support water vole, namely it excludes field drains and those habitats which are not functionally connected to rivers and streams. All watercourses assessed as providing the potential to support otter will be subject to otter surveys in order to confirm whether or not otter are present. Particular attention will be paid to Dilham Canal, where otter have been recorded previously.

162. The otter surveys will follow the protocol set out by Scottish Natural Heritage (Otters and Development, 2016). Surveys will be conducted on one bank for the full length of each optimal watercourse within the project area, plus an additional 250m upstream and 250m downstream. The watercourse will be walked by an ecologist, and all field signs of otter will be recorded. This will include spraints, holts, couches, prints, feeding remains, anal jelly and sightings. The field sign and its location will be recorded. Field signs of mink will also be recorded. The survey will involve one visit at any time of year. Surveys will not be undertaken following heavy rain.

163. Due to the overlap in survey methodology and in habitats, the otter survey will be conducted concurrently with the water vole survey.

164. Analysis of the Norfolk Living Map also identified a further three watercourses which may be suitable to support otter located within land which was not accessible during

the field survey. If access to these features is granted during the otter survey period, these watercourses will be visited to assess their suitability to water vole, and if found to provide suitable habitat, an otter survey following the protocol set out above will be undertaken. The location of these can be seen on Figure 4, Annex A: Figures.

22.6.1.6 Great crested newt presence / absence and population estimate surveys

165. Section 22.5 classified the standing water bodies located within 250m of the temporary elements of the onshore project area and 500m of the permanent elements of the onshore project area in terms of their suitability to support breeding populations of great crested newts. As proposed in the Norfolk Vanguard all standing water bodies identified as containing 'average' or greater habitat suitability (a HSI score of 0.6 or greater) will be subject to presence / absence surveys. This includes 77 standing water bodies. Those standing water bodies with a lower HSI score will be scoped out of further assessment.

166. The great crested newt presence / absence surveys will follow the protocol set out in the Great Crested Newt Mitigation Guidelines (English Nature, 2001). Each standing water body scoped into the survey will be subject to four survey visits between mid-March and mid-June, with at least two visits during the peak season (mid-April to mid-May). During each visit, each standing water body will be subject to three survey methods, including torching and bottle-trapping, and one of netting or egg-searching. Each survey method will be used to record number, sex, life-stage of all great crested newts founding during the surveys. All other amphibians found should be recorded also. If great crested newt presence is found during survey visits 1-4, two further survey visits are required in order to provide a water body population estimate. The same survey methods are required for these subsequent visits.

167. Torching surveys should be conducted using 500,000 candle torches. Bottle trapping should be conducted placing traps two-metres apart around pond perimeter. For netting surveys, at least 15 minutes of netting per 50m of shoreline.

168. Weather conditions should be recorded during each visit. No surveys should be conducted if temperatures are <5°C, there is strong wind or heavy rain.

169. All surveyors must operate under a Great Crested Newt Survey Class Licence (Level 1) during presence / absence surveys.

170. A further 212 water bodies are located within the great crested newt survey area within land which was not accessible during the field survey. If access to these standing water bodies is granted during the great crested newt survey period, these standing water bodies will be visited to assess habitat suitability, and if found to

provide average or better suitability, a great crested newt presence / absence survey following the protocol set out above will be undertaken. The location of these can be seen on Figure 4, Annex A: Figures.

22.6.1.7 Reptile presence / absence surveys

171. Section 22.5 identified 16 habitats mosaics with the potential to support common reptile species within the survey area. These habitat mosaics, which provide all the suitable habitat elements required by reptiles including hibernacula, basking areas and foraging areas. Expert judgement has been used to determine which habitat mosaics are suitable for common reptile species.

172. The reptile presence / absence surveys will follow the protocol set out in the JNCC's Herpetofauna Worker's Manual (2003). The survey will involve an artificial refuge survey at each suitable habitat location. Refuge tiles will be placed in optimal locations, in groups of 3-4, within each habitat area. Tiles will cover the majority of each habitat mosaic. During each survey visit, all tiles will be lifted and the space beneath checked for the presence of reptiles. Seven survey visits in total are required. These visits will be undertaken during April, May and September. At least 48 hours should be left between survey visits.

173. Weather conditions should be recorded during each visit. The surveys will be undertaken during the morning and later afternoon, in order to coincide with the optimal temperature window (10-17°C). These timings will be from 9am-11am, and from 4pm-7pm.

174. Refuge tiles (e.g. carpet tiles, roofing felt, or metal sheeting) of 0.5m by 0.5m should be used.

175. Analysis of the Norfolk Living Map also identified a further six habitat mosaics which may be suitable to support common reptiles located within land which was not accessible during the field survey. If access to these features is granted during the reptile survey period, these habitat mosaics will be visited to assess their suitability for common reptiles, and if found to provide the potential to support common reptile species, a reptile survey following the protocol set out above will be undertaken. The location of these can be seen on Figure 4, Annex A: Figures.

22.6.1.8 White-clawed crayfish surveys

176. Following consultation with the Environment Agency, conducted as part of the Evidence Plan Process, the presence of watercourses known to support white-clawed crayfish within the survey area was identified.

177. At the time of drafting, the names of these watercourses have not yet been made available. When these watercourses have been identified, following advice from the Environment Agency, white-clawed crayfish surveys will be required for these watercourses.

178. The white-clawed crayfish surveys will follow the protocol set out in 'A monitoring protocol for white-clawed crayfish' (Peay and Hirst, 2003).

179. Within each watercourse, refuges will be sampled for the presence of crayfish using manual searching under stones and submerged tree roots and, where appropriate, kick sampling using a pond net. A habitat assessment for white-clawed crayfish will be made for each section of the watercourse.

180. Weather conditions should be recorded during each visit.

181. All surveyors must operate under a white-clawed crayfish Survey Class Licence during white-clawed crayfish surveys.

22.6.1.9 Invertebrate surveys

182. Following consultation with Natural England conducted as part of the Evidence Plan Process, the need for a terrestrial invertebrate survey is required in relation to the wet grassland and field drain habitats associated with River Wensum. The survey was recommended by Natural England in order to determine presence / absence of the Desmoulin's snail *Vertigo moulinsiana*, an Annex II species present as a qualifying feature, but not a primary reason for site selection for the River Wensum SAC.

183. This invertebrate survey will follow the protocol set out in the Buglife's A manual for the survey and evaluation of the aquatic plant and invertebrate assemblages of grazing marsh ditch systems (Version 6) (2013). All of the ditches functionally connected to the River Wensum within the survey area, plus both banks of the River Wensum within the survey area, will be sampled, as shown on Figure 4, Annex A: Figures. This should include 7 samples in total. Each sample will be taken by netting on three occasions for 1-3 minutes at a selected location. The each netted sample will then be sorted and species identified, and species abundance recorded. Those species which cannot be identified in the field will be taken back to the laboratory for identification.

184. The invertebrate survey should start in the last week in April and ideally be completed by early June (although useful results can be obtained up to mid-October).

22.6.1.10 Botanical surveys

185. Following consultation with Natural England conducted as part of the Evidence Plan Process, the need for a detailed assessment of the habitat associated with the River Wensum was recommended to ensure that the potential effects of proposed horizontal directional drilling under the River Wensum upon the quantifying features of the River Wensum SAC and the notified features of the River Wensum SSSI were fully understood. As a consequence a botanical survey will be undertaken to characterise the habitats of the semi-improved grassland found adjacent to the River Wensum during the field survey. This botanical survey will also involve a systematic search of the site in order to check the wet grassland habitats for the presence of springs and seepages, in order to characterise the water environment within the River Wensum floodplain.

186. The botanical survey will follow the methodology set out in National Vegetation Classification: Users' handbook (Rodwell, 2006). The survey will cover all semi-improved and wet grassland areas adjacent to the River Wensum within the survey area (as shown on Figure 4, Annex A: Figures). Quadrat sampling will be used within delineated sub-communities, and those species found within each quadrat identified.

187. The optimal surveying window for the botanical survey is between April and June.

188. The River Wensum floodplain habitats on the lefthand bank of the river were not accessible during the field survey. If access is granted for these semi-improved and wet grassland areas prior to the botanic survey, then they will be scoped in to the botanical survey.

22.6.1.11 Onshore wintering bird surveys

189. A suite of onshore wintering bird surveys in relation to the Norfolk Vanguard Offshore Wind Farm commenced in October 2016.

190. These surveys were identified during the Wintering / Passage Bird Survey Scoping assessment (Royal HaskoningDHV, 2016) which used desk-based information to scope what onshore ornithological surveys were likely to be required in order to provide sufficient baseline information to inform the EIA process.

191. This Wintering / Passage Bird Survey Scoping Report was produced early on within the process to enable any passage or wintering bird surveys to commence in autumn / winter 2016, so to ensure the optimal surveying window was not missed. This report and subsequent surveys commenced prior to the agreed receipt of a

formal EIA Screening and Scoping Opinion from the Planning Inspectorate which was received in November 2016.

192. Natural England and Norfolk County Council both reviewed and commented on the Wintering / Passage Bird Survey Scoping Report. A revised report was then produced to incorporate their comments and which formed the basis for the surveys which commenced in October 2016.

193. Natural England confirmed that the onshore wintering bird surveys should focus on those areas identified as being 'ornithological risk areas' (i.e. areas which may support birds associated with statutory designated sites over winter, either within the site boundaries themselves or within ex-situ habitats which may support interest features of statutory designated sites) within 1km of the onshore scoping area. As such the 2016 wintering bird surveys focused on:

- Transect surveys along the North Walsham and Dilham Canal (disused) and Mown Fen / Hundred Stream and surrounding habitats;
- Low tide count surveys along the North Norfolk coast;
- Transect surveys of Mattishall Moor SSSI;
- Vantage point surveys at Westwick Lakes SSSI and Dereham Rush Meadows SSSI; and
- Road transect surveys of agricultural fields in North Walsham District.

194. Following a refinement of the project area in January 2017, the scope of the survey was reduced to include transect surveys along Mown Fen / Hundred Stream and surrounding habitats; low tide count surveys along the North Norfolk coast; vantage point surveys at Dereham Rush Meadows SSSI; road transect surveys of agricultural fields in North Walsham District.

195. Monthly surveys have been undertaken since October 2016 and will continue through to the end of March 2017.

22.6.2 Survey Programme

196. Based on the results obtained from the field survey, the provisional onshore ecological survey programme for 2017 is set out in Table 22.12. The exact requirements for some surveys remain subject to confirmation; consequently a worst case survey requirement has been presented in Table 22.12. This worst case presents the likely longest survey periods reasonably foreseeable. The survey durations and need for surveys will remain under review as the project progresses.

Table 22.12 Provisional onshore survey programme (based on the findings of the field survey)

Survey	Survey dates	Notes
Breeding bird surveys	April – September 2017	None
Bat emergence / re-entry surveys	May - August 2017	None
Bat activity survey	April – October 2017	None
Water vole presence / absence / population estimate surveys	Mid-April – June 2017	None
Otter surveys	Mid-April – June 2017	None
Great crested newt presence / absence survey	April – June 2017	Two of the four survey visits will be within the mid-April and mid-May window (Natural England 2015)
Reptile presence / absence surveys	April – May 2017	None
White-clawed crayfish surveys	Mid-July to mid-September 2017	None
Invertebrates surveys	April – September 2017	None
Botanical survey	June 2017	None

22.7 Conclusions

197. The desk study identified two statutory designated sites that falls within the project area for the proposed Norfolk Vanguard project, River Wensum SAC/SSSI and Pigney's Wood LNR.

198. Six non-statutory designated sites are located within the project area (Necton Wood, Great Wood, Wendling Carr, Land south of Dillington Carr, Marriott's Way, Paston Way & Knapton Cutting), and a further eight are located adjacent to the project area.

199. UK Habitats of Principal Importance habitats located within the project area include coastal and floodplain grazing marsh, lowland fen, deciduous woodland, maritime cliffs and slopes.

200. The field survey recorded that the majority of the survey area is dominated by an agricultural landscape, with large areas being arable land separated by hedgerows (which are typically species-rich with trees). Habitats present with higher

biodiversity value include semi-natural and plantation woodlands, parkland, scrub, tall ruderal, semi-improved grasslands, water bodies, isolated trees and old farm buildings.

201. Suitable habitats or a range of protected and notable species have been identified within the survey area. These include multiple habitats for Red List breeding bird species including skylark and woodcock; 53 trees and structures with moderate or high bat roost potential; 167 linear features of with moderate or high potential to support commuting or foraging bats; 31 watercourse optimal for supporting water voles; 12 watercourses optimal for supporting otters; 77 water bodies with average or higher habitat suitability to support breeding populations of great crested newts; and 16 habitat mosaics suitable to support common reptiles; two watercourses capable of supporting white-clawed crayfish; habitats adjacent to the River Wensum which may support the notable Desmoulin's whorl snail and which may support qualifying botanical features of the River Wensum SAC and notified botanical features of the River Wensum SSSI. Further surveys have been proposed in relation to these species. Findings in relation to badger activity are held within confidential Annex B: Badger Results.

22.8 References

Bat Conservation Trust and Institute of Lighting Engineers (2009) Bats and Lighting in the UK: Bats and the Built Environment Series, May 2009.
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22.9 Annex A: Figures

585000 590000 595000

315000

310000

N

River Nar (SSSI)

Litcham Common (LNR)

Dillington Carr, Gressenhall (SSSI)

Honeypot Wood, Wendling (SSSI)

Holly Farm Meadow, Wendling (SSSI)

Norfolk Valley Fens (SAC)

Breckland Farmland (SPA & SSSI)

0 2 4 km

Legend:

Norfolk Vanguard Onshore Infrastructure

- National Grid Substation Extension Zone
- Overhead Line Modification Zone
- Project Substation Search Zone
- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- Local Nature Reserves
- Special Areas of Conservation
- Special Protection Areas
- Sites of Special Scientific Interest

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Statutory Designated Sites
(Page 1 of 5)

Figure: 1 | Drawing No: PB4476-03-PS-001

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	07/03/2017	JE	GC	A3	1:50,000

Co-ordinate system: British National Grid **EPSG:** 27700

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595000 600000 605000

320000 315000

Horningtoft Wood (SSSI)

River Wensum (SAC)

Foxley Wood (NNR & SSSI)

River Wensum (SSSI)

Beetley & Hoe Meadows (SSSI)

Dillington Carr, Gressenhall (SSSI)

oneypot Wood, Wendling (SSSI)

Dereham Rush Meadow (SSSI)

Potter & Scarning Fens, East Dereham (SSSI)

Norfolk Valley Fens (SAC)

Badley Moor (SSSI)

Mattishall Moor (SSSI)

Rosie Curston's Meadow, Mattishall (SSSI)

Hockering Wood (SSSI)

N

0 2 4 km

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- National Nature Reserves
- Special Areas of Conservation
- Sites of Special Scientific Interest

Project: Norfolk Vanguard	Report: Onshore Ecology and Ornithology Method Statement

Title: Statutory Designated Sites (Page 2 of 5)

Figure: 1 Drawing No: PB4476-03-PS-001

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid **EPSG:** 27700

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610000 615000 620000

330000 325000 320000

N

Cawston and Marsham Heaths (SSSI)

Booton Common (SSSI)

Norfolk Valley Fans (SAC)

Whitwell Common (SSSI)

River Wensum (SSSI)

River Wensum (SAC)

Alderford Common (SSSI)

Swannington Upgate Common (SSSI)

Buxton Heath (SSSI)

Norfolk Valley Fens (SAC)

0 2 4 km

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- National Nature Reserves
- Special Areas of Conservation
- Sites of Special Scientific Interest

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Statutory Designated Sites
(Page 3 of 5)

Figure: 1 Drawing No: PB4476-03-PS-001

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	07/03/2017	JE	GC	A3	1:50,000

Co-ordinate system: British National Grid **EPSG:** 27700

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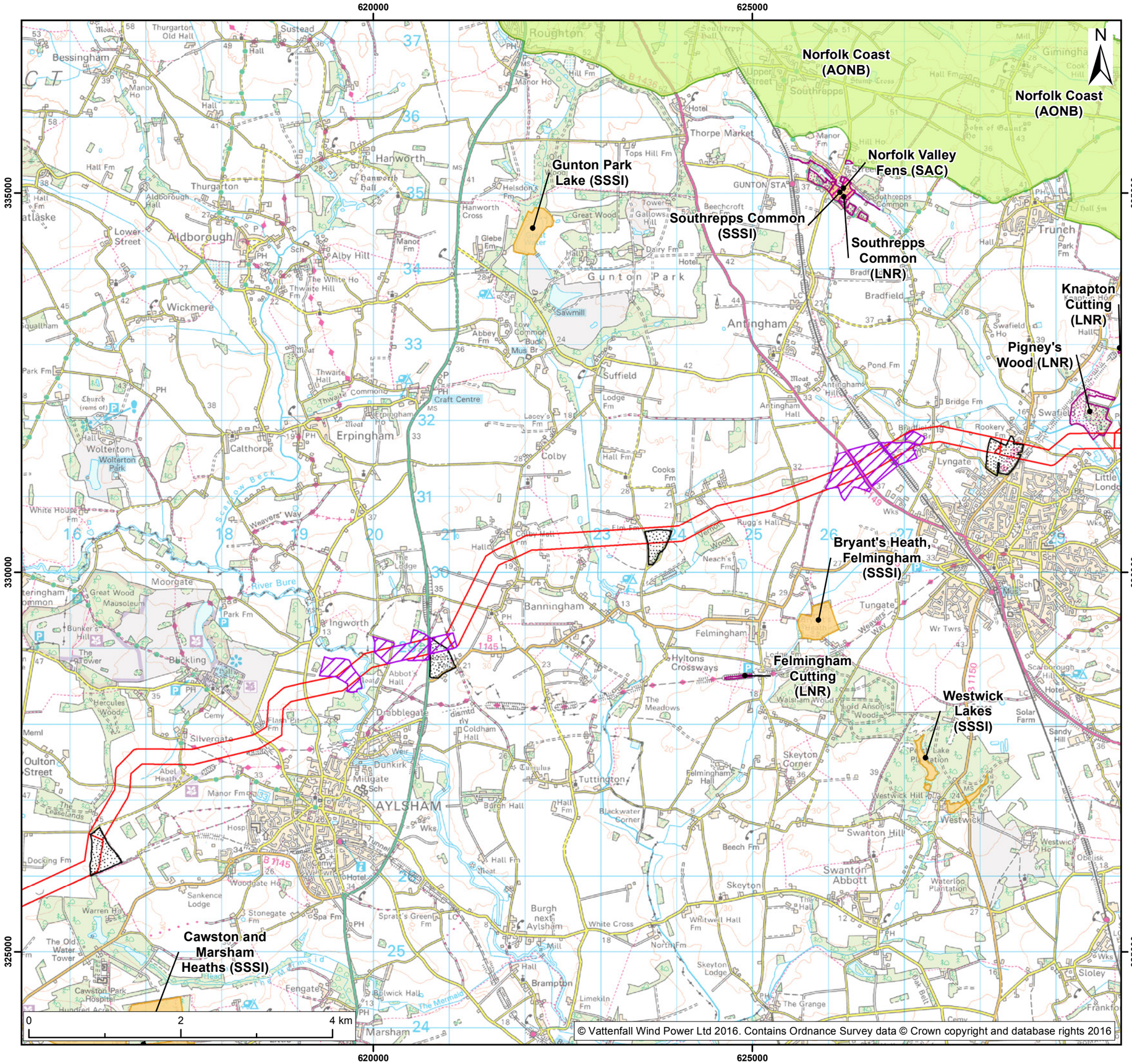

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- Areas of Outstanding Natural Beauty
- Local Nature Reserves
- Special Areas of Conservation
- Sites of Special Scientific Interest

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Statutory Designated Sites
(Page 4 of 5)

Figure: 1 | Drawing No: PB4476-03-PS-001

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	07/03/2017	JE	GC	A3	1:50,000

Co-ordinate system: British National Grid **EPSG:** 27700

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Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- Cable Relay Station Zone
- Landfall Zone
- National Park
- Areas of Outstanding Natural Beauty
- Local Nature Reserves
- National Nature Reserves
- Ramsar Sites
- Special Areas of Conservation
- Special Protection Areas
- Sites of Special Scientific Interest

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Statutory Designated Sites
(Page 5 of 5)

Figure: 1 | Drawing No: PB4476-03-PS-001

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	07/03/2017	JE	GC	A3	1:50,000

Co-ordinate system: British National Grid **EPSG:** 27700

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585000 590000 595000

315000

310000

Gressenhall Green Marshes
Gressenhall Orchard
Land west of Gressenhall Green
Eel's Foot
Longham Clay Pits
Longham Road Meadow
Dentford Wood
Pond by Dillington Carr
Land south of Dillington Carr
Baker's Wood
Old Carr
Little Wood
Pump House Woods
Church Farm Meadow
Wendling Carr
Dereham Sewerage Works Meadow
Rushmeadow Road Meadow
Land near Podmore Farm
Scarning Meadows
Potters Fen Meadow
Necton Wood
North Grove
Necton Old Common
Great Wood
Gravel Pit
Cant's Corner Meadow
Fox Covert
Wissey Meadow
Church Lane Meadow
Land adjacent to River Wissey
High Grove

0 2 4 km

Legend:

Norfolk Vanguard Onshore Infrastructure

- National Grid Substation Extension Zone
- Overhead Line Modification Zone
- Project Substation Search Zone
- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- County Wildlife Sites[1]

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Non-Statutory Designated Sites
(Page 1 of 5)

Figure: 2 | Drawing No: PB4476-03-PS-002

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	07/03/2017	JE	GC	A3	1:50,000

Co-ordinate system: British National Grid **EPSG:** 27700

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595000 600000 605000

320000 315000

Land north of Beetley Hall
Beetley Common
Land south-west of Gravel Pit
Beetley & Hoe Meadows
North Covert Meadow
Swanton Morley Meadow
Marriott's Way
Land adj. to D Rai
Sparham Wood
Sparham House Grounds
Lakes near Lyng
Pits near Mill Street
Grassland adj. River Wensum
Lake Opposite Fustyweed
Sparham Pools
Lyng Easthaugh Meadows
Land south of Cadder's Hill
Earthworks Field, Park Farm
Woodgate Meadow
West Hoe Meadow
Hoe Marsh
Hoe Common
Hoe Gravel Pit
Gressenhall Green Marshes
Gressenhall Orchard
Land west of Gressenhall Green
Eel's Foot
Longham Clay Pits
Dentford Wood
Longham Road Meadow
Pond by Dillington Carr
Land south of Dillington Carr
Baker's Wood
Old Carr
Little Wood
Pump House Woods
Rushmeadow Road Meadow
Scarning Meadows
Wendling Carr
Dereham Sewerage Works Meadow
Land near Podmore Farm
Potters Fen Meadow
North Tuddenham Common

0 2 4 km

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- County Wildlife Sites[1]

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title: Non-Statutory Designated Sites (Page 2 of 5)

Figure: 2 | Drawing No: PB4476-03-PS-002

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid **EPSG:** 27700

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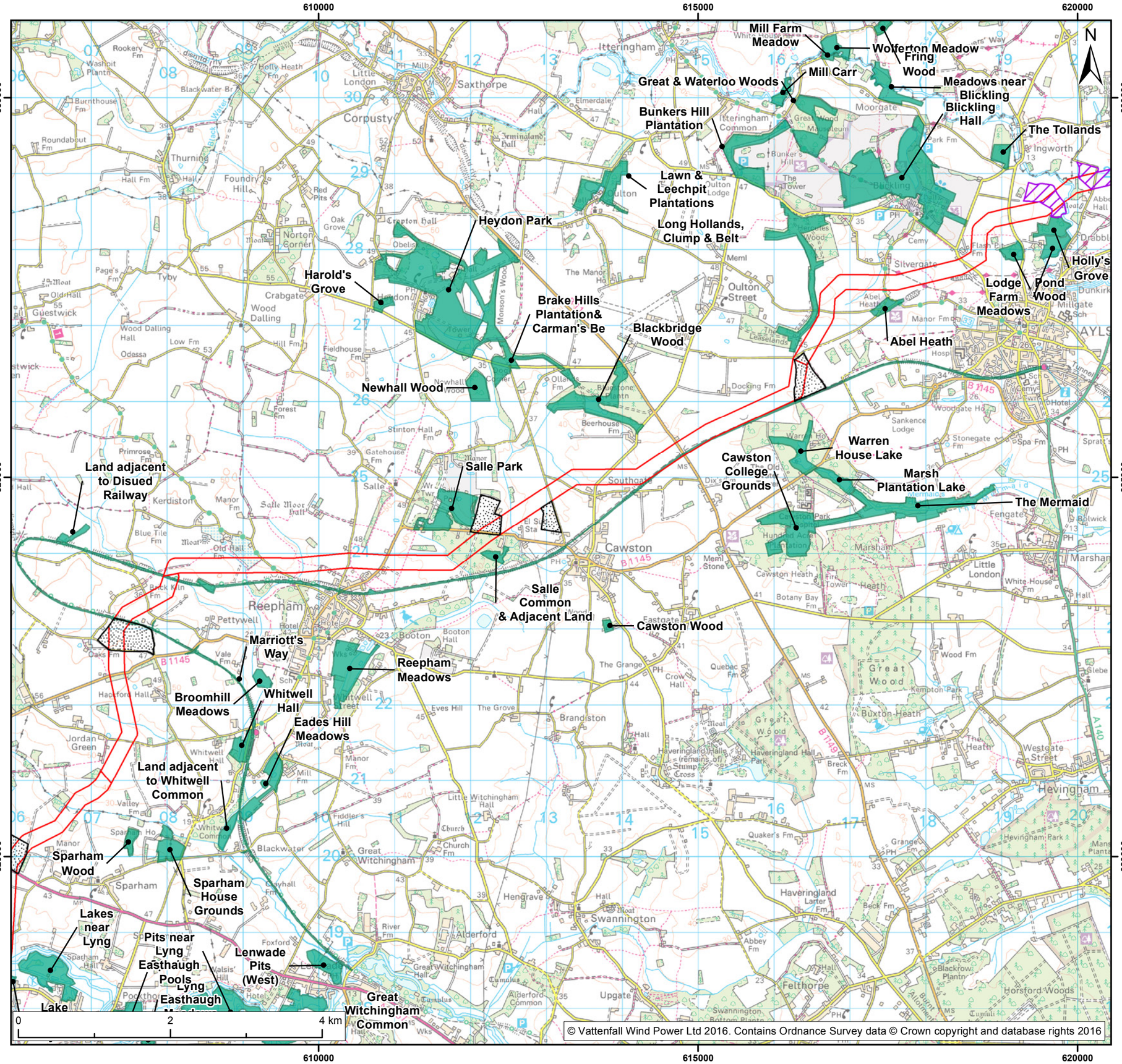

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- County Wildlife Sites[1]

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Non-Statutory Designated Sites
(Page 3 of 5)

Figure: 2 | Drawing No: PB4476-03-PS-002

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid **EPSG:** 27700

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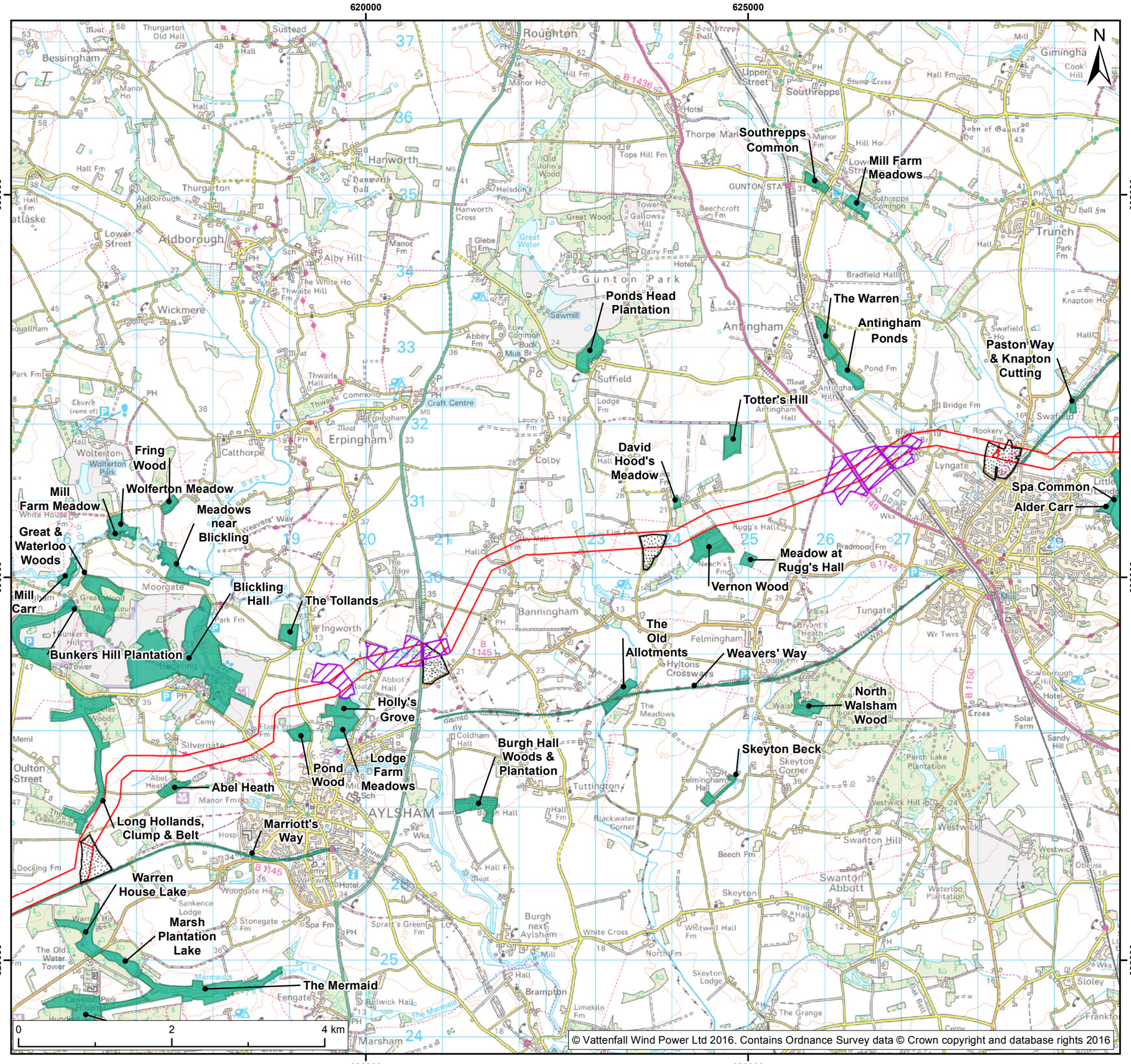

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- County Wildlife Sites[1]

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Non-Statutory Designated Sites
(Page 4 of 5)

Figure: 2 | Drawing No: PB4476-03-PS-002

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Co-ordinate system: British National Grid **EPSG:** 27700

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630000 635000 640000

335000 330000

N

Paston Way & Knapton Cutting

Spa Common

Ebridge Farm Meadows

Weavers' Way

Crostwight Heath

Crostwight Common

Fox Hill Allotment & Common

Dyball's Allotment

Alder Carr

Marram Hills

Dilham Meadows

Old Corner Common

Land near Old Corner Common

Honing Bridge Carr

Land adj. East Ruston Allotments

Honing Common

Ingham Fen

Land south of Hempstead Marshes

New Cut

0 2 4 km

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- Cable Relay Station Zone
- Landfall Zone
- County Wildlife Sites[1]

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title: Non-Statutory Designated Sites (Page 5 of 5)

Figure: 2 | Drawing No: PB4476-03-PS-002

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid **EPSG:** 27700

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585000 590000 595000

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N

Legend:

Norfolk Vanguard Onshore Infrastructure

- National Grid Substation Extension Zone
- Overhead Line Modification Zone
- Project Substation Search Zone
- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone

UK Habitats of Principal Importance[1]

- Coastal and floodplain grazing marsh
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland dry acid grassland
- Lowland fens
- Lowland heathland
- Lowland meadows
- Purple moor grass and rush pastures
- Reedbeds
- Traditional orchard

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Habitats of Principle Importance
(Page 1 of 5)

Figure: 3 | Drawing No: PB4476-03-PS-003

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	07/03/2017	JE	GC	A3	1:50,000

Co-ordinate system: British National Grid **EPSG:** 27700

0 2 4 km

595000 600000 605000

320000

315000

N

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone

UK Habitats of Principal Importance[1]

- Coastal and floodplain grazing marsh
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland fens
- Lowland heathland
- Lowland meadows
- Purple moor grass and rush pastures
- Reedbeds
- Traditional orchard

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Habitats of Principle Importance
(Page 2 of 5)

Figure: 3 | Drawing No: PB4476-03-PS-003

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	07/03/2017	JE	GC	A3	1:50,000

Co-ordinate system: British National Grid **EPSG:** 27700

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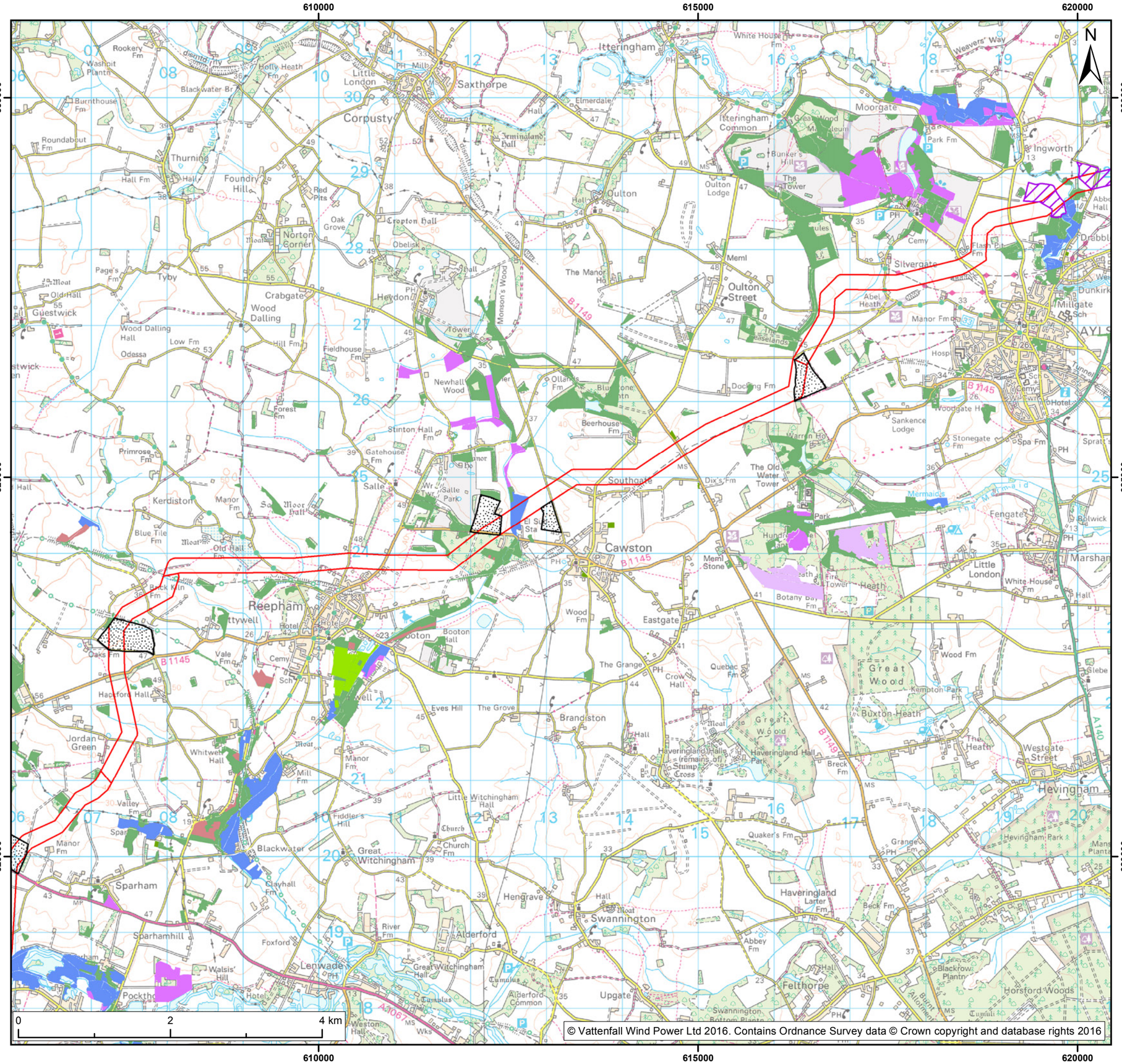
0 2 4 km



Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone

UK Habitats of Principal Importance[1]

- Coastal and floodplain grazing marsh
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland fens
- Lowland heathland
- Lowland meadows
- Traditional orchard

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Habitats of Principle Importance
(Page 3 of 5)

Figure: 3 | Drawing No: PB4476-03-PS-003

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid **EPSG:** 27700

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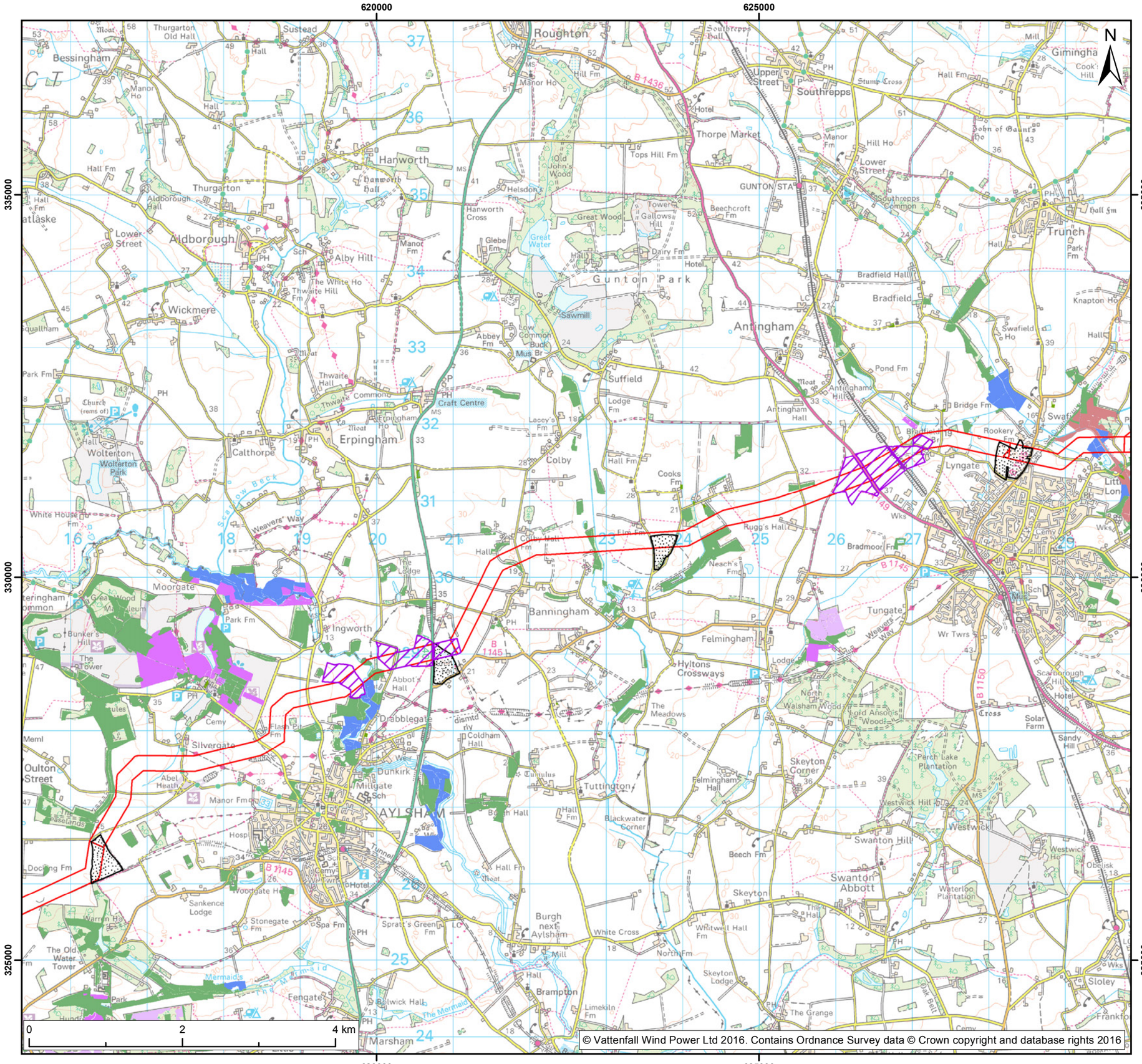

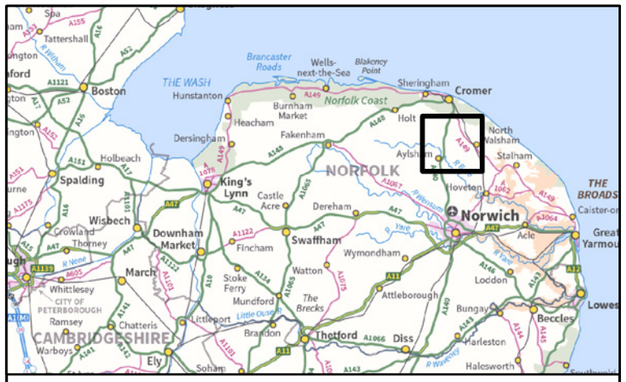

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone

UK Habitats of Principal Importance[1]

- Coastal and floodplain grazing marsh
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland fens
- Lowland heathland
- Traditional orchard

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Habitats of Principle Importance
(Page 4 of 5)

Figure: 3 | Drawing No: PB4476-03-PS-003

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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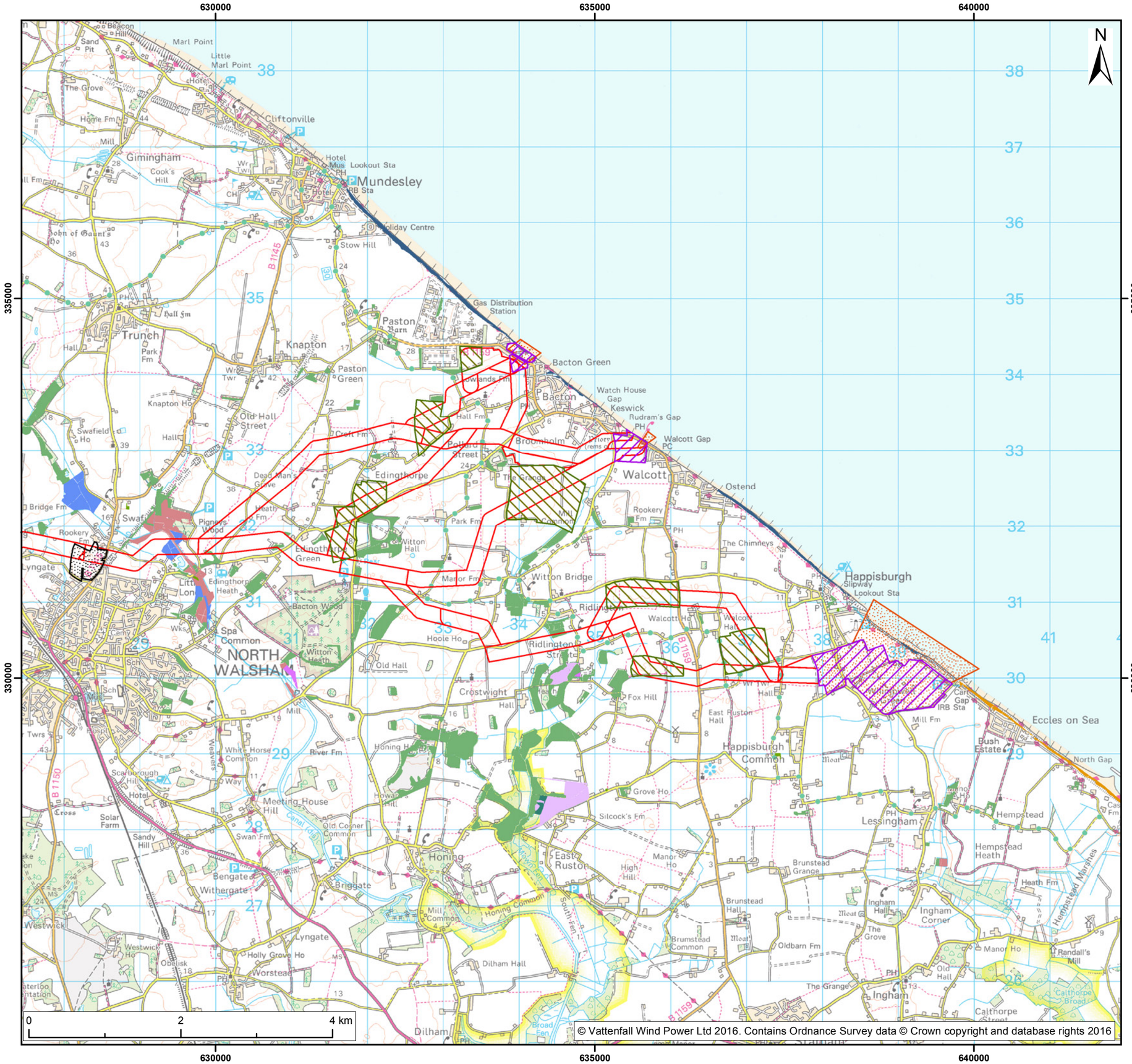

Legend:

Norfolk Vanguard Onshore Infrastructure

- Onshore Cable Corridor
- Horizontal Directional Drilling (HDD) Zone
- Mobilisation Zone
- Cable Relay Station Zone
- Landfall Zone

UK Habitats of Principal Importance[1]

- Coastal and floodplain grazing marsh
- Coastal sand dunes
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland fens
- Lowland heathland
- Maritime cliff and slope
- Reedbeds
- Traditional orchard

[1] Natural England, 2016.

Project:	Report:
Norfolk Vanguard	Onshore Ecology and Ornithology Method Statement

Title:

Habitats of Principle Importance
(Page 5 of 5)

Figure: 3 | Drawing No: PB4476-03-PS-003

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid **EPSG:** 27700

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588000 589000 590000

311000 310000

Spicers Corner

Pillwood Covert

Buscall's Plantation

Corbett's Lodge

Corbett's Lodge Cottages

Kennels

Swedish Barn

The Manor

Top Farm

Sparham Hall Cottages

Sparham Hall

Hulverhouse Plantation

Redgate

Grove Plantation

Grove

Lodge Farm

Ivy House

Ivy Todd

Ivy Todd Farm

Rose Cottage Farm

Mona Farm

Mona Farm Cottages

Rose Farm

The Old Chapel

Brook Farm

Clay Pit

Norton Grange

Norton VA Primary School

Playing Field

Hall

Pav

Rectory

Issues

Lodge Cottages

Necton Wood

Waterloo Lane

Chapel Road

Tuns Road

Burnham Road

Dodwells Lane

Lane

1 Bat, 1 Bird

88 89 87 85 86 68 67 66 90

TN1 TN2 TN3 TN4 TN5 TN6 TN7 TN8 TN9 TN10 TN11 TN12 TN13 TN14 TN15 TN16 TN17 TN18 TN19 TN20 TN21 TN22 TN24

N

0 400 800 m

Norfolk Living Map[1]

- Arable
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved (scrub)
- Semi-improved grassland
- Semi-improved grassland (wet)
- Urban
- Waterbodies

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Improved grassland
- Poor semi-improved grassland
- Standing water
- Running water
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Fence
- Dry ditch
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map) (Page 1 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	14/03/2017	JE	GC	A3	1:10,000

Co-ordinate system: British National Grid **EPSG:** 27700

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590000 591000 592000

312000 311000

N

Norfolk Living Map[1]

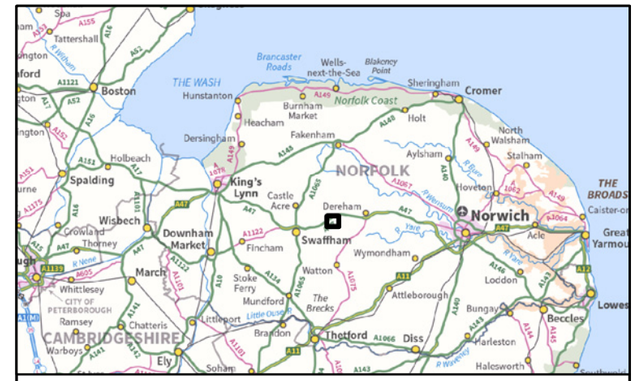
- Arable
- Coniferous Plantation
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved (scrub)
- Semi-improved grassland
- Semi-improved grassland (wet)
- Urban
- Waterbodies

Little Fransham

1 Bat, 1 Bird

Necton Wood

0 400 800 m



Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Poor semi-improved grassland
- Running water
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title: Phase 1 Habitat Survey (including Norfolk Living Map) (Page 2 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	14/03/2017	JE	GC	A3	1:10,000

Co-ordinate system: British National Grid **EPSG:** 27700

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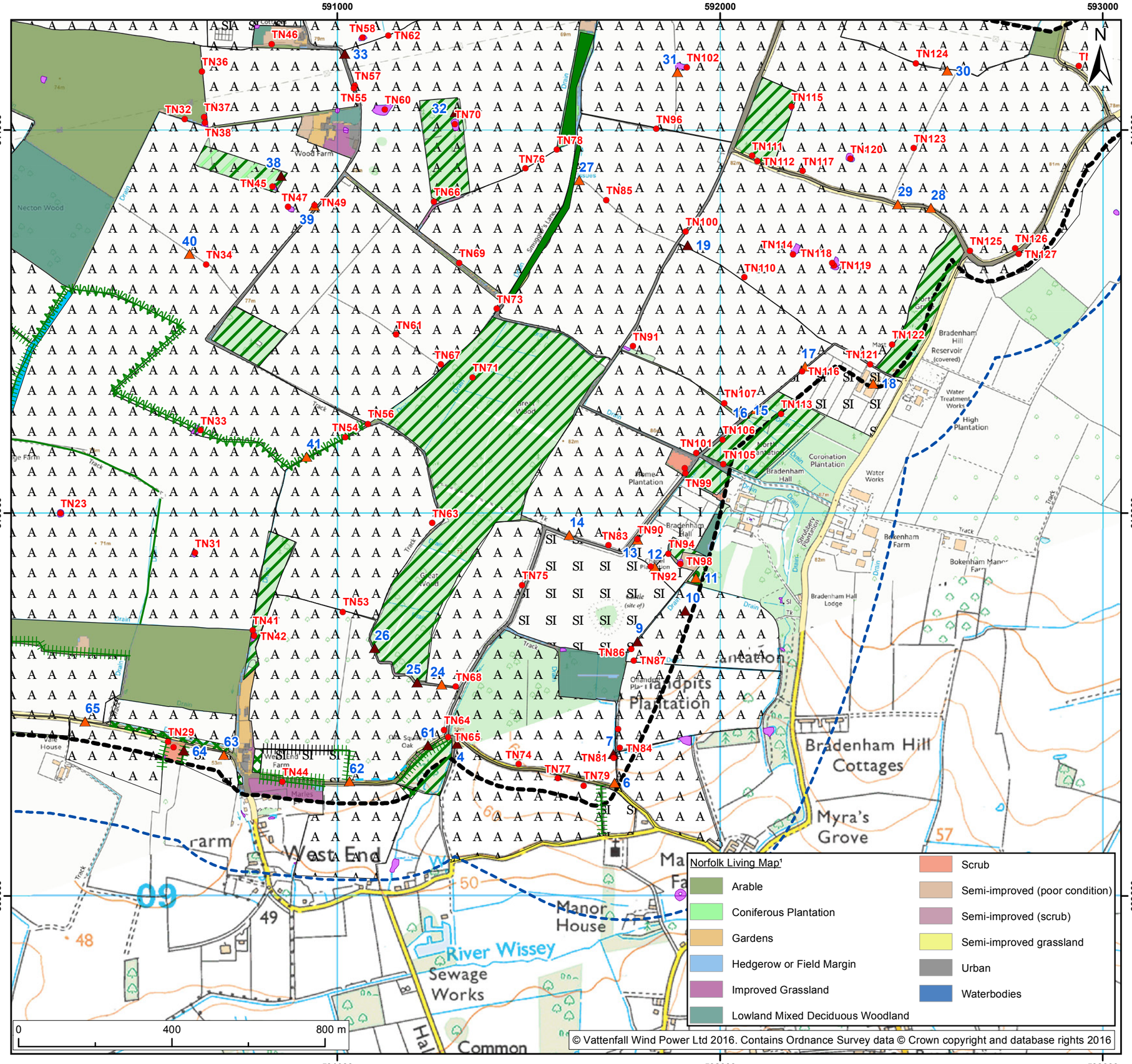

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- Improved grassland
- Poor semi-improved grassland
- Running water
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Fence
- Dry ditch
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note

Norfolk Living Map[1]

- Arable
- Coniferous Plantation
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved (scrub)
- Semi-improved grassland
- Urban
- Waterbodies

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title: Phase 1 Habitat Survey (including Norfolk Living Map) (Page 3 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	14/03/2017	JE	GC	A3	1:10,000

Co-ordinate system: British National Grid **EPSG:** 27700

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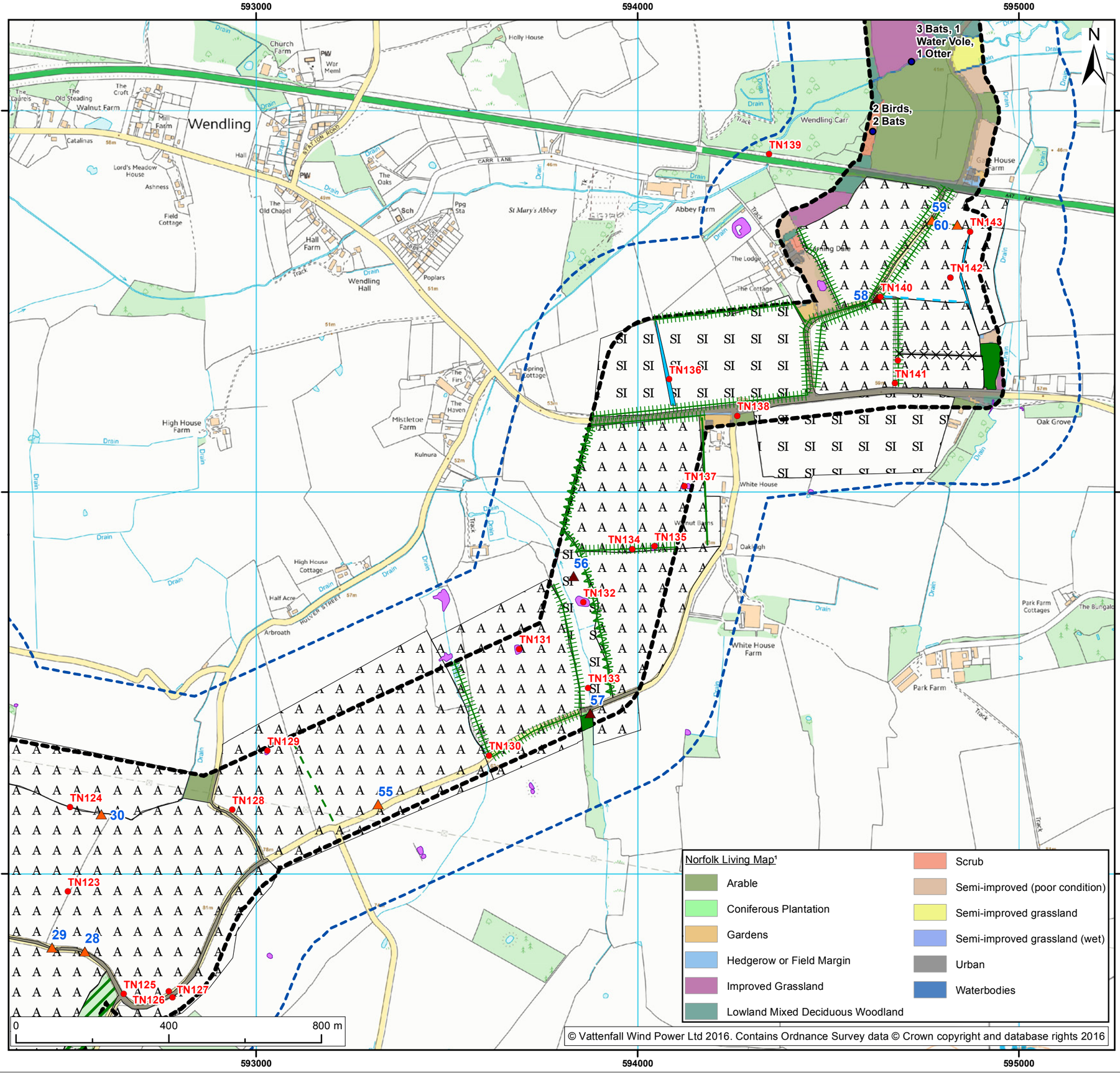

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Poor semi-improved grassland (SI)
- Running water
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Dry ditch
- Boundary removed
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map) (Page 4 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid **EPSG:** 27700

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595000 596000 597000

315000 314000 313000

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0 400 800 m

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Hedge with trees - Native species-rich
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Improved grassland
- Standing water
- Running water
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Other habitat

Norfolk Living Map[1]

- Arable
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved (scrub)
- Semi-improved grassland
- Urban
- Waterbodies

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title: Phase 1 Habitat Survey (including Norfolk Living Map) (Page 5 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	14/03/2017	JE	GC	A3	1:10,000

Co-ordinate system: British National Grid **EPSG:** 27700

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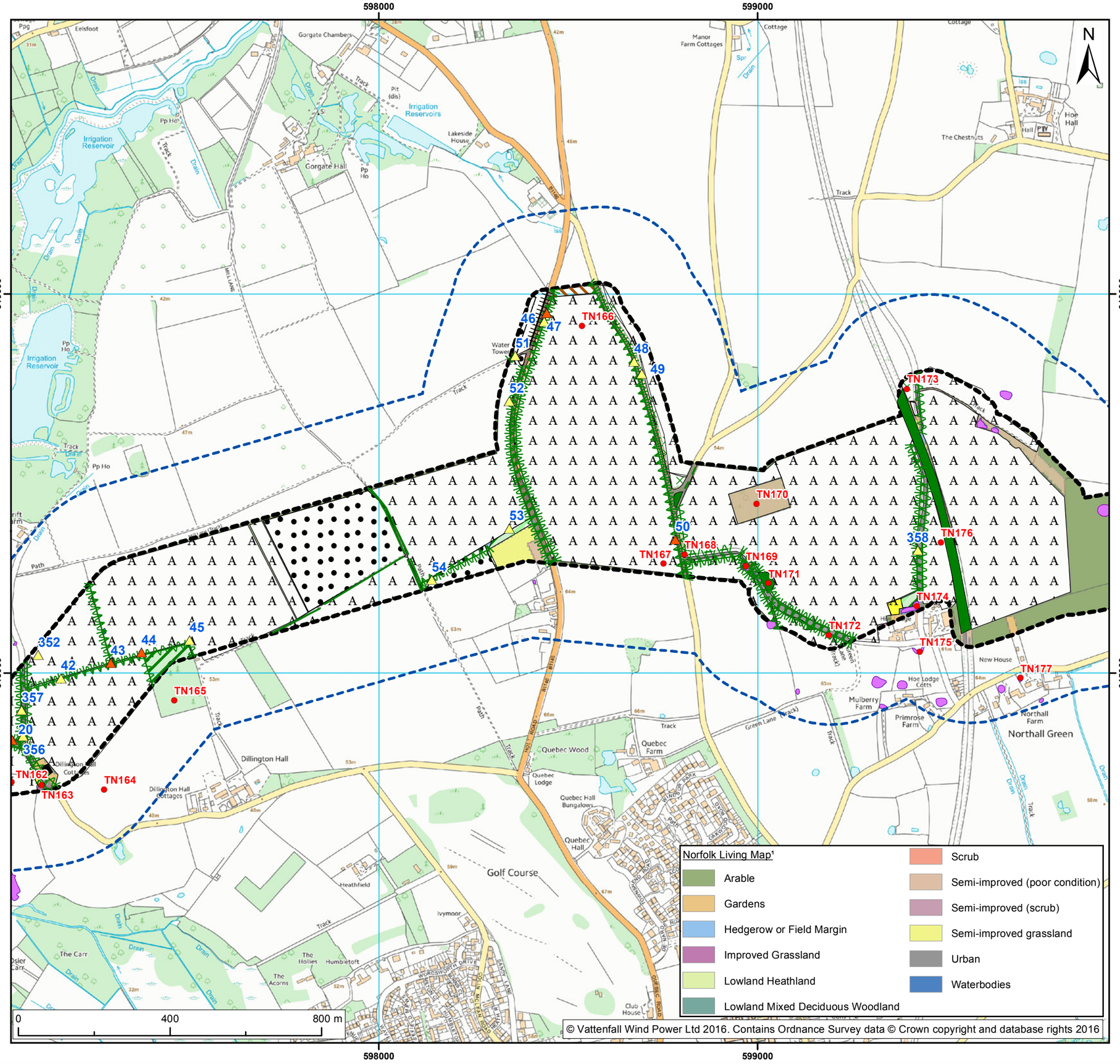

Norfolk Living Map[1]

- Arable
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Heathland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved (scrub)
- Semi-improved grassland
- Urban
- Waterbodies

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Native species-rich
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Fence
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title: Phase 1 Habitat Survey (including Norfolk Living Map) (Page 6 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

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Co-ordinate system: British National Grid **EPSG:** 27700

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600000 601000 602000

317000 316000 315000

Norfolk Living Map[1]

- Arable
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved grassland
- Urban
- Waterbodies

N

Swanton Morley
Greengate
Greengate House Farm
Chapel Farm
Hazeldene Farm
Woodgate
Woodgate Farm
Woodgate Hall Farm
Hospital Farm
Home Farm
The Brambles
Playing Field
Hall
Greenfields Cottage
Swanton Morley VC Primary School
Harke's Lane (Track)
Works
Pigg Sta
PH
Track
Drain
Walnut Tree Farm
Swanton Road Farm
Nursery
Greenfields
Foxbow
Northall Green Farm
Bird's Lane (Track)
Dirty Lane (Track)
Gooch's Cottages
5 Birds, 7 Bats

TN178 TN179 TN180 TN181 TN182 TN183 TN184 TN185 TN186 TN187 TN188 TN189 TN190 TN191

359 360 361 362

0 400 800 m

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Hedge with trees - Native species-rich
- Bat Roost Feature (Low Suitability)
- Target Note
- Living Map Key Habitats

Phase 1 Habitat Classification

- Scrub - scattered
- Improved grassland
- Poor semi-improved grassland
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title: Phase 1 Habitat Survey (including Norfolk Living Map) (Page 7 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

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Co-ordinate system: British National Grid **EPSG:** 27700

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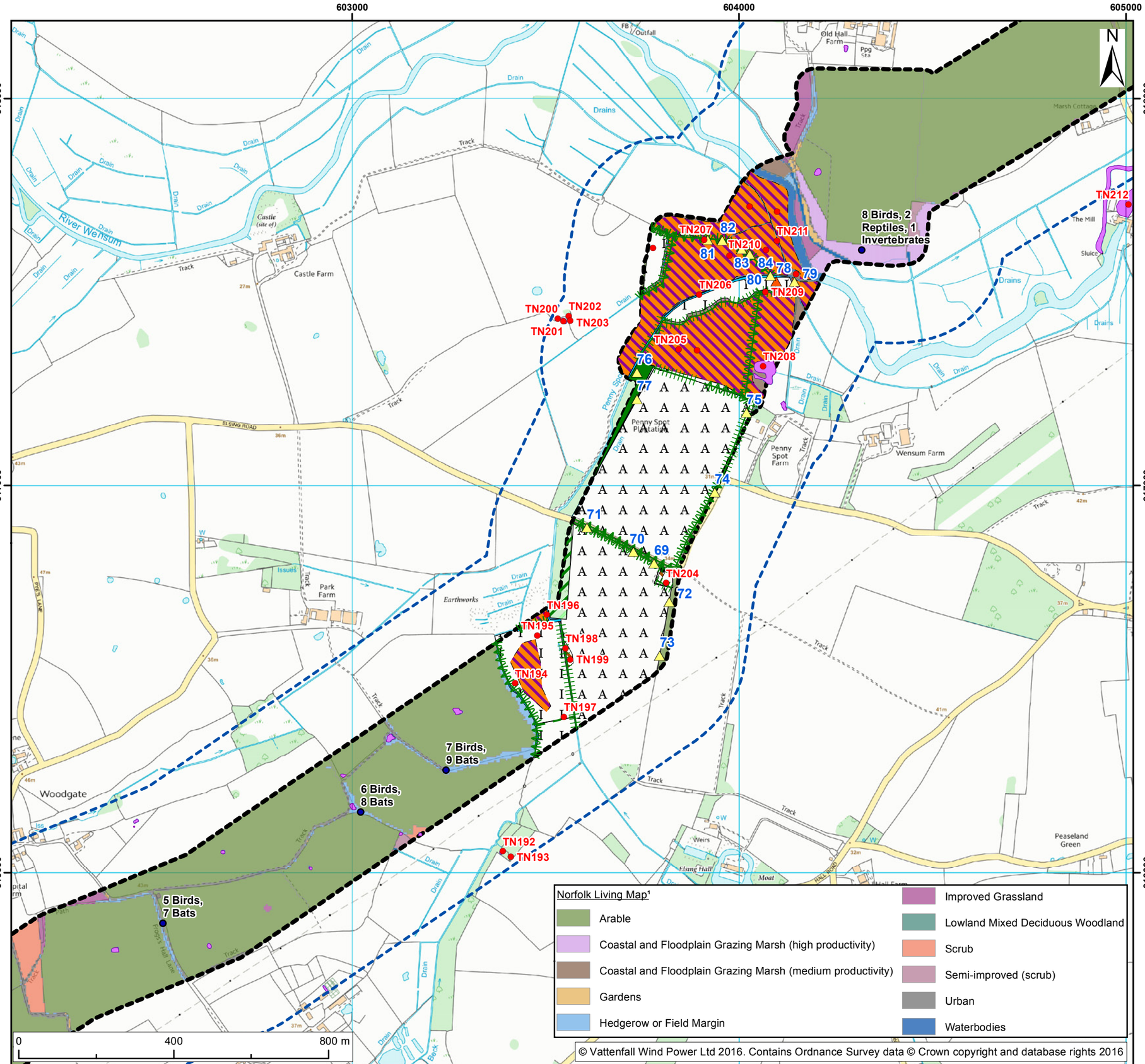

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Improved grassland
- Marsh/marshy grassland
- Other tall herb and fern - ruderal
- Standing water
- Running water
- Cultivated/disturbed land - arable
- Bare ground

Norfolk Living Map[1]

- Arable
- Coastal and Floodplain Grazing Marsh (high productivity)
- Coastal and Floodplain Grazing Marsh (medium productivity)
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (scrub)
- Urban
- Waterbodies

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map)
(Page 8 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid **EPSG:** 27700

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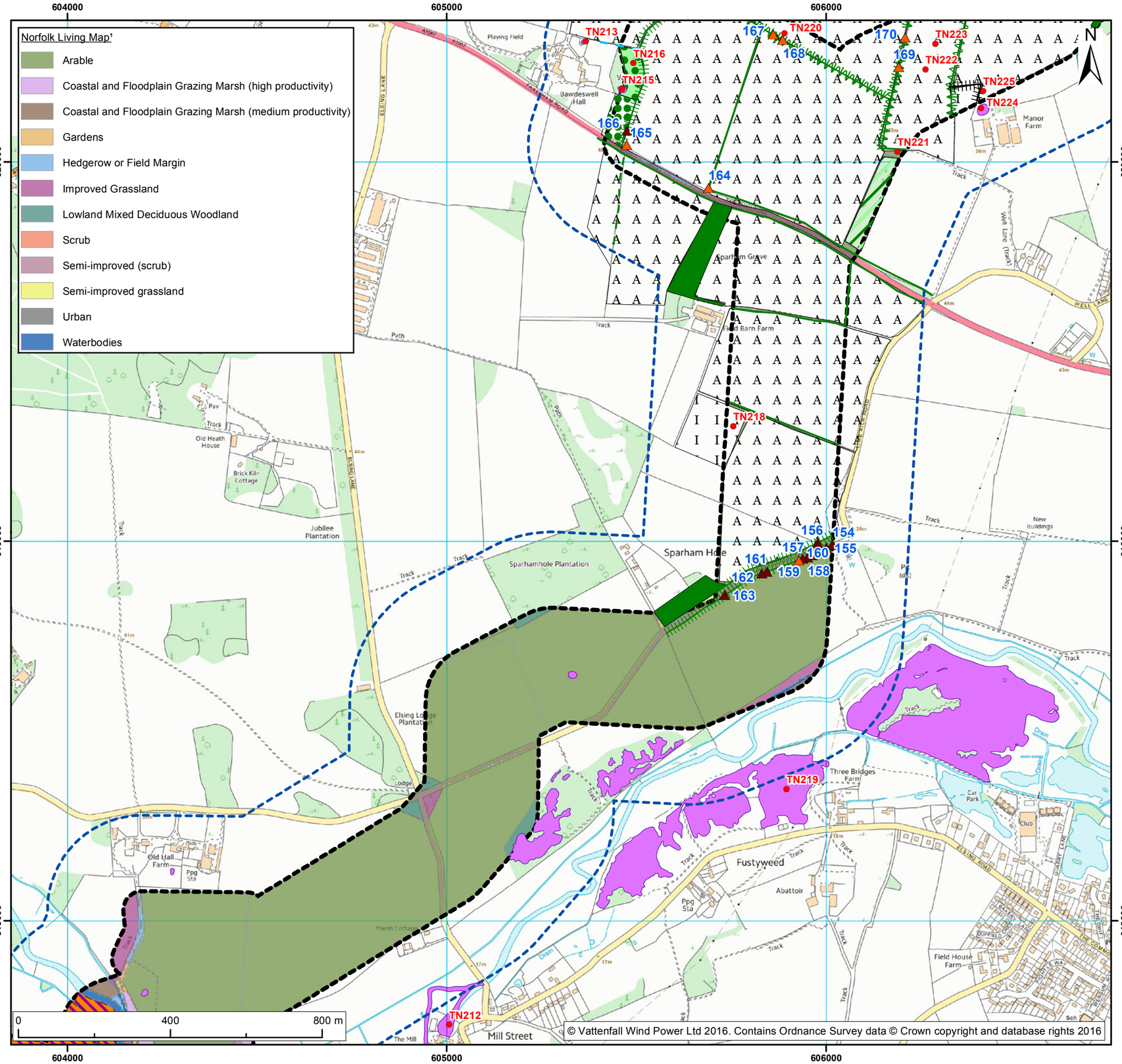

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Fence
- Dry ditch
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Broadleaved Parkland/scattered trees
- Improved grassland
- Marsh/marshy grassland
- Cultivated/disturbed land - arable

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map)
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Figure:	Drawing No:				
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Co-ordinate system: British National Grid **EPSG:** 27700

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606000

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Norfolk Living Map[1]

- Arable
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved grassland
- Urban
- Waterbodies

N

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Fence
- Dry ditch
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Improved grassland
- Marsh/marshy grassland
- Other tall herb and fern - ruderal
- Cultivated/disturbed land - arable

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map) (Page 10 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

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Co-ordinate system: British National Grid **EPSG:** 27700

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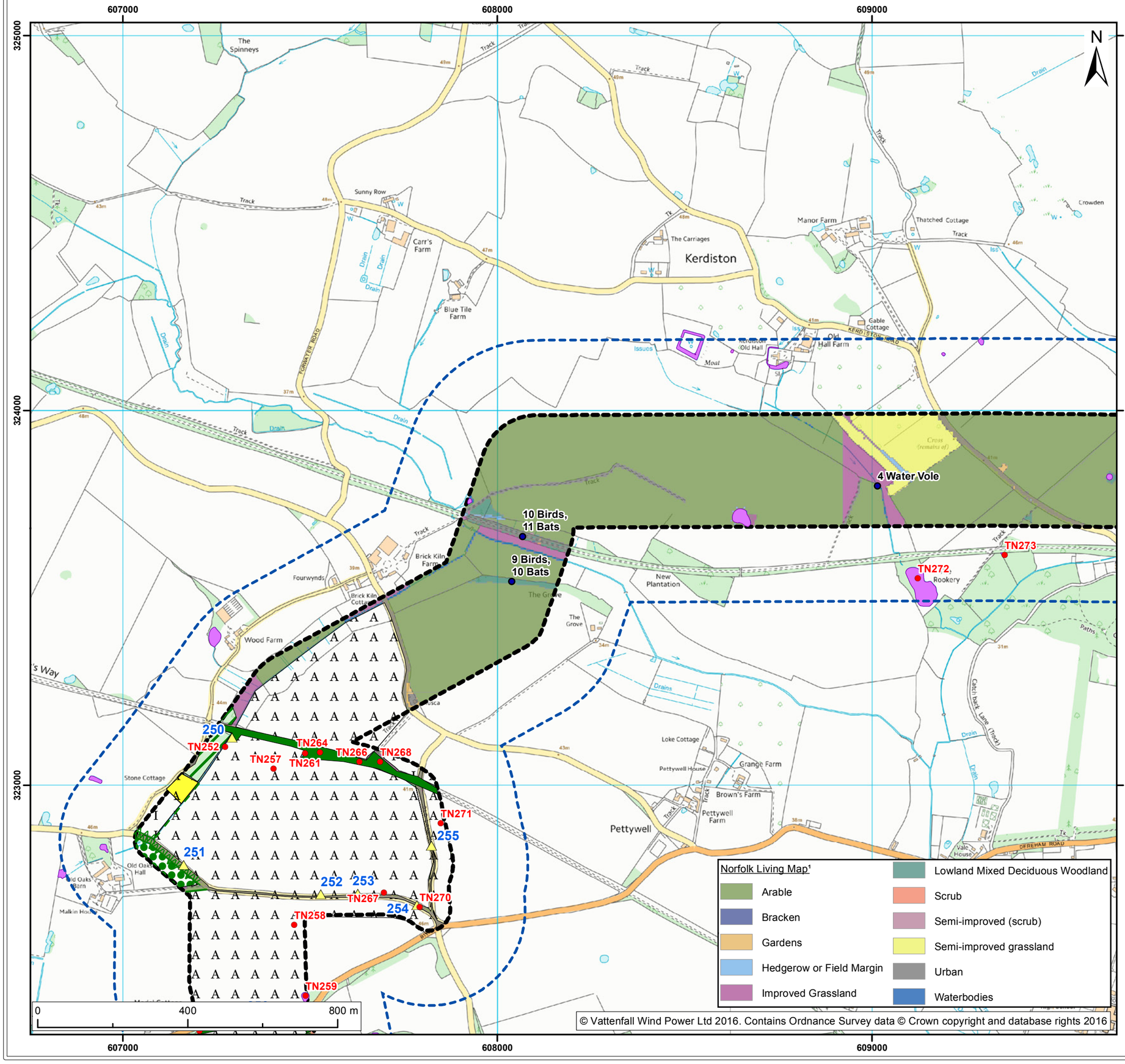

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Bat Roost Feature (Low Suitability)
- Target Note
- Living Map Key Habitats

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Broadleaved Parkland/scattered trees
- Improved grassland
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map)
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Figure:	Drawing No:
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Co-ordinate system: British National Grid **EPSG:** 27700

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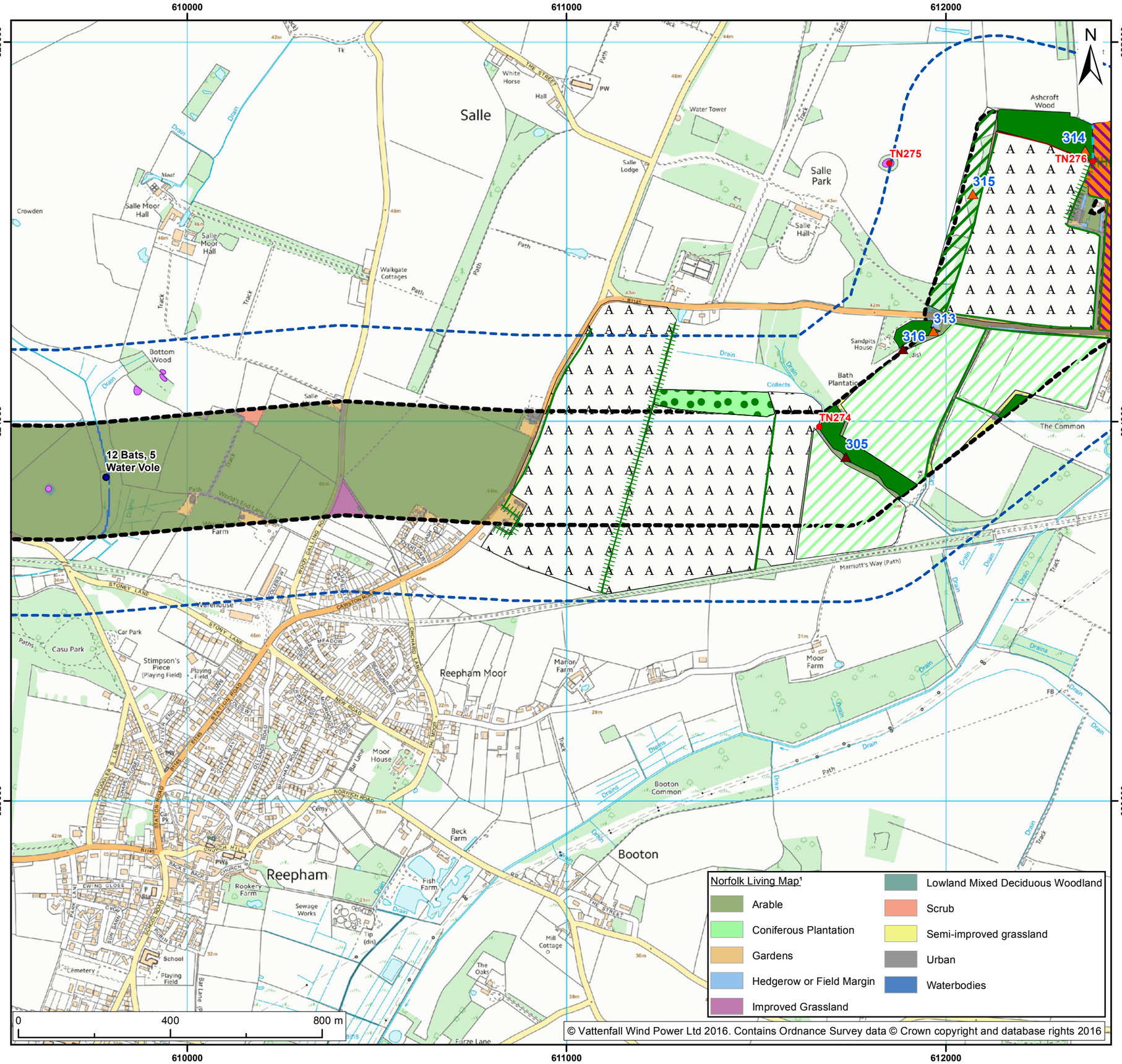

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Marsh/marshy grassland
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- <all other values>
- Intact hedge - Species-poor
- Hedge with trees - Species-poor
- Dry ditch
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title: Phase 1 Habitat Survey (including Norfolk Living Map) (Page 12 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

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Co-ordinate system: British National Grid **EPSG:** 27700

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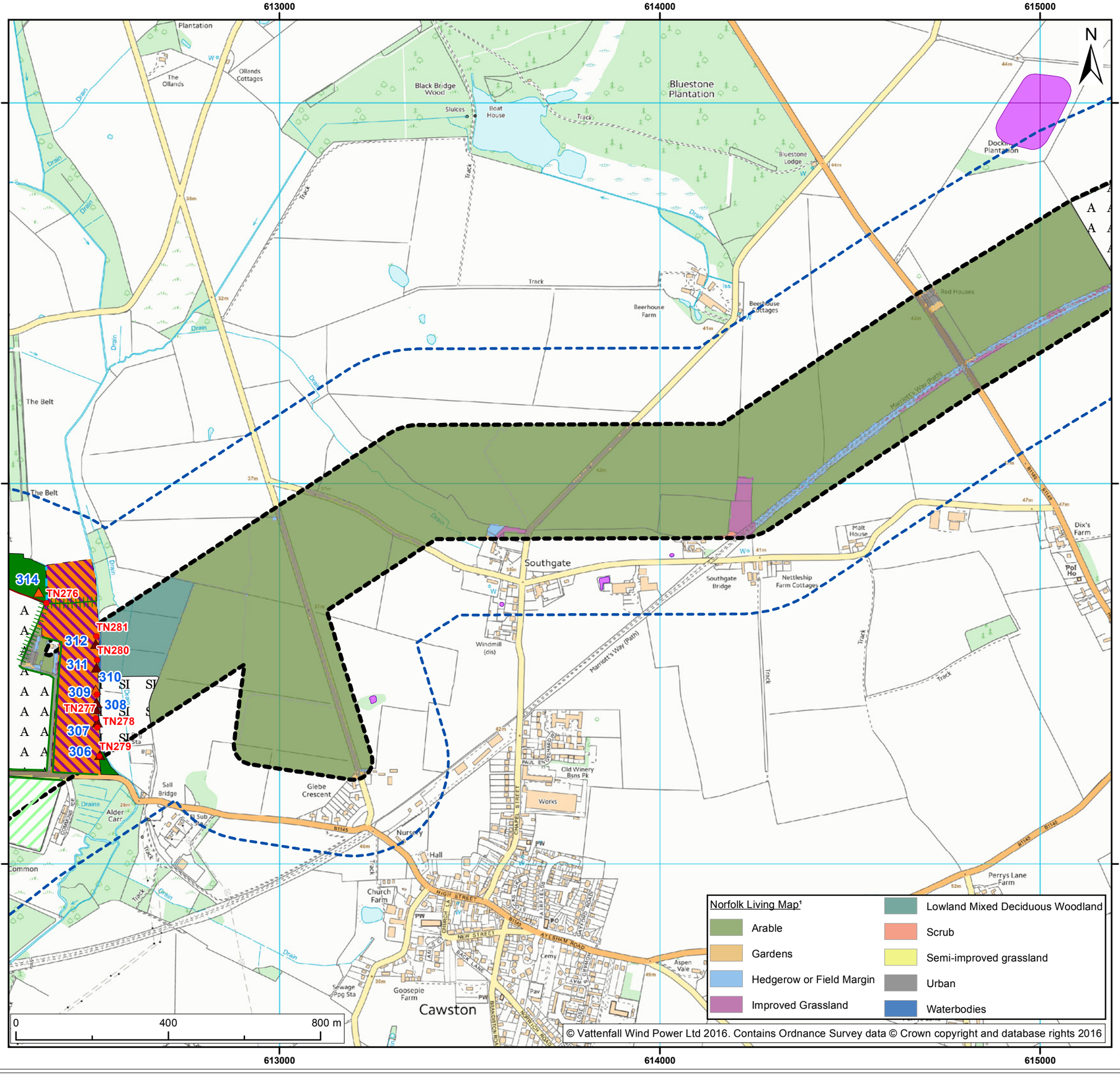

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Coniferous woodland - plantation
- Marsh/marshy grassland
- Poor semi-improved grassland
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- <all other values>
- Intact hedge - Species-poor
- Hedge with trees - Species-poor
- Dry ditch
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map)
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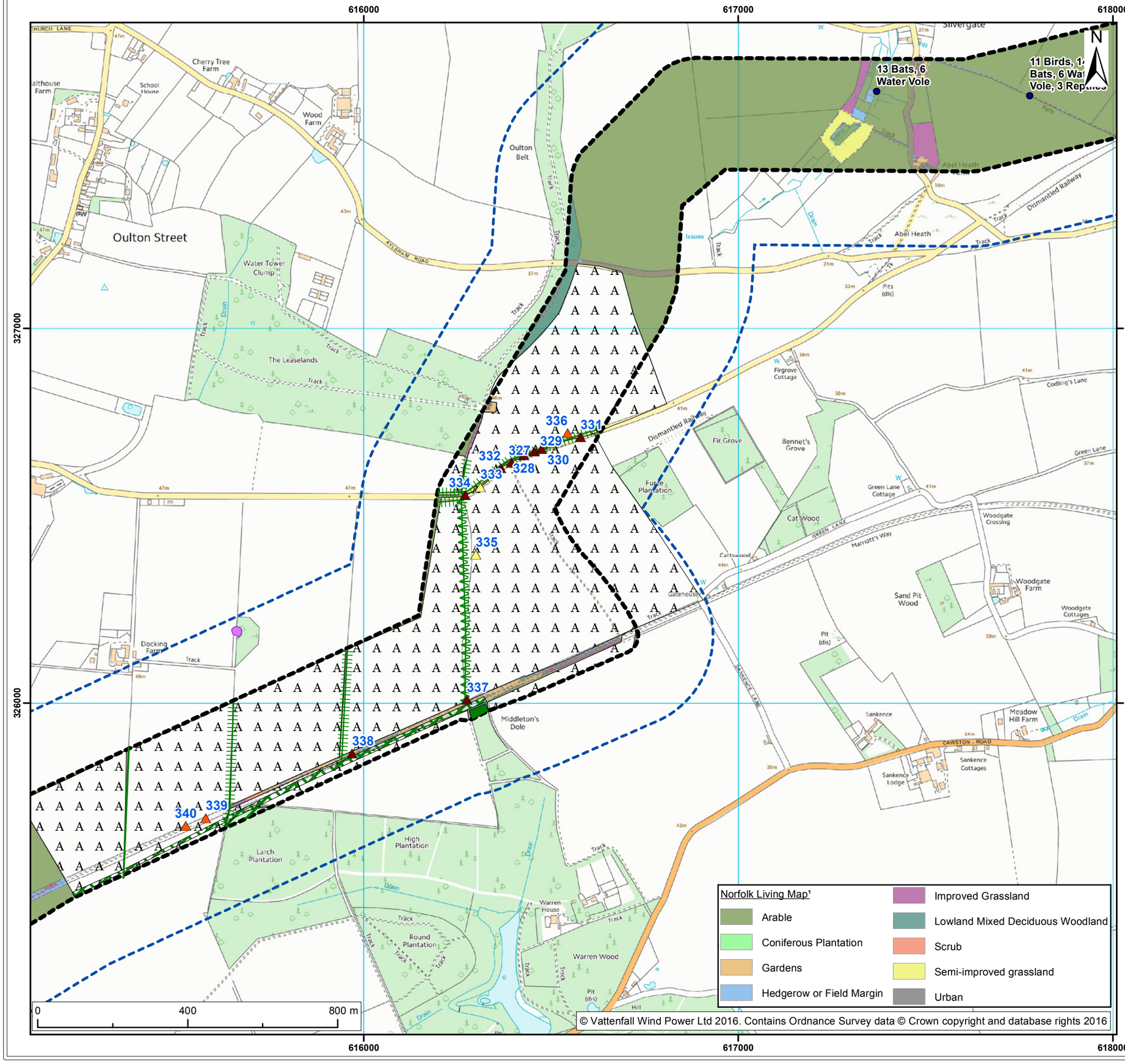

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Scrub - dense/continuous
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Living Map Key Habitats

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
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Phase 1 Habitat Survey (including Norfolk Living Map) (Page 14 of 25)

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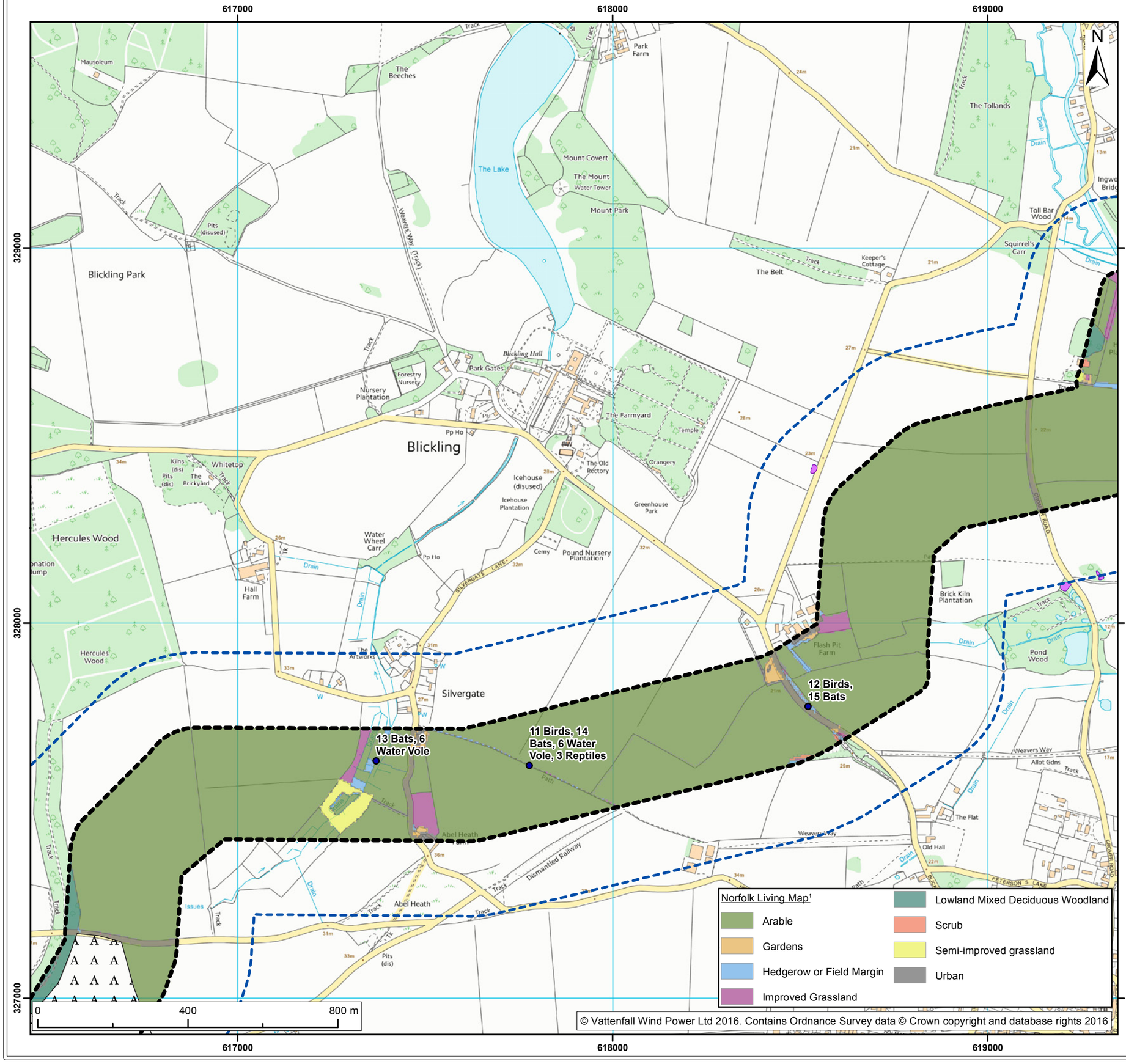

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Living Map Key Habitats

Phase 1 Habitat Classification

- A — Cultivated/disturbed land - arable

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map)
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Figure: 4 | Drawing No: PB4476-03-PS-004

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Co-ordinate system: British National Grid **EPSG:** 27700

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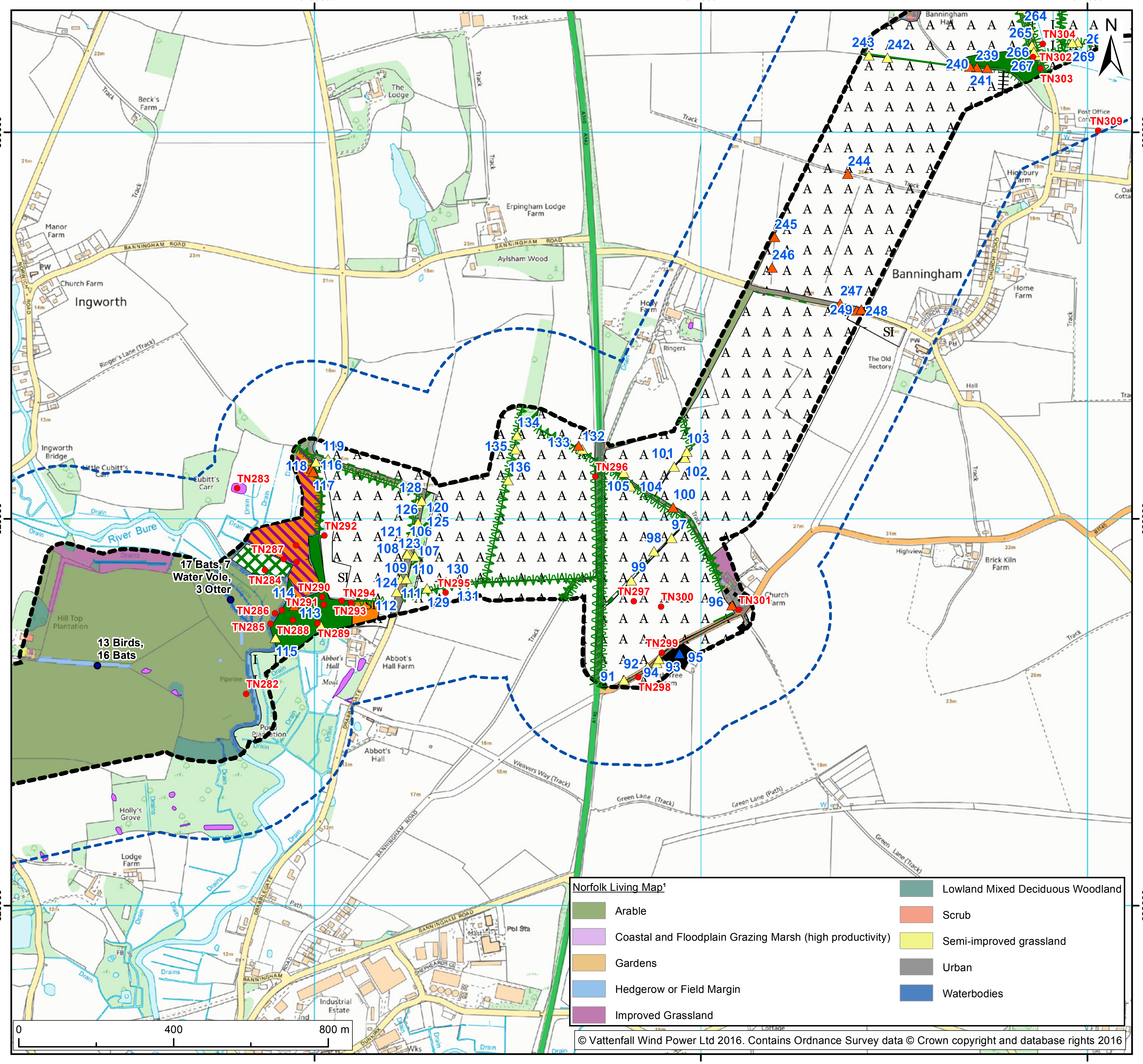

Norfolk Living Map[1]

- Arable
- Coastal and Floodplain Grazing Marsh (high productivity)
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved grassland
- Urban
- Waterbodies

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- Neutral grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Standing water
- Cultivated/disturbed land - arable
- Buildings
- Other habitat
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Fence
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Bat Roost Feature (Negligable Suitability)
- Target Note
- Living Map Key Habitats

[1] Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map) (Page 16 of 25)

Figure: 4 Drawing No: PB4476-03-PS-004

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01	14/03/2017	JE	GC	A3	1:10,000

Co-ordinate system: British National Grid **EPSG:** 27700

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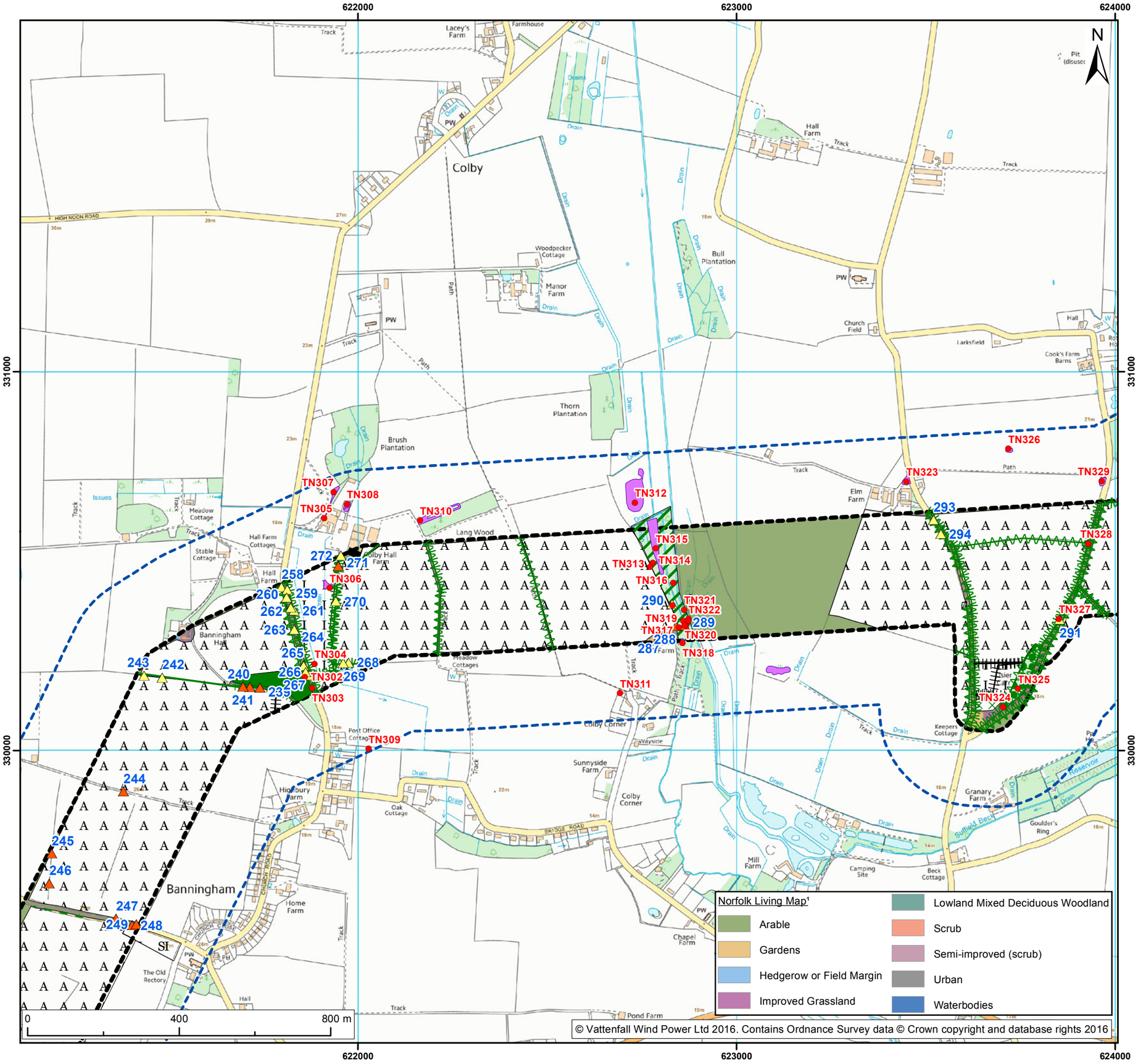

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Improved grassland
- Poor semi-improved grassland (SI)
- Cultivated/disturbed land - arable (A)
- Buildings
- Bare ground
- Other habitat
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Native species-rich
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Fence
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title: Phase 1 Habitat Survey (including Norfolk Living Map) (Page 17 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

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Co-ordinate system: British National Grid **EPSG:** 27700

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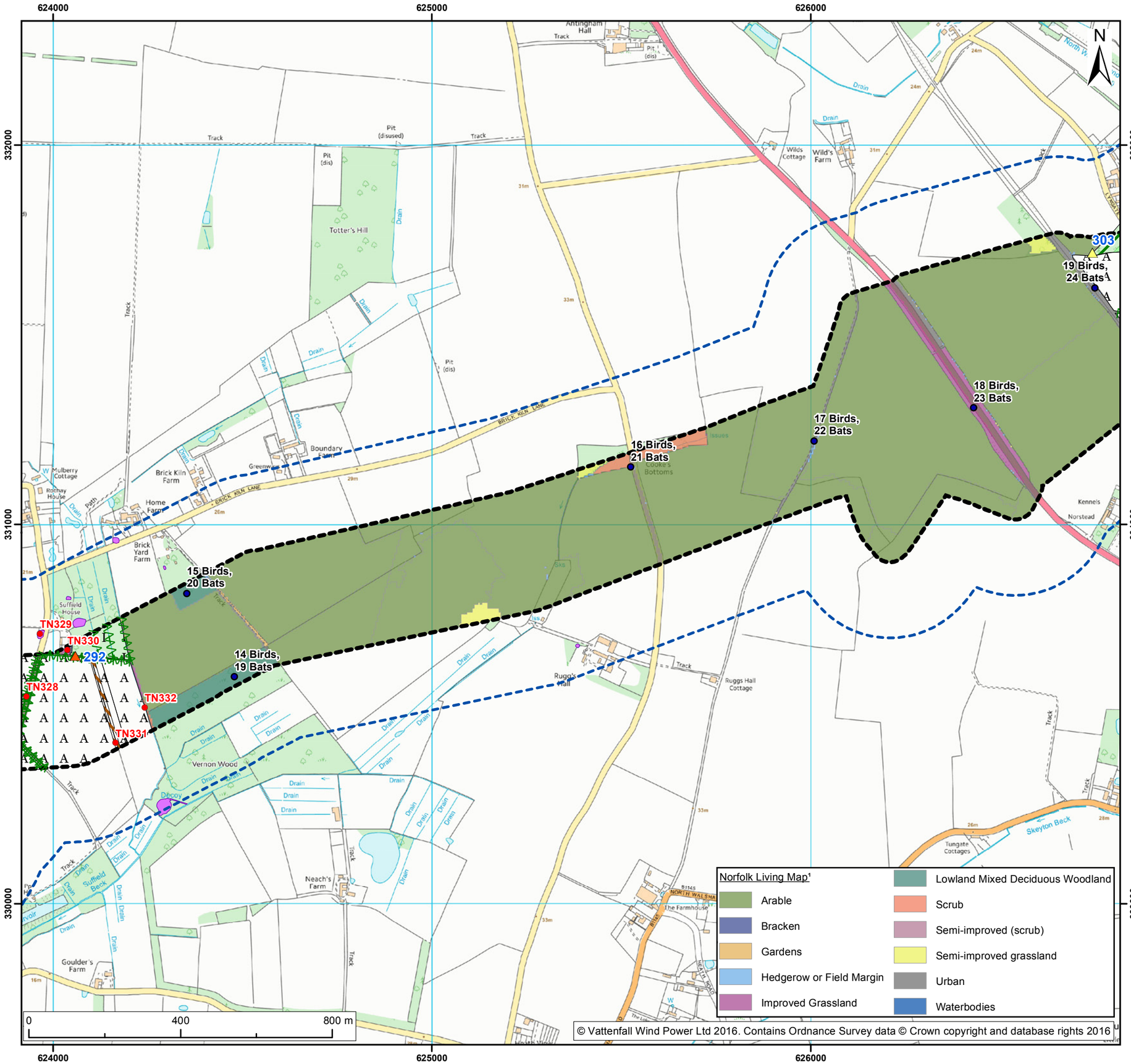

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Mixed woodland - plantation
- Improved grassland
- Other tall herb and fern - ruderal
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Defunct hedge - Native species-rich
- Hedge with trees - Native species-rich
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
Norfolk Vanguard	Extended Phase 1 Habitat Survey Report

Title:

Phase 1 Habitat Survey (including Norfolk Living Map) (Page 18 of 25)

Figure: 4 | Drawing No: PB4476-03-PS-004

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VATTENFALL

Royal HaskoningDHV
Enhancing Society Together

627000 628000 629000

332000 331000 330000

N

Swafield

TN334 TN336 TN339 TN338 TN335 TN337 TN333 TN340

302 301 300 295 304 298 297 296 299

25 Bats, 9 Water Vole

20 Birds, 26 Bats, 5 Reptiles

19 Birds, 24 Bats

21 Birds, 27 Bats

22 Birds, 28 Bats

TN344 TN345 TN341 TN343 TN342 TN346

138 139

TN347 TN348

NORTH WALSHAM

0 400 800 m

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Coniferous Parkland/scattered trees
- Improved grassland
- Marsh/marshy grassland
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Native species-rich
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Low Suitability)
- Target Note
- Living Map Key Habitats

Norfolk Living Map[1]

- Arable
- Coniferous Plantation
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved grassland
- Urban
- Waterbodies

[1] Norfolk Biodiversity Information Service, 2017.

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Title:

Phase 1 Habitat Survey (including Norfolk Living Map)
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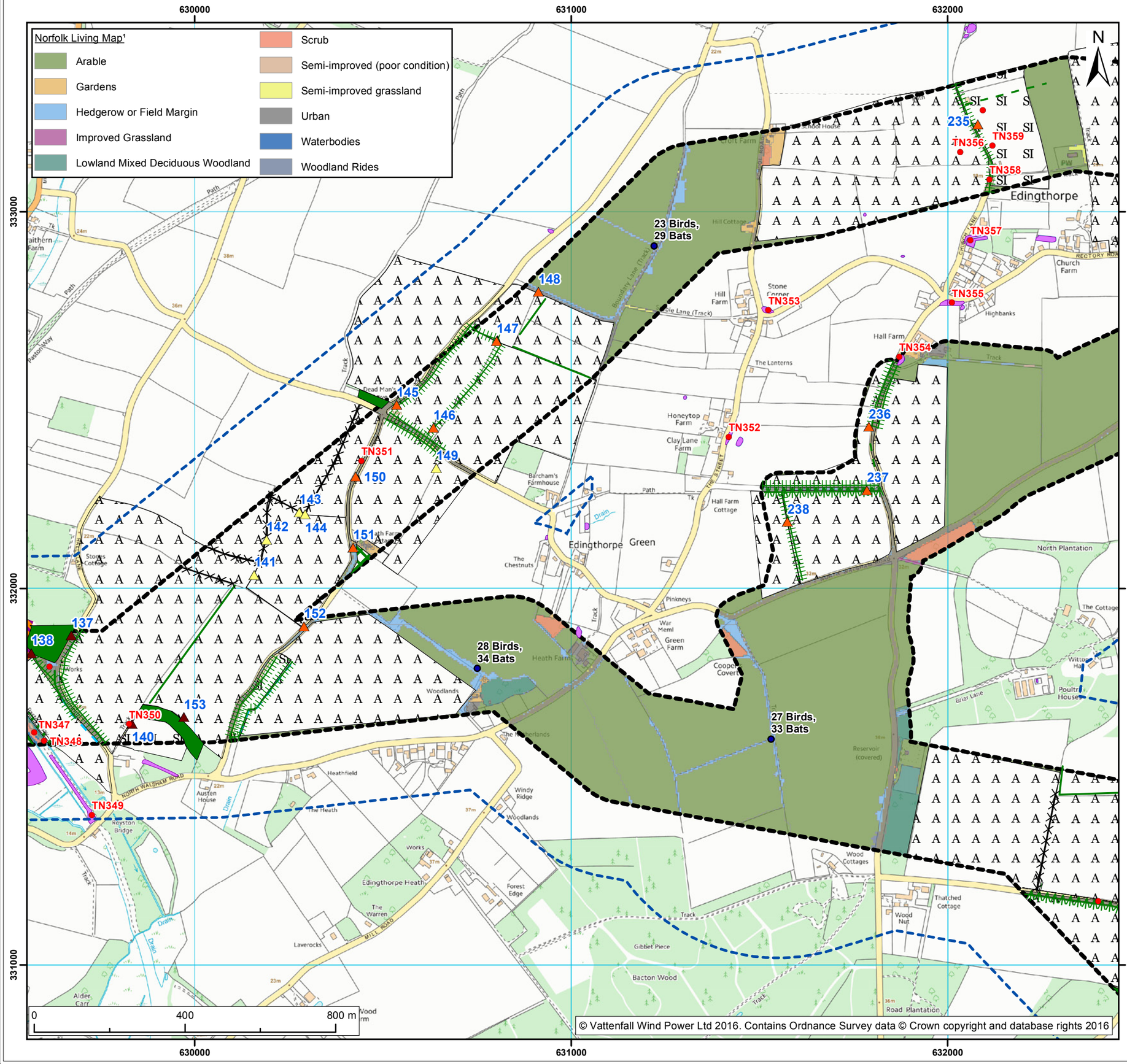

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Marsh/marshy grassland
- Poor semi-improved grassland
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Dry ditch
- Boundary removed
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

¹ Norfolk Biodiversity Information Service, 2017.

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Enhancing Society Together

632000 633000 634000

334000 333000

Norfolk Living Map[1]

- Arable
- Beach
- Coastal Sediment
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved grassland
- Urban
- Waterbodies

N

25 Birds, 31 Bats

23 Birds, 30 Bats

26 Birds, 32 Bats

TN373 TN359 TN358 TN357 TN356 TN355 TN354

235 236 274 275 276 278 279 280 281

Bacton Gas Distribution Station

Edingthorpe

Bacton

Pollard Street

Butt Hill

Witton Old Rectory

0 400 800 m

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- Improved grassland
- Poor semi-improved grassland
- Intertidal - mud/sand
- Cultivated/disturbed land - arable
- Artificial sea wall
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Species-poor
- Dry ditch
- Boundary removed
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

[1] Norfolk Biodiversity Information Service, 2017.

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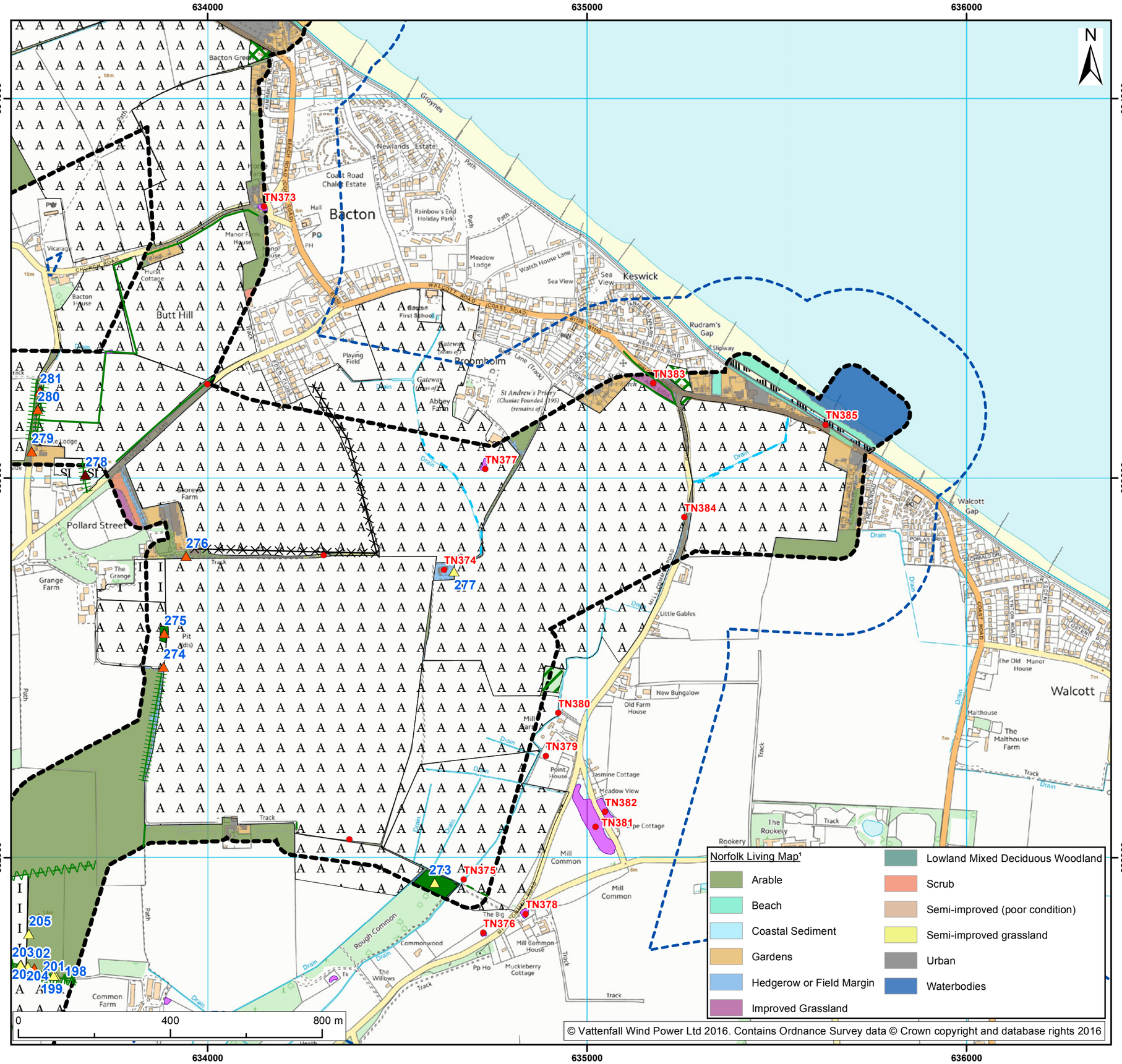

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Native species-rich
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Dry ditch
- Boundary removed
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- Improved grassland
- Poor semi-improved grassland
- Intertidal - mud/sand
- Cultivated/disturbed land - arable
- Artificial sea wall

¹ Norfolk Biodiversity Information Service, 2017.

Project:	Report:
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Title: Phase 1 Habitat Survey (including Norfolk Living Map) (Page 22 of 25)

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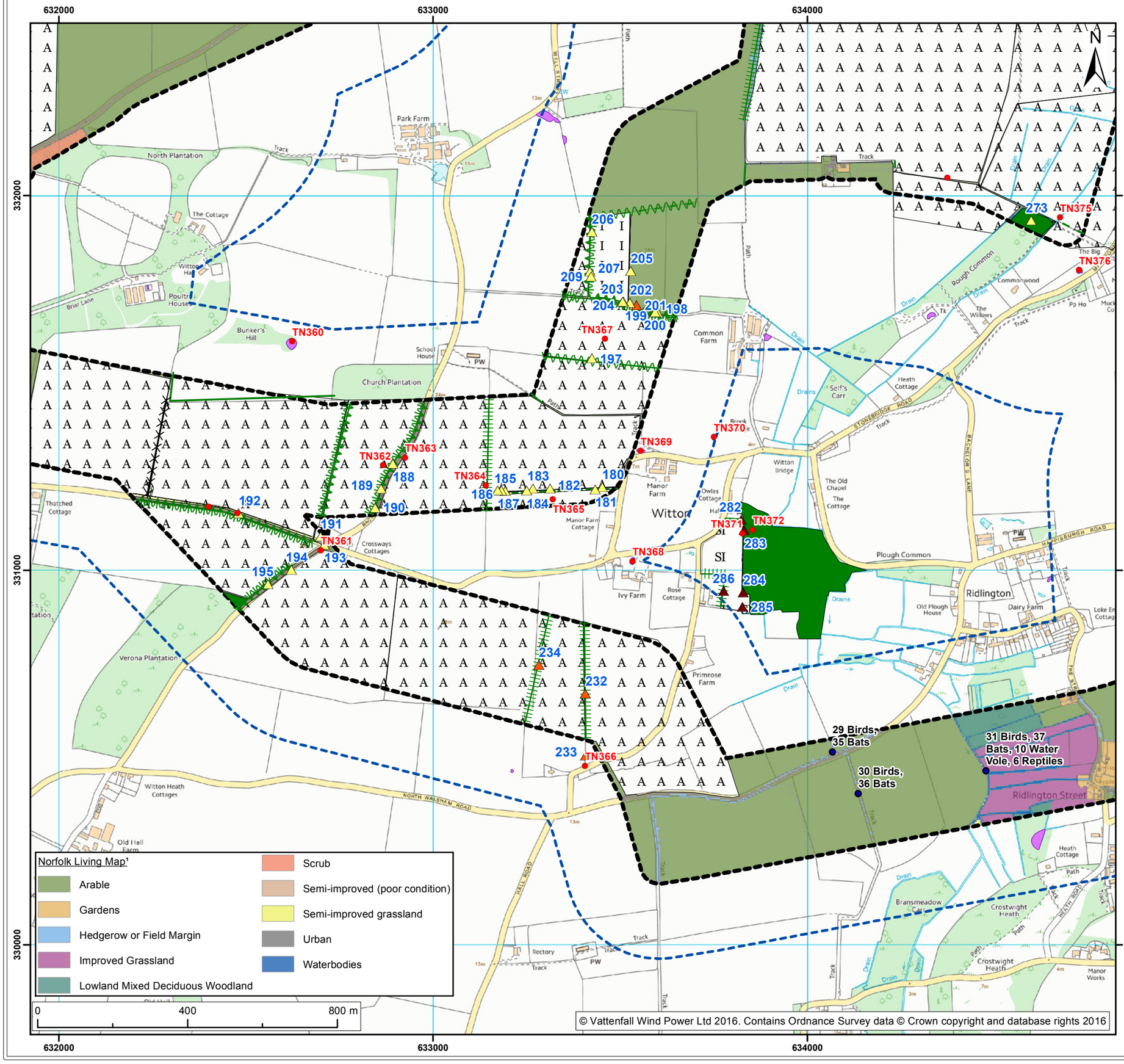

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Native species-rich
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Hedge with trees - Species-poor
- Boundary removed
- Bat Roost Feature (High Suitability)
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note
- Living Map Key Habitats

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Improved grassland
- Poor semi-improved grassland
- Cultivated/disturbed land - arable
- Buildings
- Bare ground

¹ Norfolk Biodiversity Information Service, 2017.

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Phase 1 Habitat Survey (including Norfolk Living Map)
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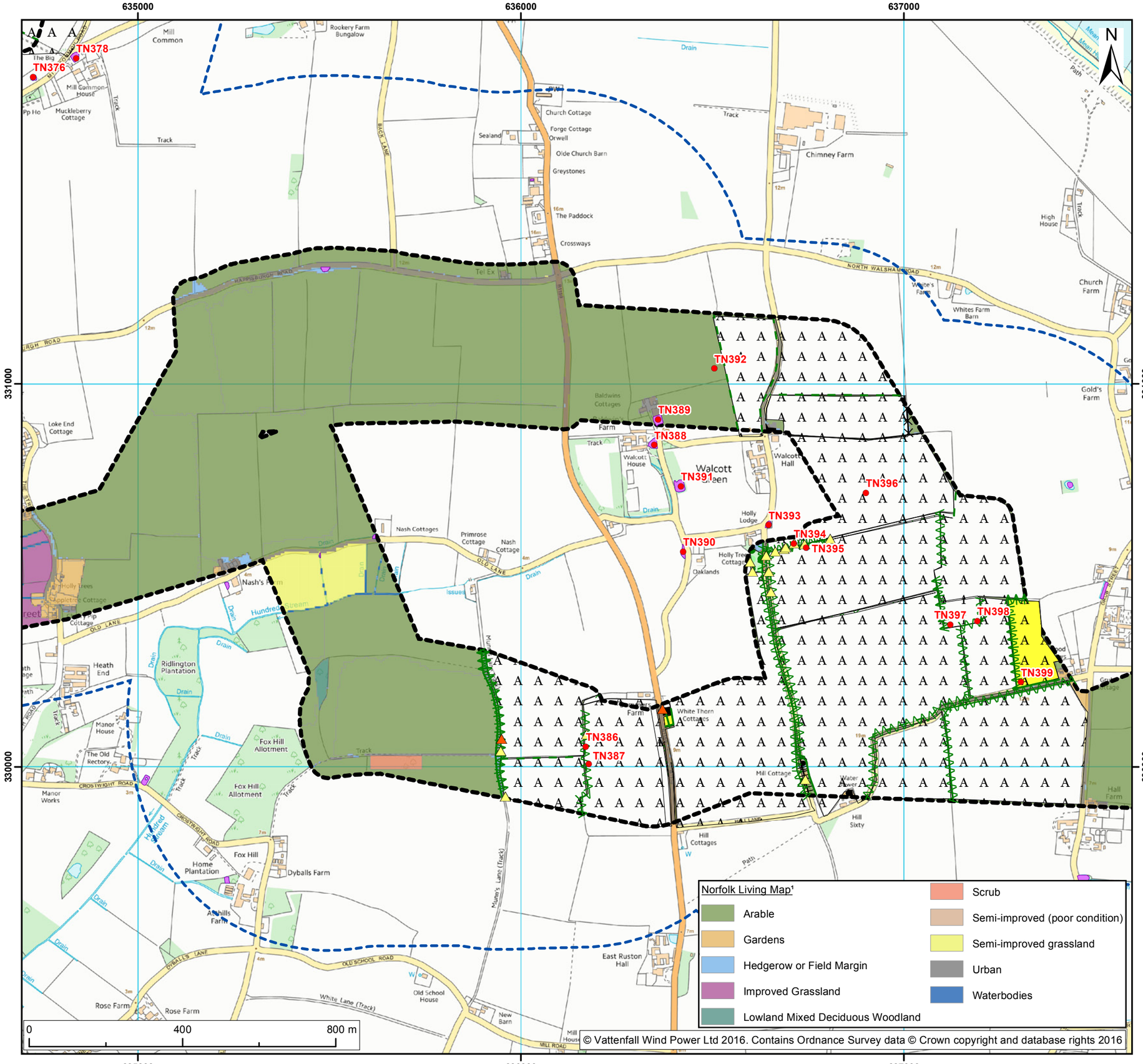

Norfolk Living Map[1]

- Arable
- Gardens
- Hedgerow or Field Margin
- Improved Grassland
- Lowland Mixed Deciduous Woodland
- Scrub
- Semi-improved (poor condition)
- Semi-improved grassland
- Urban
- Waterbodies

Legend:

- Extended Phase 1 Habitat Survey Area
- Greater Crested Newt Search Area

Phase 1 Habitat Classification

- Scrub - scattered
- Coniferous Parkland/scattered trees
- Improved grassland
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Waterbodies surveyed for GCN
- Intact hedge - Native species-rich
- Intact hedge - Species-poor
- Defunct hedge - Native species-rich
- Defunct hedge - Species-poor
- Hedge with trees - Native species-rich
- Fence
- Boundary removed
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note

[1] Norfolk Biodiversity Information Service, 2017.

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Phase 1 Habitat Survey (including Norfolk Living Map) (Page 24 of 25)

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638000 639000 640000

331000 330000 329000

N

Norfolk Living Map[1]

- Arable
- Beach
- Coastal Sand Dunes
- Coastal Sediment
- Dune Grassland
- Gardens
- Hedgerow or Field Margin
- Lowland Mixed Deciduous Woodland
- Maritime Cliff and Slopes
- Semi-improved (poor condition)
- Semi-improved grassland
- Urban
- Waterbodies

Legend:

- Extended Phase 1 Habitat Survey Area
- Great Crested Newt Search Area

Phase 1 Habitat Classification

- Scrub - dense/continuous
- Poor semi-improved grassland
- Intertidal - mud/sand
- Dune grassland
- Coastal grassland
- Cultivated/disturbed land - arable
- Waterbodies surveyed for Great Crested Newt
- Intact hedge - Species-poor
- Defunct hedge - Species-poor
- Hedge with trees - Species-poor
- Dry ditch
- Bat Roost Feature (Low Suitability)
- Bat Roost Feature (Moderate Suitability)
- Target Note

[1] Norfolk Biodiversity Information Service, 2017.

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Phase 1 Habitat Survey (including Norfolk Living Map)
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0 400 800 m

22.10 Annex B: Badger Results

202. Field survey results in relation to badgers are confidential.

22.11 Annex C: Target Notes

203. Table 22.13 below shows the field survey target notes.

Table 22.13 Target notes

Plate Ref (Object ID)	Target Note	Description	Date
167	TN1	Drain near A47, WV assessment undertaken	14-Feb
168	TN2	Pond reference: TF8810-6, HSI undertaken	14-Feb
169	TN3	Pond reference: TF8810-8, HSI undertaken	14-Feb
166	TN4	TF8809-10	14-Feb
170	TN5	New pond, HSI undertaken, Pond reference TF8810-8-A	14-Feb
208	TN6	TF8910-11 - pond dry	15-Feb
209	TN7	TF8810-2A	15-Feb
165	TN8	TF8910-16	14-Feb
214	TN9	Pond ref TF8910-15	15-Feb
163	TN10	Semi mature trees along the road, common bird nesting potential (typical of available nesing habitat)	14-Feb
164	TN11	TF8909-17	14-Feb
212	TN12	Potential otter resting place, in banks underneath tree/hedgerow	15-Feb
213	TN13	TF8910-19	15-Feb

Plate Ref (Object ID)	Target Note	Description	Date
162	TN14	TF8909-21	14-Feb
215	TN15	Possible WV burrows in banks of substation drain within woodland	15-Feb
210	TN16	Substation drain	15-Feb
211	TN17	Substation drain	15-Feb
216	TN18	TF9010-24	15-Feb
218	TN19	Ditch with running water, WV assessment undertaken	15-Feb
217	TN20	Ditch with running water, WV assessment undertaken	15-Feb
161	TN21	TF8909-26	14-Feb
219	TN22	TF9010-31. Pond dry.	15-Feb
220	TN23	Pond ref TF9009-39 - same as TF9010-39	15-Feb
91	TN24	Pond ref TF9011-38	10-Feb
90	TN25	Species poor hedgerow consisting mainly of hawthorn and bramble with scattered young oak and ash trees	10-Feb
89	TN26	TF9011-43	10-Feb
88	TN27	Hedgerow consisting of mainly hawthorn with scattered mature, ivy clad oak, bramble and dog rose. Ditch with standing water.	10-Feb
87	TN28	Species poor hedgerow consisting mainly of hawthorn with occasional elder	10-Feb

Plate Ref (Object ID)	Target Note	Description	Date
159	TN29	TF9009-47 - dry pond. Giant hogweed also present.	14-Feb
86	TN30	TF9011-45	10-Feb
221	TN31	TF9009-49	15-Feb
98	TN32	Species poor hedgerow with trees; hawthorn, oak, bramble and ditch with standing water	10-Feb
104	TN33	TF9010-50	10-Feb
102	TN34	Species poor hedgerow with trees; hawthorn, oak, ash, bramble and dry ditch	10-Feb
85	TN35	TF9011-48	10-Feb
95	TN36	Species poor hedgerow with trees; hawthorn, oak, bramble and dry ditch	10-Feb
96	TN37	TF9011-52	10-Feb
97	TN38	TF9011-51	10-Feb
92	TN39	Species poor hedgerow mainly hawthorn and bramble and ditch with shallow standing water	10-Feb
84	TN40	Species poor hedgerow with trees; hawthorn, crab apple, oak, bramble	10-Feb
106	TN41	West End Farm drain	10-Feb
105	TN42	TF9090-57. Pond doesn't exist	10-Feb
93	TN43	TF9011-53	10-Feb

Plate Ref (Object ID)	Target Note	Description	Date
158	TN44	TF9009-61. Pond in a back garden, HSI undertaken from roadside	14-Feb
99	TN45	Pond ref tf901060	10-Feb
94	TN46	Species poor hedgerow with trees consisting mainly of hawthorn, ash, holly, oak, bramble. Large ditch with standing water between hedgerow and property behind	10-Feb
100	TN47	TF9010-62	10-Feb
83	TN48	Ditch with shallow standing water between field and woodland	10-Feb
101	TN49	Species poor hedgerow with mature trees; hawthorn, oak, bramble, ivy and dry ditch	10-Feb
82	TN50	Species poor hedgerow with scattered trees; hawthorn, oak	09-Feb
80	TN51	TF9011-64	09-Feb
81	TN52	Scrub and ditch with standing water between field and road on both sides	09-Feb
39	TN53	Species poor hedgerow with trees; oak hawthorn and elderberry	09-Feb
103	TN54	Hedgerow consisting of hawthorn, oak, sycamore, hazel and bramble	10-Feb
68	TN55	Species poor hedgerow with trees; hawthorn, oak lining road on both sides	09-Feb
41	TN56	Species poor hedgerow with trees; hawthorn oak and culverted ditch	09-Feb
67	TN57	Species poor hedgerow with trees; hawthorn, oak lining road on both sides	09-Feb
70	TN58	TF9111-68. Pond dry	09-Feb

Plate Ref (Object ID)	Target Note	Description	Date
71	TN59	Dry ditch, hawthorn hedgerow	09-Feb
66	TN60	TF9111-67	09-Feb
42	TN61	Species poor hedgerow with oak, ash, alder, hawthorn	09-Feb
69	TN62	Species poor hedgerow with trees; hawthorn, oak, ivy, holly, hazel and dry ditch	09-Feb
40	TN63	Dry ditch running between arable and woodland	09-Feb
37	TN64	Species poor hedgerow with trees ; hawthorn, crab apple, oak, bramble	09-Feb
4	TN65	Fast running stream downstream of bridge, steep banks, oak lined, good water quality, arable on left hand bank. Upstream of bridge, hogweed, bramble, common reed	08-Feb
107	TN66	TF9110-71	10-Feb
43	TN67	Running water alongside hedgerow	09-Feb
38	TN68	Species poor hedgerow with trees; hawthorn, bramble, oak	09-Feb
45	TN69	Species poor hedgerow with scattered oak, hawthorn bramble. Ditch adjacent with standing water.	09-Feb
65	TN70	TF9110-72 - no pond ref TF9111-72	09-Feb
36	TN71	All ditches in the woodland are dry	09-Feb
72	TN72	Species poor hedgerow with trees; hawthorn, oak , bramble	09-Feb
44	TN73	Species poor hedgerow ; hawthorn and bramble	09-Feb

Plate Ref (Object ID)	Target Note	Description	Date
5	TN74	Species poor intact hedge; oak, hazel, crab apple, bramble, limited dog rose observed - many bird nests observed	08-Feb
35	TN75	Dry ditch, species poor hedge both sides of the track, oak, elderberry, hawthorn	09-Feb
64	TN76	Species poor hedgerow with trees; hawthorn, oak, sycamore, bramble and dry ditch	09-Feb
3	TN77	Mature ivy clad oak, bat roost potential	08-Feb
63	TN78	TF9110-73. Pond not present.	09-Feb
2	TN79	Mature oak tree, ivy clad, bat roost potential	08-Feb
73	TN80	Species poor hedgerow hawthorn and bramble	09-Feb
6	TN81	Species poor intact hedge with trees; oak, hazel, blackthorn, bramble, and dry ditch - nesting bird potential	08-Feb
79	TN82	TF91111-75	09-Feb
15	TN83	Species poor intact, trimmed hedgerow with scattered semi mature - mature trees; hawthorn, rowan, oak, dog rose, bramble, ivy - predominantly hawthorn - nesting bird potential	08-Feb
7	TN84	Species poor intact hedge with trees; sycamore, oak, blackthorn, bramble - dry ditch - nesting bird potential	08-Feb
46	TN85	Species poor hedgerow with trees; Hawthorn, oak, bramble; ditch with running water	09-Feb
10	TN86	Dry ditch; species poor hedgerow; oak, bramble, ivy, blackthorn - nesting bird potential - mature oaks	08-Feb
9	TN87	Dry ditch; species poor hedgerow; ash, oak, hawthorn - nesting bird potential	08-Feb
75	TN88	Smugglers Lane ditch. WV assessment undertaken.	09-Feb

Plate Ref (Object ID)	Target Note	Description	Date
74	TN89	Large pond with ramp, well maintenances, probably used as a fish pond - TF91111-76. Pond TF9111-78 functionally connected to TF91111-76.	09-Feb
14	TN90	Species poor intact hedgerow; oak, ash, hawthorn, bramble, ivy and dry ditch	08-Feb
34	TN91	TF9110-77	09-Feb
13	TN92	Species poor intact hedgerow; ash, oak, sycamore, ivy - nesting bird potential, dry ditch, fenced.	08-Feb
78	TN93	Ditch with standing water between road and fields (Crown Lane)	09-Feb
12	TN94	Dry ditch, fenced - wood and grassland	08-Feb
76	TN95	Hawthorn and ivy hedgerow on both sides of road, with scattered oak	09-Feb
62	TN96	Species poor hedgerow with trees; oak, alder, hawthorn, bramble, fenced	09-Feb
77	TN97	Hawthorn and ivy hedgerow on both sides of road, with scattered oak	09-Feb
11	TN98	TF9109-81	08-Feb
16	TN99	Dry ditch, defunct hedgerow with ivy and hawthorn	08-Feb
30	TN100	Species rich intact hedgerow with trees Hawthorn, ash, dog rose, alder, bramble, upstream section of wood lane stream adjacent, fast flowing possible culvert end downstream	08-Feb
18	TN101	Species poor intact trimmed hedgerow with scattered semi mature trees; hawthorn, oak, dog rose	08-Feb
61	TN102	TF9111-82. Pond not present.	09-Feb

Plate Ref (Object ID)	Target Note	Description	Date
60	TN103	TF9111-85	09-Feb
59	TN104	TF9111-84	09-Feb
19	TN105	Dry ditch adjacent to plantation woodland	08-Feb
20	TN106	Species poor, defunct hedgerow with scattered semi mature trees; oak, ivy, hawthorn and dry ditch	08-Feb
21	TN107	Species poor intact hedgerow with scattered mature trees; oak, hawthorn, ash, bramble and dry ditch	08-Feb
58	TN108	Area of scrub underneath pylon, hogweed, bramble	09-Feb
57	TN109	Species poor hedgerow with trees ; hawthorn, hazel, bramble, oak and dry ditch	09-Feb
29	TN110	Species rich intact hedgerow with semi mature trees; Bramble, hazel, hawthorn, ivy, nettle, bramble, ash - dry ditch	08-Feb
48	TN111	Species poor hedgerow with hawthorn between woodland and road	09-Feb
47	TN112	Species poor hedgerow; hawthorn, dog rose, bramble with ditch, running water	09-Feb
22	TN113	Dry ditch running within plantation woodland	08-Feb
28	TN114	TF9210-93 Heavily shaded pond in arable field; hawthorn and bramble	08-Feb
49	TN115	TF9211-92. No pond present.	09-Feb
23	TN116	Species poor intact trimmed hedgerow; hawthorn dominant, ivy scattered trees, dry ditch	08-Feb
50	TN117	Area of scrub between road and field; hogweed, bramble, nettle.	09-Feb

Plate Ref (Object ID)	Target Note	Description	Date
27	TN118	TF9210-95	08-Feb
26	TN119	TF9210-94	08-Feb
51	TN120	TF9210-96	09-Feb
24	TN121	Species poor intact hawthorn dominant hedgerow, trimmed	08-Feb
25	TN122	Species poor intact hedgerow; hawthorn, ivy and dry ditch	08-Feb
55	TN123	Species poor hedgerow with trees; hazel, oak, hawthorn, bramble and dry ditch	09-Feb
56	TN124	Species poor hedgerow with trees; hawthorn, oak, ash, alder, bramble and dry ditch	09-Feb
52	TN125	Sliver of scrub with trees and ditch with standing water adjacent to road; oak, ash, hawthorn, bramble	09-Feb
54	TN126	Row of semi mature ash trees between arable field and road	09-Feb
53	TN127	Species poor hedgerow with hawthorn	09-Feb
142	TN128	Species poor hedgerow; hawthorn, bramble, dry ditch	13-Feb
143	TN129	TF9311-98	13-Feb
144	TN130	WV assessment undertaken	13-Feb
145	TN131	TF9311-104	13-Feb
147	TN132	TF9311-107	13-Feb

Plate Ref (Object ID)	Target Note	Description	Date
146	TN133	WV assessment undertaken	13-Feb
149	TN134	TF9311-108	13-Feb
148	TN135	TF9411-109	13-Feb
151	TN136	WV assessment undertaken	13-Feb
150	TN137	TF9412-110 and TF9412-112 is one pond	13-Feb
157	TN138	TF9412-113	13-Feb
116	TN139	TF9412-115	13-Feb
152	TN140	Rubble and fallen branches; potential reptile refugia	13-Feb
156	TN141	Area of scrub bordering track and arable fields; potential reptile habitat	13-Feb
154	TN142	TF9412-122 - no pond	13-Feb
153	TN143	Ditch with running water running between arable crops, WV assessment undertaken	13-Feb
117	TN144	TF9513-129	13-Feb
421	TN145	Skylark heard in this field.	03-Mar
118	TN146	TF9513-133A	13-Feb
424	TN147	Mature oak with large internal cavity. Suitable owl nesting site, although cavity adjacent to road.	03-Mar

Plate Ref (Object ID)	Target Note	Description	Date
423	TN148	Wader using pond. Common sandpiper.	03-Mar
422	TN149	TF9514-134	03-Mar
425	TN150	TF9514-136A. Pond not on OS mapping. HSI undertaken.	03-Mar
120	TN151	TF9514-136	13-Feb
119	TN152	TF9514-138	13-Feb
121	TN153	TF9514-139	13-Feb
123	TN154	TF9514-143A. Pond not on OS mapping. HSI undertaken.	13-Feb
122	TN155	TF9514-143	13-Feb
124	TN156	TF9615-145	13-Feb
125	TN157	TF9615-146	13-Feb
33	TN158	Watercourse. WV assessment undertaken.	09-Feb
110	TN159	Ancient woodland (landowner advice - check)	10-Feb
108	TN160	TF9614-156	10-Feb
109	TN161	TF9614-157	10-Feb
32	TN162	Semi-mature oak. Nesting potential	09-Feb

Plate Ref (Object ID)	Target Note	Description	Date
31	TN163	Building. Wood stack - poor reptile hibernacula. No obvious bat roost potential under eaves.	09-Feb
114	TN164	Landowner noted that skylarks nest in this field	10-Feb
115	TN165	Landowner noted that badgers use this field. Outside of the survey area.	10-Feb
111	TN166	Large lapwing flock, c.200	10-Feb
113	TN167	Hare spotted	10-Feb
112	TN168	Veteran tree	10-Feb
126	TN169	TF9815-160	13-Feb
428	TN170	Woodland has not been surveyed	03-Mar
427	TN171	TF9815-160A. Pond not on OS mapping, HSI undertaken.	03-Mar
426	TN172	Goldcrest observed in hedgerow.	03-Mar
430	TN173	Good reptile mosaic, with scrub, woodland by railway and grassland. Mosaic is small.	03-Mar
128	TN174	TF9915-166	13-Feb
127	TN175	TF9915-167	13-Feb
429	TN176	Skylark heard in songflight. Buzzard observed overhead.	03-Mar
129	TN177	TF9914-173	13-Feb

Plate Ref (Object ID)	Target Note	Description	Date
130	TN178	TG0015-180. Filled in.	13-Feb
131	TN179	TG0015-185	13-Feb
133	TN180	TG0115-189	13-Feb
132	TN181	TG0115-190	13-Feb
134	TN182	TG0115-192	13-Feb
431	TN183	Ditch running along field margin. Too shallow for WV, no assessment undertaken.	03-Mar
141	TN184	TG0115-193	13-Feb
140	TN185	TG0115-194	13-Feb
139	TN186	TG0114-197	13-Feb
138	TN187	TG0114-199	13-Feb
137	TN188	TG0115-200	13-Feb
136	TN189	TG0114-201 - actually part of TG0114-202	13-Feb
135	TN190	TG0114-202	13-Feb
195	TN191	TG0115-203	15-Feb
179	TN192	TG0316-222	14-Feb

Plate Ref (Object ID)	Target Note	Description	Date
180	TN193	TG0316-223	14-Feb
177	TN194	Ephemeral waterbody. No HSI undertaken.	14-Feb
176	TN195	Skylark observed	14-Feb
174	TN196	Decomposing trees, adjacent to wet tussocky grassland, watercourse and woodland habitat mosaic. Optimal reptile habitat.	14-Feb
178	TN197	Little egret spotted.	14-Feb
175	TN198	Watercourse subject to WV assessment.	14-Feb
181	TN199	Ruderal patch on field margin, adjacent to watercourse. Fallen trees present. Optimal reptile habitat mosaic.	14-Feb
197	TN200	TG0317-224. Part of TG0317-226.	15-Feb
199	TN201	TG0317-225	15-Feb
196	TN202	TG0317-226	15-Feb
198	TN203	TG0317-227	15-Feb
173	TN204	Mature pile, reptile hibernacula / breeding habitat. Adjacent to tussocky grassland / tall ruderal habitat.	14-Feb
183	TN205	Unidentifiable wader flushed from rushes on approach. 3no flushed in total. Suspected snipe.	14-Feb
186	TN206	Running watercourse assessed for WV potential	15-Feb
193	TN207	Ditch assessed for WV	15-Feb

Plate Ref (Object ID)	Target Note	Description	Date
182	TN208	TG0417-228	14-Feb
184	TN209	Watercourse assessed for WV	14-Feb
190	TN210	Birds observed in these wet fields: Egret, cormorant, robin, chaffinch long tailed tit, blue tit, great tit, blackbird, bullfinch, woodpidgeon, buzzard, herring gull, Egyptian goose (2no), goldcrest, tree creeper.	15-Feb
191	TN211	Assed for WV potential	15-Feb
200	TN212	TG0517-232	15-Feb
259	TN213	TG0520-237	17-Feb
260	TN214	TG0520-239	17-Feb
257	TN215	TG0520-241 - pond dry	17-Feb
258	TN216	TG0520-242 - pond dry	17-Feb
261	TN217	TG0520-243	17-Feb
256	TN218	Area of possible grazing, grassland, fenced off with electrical fencing; potential pig huts observed at bottom of hill near woodland	17-Feb
201	TN219	TG0518-244	15-Feb
262	TN220	Rats observed within hedgerow and field margins; at least 15	17-Feb
263	TN221	Hare spotted in field.	17-Feb

Plate Ref (Object ID)	Target Note	Description	Date
282	TN222	Skylark spotted above field	17-Feb
283	TN223	TG0620-246	17-Feb
281	TN224	Loose sheeting piles and other mechanical debris. Adjacent to tussocky improved grassland, and pond. Although good hibernacula, sub-optimal reptile habitat due to patchy nature of habitat mosaic.	17-Feb
280	TN225	TG0620-247	17-Feb
279	TN226	TG0620-248	17-Feb
278	TN227	Siskin flock (c.10no.) in song in the woodland canopy	17-Feb
272	TN228	Possible sand martin burrows. Adjacent to low-flow watercourse only.	17-Feb
277	TN229	Woodpecker heard in this woodland.	17-Feb
276	TN230	Maintained watercourse (straightened channel). Gravelly substrate observed.	17-Feb
273	TN231	Good reptile habitat mosaic. Tussocky grassland, woodland, large hibernacula (at this location).	17-Feb
275	TN232	Predator droppings. Unlikely to be otter, likely fox. Mouse skeleton within droppings.	17-Feb
274	TN233	Unid wader - White belly, very long bill - feeding. Suspected snipe.	17-Feb
271	TN234	Woodpecker heard drilling in this woodland (no specific location available).	17-Feb
269	TN235	TG0722-252	17-Feb
418	TN236	TG0721-254	03-Mar

Plate Ref (Object ID)	Target Note	Description	Date
267	TN237	TG0721-254A. Pond not on OS mapping. Part of field drain.	17-Feb
268	TN238	TG0721-253. Not a pond but a stream	17-Feb
417	TN239	Skylark heard in flight over this field.	03-Mar
270	TN240	TG0721-256	17-Feb
203	TN241	TG0722-255	15-Feb
416	TN242	TG0721-257. No photos allowed.	03-Mar
206	TN243	TG0721-257A. New pond.	15-Feb
205	TN244	TG0721-258	15-Feb
202	TN245	TG0721-259	15-Feb
204	TN246	TG0721-260	15-Feb
265	TN247	Tawny owl observed in flight, likely roosting in woodland	17-Feb
346	TN248	TG0722-262	01-Mar
415	TN249	Shallow wet ditch	03-Mar
264	TN250	TG0721-260A. New pond, Part of drainage ditch.	17-Feb
266	TN251	WV assessment undertaken	17-Feb

Plate Ref (Object ID)	Target Note	Description	Date
342	TN252	Newly-dug drainage ditch. Very shallow, not assessed for WV.	01-Mar
284	TN253	TG0721263 dry pond	17-Feb
409	TN254	Potential otter resting place, on banks with ditch with running water. Potential runs on opposite bank.	03-Mar
413	TN255	TG0721-264	03-Mar
414	TN256	Skylarks (5no.) seen, 1no. heard in songflight	03-Mar
341	TN257	Mature oak tree in middle of field. Negligible bat roosting potential, but avoid if possible.	01-Mar
343	TN258	TG0722-265	01-Mar
207	TN259	TG0721-266	15-Feb
411	TN260	Fresh woodpecker hole drilled into mature oak tree.	03-Mar
340	TN261	TG0721-267. Dry.	01-Mar
410	TN262	Water vole assessment undertaken	03-Mar
412	TN263	Woodland, log piles, linear habitat - suitable reptile mosaic, although small in scale.	03-Mar
339	TN264	TG0722-268	01-Mar
419	TN265	Wren, tree creeper, blue tit heard in railway woodland strip.	03-Mar
337	TN266	Small 20m length of field drain. Isolated from other potential water vole habitat, so not assessed for WV.	01-Mar

Plate Ref (Object ID)	Target Note	Description	Date
344	TN267	TG0723-270	01-Mar
338	TN268	TG0722-271	01-Mar
420	TN269	Mature oak with hollow trunk. Potential owl nest site, feeding remains found.	03-Mar
345	TN270	Skylark heard in song flight over this field	01-Mar
336	TN271	TG0923-278	01-Mar
408	TN272	TG0923-281	02-Mar
407	TN273	Water vole assessment undertaken	02-Mar
398	TN274	Pond ref TG1124286	02-Mar
406	TN275	Old farm equipment and derelict huts	02-Mar
405	TN276	Water vole assessment undertaken	02-Mar
401	TN277	Banks of stream heavily vegetated in places. Bramble, nettle, ragwort. Good potential for reptile. Some woody debris. Basking and foraging areas present.	02-Mar
400	TN278	Water vole assessment undertaken	02-Mar
399	TN279	Mature ivy clad oak with potential woodpecker hole	02-Mar
403	TN280	Cabin within grassland; potential water pump, piping observed within stream	02-Mar
404	TN281	Mute swan and Egyptian goose observed in opposite field.	02-Mar

Plate Ref (Object ID)	Target Note	Description	Date
236	TN282	TG1929-304	16-Feb
335	TN283	Otter keying opportunities in adjacent woodland. No ledges or resting sites available along the River Bure in this location.	22-Feb
237	TN284	Good waterfowl cover, nesting along banks and in adjacent woodland.	16-Feb
235	TN285	R Bure. WV assessment undertaken.	16-Feb
234	TN286	Drainage ditch. WV assessment conducted.	16-Feb
239	TN287	Wide drainage ditch. WV assessment conducted, although sub-optimal.	16-Feb
232	TN288	Veteran tree. Alder.	16-Feb
231	TN289	Optimal reptile habitat. Good hibernacula (dead wood), woodland edge, rough grassland.	16-Feb
230	TN290	Minor drains not marked on map. Very shallow, not assessed for WV or GCN.	16-Feb
229	TN291	Suspected Japanese knotweed. Approx. 30m2 patch.	16-Feb
241	TN292	Deer carcass, freshly eaten by scavengers. Muntjac.	16-Feb
228	TN293	TG2028-307	16-Feb
227	TN294	Goldfinch flock observed in hedgerow. Goldcrest (1no.) also spotted.	16-Feb
242	TN295	Single mature oak tree - avoid if possible.	16-Feb
243	TN296	Hare spotted (1no.)	16-Feb

Plate Ref (Object ID)	Target Note	Description	Date
226	TN297	Isolated semi-mature trees (3no), bird nesting potential	16-Feb
222	TN298	Immature poplar. Bird nesting potential	16-Feb
223	TN299	Skylark observed in song flight. Pied wagtail, house sparrow also.	16-Feb
224	TN300	TG2128-310	16-Feb
225	TN301	Fresh woodpecker hole observed	16-Feb
347	TN302	Two woodpecker holes observed	01-Mar
348	TN303	Watercourse subject to WV assessment covers ditch network in mediate area (3 ditches)	01-Mar
350	TN304	TG2130-311	01-Mar
354	TN305	TG2130-313	01-Mar
351	TN306	TG2130-314	01-Mar
355	TN307	TG2130-316	01-Mar
353	TN308	TG2230-317	01-Mar
349	TN309	TG2230-318	01-Mar
352	TN310	TG2230-319	01-Mar
379	TN311	TG2230-320	02-Mar

Plate Ref (Object ID)	Target Note	Description	Date
378	TN312	Wet ditch not marked on map. Runs the length of the woodland area. Too shallow for WV.	02-Mar
377	TN313	Woodcock observed in holly tree near pond.	02-Mar
375	TN314	TG2230-321	02-Mar
376	TN315	Optimal reptile mosaic with woodland, log piles, water, rough grassland nearby	02-Mar
372	TN316	Dead hedgehog. preyed upon - possible evidence of badger.	02-Mar
365	TN317	TG2230-322	02-Mar
366	TN318	Drainage ditch. Assessed for WV suitability.	02-Mar
370	TN319	Woodpecker holes observed In mature alder trees.	02-Mar
373	TN320	River - assessed for water vole.	02-Mar
371	TN321	Barn owl box on mature hybrid poplar. No evidence of current use.	02-Mar
367	TN322	TG2330-324	02-Mar
389	TN323	TG2330-324A. Pond not on OS mapping. HSI undertaken.	02-Mar
380	TN324	TG2330-324B. Ponds in paddock, not marked on OS mapping. HSI undertaken.	02-Mar
381	TN325	TG2330-325	02-Mar
388	TN326	Suspected active owl nest. 7no. Owl pellets found on ground outside tree.	02-Mar

Plate Ref (Object ID)	Target Note	Description	Date
382	TN327	Large 50m gap In hedgeline.	02-Mar
386	TN328	TG2330-326	02-Mar
387	TN329	TG2430-327	02-Mar
385	TN330	Wet ditch not marked on OS mapping. Assessed for WV.	02-Mar
383	TN331	Field drain with running water. Includes drainage network of Suffield House to the north, Assessed for WV. Photo looking north.	02-Mar
384	TN332	TG2631-335	02-Mar
397	TN333	TG2632-336	02-Mar
391	TN334	Landowner stated tawny owls, sparrow hawks, buzzards nesting in woodland. Water voles also present in the SSSI.	02-Mar
390	TN335	TG2632-337	02-Mar
392	TN336	Landowner noted that otters have been recorded breeding around the pond.	02-Mar
396	TN337	TG2731-338	02-Mar
394	TN338	TG2731-339	02-Mar
393	TN339	TG2731-341	02-Mar
395	TN340	TG2932-348 - joined by ditch to TG2932-351	02-Mar
252	TN341	TG2931-349 (TG2932-349 same pond)	16-Feb

Plate Ref (Object ID)	Target Note	Description	Date
253	TN342	TG2932-351 - large pond within LNR, no access	16-Feb
251	TN343	TG2932-350 - large pond within LNR, not visible in total from path	16-Feb
250	TN344	TG2932-352 - large pond in LNR, closed off no access	16-Feb
249	TN345	TG2931-353	16-Feb
254	TN346	WV assessment undertaken	16-Feb
246	TN347	WV assessment undertaken	16-Feb
245	TN348	TG2931-355 part of ditch	16-Feb
255	TN349	Line of trees between arable field and grassland; semi mature and mature oak and ash	16-Feb
247	TN350	Boundary between road and arable land on both sides of road mainly consisting of some scattered mature ivy clad oak, with some bramble and nettle, recently trimmed; nesting bird potential	16-Feb
248	TN351	TG3132-362	16-Feb
333	TN352	TG3132-364	22-Feb
334	TN353	TG3132-366	22-Feb
332	TN354	TG3232-368 same as TG3132-368	22-Feb
331	TN355	Skylarks in the field	22-Feb
327	TN356	TG3232-372 is one pond with TG3232-373	22-Feb

Plate Ref (Object ID)	Target Note	Description	Date
330	TN357	Church lane ditch - Ditch with standing water, poor water quality, grassy banks	22-Feb
329	TN358	Two large piles of wood with reptile potential.	22-Feb
326	TN359	TG3231-376 pond dry	22-Feb
324	TN360	Large over-mature oak. No bat roosting suitability, but should not be cut down if possible.	22-Feb
290	TN361	Pair of red kites observed.	20-Feb
288	TN362	TG3231-376A. Pond not on OS mapping.	20-Feb
287	TN363	Dunnocks, Siskin observed in hedgerow	20-Feb
286	TN364	Skylark above in song flight above this field.	20-Feb
285	TN365	TG3330383 pond dry	20-Feb
323	TN366	Skylark observed over this field.	22-Feb
294	TN367	TG3331-385	20-Feb
291	TN368	TG3331-386	20-Feb
292	TN369	TG3331-388	20-Feb
293	TN370	Water vole assessment undertaken	20-Feb
364	TN371	Water vole assessment undertaken	01-Mar

Plate Ref (Object ID)	Target Note	Description	Date
363	TN372	TG3433-390	01-Mar
321	TN373	Trench, recently dug within irrigation piping laid	20-Feb
360	TN374	Several piles of rubble and wood, surrounded by scrub vegetation, hogweed, nettle, grasses, broad-leafed dock, ragwort, good reptile potential both foraging and basking, as well as refugia for hibernating. Derelict barn adjacent.	01-Mar
357	TN375	Ditch within arable fields, near small woodland, culverted with different branches, all same ditch system; common reed and soft rush present plus in channel vegetation; grassy banks; optimal for WV, assessment completed.	01-Mar
300	TN376	TG3431-394. Pond dry, now pheasant feeding area.	20-Feb
361	TN377	Pond reference TG3433395	01-Mar
299	TN378	TG3431-396	20-Feb
296	TN379	TG3432-397. Pond filled in - advised by landowner. Not possible to visit due to pigs.	20-Feb
295	TN380	Water vole burrows, landowner advised that have seen water voles. Kingfisher observed perching along watercourse. Better habitat downstream (I.e. Within the RLB).	20-Feb
298	TN381	TG3532-398	20-Feb
297	TN382	TG3532-400	20-Feb
320	TN383	Allotments	20-Feb
356	TN384	Ditch beside road, nest to arable field. WV assessment undertaken.	01-Mar
319	TN385	Sea wall defence with groynes, high tide at time of survey	20-Feb

Plate Ref (Object ID)	Target Note	Description	Date
302	TN386	Mature oak. Negligible bat potential, however avoid is possible for its biodiversity value.	21-Feb
301	TN387	Mature oak. Negligible bat potential, however avoid is possible for its biodiversity value.	21-Feb
312	TN388	TG3630-407	21-Feb
311	TN389	TG3630-408	21-Feb
314	TN390	TG3630-410	21-Feb
313	TN391	TG3630-409	21-Feb
309	TN392	2no. buzzards observed flying over field	21-Feb
310	TN393	TG3630-411	21-Feb
303	TN394	Woodcock observed in hedgerow.	21-Feb
304	TN395	TG3630-412	21-Feb
305	TN396	Skylark observed in song flight.	21-Feb
306	TN397	Isolated mature hawthorn, with nesting potential.	21-Feb
307	TN398	Mature English elm, older than any surrounding elms. Dutch elm resistant?	21-Feb
308	TN399	Earth bank and manure heap, connected to hedgerow habitat. Good reptile hibernating / breeding habitat.	21-Feb
315	TN400	New pond, ornamental within private gardens.	20-Feb

Plate Ref (Object ID)	Target Note	Description	Date
316	TN401	TG3829-417	20-Feb
317	TN402	TG3829-418	20-Feb
318	TN403	Sandy beach and cliffs	20-Feb

22.12 Annex D: Full Bat Roost Assessment Results

Table 22.14 Bat roost suitability results

Bat feature reference	Habitat Suitability	Description	Date
68	Low	Mature ivy clad oak tree with splits and cracks within hedgerow	14-Feb
88	Low	Mature, ivy clad sycamore tree within area of scrub at end of hedgerow	15-Feb
67	Low	Nutts barn - fairly modern building with some crack in the wall	14-Feb
89	Low	Mature oak with some splits and cracks	15-Feb
87	Moderate	Mature ash tree, ivy clad with splits and cracks; adjacent to running water with good foraging/commuting habitat	15-Feb
85	Low	Mature oak with splits and cracks	15-Feb
86	Low	Mature oak tree with splits and cracks, within hedgerow	15-Feb
90	Low	Group of mature ash trees	15-Feb
66	Low	Mature oak tree with splits and cracks	14-Feb
65	Low	Group of (3) ivy clad mature oak trees	14-Feb
37	Low	Group of mature oak trees within hedgerow	10-Feb
64	Low	Group of mature ivy clad oak set within hawthorn dominant hedgerow	14-Feb
40	Low	Group of mature ivy clad oak trees in hedgerow	10-Feb
63	Low	Scattered mature ivy clad oak trees	14-Feb

Bat feature reference	Habitat Suitability	Description	Date
38	Moderate	Group of mature ivy clad oak trees in woodland ; good surrounding habitat consisting of hedgerows and ponds	10-Feb
41	Low	Group of mature ivy clad oak trees in hedgerow	10-Feb
36	Low	Mature ivy clad oak with cracks and splits adjacent to road	09-Feb
39	Low	Group of mature oak trees, some ivy clad within hedgerow	10-Feb
35	Low	Group of mature ivy clad oak along erg of woodland	09-Feb
62	Low	Group of mature oak trees within hedgerow, ivy clad; good commuting/foraging habitat	14-Feb
33	Low	Group of mature ivy clad oak trees set within hedgerow	09-Feb
26	Moderate	Group of 2 mature oaks with visible holes and splits	09-Feb
25	Moderate	Cluster of mature ivy clad oak/ash, some dead trees; set on edge of small woodland plantation	09-Feb
61	Low	Several mature ivy clad oak trees within defunct hedgerow, good commuting/foraging habitat	14-Feb
24	Low	Group of 2 mature ivy clad oak with splits and cracks in hedgerow	09-Feb
4	Moderate	Mature ivy clad oak tree with multiple splits/cracks and large hole	08-Feb
32	Moderate	Group of mature trees within woodland with cracks and splits	09-Feb
14	Low	Group of 2 mature ivy clad oak trees within hedgerow	08-Feb
27	Low	Mature oak tree with some holes and ivy in hedgerow	09-Feb

Bat feature reference	Habitat Suitability	Description	Date
6	Moderate	Group of 2 mature alder trees, 1 ivy clad, crevices visible	08-Feb
7	Low	Mature ivy clad oak tree within hedgerow - good commuting potential nearby	08-Feb
9	Low	Group of 5 mature ivy clad oak trees within hedgerow	08-Feb
13	Low	Group of 5 mature, ivy clad oak trees within hedgerow	08-Feb
12	Low	Group of mature ivy clad oaks within hedgerow	08-Feb
34	Low	Group of mature ivy clad oak trees set in hedgerow	09-Feb
10	Moderate	Group of mature (5) oak trees, splits and cracks visible, good surrounding commuting habitat available	08-Feb
11	Low	Mature oaks	08-Feb
31	Low	Mature oak with splits and cracks in hedgerow	09-Feb
19	Low	Ivy clad mature oak in hedgerow	08-Feb
15	Low	Group of 4 mature ivy clad oak/ash trees within hedgerow	08-Feb
16	Moderate	Mature ash, pollarded with holes suitable for roosting	08-Feb
17	Low	Group of 7 mature oak trees within hedgerow, ivy clad	08-Feb
18	Moderate	Barns adjacent to arable fields and semi improved grassland, hedgerows nearby for commuting. Buildings have tiled roofs, in generally good condition but with plenty of cracks	08-Feb
29	Low	Mature, ivy clad oak in hedgerow adjacent to road	09-Feb

Bat feature reference	Habitat Suitability	Description	Date
28	Low	Mature ivy clad oak tree in hedgerow adjacent to road	09-Feb
30	Low	Mature ash tree with splits	09-Feb
55	Low	Group of mature ivy clad oak trees on both sides of Bradenham Lane	13-Feb
56	Moderate	Group of mature ivy clad ash and oak trees within hedgerow, good commuting habitat alongside grassland, ditches and open water	13-Feb
57	Low	Mature, ivy clad oak tree adjacent to road and woodland; good commuting/foraging habitat	13-Feb
58	Low	Mature oak, ivy clad, on field/road boundary; good commuting/foraging habitat	13-Feb
59	Low	Mature oak adjacent to road, with splits and cracks; busy road approx 150m away	13-Feb
60	Low	Mature ivy clad oak	13-Feb
345	Moderate	Dead oak trunk, frequent, sizeable roost spaces in dead trunk, if low to the ground (3m high). Good connecting habitat.	03-Mar
344	Moderate	Dead oak trunk, frequent, sizeable roost spaces under dead bark, if low to the ground (3m high). good connecting habitat.	03-Mar
343	Low	Mature ivy-clad oak. Deadwood exposed large cavity in heartwood. Not moderate suitability as evidence of bird nesting in cavity.	03-Mar
342	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	03-Mar
346	Low	Mature ivy-clad oak tree. Cracks observed under dead limb.	03-Mar
347	Low	Mature ivy-clad oak tree. PRFs possible beneath ivy.	03-Mar

Bat feature reference	Habitat Suitability	Description	Date
341	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	03-Mar
348	Low	Mature ivy-clad oak tree. PRFs possible beneath ivy.	03-Mar
349	Moderate	Mature ivy-clad dead oak tree. Cracks beneath dead bark and multiple dead limbs. Potential for large cavities under ivy. Good connecting habitat along hedgeline.	03-Mar
350	Low	Mature ivy-clad oak tree. PRFs possible beneath ivy.	03-Mar
351	Low	Mature ivy-clad oak tree. PRFs possible beneath ivy.	03-Mar
354	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	03-Mar
353	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	03-Mar
355	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	03-Mar
23	Moderate	Mature ash ivy clad. Ivy provides PRFs. On good commuting feature.	09-Feb
22	Moderate	Mature ivy clad oaks (line of 10). Ivy provides PRFs.	09-Feb
21	Moderate	Mature ivy clad oak tree. Ivy provides PRFs.	09-Feb
20	Moderate	Mature ivy clad oak tree. Ivy provides PRFs.	09-Feb
357	Low	Mature oak, smooth trunk cavity provides PRF.	03-Mar
356	Low	Mature oak,small cavities in trunk.	03-Mar
352	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	03-Mar

Bat feature reference	Habitat Suitability	Description	Date
42	Low	Mature ash, small knot holes observed.	10-Feb
43	Moderate	Over-Mature oak, decayed trunk, suitable for small-moderate roost	10-Feb
44	Moderate	Large crack down side of mature oak. 2 bat boxes installed.	10-Feb
45	Low	Mature ivy clad oak with cracks	10-Feb
54	Low	Ivy clad mature oak. Ivy provides PRFs.	10-Feb
53	Low	Mature ivy clad oak. Ivy provides PRFs.	10-Feb
52	Low	Mature ivy clad oak. Ivy provides PRFs.	10-Feb
51	Low	Mature oak. Knot hole.	10-Feb
46	Low	Mature ivy clad oak. Ivy provides PRFs.	10-Feb
47	Moderate	Mature oak trunk dead, core exposed. Cracks present, suitable for multiple roosting bats.	10-Feb
48	Low	Mature oak. Knot hole and small cracks.	10-Feb
49	Low	Ivy clad mature oaks (2no). Possible PRFs beneath ivy.	10-Feb
50	Moderate	Mature ivy clad oak. PRFs under ivy and cracks along trunk.	10-Feb
358	Low	Mature ash with dead crown. PRFs may be present in crown.	03-Mar
360	Low	Mature oak with 2no. Small cavities in trunk.	03-Mar

Bat feature reference	Habitat Suitability	Description	Date
361	Low	Mature oak tree in pond. Large cavity in trunk, maybe suitable for small roost.	03-Mar
362	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	03-Mar
359	Low	Mature oak. Small cracks around 2no. Knot holes.	03-Mar
71	Low	Mature turkey oak, with cracks and holes c. 15m high.	14-Feb
70	Low	Mature ivy-clad oak with cracked branches. Potential PRFs beneath ivy.	14-Feb
77	Low	Mature ivy-clad ash. Potential PRFs beneath ivy.	14-Feb
76	Low	Ivy clad mature oak. Likely PRFs behind ivy.	14-Feb
69	Low	Ivy clad mature oak with cracked branches. Potential PRFs present under ivy.	14-Feb
73	Low	Mature oak trees. Holes observed.	14-Feb
72	Low	Ivy-clad mature oak. Potential PRFs beneath ivy.	14-Feb
74	Low	Ivy-clad semi-mature oak. Potential PRFs beneath ivy.	14-Feb
81	Low	Mature ivy clad oak. PRFs may be present beneath ivy.	15-Feb
82	Low	Mature ivy clad oak. PRFs may be present beneath ivy.	15-Feb
75	Low	Mature ivy clad ash. Potential PRFs beneath ivy.	14-Feb
83	Low	Mature oak, crack PRF located approx. 15m high.	15-Feb

Bat feature reference	Habitat Suitability	Description	Date
84	Low	Ivy clad mature oak PRFs may be locate beneath ivy.	15-Feb
80	Low	Mature ivy-clad willow. Likely PRFs in broken limbs.	15-Feb
78	Moderate	Mature oak, large crack in mostly dead limb. Suitable for summer roost. Other small holes present in other limbs, suitable for opportunistic roosting only.	15-Feb
79	Low	Mature multi-stem alder. Series of smells cracks and knot holes.	15-Feb
165	Low	Mature sycamore tree within hedgerow, adjacent to busy A-road, near woodland, good commuting/foraging habitat	17-Feb
166	Moderate	Mature oak with splits and cracks, within hedgerow set back from main road, adjacent to woodland; good commuting/foraging habitat nearby	17-Feb
163	Low	Large mature ivy clad oak tree within hedgerow, adjacent to small woodland, good commuting/foraging habitat nearby	17-Feb
164	Low	Mature ivy clad oak tree within hedgerow; some commuting/foraging habitat nearby	17-Feb
162	Low	Large mature ivy clad sycamore tree within hedgerow, good commuting/foraging habitat nearby	17-Feb
161	Low	Large mature ivy clad oak tree within hedgerow, good commuting/foraging habitat nearby	17-Feb
167	Low	Mature, ivy clad oak within hedgerow, limited roosting features visible but good commuting/foraging habitat nearby; slightly exposed and windy	17-Feb
160	Low	Mature oak tree within hedgerow, limited trunk available for roosting, good commuting/foraging habitat nearby	17-Feb
159	Low	Mature ivy clad oak tree within hedgerow, good commuting/foraging habitat nearby	17-Feb
168	Low	Mature ivy clad oak within hedgerow; good commuting/foraging habitat nearby; exposed and windy	17-Feb

Bat feature reference	Habitat Suitability	Description	Date
158	Low	Mature ivy clad oak tree within hedgerow, good commuting/foraging habitat nearby	17-Feb
157	Low	Mature ivy clad oak tree within hedgerow, good commuting/foraging habitat nearby	17-Feb
156	Low	Mature ivy clad oak tree within hedgerow, good commuting/foraging habitat nearby	17-Feb
155	Low	Mature ivy clad sycamore within hedgerow, good commuting/foraging habitat nearby	17-Feb
154	Low	Mature ivy clad oak tree within hedgerow, good commuting/foraging habitat nearby	17-Feb
169	Low	Mature oak within hedgerow, some commuting/foraging habitat nearby	17-Feb
170	Low	Mature oak within hedgerow, ivy clad, some commuting/foraging habitat nearby	17-Feb
171	Low	Large mature ivy clad oak tree within hedgerow; some commuting/foraging habitat nearby	17-Feb
174	Moderate	Mature ash with crack in trunk, suitable for small-moderate sized roost. Moderate suitability due to good connecting habitat if woodland and nearby wetland.	17-Feb
178	Low	Mature ivy-clad oak. Potential for PRFs beneath ivy.	17-Feb
177	Low	Mature ivy-clad oak. Potential for PRFs beneath ivy.	17-Feb
176	Low	Mature ivy-clad oak. Potential for PRFs beneath ivy.	17-Feb
175	Moderate	Mature ash. Larges holes and cracks in trunk. Potential for small-medium sized roost, good connecting habitat.	17-Feb
173	Low	Mature ash with large crack in bole. Isolated in centre of field, opportunistic roost only.	17-Feb
251	Low	Mature oak, some small cracks in upper limbs.	01-Mar

Bat feature reference	Habitat Suitability	Description	Date
179	Moderate	Mature ivy-clad oak, with hollow trunk. Large, sheltered cavity suitable if supporting small-moderate sized roost. Possible veteran tree.	17-Feb
172	Low	Dead ash trees. Small holes observed, but none of a size to support a notable roost.	17-Feb
250	Low	Mature oak with dead crown and hollow upper trunk. Mostly too exposed for roosts, some small cracks.	01-Mar
256	Low	Group of 3no. mature ivy-clad oak trees. No cracks visible, but PRFs may be present beneath ivy,	01-Mar
324	Low	Limited trunk available for roosting, however good commuting and foraging habitat. Mature ivy clad oak	03-Mar
257	Low	2no. Mature ivy clad oaks. PRFs may be present beneath ivy.	01-Mar
323	High	Veteran ivy clad oak tree, lots of splits and cracks, set within hedgerow.	03-Mar
322	Low	Mature ivy clad oak adjacent to good commuting foraging habitat. Ditch with running water nearby.	03-Mar
317	Low	Ivy clad mature oak, limited trunk potential for roost features. However, set within hedgerow so good commuting foraging potential.	03-Mar
318	Moderate	Ivy clad mature oak, with splits and cracks for roosting, adjacent to pond and hedgerow for commuting foraging.	03-Mar
320	Moderate	Mature ivy clad oak, set within hedgerow, good commuting foraging habitat, splits and cracks in tree.	03-Mar
319	Low	Mature ivy clad oak, adjacent to linear features for commuting foraging	03-Mar
326	Low	Mature ivy glad oak, with limited trunk width and roost features. Hedgerow and water course close by, good commuting and foraging habitat	03-Mar
252	Low	Large crack on upper limb. Large enough to support small- medium roost, but exposed, and tree isolated from connecting	01-Mar

Bat feature reference	Habitat Suitability	Description	Date
		habitat.	
321	Low	Mature ivy clad sycamore, limited trunk for roosting, however good commuting foraging habitat available	03-Mar
325	Low	Mature ivy clad oak within hedgerow. Good commuting foraging habitat nearby	03-Mar
253	Low	Mature oak. Crack observed on single limb, potential providing roost space. Tree isolated, with no connecting habitat.	01-Mar
254	Low	Mature oak with large cracks, but isolated and suspected owl nest present.	01-Mar
255	Low	Mature oak with dead, exposed core. Large roost space inside, but exposed and isolated with no nearby connecting habitat.	01-Mar
305	Low	Mature ivy clad sycamore, adjacent to ditch with running water and woodland area. Good commuting foraging habitat though area is open and exposed.	02-Mar
316	Low	Mature ivy clad oak within hedgerow, adjacent to woodland; commuting/foraging habitat nearby	02-Mar
313	Low	Some trees within woodland area appear to have potential roosting features, however quite limited (trunk width, etc.), some commuting/foraging habitat nearby	02-Mar
315	Moderate	Several trees within woodland with potential roost features; commuting/foraging habitat nearby	02-Mar
314	Moderate	Several trees within woodland with some roost potential, commuting and foraging habitat nearby	02-Mar
308	Moderate	Mature ivy clad sycamore with splits and cracks; adjacent to stream within grassland area; commuting and foraging habitat available nearby	02-Mar
310	Low	Mature ivy clad sycamore with limited trunk/branch width available for roosting; however good commuting/foraging habitat nearby	02-Mar

Bat feature reference	Habitat Suitability	Description	Date
307	Low	Mature ivy clad oak, adjacent to stream and grassland. Commuting foraging habitat available.	02-Mar
309	Low	Mature ivy clad oak; adjacent to stream within grassland	02-Mar
306	Moderate	Mature ivy clad oak on edge of woodland adjacent to ditch. Grassland either side. Commuting foraging habitat available.	02-Mar
311	Moderate	Mature ivy clad oak with splits and cracks; adjacent to stream within grassland; good commuting and foraging habitat nearby	02-Mar
312	Low	Mature ivy clad oak adjacent to stream within grassland; good commuting and foraging habitat nearby	02-Mar
340	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
339	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
338	Low	Mature ivy clad sycamore, good commuting and foraging habitat.	03-Mar
337	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
334	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
335	Low	Mature ivy clad oak, good commuting and foraging habitat. Limited roosting features.	03-Mar
333	Low	Mature oak, good commuting and foraging habitat. Lack of roosting features available.	03-Mar
332	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
327	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
328	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar

Bat feature reference	Habitat Suitability	Description	Date
329	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
330	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
336	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
331	Low	Mature ivy clad oak, good commuting and foraging habitat.	03-Mar
115	Low	Mature ivy clad alder. PRFs beneath ivy.	16-Feb
114	Moderate	Dead, fallen goat willow. Large cracks opened within trunk, suitable for small-medium roost. Cracks recently formed.	16-Feb
116	Moderate	Veteran oak tree. Hollow, dead trunk with roost opportunities.	16-Feb
117	Moderate	Veteran common oak tree. Hollow dead trunk, multiple roost spaces.	16-Feb
113	Low	Mature ivy clad oak. PRFs beneath ivy.	16-Feb
118	Low	Mature oak with large knot hole. Hole appears to be used as a bird nest site, therefore bat roosting suitability low.	16-Feb
119	Low	Pair of adjacent ivy clad oaks. Potential PRFs under bark.	16-Feb
112	Low	Mature dead ivy-clad oak, potential PRFs located beneath.	16-Feb
111	Low	Mature oak, small cracks and holes observed in dead limbs.	16-Feb
110	Low	Mature ivy-clad oak, potential PRFs located beneath. Dead limb likely to contain PRFs	16-Feb
124	Low	Mature oak, small holes in upper dead branches.	16-Feb

Bat feature reference	Habitat Suitability	Description	Date
109	Low	Mature dead ivy-clad oak, potential PRFs located beneath.	16-Feb
108	Low	Mature ivy-clad oak, potential PRFs located beneath.	16-Feb
107	Low	Mature ivy-clad oak, potential PRFs located beneath.	16-Feb
106	Low	Mature ivy-clad oak. Bark peeling from dead limbs. Potential PRFs beneath.	16-Feb
121	Low	Mature ivy-clad oak, potential PRFs beneath ivy.	16-Feb
123	Low	Mature ivy-clad oak, potential PRFs beneath ivy.	16-Feb
122		Mature ivy-clad oak, potential PRFs beneath ivy.	16-Feb
125	Low	Mature ivy-clad oak, potential PRFs beneath ivy.	16-Feb
126	Low	Mature ivy-clad oak, potential PRFs beneath ivy.	16-Feb
120	Low	Mature ivy-clad oak, potential PRFs beneath ivy.	16-Feb
127		Mature ivy-clad oak. Potential PRFs beneath ivy. Cracked limb.	16-Feb
128	Low	Mature ivy-clad oak. Potential PRFs beneath ivy. Large crack on trunk, potential roost site.	16-Feb
129	Low	Mature ivy-clad oak. Potential PRFs beneath ivy.	16-Feb
130	Low	Mature ivy-clad oak. Potential PRFs beneath ivy.	16-Feb
131	Low	Mature oak. Small holes visible in bole.	16-Feb

Bat feature reference	Habitat Suitability	Description	Date
136	Low	Mature oak with large hole in bole. Hole relatively exposed.	16-Feb
135	Low	Mature ivy-clad oak. Potential PRFs beneath ivy.	16-Feb
134	Low	Mature ivy-clad oak. Potential PRFs beneath ivy.	16-Feb
133	Moderate	Mature oak, with large hollow area in trunk, and in lowest limb. Potentially large cavity. Potential for small-medium roost.	16-Feb
132	Low	Mature ivy-clad oak. Potential PRFs beneath ivy.	16-Feb
91	Low	Mature oak, covered with dead ivy. Ivy provides PRFs.	16-Feb
105	Low	May oak. Dead upper branches with small holes.	16-Feb
99	Low	Mature oak, clad with dead ivy. PRFs beneath ivy. Poor connecting habitat.	16-Feb
104	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	16-Feb
92	Low	Mature oak, covered in dead ivy. PRFs beneath ivy.	16-Feb
93	Low	Mature so with cracks and dead ivy. Not 'moderate' due to lack of good connecting commuting habitat.	16-Feb
94	Low	Mature ivy clad oak. PRFs beneath ivy.	16-Feb
98	Low	Mature oak, clad with dead ivy. PRFs beneath ivy. Poor connecting habitat.	16-Feb
97	Low	Mature oak, ivy clad. Flaking bark, may be PRFs beneath. Not 'moderate' due to isolation and lack of connecting habitat. Other trees along this line not listed as low for the same reason.	16-Feb
95	Negligible	Newly roofed buildings - unlikely to support roosting bats in roof space.	16-Feb

Bat feature reference	Habitat Suitability	Description	Date
100	Moderate	Common oak with dead trunk, very suitable cracks and holes. Available connecting habitat.	16-Feb
101	Low	Mature oak with dead upper branches. Small holes observed in these.	16-Feb
102	Low	Mature oak with dead upper branches. Small holes observed in these.	16-Feb
103	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	16-Feb
96	Moderate	Farm buildings (5no.). Includes barn and farmhouse, good old roof spaces, with foraging habitat in immediate vicinity, although foraging habitat poor beyond this.	16-Feb
246	Low	Mature oak with splits and cracks.	22-Feb
245	Low	Mature oak with splits and cracks.	22-Feb
247	Low	Mature oak with splits and cracks.	22-Feb
244	Low	Mature oak with splits and cracks	22-Feb
248	Low	Mature oak with splits and cracks.	22-Feb
249	Low	Two mature oaks with splits and cracks.	22-Feb
243	Low	Semi mature oak tree with some splits in trunk, within hedgerow.	22-Feb
242	Low	Semi mature oak tree within hedgerow.	22-Feb
241	Low	Mature oak with splits and cracks, near woodland.	22-Feb
240	Low	Mature oak with splits and cracks, near woodland.	22-Feb

Bat feature reference	Habitat Suitability	Description	Date
239	Low	Mature oak with splits and cracks, near woodland.	22-Feb
258	Low	Mature ivy clad oak with small visible knot holes. Small roosts may be present.	01-Mar
260	Low	Mature oak with small cavity under bark on dead limb. Small roost is possible.	01-Mar
259	Low	Mature oak with small knot holes in upper limbs. Suitable for small roosts.	01-Mar
262	Low	Mature ivy-clad oak with dead upper limbs, small crack visible.	01-Mar
263	Low	Mature oak with dead upper limbs, small cracks visible.	01-Mar
261	Low	Mature oak with dead upper limbs, small cracks visible.	01-Mar
264	Low	Mature oak with dead crown, cracks and crevices present - but exposed.	01-Mar
265	Low	Mature oak with two woodpecker holes in upper limbs, which could support small roosts.	01-Mar
267	Low	Mature oak, one knot hole observed.	01-Mar
266	Low	Mature oak with dead upper limbs, small cracks visible.	01-Mar
270	Low	Mature ivy-clad oak, PRFs may be present beneath ivy.	01-Mar
271	Moderate	Mature ivy-clad oak, with large crack in one limb and large opening beneath ivy in second limb. Potential for small-medium sized roost in second limb. Good connecting habitat along hedgeline.	01-Mar
269	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	01-Mar
272	Low	Mature ivy-clad oak, PRFs may be present beneath ivy.	01-Mar

Bat feature reference	Habitat Suitability	Description	Date
268	Low	Mature oak tree clad with dead ivy, potential PRFs beneath.	01-Mar
287	Moderate	Renovated barn. Lots of gaps under roof tiles and in brick work. Potential for roost in roof space. Good connectivity to east, with foraging habitat.	02-Mar
290	Low	Mature ivy-clad oak.	02-Mar
288	Moderate	Mature oak tree with 3 bat boxes (1 fallen, not functioning). Evidence of use (staining) around 1 of the functioning boxes. Possible mitigation for barn conversion at bat feature 16?	02-Mar
289	Moderate	Mature elder tree with three bat boxes. No evidence of current use.	02-Mar
293	Low	Mature ivy-clad oak. No cracks observed, but due to size and age may support opportunistic roosts.	02-Mar
294	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	02-Mar
291	Low	Mature oak with large, central cavity suitable for small-medium roost in good connecting habitat. Not moderate due to suspected presence of owl roost.	02-Mar
292	Moderate	Mature alder with dead heartwood. Large cavity in centre approx. 3m high, further cracks in upper limbs. May be suitable for small-medium roost, although may be out-competed by nesting birds. Good foraging habitat along hedgeline and to nearby woodland east	02-Mar
303	Low	Mature oak with dead heart wood. Small cracks. Exposed, located on edge of woodland.	02-Mar
304	Low	Mature dead ivy-clad oak. PRFs may be present beneath ivy in dead trunk.	02-Mar
295	Low	Mature ivy-clad ash. PRFs may be present beneath ivy.	02-Mar
296	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	02-Mar

Bat feature reference	Habitat Suitability	Description	Date
297	Low	Mature ivy-clad oak. Dead crown. PRFs may be present beneath ivy.	02-Mar
298	Low	Mature ivy-clad oaks (2no). PRFs may be present beneath ivy.	02-Mar
299	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	02-Mar
302	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	02-Mar
300	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	02-Mar
301	Low	Mature ivy-clad oak. Exposed crack approx. 3m above ground. Suitable for small roost.	02-Mar
139	Low	Mature ivy clad oak and ash trees bordering field margin; scrub species including bramble, nettle, dock leaf as well as cocks foot	16-Feb
138	Moderate	Several mature ivy clad oak trees at edge of LNR woodland; good commuting/foraging habitat, ditch with standing water	16-Feb
137	Low	Group of 2 mature oak with splits and cracks, bordering road and woodland; good commuting/foraging habitat	16-Feb
140	Low	Mature ivy clad oak tree, on margins of small woodland, with arable field and grassland adjacent	16-Feb
153	Low	Group of 2 mature ivy clad oak on boundary of woodland and arable field. Good commuting/foraging habitat, less exposed/windy; scrub species nearby, nettle, bramble and ferns	16-Feb
141	Low	Mature oak tree with splits and cracks; on higher ground, exposed and windy.	16-Feb
142	Low	Mature oak ivy clad, located on exposed higher ground	16-Feb
152	Low	Group of 2 mature ivy clad oak, exposed and windy but some commuting/foraging habitat nearby	16-Feb

Bat feature reference	Habitat Suitability	Description	Date
143	Low	Mature ivy clad oak, on exposed ground, windy	16-Feb
144	Low	Mature, ivy clad oak; exposed, higher ground, windy	16-Feb
151	Low	Group of mature oak with splits and cracks	16-Feb
150	Low	Mature ivy clad oak, with splits and cracks; some commuting/foraging habitat nearby, less exposed	16-Feb
145	Low	Mature ivy clad oak, still exposed and windy however set within a hedgerow with commuting/foraging habitat.	16-Feb
146	Low	Two mature ivy clad oak trees in a hedgerow with splits and cracks	16-Feb
149	Low	Mature ivy clad oak within field boundary consisting of small hillock and some scattered trees	16-Feb
147	Low	Several mature oak within hedgerow, exposed and windy but some commuting/foraging habitat available	16-Feb
148	Low	Several mature ivy clad oak, exposed and windy, some commuting/foraging habitat nearby	16-Feb
238	Low	Several mature ivy clad oaks	22-Feb
237	Low	Two mature ivy clad oaks in hedgerow.	22-Feb
236	Low	Mature oak with splits and cracks	22-Feb
235	Low	Mature ivy clad oak tree	22-Feb
192	Low	Mature oak. Medium-sized exposed crack in trunk.	20-Feb
196	Low	Mature oak, with crevices beneath flaking bark.	20-Feb

Bat feature reference	Habitat Suitability	Description	Date
195	Low	Mature ivy clad oak. PRFs possible beneath ivy.	20-Feb
194	Low	Mature oak, with good, sizeable crevices beneath flaking bark. Not moderate suitability due to isolated nature.	20-Feb
191	Low	Open barn with exposed rafters. Good potential roost site, although no protection during colder weather. No roosts observed, could not check in detail due to access restrictions. Possible to check using bound inspection.	20-Feb
193	Low	Mature oak with decaying trunk, good under bark on dead limbs. Exposed and near superior roosting habitat, so low suitability.	20-Feb
190	Low	Ivy-clad mature oak. Small cracks and openings beneath bark.	20-Feb
189	Low	Ivy-clad mature oak. Small cracks and openings beneath bark.	20-Feb
188	Low	Ivy-clad mature oak. Small cracks and openings beneath bark.	20-Feb
187	Low	Ivy-clad mature oak. Small cracks along bole beneath ivy. Tree exposed, but not far from good commuting / foraging resources.	20-Feb
186	Low	Ivy-clad mature oak. Small cracks and openings beneath bark. Tree exposed, but not far from good commuting / foraging resources.	20-Feb
185	Low	Ivy-clad mature oak. Small cracks and openings beneath bark and on trunk. Tree exposed, but not far from good commuting / foraging resources.	20-Feb
184	Low	Ivy-clad mature oak. Small cracks and openings along upper limbs and trunk, plus potential PRFs beneath ivy. Tree exposed, but not far from good commuting / foraging resource.	20-Feb
234	Low	Group of mature ivy clad oaks in hedgerow.	22-Feb

Bat feature reference	Habitat Suitability	Description	Date
183	Low	Ivy-clad mature oak. Small cracks and openings beneath bark. Tree exposed, but not far from good commuting / foraging resources.	20-Feb
182	Low	Ivy-clad mature oak. Small cracks and openings beneath bark. Tree exposed, but not far from good commuting / foraging resources.	20-Feb
233	Low	Several mature oak along the road. Trees contain small splits and cracks.	22-Feb
232	Moderate	Mature oaks within hedgerow in between arable land. Several trees with multiple splits and cracks.	22-Feb
181	Low	Ivy-clad mature oak. Dead ivy provides PRFs beneath. Tree exposed, but not far from good commuting / foraging resources.	20-Feb
197	Low	Mature oak, clad with dead ivy. PRFs may be present beneath ivy. Only roost feature along this good foraging / commuting route.	20-Feb
207	Low	Mature ivy-clad oak. PRFs may be present beneath ivy around dead limb.	20-Feb
208		Mature ivy-clad oak. Small cracks and crevices located around dead limbs.	20-Feb
209	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	20-Feb
180	Low	Ivy-clad mature oak. Small cracks and openings beneath bark. Tree exposed, but not far from good commuting /foraging resources.	20-Feb
206	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	20-Feb
204	Low	Mature ivy-clad oak. PRFs may be present beneath ivy,	20-Feb
203	Low	Mature ivy-clad oak. PRFs may be present beneath ivy,	20-Feb

Bat feature reference	Habitat Suitability	Description	Date
202	Low	Mature ivy-clad oak. PRFs may be present beneath ivy,	20-Feb
205	Low	Mature oak, small cracks around old limbs, suitable to support small roost only.	20-Feb
201	Moderate	Large, mature oak with dense ivy-cladding. Dead limbs visible. Likely to be potentially medium-sized, well protected spaces inside, along good commuting habitat.	20-Feb
200	Low	Mature ivy-clad oak, small cracks visible around dead branch.	20-Feb
199	Low	Mature ivy-clad oak. PRFs may be present beneath ivy,	20-Feb
198	Low	Mature oak with crack and crevices in trunk.	20-Feb
279	Low	Mature oak, adjacent to road, some splits and cracks, localised commuting and foraging habitat nearby	01-Mar
280	Low	Mature ivy clad oak, linear features available for commuting and foraging	01-Mar
281	Low	Mature ivy clad oak with some linear features for commuting and foraging	01-Mar
286	Low	Ivy clad oak in hedgerow adjacent to grassland with recently tilled earth. Woodland with ditch and pond nearby. commuting and foraging habitat nearby.	01-Mar
278	Low	Mature ivy clad oak within scrub hedgerow, adjacent to grassland area. Good commuting, foraging habitat nearby.	01-Mar
285	Low	Ivy clad oak, next to woodland and ditch, commuting and foraging habitat nearby.	01-Mar
284	Low	Ivy clad oak, next to woodland and ditch, commuting and foraging habitat nearby.	01-Mar
282	Low	Mature ivy clad oak, adjacent to arable crop and woodland with ditch network and pond. Linear features for commuting and foraging.	01-Mar

Bat feature reference	Habitat Suitability	Description	Date
283	Low	Ivy clad oak	01-Mar
274	Low	Mature ivy clad oak with splits and cracks, exposed, however some linear features nearby as well as small woodland for commuting and foraging.	01-Mar
275	Low	Mature ivy clad oak on edge of small copse and arable field. Some foraging habitat nearby	01-Mar
276	Moderate	Barn buildings with gaps. Some semi mature trees nearby, some commuting and foraging potential.	01-Mar
273	Low	Semi natural woodland; mature and semi mature oak and sycamore; limited roost features available, though some mature ivy clad trees present; extensive ditch system nearby so some commuting and/or foraging potential	01-Mar
277	Low	Derelict brick building, part ivy clad, lack of holes and cracks, and no linear features nearby, exposed location	01-Mar
213	Low	Dead ash trunk, clad with ivy. Small cracks observed in bole.	21-Feb
214	Moderate	Ash with a series of holes in trunk, roosts spaces inside the bole possible. Good connecting habitat along hedgeline.	21-Feb
212	Low	Mature ivy-clad oak. PRFs may be present, due to density of ivy cover.	21-Feb
211	Low	Mature oak with small cracks in the bole. Good connecting habitat to the north.	21-Feb
210	Moderate	House and outbuilding c.80 years old, potential roost spaces with roofs once of both buildings. No fields signs observed.	21-Feb
219	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	21-Feb
218	Low	Mature ivy-clad oak. PRFs possible beneath ivy. One of a line of ivy-clad oaks, no visible cracks or mature ivy visible on the others.	21-Feb
220	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	21-Feb

Bat feature reference	Habitat Suitability	Description	Date
217	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	21-Feb
216	Low	Mature ivy-clad oak, with cracks visible along limbs.	21-Feb
221	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	21-Feb
222	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	21-Feb
223	Low	Mature oak with hollow trunk. Roosting space inside cavity	21-Feb
215	Low	Mature ivy-clad oak. PRFs may be present beneath ivy.	21-Feb
224	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	21-Feb
225	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	21-Feb
226	Low	Mature ivy-clad oak. PRFs possible beneath ivy.	21-Feb
228	Low	Dead ivy clad oaks within a hedgerow.	20-Feb
227	Low	Semi mature ivy clad oak within short section of hedgerow, adjacent to house/gardens. Limited commuting/foraging habitat with wind exposure.	20-Feb
229	Moderate	Old disused shed and farm buildings with cracks and gaps, adjacent to scrub, some commuting/foraging habitat nearby	20-Feb
230	Low	Semi mature, ivy clad trees within hedgerow (surveyed from a distance so species difficult to determine); some potential commuting/foraging habitat nearby	20-Feb
231	Low	Ruined building, ivy covered with limited roosting features; little to no commuting/foraging habitat nearby: surrounding area is windy and exposed	20-Feb

22.13 Annex E: Full Watercourse Assessment Results

Table 22.15 shows the full watercourse assessment results for all watercourses surveyed.

Table 22.15 Watercourse assessment results

Target Note	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Disturbance	Bank profile	Depth	Width	Current	Latrines	Burrows	Rat field signs	Otter field signs	Mink field signs	Survey distance (km)	Additional comments
TN1	CC/ MW	14-Feb	Dry, cold	Ditch, running water	Earth	Arable crop, upland grass	Rare	Rare	Occasional	Occasional	Rare	Frequent	Dominant		Steep > 45o	< 0.5m	1-2m	Fast	No	No	No	No	No		Optimal for WV, steep banks for burrowing, abundant food source.
TN16	CC/ MW	14-Feb	Dry, cold	Ditch	Earth, silt, sand	Arable crop	Rare	Occasional	Occasional	Rare	Rare	Abundant	Dominant		Steep > 45o	< 0.5m	1-2m	Slow	Yes	No	No	No	No		Potentially optimal for WV.
TN17	CC/ MW	14-Feb	Dry, cold	Ditch	Earth, silt, sand	Arable crop	Rare	Occasional	Occasional	Rare	Rare	Abundant	Dominant		Steep > 45o	< 0.5m	1-2m	Slow	Yes	No	No	No	No		Potentially optimal for WV.
TN19	CC/ MW	14-Feb	Dry, cold	Ditch	Earth, silt	Arable crop	Occasional	Occasional	Rare	Occasional	Rare	Frequent	Frequent		Steep > 45o	< 0.5m	1-2m	Fast	No	No	No	No	No		Potentially optimal for WV.
TN20	CC/ MW	14-Feb	Dry, cold	Ditch	Earth, silt	Arable crop	Occasional	Occasional	Rare	Occasional	Rare	Frequent	Frequent		Steep > 45o	< 0.5m	1-2m	Fast	No	No	No	No	No		Potentially optimal for WV.
TN41	CC/ MW	10-Feb	Dry, cold	Running water	Earth, silt, sand, gravel	Arable crop, mixed broadleaf woodland	Dominant	Occasional	Rare	Rare	Rare	Rare			Steep > 45o	< 0.5m	1-2m	Fast	No	No	No	No	No	700m	Potentially optimal for WV.
TN65	CC/ MW	08-Feb	Dry, cold	Running water	Earth, silt, sand, gravel	Arable crop, mixed broadleaf woodland	Dominant	Rare	Rare	Rare	Rare	Rare	Rare		Vertical/undercut	< 0.5m	1-2m	Fast	No	No	No	No	No	250m	Road crossing stream, semi mature oak lined. Potentially optimal for WV.
TN88	CC/ MW	09-Feb	Dry, cold	Ditch	Earth, silt	Arable crop	Rare	Dominant	Frequent	Occasional	Occasional	Rare	Abundant		Steep > 45o	< 0.5m	1-2m	Fast	No	No	No	No	No	500m	Potentially optimal for WV.

Target Note	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Disturbance	Bank profile	Depth	Width	Current	Latrines	Burrows	Rat field signs	Otter field signs	Mink field signs	Survey distance (km)	Additional comments
TN130	CC/ MW	13-Feb	Dry, cold	Ditch, running water	Earth, silt, sand, gravel	Arable crop	Dominant	Abundant	Frequent	Rare	Rare	Abundant	Abundant		Steep > 45o	< 0.5m	1-2m	Fast	No	No	No	No	No	500m	Potentially optimal for WV.
TN133	CC/ MW	13-Feb	Dry, cold	Ditch, running water	Earth, silt, poached	Arable crop, upland grass	Abundant	Dominant	Frequent	Rare	Rare	Frequent	Abundant		Shallow < 45o	< 0.5m	1-2m	Fast	No	No	No	No	No		Potentially optimal for WV.
TN136	CC/ MW	13-Feb	Dry, cold	Ditch, running water	Earth	Upland grass	Rare	Rare	Rare	Frequent	Rare	Abundant	Dominant		Steep > 45o	< 0.5m	1-2m	Fast	No	No	No	No	No	500m	Potentially optimal for WV.
TN143	CC/ MW	13-Feb	Dry, cold	Ditch	Earth	Arable crop	Occasional	Occasional	Occasional	Frequent	Rare	Abundant	Abundant		Steep > 45o	< 0.5m	1-2m	Static	No	No	No	No	No		Potentially optimal for WV.
TN158	GC/ TC	09-Feb	Dry, cold	Running water	Earth	Mixed broadleaf woodland, cattle/grazing	Abundant	Frequent	Frequent	Rare	Rare	Occasional	Occasional	No poaching observed.	Steep > 45o	1-2m	2-5m	Slow	No	No	No	No	No	200m	Watercourse not fully accessed.
TN198	GC/ TC	14-Feb	Dry, cold	Running water	Earth	Arable crop, cattle/grazing, conifer wood	Abundant	Rare	Abundant	Rare	Frequent	Frequent	Rare	Stock-proof fence between pastoral field and watercourse banks. No disturbance.	Shallow < 45o	0.5-1m	1-2m	Slow	No	No	No	No	No	200m	Potentially optimal for WV.
TN206	GC/ TC	15-Feb	Wet, mild	Running water	Earth	Permanent/temporary grass, cattle/grazing	Rare	Rare	Occasional	Occasional	Frequent	Frequent	Abundant	Cattle poaching on left hand bank	Steep > 45o	0.5-1m	1-2m	Slow	No	No	Prints and droppings	No	No	200m	Optimal for WV. Burrow observed, but rat field signs also observed.
TN207	GC/ TC	15-Feb	Wet, mild	Ditch	Earth	Permanent/temporary grass, cattle/grazing	Abundant	Frequent	Occasional	Abundant	Frequent	Occasional	Frequent	Cattle poaching on northern edge.	Shallow < 45o	0.5-1m	2-5m	Static	No	No	No	No	No	200m	Sub-optimal habitat, very little bank for burrowing.
TN209	GC/ TC	14-Feb	Dry, cold	Ditch	Earth	Permanent/temporary grass, cattle/grazing	Abundant	Abundant	Occasional	Rare	Frequent	Rare	Frequent	No signs of disturbance. Oil scum visible on water.	Shallow < 45o	0.5-1m	1-2m	Sluggish	No	No	No	No	No	200m	Some patches of bank not visible. Water quality poor, WV unlikely to be present. Sub-optimal for WV.

Target Note	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Disturbance	Bank profile	Depth	Width	Current	Latrines	Burrows	Rat field signs	Otter field signs	Mink field signs	Survey distance (km)	Additional comments
TN211	GC/ TC	15-Feb	Wet , mild	Running water	Earth	Permanent/temporary grass, cattle/grazing	Rare	Rare	Rare	Dominant	Abundant	Frequent	Frequent	Cattle poaching on both banks	Shallow < 45o	0.5-1m	2-5m	Sluggish	No	No	No	No	No	200m	Sub-optimal habitat, very little bank for burrowing.
TN230	GC/ TC	17-Feb	Dry, mild	Running water	Earth	Permanent/temporary grass, arable crop, mixed broadleaf woodland	Occasional	Rare	Frequent	Frequent	Occasional	Frequent	Occasional	Channel artificially straightened. Not within the last 5 years.	Steep > 45o	0.5-1m	2-5m	Rapid	No	No	No	No	No	200m	Optimal for WV, good bankside and in-channel vegetation.
TN251	GC/ TC	01-Mar	Dry, mild	Running water	Earth	Mixed broadleaf woodland	Abundant	Occasional	Abundant	Occasional	Rare	Frequent	Rare	Ditch managed, but no evidence of recent excavation. Subject to arable runoff.	Steep > 45o	< 0.5m	1-2m	Rapid	No	No	No	No	No	200m	Optimal for WV, good bankside and in-channel vegetation.
TN262	CC/ JP	03-Mar	Wet , mild	Ditch	Earth, silt, sand, gravel	Arable crop	Dominant	Frequent	Abundant	Rare	Rare	Abundant	Abundant		Steep > 45o	< 0.5m	2-5m	Fast	No	No	No	No	No		Drain with running water adjacent to arable fields with grassland margins. Mature and semi mature oak, sycamore, hawthorn, nettle, bramble, hogweed, Alexander's, broad leafed dock, ragwort. Potentially optimal for WV.
TN273	CC/ JP	02-Mar	Cold , dry	Ditch	Earth, silt, sand	Arable crop, mixed broadleaf woodland	Dominant	Occasional	Frequent	Rare	Rare	Frequent	Frequent	No	Steep > 45o	< 0.5m	2-5m	Fast	No	No	Yes	No	No		Ditch with running water, adjacent to woodland. Steep bank profile in places. Rat holes observed. Potentially optimal for WV.
TN276	CC/ JP	02-Mar	Cold , dry	Running water	Earth, silt, sand	Upland grass	Dominant	Dominant	Dominant	Rare	Occasional	Dominant	Dominant	No	Shallow < 45o	0.5-1m	5-10m	Fast	No	No	No	No	No		Stream running through grassland area. Shallow banks on one side, steeper on the other. Potentially optimal for WV.
TN278	CC/ JP	02-Mar	Cold , dry	Ditch	Earth, silt, sand	Upland grass, mixed broadleaf woodland	Dominant	Rare	Frequent	Rare	Rare	Rare	Frequent		Shallow < 45o	< 0.5m	2-5m	Static	No	No	No	No	No		Ditch within small woodland. Mainly beech, sycamore and oak. Grassland on other bank. Bank profile quite shallow, limited burrowing opportunities. Potentially optimal for WV.
TN285	GC TC	16-Feb	Dry, mild	Running water	Earth	Mixed broadleaf woodland, cattle/grazing	Frequent	Rare	Rare	Frequent	Frequent	Abundant	Abundant		Shallow < 45o	1-2m	5-10m	Slow	No	No	No	No	No	200m	Sub-optimal for WV in section surveyed. Banks either too shallow or cattle poached.
TN286	GC TC	16-Feb	Dry, mild	Ditch	Earth	Mixed broadleaf woodland, cattle/grazing	Abundant	Rare	Occasional	Occasional	Abundant	Frequent	Frequent		Steep > 45o	0.5-1m	2-5m	Sluggish	No	No	No	No	No	200m	Optimal for WV, good bank vegetation, although low levels of in-channel vegetation.

Target Note	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Disturbance	Bank profile	Depth	Width	Current	Latrines	Burrows	Rat field signs	Otter field signs	Mink field signs	Survey distance (km)	Additional comments
TN287	GC TC	16-Feb	Dry, mild	Ditch	Earth	Mixed broadleaf woodland	Frequent	Occasional	Abundant	Rare	Occasional	Occasional	Occasional		Shallow < 45o	0.5-1m	2-5m	Static	No	No	No	No	No	200m	Sub-optimal habitat, low in-channel vegetation provision.
TN303	GC, TC	01-Mar	Dry, mild	Ditch, running water	Earth	Arable crop, permanent/tem porary grass	Frequent	Frequent	Occasional	Rare	Occasional	Frequent	Frequent	Evidence of recent excavation (c.3years ago).	Steep > 45o	< 0.5m	1m	Rapid	No	No	No	No	No	200m	Sub-Optimal for WV, low flows and regular maintenance.
TN318	GC, TC	02-Mar	Dry, mild	Ditch, running water	Earth	Permanent/tem porary grass, mixed broadleaf woodland	Abundant	Rare	Frequent	Occasional	Frequent	Frequent	Occasional	No evidence of recent drain maintainence	Steep > 45o	0.5-1m	1-2m	Slow	No	No	No	No	No	200m	Optimal for WV. Good banks, food, cover and low disturbance.
TN320	GC, TC	02-Mar	Dry, mild	Running water	Earth	Permanent/tem porary grass, mixed broadleaf woodland, cattle/grazing	Frequent	Occasional	Occasional	Occasional	Abundant	Frequent	Frequent	Artificial, but no evidence of recent maintainence	Steep > 45o	1-2m	2-5m	Rapid	No	No	No	No	No	200m	Optimal for WV. Good banks, food, cover and low disturbance.
TN330	GC, TC	02-Mar	Dry, mild	Ditch	Earth	Arable crop	Rare	Rare	Occasional	Abundant	Frequent	Dominant	Abundant	Artificial, but no evidence of recent maintainence	Steep > 45o	< 0.5m	1m	Static	No	No	No	No	No	200m	Sub-optimal for WV. Shallow, isolated.
TN331	GC, TC	02-Mar	Dry, mild	Ditch, running water	Earth	Arable crop	Occasional	Rare	Occasional	Occasional	Rare	Dominant	Abundant	Artificial, but no evidence of recent maintainence	Steep > 45o	< 0.5m	1m	Rapid	No	No	No	No	No	200m	Optimal for WV, although lack of in channel vegetation.
TN346	CC/ MW	16-Feb	Dry, cold	Ditch	Earth, silt, sand	Permanent/tem porary grass	Rare	Rare	Abundant	Frequent	Abundant	Abundant	Dominant	As per Paston way 1	Steep > 45o	0.5-1m	5-10m	Slow	No	No	No	No	No		Optimal for WV.
TN347	CC/ MW	16-Feb	Dry, cold	Ditch	Earth, silt, sand	Arable crop	Rare	Dominant	Abundant	Occasional	Dominant	Frequent	Abundant	Paston way LDP RUNS ALONG THE TOP OF THE EMBANKMENTS	Steep > 45o	< 0.5m	2-5m	Slow	No	No	No	No	No		Ditch adjacent to PROW, areas of scrub adjacent. Optimal for WV.
TN370	CC/ JP	01-Mar	Dry, mild	Ditch	Earth, silt	Mixed broadleaf woodland, arable crop	Dominant	Abundant	Frequent	Frequent	Abundant	Frequent	Rare		Steep > 45o	< 0.5m	2-5m	Static	No	No	No	No	No		Ditch within woodland. Duck weed, common reed, oak, hawthorn, ferns, dock leaf. Optimal for WV.

Target Note	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Disturbance	Bank profile	Depth	Width	Current	Latrines	Burrows	Rat field signs	Otter field signs	Mink field signs	Survey distance (km)	Additional comments
TN375	CC/ JP	01-Mar	Dry, mild	Ditch	Earth, silt, sand	Arable crop	Rare	Occasional	Frequent	Abundant	Abundant	Occasional	Dominant		Steep > 45o	< 0.5m	2-5m	Static	No	No	No	No	No		Potentially optimal for WV.
TN384	CC/ JP	01-Mar	Dry, mild	Ditch	Earth, silt	Arable crop	Rare	Rare	Occasional	Rare	Rare	Abundant	Abundant		Steep > 45o	< 0.5m	1-2m	Static	No	No	No	No	No		Ditch by roadside, arable crops on other side; recently trimmed grass. Nettle, cow parsley, cocks foot, hogweed. Potentially optimal for WV.
TN357	CC/ MW	22-Feb	Dry, cold	Ditch	Earth, silt, sand	Arable crop, cattle/grazing	Rare	Rare	Occasional	Occasional	Occasional	Frequent	Dominant		Steep > 45o	< 0.5m	1-2m	Static	No	No	No	No	No		Potentially optimal for WV.

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22.14 Annex F: Full HSI Results

Table 22.16 shows the full Habitat Suitability Index (HSI) scoring for all waterbodies surveyed.

Table 22.16 HSI results

TN Number	Date HSI undertaken	Pond ref	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds in 1km	SI9 - Terrestrial habitat	SI10 - Macrophytes	HSI score
TN4	14-Feb	TF8809-10	1.00	0.10	0.90	0.33	1.00	0.67	0.67	1.00	0.33	0.30	0.52
	08-Feb	TF8809-9	1.00	0.20	1.00	0.67	1.00	0.67	1.00	0.95	0.01	1.00	0.49
	09-Feb	TF8810-2A	1.00	0.05	0.90	0.67	1.00	0.67	0.67	0.85	0.67	0.60	0.58
TN2	14-Feb	TF8810-6	1.00	0.10	1.00	0.33	1.00	0.67	0.33	0.95	0.33	1.00	0.54
TN3	14-Feb	TF8810-8	1.00	0.10	1.00	0.01	1.00	0.01	0.67	0.95	0.67	0.70	0.28
TN5	14-Feb	TF8810-8-A	1.00	0.90	0.90	0.67	1.00	0.67	0.67	0.95	1.00	1.00	0.86
TN11	14-Feb	TF8909-17	1.00	0.10	0.90	0.33	0.80	0.67	0.67	0.95	0.33	0.40	0.52
TN14	08-Feb	TF8909-21	1.00	0.05	1.00	0.33	1.00	0.67	1.00	0.95	0.33	0.30	0.50
TN21	08-Feb	TF8909-26	1.00	0.95	0.90	0.33	0.40	0.67	0.67	1.00	0.67	0.30	0.63
		TF8910-11	Dry pond										
TN9	15-Feb	TF8910-15	1.00	0.10	1.00	0.33	0.20	0.01	0.67	0.90	0.33	0.30	0.29
TN8	14-Feb	TF8910-16	1.00	0.10	0.90	0.33	0.40	0.67	0.67	0.95	0.33	0.30	0.47
TN13	15-Feb	TF8910-19	1.00	0.10	0.90	0.33	0.80	0.67	0.67	1.00	0.33	0.30	0.50
	15-Feb	TF8910-19-A	1.00	0.40	0.90	0.67	1.00	0.67	0.67	1.00	0.67	1.00	0.77
	15-Feb	TF8910-24	1.00	0.10	0.90	1.00	1.00	0.67	0.67	1.00	0.67	0.55	0.66
TN23	15-Feb	TF9009-39	1.00	0.10	0.90	0.33	1.00	0.67	0.67	0.95	0.33	0.90	0.57
		TF9009-47	Dry pond										
TN31	15-Feb	TF9009-49	1.00	0.10	0.90	0.33	0.40	0.67	0.67	0.95	0.33	0.40	0.48
TN44	08-Feb	TF9009-61	1.00	0.05	0.50	1.00	1.00	0.67	0.67	1.00	0.33	0.90	0.57
TN33	01-Feb	TF9010-50	1.00	0.10	0.90	1.00	1.00	0.67	0.67	1.00	1.00	0.45	0.67
TN45	10-Feb	TF9010-60	1.00	0.10	0.90	0.33	0.40	0.67	1.00	1.00	0.67	0.40	0.54
TN47	10-Feb	TF9010-62	1.00	0.10	0.90	0.01	1.00	0.67	0.67	1.00	0.33	0.30	0.36
	09-Feb	TF9011-35	1.00	1.00	0.90	0.33	0.80	0.67	0.67	1.00	0.67	0.30	0.68
	09-Feb	TF9011-37	1.00	0.85	0.90	0.33	1.00	0.67	0.67	1.00	0.67	0.40	0.71

TN Number	Date HSI undertaken	Pond ref	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds in 1km	SI9 - Terrestrial habitat	SI10 - Macrophytes	HSI score
TN24	10-Feb	TF9011-38	1.00	0.10	0.90	0.01	0.80	0.67	0.67	1.00	0.33	0.80	0.39
	09-Feb	TF9011-40	1.00	0.05	0.10	0.33	0.60	0.67	1.00	1.00	0.67	0.60	0.44
	09-Feb	TF9011-41	1.00	0.20	0.50	0.33	0.60	0.67	1.00	1.00	0.67	0.30	0.55
	09-Feb	TF9011-42	1.00	0.05	0.10	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.37
TN26	10-Feb	TF9011-43	1.00	0.10	0.90	0.33	0.60	0.01	0.67	1.00	0.67	0.40	0.36
	09-Feb	TF9011-44	1.00	1.00	1.00	0.33	0.60	0.01	1.00	1.00	0.33	0.30	0.43
TN30	10-Feb	TF9011-45	1.00	0.20	0.90	0.01	1.00	0.67	0.67	1.00	0.33	0.40	0.40
TN35	10-Feb	TF9011-48	1.00	0.10	0.90	0.33	0.80	0.67	0.67	1.00	0.33	0.35	0.51
TN38	10-Feb	TF9011-51	1.00	0.10	0.90	0.67	0.80	0.67	0.67	1.00	0.33	0.40	0.56
TN37	10-Feb	TF9011-52	1.00	0.10	0.90	0.33	0.20	0.67	0.67	1.00	0.33	0.40	0.45
TN43	10-Feb	TF9011-53	1.00	0.20	0.90	0.33	0.40	0.01	0.67	1.00	0.33	0.40	0.34
TN51	09-Feb	TF9011-64	1.00	0.10	0.90	0.33	0.40	0.67	0.67	1.00	0.33	0.40	0.48
TN98	08-Feb	TF9109-81	1.00	0.10	0.90	0.67	1.00	0.67	0.67	0.90	0.67	0.40	0.60
	08-Feb	TF9109-83	1.00	1.00	0.90	0.33	0.60	0.67	0.67	1.00	0.33	0.30	0.62
TN66	10-Feb	TF9110-71	1.00	0.10	0.90	0.33	0.30	0.67	0.67	1.00	0.67	0.30	0.49
TN70	09-Feb	TF9110-72	1.00	0.10	0.90	0.33	1.00	0.67	0.67	1.00	0.67	0.30	0.55
		TF9110-73	No pond										
TN91	08-Feb	TF9110-77	1.00	0.10	0.90	0.33	0.60	0.67	0.67	1.00	0.67	0.40	0.54
TN60	09-Feb	TF9111-67	1.00	0.05	0.50	0.33	0.80	0.67	1.00	1.00	0.67	0.70	0.54
TN58		TF9111-68	Dry pond										
	09-Feb	TF9111-69	1.00	0.10	0.90	0.33	1.00	0.67	0.67	1.00	0.67	0.30	0.55
		TF9111-72	No pond										
TN82	09-Feb	TF9111-75	1.00	0.90	0.90	0.33	0.40	0.67	0.67	1.00	0.67	0.30	0.63
TN89		TF9111-76	1.00	0.00	0.90	0.67	1.00	0.67	0.01	1.00	0.33	0.35	0.46
TN89		TF9111-78	Same pond as TF9111-76										
TN102		TF9111-82	No pond										
TN104	09-Feb	TF9111-84	1.00	0.10	0.90	0.33	0.80	0.67	0.67	1.00	0.33	0.50	0.53
TN103	09-Feb	TF9111-85	1.00	0.10	0.90	0.33	0.80	0.67	0.67	1.00	0.33	0.50	0.53
	09-Feb	TF9111-86	1.00	1.00	0.90	0.01	0.40	0.67	1.00	1.00	0.67	0.40	0.48

TN Number	Date HSI undertaken	Pond ref	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds in 1km	SI9 - Terrestrial habitat	SI10 - Macrophytes	HSI score
	09-Feb	TF9112-79	1.00	0.05	0.10	0.33	0.20	0.67	1.00	1.00	0.67	0.80	0.40
	08-Feb	TF9209-89	1.00	1.00	0.90	0.33	0.80	0.67	0.67	0.95	0.67	0.30	0.68
	08-Feb	TF9209-90	1.00	0.05	0.50	0.33	1.00	0.67	1.00	0.95	0.67	0.35	0.51
	08-Feb	TF9209-91	1.00	0.05	0.10	0.67	1.00	0.67	1.00	0.90	0.67	0.90	0.51
TN114	08-Feb	TF9210-93	1.00	0.10	0.90	0.33	0.20	0.67	0.67	1.00	0.33	0.40	0.45
TN119	08-Feb	TF9210-94	1.00	0.10	0.90	0.33	0.20	0.67	0.67	1.00	0.33	0.40	0.45
TN118	08-Feb	TF9210-95	1.00	0.10	0.90	0.33	0.20	0.67	0.67	1.00	0.33	0.40	0.45
TN120	09-Feb	TF9210-96	1.00	0.10	0.90	0.33	0.60	0.67	0.67	1.00	0.33	0.40	0.50
TN115		TF9211-92	No pond										
	09-Feb	TF9211-97	1.00	0.10	1.00	0.33	0.40	0.67	1.00	1.00	0.67	0.30	0.53
	08-Feb	TF9311-100	1.00	1.00	1.00	0.33	0.60	0.67	1.00	1.00	0.67	0.30	0.70
	08-Feb	TF9311-101	1.00	0.20	1.00	0.67	1.00	0.67	1.00	1.00	0.67	0.40	0.69
	08-Feb	TF9311-101-A	1.00	0.10	1.00	0.33	0.70	0.67	1.00	1.00	0.67	0.50	0.59
	08-Feb	TF9311-102	1.00	1.00	1.00	0.67	1.00	0.67	0.67	1.00	1.00	0.40	0.81
	08-Feb	TF9311-103	1.00	0.50	1.00	1.00	1.00	0.67	0.67	1.00	1.00	0.80	0.84
TN131	13-Feb	TF9311-104	1.00	0.10	0.90	0.33	1.00	0.67	0.67	1.00	0.67	0.35	0.56
	08-Feb	TF9311-105	1.00	0.30	1.00	0.33	0.60	0.67	1.00	1.00	0.33	0.50	0.60
	08-Feb	TF9311-106	1.00	0.05	1.00	0.67	1.00	0.67	1.00	1.00	0.33	0.60	0.58
	13-Feb	TF9311-107	1.00	0.10	0.90	1.00	1.00	0.01	0.67	1.00	1.00	0.50	0.44
TN134	13-Feb	TF9311-108	1.00	0.10	0.90	0.67	0.30	0.67	0.67	1.00	0.67	0.30	0.53
	13-Feb	TF9311-98	1.00	0.10	0.90	0.33	0.20	0.67	0.67	1.00	0.33	0.30	0.44
TN135	13-Feb	TF9411-109	1.00	0.10	0.90	0.67	0.50	0.67	0.67	1.00	0.67	0.30	0.55
TN137	08-Feb	TF9412-110	1.00	0.50	1.00	0.67	0.50	0.67	1.00	1.00	0.33	0.40	0.66
		TF9412-112	Same pond as TF9412-110										
TN138	08-Feb	Tf9412-113	1.00	0.05	0.50	0.33	0.30	0.67	1.00	1.00	0.33	0.30	0.42
TN139		TF9412-115	Running water - no HSI undertaken										
TN142		TF9412-122	No pond										
	08-Feb	TF9512-126	1.00	0.05	0.50	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.43
TN144		TF9513-129	No pond										

TN Number	Date HSI undertaken	Pond ref	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds in 1km	SI9 - Terrestrial habitat	SI10 - Macrophytes	HSI score
TN146	13-Feb	TF9513-133-A	1.00	0.05	0.50	0.33	1.00	0.01	1.00	1.00	0.33	0.30	0.31
TN149	03-Mar	TF9514-134	1.00	1.00	1.00	0.67	1.00	0.67	1.00	1.00	0.33	0.80	0.81
TN151	13-Feb	TF9514-136	1.00	0.30	1.00	0.33	0.20	0.67	0.67	1.00	0.67	0.50	0.56
TN150	03-Mar	TF9514-136-A	1.00	0.05	0.50	0.33	0.20	0.67	1.00	1.00	0.33	0.30	0.40
TN152	13-Feb	TF9514-138	1.00	0.80	1.00	0.67	0.40	0.67	0.67	1.00	0.33	0.30	0.63
TN153	13-Feb	TF9514-139	1.00	0.20	0.50	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.50
TN155	13-Feb	TF9514-143	1.00	0.50	0.50	0.67	0.70	0.67	0.67	1.00	0.67	0.50	0.67
TN154	13-Feb	TF9514-143-A	1.00	0.50	0.50	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.54
	09-Feb	TF9614-154	1.00	0.95	1.00	1.00	0.60	0.67	0.67	1.00	1.00	0.95	0.87
	09-Feb	TF9614-155	1.00	0.90	1.00	1.00	0.80	0.67	0.67	1.00	1.00	0.90	0.88
TN160	10-Feb	TF9614-156	1.00	0.50	0.90	0.67	0.70	0.67	0.67	1.00	1.00	0.50	0.74
TN161	10-Feb	TF9614-157	1.00	0.00	0.90	1.00	1.00	0.67	0.67	1.00	1.00	0.60	0.87
TN156	13-Feb	TF9615-145	1.00	0.00	0.90	1.00	1.00	0.67	0.33	1.00	0.67	0.70	0.79
TN157	13-Feb	TF9615-146	1.00	0.20	0.10	1.00	1.00	0.67	1.00	1.00	0.67	0.80	0.61
	09-Feb	TF9715-158	1.00	0.15	0.50	0.33	0.40	0.67	1.00	1.00	0.67	0.30	0.52
		TF9815-159											
TN169	13-Feb	TF9815-160	1.00	0.90	0.50	0.33	0.40	0.67	1.00	1.00	0.33	0.30	0.57
TN171	03-Mar	TF9815-160-A	1.00	0.80	0.50	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.57
TN177	13-Feb	TF9914-173	1.00	0.20	0.90	0.67	0.80	0.67	0.33	1.00	0.67	0.50	0.61
TN174	13-Feb	TF9915-166	1.00	1.00	0.90	0.33	0.40	0.67	0.67	1.00	0.67	0.30	0.64
TN175	13-Feb	TF9915-167	1.00	0.80	1.00	0.67	1.00	0.67	0.33	1.00	0.67	0.50	0.72
TN178		TG0015-180	Pond filled in										
TN179	13-Feb	TG0015-185	1.00	0.20	1.00	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.53
TN186	13-Feb	TG0114-197	1.00	0.50	1.00	0.33	0.20	0.67	1.00	1.00	0.33	0.30	0.54
TN187	13-Feb	TG0114-199	1.00	0.90	1.00	0.33	0.20	0.67	1.00	1.00	0.33	0.30	0.57
		TG0114-201	Same pond as TG0114-202										
TN190	13-Feb	TG0114-202	1.00	0.60	1.00	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.59
TN180	13-Feb	TG0115-189	1.00	0.80	0.90	0.33	0.20	0.67	0.67	1.00	0.67	0.30	0.58
TN181	13-Feb	TG0115-190	1.00	0.05	0.50	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.43

TN Number	Date HSI undertaken	Pond ref	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds in 1km	SI9 - Terrestrial habitat	SI10 - Macrophytes	HSI score
TN182	13-Feb	TG0115-192	1.00	0.20	1.00	0.33	0.40	0.67	0.67	1.00	0.33	0.30	0.51
TN184	13-Feb	TG0115-193	1.00	0.30	1.00	0.67	1.00	0.67	0.67	1.00	0.33	0.70	0.68
TN185	13-Feb	TG0115-194	1.00	0.05	0.10	0.67	0.60	0.67	1.00	1.00	0.33	0.80	0.45
TN188	13-Feb	TG0115-200	1.00	0.40	0.90	0.33	0.40	0.67	0.67	1.00	0.33	0.30	0.54
TN191	15-Feb	TG0115-203	1.00	0.80	0.90	0.67	1.00	0.67	0.33	1.00	0.33	0.50	0.67
TN192	14-Feb	TG0316-222	1.00	0.20	1.00	0.33	0.60	0.67	0.67	1.00	0.67	0.40	0.59
TN193	14-Feb	TG0316-223	1.00	0.20	1.00	0.33	1.00	0.67	0.67	1.00	0.67	0.50	0.63
		TG0317-224	Same pond as TG0317-226										
TN201	15-Feb	TG0317-225	1.00	0.05	0.50	0.33	0.20	0.67	1.00	0.95	0.33	0.30	0.40
TN202	15-Feb	TG0317-226	1.00	0.70	0.50	0.33	0.20	0.67	1.00	1.00	0.33	0.30	0.52
TN203		TG0317-227	Dry pond										
TN208	14-Feb	TG0417-228	1.00	0.85	0.90	1.00	1.00	0.67	0.67	0.85	0.67	0.50	0.79
	14-Feb	TG0417-228-A	1.00	0.40	0.10	0.33	0.20	0.67	1.00	0.85	0.67	0.30	0.44
TN212		TG0517-232	No pond, running water - no HSI undertaken										
TN219	15-Feb	TG0518-244	1.00	0.00	0.90	1.00	1.00	0.67	0.33	1.00	0.67	0.50	0.76
TN213	17-Feb	TG0520-237	1.00	0.10	0.90	0.33	1.00	0.67	0.67	0.80	0.67	0.30	0.54
TN214	17-Feb	TG0520-239	1.00	0.40	0.90	0.67	0.80	0.01	0.67	0.90	0.67	0.30	0.43
TN215		TG0520-241	Dry pond										
TN216		TG0520-242	Dry pond										
TN217	17-Feb	TG0520-243	1.00	0.10	0.90	0.33	0.60	0.01	0.67	0.95	0.67	0.30	0.34
	20-Feb	TG0520-243-A	1.00	0.10	0.90	0.67	1.00	0.67	0.67	0.95	0.33	0.30	0.55
TN223	17-Feb	TG0620-246	1.00	0.95	0.90	0.67	1.00	0.67	0.67	0.80	0.67	0.50	0.77
TN225	17-Feb	TG0620-247	1.00	0.00	0.90	0.33	0.20	0.67	0.67	0.95	0.67	0.40	0.61
TN226	17-Feb	TG0620-248	1.00	0.00	0.90	0.33	0.20	0.67	0.67	0.90	0.67	0.30	0.59
TN236	17-Feb	TG0721-254	1.00	1.00	0.90	0.33	0.20	0.67	1.00	1.00	0.67	0.30	0.62
TN237	17-Feb	TG0721-254-A	1.00	0.40	0.50	0.33	0.60	0.67	1.00	1.00	0.33	0.30	0.55
TN240	15-Feb	TG0721-256	1.00	0.60	0.90	0.67	1.00	0.67	0.67	1.00	0.33	0.60	0.71
TN242	15-Feb	TG0721-257	1.00	0.20	1.00	0.67	1.00	0.67	1.00	1.00	0.33	0.90	0.70
TN243	15-Feb	TG0721-257-A	1.00	0.60	1.00	0.67	1.00	0.67	0.67	1.00	0.33	0.60	0.72

TN Number	Date HSI undertaken	Pond ref	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds in 1km	SI9 - Terrestrial habitat	SI10 - Macrophytes	HSI score
TN244	15-Feb	TG0721-258	1.00	0.60	1.00	0.33	0.30	0.67	0.67	1.00	0.33	0.40	0.57
TN245	15-Feb	TG0721-259	1.00	0.90	1.00	0.33	0.20	0.67	1.00	1.00	0.33	0.30	0.57
TN246		TG0721-260	Dry pond										
TN250	17-Feb	TG0721-260-A	1.00	0.30	1.00	0.33	0.40	0.67	1.00	1.00	0.33	0.40	0.57
TN253		TG0721-263	Dry pond										
TN255	03-Mar	TG0721-264	1.00	0.10	0.90	0.67	1.00	0.67	0.67	1.00	1.00	0.50	0.65
TN259	03-Mar	TG0721-266	1.00	0.30	0.90	0.33	0.40	0.67	0.67	1.00	0.67	0.30	0.56
TN261		TG0721-267	Dry pond										
TN235	03-Mar	TG0722-252	1.00	0.10	0.90	0.67	0.60	0.67	0.67	1.00	1.00	0.30	0.59
TN241	03-Mar	TG0722-255	1.00	0.10	0.90	0.67	0.40	0.67	0.67	1.00	1.00	0.30	0.56
TN248	03-Mar	TG0722-262	1.00	0.10	0.90	0.33	0.60	0.01	0.67	1.00	1.00	0.40	0.37
TN258	15-Feb	TG0722-265	1.00	0.80	0.90	0.67	1.00	0.67	0.67	1.00	0.33	0.50	0.72
TN264	03-Mar	TG0722-268	1.00	0.80	0.90	0.67	1.00	0.01	0.67	1.00	1.00	0.30	0.50
TN268	03-Mar	TG0722-271	1.00	0.10	0.90	0.67	1.00	0.01	0.67	1.00	1.00	0.30	0.41
TN267		TG0723-270	Dry pond										
TN271	02-Mar	TG0923-278	1.00	0.99	0.90	1.00	1.00	0.67	0.67	1.00	1.00	0.60	0.87
TN272	02-Mar	TG0923-281	1.00	0.10	0.90	0.67	0.40	0.67	0.67	1.00	0.67	0.90	0.60
TN274	02-Mar	TG1124-286	1.00	0.10	0.90	1.00	1.00	0.01	0.67	0.90	1.00	0.30	0.42
TN282	22-Feb	TG1929-304	1.00	0.10	0.90	1.00	1.00	0.67	0.67	1.00	1.00	0.90	0.72
TN293	16-Feb	TG2028-307	1.00	0.80	0.50	0.33	0.30	0.67	1.00	1.00	0.67	0.35	0.60
TN300	16-Feb	TG2128-310	1.00	0.20	0.50	0.67	0.70	0.67	0.67	0.70	0.33	1.00	0.59
TN304	01-Mar	TG2130-311	1.00	0.05	0.50	0.67	0.80	0.67	1.00	0.90	0.33	0.40	0.50
TN305	01-Mar	TG2130-313	1.00	0.60	0.50	0.67	0.80	0.67	1.00	0.90	0.67	1.00	0.76
TN306	01-Mar	TG2130-314	1.00	1.00	0.90	0.67	1.00	0.67	0.67	1.00	0.67	0.30	0.75
TN307	01-Mar	TG2130-316	1.00	1.00	0.90	1.00	1.00	0.67	0.33	0.95	0.67	1.00	0.81
TN308		TG2230-317	Dry pond										
TN309	01-Mar	TG2230-318	1.00	0.10	0.10	0.67	0.40	0.67	1.00	1.00	0.67	0.80	0.50
TN310	02-Mar	TG2230-319	1.00	0.20	1.00	0.67	1.00	0.67	0.33	1.00	0.33	0.90	0.62
TN311	02-Mar	TG2230-320	1.00	0.00	0.90	0.67	0.20	0.67	0.67	1.00	1.00	0.40	0.68

TN Number	Date HSI undertaken	Pond ref	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds in 1km	SI9 - Terrestrial habitat	SI10 - Macrophytes	HSI score
TN314	02-Mar	TG2230-321	1.00	0.00	0.90	0.67	0.60	0.67	0.67	1.00	1.00	0.40	0.76
TN317	02-Mar	TG2230-322	1.00	0.20	1.00	0.67	0.70	0.67	1.00	1.00	1.00	0.90	0.75
TN322	02-Mar	TG2330-324	1.00	0.95	1.00	0.33	0.20	0.67	1.00	1.00	0.33	0.40	0.59
TN323	02-Mar	TG2330-324-A	1.00	0.40	0.50	0.67	1.00	0.67	1.00	1.00	0.33	0.40	0.64
TN324	02-Mar	TG2330-324-B	1.00	0.80	0.50	0.67	0.80	0.67	1.00	1.00	0.67	0.40	0.72
TN325	02-Mar	TG2330-325	1.00	0.20	1.00	0.67	0.60	0.67	1.00	1.00	0.33	0.40	0.61
TN328	02-Mar	TG2330-326	1.00	0.60	0.50	0.67	1.00	0.67	1.00	1.00	0.33	0.80	0.72
TN332	02-Mar	TG2631-335	1.00	0.40	0.50	0.33	1.00	0.67	1.00	0.95	0.33	0.30	0.58
TN333	02-Mar	TG2632-336	1.00	1.00	0.90	0.67	1.00	0.67	0.67	0.95	1.00	0.50	0.81
TN335	02-Mar	TG2632-337	1.00	1.00	0.90	0.67	1.00	0.67	0.67	0.95	1.00	0.50	0.81
TN337	02-Mar	TG2731-338	1.00	0.00	0.90	1.00	0.60	0.67	0.33	0.95	0.67	0.50	0.72
TN338	02-Mar	TG2731-339	1.00	1.00	0.90	0.67	1.00	0.67	0.67	0.95	1.00	0.60	0.83
TN339	02-Mar	TG2731-341	1.00	0.20	0.10	0.33	0.20	0.67	1.00	0.85	0.33	0.30	0.39
TN345	16-Mar	TG2931-353	1.00	0.90	0.90	1.00	1.00	0.67	0.67	1.00	1.00	0.80	0.88
TN340	16-Mar	TG2932-348	1.00	0.60	0.90	1.00	1.00	0.67	0.67	0.95	1.00	0.90	0.85
TN343	16-Mar	TG2932-350	1.00	0.80	0.90	1.00	1.00	0.67	0.67	1.00	1.00	0.80	0.87
TN340	16-Mar	TG2932-351	1.00	1.00	0.90	1.00	1.00	0.67	0.67	0.95	1.00	0.90	0.90
TN344	16-Mar	TG2932-352	1.00	0.30	0.90	1.00	1.00	0.67	0.67	1.00	1.00	0.80	0.79
TN351	22-Feb	TG3132-362	1.00	0.10	1.00	0.33	0.80	0.01	0.67	0.95	0.67	0.50	0.38
TN352	22-Feb	TG3132-364	1.00	0.10	0.90	0.33	1.00	0.67	0.67	1.00	0.67	0.65	0.60
TN353	22-Feb	TG3132-366	1.00	0.10	1.00	0.67	1.00	0.67	0.67	0.95	0.67	1.00	0.67
TN362	20-Feb	TG3231-376-A	1.00	0.30	0.50	0.67	1.00	0.67	1.00	0.80	0.33	0.50	0.62
TN354	22-Feb	TG3232-368	1.00	0.10	0.90	0.33	1.00	0.67	0.67	0.95	0.67	1.00	0.62
TN356	22-Feb	TG3232-372	1.00	0.10	0.90	0.33	0.60	0.67	0.67	0.95	0.67	0.40	0.54
TN367	20-Feb	TG3331-385	1.00	0.30	0.90	0.67	1.00	0.67	0.67	0.89	0.67	0.50	0.69
TN368	20-Feb	TG3331-386	1.00	0.40	0.90	0.67	1.00	0.67	1.00	1.00	0.33	0.30	0.66
TN378	20-Feb	TG3431-396	1.00	0.20	0.10	0.67	1.00	0.67	1.00	0.95	0.33	0.80	0.54
TN372	20-Feb	TG3433-390	1.00	0.10	1.00	0.67	1.00	0.67	0.67	0.70	0.67	0.90	0.65
TN377	01-Mar	TG3433-395	1.00	0.10	0.90	0.33	0.40	0.01	0.67	0.70	0.33	0.40	0.31

TN Number	Date HSI undertaken	Pond ref	SI1 - Location	SI2 - Pond area	SI3 - Pond drying	SI4 - Water quality	SI5 - Shade	SI6 - Fowl	SI7 - Fish	SI8 - Ponds in 1km	SI9 - Terrestrial habitat	SI10 - Macrophytes	HSI score
	01-Mar	TG3433-395-A	1.00	0.40	0.90	0.67	1.00	0.67	0.67	0.70	1.00	0.70	0.75
TN381	20-Feb	TG3532-398	1.00	0.20	0.10	0.33	0.20	0.67	1.00	0.82	0.67	0.30	0.41
TN382	20-Feb	TG3532-400	1.00	0.10	0.10	0.33	0.20	0.67	1.00	0.82	0.67	0.30	0.39
TN388	21-Feb	TG3630-407	1.00	0.95	0.90	0.67	1.00	0.67	0.67	0.89	0.67	0.60	0.79
TN389	21-Feb	TG3630-408	1.00	0.95	1.00	0.67	1.00	0.67	0.67	0.89	0.33	1.00	0.78
TN391	21-Feb	TG3630-409	1.00	0.95	0.10	0.67	0.20	0.67	1.00	0.89	0.67	0.80	0.58
TN390	21-Feb	TG3630-410	1.00	0.50	0.50	0.67	0.80	0.67	0.67	0.88	0.67	0.80	0.70
TN393	21-Feb	TG3630-411	1.00	1.00	0.90	0.67	1.00	0.67	0.67	0.88	0.67	0.60	0.79
TN401	20-Feb	TG3829-417	1.00	0.10	0.90	0.33	0.20	0.67	0.67	0.81	0.33	0.30	0.43
TN402	20-Feb	TG3829-418	1.00	0.10	0.90	0.67	1.00	0.01	0.67	0.81	0.67	0.30	0.38

22.15 Annex G: Plates

Please use Plate Ref (Object ID) within Annex B: Badger Results, Annex C: Target Notes, Annex D: Full Bat Roost Assessment for identifying the relevant plate in the plate files which accompany this report. Please note plates available in electronic version of this document and can be found at www.vattenfall.co.uk/norfolkvanguard

22.16 Annex H: Legislation

22.16.1 General note

1. This section briefly describes the information on the most relevant aspects of the legal protection afforded to habitats and species mentioned in this report. It is for information only and is not intended to be exhaustive or to replace specialised legal advice.

22.16.2 Conservation of Habitats and Species Regulations 2010 (as amended)

22.16.2.1 Habitats

2. The Regulations transpose the Council Directive 92/43/EEC the 'Habitats Directive' into national law (in respect of England and Wales) and requires the state to designate Special Areas of Conservation (SAC).

3. The Regulations require competent authorities to consider or review planning permission, applied for or granted, affecting a European site, and, subject to certain exceptions, restrict or revoke permission where the integrity of the site would be adversely affected.

22.16.2.2 Species

4. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4.

22.16.3 Wildlife and Countryside Act 1981 (as amended)

22.16.3.1 Habitats

5. This Act makes provision for the notification and confirmation of SSSIs. The Act also makes it an offence to intentionally or recklessly destroy or damage any flora, fauna, geological or physiographical features by which a site of scientific interest is of special interest; or to intentionally or recklessly disturb any fauna of the site.

22.16.3.2 Species

6. This Act makes it an offence (with exception to species listed in Schedule 2 and with additional penalties for species listed in Schedule 1) to intentionally:

   - kill, injure, or take any wild bird; take, damage or destroy the nest of any wild bird while that nest is in use or being built; and take or destroy an egg of any wild bird;

7. With regards to Schedule 1 species of birds, it is an offence to disturb these species while it is building a nest or is in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird;

8. This Act makes it an offence to intentionally kill, injure or take any animal listed in Schedule 5 of the Act and protects occupied and unoccupied places used for shelter or protection;

9. This Act makes it an offence (subject to exceptions) to intentionally) pick, uproot or destroy any wild plant listed in Schedule 8 of the Act; and

10. This Act makes it a criminal offence to plant or otherwise cause to grow in the wild any non-native, invasive species listed under Schedule 9 of the Act or any species which is not ordinarily resident to Great Britain in a wild state.

22.16.4 Natural Environment and Rural Communities Act 2006

11. Section 41 of the Act requires the Secretary of State to compile a list of habitats and species of principal importance for the conservation of biodiversity in England.

12. Decision makers of public bodies, in the execution of their duties, must have regard to the conservation of biodiversity in England, and the list is intended to guide them.

22.16.5 Protection of Badgers Act 1992

13. The Act makes it an offence to:

   - Willfully capture, kill or take a badger;
   - Intentionally or recklessly interfere with a badger sett by damaging, destroying, obstructing, causing dog a dog to enter a sett, disturbing an occupied sett.

22.16.6 The Hedgerow Regulations 1997

14. The Regulations make it an offence to remove or destroy certain hedgerows without permission from the local planning authority and the local planning authority is the enforcement body for such offences.

22.17 Annex I: Ecological Survey Calendar

ECOLOGICAL SURVEY	January	February	March	April	May	June	July	August	September	October	November	December
Habitats	Phase I habitat and limited NVC (sub-optimal)			Phase I surveys and detailed botanical assessments						Phase I habitat and limited NVC (sub-optimal)		
Badgers	Limited sett/bait surveys	Sett surveys and bait marking			Sett surveys and limited bait marking				Sett surveys			Limited sett/bait surveys
Bats	Hibernation roost inspection			Limited activity	Roost and activity surveys					Limited activity	Hibernation roosts	
	Internal building/roost inspections possible throughout year. Tree inspections optimal during winter											
Birds	Winter species		Breeding bird/migrant species		Breeding birds		Low activity		Migrant species		Winter species	
Dormice	Hazel nut search			Nest tube survey from April to November. Hazel nut search - best from September to December								
Great crested newts	Habitat suitability assessment		Pond surveys between mid-March and early June				Habitat suitability assessment only					
Otters	Survey possible throughout year (limited by weather and vegetation cover)											
Reptiles	No surveys possible (reptiles hibernating)		Peak survey months, April, May and June				Surveys possible but reduced basking time may affect survey		Optimal survey month	Limited activity	No surveys possible (reptiles hibernating)	
Water voles	Low activity		Limited activity (weather dependent)	Activity surveys			Limited surveys (due to vegetation cover)		Activity surveys		Habitat assessment only	
White-clawed crayfish	Habitat assessment only			Torch survey only (no handling)			Activity surveys – trapping and torching				Habitat assessment	

KEY	
	Optimal survey period
	Sub-optimal survey period (some surveying is possible but results may not be robust and may require further survey during optimum period)
	No surveys possible