





Llandyfaelog

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# **Executive Summary**

Stantec UK Ltd. was commissioned by National Grid Electricity Transmission to undertake a hazel dormouse *Muscardinus avellanarius* Habitat Quality Assessment for land at Llandyfaelog, Carmarthenshire (hereafter 'the Site'), in support of an Ecological Impact Assessment for a proposed substation development.

The assessment aimed to evaluate the quality of habitats within the Site and the wider Survey Area for hazel dormice, building on confirmed presence from a 2024 nest tube survey (Stantec 2025). The study focused on estimating potential dormouse population densities based on habitat quality, rather than conducting further presence/absence surveys.

The assessment followed guidance from the Hazel Dormouse Mitigation Handbook (Wells *et al.*, 2025) and included a desk study and field survey. The field survey was conducted in May–June 2025, assessing hedgerows, woodland, and scrub for plant species diversity and structural complexity. The plant species diversity and structural complexity values were utilised to determine habitat quality and an estimate of breeding adult dormouse numbers for the Site and the Survey Area.

In addition to the dormouse confirmed on the Site during the 2024 surveys, the desk study provided records of dormouse within 2 km of the Site with the closest located 1.6 km with ecological connectivity to the Site.

Based on habitat quality, it is estimated that the Survey Area supports approximately 97 breeding adult dormice, while the Site supports around 47 breeding adults.



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# 1 Introduction

#### 1.1 Overview

- 1.1.1 Stantec UK Ltd. were instructed by National Grid Electricity Transmission to undertake a hazel dormouse *Muscardinus avellanarius* Habitat Quality Assessment (HQA) survey of land at Llandyfaelog, Carmarthenshire (Ordnance Survey grid reference SN 419 132) (hereafter 'the Site).
- 1.1.2 Preliminary, desk-based assessments of the Site and survey work identified habitat with the suitability for dormice. A nest-tube survey was carried out by Stantec in 2024 which identified the presence of dormice (Stantec 2025).
- 1.1.3 The purpose of this report is to inform an Ecological Impact Assessment of proposals to construct a new substation and associated infrastructure.

#### 1.2 The Site and Survey Area

- 1.2.1 The Site for the proposed Llandyfaelog substation comprises agricultural grassland fields bound by hedgerows with an area of ancient woodland to the south of the Site.
- 1.2.2 The Survey Area for the field surveys encompassed the Site, as well as the wider area assessed within the Environmental Impact Assessment Screening (Stantec 2025). In addition to agricultural grassland fields, the Survey Area comprises marshy ground to the west and an area of immature plantation forestry in the south-west. The Survey Area is bordered to the north by the C2074, to the west by the A484, the Crugan Fawr Road and farm tracks to the south, and by open countryside to the east. A tributary of the Gwendraeth Fach runs through woodland along part of the eastern boundary and the headwaters of a stream (Nant Morlais) run from the centre of the Survey Area in the form of drainage ditches.
- 1.2.3 Appendix A, Figure 1 shows the boundaries of the Site and the Survey Area.

#### 1.3 Proposed Development

- 1.3.1 The proposed development is comprised of the following principal elements:
  - Construction of a single level platform (260 metres (m) by 640 m) on which an Air Insulated Substation (AIS) is sited measuring 155 m by 602 m.
  - Bellmouth access to the A484 with an operational access road to connect the platform to the A484.
  - Modification works to the existing 400kV Overhead Line (OHL) to connect the substation to the existing OHL involving the installation of two new towers (pylons) and one replacement tower (pylon) circa 18 m and 62 m.
  - Associated drainage, and hard and soft landscaping.

#### 1.4 Legislation

- 1.4.1 Hazel dormouse receives protection under the following legislation:
  - Conservation of Habitats and Species Regulations 2017 (as amended);
  - Wildlife and Countryside Act 1981 (as amended); and
  - Environment (Wales) Act 2016.



1.4.2 Please see Appendix B for a summary of the protection hazel dormouse receives under this legislation.

#### 1.5 Aims and Objectives

1.5.1 The Hazel Dormouse Mitigation Handbook (Wells *et al.* 2025) sets out guidelines for determining hazel dormouse presence. It states that, reliable records from the past 5 years and within 3 km of the Site may be used to infer hazel dormouse presence within the Site. If the record is outside of the Site, there must be evidence that the Site is not isolated from the location of the confirmed record. Since dormouse have been recorded within the Site in 2024 (Stantec 2025), further nest tube surveys were deemed unnecessary. As such, in accordance with the handbook HQA surveys were undertaken within the Survey Area and the Site. The aim of the HQA was to determine the quality of habitat across the Site and Survey Area for dormice and infer an estimated dormouse population size.



# 2 Methods

#### 2.1 Overview

- 2.1.1 This assessment provides an appraisal of dormouse habitat quality across the Survey Area and the Site. Presence of hazel dormouse was confirmed in 2024 (Stantec 2025); therefore, in line with the Hazel Dormouse Mitigation Handbook, effort focused on a HQA to evaluate habitat quality and to infer likely breeding numbers rather than undertaking further presence/absence survey.
- 2.1.2 The methods comprised three linked stages: desk study, field survey and analysis of results to determine an estimate of breeding dormouse density within the Site and Survey Area.

#### 2.2 Desk Study

- 2.2.1 West Wales Biodiversity Information Centre (WWBIC) was contacted in May 2025 for biological records within 2 km of the Survey Area (see Appendix A, Figure 1). These records were filtered then for relevant hazel dormouse records within the past 10 years.
- 2.2.2 The desk study also involved a review of 2024 survey findings, mapping, aerial imagery and OS baseline data to inform survey planning.

#### 2.3 Field Survey

- 2.3.1 The HQA of all hedgerows, scrub and woodland within the Survey Area was undertaken on the 19-21 of May and 2 and 3 of June 2025 by an experienced ecologist, with reference to survey methodology detailed in the Hazel Dormouse Mitigation Handbook (Wells *et al.* 2025). Data was collected to determine the structural complexity and species diversity of the habitats. The number of woody species from a list considered suitable for dormice, (refer to Appendix C, Table C1 for full list) present within an average 100 metre transect was recorded to determine species diversity. In addition, relevant features of the woodland and scrub (shown in Appendix C, Table C2) and hedgerows (shown in Appendix C, Table C3) were collected to determine the structural complexity.
- 2.3.2 Each habitat and associated data including representative photographs were recorded and mapped using a mobile Geographic Information System (GIS).

#### 2.4 Analysis of Results

2.4.1 From the results of the structural complexity and species diversity, an assessment of habitat quality as outlined in Table 1 was undertaken.

		Species Diversity p	oer km of Hedgerow or Scrub	ha Woodland/					
		High (>6 spp.) Medium (3-6 spp.) Low (>3 spp							
Structural	High	Excellent	Good	Fair					
Complexity	Medium	Good	Good	Poor					
	Low	Fair	Poor	Poor					

2.4.2 This assessment of habitat quality was then referenced to determine an estimated density of breeding dormouse within the Site and Survey Area. Table 2 shows estimated number of breeding adults per km of hedgerow or hectare (ha) of woodland or scrub.



Table 2 Relationship between habitat quality and dormouse density in terms of numbers of breeding adults (n/km in hedgerow, n/ha in woodland/scrub)

		Estimated Number of Breeding Adult Dormice						
		Per km of Hedgerow	Per ha of Woodland/ Scrub					
Habitat	Excellent	8	10					
Quality	Good	5	6					
	Fair	3	4					
	Poor	1	2					

#### 2.5 Limitations

- 2.5.1 Biological records are a snapshot of available data and may be incomplete or spatially biased toward better-surveyed locations. Absence of records does not confirm absence. However, given the existence of recent survey results from within the Site, this is not considered a limitation.
- 2.5.2 While scoring followed the methodology set out in the *Hazel Dormouse Mitigation Handbook* and was undertaken by an experienced ecologist, assessments of structural complexity involved an element of professional judgement. To reduce subjectivity, consistent criteria were applied across all features and scores were cross-checked.
- 2.5.3 The field survey was undertaken at an appropriate time of year (late-May early-June) and is therefore not considered seasonally constrained.



# 3 Results

#### 3.1 Desk Study

3.1.1 Two records were returned by WWBIC, for the past 10 years with the closest located within Nant Morlais woodland, 1.6 km from the Survey Area, with ecological connectivity to the Survey Area. Three records from 2010 were also returned for the Site.

#### 3.2 Field Survey

#### **Hedgerows**

- 3.2.1 Habitat quality assessment results are displayed in Appendix A, Figure 2 and a summary of the results and an estimate of the number of breeding adults within the habitat is given in Table 3.
- 3.2.2 Within the Survey Area, most hedgerows were assessed as good quality, accounting for 76% of the total hedgerow length. A smaller proportion was classified as poor (17%), excellent (4%), and fair (4%).
- 3.2.3 Within the Site, the pattern was similar but with a slightly higher proportion of good quality hedgerows, making up 84% of the total. Poor quality hedgerows accounted for 12%, while fair and excellent hedgerows each represented 4% and 6%, respectively.
- 3.2.4 Full results of the quality assessment can be found in Appendix D, Table D1.

Table 3 Estimated number of adult dormice within hedgerows

Parcel References*	Habitat Quality	Length of	Hedgerows	Estimated Breeding Adults		
	Score	Survey Area	Site	Survey Area	Site	
H5, H6, H15, H30, H32, H35, H37, H41, H53, H56, H64, H65, H66, H71, H74, H82, H83, H94, H99	Poor	2.30 km	0.95 km	2.30	0.95	
H3, H45, H60, H88, H98	Fair	0.51 km	0.32 km	1.52	0.97	
H1, H2, H4, H7, H8, H9, H10, H11, H12, H13, H14, H16, H17, H18, H19, H20, H21, H22, H23, H24, H25, H26, H27, H28, H29, H33, H36, H38, H39, H40, H42, H43, H44, H46, H47, H48, H49, H50, H51, H52, H54, H55, H58, H59, H61, H62, H63, H67, H68, H69, H72, H73, H75, H76, H77, H78, H79, H80, H81, H84, H85, H86, H87, H89, H90, H91, H92, H93, H95, H96, H97	Good	10.43 km	6.46 km	52.13	32.28	
H31, H57, H70	Excellent	0.49 km	0.49 km	3.95	3.95	
Total		13.73 km	7.72 km	59.91	38.14	



#### Woodland and Scrub

- 3.2.5 Habitat quality assessment results are displayed on Figure 1 and summarised below and a summary of the results and an estimate of the number of breeding adults within the habitat is given in Table 4.
- 3.2.6 Within the Survey Area, nearly half of the scrub and woodland (47%) were assessed as poor quality. Good and excellent quality habitats made up 27% and 26%, respectively. No areas were classified as fair quality.
- 3.2.7 Within the Site, most of the scrub and woodland was assessed as excellent quality, comprising 86% of the total area. Poor quality habitat accounted for 11%, and good quality for 3%. No fair quality habitat was recorded within the Site.
- 3.2.8 Full results of the quality assessment can be found in Appendix D, Table D2.

Table 4 Estimated number of adult dormice within woodland and scrub

Parcel References*	Habitat Quality	Area of H	abitat (ha)	Estimated Breeding Adults			
	Score	Survey Area	Site	Survey Area	Site		
3, 4, 6, 11, 16, 21, <b>39</b> , <b>42</b>	Poor	3.45	0.11	6.89	0.23		
-	Fair	-	-	-	-		
12, 26, 32, <b>71</b>	Good	1.95	0.03	11.68	0.17		
<b>30</b> , <b>60</b> , <b>77</b> , 90, 97 Excellent		1.89	0.85	18.87	8.46		
Total		7.28	0.99	37.44	8.85		

<sup>\*</sup> Parcel references in bold lie partially or wholly within the Site boundary

#### 3.3 Estimated Breeding Adult Dormice

3.3.1 In total, across the Survey Area, it can be estimated that there are approximately 97 breeding adult dormice. Across the Site it can be estimated that there are approximately 47 breeding adult dormice.



<sup>\*</sup> Parcel references in bold lie partially or wholly within the Site boundary

# 4 References

Wells, D., Chanin, P. & Gubert, L. (2025) Hazel Dormouse Mitigation Handbook. The Mammal Society.

Stantec (2025) Hazel Dormouse 2024 Surveys Llandyfaelog

#### Web Addresses for Access to Full Legislation Text:

Environment (Wales) Act 2016 https://www.legislation.gov.uk/anaw/2016/3/contents

Wildlife and Countryside Act 1981: http://www.legislation.gov.uk/ukpga/1981/69

The Conservation of Habitats and Species Regulations 2017 (as amended) <a href="https://www.legislation.gov.uk/uksi/2017/1012/contents">https://www.legislation.gov.uk/uksi/2017/1012/contents</a>

#### Habitats Directive:

http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index en.htm



# Appendix A Figures

Figure 1 Site and Survey Area

Figure 2 Dormouse Habitat Quality

# Appendix B Legislation

- B.1.1 Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in Section 5 References.
- B.1.2 The hazel dormouse is listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) and therefore receives protection under Regulation 43 of these Regulations. The species is also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and is afforded protection under Section 9 of that Act.
- B.1.3 This legislation makes it an offence to:
  - deliberately capture, injure, or kill a dormouse;
  - intentionally or recklessly disturb a dormouse while it is occupying a structure or place of shelter or protection;
  - intentionally or recklessly obstruct access to any such structure or place; and
  - damage or destroy a breeding site or resting place used by a dormouse.
- B.1.4 In the case of *Vivienne Morge vs. Hampshire County Council* (2010), the Supreme Court interpreted deliberate disturbance as "an intentional act knowing that it will or may have a particular consequence, namely disturbance of the relevant protected species."
- B.1.5 EPS licences in Wales may be granted by Natural Resources Wales (NRW) to permit activities that would otherwise be unlawful under the Habitats Regulations. Licences can only be issued where the following three tests—derived from the Habitats Directive—are satisfied:
  - the development is for imperative reasons of overriding public interest;
  - there is no satisfactory alternative; and
  - the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range.
- B.1.6 Under Section 6 of the Environment (Wales) Act 2016, all public authorities—including planning authorities—have a legal duty to seek to maintain and enhance biodiversity and promote the resilience of ecosystems in the exercise of their functions (known as the Section 6 duty).
- B.1.7 Section 7 of the Environment (Wales) Act 2016 requires Welsh Ministers to prepare and publish lists of the living organisms and types of habitat which in their opinion are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. These lists informs local planning authorities and statutory bodies in the fulfilment of their biodiversity duties to maintain and enhance the living organisms and types of habitat included in any list published under Section 7. Hazel dormouse is included on the Section 7 list of Species of Principal Importance (SPI).

# **Appendix C** Criteria for Assessment of Dormouse Habitat Quality

Table C1: Species which may be included in calculations for species diversity

Species Common Name	Latin
Field maple	Acer campestre
Sycamore	Acer pseudoplatanus
Birch	Betula pendula & B. pubescens
Buddleia (Note: not suitable for planting – non-native)	Buddleia davidii
Hornbeam	Carpinus betulus
Sweet chestnut	Castanea sativa
Old man's beard	Clematis vitalba
Dogwood	Cornus sanguinea
Hazel	Corylus avellana
Hawthorn	Crataegus monogyna
Broom	Cytisus scoparius
Spindle	Euonymus europaeus
Alder buckthorn	Frangula alnus
Ash	Fraxinus excelsior
Holly	llex aquifolium
Honeysuckle	Lonicera periclymenum
Crab apple	Malus sylvestris
Wild cherry	Prunus avium
Blackthorn	Prunus spinosa
Oak	Quercus robur & Q. petraea
Rose species	Rosa spp.
Bramble	Rubus fruticosus agg.
Willow species	Salix spp.
Elder	Sambucus nigra
Whitebeam	Sorbus aria agg.
Rowan	Sorbus aucuparia
Wild service tree	Sorbus torminalis
Yew	Taxus baccata
Gorse	Ulex europaeus
Wych elm	Ulmus glabra
Wayfaring tree	Viburnum lantana
Guelder rose	Viburnum opulus

Table C2: Categories for Structural Complexity in Woodland and Scrub,

Structural Complexity	Character of Habitat
High	Canopy and understory layers present and well connected, with or without scrub layer beneath OR understory and scrub generally present and well-connected with canopy sparse or absent.
Medium	Canopy layer present with sparse or absent understory, but scrub layer generally present OR understory layer generally present, with sparse or absent canopy or scrub layers OR scrub with developing understory and/or canopy trees.
Low	Canopy present with sparse or absent understorey and scrub layers OR scrub present, with sparse or absent canopy and understory above

Table C3: Categories for Structural Complexity in Hedgerows,

Structural Complexity		Character of Habitat *					
High	Features typically present						
	Other characteristic features	Dense growth to ground level along > 50% of hedge length Dense outgrowths along >25% hedge length Height > 3 metres Mature standards < 40 metres spacings Marginal permanent herbaceous cover >2m wide					
Medium	Features typically present	10-25% of total length consists of gaps and/or some large gaps (>5m) AND width of hedge <2 metres					
	Other characteristic features	Dense growth to ground level along 25 -50% of hedge length Dense outgrowths along 5-25% hedge length Height 2-3 metres Mature standards 40 – 100 metres spacings Marginal permanent herbaceous cover 1- 2m wide					
Low	Features typically present	>25% of total length consists of gaps and/or frequent large gaps (>5m)  AND width of hedge <2 metres					
	Other characteristic features	Dense growth to ground level along <25% of hedge length  Dense outgrowths along <5% hedge length  Height <2 metres  Mature standards > 100 metres spacings  Marginal permanent herbaceous cover <1m wide					
*Please note: t		Height <2 metres  Mature standards > 100 metres spacings					

\*Please note: to fit into the high or medium categories, a hedge should have all the typical features and at least two of the other features described

# **Appendix D** Habitat Quality Assessment Results Table

Table D1: Breakdown of complexity and diversity scores for hedgerows

Parcel Species Typical Features (Low, Ref Diversity Medium, High)				Other Characteristic Features (Low, Medium, High)						Count High	Count Medium	Complexity Score	Diversity Score	Habitat Quality
		Gaps (>25%, 10- 25%, <10%)	Width (<2m, 2-3m, >3m)	Height (<2m, 2-3m, >3m)	Dense growth to ground level (<25%, 25-50%, >50%)	Dense outgrowths (<5%, 5-25%, >25%)	Mature standards (>100m spacing, 40-100m, <40m)	Marginal permanent herbaceous cover (<1m, 1-2m, >2m)	Typical Features Present		+ High			
H1	9	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	High	Good
H2	8	High	Medium	Low	High	Low	High	High	Medium	3	3	Medium	High	Good
H3	8	Low	Medium	Medium	Medium	Low	High	High	Low	2	4	Low	High	Fair
H4	4	High	Medium	Medium	High	Low	Low	High	Medium	2	3	Medium	Medium	Good
H5	4	Low	Medium	Medium	Medium	Low	High	Medium	Low	1	4	Low	Medium	Poor
H6	1	High	Low	Low	High	Low	Low	Medium	Low	1	2	Low	Low	Poor
H7	7	High	Medium	High	Medium	Low	High	High	Medium	3	4	Medium	High	Good
H8	7	High	Medium	Medium	Medium	Low	High	Medium	Medium	1	4	Medium	High	Good
H9	8	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	High	Good
H10	5	High	High	High	Medium	Low	High	High	High	3	4	High	Medium	Good
H11	10	High	Medium	Low	High	Low	Low	Medium	Medium	1	2	Medium	High	Good
H12	10	High	Medium	Medium	High	High	Low	Medium	Medium	2	4	Medium	High	Good
H13	8	High	Medium	High	High	Low	High	High	Medium	4	4	Medium	High	Good
H14	7	High	Medium	High	High	Low	High	Medium	Medium	3	4	Medium	High	Good
H15	5	Low	Medium	High	High	Medium	Low	Medium	Low	2	4	Low	Medium	Poor
H16	6	Medium	Medium	Medium	Medium	Low	Low	Medium	Medium	0	3	Medium	Medium	Good
H17	7	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	High	Good
H18	9	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	High	Good
H19	9	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	High	Good
H20	9	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	High	Good
H21	9	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	High	Good
H22	8	High	Medium	High	High	Low	High	High	Medium	4	4	Medium	High	Good
H23	8	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	High	Good
H24	9	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	High	Good
H25	9	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	High	Good
H26	9	High	Medium	Low	High	Low	Low	Medium	Medium	1	2	Medium	High	Good
H27	8	High	Medium	Medium	Low	Low	Low	Medium	Medium	0	2	Medium	High	Good
H28	8	High	Medium	High	Medium	Low	High	High	Medium	3	4	Medium	High	Good
H29	8	High	Medium	High	High	Low	High	Medium	Medium	3	4	Medium	High	Good
H30	6	High	Low	Low	High	Low	Low	High	Low	2	2	Low	Medium	Poor
H31	10	High	High	High	High	Low	High	Medium	High	3	4	High	High	Excellent
H32	6	High	Low	Low	Medium	Low	Low	Medium	Low	0	2	Low	Medium	Poor
H33	6	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	Medium	Good
H35	2	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	Low	Poor
H36	6	High	Medium	Medium	Medium	Low	Low	High	Medium	1	3	Medium	Medium	Good

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Parcel Ref	Species Diversity	Typical Features (Low, Medium, High)		Other Characteristic Features (Low, Medium, High)					Count High	Count Medium	Complexity Score	Diversity Score	Habitat Quality	
		Gaps (>25%, 10- 25%, <10%)	Width (<2m, 2-3m, >3m)	Height (<2m, 2-3m, >3m)	Dense growth to ground level (<25%, 25-50%, >50%)	Dense outgrowths (<5%, 5-25%, >25%)	Mature standards (>100m spacing, 40-100m, <40m)	Marginal permanent herbaceous cover (<1m, 1-2m, >2m)	Typical Features Present		+ High			
H37	3	Medium	Low	Low	Medium	Low	Low	Low	Low	0	1	Low	Medium	Poor
H38	7	High	Medium	Medium	High	Low	Low	High	Medium	2	3	Medium	High	Good
H39	6	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	Medium	Good
H40	6	High	Medium	Medium	Medium	Low	Low	Medium	Medium	0	3	Medium	Medium	Good
H41	6	High	Low	Low	Medium	Low	Low	Medium	Low	0	2	Low	Medium	Poor
H42	7	High	Medium	Low	High	Low	Low	Medium	Medium	1	2	Medium	High	Good
H43	6	High	High	Low	High	Low	High	Low	High	2	2	High	Medium	Good
H44	7	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	High	Good
H45	11	High	Low	Low	Medium	Low	High	Low	Low	1	2	Low	High	Fair
H46	11	Medium	High	Low	High	Low	Low	Medium	Medium	1	2	Medium	High	Good
H47	5	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	Medium	Good
H48	8	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	High	Good
H49	8	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	High	Good
H50	6	High	Medium	Medium	Medium	Low	Low	Medium	Medium	0	3	Medium	Medium	Good
H51	7	High	Medium	Medium	High	Low	Low	High	Medium	2	3	Medium	High	Good
H52	5	High	High	High	High	Low	High	Low	High	3	3	High	Medium	Good
H53	4	High	Low	Low	High	Low	Low	Medium	Low	1	2	Low	Medium	Poor
H54	4	High	Medium	Low	High	Low	Low	Medium	Medium	1	2	Medium	Medium	Good
H55	7	High	Medium	Medium	Medium	Low	Low	Medium	Medium	0	3	Medium	High	Good
H56	4	High	Medium	Medium	Low	Low	Low	Low	Medium	0	1	Low	Medium	Poor
H57	9	High	High	High	Medium	Low	High	Medium	High	2	4	High	High	Excellent
H58	6	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	Medium	Good
H59	7	High	Medium	Medium	Medium	Low	Low	Low	Medium	0	2	Medium	High	Good
H60	7	High	Low	Low	High	Low	Low	High	Low	2	2	Low	High	Fair
H61	4	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	Medium	Good
H62	9	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	High	Good
H63	5	High	Medium	Medium	Low	Low	Low	Medium	Medium	0	2	Medium	Medium	Good
H64	3	High	Low	Low	High	Low	Low	Medium	Low	1	2	Low	Medium	Poor
H65	1	High	Low	Medium	Low	Low	Low	Low	Low	0	1	Low	Low	Poor
H66	1	High	Low	Low	High	Low	Low	Low	Low	1	1	Low	Low	Poor
H67	3	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	Medium	Good
H68	4	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	Medium	Good
H69	7	High	Medium	Medium	Medium	Low	Low	Medium	Medium	0	3	Medium	High	Good
H70	8	High	High	High	Medium	Low	High	Medium	High	2	4	High	High	Excellent
H71	3	Low	Low	Medium	High	Low	Low	Low	Low	1	2	Low	Medium	Poor
H72	8	High	High	Medium	High	Low	Low	Low	High	1	2	Medium	High	Good
H73	5	High	Medium	Medium	Medium	Low	Low	Low	Medium	0	2	Medium	Medium	Good
H74	3	High	Low	Low	High	Low	Low	Low	Low	1	1	Low	Medium	Poor
H75	5	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	Medium	Good
H76	8	High	High	Medium	High	Low	Low	Low	High	1	2	Medium	High	Good

Parcel Ref	Species Diversity	Typical Features (Low, Medium, High)		Other Characteristic Features (Low, Medium, High)						Count High	Count Medium	Complexity Score	Diversity Score	Habitat Quality
		Gaps (>25%, 10- 25%, <10%)	Width (<2m, 2-3m, >3m)	Height (<2m, 2-3m, >3m)	Dense growth to ground level (<25%, 25-50%, >50%)	Dense outgrowths (<5%, 5-25%, >25%)	Mature standards (>100m spacing, 40-100m, <40m)	Marginal permanent herbaceous cover (<1m, 1-2m, >2m)	Typical Features Present		+ High			
H77	8	High	High	Medium	High	Low	Low	Medium	High	1	3	Medium	High	Good
H78	7	High	Medium	Medium	Medium	Low	Low	Medium	Medium	0	3	Medium	High	Good
H79	6	High	Medium	Medium	High	Low	High	Low	Medium	2	3	Medium	Medium	Good
H80	9	High	High	Medium	High	Low	Low	Medium	High	1	3	Medium	High	Good
H81	5	High	Medium	Medium	Medium	Low	Low	Medium	Medium	0	3	Medium	Medium	Good
H82	5	High	Low	Medium	Medium	Low	Low	Low	Low	0	2	Low	Medium	Poor
H83	2	High	Medium	Medium	High	Low	Low	Low	Medium	1	2	Medium	Low	Poor
H84	6	High	High	High	High	Low	High	Low	High	3	3	High	Medium	Good
H85	5	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	Medium	Good
H86	9	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	High	Good
H87	8	High	Medium	Medium	High	Low	High	Low	Medium	2	3	Medium	High	Good
H88	7	High	Low	Medium	High	Low	Low	Low	Low	1	2	Low	High	Fair
H89	7	High	Medium	Medium	Medium	Low	High	Low	Medium	1	3	Medium	High	Good
H90	9	High	High	Medium	High	Low	Low	Medium	High	1	3	Medium	High	Good
H91	6	High	Medium	Medium	High	Low	Low	Medium	Medium	1	3	Medium	Medium	Good
H92	6	High	Medium	Medium	Medium	Low	Low	Low	Medium	0	2	Medium	Medium	Good
H93	7	High	Medium	High	High	Low	Low	Low	Medium	2	2	Medium	High	Good
H94	4	High	Low	Low	High	Low	High	Low	Low	2	2	Low	Medium	Poor
H95	9	High	High	Medium	High	Low	Low	Medium	High	1	3	Medium	High	Good
H96	6	High	High	High	Medium	Low	Low	Medium	High	11	3	Medium	Medium	Good
H97	10	Medium	Medium	High	High	Low	Low	Medium	Medium	2	3	Medium	High	Good
H98	8	High	Low	High	High	Low	Low	Medium	Low	2	3	Low	High	Fair
H99	5	High	Low	Low	High	Low	Low	Medium	Low	1	2	Low	Medium	Poor

Table D2: Breakdown of complexity and diversity scores for woodland and scrub

Parcel Ref	Species Diversity	Diversity Score	Structural Complexity	Habitat Quality
3	4	Medium	Low	Poor
4	4	Medium	Low	Poor
6	6	Medium	Low	Poor
11	4	Medium	Low	Poor
12	3	Medium	Medium	Good
16	5	Medium	Low	Poor
21	3	Medium	Low	Poor
26	3	Medium	High	Good
30	10	High	High	Excellent
32	3	Medium	High	Good
39	1	Low	Low	Poor
42	2	Low	Medium	Poor
60	9	High	High	Excellent
71	4	Medium	Medium	Good
77	9	High	High	Excellent
90	8	High	High	Excellent
97	8	High	High	Excellent

# **Appendix E** Photographs



Photograph 1: H65 (poor quality hedgerow)



Photograph 3: H32 (poor quality hedgerow)



Photograph 2: H53 (poor quality hedgerow)

Photograph 4: H3 (fair quality hedgerow)



Photograph 5: H45 (fair quality hedgerow)



Photograph 7: H1 (good quality hedgerow)



Photograph 6: H98 (fair quality hedgerow)



Photograph 8: H40 (good quality hedgerow)

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Photograph 9: H96 (good quality hedgerow)



Photograph 11: H57 (excellent quality hedgerow)



Photograph 10: H31 (excellent quality hedgerow)



Photograph 12: H70 (excellent quality hedgerow)





Photograph 13: Parcel 39 and 42 – willow scrub and woodland of poor quality

Photograph 14: Parcel 77 - lowland mixed deciduous woodland of excellent quality



Photograph 15: Parcel 71 – mixed scrub of good quality

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