

# **High Speed Rail (Crewe – Manchester)**

## **Background information and data**

### **Ecology and biodiversity**

BID EC-004-00001

Ecological baseline data -

National Vegetation Classification and  
ancient woodland

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## Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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Ecological baseline data – National Vegetation Classification and ancient woodland

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# 1 Introduction

- 1.1.1 This report presents a summary of the baseline data relating to National Vegetation Classification (NVC) and ancient woodland.
- 1.1.2 Baseline data have been collected for the Proposed Scheme in relation to the following community areas (CA):
- Hough to Walley's Green (MA01);
  - Wimboldsley to Lostock Gralam (MA02);
  - Pickmere to Agden and Hulseheath (MA03);
  - Broomedge to Glazebrook (MA04);
  - Risley to Bamfurlong (MA05);
  - Hulseheath to Manchester Airport (MA06);
  - Davenport Green to Ardwick (MA07); and
  - Manchester Piccadilly Station (MA08).
- 1.1.3 This report should be read in conjunction with Map Series EC-10 in the Background Information and Data, Ecology Map Book.
- 1.1.4 The Environmental Statement<sup>1</sup> should be referred to for details of the ecology impact assessment.

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<sup>1</sup> High Speed Two Ltd (2022), *High Speed Rail (Crewe – Manchester), Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

## 2 National Vegetation Classification and ancient woodland

### 2.1 Methodology

- 2.1.1 Details of the standard methodology utilised for NVC surveys are provided in Technical Note – Ecology and biodiversity – Ecological Field Survey Methods and Standards (FSMS) included in the Environmental Impact Assessment Scope and Methodology Report (SMR) (see Environmental Statement, Volume 5, Appendix CT-001-0001)<sup>2</sup>.
- 2.1.2 A computer programme was used to provide additional analysis as specified in the FSMS. This was TABLEFIT<sup>3</sup>, created by Dr Mark Hill for the Centre for Ecology and Hydrology. This programme assesses the similarity of survey datasets, collected using standard NVC survey methods from homogenous stands of vegetation, with the defined NVC communities and sub-communities of the published classification<sup>4,5,6,7,8</sup>. As part of this, a ‘goodness of fit’ rating is generated as an indication of how well the data match the defined NVC communities and sub-communities. The ‘goodness of fit’ ratings are as follows:
- 80 – 100 = very good;
  - 70 – 79 = good;
  - 60 – 69 = fair;
  - 50 – 59 = poor; and
  - 0 – 49 = very poor.
- 2.1.3 In line with the published guidance<sup>9</sup>, ‘goodness of fit’ ratings were not used in isolation to assign homogenous stands of vegetation to a NVC community. Instead, the results were

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<sup>2</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*, Environmental Impact Assessment Scope and Methodology Report, Volume 5, Appendix CT-001-00001. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

<sup>3</sup> Hill, M. O. (2015), *TABLEFIT version 2.0 for identification of vegetation types*, Centre for Ecology and Hydrology, Wallingford.

<sup>4</sup> Rodwell, J.S. (1991), *British Plant Communities Volume 1 Woodlands and Scrub*, Cambridge University Press, Cambridge.

<sup>5</sup> Rodwell, J.S. (1991), *British Plant Communities Volume 2 Mires and Heaths*, Cambridge University Press, Cambridge.

<sup>6</sup> Rodwell, J.S. (1992), *British Plant Communities Volume 3 Grassland and Montane Communities*, Cambridge University Press, Cambridge.

<sup>7</sup> Rodwell, J.S. (1995), *British Plant Communities Volume 4 Aquatic Communities, Swamps and Tall-herb Fens*, Cambridge University Press, Cambridge.

<sup>8</sup> Rodwell, J.S. (2000), *British Plant Communities Volume 5 Maritime Communities and Vegetation of Open Habitats*, Cambridge University Press, Cambridge.

<sup>9</sup> Rodwell, J.S. (2006), *National Vegetation Classification: Users’ handbook*, Joint Nature Conservation Committee, Peterborough. Available at [http://jncc.defra.gov.uk/pdf/pub06\\_NVCUsershandbook2006.pdf](http://jncc.defra.gov.uk/pdf/pub06_NVCUsershandbook2006.pdf).

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always reviewed against the keys and descriptions given in the published NVC handbooks and subsequent reviews<sup>10</sup>, and surveyor experience was also used. In some cases, even particularly high coefficients of similarity were treated with caution where the results were not considered to be a true reflection of the existing vegetation community by the surveyor. Previous reviews of TABLEFIT<sup>11</sup> have found that a satisfactory classification will not always be generated by this programme, and where there is a very poor fit a sample should not be allocated to an NVC community.

- 2.1.4 Details of the locations where NVC survey were conducted are provided in the accompanying Ecology Map Series EC-10. Sites for NVC survey were identified as locations that might be subject to direct or indirect impacts and where:
- they are within a designated site (including ancient woodland) or comprise habitats of principal importance;
  - sites containing other high value habitats;
  - sites that contain rare plant species; or
  - sites with extensive wetland areas.
- 2.1.5 A general field survey area of 100m was used to identify possible candidate sites for NVC survey, this was extended to any distance, in a small number of cases, where scope for remote indirect impacts was identified.
- 2.1.6 Sites for NVC survey were screened using aerial imagery, desktop information about habitats of principal importance and the results of the Phase 1 habitat surveys.
- 2.1.7 A total of 49 sites<sup>12</sup> were subject to NVC survey within MA01 – MA08 which are listed in Table 1. The NVC survey site locations are indicated in the accompanying Ecology Map Series EC-10.

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<sup>10</sup>Wallace, H. & Prosser, M. (2017), *A Review of the National Vegetation Classification for the Calthion group of plant communities in England and Wales*, Natural England Joint Publication JPO21. Available online at: <http://publications.naturalengland.org.uk/publication/5839929072943104>.

<sup>11</sup>Palmer, M. (1992), *Trial of MATCH and TABLEFIT computer programs for placing survey data within the National Vegetation Classification*, JNCC, Peterborough.

<sup>12</sup>Forty-nine sites were surveyed comprising 168 survey features (stands), i.e. each site is comprised of multiple stands. There are 167 rows in Table 1.

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**Table 1: Summary of NVC surveys undertaken within MA01 – MA08**

Ecology survey code	NVC survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) <sup>13</sup>
CH616525_L5228_PH2_150618	Larch Wood	Minshull Vernon	SJ6908160129	Broadleaved semi-natural woodland	15 June 2018	MA01	Within
CH483359-CH587305_L5340_PH2_150618	Rookery/Small Rookery Woods	Wimboldsley Grange	SJ6769463627	Broadleaved semi-natural woodland	15 June 2018	MA02	Within
CH346229-CH653663_L6089_PH2_130618	Clive Green Woodland	Occleston	SJ6880764873	Broadleaved semi-natural woodland	13 June 2018	MA02	Within
CH244501_L5373-L5255_PH2_130618	Coalpit Lane Woodland	Manor Park	SJ6892265706	Broadleaved semi-natural woodland	13 June 2018	MA02	Within
CH245174_L4616_F001_PH2_160719	Stanthorne Hall Farm	Wharton	SJ6822266587	Broadleaved plantation woodland	16 July 2019	MA02	Within
CH366652-CH446766-CH614893_L5405_CH614893_L4900_PH2_190718	Bank farm, A533 Bostock Road	Stanthorne	SJ6851867405	Broadleaved semi-natural woodland	19 July 2018	MA02	Within
CH446766-CH614893_L5474_PH2_120618	Bull's Wood/Oak wood	Bostock Hall	SJ6828067984	Broadleaved semi-natural woodland	12 June 2018	MA02	Within
CH446766-CH614832_L22111_F001_PH2_210819	Oak Clump	Bostock Hall	SJ6802968092	Mixed woodland	21 August 2019	MA02	Within
CH446766-CH614832_L22112_F001_PH2_210819	Hill Wood	Bostock Green	SJ6810268416	Broadleaved semi-natural woodland	21 August 2019	MA02	Within

<sup>13</sup> Measurements are generated using a Geographic Information System to measure the distance between the centre point of the grid reference and the outer boundary of the land required for construction of the Proposed Scheme. They are approximate as most grid references are accurate to +/- 10m or more.

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Ecology survey code	NVC survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) <sup>13</sup>
CH446766-CH614832_L5429_F002_PH2_150920	River Dane Bostock Local Wildlife Site (LWS) and surrounding land	Bostock	SJ6832868524	Improved grassland	15 September 2020	MA02	Within
CH446766-CH614832_L5429_F003_PH2_150920	River Dane Bostock LWS and surrounding land	Bostock	SJ6840968548	Poor semi-improved grassland	15 September 2020	MA02	Within
CH446766-CH614832_L5429_F001_PH2_150920	River Dane Bostock LWS and surrounding land	Bostock	SJ6826668685	Semi-improved neutral grassland	15 September 2020	MA02	Within
CH446766-CH515800-CH534892_L5171_PH2_140618	Whatcroft Woodland	Bostock Green	SJ6848169661	Broadleaved semi-natural woodland	14 June 2018	MA02	Within
CH402012-CH505004_L5344_F001_PH2_150518	Marshall's Gorse	Rudheath	SJ6853271884	Broadleaved semi-natural woodland	15 May 2018	MA02	Within
CH402012-CH505004_L5344_F004_PH2_150518	Marshall's Gorse	Rudheath	SJ6840171950	Dense scrub	15 May 2018	MA02	60
CH402012-CH505004_L5344_F003_PH2_150518	Marshall's Gorse	Rudheath	SJ6841171966	Tall ruderal	15 May 2018	MA02	75
CH402012-CH505004_L5344_F002_PH2_150518	Marshall's Gorse	Rudheath	SJ6854071976	Broadleaved semi-natural woodland	15 May 2018	MA02	Within
CH557156-U200836-U200837_L5489_F002_PH2_070818	Long Wood	Lostock Gralam	SJ7001574831	Broadleaved semi-natural woodland	7 August 2018	MA02	Within



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CH557156-U200836-U200837_L5489_F001_PH2_070818	Long Wood	Lostock Gralam	SJ7011175030	Broadleaved semi-natural woodland	7 August 2018	MA02	Within
CH231088_L5855_F001_PH2_160518	Winnington Belt	Lostock Gralam	SJ7028375392	Broadleaved plantation woodland	16 May 2018	MA02	Within
CH231088_L5855_F004_PH2_160518	Winnington Belt	Lostock Gralam	SJ7031375427	Dense scrub	16 May 2018	MA02	6
CH231088_L5855_F002_PH2_160518	Winnington Belt	Lostock Gralam	SJ7029675437	Tall ruderal	16 May 2018	MA02	12
CH231088_L5855_F001_PH2_160518	Winnington Belt	Lostock Gralam	SJ7025875466	Broadleaved plantation woodland	16 May 2018	MA02	22
CH557156_L7011_F003_PH2_050618	Winnington and Peas Wood	Lostock Gralam	SJ6971875567	Continuous bracken	5 June 2018	MA02	245
CH134605_L5935_F007_PH2_030719	Winnington and Peas Wood	Lostock Gralam	SJ6998375572	Continuous bracken	3 July 2019	MA02	43
CH557156_L7011_F002_PH2_050618	Winnington and Peas Wood	Lostock Gralam	SJ6980275601	Broadleaved semi-natural woodland	5 June 2018	MA02	131
CH134605_L5935_F003_PH2_050618	Winnington and Peas Wood	Lostock Gralam	SJ7020575602	Broadleaved semi-natural woodland	5 June 2018	MA02	Within
CH557156_L7011_F001_PH2_050618	Winnington and Peas Wood	Lostock Gralam	SJ6970875631	Broadleaved semi-natural woodland	5 June 2018	MA02	162
CH134605_L5935_F004_PH2_050618	Winnington and Peas Wood	Lostock Gralam	SJ7008475670	Marshy grassland	5 June 2018	MA02	106
CH134605_L5935_F006_PH2_030719	Winnington and Peas Wood	Lostock Gralam	SJ7008475703	Tall ruderal	3 July 2019	MA02	58
CH561720_L4808_F001_PH2_150	Winnington and Peas	Lostock	SJ7021275742	Broadleaved semi-	15 September	MA02	Within

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920	Wood	Gralam		natural woodland	2020		
CH134605_L5935_F005_PH2_030719	Winnington and Peas Wood	Lostock Gralam	SJ6999475748	Dense scrub	3 July 2019	MA02	142
CH134605_L5935_F001_PH2_100518	Winnington and Peas Wood	Lostock Gralam	SJ6994875654	Broadleaved plantation woodland	10 May 2018	MA02	8
CH134605_L5935_F002_PH2_030719	Winnington and Peas Wood	Lostock Gralam	SJ7000875763	Broadleaved plantation woodland	3 July 2019	MA02	88
CH561720_L8877-L5278_CH634300_L5278_F001_PH2_010519	Leonard's and Smoker Wood	Higher Wincham	SJ7102576162	Broadleaved semi-natural woodland	1 May 2019	MA02	75
CH561720-U201038-U203027_L8877_F002_PH2_140819	Leonard's and Smoker Wood	Higher Wincham	SJ7099976197	Broadleaved semi-natural woodland	14 August 2019	MA02	37
CH568445_L43004_F004_PH2_020519	Leonard's and Smoker Wood	Higher Wincham	SJ7012276220	Broadleaved semi-natural woodland	2 May 2019	MA02	Within
CH568445_L43004_F003_PH2_020519	Leonard's and Smoker Wood	Higher Wincham	SJ7017976191	Broadleaved plantation woodland	2 May 2019	MA03	24
CH421059_L17921_CH641530_L5496_CH623030_L6330_U200965-U202544_L10066_PH2_060618	Arley and Waterless Brook Corridor	Over Tabley	SJ7028779226	Broadleaved semi-natural woodland	6 June 2018	MA03	Within
CH517829_L7111_F001_PH2_170518	Belt Wood East	Mere	SJ7139981319	Broadleaved semi-natural woodland	17 May 2018	MA03	Within
CH517829_L7111_F004_PH2_170518	Belt Wood East	Mere	SJ7140781394	Continuous bracken	17 May 2018	MA03	Within
CH7353_L46235_F004_PH2_120820	The Mere, Mere	Mere	SJ7325081428	Swamp	12 August 2020	MA03	288

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CH7353_L46235_F009_PH2_120820	The Mere, Mere	Mere	SJ7324981456	Standing water	12 August 2020	MA03	281
CH7353_L46235_F003_PH2_120820	The Mere, Mere	Mere	SJ7313681576	Swamp	12 August 2020	MA03	258
CH7353_L46235_F002_PH2_120820	The Mere, Mere	Mere	SJ7316181579	Broadleaved semi-natural woodland	25 August 2020	MA03	248
CH517829_L6290_F001_PH2_050718	Woodland near Daisy Bank Farm	Mere	SJ7131581631	Broadleaved semi-natural woodland	5 July 2018	MA03	Within
CH517829_L7111_F006_PH2_170518	Belt Wood East	Mere	SJ7158681703	Semi-improved neutral grassland	17 May 2018	MA03	Within
CH517829_L7111_F005_PH2_170518	Belt Wood East	Mere	SJ7159481705	Dense scrub	17 May 2018	MA03	Within
CH7353_L46235_F010_PH2_130820	The Mere, Mere	Mere	SJ7280881726	Semi-improved neutral grassland	13 August 2020	MA03	43
CH7353_L46235_F007_PH2_120820	The Mere, Mere	Mere	SJ7316281796	Tall ruderal	12 August 2020	MA03	406
CH7353_L46235_F009_PH2_120820	The Mere, Mere	Mere	SJ7318181824	Standing water	12 August 2020	MA03	402
CH7353_L46235_F008_PH2_120820	The Mere, Mere	Mere	SJ7316781839	Swamp	12 August 2020	MA03	392
CH517829_L7111_F003_PH2_170518	Belt Wood East	Mere	SJ7181481855	Broadleaved semi-natural woodland	17 May 2018	MA03	Within
CH458512-CH575462-CH586994-U206342_L5396_F001_PH2_130820	Mere Old Hall	Mere	SJ7264181882	Improved grassland	13 August 2020	MA03	Within

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CH7353_L46235_F006_PH2_120820	The Mere, Mere	Mere	SJ7335381992	Swamp	12 August 2020	MA03	528
U205761-U206654_L7111_F001_PH2_130820	Belt Wood East	Mere	SJ7238382084	Broadleaved semi-natural woodland	13 August 2020	MA03	248
CH7353_L46235_F005_PH2_120820	The Mere, Mere	Mere	SJ7334682187	Swamp	12 August 2020	MA03	451
CH517829_L7111_F002_PH2_170518	Belt Wood East	Mere	SJ7197882259	Broadleaved semi-natural woodland	17 May 2018	MA03	Within
CH517829_L7111_F007_PH2_170518	Belt Wood East	Mere	SJ7204982281	Coniferous plantation woodland	17 May 2018	MA03	4
CH7353_L46235_F001_PH2_120820	The Mere, Mere	Mere	SJ7311282632	Broadleaved semi-natural woodland	12 August 2020	MA03	60
CH548895_L4736_F003_PH2_130618	Broom Manor	Hulseheath	SJ7202383955	Semi-improved neutral grassland	13 June 2018	MA03	Within
CH548895_L4736_F001_PH2_130618	Broom Manor	Hulseheath	SJ7207983969	Broadleaved semi-natural woodland	13 June 2018	MA03	Within
CH548895_L4736_F002_PH2_130618	Broom Manor	Hulseheath	SJ7204683985	Unimproved neutral grassland	13 June 2018	MA03	Within
U200332-U200992_L6113_F002_PH2_270619	Fox Covert and Meadows	Heatley	SJ7080288560	Swamp	27 June 2019	MA04	31
U200332-U200992_L6113_F001_PH2_270619	Fox Covert and Meadows	Heatley	SJ7077288591	Broadleaved semi-natural woodland	27 June 2019	MA04	72
GM451813-	Fox Covert and	Heatley	SJ7065788592	Marshy grassland	24 July 2018	MA04	5

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MAN44064_L5970_PH2_240718	Meadows						
GM852664- MAN90718_L5831_PH2_250618	Saracens Head Wood	Mossbrow	SJ7054789332	Broadleaved semi-natural woodland	25 June 2018	MA04	Within
MAN107024_L5926_F005_PH2_2 80619	Coroners Wood Complex	Partington	SJ7067690791	Broadleaved semi-natural woodland	28 June 2019	MA04	16
GM269989- GM320678_L5863_MAN294058_ L21508_PH2_290518	Coroners Wood Complex	Partington	SJ7014390850	Broadleaved semi-natural woodland	29 May 2018	MA04	Within
MAN107024_L5926_F004_PH2_2 80619	Coroners Wood Complex	Partington	SJ7066590881	Broadleaved semi-natural woodland	28 June 2019	MA04	130
MAN107024_L5926_F001_PH2_2 80619	Coroners Wood Complex	Partington	SJ7074690985	Broadleaved semi-natural woodland	28 June 2019	MA04	104
MAN107024_L5926_F002_PH2_2 80619	Coroners Wood Complex	Partington	SJ7061991085	Broadleaved semi-natural woodland	28 June 2019	MA04	21
MAN107024_L5926_F003_PH2_2 80619	Coroners Wood Complex	Partington	SJ7059691167	Broadleaved semi-natural woodland	28 June 2019	MA04	Within
CH329686_L21217_F002_PH2_26 0618	Holcroft Moss	Glazebrook	SJ6850293024	Broadleaved semi-natural woodland	26 June 2018	MA04	Within
CH398941_L7071_F001_PH2_010 819	Gorse Covert Mounds	Risley	SJ6626892763	Broadleaved semi-natural woodland	1 August 2019	MA05	16
CH398941_L7071_F002_PH2_010 819	Gorse Covert Mounds	Risley	SJ6639192833	Improved grassland	1 August 2019	MA05	392
CH367601- CH398941_L7070_F003_PH2_200 819	Gorse Covert Mounds	Risley	SJ6682492855	Dense scrub	20 August 2019	MA05	163
CH367601-	Gorse Covert Mounds	Risley	SJ6650792861	Broadleaved semi-	20 August 2019	MA05	403

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Ecology survey code	NVC survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) <sup>13</sup>
CH398941_L7070_F005_PH2_200819				natural woodland			
CH367601-CH398941_L7070_F001_PH2_200819	Gorse Covert Mounds	Risley	SJ6656092866	Broadleaved plantation woodland	20 August 2019	MA05	286
CH398628-CH398941_L7069_F003_PH2_010819	Pestfurlong Moss	Risley	SJ6705892899	Semi-improved neutral grassland	1 August 2019	MA05	170
CH367601-CH398941_L7070_F002_PH2_200819	Gorse Covert Mounds	Risley	SJ6688792902	Broadleaved semi-natural woodland	20 August 2019	MA05	175
CH398628-CH398941_L7069_F001_PH2_010819	Pestfurlong Moss	Risley	SJ6702792915	Continuous bracken	1 August 2019	MA05	220
CH367601-CH398941_L7070_F004_PH2_200819	Gorse Covert Mounds	Risley	SJ6691392927	Broadleaved semi-natural woodland	20 August 2019	MA05	104
CH398628-CH398941_L7069_F002_PH2_010819	Pestfurlong Moss	Risley	SJ6701792963	Dense scrub	1 August 2019	MA05	192
CH398941_L7073_F001_PH2_010819	Pestfurlong Moss / Gorse Covert Mounds	Risley	SJ6710992986	Broadleaved semi-natural woodland	1 August 2018	MA05	49
CH398941_L7073_F002_PH2_010819	Pestfurlong Moss / Gorse Covert Mounds	Risley	SJ6713193018	Raised bog	1 August 2019	MA05	110
CH398941_L7073_F004_PH2_010819	Pestfurlong Moss / Gorse Covert Mounds	Risley	SJ6701793056	Dense scrub	1 August 2019	MA05	101
CH398941_L7073_F005_PH2_010	Pestfurlong Moss /	Risley	SJ6708593066	Broadleaved semi-	1 August 2019	MA05	127

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819	Gorse Covert Mounds			natural woodland			
CH398941_L7073_F003_PH2_010 819	Pestfurlong Moss / Gorse Covert Mounds	Risley	SJ6708293123	Unimproved neutral grassland	1 August 2019	MA05	55
CH329686_L21217_F002_PH2_26 0618	Holcroft Moss	Glazebrook	SJ6847793222	Broadleaved semi- natural woodland	26 June 2018	MA05	Within
CH329686_L21217_F003_PH2_01 0917	Holcroft Moss	Glazebrook	SJ6846793261	Raised bog	1 September 2017	MA05	Within
CH414713_L21396_F001_PH2_31 0719	Land adjacent to Holcroft Moss	Glazebrook	SJ6790093284	Tall ruderal	31 July 2019	MA05	Within
CH414713_L21396_F002_PH2_31 0719	Land adjacent to Holcroft Moss	Glazebrook	SJ6787393324	Broadleaved semi- natural woodland	31 July 2019	MA05	Within
CH329686_L21217_F001_PH2_26 0618	Holcroft Moss	Glazebrook	SJ6835893426	Broadleaved semi- natural woodland	26 June 2018	MA05	Within
CH510589_L5485_CH510589- CH571149- CH575176_L5095_CH103951_L5 080_PH2_250718	Silver Lane Ponds	Culcheth	SJ6636994024	Marshy grassland/swamp	25 July 2018	MA05	39
CH510589_L4916_PH2_250718	Silver Lane Ponds	Culcheth	SJ6589394056	Marshy grassland	25 July 2018	MA05	11
GM413560-GM490996- GM917075_L5298_PH2_151019	Ponds near Lightshaw Lane	Lowton	SJ6185699150	Unimproved neutral grassland	15 October 2019	MA05	Within
GM413560-GM490996- GM917075_L5298_F003_PH2_15 1019	Ponds near Lightshaw Lane	Lowton	SJ6186799207	Dense scrub	15 October 2019	MA05	Within
MAN250230_L4977_PH2_010819	Abram Flashes	Crankwood	SJ6181099933	Unimproved neutral grassland	1 August 2019	MA05	279
MAN250230_L4948_PH2_010819	Abram Flashes	Crankwood	SD6141600163	Unimproved neutral	1 August 2019	MA05	280

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				grassland			
MAN250270_L5007_F002_PH2_090719	Abram Flashes	Crankwood	SD6116500343	Unimproved neutral grassland	9 July 2019	MA05	273
GM719324_L21153_U201104_L21305_PH2_F001_270618	Abram Flashes	Crankwood	SD6089500380	Poor semi-improved grassland	27 June 2018	MA05	Within
MAN250270_L5007_F001_PH2_090719	Abram Flashes	Crankwood	SD6106200396	Broadleaved semi-natural woodland	9 July 2019	MA05	103
GM719324_L21153_U201104_L21305_PH2_F002_270618	Abram Flashes	Crankwood	SD6089900456	Marshy grassland/swamp	27 June 2018	MA05	5
GM909356_L6071_F002_PH2_110718	Abram Flashes	Crankwood	SD6046800759	Marshy grassland	11 July 2018	MA05	102
GM719324-GM909356-U201102-U205947_L6100_PH2_F001_070820	Abram Flashes	Crankwood	SD6054400798	Marshy grassland	7 August 2020	MA05	158
GM425997-GM917074_L6100_PH2_F002_120718	Abram Flashes	Crankwood	SD6053800837	Marshy grassland/swamp	12 July 2018	MA05	178
GM425997-GM917074_L6100_PH2_F003_120718	Abram Flashes	Crankwood	SD6049700838	Marshy grassland	12 July 2018	MA05	156
GM425997-GM917074_L6100_PH2_F004_120718	Abram Flashes	Crankwood	SD6051100852	Swamp	12 July 2018	MA05	180
GM830198_L20982_PH2_300719	Abram Flashes	Crankwood	SD6062700857	Swamp	30 July 2019	MA05	127
GM719324-GM909356-U201102-U205947_L6100_PH2_F002_0708	Abram Flashes	Crankwood	SD6051500881	Swamp	7 August 2020	MA05	156



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Ecology survey code	NVC survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) <sup>13</sup>
20							
MAN247592_L4907_F002_PH2_300719	Abram Flashes	Crankwood	SD6062700883	Broadleaved semi-natural woodland	30 July 2019	MA05	215
GM425997-GM917074_L6100_PH2_F001_120718	Abram Flashes	Crankwood	SD6052500927	Swamp	12 July 2018	MA05	197
MAN247592_L4907_F001_PH2_300719	Abram Flashes	Crankwood	SD6061200931	Poor semi-improved grassland	30 July 2019	MA05	131
GM909356_L6071_F001_PH2_110718	Abram Flashes	Crankwood	SD6043900946	Swamp	11 July 2018	MA05	109
MAN135566_L4554_F002_PH2_300719	Abram Flashes	Crankwood	SD6058500956	Broadleaved semi-natural woodland	30 July 2019	MA05	258
GM909356_L6071_F003_PH2_110718	Abram Flashes	Crankwood	SD6045800965	Swamp	11 July 2018	MA05	88
MAN135566_L4554_F001_PH2_300719	Abram Flashes	Crankwood	SD6056600969	Swamp	30 July 2019	MA05	252
GM721001-GM917074-U205947_L5332_F003_PH2_060820	Abram Flashes	Crankwood	SD6046001119	Broadleaved semi-natural woodland	6 August 2020	MA05	124
GM917074_L21296_PH2_F001_060820	Abram Flashes	Crankwood	SD6052101192	Swamp	6 August 2020	MA05	41
MAN135564-MAN247591_L4983_F002_PH2_300719	Abram Flashes	Abram	SD6051601257	Poor semi-improved grassland	30 July 2019	MA05	124
MAN135564-MAN247591_L4983_F001_PH2_3	Abram Flashes	Abram	SD6052501392	Broadleaved semi-natural woodland	30 July 2019	MA05	199

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Ecology survey code	NVC survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) <sup>13</sup>
00719							
MAN135564-MAN247591_L4983_F003_PH2_300719	Abram Flashes	Abram	SD6043201482	Broadleaved semi-natural woodland	30 July 2019	MA05	112
GM721001-GM917074-U205947_L5332_F002_PH2_060820	Abram Flashes	Crankwood	SD6038901485	Swamp	6 August 2020	MA05	30
GM721001-GM917074-U205947_L5332_F001_PH2_060820	Abram Flashes	Crankwood	SD6026801637	Swamp	6 August 2020	MA05	1
CH448367_L5290_PH2_010618	Millington Clough	Warburton Green	SJ7242284202	Broadleaved semi-natural woodland	1 June 2018	MA06	Within
U202295_L21600_F002_PH2_230719	Rostherne Mere	Rostherne	SJ7404584823	Swamp	23 July 2019	MA06	100
U201015_L6143_F001_PH2_230719	Rostherne Mere	Rostherne	SJ7408684756	Broadleaved semi-natural woodland	23 July 2019	MA06	77
U204258_L8913_F009_PH2_230719	Rostherne Mere	Rostherne	SJ7427883828	Swamp	23 July 2019	MA06	827
U201015_L6143_F003_PH2_230719	Rostherne Mere	Rostherne	SJ7428984622	Swamp	23 July 2019	MA06	178
U202295_L21600_F007_PH2_240719	Rostherne Mere	Rostherne	SJ7435883810	Swamp	24 July 2019	MA06	742
U204258_L8913_F004_PH2_240719	Rostherne Mere	Rostherne	SJ7442383857	Swamp	24 July 2019	MA06	711
U202295_L21600_F008_PH2_240719	Rostherne Mere	Rostherne	SJ7458183860	Swamp	24 July 2019	MA06	517

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Ecology survey code	NVC survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) <sup>13</sup>
U201015_L6143_F011_PH2_250719	Rostherene Mere	Rostherne	SJ7462584535	Broadleaved semi-natural woodland	25 July 2019	MA06	73
U203052_L8912_F006_PH2_250719	Rostherne Mere	Rostherne	SJ7468883668	Broadleaved semi-natural woodland	25 July 2019	MA06	601
CH5603_L5349_F005_PH2_250719	Rostherne Mere	Rostherne	SJ7485583754	Marshy grassland	25 July 2019	MA06	197
U204258_L8913_F012_PH2_250719	Rostherne Mere	Rostherne	SJ7500283852	Swamp	25 July 2019	MA06	323
U204258_L8913_F010_PH2_250719	Rostherne Mere	Rostherne	SJ7523283916	Swamp	25 July 2019	MA06	95
CH561486-U204199_L5494_PH2_240719	Hancock's Bank South	Rostherne	SJ7552884459	Broadleaved semi-natural woodland	24 July 2019	MA06	Within
CH561505_L5425_F003_PH2_270619	Ryecroft Covert (also referred to as Lambsbank Covert)	Ashley	SJ7586284582	Broadleaved semi-natural woodland	27 June 2019	MA06	Within
CH561505_L5425_F002_PH2_270619	Ryecroft Covert (also referred to as Lambsbank Covert)	Ashley	SJ7589584539	Broadleaved semi-natural woodland	27 June 2019	MA06	Within
CH561505_L3654_PH2_230719	Birkin Brook Grassland	Ashley	SJ7595684153	Improved grassland	23 July 2019	MA06	Within
CH561505_L5425_F001_PH2_270619	Ryecroft Covert (also referred to as Lambsbank Covert)	Ashley	SJ7608584552	Broadleaved semi-natural woodland	27 June 2019	MA06	3
CH480792_L5149_PH2_150618	Brickhill Wood	Warburton Green	SJ7926683617	Broadleaved semi-natural woodland	15 June 2018	MA06	Within
GM742096_L5923_F003_PH2_03	Sunbank Wood &	Warbuton	SJ7936784313	Unimproved neutral	3 July 2018	MA06	Within

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0718	Ponds and Bollin Bank	Green		grassland			
MAN157547- MAN43748_L5131_PH2_030718	Hennersley Bank / Wood near Chapel Lane	Warburton Green	SJ7943284443	Broadleaved semi-natural woodland	3 July 2018	MA06	Within
GM742096_L5923_F002_PH2_030718	Sunbank Wood & Ponds and Bollin Bank	Warbuton Green	SJ7944384269	Unimproved neutral grassland	3 July 2018	MA06	Within
GM742096_L5923_F001_PH2_240518	Sunbank Wood & Ponds and Bollin Bank	Warbuton Green	SJ7945784245	Broadleaved semi-natural woodland	24 May 2018	MA06	Within
CH542392_L5218_PH2_180518	Erlam Wood / Mill Wood, Castle Mill	Warburton Green	SJ7960584093	Broadleaved semi-natural woodland	18 May 2018	MA06	Within
GM478972- MAN157768_L5040_F001_PH2_090818	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ7963384132	Unimproved neutral grassland	9 August 2018	MA06	6
GM478972- MAN157768_L5040_F002_PH2_090818	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ7963384157	Broadleaved semi-natural woodland	9 August 2018	MA06	Within
GM207519_L5210_F002_PH2_230518	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ7983484211	Broadleaved semi-natural woodland	23 May 2018	MA06	23
GM207519_L5210_F001_PH2_230518	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ7988984003	Broadleaved semi-natural woodland	23 May 2018	MA06	54
GM207519_L5210_F003_PH2_120618	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ7995684097	Broadleaved semi-natural woodland	12 June 2018	MA06	75
GM354762_L6041_PH2_240518 and GM865079_L5823_PH2_240518	Sunbank Wood and Ponds	Warburton Green	SJ8000584360	Broadleaved semi-natural woodland	24 May 2018	MA06	41
GM347593-	Sunbank Wood &	Warburton	SJ8003384447	Broadleaved semi-	24 May 2018	MA06	1

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Ecology survey code	NVC survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) <sup>13</sup>
GM579478_L6042_GM225194_L2137_MAN157768-MAN56379_L5352_GM225194_L4633_PH2_240518	Ponds and Bollin Bank	Green		natural woodland			
GM207519_L5210_F004_PH2_120618	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ8006683950	Broadleaved semi-natural woodland	12 June 2018	MA06	58
MAN157768-MAN56379_L5352_PH2_210818	Sunbank Wood and Ponds	Warburton Green	SJ8016084454	Broadleaved semi-natural woodland	21 August 2018	MA06	65
GM79805_L24000_PH2_150618	Davenport Green Wood	Davenport Green	SJ8032186134	Broadleaved semi-natural woodland	15 June 2018	MA06	Within
MAN32145_L5133_PH2_260619	Black Carr Wood	Benchill	SJ8200488877	Broadleaved semi-natural woodland	26 June 2019	MA07	81
MAN344335_L8860_F003_PH2_030719	Wrengate Wood Complex	Northenden	SJ8363090089	Broadleaved plantation woodland	3 July 2019	MA07	118
MAN344335_L8860_F002_PH2_030719	Wrengate Wood Complex	Northenden	SJ8378390159	Ornamental tree line	3 July 2019	MA07	216
GM53625-GM686564_L4904_GM370272_L8827_F001_PH2_030719	Wrengate Wood Complex	Northenden	SJ8328790537	Broadleaved plantation woodland	3 July 2019	MA07	Within
GM53625-GM686564_L4904_GM370272_L8827_F002_PH2_030719	Wrengate Wood Complex	Northenden	SJ8402090774	Broadleaved plantation woodland	3 July 2019	MA07	Within
MAN344335_L8860_F004_PH2_030719	Wrengate Wood Complex	Northenden	SJ8357790885	Broadleaved semi-natural woodland	3 July 2019	MA07	Within
GM643659-LA33758_L8837_F001_PH2_030719	Wrengate Wood Complex	Northenden	SJ8379690961	Broadleaved semi-natural woodland	3 July 2019	MA07	2

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Ecology survey code	NVC survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) <sup>13</sup>
LA80010_L4590_F001_PH2_040719	Limekiln Lane Woodland/Pin Mill Brow	Ardwick	SJ8590697756	Broadleaved plantation woodland	4 July 2019	MA07	71
GM300408_L4928_F002_PH2_070818	Limekiln Lane Woodland/Pin Mill Brow	Ardwick	SJ8571497806	Poor semi-improved grassland	7 August 2018	MA08	4

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- 2.1.8 NVC survey sites which are Ancient Woodland Inventory (AWI) sites<sup>14</sup> or ancient woodland<sup>15</sup> were subject to a search for vascular plant species that are typically more prevalent in ancient<sup>16</sup> rather than secondary woodlands<sup>17,18</sup>. In particular, the survey involved a search for those ancient woodland plant indicator species that exhibit strong affinity to such sites on the basis of the list compiled by Rose (1999)<sup>19</sup> in consultation with other professional botanists.
- 2.1.9 A total of 21 sites<sup>20</sup> were surveyed for ancient woodland plant indicator species within MA01 – MA08, as described in Table 2.

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<sup>14</sup> Sites identified on Natural England's Ancient Woodland Inventory. Available online at: <https://naturalengland-defra.opendata.arcgis.com/>.

<sup>15</sup> Three ancient woodland sites have been identified by HS2 Ltd's heritage analysis which are of insufficient size for Natural England to add to the AWI. These are Daisybank Wood (also known as Woodland near Daisy Bank Farm) Ecology Survey code CH517829\_L6290\_F001\_PH2\_050718; Erlam's Meadow LWS incorporating East of Arden House ancient woodland (not accessible for survey) and Heyscroft Wood (part of Ecology Survey Code GM53625-GM686564\_L4904\_GM370272\_L8827\_F001\_PH2\_030719). All three sites are still regarded as ancient woodland for the purposes of survey and assessment.

<sup>16</sup> Ancient woodland sites are those that have had continuity of woodland cover since at least AD 1600.

<sup>17</sup> Peterken, G.F. (1974), *A method for assessing woodland flora for conservation for using Indicator Species*. Biological Conservation, 6, P239-245.

<sup>18</sup> Thompson, R.J., Butcher, W.G., Williams, P. & Warren, M. (2003), *The use of vascular plants as indicators of ancient woodland in Somerset: The development of a county specific list*. Somerset Archaeology and Natural History.

<sup>19</sup> Rose, F. (1999), *Indicators of ancient woodland: The use of vascular plants in evaluating ancient woods for nature conservation*, British Wildlife, 10(4), 241-247.

<sup>20</sup> Twenty-one sites were surveyed in which there were 52 survey features (stands) of woodland which are listed in Table 2.

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**Table 2: Summary of ancient woodland plant indicator species surveys undertaken within MA01 – MA08**

Ecology survey code	Survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
CH483359-CH587305_L5340_PH2_150618	Rookery/Small Rookery Woods	Wimboldsley Grange	SJ6769463627	AWI site	15 June 2018	MA02	Within
CH245174_L4616_F001_PH2_160719	Stanthorne Hall Farm	Wharton	SJ6822266587	AWI site	16 July 2019	MA02	Within
CH446766-CH614893_L5474_PH2_120618	Bull's Wood/Oak wood	Bostock Hall	SJ6828067984	AWI site	12 June 2018	MA02	Within
CH446766-CH614832_L22111_F001_PH2_210819	Oak Clump	Bostock Hall	SJ6802968092	AWI site	21 August 2019	MA02	Within
CH231088_L5855_F001_PH2_160518	Winnington Belt	Lostock Gralam	SJ7028375392	AWI site	16 May 2018	MA02	Within
CH231088_L5855_F001_PH2_160518	Winnington Belt	Lostock Gralam	SJ7025875466	AWI site	16 May 2018	MA02	22
CH557156_L7011_F002_PH2_050618	Winnington and Peas Wood	Lostock Gralam	SJ6980275601	AWI site	5 June 2018	MA02	131
CH134605_L5935_F003_PH2_050618	Winnington and Peas Wood	Lostock Gralam	SJ7020575602	AWI site	5 June 2018	MA02	Within
CH557156_L7011_F001_PH2_050618	Winnington and Peas Wood	Lostock Gralam	SJ6970875631	AWI site	5 June 2018	MA02	162
CH561720_L4808_F001_PH2_150920	Winnington and Peas Wood	Lostock Gralam	SJ7021275742	AWI site	15 September 2020	MA02	Within
CH134605_L5935_F001_PH2_100518	Winnington and Peas Wood	Lostock Gralam	SJ6994875654	AWI site	10 May 2018	MA02	8
CH134605_L5935_F002_PH2_030719	Winnington and Peas Wood	Lostock Gralam	SJ7000875763	AWI site	3 July 2019	MA02	88
CH561720_L8877-L5278_CH634300_L5278_F001_PH2_010519	Leonard's and Smoker Wood	Higher Wincham	SJ7102576162	AWI site	1 May 2019	MA02	75



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Ecology survey code	Survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
CH561720-U201038-U203027_L8877_F002_PH2_140819	Leonard's and Smoker Wood	Higher Wincham	SJ7099976197	AWI site	14 August 2019	MA02	37
CH568445_L43004_F004_PH2_020519	Leonard's and Smoker Wood	Higher Wincham	SJ7012276220	AWI site	2 May 2019	MA02	Within
CH568445_L43004_F003_PH2_020519	Leonard's and Smoker Wood	Higher Wincham	SJ7017976191	AWI site	2 May 2019	MA03	24
CH517829_L7111_F001_PH2_170518	Belt Wood East	Mere	SJ7139981319	AWI site	17 May 2018	MA03	Within
CH517829_L6290_F001_PH2_050718	Daisybank Wood (also known as Woodland near Daisy Bank Farm)	Mere	SJ7131581631	Ancient woodland	5 July 2018	MA03	Within
CH517829_L7111_F003_PH2_170518	Belt Wood East	Mere	SJ7181481855	AWI site	17 May 2018	MA03	Within
U205761-U206654_L7111_F001_PH2_130820	Belt Wood East	Mere	SJ7238382084	AWI site	13 August 2020	MA03	248
CH517829_L7111_F002_PH2_170518	Belt Wood East	Mere	SJ7197882259	AWI site	17 May 2018	MA03	Within
CH517829_L7111_F007_PH2_170518	Belt Wood East	Mere	SJ7204982281	AWI site	17 May 2018	MA03	4
MAN107024_L5926_F005_PH2_280619	Coroners Wood Complex	Partington	SJ7067690791	AWI site	28 June 2019	MA04	16
GM269989-GM320678_L5863_MAN294058_L21508_PH2_290518	Coroners Wood Complex	Partington	SJ7014390850	AWI site	29 May 2018	MA04	Within
MAN107024_L5926_F004_PH2_280619	Coroners Wood Complex	Partington	SJ7066590881	AWI site	28 June 2019	MA04	130
MAN107024_L5926_F001_PH2_280619	Coroners Wood Complex	Partington	SJ7074690985	AWI site	28 June 2019	MA04	104
MAN107024_L5926_F002_PH2_280619	Coroners Wood	Partington	SJ7061991085	AWI site	28 June 2019	MA04	21

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Ecology survey code	Survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
	Complex						
MAN107024_L5926_F003_PH2_280619	Coroners Wood Complex	Partington	SJ7059691167	AWI site	28 June 2019	MA04	Within
CH448367_L5290_PH2_010618	Millington Clough	Warburton Green	SJ7242284202	AWI site	1 June 2018	MA06	Within
U203052_L8912_F006_PH2_250719	Rostherne Mere	Rostherne	SJ7468883668	AWI site	25 July 2019	MA06	601
CH561486-U204199_L5494_PH2_240719	Hancock's Bank South	Rostherne	SJ7552884459	AWI site	24 July 2019	MA06	Within
CH561505_L5425_F003_PH2_270619	Ryecroft Covert (also referred to as Lambsbank Covert)	Ashley	SJ7586284582	AWI site	27 June 2019	MA06	Within
CH561505_L5425_F002_PH2_270619	Ryecroft Covert (also referred to as Lambsbank Covert)	Ashley	SJ7589584539	AWI site	27 June 2019	MA06	Within
CH561505_L5425_F001_PH2_270619	Ryecroft Covert (also referred to as Lambsbank Covert)	Ashley	SJ7608584552	AWI site	27 June 2019	MA06	3
CH480792_L5149_PH2_150618	Brickhill Wood	Warburton Green	SJ7926683617	AWI site	15 June 2018	MA06	Within
MAN157547- MAN43748_L5131_PH2_030718	Hennersley Bank / Wood near Chapel Lane	Warburton Green	SJ7943284443	AWI site	3 July 2018	MA06	Within
GM742096_L5923_F001_PH2_240518	Sunbank Wood & Ponds and Bollin Bank	Warbuton Green	SJ7945784245	AWI site	24 May 2018	MA06	Within
GM478972- MAN157768_L5040_F002_PH2_090818	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ7963384157	AWI site	9 August 2018	MA06	Within
GM207519_L5210_F002_PH2_230518	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ7983484211	AWI site	23 May 2018	MA06	23
GM207519_L5210_F001_PH2_230518	Sunbank Wood & Ponds	Warburton Green	SJ7988984003	AWI site	23 May 2018	MA06	54

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Ecology survey code	Survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
	and Bollin Bank						
GM207519_L5210_F003_PH2_120618	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ7995684097	AWI site	12 June 2018	MA06	75
GM354762_L6041_PH2_240518 and GM865079_L5823_PH2_240518	Sunbank Wood and Ponds	Warburton Green	SJ8000584360	AWI site	24 May 2018	MA06	41
GM347593- GM579478_L6042_GM225194_L2137_MAN 157768- MAN56379_L5352_GM225194_L4633_PH2_240518	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ8003384447	AWI site	24 May 2018	MA06	1
GM207519_L5210_F004_PH2_120618	Sunbank Wood & Ponds and Bollin Bank	Warburton Green	SJ8006683950	AWI site	12 June 2018	MA06	58
MAN157768- MAN56379_L5352_PH2_210818	Sunbank Wood and Ponds	Warburton Green	SJ8016084454	AWI site	21 August 2018	MA06	65
GM79805_L24000_PH2_150618	Davenport Green Wood	Davenport Green	SJ8032186134	AWI site	15 June 2018	MA06	Within
MAN32145_L5133_PH2_260619	Black Carr Wood	Benchill	SJ8200488877	AWI site	26 June 2019	MA07	81
MAN344335_L8860_F003_PH2_030719	Wrengate Wood Complex	Northenden	SJ8363090089	AWI site	3 July 2019	MA07	118
GM53625- GM686564_L4904_GM370272_L8827_F001 _PH2_030719	Wrengate Wood Complex	Northenden	SJ8328790537	AWI site	3 July 2019	MA07	Within
GM53625- GM686564_L4904_GM370272_L8827_F002 _PH2_030719	Wrengate Wood Complex	Northenden	SJ8402090774	AWI site	3 July 2019	MA07	Within
MAN344335_L8860_F004_PH2_030719	Wrengate Wood Complex	Northenden	SJ8357790885	AWI site	3 July 2019	MA07	Within

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Ecology survey code	Survey site name	Location	OS grid reference	Habitat types included in survey	Survey date	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
GM643659-LA33758_L8837_F001_PH2_030719	Wrengate Wood Complex	Northenden	SJ8379690961	AWI site	3 July 2019	MA07	2

## 2.2 Deviations, constraints and limitations

- 2.2.1 The following deviations to the standard methodology were applied. The rest of the surveys were conducted as per the standard methodology provided in the FSMS.
- 2.2.2 Access was limited to a number of sites where NVC and ancient woodland plant indicator surveys were proposed. Approximately 43% of NVC sites and 55% of ancient woodland sites were surveyed, including a representative variety of habitats found within the land required for the construction of the Proposed Scheme.
- 2.2.3 The quality of NVC survey is limited by seasonal factors which affect the detectability of plants. This means that the results of survey are affected by the timing of the visits to the site. An NVC survey does not produce a complete list of plants at a site and the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. Nevertheless, the results of these surveys permit an assessment of the ecological value of habitats for vegetation communities.
- 2.2.4 Land access was not available during the appropriate survey period at 65 sites that were selected for NVC assessment. These sites are listed in Table 3.
- 2.2.5 The FSMS encourages collection of five or more quadrat samples in each stand of vegetation. This approach was adopted unless the stand of vegetation was too small to accommodate five samples, or it could be adequately sampled and described with a fewer number of samples (e.g. it was species-poor and completely homogenous), or a single 'whole stand' sample was collected. This approach to quadrat sampling is in line with published guidance<sup>9</sup>.
- 2.2.6 In most cases, a species floristic table is provided to accompany the vegetation description. However, in a small number of cases, vegetation was sampled to provide full spatial coverage of a wider site (e.g. a designated site or a woodland). This resulted in vegetation that would ordinarily not qualify for NVC survey (because it does not meet the criteria stated in Paragraph 2.1.4) being sampled alongside target vegetation. Non-target vegetation samples are not accompanied by a floristic table.
- 2.2.7 TABLEFIT analysis was undertaken of the majority of vegetation samples. Vegetation was not subject to computer analysis where it is species-poor and readily identifiable to a NVC community without computer verification; or it contained species which are not well sampled in the NVC classification (e.g. vegetation dominated by Himalayan balsam (*Impatiens glandulifera*)).
- 2.2.8 In Section 2.3 it is confirmed whether each of the sampled stands of vegetation qualify as a Habitat of Principal Importance (HoPI). Determination of whether a stand qualifies as a HoPI is based on the priority habitat descriptions published by the Joint Nature Conservation

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Committee/Biodiversity Reporting and Information Group<sup>21</sup>. Each stand of vegetation is assessed as a HoPI independent of whether it occurs in mosaic with other stands.

#### 2.2.9 Site-specific limitations and deviations include:

- River Dane Bostock Local Wildlife Site (LWS) and surrounding land (CH446766-CH614832\_L5429\_F003\_PH2\_150920) was a narrow strip of riparian vegetation adjacent to the River Bostock. It was sampled as a continuous series of quadrats (10 in total) running parallel to the west bank of the river, where access was available. A number of small patches of different vegetation types are present in this linear 'transect' of quadrats. However, they are collated into a single frequency table (Table 15) because the vegetation is present in an intricate, intergrading mosaic and individual stands could not be readily delineated. All vegetation types were commonplace habitats and identification of the NVC communities was possible;
- Erlam Wood / Mill Wood, Castle Mill (CH542392\_L5218\_PH2\_180518), health and safety concerns about working on a steep bank prevented quadrat sampling. The woodland was surveyed from the top of the bank using the DAFOR<sup>22</sup> system and close-focussing binoculars to identify the species present. The DAFOR scale is a different, more qualitative, system for recording plant species abundance than Domin, which is the conventional system used for NVC. However, use of DAFOR data for this site did not constrain accurate NVC identification;
- Rostherne Mere (B018\_U202295\_L21600\_F007\_PH2\_240719), a band of reed swamp fringing the eastern edge of Mere Covert could not be safely accessed. This habitat was assessed using close-focussing binoculars. Most of the fringing swamp vegetation is monospecific common reed (*Phragmites australis*) and could be identified accurately;
- Hancock's Bank South (CH561486-U204199\_L5494\_PH2\_240719), the woodland was bisected by a 5m wide stream of unknown depth. There were no crossing points over the stream and therefore access was not possible to the western section of the woodland due to health and safety concerns, and sampling was confined to the east section;
- Davenport Green Wood (GM79805\_L24000\_PH2\_150618), access was not provided in 2019 for further sampling. However, an accurate NVC identification was possible for 2018 data;
- Abram Flashes (GM909356\_L6071\_F001\_PH2\_110718), two quadrat samples were obtained, as health and safety considerations prevented additional sampling; and
- Abram Flashes (MAN250270\_L5007\_F001\_PH2\_090719), there was no access to woodland on one side of the canal, but surveyors could see the canopy of the inaccessible woodland using binoculars to determine that it was the same as parts of the woodland where access was possible.

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<sup>21</sup> Joint Nature Conservation Committee/Biodiversity Reporting and Information Group (2011). *UK Biodiversity Action Plan – Priority Habitat Descriptions*. Joint Nature Conservation Committee, Peterborough.

<sup>22</sup> The DAFOR system is a system for grading plant abundance/percentage cover as follows: D - Dominant (75% or more); A - Abundant (51-75%); F - Frequent (26-50%); O - Occasional (11-25%); R - Rare (1-10%).

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**Table 3: Summary of locations within MA01 – MA08 where the requirement for NVC survey was identified but access was not available for survey**

Survey site name	Location	OS grid reference	Description of proposed survey location	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
Burnt Covert LWS	North-east of Bradfield Green	SJ6920460264	Broadleaved semi-natural woodland	MA01	Within
Moss Lane Meadow LWS	Leighton	SJ6930258873	Unimproved neutral grassland	MA01	Within
Spring Plantation Grassland LWS	Leighton	SJ6962758762	Unimproved neutral grassland	MA01	Within
Mossbridge Marsh LWS	Leighton	SJ7000658626	Marshy grassland/swamp	MA01	Within
Rookery Woods/Small Rookery Woods LWS / AWI site	North of Minshull Vernon	SJ6768863688	Broadleaved semi-natural woodland	MA02	Within
Wimboldsley Woods SSSI, AWI site	Wimboldsley	SJ6764064243	Broadleaved semi-natural woodland	MA02	25
Woodland near Lea Hall, Wimboldsley LWS / AWI site	North-west of Occleston	SJ6780264192	Broadleaved semi-natural woodland	MA02	Within
Bull's Wood and Meadow LWS and AWI site	Bostock	SJ6835067945	Broadleaved semi-natural woodland	MA02	Within
Stanthorne Hall Farm AWI site	Wharton	SJ6837966603	Broadleaved semi-natural woodland	MA02	Within
Puddinglake Brook Wood LWS	South of Whatcroft	SJ6842170084	Broadleaved semi-natural woodland	MA02	Within
Whatcroft Lane Wetlands LWS	Whatcroft	SJ6847270789	Marshy grassland/swamp	MA02	Within
Marshall's Gorse LWS	South of Rudheath	SJ6867372108	Broadleaved semi-natural woodland	MA02	Within
Rudheath Lane Limebeds LWS	Rudheath	SJ6868173517	Ephemeral short/perennial	MA02	Within
Pear Tree Farm LWS	Whatcroft	SJ6869471609	Broadleaved semi-natural woodland	MA02	Within
Wades Brook LWS	Lostock Gramam	SJ6881474345	Marshy grassland/swamp	MA02	Within
Greenhays Farm Pasture LWS	North-west of Middlewich	SJ6898767094	Unimproved neutral grassland	MA02	Adjacent
Winnington and Peas Wood LWS	North of Lostock Gramam	SJ7023875708	Broadleaved semi-natural woodland	MA02	Within
Roadside Verge near Holford Farm LWS	Between Lostock Gramam and Plumley	SJ7061875751	Unimproved neutral grassland	MA02	Within

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Survey site name	Location	OS grid reference	Description of proposed survey location	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
Bongs Wood and Rough LWS / AWI site	Between Over Tabley and Pickmere	SJ7014479699	Broadleaved semi-natural woodland	MA03	Within
Dobb Lane LWS	South-east of High Legh	SJ7104882653	Broadleaved semi-natural woodland	MA03	Within
Deciduous Woodland Priority Habitat Inventory (PHI)	West of Over Tabley	SJ7114480251	Broadleaved semi-natural woodland	MA03	Within
Deciduous Woodland PHI	SW of Mere	SJ7189781126	Broadleaved semi-natural woodland	MA03	Within
Tableypipe Wood LWS	Over Tabley	SJ7190780439	Broadleaved semi-natural woodland	MA03	Within
Mere Old Hall Wood Pasture and Parkland Inventory site	Mere	SJ7200382253	Scattered broadleaved trees over grassland	MA03	Within
The Mere, Mere SSSI Ramsar	Mere	SJ7328881805	Marshy grassland/swamp	MA03	260 (196m from the nearest construction traffic route)
Glazebrook Moss LWS	Glazebrook	SJ6859992782	Marshy grassland/swamp	MA04	Within
Coroners Wood LWS and AWI site	Partington	SJ7039990842	Broadleaved semi-natural woodland	MA04	Within
Fox Covert and Meadows LWS	Heatley	SJ7075388560	Broadleaved semi-natural woodland	MA04	Within
Wood near Wet Gate Lane AWI site	Heatley	SJ7078788190	Broadleaved semi-natural woodland	MA04	Adjacent
Horrocks Flash SSSI, LNR, LWS, PHI	Platt Bridge	SD5932502633	Marshy grassland/swamp	MA05	Within
Edge Green LWS	North of Golborne	SJ6020899687	Unimproved neutral grassland	MA05	Within
Abram Flashes SSSI LWS PHI	Abram	SD6046801152	Marshy grassland/swamp	MA05	Within
Ponds near Lightshaw Lane LWS	North-east of Golborne	SJ6151299154	Marshy grassland/swamp	MA05	Within
Eleven Acre Common LWS	Twiss Green/Leigh	SJ6437395398	Unimproved neutral grassland	MA05	Within
Silver Lane Ponds LWS	Culcheth	SJ6616294103	Marshy grassland/swamp	MA05	Within
Gorse Covert Mounds LWS	Risley	SJ6699993172	Broadleaved semi-natural woodland	MA05	Within



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Survey site name	Location	OS grid reference	Description of proposed survey location	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
Pestfurlong Moss LWS	Risley	SJ6717892934	Marshy grassland/swamp	MA05	62
Woods by Holcroft Moss LWS	Glazebrook	SJ6779793426	Broadleaved semi-natural woodland	MA05	Within
Holcroft Moss SAC, SSSI	Glazebrook	SJ6814893403	Raised bog	MA05	Within
Sugar Brook LWS and AWI site	Between Ashley and New Mills	SJ7749082797	Broadleaved semi-natural woodland	MA06	Within
Ashley Brickworks Extension LWS	South of Ashley	SJ7745683225	Broadleaved semi-natural woodland	MA06	Within
Erlam's Meadow LWS	South of Ashley	SJ7744583544	Unimproved neutral grassland	MA06	Within
Ecclesfield Wood LWS	South-east of Ashley	SJ7815983621	Broadleaved semi-natural woodland	MA06	Within
Brickhill Wood LWS AWI site	Thorns Green	SJ7906683624	Broadleaved semi-natural woodland	MA06	Within
Wood near Arden House LWS and AWI site	South of Ashley	SJ7709683674	Broadleaved semi-natural woodland	MA06	Within
Tatton Park Wood Pasture and Parkland Inventory / Birkin Bridge Lodge Wood ancient woodland <sup>23</sup>	Tatton Park	SJ7646783787	Broadleaved semi-natural woodland	MA06	Within
Birkin Brook LWS	Between Ashley and Rostherne	SJ7602384278	Marshy grassland/swamp	MA06	Within
Birkinheath Covert LWS	Between Ashley and Rostherne	SJ7618383788	Broadleaved semi-natural woodland	MA06	Within
Ryecroft Covert LWS	Between Ashley and Rostherne	SJ7618383788	Broadleaved semi-natural woodland	MA06	Within
Rostherne Mere SSSI, NNR, Ramsar	Rostherne	SJ7523483900	Marshy grassland/swamp	MA06	Within
Mill Wood / Castle Mill LWS	South of Warburton Green	SJ7971483989	Broadleaved semi-natural woodland	MA06	Within
Sunbank Wood and Ponds LWS and AWI	South of Warburton Green	SJ8020283996	Broadleaved semi-natural woodland	MA06	Within

<sup>23</sup> Birkin Bridge Lodge is an ancient woodland identified by HS2 Ltd. on the basis of heritage information. This information has been passed to Natural England for consideration for inclusion on the AWI.

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Survey site name	Location	OS grid reference	Description of proposed survey location	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
site					
Deciduous Woodland HPI/part LWS nr Millington	South of Millington	SJ7254884309	Broadleaved semi-natural woodland	MA06	Within
Rossmill LWS and AWI site	Hale Barns	SJ7901384750	Broadleaved semi-natural woodland	MA06	Adjacent
Millington Lane Wood LWS	Millington	SJ7257084756	Broadleaved semi-natural woodland	MA06	Within
Agden Brook LWS	Millington	SJ7247284813	Marshy grassland/swamp	MA06	Within
Hancocks Bank North LWS AWI site / Hancocks Bank South LWS AWI site	North-east of Rostherne	SJ7532184890	Broadleaved semi-natural woodland	MA06	Within
Rushy-pits Covert LWS	Millington	SJ7304385042	Marshy grassland/swamp	MA06	Within
Fish House Plantation LWS PHI	North-east of Rostherne	SJ7622385299	Plantation broadleaved woodland	MA06	Within
Ashley Mill Wood LWS PHI	South of Bowden	SJ7678085557	Broadleaved semi-natural woodland	MA06	Within
Davenport Green Wood LWS AWI site	Hale Barns	SJ8045186086	Broadleaved semi-natural woodland	MA06	Within
Deciduous Woodland PHI	Withington	SJ8340290351	Broadleaved semi-natural woodland	MA07	Within
Wrengate Wood LWS	Withington	SJ8380191020	Broadleaved semi-natural woodland	MA07	Within
Open Mosaic Habitat Inventory land in Manchester	Central Manchester	SJ8603797280	Ephemeral short/perennial	MA07	Within
Ashton Canal (West) LWS and Rochdale Canal, Stott's Lane LWS	Central Manchester	SJ8573699067	Standing water	MA08	Within

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- 2.2.10 Land access was not available during the appropriate survey period at 17 sites that were selected for search of ancient woodland plant indicator species. These sites are listed in Table 4.

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**Table 4: Summary of locations within MA01 – MA08 where the requirement for ancient woodland plant indicator surveys was identified but access was not available for survey**

Survey site name	Location	OS grid reference	Site description and reason for selection	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
Rookery Woods/Small Rookery Woods LWS / AWI site	North of Minshull Vernon	SJ6768863688	AWI site	MA02	Within
Wimbolsley Woods SSSI, AWI site	Wimboldsley	SJ6764064243	AWI site	MA02	25
Woodland near Lea Hall, Wimboldsey LWS / AWI site	North-west of Occleston	SJ6780264192	AWI site	MA02	Within
Bull's Wood and Meadow LWS and AWI site	Bostock	SJ6835067945	AWI site	MA02	Within
Stanthorne Hall Farm AWI site	Wharton	SJ6837966603	AWI site	MA02	Within
Bongs Wood and Rough LWS / AWI site	Between Over Tabley and Pickmere	SJ7014479699	AWI site	MA03	Within
Millbank Hall Woodland / Coroners Wood LWS and AWI site	Partington	SJ7039990842	AWI site	MA04	Within
Wood near Wet Gate Lane AWI site	Heatley	SJ7078788190	Ancient woodland	MA04	Adjacent
Sugar Brook LWS and AWI site	Between Ashley and New Mills	SJ7749082797	Ancient woodland	MA06	Within
Erlam's Meadow LWS incorporating East of Arden House ancient woodland	South of Ashley	SJ7744583544	Ancient woodland	MA06	Within
Brickhill Wood LWS AWI site	Thorns Green	SJ7906683624	AWI site	MA06	Within
Wood near Arden House LWS and AWI site	South of Ashley	SJ7709683674	AWI site	MA06	Within
Tatton Park Wood Pasture and Parkland Inventory / Birkin Bridge Lodge Wood ancient woodland	Tatton Park	SJ7646783787	AWI site	MA06	Within
Sunbank Wood and Ponds LWS and AWI site	South of Warburton Green	SJ8020283996	AWI site	MA06	Within
Rossmill LWS and AWI site	Hale Barns	SJ7901384750	AWI site	MA06	Adjacent

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Survey site name	Location	OS grid reference	Site description and reason for selection	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m)
Hancocks Bank North LWS AWI site / Hancocks Bank South LWS AWI site	North-east of Rostherne	SJ7532184890	AWI site	MA06	Within
Davenport Green Wood LWS AWI site	Hale Barns	SJ8045186086	AWI site	MA06	Within

## 2.3 Baseline

### Hough to Walley's Green (MA01)

#### Larch Wood (CH616525\_L5228\_PH2\_150618)

##### Site description and reasons for selection for survey

- 2.3.1 Broadleaved semi-natural woodland mapped as deciduous woodland on Natural England's Priority Habitat Inventory (PHI) is present within Larch Wood. This woodland is also designated as Larch Wood LWS.

##### Vegetation communities present

- 2.3.2 Woodland with a canopy of horse chestnut (*Aesculus hippocastanum*), sycamore (*Acer pseudoplatanus*) and wych elm (*Ulmus glabra*). These species are also present in the shrub layer, along with hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*) and several other species. The community may be loosely assigned to NVC community W8 *Fraxinus excelsior* – *Acer campestre* – *Mercurialis perennis* woodland due to the presence of ash and hazel within the shrub layer. The W8e *Geranium robertianum* sub-community showed greatest affinity to the quadrat data collected. The TABLEFIT 'goodness of fit' coefficient is 53% for W8e. The poor 'goodness of fit' statistic; and the lack of species strongly indicative of W8e (e.g dog's mercury *Mercurialis perennis* and frequent ferns and bryophytes), suggest that this woodland is a relatively weak match for this sub-community and could equally be considered as W8 woodland, undifferentiated to sub-community level. The sampled woodland is representative of lowland mixed deciduous woodland Habitat of Principal Importance (HoPI).
- 2.3.3 Four vascular plant species that are indicative of ancient woodland were recorded from Larch Wood: hazel (*Corylus avellana*), scaly male-fern (*Dryopteris affinis* agg.), wood millet (*Milium effusum*) and greater stitchwort (*Stellaria holostea*). Scaly male-fern and greater stitchwort, recorded incidentally, were not present in quadrat samples.
- 2.3.4 Table 5 sets out the NVC survey data from Larch Wood. Two quadrat samples were adequate to achieve full coverage of this small stand of woodland.

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**Table 5: NVC survey data from Larch Wood (CH616525\_L5228\_PH2\_150618)**

Species	Quadrat locations					Constancy (Dominance range) <sup>24</sup>
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Ulmus glabra</i>	6	4	NS <sup>25</sup>	NS	NS	II (4 - 6)
<i>Acer pseudoplatanus</i>	8	1	NS	NS	NS	II (1 - 8)
<i>Aesculus hippocastanum</i>	5	1	NS	NS	NS	II (1 - 5)
<i>Crataegus monogyna</i>	1	4	NS	NS	NS	II (1 - 4)
<i>Betula pendula</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Fraxinus excelsior</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Salix</i> sp.	1	1	NS	NS	NS	II (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	7	7	NS	NS	NS	II (7 - 7)
<i>Crataegus monogyna</i>	4	5	NS	NS	NS	II (4 - 5)
<i>Acer pseudoplatanus</i>	4	1	NS	NS	NS	II (1 - 4)
<i>Ulmus glabra</i>	5	1	NS	NS	NS	II (1 - 5)
<i>Rubus fruticosus</i> agg.	-	8	NS	NS	NS	I (8)
<i>Ulmus minor</i>	4	-	NS	NS	NS	I (4)
<i>Lonicera</i> sp.	-	1	NS	NS	NS	I (1)
<i>Prunus spinosa</i>	-	3	NS	NS	NS	I (3)
<i>Rosa canina</i>	-	2	NS	NS	NS	I (2)

<sup>24</sup> This column summarises the maximum and minimum Dominance score and the number of quadrats a sample was present in: V = five quadrats; IV = four quadrats; III = three quadrats; II = two quadrats; I = one quadrat. The Dominance scale is as follows: 10 = 91–100%; 9 = 76–90%; 8 = 51–75%; 7 = 34–50%; 6 = 26–33%; 5 = 11–25%; 4 = 4–10%; 3 = <4% (many individuals); 2 = <4% (several individuals); 1 = <4% (few individuals).

<sup>25</sup> NS = Not Surveyed.

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Species	Quadrat locations					Constancy (Dominance) <sup>24</sup>
	Q1	Q2	Q3	Q4	Q5	
<i>Corylus avellana</i>	-	1	NS	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Galium aparine</i>	8	8	NS	NS	NS	II (8 - 8)
<i>Milium effusum</i>	2	3	NS	NS	NS	II (2 - 3)
<i>Anthriscus sylvestris</i>	-	5	NS	NS	NS	I (5)
<i>Silene dioica</i>	-	5	NS	NS	NS	I (5)
<i>Urtica dioica</i>	-	4	NS	NS	NS	I (4)
<i>Dactylis glomerata</i>	-	4	NS	NS	NS	I (4)
<i>Rumex</i> sp.	-	2	NS	NS	NS	I (2)
<i>Prunus spinosa</i>	-	2	NS	NS	NS	I (2)
<i>Rubus fruticosus</i> agg.	-	1	NS	NS	NS	I (1)
<i>Hedera helix</i>	1	-	NS	NS	NS	I (1)

## Wimboldsley to Lostock Gralam (MA02)

### Rookery/Small Rookery Woods (CH483359-CH587305\_L5340\_PH2\_150618)

#### Site description and reasons for selection for survey

- 2.3.5 Broadleaved semi-natural woodland, mapped by Natural England as an AWI site (ancient semi-natural woodland) and on the Natural England PHI as deciduous woodland. This woodland is designated as Rookery and Small Rookery Woods LWS.

#### Vegetation communities present

- 2.3.6 Sycamore, ash and wych elm are dominant, with occasional oak. Wych elm and ash dominate the shrub layer. Hazel coppice is present in the understorey. Black poplar (*Populus nigra* ssp. *beautifolia*) is occasionally present. This habitat is attributed as W8e *Fraxinus excelsior*-*Acer*



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*campestre-Mercurialis perennis* woodland, *Geranium robertianum* sub-community. The TABLEFIT 'goodness of fit' result was 63% in support of NVC community W8e. The sampled vegetation qualifies as lowland mixed deciduous woodland HoPI.

- 2.3.7 Five vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) in Rookery/Small Rookery Woods: holly (*Ilex aquifolium*), dog's mercury, wood millet, wood speedwell (*Veronica montana*) and wild garlic (*Allium ursinum*).
- 2.3.8 Table 6 sets out the NVC survey data from Rookery/Small Rookery Woods. Three quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 6: NVC survey data from Rookery/Small Rookery Woods (CH483359-CH587305\_L5340\_PH2\_150618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	8	7	7	NS	NS	III (7 - 8)
<i>Ulmus glabra</i>	4	4	4	NS	NS	III (4 - 4)
<i>Aesculus hippocastanum</i>	5	1	1	NS	NS	III (1 - 5)
<i>Fraxinus excelsior</i>	4	1	4	NS	NS	III (1 - 4)
<i>Populus nigra</i>	5	-	-	NS	NS	I (5)
<i>Fragus sylvatica</i>	-	2	-	NS	NS	I (2)
<i>Quercus robur</i>	-	-	1	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Ulmus glabra</i>	4	4	5	NS	NS	III (4 - 5)
<i>Acer pseudoplatanus</i>	3	4	5	NS	NS	III (3 - 5)
<i>Fraxinus excelsior</i>	1	1	5	NS	NS	III (1 - 5)
<i>Sambucus nigra</i>	1	2	1	NS	NS	III (1 - 2)
<i>Aesculus hippocastanum</i>	1	2	1	NS	NS	III (1 - 2)
<i>Corylus avellana</i>	1	2	-	NS	NS	II (1 - 2)
<i>Prunus</i> sp.	-	2	-	NS	NS	I (2)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Crataegus monogyna</i>	-	2	-	NS	NS	I (2)
<i>Ilex aquifolium</i>	-	1	-	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Mercurialis perennis</i>	9	-	8	NS	NS	II (8 - 9)
<i>Hedera helix</i>	7	-	5	NS	NS	II (5 - 7)
<i>Geranium robertianum</i>	1	-	1	NS	NS	II (1 - 1)
<i>Allium ursinum</i>	5	-		NS	NS	I (5)
<i>Galium aparine</i>	5	-	-	NS	NS	I (5)
<i>Heracleum sphondylium</i>	4	-	-	NS	NS	I (4)
<i>Veronica montana</i>	3	-	3	NS	NS	I (3)
<i>Milium effusum</i>	4	-	3	NS	NS	I (3)
<i>Urtica dioica</i>	3	-	-	NS	NS	I (3)
<i>Rubus fruticosus</i> agg.	2	-	-	NS	NS	I (2)
<i>Dryopteris filix-mas</i>	1	-	-	NS	NS	I (1)
Bare ground/Leaf Litter (cover)	-	-	9	NS	NS	I (9)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Clive Green Woodland (CH346229-CH653663\_L6089\_PH2\_130618)

## Site description and reasons for selection for survey

2.3.9 Broadleaved semi-natural woodland is present in Clive Green Woodland. The woodland is not an AWI site and is not on Natural England’s PHI.

### Vegetation communities present

2.3.10 A small area (approximately 0.1 ha) of broadleaved woodland, with a canopy containing occasional sycamore and frequent pedunculate oak (*Quercus robur*). The shrub layer includes frequent hawthorn and occasional blackthorn (*Prunus spinosa*). The ground flora consists of abundant ivy (*Hedera helix*), with occasional honeysuckle (*Lonicera periclymenum*), bramble (*Rubus fruticosus* agg.), dog’s mercury and cleavers (*Galium aparine*). A pond is present in the north-west section of the woodland. TABLEFIT analysis suggests that this woodland is W8e *Fraxinus excelsior*-*Acer campestre*-*Mercurialis perennis* woodland, *Geranium robertianum* sub-community, with a ‘goodness of fit’ result of 63%. However, the floristics of this small woodland are not strongly suggestive of any particular W8 sub-community. It is considered best referred to as W8 woodland, undifferentiated to sub-community level.

2.3.11 Six vascular plant species that are indicative of ancient woodland were recorded (incidentally or in quadrats): hornbeam (*Carpinus betulus*), holly, wych elm, remote sedge (*Carex remota*), bearded couch (*Elymus caninus*), bluebell (*Hyacinthoides non-scripta*).

2.3.12 Table 7 sets out the NVC survey data from Clive Green Woodland. Two quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 7: NVC survey data from Clive Green Woodland (CH346229-CH653663\_L6089\_PH2\_130618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	5	5	NS	NS	NS	II (5 - 5)
<i>Acer pseudoplatanus</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Fagus sylvatica</i>	4	4	NS	NS	NS	II (4 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Populus x canadensis</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Tilia europaea</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Ulmus glabra</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Pinus sylvestris</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Carpinus betulus</i>	1	1	NS	NS	NS	II (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	6	6	NS	NS	NS	II (6 - 6)
<i>Prunus spinosa</i>	5	5	NS	NS	NS	II (5 - 5)
<i>Salix cinerea</i>	4	4	NS	NS	NS	II (4 - 4)
<i>Sambucus nigra</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Rosa canina</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Ilex aquifolium</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Fraxinus excelsior</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Ligustrum vulgare</i>	1	1	NS	NS	NS	II (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	9	5	NS	NS	NS	II (5 - 9)
<i>Brachythecium rutabulum</i>	2	1	NS	NS	NS	II (1 - 2)
<i>Galium aparine</i>	6	3	NS	NS	NS	II (3 - 6)
<i>Mercurialis perennis</i>	5	-	NS	NS	NS	I (5)
<i>Rubus fruticosus agg.</i>	-	5	NS	NS	NS	I (5)
<i>Holcus mollis</i>	-	4	NS	NS	NS	I (4)
<i>Isoetes myosuroides</i>	4	-	NS	NS	NS	I (4)
<i>Lonicera periclymenum</i>	-	3	NS	NS	NS	I (3)
<i>Prunus spinosa</i> (seedling)	3	-	NS	NS	NS	I (3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Elymus caninus</i>	2	-	NS	NS	NS	I (2)
<i>Hyacinthoides non-scripta</i>	-	1	NS	NS	NS	I (1)
<i>Arrhenatherum elatius</i>	-	1	NS	NS	NS	I (1)
<i>Acer pseudoplatanus</i> (seedling)	1	-	NS	NS	NS	I (1)
<i>Kindbergia praelonga</i>	-	1	NS	NS	NS	I (1)
Bare ground	4	7	NS	NS	NS	(4 - 7)

## Coalpit Lane Woodland (CH244501\_L5373-L5255\_PH2\_130618)

### Site description and reasons for selection for survey

2.3.13 Broadleaved semi-natural woodland mapped on Natural England's PHI as deciduous woodland. This woodland is not an AWI site.

### Vegetation communities present

2.3.14 The woodland canopy contains frequent semi-mature pedunculate oak and occasional sycamore, ash and wych elm. The ground flora layer contains ivy, bramble and a low abundance of wood anemone (*Anemone nemorosa*). The species composition of this habitat is representative of W10c *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland, *Hedera helix* sub-community. The TABLEFIT 'goodness of fit' result was 50% for NVC type W21c. However, W21c is an NVC scrub community, not a woodland, and does not accurately describe the sampled vegetation. The relatively high abundance of common hawthorn may account for the TABLEFIT outcome. The woodland is considered to be W10c woodland. It qualifies as lowland mixed deciduous woodland HoPI.

2.3.15 Table 8 sets out the NVC survey data from Coalpit Lane Woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 8: NVC survey data from Coalpit Lane Woodland (CH244501\_L5373-L5255\_PH2\_130618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	7	7	7	7	7	V (7 - 7)
<i>Acer pseudoplatanus</i>	5	5	5	5	5	V (5 - 5)
<i>Fraxinus excelsior</i>	5	5	5	5	5	V (5 - 5)
<i>Ulmus glabra</i>	5	5	5	5	5	V (5 - 5)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	5	5	5	5	5	V (5 - 5)
<i>Ulmus glabra</i> (sapling)	5	5	5	5	5	V (5 - 5)
<i>Acer pseudoplatanus</i> (sapling)	5	5	5	5	5	V (5 - 5)
<i>Sambucus nigra</i>	3	3	3	3	3	V (3 - 3)
<i>Ilex aquifolium</i>	2	2	2	2	2	V (2 - 2)
<i>Acer campestre</i>	2	2	2	2	2	V (2 - 2)
<i>Viburnum opulus</i>	1	1	1	1	1	V (1 - 1)
<i>Fraxinus excelsior</i> (sapling)	1	1	1	1	1	V (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	7	7	7	5	5	V (5 - 7)
<i>Rubus fruticosus</i> agg.	6	3	5	5	5	V (3 - 6)
<i>Acer pseudoplatanus</i> (seedling)	-	1	1	1	1	IV (0 - 1)
<i>Anemone nemorosa</i>	3	3	4	-	-	III (3 - 4)
<i>Rosa canina</i>	4	1	-	2	-	III (1 - 4)
<i>Kindbergia praelonga</i>	-	2	3	2	-	III (2 - 3)
<i>Fraxinus excelsior</i> (seedling)	1	3	3	-	-	III (1 - 3)
<i>Arum maculatum</i>	3	1	2	-	-	III (1 - 3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Ulmus glabra</i> (seedling)	-	1	-	1	-	II (1 - 1)
<i>Crataegus monogyna</i> (seedling)	-	-	1	-	1	II (1 - 1)
<i>Urtica dioica</i>	-	-	5	-	-	I (5)
<i>Mercurialis perennis</i>	-	-	4	-	-	I (4)
<i>Lonicera periclymenum</i>	4	-	-	-	-	I (4)
<i>Circaea lutetiana</i>	-	-	3	-	-	I (3)
<i>Brachythecium rutabulum</i>	-	-	-	2	-	I (2)
<i>Ilex aquifolium</i> (seedling)	-	1	-	-	-	I (1)
<i>Geranium robertianum</i>	-	-	-	1	-	I (1)
<i>Aesculus hippocastanum</i>	1	-	-	-	-	I (1)
<i>Quercus robur</i> (seedling)	1	-	-	-	-	I (1)
Bare ground	5	6	5	7	7	V (5 - 7)

## Stanthorne Hall Farm (CH245174\_L4616\_F001\_PH2\_160719)

### Site description and reasons for selection for survey

2.3.16 Planted broadleaved trees, either side of driveway. The area is an AWI site.

### Vegetation communities present

2.3.17 The canopy has frequent beech (*Fagus sylvatica*) and common lime (*Tilia x europaea*). Ash, sycamore and London Plane (*Platanus x hispanica*) are present rarely. The understorey comprises holly, elder, sycamore and ash. The woodland is a young, planted woodland, and does not closely resemble any NVC type. No TABLEFIT analysis was required to confirm the character/importance of this woodland.

2.3.18 No vascular plant species indicative of ancient woodland are present.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.19 Table 9 sets out the NVC survey data from Stanthorne Hall Farm. One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

**Table 9: NVC survey data from Stanthorne Hall Farm (CH245174\_L4616\_F001\_PH2\_160719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Tilia x europaea</i>	7	NS	NS	NS	NS	I (7)
<i>Fagus sylvatica</i>	7	NS	NS	NS	NS	I (7)
<i>Aesculus hippocastanum</i>	4	NS	NS	NS	NS	I (4)
<i>Acer pseudoplatanus</i>	4	NS	NS	NS	NS	I (4)
<i>Fraxinus excelsior</i>	1	NS	NS	NS	NS	I (1)
<i>Platanus x hispanica</i>	1	NS	NS	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Ilex aquifolium</i>	1	NS	NS	NS	NS	I (1)
<i>Sambucus nigra</i>	1	NS	NS	NS	NS	I (1)
<i>Acer pseudoplatanus</i>	1	NS	NS	NS	NS	I (1)
<i>Fraxinus excelsior</i>	1	NS	NS	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Arrhenatherum elatius</i>	9	NS	NS	NS	NS	I (9)
<i>Gallium mollugo</i>	6	NS	NS	NS	NS	I (6)
<i>Dactylis glomerata</i>	5	NS	NS	NS	NS	I (5)
<i>Cynosurus cristatus</i>	5	NS	NS	NS	NS	I (5)
<i>Holcus lanatus</i>	5	NS	NS	NS	NS	I (5)
<i>Medicago lupulina</i>	4	NS	NS	NS	NS	I (4)
<i>Silene dioica</i>	4	NS	NS	NS	NS	I (4)
<i>Trifolium pratense</i>	2	NS	NS	NS	NS	I (2)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Lolium perenne</i>	2	NS	NS	NS	NS	I (2)
<i>Achillea millefolium</i>	2	NS	NS	NS	NS	I (2)
<i>Senecio jacobaea</i>	1	NS	NS	NS	NS	I (1)
<i>Lapsana communis</i>	1	NS	NS	NS	NS	I (1)
<i>Leucanthemum vulgare</i>	1	NS	NS	NS	NS	I (1)
<i>Sonchus arvensis</i>	1	NS	NS	NS	NS	I (1)
<i>Ranunculus acris</i>	1	NS	NS	NS	NS	I (1)
<i>Trifolium repens</i>	1	NS	NS	NS	NS	I (1)
Leaf litter	1	NS	NS	NS	NS	I (1)

## Bank Farm, A533 Bostock Road (CH366652-CH446766-CH614893\_L5405\_CH614893\_L4900\_PH2\_190718)

### Site description and reasons for selection for survey

2.3.20 Broadleaved woodland at Bank Farm, mapped on Natural England's PHI as 'no main habitat but additional habitats present'. The woodland is part of the River Dane, Bostock LWS, and it is not an AWI site.

### Vegetation communities present

2.3.21 The woodland canopy is dominated by common alder (*Alnus glutinosa*), hybrid crack willow (*Salix x fragilis*) and pedunculate oak. Ash, pedunculate oak and sycamore were occasional in the canopy. The shrub layer contains grey willow (*Salix cinerea*) and elder. The field layer includes common nettle (*Urtica dioica*), bittersweet (*Solanum dulcamara*), rough meadow-grass (*Poa trivialis*), creeping buttercup (*Ranunculus repens*), cleavers and ground-ivy (*Glechoma hederacea*). False oat-grass (*Arrhenatherum elatius*) and hogweed (*Heracleum sphondylium*) form the ground flora in drier parts of the wood, but are not dominant overall. This vegetation is representative of NVC type W6a *Alnus glutinosa* - *Urtica*

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

### Ecological baseline data – National Vegetation Classification and ancient woodland

*dioica* woodland typical sub-community. The TABLEFIT ‘goodness of fit’ statistic was 66% for NVC type W6a. This woodland qualifies as wet woodland HoPI.

2.3.22 Thirteen vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Bank Farm wood: field maple (*Acer campestre*), holly, wild cherry (*Prunus avium*), wych elm, guelder rose, wood anemone, hairy brome (*Bromopsis ramosa*), remote sedge, wood sedge (*Carex sylvatica*), dog’s mercury, bluebell, opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*) and hornbeam.

2.3.23 Table 10 sets out the NVC survey data from Bank Farm, A533 Bostock Road.

**Table 10: NVC survey data from Bank Farm, A533 Bostock Road (CH366652-CH446766-CH614893\_L5405\_CH614893\_L4900\_PH2\_190718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Salix fragilis</i>	7	9	4	4	3	V (3 - 9)
<i>Alnus glutinosa</i>	2	3	1	7	3	V (1 - 7)
<i>Quercus robur</i>	3	-	8	7	4	IV (0 - 8)
<i>Fraxinus excelsior</i>	2	-	-	-	8	II (2 - 8)
<i>Betula pendula</i>	2	-	2	-	-	II (2 - 2)
<i>Carpinus betulus</i>	2	-	-	-	-	I (2)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	4	4	7	6	5	V (4 - 7)
<i>Salix cinerea</i>	8	8	8	1	-	IV (1 - 8)
<i>Corylus avellana</i>	-	-	2	6	5	III (2 - 6)
<i>Crataegus monogyna</i>	-	4	3	-	-	II (3 - 4)
<i>Prunus spinosa</i>	-	-	-	1	7	II (1 - 7)
<i>Ilex aquifolium</i>	-	-	3	-	-	I (3)
<i>Acer pseudoplatanus</i>	-	-	-	-	2	I (2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Pteridium aquilinum</i>	2	5	3	9	2	V (2 - 9)
<i>Urtica dioica</i>	6	5	8	4	4	V (4 - 8)
<i>Hyacinthoides non-scripta</i>	-	-	2	3	2	III (2 - 3)
<i>Poa trivialis</i>	3	3	2	-	-	III (2 - 3)
<i>Heracleum sphondylium</i>	-	2	1	-	2	III (1 - 2)
<i>Heracleum sphondylium</i>	-	2	1	-	2	III (1 - 2)
<i>Galium aparine</i>	7	4	-	-	-	II (4 - 7)
<i>Solanum dulcamara</i>	4	-	4	-	-	II (4 - 4)
<i>Glechoma hederacea</i>	-	4	-	-	3	II (3 - 4)
<i>Rubus fruticosus</i> agg.	-	-	2	4	-	II (2 - 4)
<i>Epilobium hirsutum</i>	3	-	-	1	-	II (1 - 3)
<i>Hedera helix</i>	-	-	-	-	8	I (8)
<i>Chrysosplenium oppositifolium</i>	-	7	-	-	-	I (7)
<i>Holcus lanatus</i>	4	-	-	-	-	I (4)
<i>Convolvulus arvensis</i>	3	-	-	-	-	I (3)

## Bull's Wood/Oak Wood (CH446766-CH614893\_L5474\_PH2\_120618)

### Site description and reasons for selection for survey

2.3.24 Mixed woodland, which is an AWI site (a small area of ancient semi-natural woodland with a larger area of plantation on an ancient woodland site - PAWS). The woodland is also part of Bull's Wood and Meadow LWS and is mapped on Natural England's PHI as deciduous woodland. The woodland is referred as Bull's Wood but adjoins/overlaps an area also called Oak Wood.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.25 A predominantly closed canopy is present, with several glades. The canopy comprises sycamore, pedunculate oak, ash, beech and several other species, including occasional larch (*Larix decidua*). The understorey is relatively diverse and contains sycamore saplings, elder, ash saplings, hazel and holly, as well as cherry laurel (*Prunus laurocerasus*) and rhododendron (*Rhododendron ponticum*). The ground flora is also relatively diverse, with dog's mercury, enchanter's nightshade (*Circaea lutetiana*) and common nettle as the most frequent species. The TABLEFIT 'goodness of fit' statistic was 45% for NVC type W8e.
- 2.3.26 Ten vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Oak Wood: hazel, holly, ramsons (*Allium ursinum*), wood anemone, remote sedge, opposite-leaved golden-saxifrage, common figwort (*Scrophularia nodosa*), wood sorrel (*Oxalis acetosa*), bluebell and wood horsetail (*Equisetum sylvaticum*).
- 2.3.27 Table 11 sets out the NVC survey data from Bull's Wood/Oak Wood.

**Table 11: NVC survey data from Bull's Wood/Oak Wood (CH446766-CH614893\_L5474\_PH2\_120618)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	8	8	7	7	6	V (6 - 8)
<i>Quercus robur</i>	4	3	7	4	5	V (3 - 7)
<i>Fagus sylvatica</i>	2	4	5	6	5	V (2 - 6)
<i>Fraxinus excelsior</i>	5	5	3	5	5	V (3 - 5)
<i>Larix decidua</i>	2	4	5	4	4	V (2 - 5)
<i>Tilia x europaea</i>	5	2	1	1	1	V (1 - 5)
<i>Populus nigra</i>	1	1	1	3	4	V (1 - 4)
<i>Betula pendula</i>	1	1	2	1	1	V (1 - 2)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus sapling</i>	5	6	6	5	7	V (5 - 7)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Sambucus nigra</i>	6	6	7	5	6	V (5 - 7)
<i>Fraxinus excelsior</i> sapling	3	3	2	2	2	V (2 - 3)
<i>Rhododendron ponticum</i>	7	8	5	1	2	V (1 - 8)
<i>Crataegus monogyna</i>	1	2	2	2	4	V (1 - 4)
<i>Ilex aquifolium</i>	1	1	3	3	2	V (1 - 3)
<i>Corylus avellana</i>	3	1	1	1	1	V (1 - 3)
<i>Fagus sylvatica</i> saplings	1	1	1	2	2	V (1 - 2)
<i>Prunus laurocerasus</i>	1	1	1	1	2	V (1 - 2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Mercurialis perennis</i>	8	1	3	2	1	V (1 - 8)
<i>Circaea lutetiana</i>	1	5	4	5	6	V (1 - 6)
<i>Urtica dioica</i>	5	1	6	1	1	V (1 - 6)
<i>Milium effusum</i>	1	2	4	1	4	V (1 - 4)
<i>Rubus</i> sp.	2	1	1	4	4	V (1 - 4)
<i>Rumex crispus</i>	1	1	3	2	1	V (1 - 3)
<i>Hedera helix</i>	1	3	1	2	1	V (1 - 3)
<i>Veronica chamaedrys</i>	3	1	3	2	1	V (1 - 3)
<i>Chrysosplenium oppositifolium</i>	3	1	1	1	1	V (1 - 3)
<i>Carex remota</i>	1	1	2	3	1	V (1 - 3)
<i>Allium ursinum</i>	1	3	2	1	1	V (1 - 3)
<i>Juncus effusus</i>	1	1	3	1	1	V (1 - 3)
<i>Dryopteris dilatata</i>	1	2	1	1	1	V (1 - 2)
<i>Pteridium aquilinum</i>	1	1	2	1	1	V (1 - 2)
<i>Poa trivialis</i>	1	1	1	1	2	V (1 - 2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Geum urbanum</i>	1	1	1	2	2	V (1 - 2)
<i>Silene dioica</i>	2	1	1	2	1	V (1 - 2)
<i>Hyacinthoides non-scripta</i>	2	1	2	1	1	V (1 - 2)
<i>Scrophularia nodosa</i>	2	2	1	1	1	V (1 - 2)
<i>Oxalis acetosella</i>	2	1	1	1	1	V (1 - 2)
<i>Equisetum sylvaticum</i>	1	1	2	2	1	V (1 - 2)
<i>Stellaria media</i>	1	1	1	1	1	V (1 - 1)
<i>Arum maculatum</i>	1	1	1	1	1	V (1 - 1)

## Oak Clump (CH446766-CH614832\_L22111\_F001\_PH2\_210819)

### Site description and reasons for selection for survey

2.3.28 Mixed woodland mapped on Natural England's PHI as deciduous woodland. This woodland is identified by Natural England as a AWI site.

### Vegetation communities present

2.3.29 The wood is dominated by pedunculate oak, with occasional sycamore. Scot's Pine (*Pinus sylvestris*) is frequent, locally. Silver birch (*Betula pendula*), hybrid crack willow, and wych elm were all rarely recorded. The understorey is dominated by rhododendron, particularly in the north of the wood. The grassy, ground flora contains frequent common bent (*Agrostis capillaris*), bramble, Yorkshire fog (*Holcus lanatus*) and mosses. This vegetation is representative of NVC type W10 *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland, but it is difficult to place within a sub-community owing to its grassy field layer composition and lack of strongly preferential species. It is most similar to sub-community W10d *Holcus lanatus* sub-community. The TABLEFIT 'goodness of fit' statistic was 28% for NVC type W10, undifferentiated to sub-community level.

2.3.30 Two vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Oak Clump: bluebell and wych elm.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.31 Table 12 sets out the NVC survey data from Oak Clump.

**Table 12: NVC survey data from Oak Clump (CH446766-CH614832\_L22111\_F001\_PH2\_210819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	9	9	8	4	4	V (4 - 9)
<i>Acer pseudoplatanus</i>	1	6	7	9	7	V (1 - 9)
<i>Pinus sylvestris</i>	-	-	-	4	7	II (4 - 7)
<i>Salix x fragilis</i>	1	1	-	-	-	II (1 - 1)
<i>Aesculus hippocastanum</i>	-	-	2	-	-	I (2)
<i>Betula pendula</i>	-	1	-	-	-	I (1)
<i>Ulmus glabra</i>	-	-	-	1	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Rhododendron ponticum</i>	9	7	8	7	5	V (5 - 9)
<i>Acer pseudoplatanus</i>	4	1	-	-	-	II (1 - 4)
<i>Sambucus nigra</i>	-	4	-	-	4	II (4 - 4)
<i>Crataegus monogyna</i>	-	-	-	4	-	I (4)
<i>Ilex aquifolium</i>	-	-	-	4	-	I (4)
<b>Ground flora layer (4m x 4m)</b>						
<i>Agrostis capillaris</i>	-	7	7	2	8	IV (2 - 8)
<i>Kinbergia praelonga</i>	-	-	5	7	4	III (4 - 7)
<i>Other moss species</i>	-	-	4	5	4	III (4 - 5)
<i>Holcus lanatus</i>	-	5	-	2	5	III (2 - 5)
<i>Rubus fruticosus</i> agg.	9	4	-	-	-	II (4 - 9)
<i>Urtica dioica</i>	-	2	-	-	7	II (2 - 7)
<i>Mnium hornum</i>	-	-	3	-	5	I (3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Arrhenatherum elatius</i>	-	-	-	2	-	I (2)
<i>Arctium lappa</i>	-	2	-	-	0	I (2)
Bare ground	1	4	4	2	4	V (1 - 4)
Leaf Litter	5	7	7	1	6	V (1 - 7)

## Hill Wood (CH446766-CH614832\_L22112\_F001\_PH2\_210819)

### Site description and reasons for selection for survey

2.3.32 Broadleaved semi-natural woodland mapped on Natural England's PHI as deciduous woodland. This woodland is not an AWI site.

### Vegetation communities present

- 2.3.33 Pedunculate oak is constant and abundant. The northern part of the wood includes locally dominant beech, which appears to be planted. Sycamore replaces beech as a canopy dominant in the south of the wood. Yew (*Taxus baccata*) is rare overall, as is ash. The understorey is not well-developed, with rhododendron dominant. There are occasional saplings of sycamore and hawthorn is rare, whilst elder is present in the south only, where it is occasional. The ground flora is not a strong match for any single NVC community and shares characteristics of both W10 *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland (oak canopy abundant with a bramble understorey) and W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* (some beech, sycamore and ash in the canopy with enchanter's nightshade as a ground flora plant) woodland types. The TABLEFIT 'goodness of fit' statistic was 27% for NVC type W25a *Pteridium aquilinum - Rubus fruticosus* underscrub, which is a weak match and not a suitable description of this community, which is a woodland.
- 2.3.34 Two vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Hill Wood: wood millet, bluebell.
- 2.3.35 Table 13 sets out the NVC survey data from Hill Wood.



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 13: NVC survey data from Hill Wood (CH446766-CH614832\_L22112\_F001\_PH2\_210819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	7	5	8	7	8	V (5 - 8)
<i>Acer pseudoplatanus</i>	-	9	7	7	7	IV (7 - 9)
<i>Fagus sylvatica</i>	8	-	4	-	-	II (4 - 8)
<i>Taxus baccata</i>	-	-	5	-	5	II (5 - 5)
<i>Fraxinus excelsior</i>	-	-	-	5	-	I (5)
<i>Betula pendula</i>	1	-	-	-	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Rhododendron ponticum</i>	4	5	7	8	7	V (4 - 8)
<i>Acer pseudoplatanus</i>	-	1	-	6	-	II (1 - 6)
<i>Sambucus nigra</i>	-	-	-	5	4	II (4 - 5)
<i>Crataegus monogyna</i>	1	-	-	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
Moss sp.	-	-	4	4	4	III (4 - 4)
<i>Rubus fruticosus</i> agg.	-	4	4	-	5	III (4 - 5)
<i>Hyacinthoides non-scripta</i>	4	-	1	-	3	III (1 - 4)
<i>Fagus sylvatica</i>	2	-	-	-	3	II (2 - 3)
<i>Acer pseudoplatanus</i>	-	3	1	-	-	II (1 - 3)
<i>Urtica dioica</i>	-	-	-	7	-	I (7)
<i>Circaea lutetiana</i>	-	-	-	4	-	I (4)
<i>Heracleum sphondylium</i>	-	-	-	1	-	I (4)
<i>Rubus idaeus</i>	-	-	-	-	1	I (1)
Leaf litter	10	10	10	7	10	V (7 - 10)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
Bare ground	-	4	-	5	-	II (4 - 5)

## River Dane Bostock LWS and surrounding land (CH446766-CH614832\_L5429\_F001\_PH2\_150920)

### Site description and reasons for selection for survey

2.3.36 An area of open farmland/grassland bordering the River Dane. This land is mapped as coastal and floodplain grazing marsh on Natural England's PHI. The west bank of the River Dane, Bostock LWS, forms the northern boundary of this land. Several wader scrapes had been excavated in the grassland and were the focus of this vegetation sample.

### Vegetation communities present

2.3.37 Grassland with a sward height of approximately 40cm is present. It is dominated by common bent, with a range of broadleaved herbs and grasses occasionally present, such as creeping buttercup and Timothy grass (*Phelum pratense*), with rare goat willow (*Salix caprea*) saplings. This vegetation occurs in a depression, dug into a field to act as a wader scrape, which was dry at the time of survey. Grassland wholly dominated by common bent, with neutral indicator species, is not a close match for any NVC community, but this vegetation has affinities to the MG6 *Lolium perenne-Cynosurus cristatus* grassland, *Anthoxanthum odoratum* sub-community, albeit, perennial rye-grass (*Lolium perenne*) is at very low cover in this example. This grassland is not a HoPI.

2.3.38 Table 14 sets out the NVC survey data for the River Dane Bostock LWS and surrounding land.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 14: River Dane Bostock LWS and surrounding land (CH446766-CH614832\_L5429\_F001\_PH2\_150920)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Agrostis capillaris</i>	9	10	10	10	9	V (9 - 10)
<i>Ranunculus repens</i>	2	2	2	3	2	V (2 - 3)
<i>Phleum pratense</i>	2	1	-	2	1	IV (1 - 2)
<i>Rumex obtusifolius</i>	2	-	2	2	1	IV (1 - 2)
<i>Salix caprea (sapling)</i>	2	1	1	-	1	IV (1 - 2)
<i>Cirsium arvense</i>	2	-	-	2	1	III (1 - 2)
<i>Holcus lanatus</i>	2	-	-	-	-	I (2)
<i>Lolium perenne</i>	2	-	-	-	-	I (2)
<i>Sonchus asper</i>	1	-	-	-	-	I (1)
<i>Persicaria maculosa</i>	-	1	-	-	-	I (1)
<i>Phalaris arundinacea</i>	-	-	-	1	-	I (1)

## River Dane Bostock LWS and surrounding land (CH446766-CH614832\_L5429\_F002\_PH2\_150920)

### Site description and reasons for selection for survey

- 2.3.39 An area of open farmland/grassland bordering the River Dane. This land is mapped as coastal and floodplain grazing marsh on Natural England's PHI. The west bank of the River Dane, Bostock LWS, forms the northern boundary of this land.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.40 Short, grazed grassland dominated by perennial rye-grass, with frequent rough-stalked meadow-grass (*Poa trivialis*) and a small number of occasional herbaceous species, including Yorkshire fog, broad-leaved dock (*Rumex obtusifolius*) and white clover (*Trifolium repens*). This vegetation is improved grassland; no quadrat sampling was necessary to confirm its identity as NVC community MG7 *Lolium perenne* leys and related grasslands, which is improved grassland and is not a HoPI.

### River Dane Bostock LWS and surrounding land (CH446766-CH614832\_L5429\_F003\_PH2\_150920)

#### Site description and reasons for selection for survey

- 2.3.41 Riparian habitat along the west bank of the River Dane, Bostock LWS. It borders an area mapped as coastal and floodplain grazing marsh on Natural England's PHI.

### Vegetation communities present

- 2.3.42 Habitat adjacent to the River Dane is present in a narrow strip of riparian land, in an intricate mosaic of tall ruderal vegetation, semi-natural and tussocky grassland, with lines of trees and scattered scrub. Patches of Himalayan balsam, common nettle bramble and great willowherb (*Epilobium hirsutum*) are frequent. Grassland dominated by cock's-foot (*Dactylis glomerata*) and common bent is the dominant habitat, with a small selection of tall herbs (e.g. hogweed), occasional to frequent, in the sward. The River Dane has high, often steep banks, and generally lacks marginal and inundation vegetation. Ten quadrats were collected to sample the vegetation mosaic, which constitutes a range of NVC community types, including: MG1b *Arrhenatherum elatius* grassland, the *Urtica dioica* sub-community; the OV24 *Urtica dioica-Galium aparine* community; and small fragments of the OV26 *Epilobium hirsutum* community. These vegetation types do not qualify as HoPIs.
- 2.3.43 Table 15 sets out the NVC survey data for the River Dane Bostock LWS and surrounding land. Five samples per stand of vegetation is the standard adopted for HS2 NVC surveys, generally. However, ten quadrats (rather than five) were collected as a linear transect along the River

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Dane. Post-survey analysis showed that all ten samples were best grouped as a single homogenous stand. This is consistent with good NVC survey practice and is not a limitation.

**Table 15: River Dane Bostock LWS and surrounding land (CH446766-CH614832\_L5429\_F003\_PH2\_150920)**

Species	Quadrat locations										Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
<b>Canopy (50m × 50m)</b>											
<i>Salix fragilis</i>	2	-	-	1	-	-	-	-	1	-	II (2 - 1)
<i>Acer pseudoplatanus</i>	1	-	-	-	1	-	-	-	-	-	II (1 - 1)
<i>Quercus robur</i>	-	-	-	-	1	1	-	-	-	-	II (1 - 1)
<i>Fagus sylvatica</i>	-	-	-	-	-	1	-	-	-	-	I (1)
<b>Understorey (10m x 10m)</b>											
<i>Salix fragilis</i>	2	2	-	1	-	-	-	-	-	2	III (2 - 1)
<i>Rubus fruticosus agg.</i>	-	-	-	-	7	-	2	-	2	-	II (7 - 2)
<i>Alnus glutinosa</i>	-	-	1	-	2	-	1	-	-	-	II (2 - 1)
<i>Quercus robur</i>	-	-	-	-	-	-	1	-	-	-	I (1)
<i>Sambucus nigra</i>	1	-	-	-	-	-	-	-	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>											
<i>Dactylis glomerata</i>	8		2	8	7	9	7	2	2	2	V (9 - 2)
<i>Impatiens glandulifera</i>	4	2	-	8	4	1	1		2	3	IV (8 - 1)
<i>Agrostis capillaris</i>	-	9	9	-	5	-	5	7	2	-	III (9 - 2)
<i>Urtica dioica</i>	5	-	-	8	-	2	-	2	4	8	III (8 - 2)
<i>Heracleum sphondylium</i>	7	2	-	1	-	2	-	1	-	-	III (7 - 1)
<i>Cirsium arvense</i>	-	2	2	-	-	-	-	2	2	2	III (2 - 2)
<i>Epilobium hirsutum</i>	-	-	2	-	-	-	-	7	6	-	II (7 - 2)
<i>Festuca rubra</i>	-	-	-	-	-	-	-	7	2	-	II (7 - 2)
<i>Calystegia sepium</i>	6	-	-	-	-	-	-	-	-	2	II (6 - 2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations										Constancy (Domin range)	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
<i>Phalaris arundinacea</i>	-	-	4	-	-	-	-	-	-	2	-	II (4 - 2)
<i>Phleum pratense</i>	-	-	2	-	-	-	-	2	-	2	-	II (2 - 2)
<i>Jacobaea vulgaris</i>	-	-	-	-	-	-	-	1	-	2	-	II (2 - 1)
<i>Holcus lanatus</i>	8	-	-	-	-	-	-	-	-	-	-	I (8)
<i>Geranium pratense</i>	-	-	-	-	1	-	-	-	-	-	-	I (1)
<i>Crataegus monogyna</i> <sup>26</sup>	-	-	-	-	-	-	-	-	-	-	-	- (0)
Bare ground (river bank)	-	-	-	-	-	-	-	7	-	-	-	I (7)
Leaf litter (cover)	7	-	-	-	-	-	-	-	-	-	-	I (7)

## Whatcroft Woodland (CH446766-CH515800-CH534892\_L5171\_PH2\_140618)

### Site description and reasons for selection for survey

2.3.44 Broadleaved semi-natural woodland. This woodland is not an AWI site or mapped on Natural England's PHI.

### Vegetation communities present

2.3.45 The canopy contained frequent sycamore and occasional pedunculate oak. The shrub layer comprises occasional wych elm, hawthorn and elder. The ground flora is sparse and contains cleavers, wood millet, bluebell and bramble. This woodland may be attributed to W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, based on the diversity of the shrub and canopy layer species. However, it is a relatively weak match, and it is not possible to classify to sub-community level. The TABLEFIT 'goodness of fit' statistic was 27% for NVC type W25a. However, bracken vegetation is a type of underscrub and is not a suitable match for this woodland. This woodland qualifies as lowland mixed deciduous woodland HoPI.

<sup>26</sup> Not present in a quadrat sample but present in vegetation.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.46 Five vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Whatcroft Woodland: holly, wych elm, remote sedge, wood millet, bluebell.

2.3.47 Table 16 sets out the NVC survey data from Whatcroft Woodland.

**Table 16: NVC survey data from Whatcroft Woodland (CH446766-CH515800-CH534892\_L5171\_PH2\_140618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudoplatanus</i>	7	7	7	7	7	V (7 - 7)
<i>Quercus robur</i>	5	5	5	5	5	V (5 - 5)
<i>Fagus sylvatica</i>	4	4	4	4	4	V (4 - 4)
<i>Populus nigra x canadensis</i>	3	3	3	3	3	V (3 - 3)
<i>Salix cinerea</i>	3	3	3	3	3	V (3 - 3)
<i>Castanea sativa</i>	3	3	3	3	3	V (3 - 3)
<i>Quercus rubra</i>	1	1	1	1	1	V (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Ulmus glabra</i>	5	5	5	5	5	V (5 - 5)
<i>Sambucus nigra</i>	4	4	4	4	4	V (4 - 4)
<i>Crataegus monogyna</i>	4	4	4	4	4	V (4 - 4)
<i>Fraxinus excelsior</i>	3	3	3	3	3	V (3 - 3)
<i>Prunus avium</i>	3	3	3	3	3	V (3 - 3)
<i>Pinus sylvestris</i>	2	2	2	2	2	V (2 - 2)
<i>Quercus ilex</i>	1	1	1	1	1	V (1 - 1)
<i>Populus alba</i>	1	1	1	1	1	V (1 - 1)
<i>Ilex aquifolium</i>	1	1	1	1	1	V (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Galium aparine</i>	7	3	4	5	1	V (1 - 7)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Milium effusum</i>	5	3	-	5	5	IV (3 - 5)
<i>Hyacinthoides non-scripta</i>	7	6	5	-	-	III (5 - 7)
<i>Rubus fruticosus</i> agg.	5	6	-	-	6	III (5 - 6)
<i>Ulmus glabra</i> (seedling)	-	-	1	4	2	III (1 - 4)
<i>Crataegus monogyna</i>	-	-	3	3	-	II (3 - 3)
<i>Poa trivialis</i>	-	2	-	4	-	II (2 - 4)
<i>Holcus mollis</i>	-	-	5	-	-	I (5)
<i>Urtica dioica</i>	-	-	-	3	-	I (3)
<i>Pteridium aquilinum</i>	-	-	2	-	-	I (2)
<i>Silene dioica</i>	-	-	-	1	-	I (1)
<i>Lamium</i> sp.	-	-	1	-	-	I (1)
<i>Kindbergia praelonga</i>	1	-	-	-	-	I (1)
<i>Holcus lanatus</i>	1	-	-	-	-	I (1)
<i>Acer pseudoplatanus</i> (seedling)	-	-	1	-	-	I (1)
Bare ground	5	5	8	7	7	V (5 - 8)

## Marshall's Gorse (CH402012-CH505004\_L5344\_F001\_PH2\_150518)

### Site description and reasons for selection for survey

- 2.3.48 Mixed woodland, all within Marshall's Gorse LWS, mainly south of Gad Brook and extending a short distance to the north of the watercourse. Most is identified by Natural England's PHI as deciduous woodland (other than a small area long the southern boundary). The woodland is not an AWI site.



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.49 The most frequent canopy species are sycamore and Scot's pine. Pedunculate oak is occasional, but evenly distributed across the woodland. Ash increases locally towards the Gad Brook, and a number of tall non-native poplars (*Populus* sp.) are present. The shrub layer is diverse, with sapling canopy trees and constant holly, elder, common hawthorn and hazel. Bramble and broad buckler-fern (*Dryopteris dilatata*) are constant in the ground flora, with bluebell and ivy frequent. Himalayan balsam occurs close to the brook. The woodland is a weak match to W10a *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* typical sub-community as several W10 constant species are missing (e.g. honeysuckle and bracken *Pteridium aquilinum*). The TABLEFIT 'goodness of fit' statistic for this NVC type was 53% for W8e. However, the woodland is not a good match to W8 woodland, as calcicolous ground flora indicator species are rare/absent. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.50 Five vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from all the stands of Marshall Gorse: holly, wych elm, moschatel (*Adoxa moschatellina*), dog's mercury and bluebell.
- 2.3.51 Table 17 sets out the NVC survey data from Marshall's Gorse (F001).

**Table 17: NVC survey data from Marshall's Gorse (CH402012-CH505004\_L5344\_F001\_PH2\_150518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudo-platanus</i>	5	7	7	7	7	V (5 - 7)
<i>Pinus sylvestris</i>	7	-	4	5	4	V (4 - 7)
<i>Quercus robur</i>	2	1	5	1	1	V (1 - 5)
<i>Fraxinus excelsior</i>	4	2	-	6	7	IV (2 - 7)
<i>Betula pendula</i>		1	-	1	1	III (1 - 1)
<i>Populus x canadensis</i>	-	-	-	5	-	I (5)
<i>Salix fragilis</i>	-	-	-	-	1	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudo-platanus</i>	3	5	4	4	4	V (3 - 5)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Sambucus nigra</i>	2	3	3	3	2	V (2 - 3)
<i>Crataegus monogyna</i>	2	2	2	2	2	V (2 - 2)
<i>Ilex aquifolium</i>	4	2	4	4	1	V (1 - 4)
<i>Corylus avellana</i>	3	2	3	2	-	IV (2 - 3)
<i>Quercus robur</i>	-	2	-	-	-	I (2)
<i>Betula pubescens</i>	-	-	-	-	1	I (1)
<i>Rosa canina</i>	1	-	-	-	-	I (1)
<i>Salix fragilis</i>	1	-	-	-	-	I (1)
<i>Prunus spinosa</i>	-	-	1	-	-	I (1)
<i>Salix caprea</i>	-	-	1	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i>	5	3	6	7	5	V (3 - 7)
<i>Kindbergia praelonga</i>	4	-	3	4	5	IV (3 - 5)
<i>Dryopteris dilatata</i>	2	1	4	1	-	IV (1 - 4)
<i>Brachythecium rutabulum</i>	3	-	-	4	4	III (3 - 4)
<i>Hyacinthoides non-scripta</i>	2	1	-	-	4	III (1 - 4)
<i>Galium aparine</i>	1	-	-	3	3	III (1 - 3)
<i>Hedera helix</i>	3	2	-	-	-	II (2 - 3)
<i>Geum urbanum</i>	-	-	-	1	1	II (1 - 1)
<i>Mnium hornum</i>	-	-	-	3	-	I (3)
<i>Impatiens glandulifera</i>	-	-	-	2	-	I (2)
<i>Ficaria verna</i>	-	-	-	1	-	I (1)
<i>Glechoma hederacea</i>	-	-	-	1	-	I (1)
<i>Silene dioica</i>	-	-	-	1	-	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Geranium robertianum</i>	-	-	-	-	1	I (1)
<i>Poa trivialis</i>	-	-	-	-	1	I (1)
Bare ground	6	7	7	7	4	V (4 - 7)

### Marshall's Gorse (CH402012-CH505004\_L5344\_F002\_PH2\_150518)

#### Site description and reasons for selection for survey

- 2.3.52 Mixed woodland, all within Marshall's Gorse LWS, mainly south of Gad Brook and extending a short distance to the north of the watercourse. Most is identified by Natural England's PHI as deciduous woodland (other than a small area long the southern boundary). The woodland is not an AWI site.

#### Vegetation communities present

- 2.3.53 The canopy is dominated by sycamore with occasional Scot's pine. Other species in the canopy are of rare abundance. The shrub layer features sprawling bramble and young sycamore trees, as well as rarely recorded species such as holly, wych elm and hazel. Norway maple (*Acer platanoides*) is present in the shrub layer and the canopy. In addition to bramble, the ground flora contains broad buckler-fern and abundant leaf litter. This woodland is an example of NVC community W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* typical sub-community. The TABLEFIT 'goodness of fit' statistic for this stand was 50% for W10e the *Acer pseudoplatanus - Oxalis acetosella* subcommunity. However, it is considered that W10a is a better match for this vegetation, as wood sorrel is absent, and the cover of mosses and ferns is lower than would be expected for W10e vegetation. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.54 Vascular plant species that are indicative of ancient woodland in Marshall Gorse (all stands – F001 to F004) are reported under the description for stand CH402012-CH505004\_L5344\_F001\_PH2\_150518.
- 2.3.55 Table 18 sets out the NVC survey data from Marshall's Gorse (F002). Three quadrat samples were adequate to achieve full coverage of this small stand of woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 18: NVC survey data from Marshall's Gorse (CH402012-CH505004\_L5344\_F002\_PH2\_150518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudoplatanus</i>	9	8	9	NS	NS	III (8 - 9)
<i>Pinus sylvestris</i>	1	4	5	NS	NS	III (1 - 5)
<i>Salix fragilis</i>	1	-	-	NS	NS	I (11)
<i>Quercus</i> sp.	1	-	-	NS	NS	I (1)
<i>Quercus robur</i>	-	1	1	NS	NS	II (1)
<i>Larix decidua</i>	-	-	1	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Rubus fruticosus</i> agg.	5	7	7	NS	NS	III (5 - 7)
<i>Crataegus monogyna</i>	3	1	2	NS	NS	III (1 - 3)
<i>Ilex aquifolium</i>	2	2	2	NS	NS	III (2 - 2)
<i>Acer platanoides</i>	1	2	1	NS	NS	III (1 - 2)
<i>Prunus spinosa</i>	1	1	1	NS	NS	III (1 - 1)
<i>Acer pseudoplatanus</i>	4	4	-	NS	NS	II (4 - 4)
<i>Corylus avellana</i>	2	-	-	NS	NS	I (2)
<i>Fraxinus excelsior</i>	2	1	-	NS	NS	II (1 - 2)
<i>Ulmus glabra</i>	2	-	-	NS	NS	I (2)
<i>Quercus</i> sp.	-	-	1	NS	NS	I (1)
<i>Rosa canina</i>	-	-	1	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	7	5	5	NS	NS	III (5 - 7)
<i>Kindbergia praelonga</i>	4	4	4	NS	NS	III (4 - 4)
<i>Dryopteris dilatata</i>	2	5	5	NS	NS	III (2 - 5)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Hedera helix</i>	3	-	3	NS	NS	II (3 - 3)
<i>Mnium hornum</i>	-	3	-	NS	NS	I (3)
Leaf litter	7	8	7	NS	NS	III (7 - 8)

### Marshall's Gorse (CH402012-CH505004\_L5344\_F003\_PH2\_150518)

#### Site description and reasons for selection for survey

2.3.56 A small area of common nettle-dominated vegetation either side of the Gad Brook, in a wayleave crossing the western side of Marshall's Gorse.

#### Vegetation communities present

2.3.57 Common nettle is dominant, with abundant great willowherb, and frequent cleavers, wavy bitter-cress (*Cardamine hirsuta*), reed canary-grass (*Phalaris arundinacea*), meadowsweet (*Filipendula ulmaria*), wild angelica (*Angelica sylvestris*) and rough-stalked meadow-grass. This vegetation most closely resembles the OV26c *Epilobium hirsutum* community, *Filipendula ulmaria*-*Angelica sylvestris* sub-community. This vegetation does not qualify as a HoPI.

### Marshall's Gorse (CH402012-CH505004\_L5344\_F004\_PH2\_150518)

#### Site description and reasons for selection for survey

2.3.58 A small area of continuous bramble scrub in the open habitat along the wayleave, passing through the western end of Marshall's Gorse woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.59 Bramble is dominant, with frequent common nettle. Himalayan balsam is frequent near the watercourse that passes through the wayleave. The habitat is an example of the W24 *Rubus fruticosus* - *Holcus lanatus* underscrub community. This vegetation does not qualify as a HoPI.
- 2.3.60 Table 19 sets out the NVC survey data from Marshall's Gorse (F004). Two quadrat samples were adequate to achieve full coverage of this small stand of scrub.

**Table 19: NVC survey data from Marshall's Gorse (CH402012-CH505004\_L5344\_F004\_PH2\_150518)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	9	9	NS	NS	NS	II (9 - 9)
<i>Urtica dioica</i>	6	4	NS	NS	NS	II (4 - 6)
<i>Acer pseudoplatanus</i>	3	4	NS	NS	NS	II (3 - 4)
<i>Brachythecium rutabulum</i>	4	3	NS	NS	NS	II (3 - 4)
<i>Kindbergia praelonga</i>	3	4	NS	NS	NS	II (3 - 4)
<i>Impatiens glandulifera</i>	4	1	NS	NS	NS	II (1 - 4)
<i>Poa trivialis</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Prunus spinosa</i>	1	2	NS	NS	NS	II (1 - 2)
<i>Galium aparine</i>	-	3	NS	NS	NS	I (3 - 3)
<i>Sambucus nigra</i>	2	-	NS	NS	NS	I (2 - 2)
<i>Crataegus monogyna</i>	-	2	NS	NS	NS	I (2 - 2)
<i>Geum urbanum</i>	-	2	NS	NS	NS	I (2 - 2)
<i>Lonicera periclymenum</i>	-	2	NS	NS	NS	I (2 - 2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Long Wood (CH557156-U200836-U200837\_L5489\_F001\_PH2\_070818)

#### Site description and reasons for selection for survey

- 2.3.61 Long Wood is a narrow area of broadleaved woodland, mapped on Natural England's PHI as deciduous woodland and identified as Long Wood LWS. Long Wood is not an AWI site.

#### Vegetation communities present

- 2.3.62 Mature and veteran pedunculate oak form the canopy, with frequent sycamore and common lime, and occasional sweet chestnut (*Castanea sativa*) and alder. Rowan (*Sorbus aucuparia*) is frequent in the sub-canopy, and there is a sparse understorey of hazel (*Corylus avellana*) and hawthorn. The ground flora is dominated by bramble, with occasional broad buckler-fern and bluebell, and a patchy moss covering of swan's-neck thyme-moss (*Mnium hornum*). Constant and abundant pedunculate oak, and a ground flora species mostly indicative of neutral soil pH with bluebell, are representative of the W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland sub-community. However, certain W10 indicators are absent (e.g. honeysuckle and bracken). The TABLEFIT 'goodness of fit' statistic for W10 woodland was 51%. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.63 Six vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Long Wood: holly, crab apple (*Malus sylvestris*), wild cherry, small-leaved lime (*Tilia cordata*), bluebell and remote sedge.
- 2.3.64 Table 20 sets out the NVC survey data from woodland with ponds near Long Wood (F001).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 20: NVC survey data from Long Wood (CH557156-U200836-U200837\_L5489\_F001\_PH2\_070818)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	8	7	7	7	8	V (7 - 8)
<i>Fagus sylvatica</i>	1	2	2	-	1	IV (1 - 2)
<i>Acer pseudoplatanus</i>	5	-	4	1	4	III (4 - 5)
<i>Tilia x europaea</i>	3	-	-	-	1	II (1 - 3)
<i>Aesculus hippocastanum</i>	1	-	-	-	2	II (1 - 2)
<i>Castanea sativa</i>	1	1	-	-	-	II (1 - 1)
<i>Alnus glutinosa</i>	-	-	-	7	-	I (7)
<b>Understorey (10m x 10m)</b>						
<i>Sorbus aucuparia</i>	4	4	-	2	-	III (2 - 4)
<i>Crataegus monogyna</i>	1	-	4	4	-	III (1 - 4)
<i>Illex aquifolium</i>	1	2	-	1	-	III (1 - 2)
<i>Corylus avellana</i>	-	-	1	1	-	III (1 - 1)
<i>Betula pendula</i>	-	2	-	-	-	I (2)
<i>Acer pseudoplatanus</i>	-	2	-	-	-	I (2)
<i>Salix x fragilis</i>	-	-	2	-	-	I (2)
<i>Salix cinerea</i>	-	-	-	1	-	I (1)
<i>Castanea sativa</i>	-	1	-	-	-	I (1)
<i>Lonicera periclymenum</i>	-	-	-	1	-	I (1)
<i>Prunus spinosa</i>	-	-	-	1	-	I (1)
<i>Quercus robur</i>	-	-	-	1	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	8	5	-	6	8	IV (5 - 8)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Dryopteris dilatata</i>	3	5	-	1	3	IV (1 - 5)
<i>Hyacinthoides non-scripta</i>	-	-	5	-	4	II (4 - 5)
<i>Sambucus nigra</i>	-	-	1	1	-	II (1 - 1)
<i>Carex remota</i>	-	-	-	7	-	I (7)
<i>Rumex sanguineus</i>	-	-	-	4	-	I (4)
<i>Mnium hornum</i>	-	-	-	-	3	I (3)
<i>Deschampsia cespitosa</i>	-	-	-	-	2	I (2)
<i>Holcus mollis</i>	1	-	-	-	-	I (1)

## Long Wood (CH557156-U200836-U200837\_L5489\_F002\_PH2\_070818)

### Site description and reasons for selection for survey

- 2.3.65 Broadleaved semi-natural woodland a short distance south of the main body of Long Wood (CH557156-U200836-U200837\_L5489\_F001\_PH2\_070818). This woodland is present around several ponds in a boundary hedge/linear wood between two arable fields. This woodland is not an AWI site, not a LWS and is not listed on Natural England's PHI.

### Vegetation communities present

- 2.3.66 Alder is the dominant canopy tree, with grey willow frequent in the shrub layer and remote sedge wood dock (*Rumex sanguineus*) and bramble frequent ground flora species. There are several woodland ponds that contain occasional yellow iris (*Iris pseudacorus*), meadowsweet and reed canary-grass. This woodland most closely matches the W6d *Alnus glutinosa-Urtica dioica* woodland, *Sambucus nigra* sub-community, which is a drier type of alder woodland. This vegetation qualifies as wet woodland HoPI.
- 2.3.67 Table 21 sets out the NVC survey data from woodland with ponds near Long Wood (F002). One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 21: NVC survey data from Long Wood (CH557156-U200836-U200837\_L5489\_F002\_PH2\_070818)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	7	NS	NS	NS	NS	I (7)
<i>Alnus glutinosa</i>	7	NS	NS	NS	NS	I (7)
<i>Acer pseudoplatanus</i>	1	NS	NS	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Salix cinerea</i>	5	NS	NS	NS	NS	I (5)
<i>Crataegus monogyna</i>	4	NS	NS	NS	NS	I (4)
<i>Illex aquifolium</i>	1	NS	NS	NS	NS	I (1)
<i>Lonicera periclymenum</i>	1	NS	NS	NS	NS	I (1)
<i>Corylus avellana</i>	1	NS	NS	NS	NS	I (1)
<i>Prunus spinosa</i>	1	NS	NS	NS	NS	I (1)
<i>Quercus robur</i>	1	NS	NS	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Carex remota</i>	7	NS	NS	NS	NS	I (7)
<i>Rubus fruticosus</i> agg.	6	NS	NS	NS	NS	I (6)
<i>Rumex sanguineus</i>	4	NS	NS	NS	NS	I (4)
<i>Dryopteris dilatata</i>	1	NS	NS	NS	NS	I (1)
<i>Sambucus nigra</i>	1	NS	NS	NS	NS	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Winnington Belt (CH231088\_L5855\_F001\_PH2\_160518)

#### Site description and reasons for selection for survey

2.3.68 Broadleaved plantation woodland identified by Natural England as an AWI site (ancient semi-natural woodland) and an area of deciduous woodland PHI. The woodland is also designated as Winnington Belt LWS.

#### Vegetation communities present

2.3.69 The canopy contains beech, sycamore and pedunculate oak (at varying levels of abundance). The beech trees are mature and relatively even-aged, indicating a plantation. The mixed shrub layer comprises sycamore, holly, rowan, hazel and cherry. The ground flora is dominated by bluebell, with all other species at occasional or rare abundance. Small stands of rosebay willowherb (*Chamerion angustifolium*) are present in clearings in the north corner of the wood along, with common nettle and cleavers. Garden waste material is frequent in the wood, and numerous non-native shrubs and ground flora species are present. This woodland is an example of the W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* typical sub-community. The TABLEFIT 'goodness of fit' statistic for NVC type W10 was 54%. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.70 Six vascular plant species that are indicative of ancient woodland were recorded (incidentally or in quadrats) from Winnington Belt: holly, wild cherry, wood anemone, wood millet, dog's mercury and bluebell.

2.3.71 Table 22 sets out the NVC survey data from Winnington Belt (F001). Three quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 22: NVC survey data from Winnington Belt (CH231088\_L5855\_F001\_PH2\_160518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	2	8	7	NS	NS	III (2 - 8)
<i>Quercus robur</i>	2	6	6	NS	NS	III (2 - 6)
<i>Fagus sylvatica</i>	7	4	-	NS	NS	II (4 - 7)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Fraxinus excelsior</i>	1	-	-	NS	NS	I (1)
<i>Alnus glutinosa</i>	-	1	-	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Ilex aquifolium</i>	4	4	5	NS	NS	III (4 - 5)
<i>Acer pseudoplatanus</i>	4	4	4	NS	NS	III (4 - 4)
<i>Craetagus monogyna</i>	1	3	3	NS	NS	III (1 - 3)
<i>Sorbus aucuparia</i>	2	-	3	NS	NS	II (2 - 3)
<i>Sambucus nigra</i>	-	2	2	NS	NS	II (2 - 2)
<i>Ulmus procera</i>	2	1	-	NS	NS	II (1 - 2)
<i>Fagus sylvatica</i>	-	1	2	NS	NS	II (1 - 2)
<i>Fraxinus excelsior</i>	1	-	-	NS	NS	I (1)
<i>Corylus avellana</i>	-	1	-	NS	NS	I (1)
<i>Aesculus hippocastanum</i>	1	-	-	NS	NS	I (1)
<i>Prunus avium</i>	-	1	-	NS	NS	I (1)
<i>Salix fragilis</i>	-	-	1	NS	NS	I (1)
<i>Tilia x europaea</i>	-	-	1	NS	NS	I (1)
<i>Ulmus glabra</i>	-	-	1	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hyacinthoides non-scripta</i>	9	7	8	NS	NS	III (7 - 9)
<i>Rubus fruticosus agg.</i>	3	4	3	NS	NS	III (3 - 4)
<i>Brachythecium rutabulum</i>	2	3	2	NS	NS	III (2 - 3)
<i>Kindbergia praelonga</i>	-	2	3	NS	NS	II (2 - 3)
<i>Lonicera periclymenum</i>	1	-	-	NS	NS	I (1)
<i>Mnium hornum</i>	-	4	-	NS	NS	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Galium aparine</i>	-	4	-	NS	NS	I (4)
<i>Pteridium aquilinum</i>	-	4	-	NS	NS	I (4)
<i>Acer pseudoplatanus</i>	-	2	4	NS	NS	I (4)
<i>Chamerion angustifolium</i>	-	3	-	NS	NS	I (3)
<i>Hypnum cupressiforme</i>	-	-	2	NS	NS	I (2)
Leaf litter	5	6	7	NS	NS	V (5 - 7)
Bare soil	4	5	4	NS	NS	III (4 - 5)

### Winnington Belt (CH231088\_L5855\_F002\_PH2\_160518)

#### Site description and reasons for selection for survey

2.3.72 Two areas of tall, broadleaved herb vegetation in Winnington Belt woodland, outside of the habitat which is an AWI site and LWS.

#### Vegetation communities present

2.3.73 Vegetation dominated by rosebay willowherb, with common nettle, bramble, cleavers and bracken. This is an example of NVC type OV27 *Epilobium* [*Chamerion*] *angustifolium* community. This vegetation does not qualify as a HoPI.

### Winnington Belt (CH231088\_L5855\_F004\_PH2\_160518)

#### Site description and reasons for selection for survey

2.3.74 Dense, continuous bramble scrub in the northern corner of Winnington Belt woodland, outside of the habitat which is an AWI site and LWS.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.75 Relatively small stands of dense and continuous bramble in small clearings in the northern corner of Winnington Belt. Bramble is dominant, with common nettle frequent. Leaf litter is extensive beneath the bramble, with occasional bryophytes. This vegetation is an example of the W24 *Rubus fruticosus-Holcus lanatus* underscrub community. It does not qualify as a HoPI.

### Winnington and Peas Wood (CH134605\_L5935\_F001\_PH2\_100518)

#### Site description and reasons for selection for survey

- 2.3.76 Broadleaved semi-natural woodland, the majority of which is listed by Natural England as an AWI site (ancient semi-natural woodland) and included on their PHI as deciduous woodland. This woodland is also designated as Winnington and Peas Wood LWS.

### Vegetation communities present

- 2.3.77 A canopy of pedunculate oak and silver birch, with occasional rowan, sycamore and rare beech. The shrub layer contains constant hazel, with occasional rowan. Bluebell is abundant in the ground flora and broad-buckler fern is also constant, but at lower cover levels. Himalayan balsam is locally abundant near the bottom of the slope, at the northern end of the wood. This woodland includes at least four birch (*Betula* sp.) trees of sufficient girth, and with multiple veteran features, to be considered possible ancient trees. This woodland is an example of the W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* typical sub-community community. The TABLEFIT statistic for this NVC type was 66%. This woodland qualifies as a lowland mixed deciduous woodland HoPI.
- 2.3.78 Twenty eight vascular plant species that are indicative of ancient woodland were recorded from Winnington and Peas Wood (the list of 30 ancient woodland indicator species was recorded in Winnington and Peas Wood as a whole – all stands - not just stand F001): hornbeam, holly, crab apple, field rose (*Rosa arvensis*), large-leaved lime (*Tilia platyphyllos*)<sup>27</sup>, small-leaved lime, wych elm, wild garlic, wood anemone, false brome (*Brachypodium sylvaticum*), remote sedge, climbing corydalis (*Ceratocarpus claviculata*), wood speedwell, wood sorrel, wood millet, dog's

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<sup>27</sup> Large-leaved lime is likely to be a planted tree in this locality as it is non-native to this part of the UK.

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mercury, yellow pimpernel (*Lysimachia nemorum*), creeping soft-grass (*Holcus mollis*), bluebell, woodruff (*Galium odoratum*), wild cherry, opposite-leaved golden-saxifrage, thin-spiked wood-sedge (*Carex strigosa*), pignut (*Conopodium majus*), hart's tongue (*Asplenium scolopendrium*), wood melick (*Melica uniflora*), hairy woodrush (*Luzula pilosa*) and yellow archangel (*Lamiastrum galeobdolon* subsp. *montanum*).

2.3.79 Table 23 sets out the NVC survey data from Winnington and Peas Wood (F001).

**Table 23: NVC survey data from Winnington and Peas Wood (CH134605\_L5935\_F001\_PH2\_100518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	7	4	7	8	8	V (4 - 8)
<i>Betula pubescens</i>	6	7	7	6	1	V (1 - 7)
<i>Sorbus aucuparia</i>	4	5	-	2	5	IV (2 - 5)
<i>Acer pseudoplatanus</i>	4	-	1	4	4	IV (1 - 4)
<i>Betula pendula</i>	-	-	-	1	1	II (1 - 1)
<i>Fagus sylvatica</i>	-	-	-	-	1	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Corylus avellana</i>	5	4	5	4	4	V (4 - 5)
<i>Sorbus aucuparia</i>	4	5	3	4	3	V (3 - 5)
<i>Quercus robur</i>	1	2	2	3	2	V (1 - 3)
<i>Betula pubescens</i>	1	2	1	-	1	IV (1 - 2)
<i>Acer pseudoplatanus</i>	2	-	1	-	4	III (1 - 4)
<i>Betula pendula</i>	-	1	-	2	1	III (1 - 2)
<i>Fagus sylvatica</i>	-	-	-	1	1	II (1 - 1)
<i>Crataegus monogyna</i>	-	-	-	-	1	I (1)
<i>Ilex aquifolium</i>	-	-	-	-	1	I (1)
<i>Malus sylvestris</i>	1	-	-	-	-	I (1)
<i>Salix cinerea</i>	-	-	1	-	-	I (1)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Hyacinthoides non-scripta</i>	8	4	5	7	8	V (4 - 8)
<i>Rubus fruticosus</i> agg.	3	3	3	2	2	V (2 - 3)
<i>Dryopteris dilatata</i>	4	1	4	4	4	V (1 - 4)
<i>Kindbergia praelonga</i>	3	4	3	-	-	III (3 - 4)
<i>Impatiens glandulifera</i>	5	8	2	-	-	III (2 - 8)
<i>Pteridium aquilinum</i>	1	4	-	2	-	III (1 - 4)
<i>Brachythecium rutabulum</i>	-	3	3	-	-	II (3 - 3)
<i>Ceratocarpus claviculata</i>	-	2	-	-	-	I (2 - 2)
Bare Ground	4	2	4	2	4	V (2 - 4)
Leaf Litter (cover)	4	4	7	6	5	V (4 - 7)

## Winnington and Peas Wood (CH134605\_L5935\_F002\_PH2\_030719)

### Site description and reasons for selection for survey

- 2.3.80 Small, broadleaved plantation woodland in the Peover Eye floodplain. This vegetation is included on Natural England's PHI as 'no main habitat but additional habitats present'. It is outside of the Winnington and Peas Wood LWS boundary and is not an AWI site.

### Vegetation communities present

- 2.3.81 The canopy is dominated by alder, with occasional hybrid crack-willow along the watercourse edge. The shrub layer is sparse and includes some younger alder, as well as elder, hawthorn, sycamore and ash. Himalayan balsam dominates the ground flora. This plantation woodland is an example of the W6d *Alnus glutinosa* - *Urtica dioica* woodland, *Sambucus nigra* sub-community. The TABLEFIT statistic for this woodland was 45% 'goodness of fit' for NVC type W6 *Alnus glutinosa*-*Urtica dioica* woodland, undifferentiated to sub-community level. This woodland qualifies as wet woodland HoPI.



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.82 A list of vascular plant species characteristic of ancient woodland found across the whole of Winnington and Peas Wood is provided under the description of stand CH134605\_L5935\_F001\_PH2\_100518.

2.3.83 Table 24 sets out the NVC survey data from Winnington and Peas Wood (F002).

**Table 24: NVC survey data from Winnington and Peas Wood (CH134605\_L5935\_F002\_PH2\_030719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Alnus glutinosa</i>	9	9	10	4	-	IV (4 - 10)
<i>Betula pubescens</i>	-	-	-	7	4	II (4 - 7)
<i>Salix fragilis</i>	4	4	-	-	-	II (4 - 4)
<i>Acer pseudoplatanus</i>	-	-	-	4	4	II (4 - 4)
<i>Betula pendula</i>	-	-	-	-	7	I (7)
<i>Quercus robur</i>	-	-	-	5	-	I (5)
<i>Fraxinus excelsior</i>	-	-	-	4	-	I (4)
<i>Sorbus aucuparia</i>	-	-	-	4	-	I (4)
<b>Understorey (10m x 10m)</b>						
<i>Alnus glutinosa</i>	4	4	4	-	-	III (4 - 4)
<i>Sambucus nigra</i>	1	1	-	2	-	III (1 - 2)
<i>Acer pseudoplatanus</i>	4	-	-	4	2	III (2 - 4)
<i>Salix cinerea</i>	-	-	-	4	4	II (4 - 4)
<i>Crataegus monogyna</i>	-	4	1	-	-	II (1 - 4)
<i>Betula pubescens</i>	-	-	-	5	-	I (5)
<i>Sorbus aucuparia</i>	-	-	-	4	-	I (4)
<i>Quercus robur</i>	-	-	-	2	-	I (2)
<i>Salix caprea</i>	-	-	-	2	-	I (2)
<i>Corylus avellana</i>	-	-	1	-	-	I (1)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Betula pendula</i>	-	-	-	1	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Impatiens glandulifera</i>	9	9	8	8	7	V (7 - 9)
<i>Rubus fruticosus</i> agg.	1	4	2	4	4	V (1 - 4)
<i>Brachythecium rutabulum</i>	3	2	3	3	-	IV (2 - 3)
<i>Poa trivialis</i>	3	3	3	-	-	III (3 - 3)
<i>Dryopteris dilatata</i>	4	4	1	-	-	III (1 - 4)
<i>Eurhynchium striatum</i>	3	3	-	-	-	II (3 - 3)
<i>Kindbergia praelonga</i>	-	-	-	3	3	II (3 - 3)
<i>Pteridium aquilinum</i>	-	-	-	2	8	II (2 - 8)
<i>Urtica dioica</i>	4	1	-	-	-	II (1 - 4)
<i>Holcus mollis</i>	-	-	4	-	-	I (4)
<i>Ceratocarpus claviculata</i>	-	-	-	-	4	I (4)
<i>Hyacinthoides non-scripta</i>	-	-	-	3	-	I (3)
<i>Atrichum undulatum</i>	-	-	3	-	-	I (3)
<i>Mnium hornum</i>	-	-	-	-	3	I (3)
<i>Veronica montana</i>	2	-	-	-	-	I (2)
<i>Heracleum sphondylium</i>	-	-	1	-	-	I (1)
<i>Holcus lanatus</i>	-	-	1	-	-	I (1)
Bare ground	5	4	4	-	-	III (4 - 5)
Leaf litter	5	7	5	-	-	III (5 - 7)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Winnington and Peas Wood (CH134605\_L5935\_F003\_PH2\_050618)

## Site description and reasons for selection for survey

2.3.84 Broadleaved semi-natural woodland, which is partly identified as an AWI site (ancient semi-natural woodland) and all mapped as deciduous woodland on Natural England’s PHI. This woodland is the south-western part of the Winnington and Peas Wood LWS.

## Vegetation communities present

2.3.85 Sycamore is dominant in the canopy, with beech and large-leaved lime constant but subordinate. Pedunculate oak is frequent. A diverse shrub layer is present, including holly, rowan, sycamore and beech. Ivy is the most abundant of the constant ground flora species, locally reaching up towards 50% cover. Other constant species include bluebell, bracken and broad buckler-fern. Bramble is locally abundant. Bryophytes are frequent at low cover, including *Kindbergia praelonga*, *Mnium hornum* and *Atrichum undulatum*. This vegetation is an example of NVC type W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland. The TABLEFIT ‘goodness of fit’ statistic for this woodland was 43% for NVC type W10e *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland, *Acer pseudoplatanus*-*Oxalis acetosella* sub-community. This vegetation qualifies as lowland mixed deciduous woodland HoPI.

2.3.86 A list of vascular plant species characteristic of ancient woodland found across the whole of Winnington and Peas Wood is provided under the description of stand CH134605\_L5935\_F001\_PH2\_100518.

2.3.87 Table 25 sets out the NVC survey data from Winnington and Peas Wood (F003).

**Table 25: NVC survey data from Winnington and Peas Wood (CH134605\_L5935\_F003\_PH2\_050618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	8	8	5	7	8	V (5 - 8)
<i>Fagus sylvatica</i>	-	5	5	7	5	IV (5 - 7)
<i>Tilia platyphyllos</i>	5	-	6	5	5	IV (5 - 6)
<i>Quercus robur</i>	-	4	6	-	4	III (4 - 6)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Carpinus betulus</i>	1	1	-	-	-	II (1 - 1)
<i>Betula pubescens</i>	-	-	1	-	1	II (1 - 1)
<i>Castanea sativa</i>			5			I (5)
<i>Alnus glutinosa</i>	4	-	-	-	-	I (4)
<b>Understorey (10m x 10m)</b>						
<i>Ilex aquifolium</i>	4	4	2	5	4	V (2 - 5)
<i>Acer, pseudoplatanus</i>	4	3	2	3	3	V (2 - 4)
<i>Fagus sylvatica</i>	-	2	2	3	2	IV (2 - 3)
<i>Sorbus aucuparia</i>	2	5	3	3	-	IV (2 - 5)
<i>Corylus avellana</i>	2	4	-	-	3	III (2 - 4)
<i>Carpinus betulus</i>	2	1	-	-	2	III (1 - 2)
<i>Quercus robur</i>	-	1	1	1	-	III (1 - 1)
<i>Ulmus glabra</i>	-	-	-	3	-	I (3)
<i>Sambucus nigra</i>	-	2	-	-	-	I (2)
<i>Tilia platyphyllos</i>	-	-	2	-	-	I (2)
<i>Betula pendula</i>	-	1	-	-	-	I (1)
<i>Betula pubescens</i>	-	-	-	-	1	I (1)
<i>Castanea sativa</i>	-	-	-	1	-	I (1)
<i>Crataegus monogyna</i>	-	1	-	-	-	I (1)
<i>Salix caprea</i>	-	1	-	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hyacinthoides non-scripta</i>	2	2	1	3	4	V (1 - 4)
<i>Hedera helix</i>	7	4	6	4	-	IV (4 - 7)
<i>Kindbergia praelonga</i>	3	4	-	3	3	IV (3 - 4)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Dryopteris dilatata</i>	2	-	1	5	4	IV (1 - 5)
<i>Pteridium aquilinum</i>	2	4	5	-	1	IV (1 - 5)
<i>Mnium hornum</i>	4	4	-	5	-	III (4 - 5)
<i>Rubus fruticosus</i> agg.	4	-	5	-	4	III (4 - 5)
<i>Brachythecium rutabulum</i>	4	3	-	4	-	III (3 - 4)
<i>Atrichum undulatum</i>	3	3	-	-	-	II (3 - 3)
<i>Allium ursinum</i>	-	3	-	-	3	II (1 - 3)
<i>Anemone nemorosa</i>	3	-	-	-	-	I (3)
<i>Eurhynchium striatum</i>	-	-	-	3	-	I (3)
<i>Athyrium filix-femina</i>	-	-	-	-	1	I (1)
Bare soil	8	8	8	8	9	V (8 - 9)
Leaf litter	4	3	2	5	1	V (1 - 5)

## Winnington and Peas Wood (Marshy Grassland) (CH134605\_L5935\_F004\_PH2\_050618)

### Site description and reasons for selection for survey

- 2.3.88 Marshy grassland in the floodplain south of Wincham Brook. This vegetation is included on Natural England's PHI as 'no main habitat but additional habitats present'. It is outside of Winnington and Peas Wood LWS and AWI site boundaries.

### Vegetation communities present

- 2.3.89 Yorkshire fog is dominant, with frequent Himalayan balsam and creeping buttercup. Compact rush (*Juncus conglomeratus*) and soft rush (*Juncus effusus*) are frequent, at low cover levels. Sharp-flowered rush (*Juncus acutiflorus*) is locally frequent. Occasional broadleaved herbs are present in the sward, including greater bird's-foot trefoil (*Lotus pedunculatus*), meadow vetchling (*Lathyrus pratensis*), black knapweed (*Centaurea nigra*), common sorrel (*Rumex acetosa*) and bog stichwort (*Stellaria alsine*). There is a ruderal/weedy element to the sward, with creeping thistle (*Cirsium*

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*arvense*) and ragwort (*Senecio jacobaea*) both occasional. Bryophytes are present throughout, but at low cover levels. The TABLEFIT statistic for this grassland was 40% 'goodness or fit' for NVC type MG9a *Holcus lanatus-Deschampsia cespitosa* grassland, *Poa trivialis* sub-community. However, the vegetation present is not characteristic of NVC type MG9, which contains abundant tufted hair-grass (*Deschampsia cespitosa*). NVC type MG10a *Holcus lanatus-Juncus effusus* rush-pasture typical sub-community is a better match, as MG10 vegetation is characterised by abundant Yorkshire fog with rushes. However, the vegetation present in the sample is notably more species-diverse than a typical example of MG10 vegetation, which is usually a species-poor, improved vegetation type. This vegetation does not qualify as a HoPI.

2.3.90 Table 26 sets out the NVC survey data from Winnington and Peas Wood (F004).

**Table 26: NVC survey data from Winnington and Peas Wood (Marshy Grassland) (CH134605\_L5935\_F004\_PH2\_050618)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Holcus lanatus</i>	7	7	7	7	8	V (7 - 8)
<i>Impatiens glandulifera</i>	5	4	6	7	5	V (4 - 7)
<i>Poa trivialis</i>	4	4	4	4	4	V (4 - 4)
<i>Ranunculus repens</i>	4	5	6	3	3	V (3 - 6)
<i>Agrostis capillaris</i>	4	4	3	5	4	V (3 - 5)
<i>Rumex acetosa</i>	2	3	4	5	4	V (2 - 5)
<i>Lotus pedunculatus</i>	4	4	4	2	3	V (2 - 4)
<i>Rumex obtusifolius</i>	2	-	1	4	4	IV (1 - 4)
<i>Kindbergia praelonga</i>	3	3	-	-	2	III (2 - 3)
<i>Juncus conglomeratus</i>	4	3	3	-	-	III (3 - 4)
<i>Juncus effusus</i>	4	3	3	-	-	III (3 - 4)
<i>Brachythecium rutabulum</i>	-	3	2	-	2	III (2 - 3)
<i>Equisetum arvense</i>	-	2	2	3	-	III (2 - 3)
<i>Holcus mollis</i>	-	3	2	2	-	III (2 - 3)
<i>Lathyrus pratensis</i>	-	-	3	2	3	III (2 - 3)

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BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rhytiadelphus squarrosus</i>	-	3	2	-	2	III (2 - 3)
<i>Galium aparine</i>	1	1	2	-	-	III (1 - 2)
<i>Festuca rubra</i> agg.	-	-	-	2	2	II (2 - 2)
<i>Alnus glutinosa</i>	2	1	-	-	-	II (1 - 2)
<i>Alopecurus pratensis</i>	-	-	-	1	2	II (1 - 2)
<i>Senecio jacobaea</i>	1	-	-	-	2	II (1 - 2)
<i>Stellaria uliginosa</i>	2	1	-	-	-	II (1 - 2)
<i>Elytrigia repens</i>	-	-	-	-	4	I (4)
<i>Juncus acutiflorus</i>	-	4	-	-	-	I (4)
<i>Lophocolea bidentata</i>	3	-	-	-	-	I (3)
<i>Stellaria graminea</i>	-	-	-	3	-	I (3)
<i>Cerastium fontanum</i>	-	2	-	-	-	I (2)
<i>Cirsium arvense</i>	-	2	-	-	-	I (2)
<i>Dactylis glomerata</i>	-	2	-	-	-	I (2)
<i>Epilobium hirsutum</i>	-	-	-	-	2	I (2)
<i>Prunella vulgaris</i>	2	-	-	-	-	I (2)
<i>Betula pendula</i> (saplings)	1	-	-	-	-	I (1)

## Winnington and Peas Wood (CH134605\_L5935\_F005\_PH2\_030719)

### Site description and reasons for selection for survey

2.3.91 Dense scrub/tall ruderal vegetation in the Peover Eye floodplain. The vegetation is mapped by Natural's England's PHI as an area of 'no main habitat but additional habitats may be present'. It is outside of the Winnington and Peas Wood LWS and AWI site.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.92 Bramble is dominant, with Himalayan balsam. This vegetation is a form of NVC type W24 *Rubus fruticosus-Holcus lanatus* underscrub. It does not qualify as a HoPI. No quadrat samples/computer analysis were required to classify this vegetation.

### Winnington and Peas Wood (CH134605\_L5935\_F006\_PH2\_030719)

#### Site description and reasons for selection for survey

- 2.3.93 Tall ruderal vegetation in an area mapped by Natural England's PHI as 'no main habitat but additional habitats may be present'. A small part of this stand is in the Winnington and Peas Wood LWS.

### Vegetation communities present

- 2.3.94 Two small areas (both less than 0.1 ha) dominated by Himalayan balsam, on the edge of the alder woodland and the Peover Eye, respectively. This type of vegetation is not covered by the NVC and does not qualify as a HoPI.

### Winnington and Peas Wood (CH134605\_L5935\_F007\_PH2\_030719)

#### Site description and reasons for selection for survey

- 2.3.95 A small (approximately 0.1 ha), bracken-dominated glade within woodland. This vegetation is part of an AWI site (ancient semi-natural woodland) and is included on Natural England's PHI as deciduous woodland. This vegetation is also in Winnington and Peas Wood LWS.

### Vegetation communities present

- 2.3.96 Bracken is dominant, with occasional creeping soft-grass, Himalayan balsam, bluebell and climbing corydalis, sprawling through the bracken. Leaf litter is extensive beneath the bracken. This vegetation is likely to be NVC type W25 *Pteridium aquilinum-Rubus fruticosus* underscrub. This vegetation is not a HoPI.



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Winnington and Peas Wood (CH557156\_L7011\_F001\_PH2\_050618)

## Site description and reasons for selection for survey

2.3.97 Broadleaved semi-natural woodland, which is in an AWI site (ancient semi-natural woodland), mapped by Natural England's PHI as deciduous woodland, and is part of Winnington and Peas Wood LWS. A small watercourse at the western end of the stand drains into Wincham Brook.

## Vegetation communities present

2.3.98 Sycamore is abundant, with frequent pedunculate oak. Large-leaved lime, ash and alder are occasional to rare, as is small-leaved lime. The shrub layer comprises young sycamore, with elder, rowan, holly, wild cherry and hazel. The multi-stemmed hazel appears to have been coppiced (historically). Himalayan balsam is the only constant vascular plant in the ground flora and is locally dominant. Leaf litter is abundant. Bramble, broad buckler-fern and ivy are locally frequent. Numerous occasional or rare ancient woodland indicator species are present. Bryophytes occurs throughout, including species such as Kindbergia praelonga, rough-stalked feather-moss (*Brachythecium rutabulum*) and *Mnium hornum*. This vegetation is characteristic of NVC type W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland. The TABLEFIT 'goodness of fit' statistic for the woodland was 43% for NVC type W10e *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland, *Acer pseudoplatanus*-*Oxalis acetosella* sub-community. This vegetation qualifies as lowland mixed deciduous woodland HoPI.

2.3.99 A list of vascular plant species characteristic of ancient woodland found across the whole of Winnington and Peas Wood is provided under the description of stand CH134605\_L5935\_F001\_PH2\_100518.

2.3.100 Table 27 sets out the NVC survey data from Winnington and Peas Wood (F001).

**Table 27: NVC survey data from Winnington and Peas Wood (CH557156\_L7011\_F001\_PH2\_050618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	8	8	9	8	7	V (7 - 9)
<i>Quercus robur</i>	4	4	1	5	6	V (1 - 6)
<i>Tilia platyphyllos</i>	-	4	-	4	4	III (4 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Fraxinus excelsior</i>	4	1	-	-	-	II (1 - 4)
<i>Sorbus aucuparia</i>	-	-	-	1	1	II (1 - 1)
<i>Fagus sylvatica</i>	-	4	-	-	-	I (4)
<i>Alnus glutinosa</i>	-	-	1	-	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i>	5	4	4	4	3	V (3 - 5)
<i>Sambucus nigra</i>	3	3	4	4	2	V (2 - 4)
<i>Corylus avellana</i>	4	4	-	4	4	IV (4 - 4)
<i>Sorbus aucuparia</i>	-	2	2	5	4	IV (2 - 5)
<i>Fraxinus excelsior</i>	3	3	3	-	-	III (3 - 3)
<i>Ilex aquifolium</i>	1	-	-	1	-	II (1 - 1)
<i>Prunus avium</i>	-	-	-	-	2	I (2)
<i>Crataegus monogyna</i>	-	1	-	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelonga</i>	3	4	3	3	4	V (3 - 4)
<i>Impatiens glandulifera</i>	1	3	7	4	8	V (1 - 8)
<i>Brachythecium rutabulum</i>	-	3	-	3	4	III (3 - 4)
<i>Rubus fruticosus</i>	4	5	-	1	-	III (1 - 5)
<i>Dryopteris dilatata</i>	-	1	1	7	-	III (1 - 7)
<i>Galium aparine</i>	1	3	-	-	2	III (1 - 3)
<i>Hedera helix</i>	7	6	-	-	-	II (6 - 7)
<i>Mnium hornum</i>	-	-	4	4	-	II (4 - 4)
<i>Plagionmium undulatum</i>	3	4	-	-	-	II (3 - 4)
<i>Urtica dioica</i>	2	3	-	-	-	II (2 - 6)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Poa trivialis</i>	-	3	-	-	2	II (2 - 6)
<i>Holcus mollis</i>	-	-	-	2	4	II (2 - 4)
<i>Circaea lutetiana</i>	2	2	-	-	-	II (2 - 2)
<i>Anemone nemorosa</i>	1	2	-	-	-	II (1 - 2)
<i>Dryopteris filix-mas</i>	1	1	-	-	-	II (1 - 1)
<i>Pteridium aquilinum</i>	-	-	-	-	4	I (4)
<i>Oxalis acetosella</i>	-	-	4	-	-	I (4)
<i>Deschampsia cespitosa</i>	-	4	-	-	-	I (4)
<i>Veronica montana</i>	-	3	-	-	-	I (3)
<i>Allium ursinum</i>	-	2	-	-	-	I (2)
<i>Carex sylvatica</i>	-	2	-	-	-	I (2)
<i>Conopodium majus</i>	-	2	-	-	-	I (2)
<i>Mercurialis perennis</i>	2	-	-	-	-	I (2)
<i>Luzula pilosa</i>	-	-	-	2	-	I (2)
<i>Glechoma hederacea</i>	1	-	-	-	-	I (1)
<i>Silene dioica</i>	-	-	-	1	-	I (1)
<i>Iris pseudacorus</i>	1	-	-	-	-	I (1)
<i>Carex remota</i>	-	-	-	1	-	I (1)
<i>Geum urbanum</i>	-	-	-	1	-	I (1)
<i>Lysimachia nemorum</i>	-	-	-	1	-	I (1)
Leaf litter	5	3	9	9	8	V (3 - 9)
Bare soil	2	2	1	3	3	V (1 - 3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Winnington and Peas Wood (CH557156\_L7011\_F002\_PH2\_050618)

## Site description and reasons for selection for survey

2.3.101 Broadleaved semi-natural woodland, which is in an AWI site (ancient semi-natural woodland), mapped by Natural England’s PHI as deciduous woodland, and is part of Winnington and Peas Wood LWS.

## Vegetation communities present

2.3.102 Two species of birch are dominant in the canopy, with frequent pedunculate oak and sycamore. Rare and localised species include alder and ash. The shrub layer contains frequent rowan, downy birch (*Betula pubescens*) and hazel. The ground flora is dominated by Himalayan balsam and bracken, with frequent broad buckler-fern. The TABLEFIT ‘goodness of fit’ statistic was 37% for NVC type W10 *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland. Given the relatively species-poor ground flora, it is not possible to further classify to sub-community level. This vegetation is an example of lowland mixed deciduous woodland HoPI.

2.3.103 Table 28 sets out the NVC survey data from Winnington and Peas Wood (F002). Three quadrat samples are adequate to classify this small stand of vegetation.

**Table 28: NVC survey data from Winnington and Peas Wood (CH557156\_L7011\_F002\_PH2\_050618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Betula pendula</i>	-	7	8	NS	NS	II (7 - 8)
<i>Betula pubescens</i>	7	4	-	NS	NS	II (4 - 7)
<i>Quercus robur</i>	5	-	4	NS	NS	II (4 - 5)
<i>Acer pseudoplatanus</i>	4	4	-	NS	NS	II (4 - 4)
<i>Alnus glutinosa</i>	4	-	-	NS	NS	I (4)
<i>Fraxinus excelsior</i>	4	-	-	NS	NS	I (4)
<i>Sorbus aucuparia</i>	4	-	-	NS	NS	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Understorey (10m x 10m)</b>						
<i>Sorbus aucuparia</i>	4	2	4	NS	NS	III (2 - 4)
<i>Betula pubescens</i>	4	4	-	NS	NS	II (4 - 4)
<i>Corylus avellana</i>	5	-	-	NS	NS	I (5 - 5)
<i>Salix cinerea</i>	4	-	-	NS	NS	I (4 - 4)
<i>Acer pseudoplatanus</i>	2	-	-	NS	NS	I (2 - 2)
<i>Quercus robur</i>	2	-	-	NS	NS	I (2 - 2)
<i>Sambucus nigra</i>	2	-	-	NS	NS	I (2 - 2)
<i>Salix caprea</i>	1	-	-	NS	NS	I (1 - 1)
<i>Betula pendula</i>	-	-	4	NS	NS	I (4 - 4)
<b>Ground flora layer (4m x 4m)</b>						
<i>Impatiens glandulifera</i>	8	7	5	NS	NS	III (5 - 8)
<i>Dryopteris dilatata</i>	4	4	-	NS	NS	II (4 - 4)

## Winnington and Peas Wood (CH557156\_L7011\_F003\_PH2\_050618)

### Site description and reasons for selection for survey

- 2.3.104 Several patches of continuous bracken in an AWI site (ancient semi-natural woodland), land mapped by Natural England's PHI as deciduous woodland, and land that is part of Winnington and Peas Wood LWS.

### Vegetation communities present

- 2.3.105 Bracken is dominant, with extensive leaf litter limiting the opportunities for other species to grow. Other constant species include climbing corydalis and Himalayan balsam. Bluebell is present at low cover levels, with occasional birch species. This habitat is characteristic of the W25a *Pteridium aquilinum-Rubus fruticosus* underscrub community. This vegetation does not qualify as a HoPI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Winnington and Peas Wood (CH561720\_L4808\_F001\_PH2\_150920)

## Site description and reasons for selection for survey

2.3.106 Broadleaved semi-natural woodland in Winnington and Peas Wood LWS. Although mapped as deciduous woodland on Natural England’s HPI, the woodland is not in that part of this LWS that is also mapped as an AWI site.

## Vegetation communities present

2.3.107 Semi-natural broadleaved woodland with a closed canopy comprised of abundant mature pedunculate oak and sycamore. A sparse shrub layer is present, comprised of common hawthorn, hazel and wych elm. The ground flora is dominated by bramble, with a number of occasional species, including broad-buckler fern, male fern (*Dryopteris filix-mas*) and ivy. This woodland vegetation is an example of NVC community W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland, typical sub-community. This vegetation qualifies lowland mixed deciduous woodland HoPI.

2.3.108 A single vascular plant species that is characteristic of ancient woodland was present: wood meadow-grass (*Poa nemoralis*).

2.3.109 Table 29 sets out the NVC survey data from Winnington and Peas Wood.

**Table 29: NVC Survey data from Winnington and Peas Wood (CH561720\_L4808\_F001\_PH2\_150920)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	6	6	6	6	6	V (6 - 6)
<i>Acer pseudoplatanus</i>	6	6	6	6	6	V (6 - 6)
<i>Betula pendula</i>	2	2	2	2	2	V (2 - 2)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	1	1	1	1	1	V (1 - 1)
<i>Corylus avellana</i>	1	1	1	1	1	V (1 - 1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Ulmus procera</i>	1	1	1	1	1	V (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus agg.</i>	5	7	7	8	5	V (5 - 8)
<i>Atrichum undulatum</i>	4	-	-	5	6	III (4 - 6)
<i>Dryopteris dilatata</i>	3	-	2	4	-	III (2 - 4)
<i>Dryopteris filix-mas</i>	-	-	2	4	1	III (1 - 4)
<i>Hedera helix</i>	4	-	-	-	6	II (4 - 6)
<i>Fagus sylvatica</i>	2	-	4	-	-	II (2 - 4)
<i>Kindbergia praelonga</i>	4	-	-	-	-	I (4)
<i>Poa nemoralis</i>	-	-	-	-	3	I (3)
<i>Ulmus glabra</i>	2	-	-	-	-	I (2)
<i>Impatiens glandulifera</i> <sup>28</sup>	-	-	-	-	-	N/A

## Pickmere to Agden and Hulseheath (MA03)

## Leonard's and Smoker Wood (CH561720\_L8877-L5278\_CH634300\_L5278\_F001\_PH2\_010519)

### Site description and reasons for selection for survey

- 2.3.110 Broadleaved semi-natural woodland mapped by Natural England as an AWI site (ancient semi-natural woodland) and as a deciduous woodland PHI site. This woodland is also part of Leonard's and Smoker LWS. The woodland occurs on the relatively flat ground floodplain next to the brook and extends up generally south facing slopes.

<sup>28</sup> Not in a quadrat sample but in woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.111 The canopy features constant and abundant pedunculate oak and sycamore. These trees are generally mature, with both standing and fallen deadwood relatively common. Species such as hybrid crack willow and alder are close to the watercourse and a native black poplar occurs on the edge of the brook in the east of the wood. Scot's pine and horse chestnut both occur rarely, suggesting at least some historic planting in the woodland. The shrub layer is fairly open and comprises a diverse range of species including sycamore, hazel, elder, ash, holly, hawthorn and wych elm. Bluebell is locally dominant in the ground flora. Himalayan balsam is abundant next to Smokers Brook. This woodland is an example of the W10a *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland, typical subcommunity. The TABLEFIT statistic for the woodland was 60% for NVC type for this NVC type.
- 2.3.112 Fifteen vascular plant species that are indicative of ancient woodland were recorded from Leonard's and Smoker Wood (stand F001): hazel, holly, large-leaved lime, wych elm, ramsons, wood anemone, wood speedwell, pignut, wood millet, dog's mercury, honeysuckle, bluebell, hornbeam, wood meadow-grass and scaly male fern.
- 2.3.113 Table 30 sets out the NVC survey data from Leonard's and Smoker Wood.

**Table 30: NVC survey data from Leonard's and Smoker Wood (CH561720\_L8877-L5278\_CH634300\_L5278\_F001\_PH2\_010519)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	8	9	9	7	7	V (7 - 9)
<i>Acer pseudoplatanus</i>	7	4	5	6	7	V (4 - 7)
<i>Pinus sylvestris</i>	-	-	-	4	2	II (2 - 4)
<i>Salix x fragilis</i>	-	-	1	1		II (1 - 1)
<i>Betula pendula</i>	1	-	-	-	-	I (1 - 1)
<i>Ilex aquifolium</i>	1	-	-	-	-	I (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	2	2	5	2	4	V (2 - 5)
<i>Acer pseudoplatanus</i>	4	3	2	3	4	V (2 - 4)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Crataegus monogyna</i>	2	1	2	1	1	V (1 - 2)
<i>Corylus avellana</i>	2	4	4	3	-	IV (3 - 4)
<i>Ilex aquifolium</i>	4	4	4	2	-	IV (2 - 4)
<i>Sorbus aucuparia</i>	1	3		-	-	II (1 - 3)
<i>Fraxinus excelsior</i>	1	-	-	2		II (1 - 2)
<i>Ulmus glabra</i>	-	-	1	1	-	II (1 - 1)
<i>Cupressus</i> sp.	-	-	5	-	-	I (5)
<i>Prunus laurocerasus</i>	-	-	4	-	-	I (4)
<i>Quercus robur</i>	-	2	-	-	-	I (2)
<i>Salix alba</i>	-	-	2	-	-	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hyacinthoides non-scripta</i>	8	9	9	8	9	V (8 - 9)
<i>Rubus fruticosus</i> agg.	4	5	-	3	-	III (3 - 5)
<i>Impatiens glandulifera</i>			2	7	9	III (2 - 7)
<i>Pteridium aquilinum</i>	1	2	-	-	7	III (1 - 7)
<i>Hedera helix</i>	6	-	-	2		II (2 - 6)
<i>Anemone nemorosa</i>	3	-	-	-	-	I (3)
<i>Mnium hornium</i>	-	-	-	3	-	I (3)
<i>Hypnum cupressiforme</i> agg.	-	-	-	3	-	I (3)
<i>Kindbergia praelonga</i>	-	-	-	3	-	I (3)
<i>Milium effusum</i>	2	-	-	-	-	I (2)
<i>Atrichum undulatum</i>	-	-	-	2	-	I (2)
<i>Dryopteris dilatata</i>	-	1	-	-	-	I (1)
<i>Silene dioica</i>	-	-	-	-	1	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Allium ursinum</i>	-	-	1	-	-	I (1)
Leaf Litter	5	4	4	4	5	V (4 - 5)
Bare Soil	2	1	1	3	2	V (1 - 3)

## Leonard's and Smoker Wood (CH561720-U201038-U203027\_L8877\_F002\_PH2\_140819)

### Site description and reasons for selection for survey

- 2.3.114 Broadleaved semi-natural woodland at the north-east end of Leonard's and Smoker Wood LWS. This woodland is mapped by Natural England as a deciduous woodland PHI site but is not on the AWI.

### Vegetation communities present

- 2.3.115 The canopy contains constant pedunculate oak and sycamore with frequent ash. Other canopy species include occasional downy birch and alder. Sycamore is the most abundant component of the shrub and sub-canopy layer with elder and hawthorn, constant but at low cover levels. Bluebell, ivy and bramble are constant and abundant. Bracken and wood anemone are locally abundant. The woodland is an example of the W10 *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland community. The closest matching sub-community is W10c *Hedera helix* sub-community. The TABLEFIT analysis returned a result of W10 with a 'goodness of fit' of 56%. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.116 Nine vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Leonard's and Smoker Wood (stand F002): holly, hazel, wild crab apple, ramsons, wood anemone, wood millet, dog's mercury, bluebell and redcurrant (*Ribes rubrum*).
- 2.3.117 Table 31 sets out the NVC survey data from Leonard's and Smoker Wood (F002).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 31: NVC survey data from Leonard's and Smoker Wood (CH561720-U201038-U203027\_L8877\_F002\_PH2\_140819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudoplatanus</i>	8	6	8	8	7	V (6 - 8)
<i>Quercus robur</i>	7	7	6	6	7	V (6 - 7)
<i>Fraxinus excelsior</i>	-	1	1	-	1	III (1 - 1)
<i>Betula pubescens</i>	-	5	2	-	-	II (2 - 5)
<i>Alnus glutinosa</i>	-	-	-	1	4	II (1 - 4)
<i>Betula pendula</i>	1	-	-	-	-	I (1 - 1)
<i>Pinus sylvestris</i>	-	-	-	-	1	I (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i>	5	4	5	7	7	V (4 - 7)
<i>Sambucus nigra</i>	4	4	2	-	5	IV (2 - 5)
<i>Crataegus monogyna</i>	1	4	-	4	1	IV (1 - 4)
<i>Ilex aquifolium</i>	1	4	-	-	1	III (1 - 4)
<i>Quercus robur</i>	-	-	2	2	-	II (2 - 2)
<i>Corylus avellana</i>	-	-	-	-	2	I (2 - 2)
<i>Betula pubescens</i>	-	1	-	-	-	I (1 - 1)
<i>Malus sylvestris</i>	-	1	-	-	-	I (1 - 1)
<i>Prunus spinosa</i>	-	-	-	-	1	I (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hyacinthoides non-scripta</i>	2	3	5	2	3	V (2 - 5)
<i>Hedera helix</i>	-	6	7	8	8	IV (6 - 8)
<i>Rubus fruticosus agg.</i>	8	-	1	4	2	IV (1 - 8)
<i>Dryopteris dilatata</i>	4	-	-	1	-	II (1 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Pteridium aquilinum</i>	-	7	-	-	-	I (7)
<i>Anemone nemorosa</i>	-	5	-	-	-	I (5)
<i>Atrichum undulatum</i>	3	-	-	-	-	I (3)
<i>Dryopteris filix-mas</i>	-	1	-	-	-	I (1)
<i>Mercurialis perennis</i>	-	-	1	-	-	I (1)
Bare Soil	4	4	4	5	5	V (4 - 5)
Leaf Litter	4	4	5	5	4	V (4 - 5)

## Leonard's and Smoker Wood (CH568445\_L43004\_F003\_PH2\_020519)

### Site description and reasons for selection for survey

- 2.3.118 Two areas of broadleaved plantation woodland, both part of an AWI site (PAWS) and are also included on Natural England's PHI as deciduous woodland. This woodland also forms part of Leonard's and Smoker Wood LWS. The woodland is on the floodplain of Smoker Brook.

### Vegetation communities present

- 2.3.119 The high woodland canopy is dominated by eastern balsam-poplar (*Populus balsamifera*). All other canopy species were rare but include sycamore and alder. Sycamore also forms a sub-canopy with lower shrubs such as elder, blackthorn and grey willow. The ground flora comprises abundant ramsons and, locally, species such as common nettle and Himalayan balsam. As this habitat occurs on floodplain and contains a number of wet woodland indicator tree species, the woodland is considered a broad fit to the W6a *Alnus glutinosa-Urtica dioica* woodland. The TABLEFIT analysis returned a result of W6d with a 'goodness of fit' of 32% which indicates a loose association to the W6 community. The woodland is not a typical example of W6 woodland and is unlikely to qualify as wet woodland HoPI given dominance by a non-native poplar species.
- 2.3.120 Four vascular plant species that are indicative of ancient woodland were recorded from Leonard's and Smoker Wood (stand F003): wild cherry, ramsons, wood anemone, hart's tongue.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.121 Table 32 sets out the NVC survey data from Leonard's and Smoker Wood (F003). One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

**Table 32: NVC survey data from Leonard's and Smoker Wood (CH568445\_L43004\_F003\_PH2\_020519)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Populus balsamifera</i>	9	NS	NS	NS	NS	I (9)
<i>Acer pseudoplatanus</i>	2	NS	NS	NS	NS	I (2)
<i>Alnus glutinosa</i>	1	NS	NS	NS	NS	I (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i>	7	NS	NS	NS	NS	I (7 - 7)
<i>Sambucus nigra</i>	5	NS	NS	NS	NS	I (5 - 5)
<i>Corylus avellana</i>	4	NS	NS	NS	NS	I (4 - 4)
<i>Fraxinus excelsior</i>	3	NS	NS	NS	NS	I (3 - 3)
<i>Prunus spinosa</i>	3	NS	NS	NS	NS	I (3 - 3)
<i>Quercus robur</i>	2	NS	NS	NS	NS	I (2 - 2)
<i>Salix cinerea</i>	2	NS	NS	NS	NS	I (2 - 2)
<i>Betula pubescens</i>	1	NS	NS	NS	NS	I (1 - 1)
<i>Quercus rubra</i>	1	NS	NS	NS	NS	I (1 - 1)
<i>Sorbus aucuparia</i>	1	NS	NS	NS	NS	I (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Allium ursinum</i>	9	NS	NS	NS	NS	I (9 - 9)
<i>Kindbergia praelonga</i>	5	NS	NS	NS	NS	I (5 - 5)
<i>Brachythecium rutabulum</i>	4	NS	NS	NS	NS	I (4 - 4)
<i>Poa trivialis</i>	4	NS	NS	NS	NS	I (4 - 4)
<i>Glechoma hederacea</i>	3	NS	NS	NS	NS	I (3 - 3)

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Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Silene dioica</i>	3	NS	NS	NS	NS	I (3 - 3)
<i>Urtica dioica</i>	3	NS	NS	NS	NS	I (3 - 3)
<i>Galium aparine</i>	2	NS	NS	NS	NS	I (2 - 2)
<i>Heracleum sphondylium</i>	2	NS	NS	NS	NS	I (2 - 2)
<i>Plagiomnium undulatum</i>	2	NS	NS	NS	NS	I (2 - 2)
<i>Thuidium tamariscinum</i>	2	NS	NS	NS	NS	I (2 - 2)
<i>Angelica sylvestris</i>	1	NS	NS	NS	NS	I (1 - 1)
<i>Dryopteris filix-mas</i>	1	NS	NS	NS	NS	I (1 - 1)
Leaf Litter	3	NS	NS	NS	NS	I (3 - 3)
Bare Soil	4	NS	NS	NS	NS	I (4 - 4)

## Leonard's and Smoker Wood (CH568445\_L43004\_F004\_PH2\_020519)

### Site description and reasons for selection for survey

2.3.122 Broadleaved semi-natural woodland forming the west half of Leonard's and Smoker Wood LWS. Approximately two thirds of this woodland is an AWI site (PAWS) and all of it is mapped by Natural England's PHI as deciduous woodland.

### Vegetation communities present

2.3.123 The canopy contains constant pedunculate oak and sycamore with frequent ash. Other canopy species include occasional downy birch and alder. Sycamore is the most abundant component of the shrub and sub-canopy layer with elder and hawthorn, constant but at low cover levels. Bluebell, ivy and bramble are constant and abundant. Bracken and wood anemone are locally abundant. The woodland is an example of the W10 *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland community. The closest matching sub-community is W10c *Hedera helix* sub-community. The TABLEFIT analysis returned a result of W10 with a 'goodness of fit' of 56%. This woodland qualifies as lowland mixed deciduous woodland HoPI.

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

- 2.3.124 Nine vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Leonard’s and Smoker Wood: holly, hazel, wild crab apple, ramsons, wood anemone, wood millet, dog’s mercury, bluebell and redcurrant.
- 2.3.125 Table 33 sets out the NVC survey data from Leonard’s and Smoker Wood (F004). Although five samples is the adopted standard for the Proposed Scheme, post-survey analysis showed that all ten samples were best grouped as a single homogenous stand, which is consistent with good NVC survey practice.

**Table 33: NVC survey data from Leonard’s and Smoker Wood (CH568445\_L43004\_F004\_PH2\_020519)**

Species	Quadrat locations										Constancy (Domin range)	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
<b>Canopy (50m × 50m)</b>												
<i>Quercus robur</i>	7	8	8	8	7	8	9	9	7	7	V (7 - 9)	
<i>Acer pseudoplatanus</i>	5	5	5	3	7	7	4	5	6	7	V (3 - 7)	
<i>Pinus sylvestris</i>	5	1	5	5	-	-	-	-	4	2	IV (1 - 5)	
<i>Tilia x europaea</i>	-	-	5	1	-	-	-	-	-	-	II (1 - 5)	
<i>Castanea sativa</i>	-	-	-	-	4	-	-	-	-	-	I (4 - 4)	
<i>Alnus glutinosa</i>	2	-	-	-	-	-	-	-	-	-	I (2 - 2)	
<i>Salix fragilis</i>	1	-	-	-	-	-	-	-	-	-	I (1 - 1)	
<i>Ulmus glabra</i>	-	-	-	1	-	-	-	-	-	-	I (1 - 1)	
<i>Salix fragilis</i>	-	-	-	-	-	-	-	1	1	-	I (1 - 1)	
<i>Betula pendula</i>	-	-	-	-	-	1	-	-	-	-	I (1 - 1)	
<b>Understorey (10m x 10m)</b>												
<i>Acer pseudoplatanus sapling</i>	4	3	4	3	4	4	3	2	3	4	V (3 - 4)	
<i>Sambucus nigra</i>	4	4	-	3	2	2	2	5	2	4	IV (2 - 5)	
<i>Corylus avellana</i>	3	4	1	2	-	2	4	4	3	-	IV (1 - 4)	
<i>Ulmus glabra sapling</i>	4	-	3	2	4	-	-	1	1	-	III (2 - 4)	
<i>Ilex aquifolium</i>	2	1	-	-	-	4	4	4	2	-	III (1 - 2)	
<i>Crataegus monogyna</i>	1	-	-	-	1	2	1	2	1	1	III (1 - 1)	

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Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations										Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
<i>Tilia x europaea</i> sapling	-	-	1	1	1	-	-	-	-	-	II (1 - 1)
<i>Fraxinus excelsior</i> sapling	2	3	-	-	-	1	-	-	2	-	II (2 - 3)
<i>Sorbus aucuparia</i>	-	-	-	-	-	1	3	-	-	-	I (1-3)
<i>Prunus laurocerasus</i>	-	-	-	-	-	-	-	4	-	-	I (4 - 4)
<i>Quercus robur</i> sapling	-	-	-	-	-	-	2	-	-	-	I (2 - 2)
<i>Salix alba</i> sapling	-	-	-	-	-	-	-	2	-	-	I (2 - 2)
<i>Cupressus</i> sp.	-	-	-	-	-	-	-	5	-	-	I (4 - 5)
<i>Salix caprea</i>	1	-	-	-	-	-	-	-	-	-	I (1 - 1)
<b>Ground flora layer (4m x 4m)</b>											
<i>Hyacinthoides non-scripta</i>	3	2	3	3	3	8	9	9	8	9	V (2 - 9)
<i>Impatiens glandulifera</i>	8	4	5	5	4	-	-	2	7	9	IV (4 - 9)
<i>Rubus fruticosus</i> agg.	4	5	5	4	5	4	5	-	3	-	IV (4 - 5)
<i>Pteridium aquilinum</i>	4	-	4	5	-	1	2	-	-	7	III (4 - 7)
<i>Kindbergia praelonga</i>	3	-	3	-	3	-	-	-	3	-	II (3 - 3)
<i>Hedera helix</i>	1	1	-	-	-	6	-	-	2	-	II (1 - 1)
<i>Brachythecium rutabulum</i>	-	2	-	-	3	-	-	-	-	-	I (2 - 3)
<i>Hypnum cupressiforme</i> agg.	-	3	-	-	-	-	-	-	3	-	I (3 - 3)
<i>Mnium hornum</i>	-	3	-	-	-	-	-	-	3	-	I (3 - 3)
<i>Allium ursinum</i>	-	-	1	-	1	-	-	1	-	-	I (1 - 1)
<i>Galium aparine</i>	-	-	2	-	-	-	-	-	-	-	I (2 - 2)
<i>Geum urbanum</i>	-	-	2	-	-	-	-	-	-	-	I (2 - 2)
<i>Urtica dioica</i>	-	-	2	-	-	-	-	-	-	-	I (2 - 2)
<i>Anemone nemorosa</i>	-	-	-	1	-	3	-	-	-	-	I (1 - 1)
<i>Arum maculatum</i>	-	-	1	-	-	-	-	-	-	-	I (1 - 1)



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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations										Constancy (Domin range)	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
<i>Atrichum undulatum</i>	1	-	-	-	-	-	-	-	-	2	-	I (1 - 1)
<i>Rumex sanguineus</i>	-	-	1	-	-	-	-	-	-	-	-	I (1 - 1)
<i>Veronica montana</i>	-	-	1	-	-	-	-	-	-	-	-	I (1 - 1)
<i>Dryopteris dilatata</i>	-	-	-	-	-	-	-	1	-	-	-	I (1 - 1)
<i>Silene dioica</i>	-	-	-	-	-	-	-	-	-	-	1	I (1 - 1)
<i>Milium effusum</i>	-	-	-	-	-	-	2	-	-	-	-	I (2 - 2)
Bare ground/leaf litter	5	5	5	5	5	5	5	4	4	4	5	V (5 - 5)

### Arley and Waterless Brook Corridor

(CH421059\_L17921\_CH641530\_L5496\_CH623030\_L6330\_U200965-U202544\_L10066\_PH2\_060618)

#### Site description and reasons for selection for survey

- 2.3.126 Broadleaved semi-natural woodland forming the Arley and Waterless Brook Corridor LWS. Part of this woodland is mapped on Natural England's PHI as deciduous woodland. None of this woodland is an AWI site.

#### Vegetation communities present

- 2.3.127 Pedunculate oak is abundant in the canopy, with either alder or hybrid crack-willow co-dominant locally. Other canopy species are generally at low cover levels including ash, hazel and osier (*Salix viminalis*). The shrub layer is relatively sparse but includes hawthorn, hazel and elder as constants. Himalayan balsam is abundant in the ground flora, with common nettle and ivy also prominent. Bare soil and/or leaf litter is extensive. This woodland is an example of NVC community W6 *Alnus glutinosa-Urtica dioica* woodland, but it is not a strong match for this community. The TABLEFIT analysis returned a result of W21b *Crataegus monogyna-Hedera helix* scrub, *Mercurialis perennis* sub-community at a

## Background Information and Data

Ecology and biodiversity

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### Ecological baseline data – National Vegetation Classification and ancient woodland

51% goodness of fit. W21b is not representative of this vegetation as it is a type of hawthorn scrub. This woodland may qualify as wet woodland HoPI.

- 2.3.128 Nine vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Arley and Waterless Brook Corridor: field rose, holly, bluebell, ramsons, wood anemone, pignut, wood speedwell, dog's mercury, bluebell.
- 2.3.129 Table 34 sets out the NVC survey data from Arley and Waterless Brook Corridor. Three quadrat samples were adequate to achieve full coverage of this small stand of scrub.

**Table 34: NVC survey data from Arley and Waterless Brook Corridor (CH421059\_L17921\_CH641530\_L5496\_CH623030\_L6330\_U200965-U202544\_L10066\_PH2\_060618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	8	7	6	NS	NS	III (6 - 8)
<i>Salix fragilis</i>	7	4	4	NS	NS	III (4 - 7)
<i>Acer pseudolatanus</i>	2	-	4	NS	NS	II (2 - 4)
<i>Alnus glutinosa</i>	-	7	6	NS	NS	II (6 - 7)
<i>Fraxinus excelsior</i>	-	4	4	NS	NS	II (4 - 4)
<i>Corylus avellana</i>	-	-	4	NS	NS	I (4 - 4)
<i>Salix viminalis</i>	-	-	4	NS	NS	I (4 - 4)
<b>Understorey (10m x 10m)</b>						
<i>Craetagus monogyna</i>	4	3	3	NS	NS	III (3 - 4)
<i>Sambucus nigra</i>	4	3	2	NS	NS	III (2 - 4)
<i>Corylus avellana</i>	2	4	5	NS	NS	III (2 - 5)
<i>Quercus robur</i>	-	1	1	NS	NS	II (1)
<i>Acer pseudolatanus</i>	3	-	-	NS	NS	I (3)
<i>Prunus spinosa</i>	2	-	-	NS	NS	I (2)

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Fraxinus excelsior</i>	-	2	-	NS	NS	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Impatiens glandulifera</i>	7	7	4	NS	NS	III (4 - 7)
<i>Urtica dioica</i>	7	3	4	NS	NS	III (3 - 7)
<i>Hedera helix</i>	5	4	-	NS	NS	II (4 - 5)
<i>Galium aparine</i>	3	-	3	NS	NS	II (3 - 3)
<i>Rubus fruticosus agg.</i>	3	1	-	NS	NS	II (1 - 3)
<i>Kindbergia praelonga</i>	-	3	3	NS	NS	II (3 - 3)
<i>Geranium robertianum</i>	2	-	-	NS	NS	I (2 - 2)
<i>Stachys sylvatica</i>	2	-	-	NS	NS	I (2 - 2)
<i>Dryopteris dilatata</i>	-	4	-	NS	NS	I (4 - 4)
<i>Mnium hornum</i>	-	4	-	NS	NS	I (4 - 4)
<i>Poa nemoralis</i>	-	4	-	NS	NS	I (4 - 4)
<i>Silene dioica</i>	-	2	-	NS	NS	I (2 - 2)
<i>Allium ursinum</i>	-	-	6	NS	NS	I (6 - 6)
<i>Mercurialis perennis</i>	-	-	4	NS	NS	I (4 - 4)
<i>Brachythecium rutabulum</i>	-	-	3	NS	NS	I (3 - 3)
<i>Geum urbanum</i>	-	-	2	NS	NS	I (2 - 2)
<i>Veronica montana</i>	-	-	2	NS	NS	I (2 - 2)
Leaf Litter	7	5	4	NS	NS	III (4 - 7)
Bare Soil	3	7	8	NS	NS	III (3 - 8)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

### Belt Wood (CH517829\_L7111\_F001\_PH2\_170518)

#### Site description and reasons for selection for survey

- 2.3.130 Broadleaved woodland in Belt Wood. The majority of this woodland is part of Belt Wood LWS and all of it is mapped by Natural England's PHI as deciduous woodland and the northern part is identified by Natural England as wood pasture and parkland. The woodland (Belt Wood stands F001, F002, and F007 only) is identified as an AWI site by Natural England. Part of Belt Wood was removed for the creation of the new A556 Chester Road bypass<sup>29</sup>.

#### Vegetation communities present

- 2.3.131 Pedunculate oak is constant with frequent sycamore and common lime. Scot's pine is locally frequent. Rhododendron is constant in the relatively open shrub layer but at low cover levels. Other species present within the shrub layer included rowan, hazel, holly, wild cherry. Bracken is constant in the ground flora and was locally frequent. Bramble is frequent across the stand and is locally abundant. This stand is classified an example of W10a *Quercus robur-Pteridium aquilinum - Rubus fruticosus* typical subcommunity. The TABLEFIT analysis returned a result of W10 at a 44% 'goodness of fit'. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.132 Seven vascular plant species that are indicative of ancient woodland were recorded (either incidentally or in quadrats) from Belt Wood: holly, wild cherry, wych elm, remote sedge, greater stitchwort, wood sorrel, bluebell. This list of ancient woodland indicator species relates to the whole of Belt Wood and not just stand F001.
- 2.3.133 Table 35 sets out the NVC survey data from Belt Wood (F001).

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<sup>29</sup> A556 construction occurred fairly recently and several of the national data sets e.g. the AWI do not reflect the altered area of Belt Wood.

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Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 35: NVC survey data from Belt Wood (CH517829\_L7111\_F001\_PH2\_170518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	8	8	9	8	8	V (8 - 9)
<i>Tilia x europaea</i>	5	4	-	5	-	III (4 - 5)
<i>Acer pseudoplatanus</i>	-	-	1	4	5	III (1 - 5)
<i>Pinus sylvestris</i>	-	5	-	-	1	II (1 - 5)
<i>Betula pendula</i>	-	-	-	1	-	I (1 - 1)
<i>Fagus sylvatica</i>	-	-	4	-	-	I (4)
<i>Larix decidua</i>	-	-	-	-	1	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Rhododendron ponticum</i>	-	1	1	8	4	IV (1 - 8)
<i>Sorbus aucuparia</i>	4	1	-	-	2	III (1 - 4)
<i>Corylus avellana</i>	4	2	-	-	-	II (2 - 4)
<i>Crataegus monogyna</i>	3	1	-	-	-	II (1 - 3)
<i>Ilex aquifolium</i>	3	1	-	-	-	II (1 - 3)
<i>Quercus robur</i>	2	-	-	-	2	II (2 - 2)
<i>Sambucus nigra</i>	-	-	-	2	1	II (1 - 2)
<i>Prunus avium</i>	1	1	-	-	-	II (1 - 1)
<i>Acer pseudoplatanus</i>	1	-	-	-	-	I (1)
<i>Larix decidua</i>	-	1	-	-	-	I (1)
<i>Prunus laurocerasus</i>	1	-	-	-	-	I (1)
<i>Prunus spinosa</i>	1	-	-	-	-	I (1)
<i>Salix cinerea</i>	1	-	-	-	-	I (1)

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Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Pteridium aquilinum</i>	1	5	7	-	5	IV (1 - 7)
<i>Rubus fruticosus</i> agg.	7	5	-	-	7	III (5 - 7)
<i>Holcus lanatus</i>	2	5	-	-	3	III (2 - 5)
<i>Brachythecium rutabulum</i>		3	2	3	-	III (2 - 3)
<i>Hedera helix</i>	8	-	-	-	-	I (8 - 8)
<i>Lonicera periclymenum</i>	7	-	-	-	-	I (7 - 7)
<i>Urtica dioica</i>	-	-	-	5	-	I (5)
<i>Hypnum cupressiforme</i> agg.	-	-	-	-	3	I (3)
<i>Kindbergia praelonga</i>	-	-	-	2	-	I (2)
<i>Poa trivialis</i>	-	-	-	2	-	I (2)
<i>Galium aparine</i>	1	-	-	-	-	I (1)
<i>Geum urbanum</i>	-	-	-	1	-	I (1)
<i>Illex aquifolium</i>	-	-	1	-	-	I (1)
<i>Ranunculus repens</i>	-	-	-	1	-	I (1)
<i>Sorbus aucuparia</i>	1	-	-	-	-	I (1)
Leaf Litter	5	7	8	7	8	V (5-8)
Bare Soil	3	3	4	3	4	V (3-4)

## Belt Wood (CH517829\_L7111\_F002\_PH2\_170518)

### Site description and reasons for selection for survey

2.3.134 Broadleaved woodland joined to the north end of Belt Wood LWS but outside of the LWS. This wood is mapped by Natural England as deciduous woodland PHI and wood pasture and parkland. It is not an AWI site.

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.135 A canopy of pedunculate oak (dominant), with silver birch, sycamore and beech. The understorey comprises pedunculate oak, rhododendron, rowan and hazel. The ground flora comprises rough-stalked feather-moss, bramble, Yorkshire fog, broad buckler-fern, common bent and bracken. This stand is classified as W10a *Quercus robur*-*Pteridium aquilinum* - *Rubus fruticosus* typical subcommunity. The TABLEFIT analysis returned a result of W10 at a 38% goodness of fit. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.136 Vascular plant ancient woodland indicator species for Belt Wood, as a whole. are reported for stand CH517829\_L7111\_F001\_PH2\_170518 in this report.
- 2.3.137 Table 36 sets out the NVC survey data from Belt Wood (F002). Three quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 36: NVC survey data from Belt Wood (CH517829\_L7111\_F002\_PH2\_170518)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	7	8	9	NS	NS	III (7 - 9)
<i>Betula pubescens</i>	5	4	-	NS	NS	II (4 - 5)
<i>Acer pseudoplatanus</i>	4	4	-	NS	NS	II (4 - 4)
<i>Fagus sylvatica</i>	1	4	-	NS	NS	II (1 - 4)
<i>Tilia x europaea</i>	1	4	-	NS	NS	II (1 - 4)
<i>Betula pendula</i>	2	-	-	NS	NS	I (2)
<i>Picea abies</i>	2	-	-	NS	NS	I (2)
<b>Understorey (10m x 10m)</b>						
<i>Quercus robur</i>	2	2	1	NS	NS	III (1 - 2)
<i>Rhododendron ponticum</i>	8		2	NS	NS	II (2 - 8)
<i>Sorbus aucuparia</i>	-	4	4	NS	NS	II (4 - 4)
<i>Corylus avellana</i>	-	4	3	NS	NS	II (3 - 4)

## Background Information and Data

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Acer pseudoplatanus</i>	2	3	-	NS	NS	II (2 - 3)
<i>Betula pubescens</i>	2	2	-	NS	NS	II (2 - 2)
<i>Illex aquifolium</i>	-	3	-	NS	NS	I (3)
<i>Tilia x europaea</i>	-	2	-	NS	NS	I (2)
<i>Alnus glutinosa</i>	-	-	1	NS	NS	I (1)
<i>Picea abies</i>	1	-	-	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Brachythecium rutabulum</i>	3	3	3	NS	NS	III (3 - 3)
<i>Rubus fruticosus</i> agg.	-	4	7	NS	NS	II (4 - 7)
<i>Holcus lanatus</i>	1	-	5	NS	NS	II (1 - 5)
<i>Dryopteris dilatata</i>	-	6	-	NS	NS	I (6)
<i>Agrostis capillaris</i>	3	-	-	NS	NS	I (3)
<i>Pteridium aquilinum</i>	-	-	3	NS	NS	I (3)
<i>Chamaenerion angustifolium</i>	-	-	2	NS	NS	I (2)
<i>Kindbergia praelonga</i>	-	2	-	NS	NS	I (2)
<i>Poa trivialis</i>	2	-	-	NS	NS	I (2)
Bare Ground	4	4	3	NS	NS	III (3 - 4)
Leaf Litter (cover)	8	8	7	NS	NS	III (7 - 8)

## Belt Wood (CH517829\_L7111\_F003\_PH2\_170518)

### Site description and reasons for selection for survey

- 2.3.138 Broadleaved woodland in Belt Wood. All of this woodland is in Belt Wood LWS and mapped by Natural England's PHI as deciduous woodland. The woodland is not an AWI site.



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.139 Pedunculate oak is constant species with frequent sycamore and common lime. Scot's pine is localised. Rhododendron is constant in the, relatively open, shrub layer but generally at low cover levels. Other species present include rowan, hazel, holly and wild cherry. Bracken is constant species in the ground flora and was locally frequent. Bramble is also frequent and is locally prominent. A number of species are of rare abundance overall, but are locally frequent, they include ivy and common nettle. This stand is an example of the W10a *Quercus robur*-*Pteridium aquilinum* - *Rubus fruticosus* typical subcommunity. The TABLEFIT analysis returned a result of W10a at a 53% goodness of fit. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.140 Vascular plant ancient woodland indicator species for Belt Wood, as a whole, are reported for stand CH517829\_L7111\_F001\_PH2\_170518 in this report.
- 2.3.141 Table 37 sets out the NVC survey data from Belt Wood (F003).

**Table 37: NVC survey data from Belt Wood (CH517829\_L7111\_F003\_PH2\_170518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	6	7	7	4	8	V (4 - 8)
<i>Acer pseudoplatanus</i>	7	-	5	7	5	IV (5 - 7)
<i>Quercus cerris</i>	1	7	4	-	1	IV (1 - 7)
<i>Pinus sylvestris</i>	4	5	4	-	-	III (4 - 5)
<i>Fagus sylvatica</i>	-	-	4	7	-	II (4 - 7)
<i>Aesculus hippocastanum</i>	-	-	-	4	-	I (4)
<i>Alnus glutinosa</i>	-	-	-	-	2	I (2)
<i>Fraxinus excelsior</i>	1	-	-	-	-	I (1)
<i>Larix decidua</i>	-	1	-	-	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Rhododendron ponticum</i>	6	7	8	8	8	V (6 - 8)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Acer pseudoplatanus</i>	3	3	4	3	3	V (3 - 4)
<i>Quercus robur</i>	1	3	-	2	3	IV (1 - 3)
<i>Sambucus nigra</i>	2	-	4	-	-	II (2 - 4)
<i>Sorbus aucuparia</i>	1	-	-	-	1	II (1 - 1)
<i>Corylus avellana</i>	-	-	-	-	4	I (4)
<i>Quercus cerris</i>	-	4	-	-	-	I (4)
<i>Ilex aquifolium</i>	3	-	-	-	-	I (3)
<i>Ulmus glabra</i>	3	-	-	-	-	I (3)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	5	7	5	8	6	V (5 - 8)
<i>Dryopteris dilatata</i>	4	1	5	-	4	IV (1 - 5)
<i>Brachythecium rutabulum</i>	3	3	3	4	-	IV (3 - 4)
<i>Kindbergia praelonga</i>	-	3	3	-	3	III (3 - 3)
<i>Pteridium aquilinum</i>	-	7	-	-	-	I (7)
<i>Atrichum undulatum</i>	4	-	-	-	-	I (4)
<i>Hypnum cupressiform</i>	-	-	-	3	-	I (3)
<i>Lonicera periclymenum</i>	-	-	-	1	-	I (1)
Leaf Litter	8	8	9	8	9	V (8 - 9)
Bare Soil	3	3	4	4	4	V (3 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### **Belt Wood (CH517829\_L7111\_F004\_PH2\_170518)**

#### **Site description and reasons for selection for survey**

- 2.3.142 Dense bracken underscrub in a wayleave in Belt Wood LWS for overhead power lines. This vegetation is not an AWI site and is not mapped on the PHI.

#### **Vegetation communities present**

- 2.3.143 Bracken is dominant with abundant common bent and frequent Yorkshire-fog over dense bracken litter. This vegetation is an example of NVC type W25 *Pteridium aquilinum-Rubus fruticosus* underscrub. This vegetation does not qualify as a HoPI.

### **Belt Wood (CH517829\_L7111\_F005\_PH2\_170518)**

#### **Site description and reasons for selection for survey**

- 2.3.144 Bramble scrub in the north part of a narrow ride/wayleave through Belt Wood LWS, likely to be associated with a below-ground pipeline which may be present. This vegetation is mapped by Natural England's PHI as deciduous woodland, but it is not an AWI site.

#### **Vegetation communities present**

- 2.3.145 Relatively short, continuous bramble underscrub with a wide range of associated species, including a number of shrub and tree species saplings. This vegetation is NVC type W24 *Rubus fruticosus-Holcus lanatus* underscrub. This vegetation does not qualify as a HoPI.

### **Belt Wood (CH517829\_L7111\_F006\_PH2\_170518)**

#### **Site description and reasons for selection for survey**

- 2.3.146 Damp, neutral grassland in the south part of a narrow ride/wayleave through Belt Wood LWS, likely to be associated with a below-ground pipeline which may be present. This vegetation is mapped by Natural England's PHI as deciduous woodland, but it is not an AWI site.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.147 Creeping bent (*Agrostis stolonifera*) and Yorkshire-fog are abundant, with creeping buttercup frequent. Other species such as soft rush, dandelion (*Taraxacum officianale* agg.) and perennial rye-grass are at low cover levels. Bramble is encroaching into the grass sward. This grassland is not a close match to any NVC community type but is a damp neutral grassland. This vegetation does not qualify as a HoPI.

### Belt Wood (CH517829\_L7111\_F007\_PH2\_170518)

#### Site description and reasons for selection for survey

- 2.3.148 Conifer plantation woodland in the north part of Belt Wood but outside of Belt Wood LWS. This wood is mapped by Natural England as deciduous woodland PHI and wood pasture and parkland. It is not an AWI site.

### Vegetation communities present

- 2.3.149 Canopy dominated by Norway spruce (*Picea abies*) with occasional downy birch. The shrub layer is species-poor with rhododendron frequent. The ground flora in the stand is very species-poor with leaf litter and bare soil abundant. The most frequent species were bramble and broad buckler-fern. This woodland does not qualify as a HoPI.

### Belt Wood (U205761-U206654\_L7111\_F001\_PH2\_130820)

#### Site description and reasons for selection for survey

- 2.3.150 Broadleaved semi-natural woodland mapped on Natural England's PHI as deciduous woodland and wood pasture and parkland. The woodland is not an AWI site.

### Vegetation communities present

- 2.3.151 Broadleaved woodland dominated by a canopy of pedunculate oak, birch and sycamore. Bracken dominates the ground flora and, in places, bramble and ferns are frequent. The shrub layer is sparse, with holly and silver birch the most frequent species. Some non-native conifers are

## Background Information and Data

Ecology and biodiversity

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present including hybrid larch. The woodland is an example of the W10d *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland, *Holcus lanatus* sub-community which is characteristic of secondary woodlands on neutral soils and/or woodlands which have been subject to forestry interventions. The woodland qualifies as lowland mixed deciduous woodland HoPI.

- 2.3.152 No vascular plants species that are indicative of ancient woodland are present.
- 2.3.153 Table 38 sets out the NVC survey data from the Belt Wood. Three quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 38: NVC survey data from Belt Wood (U205761-U206654\_L7111\_F001\_PH2\_130820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	8	9	8	NS	NS	III (8 - 9)
<i>Fagus sylvatica</i>	4	-	7	NS	NS	II (4 - 7)
<i>Betula pendula</i>	3	-	4	NS	NS	II (3 - 4)
<i>Larix decidua x kaempferi</i>	-	4	-	NS	NS	I (4)
<i>Acer pseudoplatanus</i>	-	2	-	NS	NS	I (2)
<i>Thuja plicata</i>	2	-	-	NS	NS	I (2)
<i>Betula pubescens</i>	1	-	-	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Ilex aquifolium</i>	4	3	-	NS	NS	II (3 - 4)
<i>Quercus robur</i>	-	1	2	NS	NS	II (1 - 2)
<i>Acer pseudoplatanus</i>	3	-	-	NS	NS	I (3)
<i>Betula pendula</i>	-	-	2	NS	NS	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	4	9	9	NS	NS	III (4 - 9)
<i>Dryopteris dillitata</i>	2	8	5	NS	NS	III (2 - 8)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Holcus lanatus</i>	3	2	-	NS	NS	II (2 - 3)
<i>Pteridium aquilinum</i>	9	-	-	NS	NS	I (9)
<i>Betula pendula</i> ground	-	4	-	NS	NS	I (4)
<i>Epilobium angustifolium</i>	-	-	3	NS	NS	I (3)
<i>Dryopteris felix-mas</i>	-	2	-	NS	NS	I (2)
<i>Rubus idaeus</i>	2	-	-	NS	NS	I (2)
<i>Hypnum cupressiforme</i>	1	-	-	NS	NS	I (1)

## The Mere, Mere (CH7353\_L46235\_F001\_PH2\_120820)

### Site description and reasons for selection for survey

- 2.3.154 Two areas of broadleaved semi-natural woodland adjacent to, or near The Mere, Mere Ramsar site and Site of Special Scientific Interest (SSSI). One of the areas of woodland is in an area mapped on Natural England's PHI as wood pasture and parkland. This woodland is not an AWI site.

### Vegetation communities present

- 2.3.155 The first area of woodland is due north of the driving range on the shore of The Mere. The second is in the north-west corner of the golf course. Both areas of woodland contain planted trees and non-native species. They are likely to be secondary woods. Sycamore and oak are the dominant canopy species. The shrub layer is dominated by bramble with rhododendron, cherry laurel and birch saplings present. The grassy ground flora contained common bent, Yorkshire fog and red fescue (*Festuca rubra*) and a small number of woodland broadleaved herbs. The second woodland's ground flora is dominated by greater periwinkle (*Vinca major*). The two woods are small and could be adequately sampled with two quadrats. This vegetation is a broad fit to NVC type the W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland but is not a close match to any sub-community. No TABLEFIT analysis was necessary to characterise this woodland. This woodland habitat is unlikely to qualify as a HoPI as it is secondary woodland with numerous non-native species and is not ancient woodland.
- 2.3.156 One vascular plant species that is indicative of ancient woodland is present, wood sorrel.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.157 Table 39 sets out the NVC survey data from The Mere, Mere (F001). Two quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 39: NVC survey data from The Mere, Mere (CH7353\_L46235\_F001\_PH2\_120820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	7	5	NS	NS	NS	II (5 - 7)
<i>Pinus sylvestris</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Acer pseudoplatanus</i>	-	8	NS	NS	NS	I (8)
<i>Quercus ceris</i>	7	-	NS	NS	NS	I (7)
<b>Understorey (10m x 10m)</b>						
<i>Rubus fruticosus</i> agg.	9	9	NS	NS	NS	II (9 - 9)
<i>Prunus laurocerasus</i>	5	3	NS	NS	NS	II (3 - 5)
<i>Rhododendron ponticum</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Ligustrum ovalifolium</i>	4	-	NS	NS	NS	I (4)
<i>Betula pendula</i> sapling	3	-	NS	NS	NS	I (3)
<i>Sambucus nigra</i>	-	2	NS	NS	NS	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Festuca rubra</i>	3	1	NS	NS	NS	II (1 - 3)
<i>Oxalis acetosa</i>	-	6	NS	NS	NS	I (6)
<i>Vinca major</i>	-	6	NS	NS	NS	I (6)
<i>Agrostis capillaris</i>	5	-	NS	NS	NS	I (5)
<i>Holcus lanatus</i>	3	-	NS	NS	NS	I (3)
<i>Juncus effusus</i>	3	-	NS	NS	NS	I (3)
<i>Silene dioica</i>	-	3	NS	NS	NS	I (3)
<i>Epilobium angustifolium</i>	2	-	NS	NS	NS	I (2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Fallopia japonica</i>	2	-	NS	NS	NS	I (2)
<i>Impatiens glandulifera</i>	-	2	NS	NS	NS	I (2)
<i>Jacobea vulgaris</i>	2	-	NS	NS	NS	I (2)
<i>Sorbus aucuparia</i>	2	-	NS	NS	NS	I (2)
<i>Urtica dioica</i>	-	2	NS	NS	NS	I (2)
<i>Epilobium hirsutum</i>	1	-	NS	NS	NS	I (1)
<i>Epilobium montanum</i>	1	-	NS	NS	NS	I (1)
<i>Hypericum androsaemum</i>	1	-	NS	NS	NS	I (1)
<i>Solanum dulcamara</i>	1	-	NS	NS	NS	I (1)

## The Mere, Mere (CH7353\_L46235\_F002\_PH2\_120820)

### Site description and reasons for selection for survey

- 2.3.158 Broadleaved semi-natural woodland fringing The Mere, Mere Ramsar site and SSSI. Much of this woodland is in an area mapped on Natural England's PHI as wood pasture and parkland. The woodland is not an AWI site.

### Vegetation communities present

- 2.3.159 Woodland around The Mere is relatively young, high forest woodland. Alder is the most dominant tree species and other canopy species include pedunculate oak, sycamore, silver birch and beech. A range of shrub layer species are present including bramble (often dominant), silver birch, grey and weeping willow, holly, cherry laurel and rhododendron. A variety of ground flora species are present, the most common include Himalayan balsam, broad buckler-fern, yellow iris and soft rush. This woodland is an example of NVC community W6d *Alnus glutinosa-Urtica dioica* woodland, *Sambuccus nigra* sub-community, which represents the drier end of the W6 class of wet woodlands, although some samples contain sparse swamp species (e.g. reed canary-grass). The woodland qualifies as wet woodland HoPI, its condition is degraded by the widespread presence of invasive species (e.g. Himalayan balsam is frequent and sometimes abundant and Japanese knotweed is occasional).



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.160 No vascular plant species indicative of ancient woodland are present.

2.3.161 Table 40 sets out the NVC survey data from The Mere, Mere (F002).

**Table 40: NVC survey data from The Mere, Mere (CH7353\_L46235\_F002\_PH2\_120820)**

Species	Quadrat locations								Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	
<b>Canopy (50m × 50m)</b>									
<i>Alnus glutinosa</i>	3	3	7	8	8	8	8	5	V (8 - 3)
<i>Quercus robur</i>	2	-	8	-	6	4	5	-	IV (8 - 2)
<i>Acer pseudoplatanus</i>	-	-	-	-	4	5	-	-	II (5 - 4)
<i>Betula pendula</i>	-	-	-	3	-	-	-	-	I (3 - 3)
<i>Fagus sylvatica</i>	-	-	-	-	-	-	2	-	I (2 - 2)
<i>Castanea sativa</i>	-	-	-	-	1	-	-	-	I (1 - 1)
<i>Quercus cerris</i>	1	-	-	-	-	-	-	-	I (1 - 1)
<b>Understorey (10m x 10m)</b>									
<i>Rubus fruticosus</i> agg.	6	4	9	7	5	4	5	3	V (9 - 3)
<i>Betula pendula</i>	-	1	3	3	-	-	8	5	IV (8 - 1)
<i>Salix cinerea</i>	2	2	-	2	-	-	3	3	IV (3 - 2)
<i>Prunus laurocerasus</i>	-	-	-	-	8	4	-	-	II (8 - 4)
<i>Ilex aquifolium</i>	-	-	-	-	3	3	-	-	II (3 - 3)
<i>Acer pseudoplatanus</i> shrub	-	-	3	2	-	3	-	-	II (3 - 2)
<i>Sambucus nigra</i>	-	-	2	-	-	2	-	-	II (2 - 2)
<i>Sorbus aucuparia</i>	-	-	-	-	2	1	-	-	II (2 - 1)
<i>Rhododendron ponticum</i>	-	-	-	-	2	-	-	-	I (2)
<i>Salix x fragilis</i>	-	-	-	-	2	-	-	-	I (2)
<i>Crataegus monogyna</i>	-	-	-	-	1	-	-	-	I (1)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations								Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	
<i>Salix x sepulcralis</i>	-	-	-	-	-	-	1	-	I (1)
<i>Taxus bacatta</i>	-	-	-	-	-	1	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>									
<i>Impatiens glandulifera</i>	8	9	3	2	-	-	-	6	IV (9 - 2)
<i>Dryopteris dilatata</i>	2	-	2	8	2	3	3	-	IV (8 - 2)
<i>Iris pseudacorus</i>	3	5	2	2	-	-	-	4	IV (5 - 2)
<i>Juncus effusus</i>	3	4	-	2	-	-	-	4	III (4 - 2)
<i>Rubus idaeus</i>	-	-	9	-	-	2	-	-	II (9 - 2)
<i>Typha latifolia</i>	-	4	-	-	-	-	8	-	II (8 - 4)
<i>Hedera helix</i>	-	-	-	-	2	8	-	-	II (8 - 2)
<i>Poa trivialis</i>	-	-	-	5	-	2	-	-	II (5 - 2)
<i>Phalaris arundinacea</i>	-	4	-	-	-	-	-	4	II (4 - 4)
<i>Epilobium hirsutum</i>	3	3	-	-	-	-	-	4	II (4 - 3)
<i>Lysimachia vulgaris</i>	3	-	-	-	-	-	-	3	II (3 - 3)
<i>Calystegia sylvatica</i>	-	3	2	-	-	-	-	-	II (3 - 2)
<i>Epilobium angustifolium</i>	3	-	2	-	-	-	-	-	II (3 - 2)
<i>Lythrum salicaria</i>	-	3	2	-	-	-	-	2	II (3 - 2)
<i>Acer pseudoplatanus seed</i>	-	2	-	-	2	-	-	-	II (2 - 2)
<i>Angelica sylvestris</i>	-	2	-	-	-	-	2	-	II (2 - 2)
<i>Fallopia japonica</i>	-	-	-	-	-	-	2	2	II (2 - 2)
<i>Solanum dulcamara</i>	-	2	2	-	-	-	-	-	II (2 - 2)
<i>Sparganium erectum</i>	-	-	-	-	-	-	2	2	II (2 - 2)
<i>Lycopus europeus</i>	-	2	-	-	-	-	1	-	II (2 - 1)
<i>Mentha aquatica</i>	-	2	-	-	-	-	1	-	II (2 - 1)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations								Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	
<i>Persicaria amphibia</i>	2	1	-	-	-	-	-	-	II (2 - 1)
<i>Pteridium aquilinum</i>	-	-	-	9	-	-	-	-	I (9 - 9)
<i>Athyrium filix femina</i>	-	-	-	-	-	-	-	5	I (5 - 5)
<i>Galium palustre</i>	-	3	-	-	-	-	-	-	I (3 - 3)
<i>Geum urbanum</i>	-	-	-	-	-	3	-	-	I (3 - 3)
<i>Agrostis capillaris</i>	-	-	3	-	-	-	-	-	I (3 - 3)
<i>Urtica dioica</i>	-	3	-	-	-	-	-	-	I (3 - 3)
<i>Lonicera periclymenum</i>	-	-	-	-	2	-	-	-	I (2 - 2)
<i>Epilobium montanum</i>	-	2	-	-	-	-	-	-	I (2 - 2)
<i>Carex pseudocyperus</i>	-	-	-	-	-	-	1	-	I (1 - 1)
<i>Morus nigra</i>	1	-	-	-	-	-	-	-	I (1 - 1)
<i>Nymphaea alba</i>	-	1	-	-	-	-	-	-	I (1 - 1)

## The Mere, Mere (CH7353\_L46235\_F003\_PH2\_120820)

### Site description and reasons for selection for survey

2.3.162 Several small stands of swamp vegetation fringing The Mere, Mere Ramsar site and SSSI. Not mapped on Natural England's PHI.

### Vegetation communities present

2.3.163 Several small stands of swamp vegetation dominated by yellow iris. It is likely that more stands of this vegetation occur around The Mere; however, many bank areas were inaccessible owing to steep slopes. The vegetation is an example of NVC community S23 other water-margin vegetation. On closer inspection it may be possible to assign this vegetation to the S28 *Iris pseudacorus-Filipendula ulmaria* mire. This vegetation is not a HoPI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.164 Table 41 sets out the NVC survey data from The Mere, Mere (F003). One quadrat sample was adequate to achieve full coverage of this small stand of swamp.

**Table 41: NVC survey data from The Mere, Mere (CH7353\_L46235\_F003\_PH2\_120820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Iris pseudacorus</i>	9	NS	NS	NS	NS	9 (9)
<i>Alnus glutinosa</i>	2	NS	NS	NS	NS	2 (1)
<i>Betula pendula shrub</i>	2	NS	NS	NS	NS	2 (1)
<i>Epilobium montanum</i>	2	NS	NS	NS	NS	2 (1)
<i>Juncus effusus</i>	2	NS	NS	NS	NS	2 (1)

## The Mere, Mere (CH7353\_L46235\_F004\_PH2\_120820)

### Site description and reasons for selection for survey

2.3.165 Several small stands of common reed, swamp vegetation fringing The Mere, Mere Ramsar site and SSSI. Not mapped on Natural England's PHI.

### Vegetation communities present

2.3.166 Several different stands of common reed dominated swamp situated around The Mere. A large area of this habitat is present in the south of The Mere (approximately 0.5ha). Other areas are much smaller (<0.1ha). This habitat is not freely accessed due to deep water, steep banks and private property restrictions. The species list presented in Table 42 is a provisional list. Common reed is the dominant species in all cases. Quadrat three is a relatively species-rich example of this habitat and is at the rear of the reedbed, bordering an area of closely mown lawn, associated with a large house. Mowing obscured many of the species that may be present, and this vegetation is likely to be transitional between a reedbed and another swamp/mire community. Quadrats one and two are examples of NVC community *Phragmites australis* swamp and reed-beds and quadrat three is transitional between the S4 community and NVC type S7 *Carex acutiformis* swamp (or another mire community). Classification to sub-community is not attempted for the same reason. This vegetation is an example of reedbed HoPI.

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Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.167 Table 42 sets out the NVC survey data from The Mere, Mere (F004). Three quadrat samples were adequate to achieve full coverage of this small stand of swamp.

**Table 42: NVC survey data from The Mere, Mere (CH7353\_L46235\_F004\_PH2\_120820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Understorey (10m x 10m)</b>						
<i>Alnus glutinosa</i>	2	2	-	NS	NS	II (2 - 2)
<i>Betula pendula</i>	-	2	-	NS	NS	I (2 - 2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Phragmites australis</i>	9	9	9	NS	NS	III (9 - 9)
<i>Carex acutiformis</i>	-	-	8	NS	NS	I (8)
<i>Hydrocotyle vulgaris</i>	-	-	7	NS	NS	I (7)
<i>Sphagnum palustre</i>	-	-	6	NS	NS	I (6)
<i>Holcus lanatus</i>	-	-	4	NS	NS	I (4)
<i>Iris pseudacorus</i>	-	-	4	NS	NS	I (4)
<i>Typha latifolia</i>	-	-	4	NS	NS	I (4)
<i>Carex nigra</i>	-	-	3	NS	NS	I (3)
<i>Epilobium hirsutum</i>	-	3	-	NS	NS	I (3)
<i>Epilobium obscurum</i>	-	-	3	NS	NS	I (3)
<i>Galium palustre</i>	-	-	3	NS	NS	I (3)
<i>Impatiens glandulifera</i>	-	3	-	NS	NS	I (3)
<i>Scutellaria galericulata</i>	-	-	3	NS	NS	I (3)
<i>Mentha aquatica</i>	-	-	2	NS	NS	I (2)
<i>Rumex obtusifolius</i>	-	-	2	NS	NS	I (2)
<i>Angelica sylvestris</i>	-	1	-	NS	NS	I (1)
<i>Myosotis scorpioides</i>	-	-	1	NS	NS	I (1)

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Ecology and biodiversity

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### The Mere, Mere (CH7353\_L46235\_F005\_PH2\_120820)

#### Site description and reasons for selection for survey

2.3.168 Several small stands of swamp vegetation fringing The Mere, Mere Ramsar site and SSSI. Not mapped on Natural England's PHI.

#### Vegetation communities present

2.3.169 Small, fragmentary stands of swamp vegetation including bulrush (*Typha latifolia*) and other species. Certain areas contained frequent common spike rush (*Eleocharis palustris*) and all contained abundant bulrush. Individual stands are small (less than 10m x 10m). It is likely that this vegetation would be more extensive, but it is modified by boardwalk, patio, lawn and other lake-front development associated with adjacent housing. Recently cut swamp vegetation was observed in numerous places. Off-shore (out of safe reach) were a number of aquatic/floating species, including New Zealand pigmyweed (*Crassula helmsii*) and perfoliate pondweed (*Potamogeton perfoliatus*) which is a species mentioned on the SSSI citation. Other aquatic, floating and submerged species may be present but could not be safely sampled. This vegetation is an example of NVC community S12 *Typha latifolia* swamp. This vegetation does not qualify as a HoPI.

2.3.170 Table 43 sets out the NVC survey data from The Mere, Mere (F005). Two quadrat samples were adequate to achieve full coverage of this small stand of swamp.

**Table 43: NVC survey data from The Mere, Mere (CH7353\_L46235\_F005\_PH2\_120820)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Typha latifolia</i>	9	8	NS	NS	NS	II (8 - 9)
<i>Alisma plantago- aquatica</i>	1	-	NS	NS	NS	I (1)
<i>Angelica sylvestris</i>	1	-	NS	NS	NS	I (1)
<i>Crassula helmsii</i>	1	-	NS	NS	NS	I (1)
<i>Potamogeton perfoliatus</i>	1	-	NS	NS	NS	I (1)
<i>Nymphaea alba</i>	2	-	NS	NS	NS	I (2)
<i>Eleocharis palustris</i>	-	4	NS	NS	NS	I (4)

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### The Mere, Mere (CH7353\_L46235\_F006\_PH2\_120820)

#### Site description and reasons for selection for survey

2.3.171 Several small stands of swamp vegetation fringing The Mere, Mere Ramsar site and SSSI. Not mapped on Natural England's PHI.

#### Vegetation communities present

2.3.172 Small, fragmentary stands of common spike rush vegetation including bulrush and other species. Stands are typically less than 5m x 5m. The extend of aquatic marginal vegetation appears limited by boardwalk, patio, lawn and other lake-front development. This vegetation is an example of NVC community S19 *Eleocharis palustris* swamp. This vegetation does not qualify as a HoPI.

2.3.173 Table 44 sets out the NVC survey data from The Mere, Mere (F006). One quadrat sample was adequate to achieve full coverage of this small stand of swamp.

Table 44: NVC survey data from The Mere, Mere (CH7353\_L46235\_F006\_PH2\_120820)

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Eleocharis palustris</i>	9	NS	NS	NS	NS	I (9)
<i>Typha latifolia</i>	8	NS	NS	NS	NS	I (8)
<i>Epilobium hirsutum</i>	2	NS	NS	NS	NS	I (2)
<i>Juncus effusus</i>	2	NS	NS	NS	NS	I (2)
<i>Lycopus europeus</i>	2	NS	NS	NS	NS	I (2)
<i>Mentha aquatica</i>	2	NS	NS	NS	NS	I (2)
<i>Sparganium erectum</i>	2	NS	NS	NS	NS	I (2)

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# The Mere, Mere (CH7353\_L46235\_F007\_PH2\_120820)

## Site description and reasons for selection for survey

2.3.174 Mixed, wetland, tall-herb vegetation fringing The Mere, Mere Ramsar site and SSSI. Not mapped on Natural England's PHI.

## Vegetation communities present

2.3.175 Great willowherb is dominant with frequent gypsywort (*Lycopus europeus*), yellow iris, water mint (*Mentha aquatica*) and a range of other wetland species. Only a small area of vegetation was present (approximately 20m x 3m). Other sporadic, small patches of this vegetation may be present around The Mere but were inaccessible/concealed from view due to steep slopes. This vegetation is an example of the OV26b *Epilobium hirsutum* community *Phragmites australis-Iris pseudacorus* sub-community owing to the sub-dominance of great willowherb and presence of a moderate diversity of other tall wetland herb species. This vegetation does not qualify as a HoPI.

2.3.176 Table 45 sets out the NVC survey data from The Mere, Mere (F007). One quadrat sample was adequate to achieve full coverage of this small stand of tall herb vegetation.

**Table 45: NVC survey data from The Mere, Mere (CH7353\_L46235\_F007\_PH2\_120820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Epilobium hirsutum</i>	7	NS	NS	NS	NS	I (7)
<i>Lycopus europeus</i>	5	NS	NS	NS	NS	I (5)
<i>Mentha aquatica</i>	5	NS	NS	NS	NS	I (5)
<i>Salix cinerea</i>	5	NS	NS	NS	NS	I (5)
<i>Fallopia japonica</i>	4	NS	NS	NS	NS	I (4)
<i>Iris pseudacorus</i>	4	NS	NS	NS	NS	I (4)
<i>Lythrum salicaria</i>	4	NS	NS	NS	NS	I (4)
<i>Kindbergia praelonga</i>	3	NS	NS	NS	NS	I (3)



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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rubus fruticosus</i> agg.	3	NS	NS	NS	NS	I (3)
<i>Cirsium arvense</i>	2	NS	NS	NS	NS	I (2)
<i>Juncus effusus</i>	2	NS	NS	NS	NS	I (2)
<i>Scutellaria galericulata</i>	2	NS	NS	NS	NS	I (2)
<i>Urtica dioica</i>	2	NS	NS	NS	NS	I (2)
<i>Nymphaea alba</i>	2	NS	NS	NS	NS	I (2)
<i>Angelica sylvestris</i>	1	NS	NS	NS	NS	I (1)
<i>Betula pendula</i> sapling	1	NS	NS	NS	NS	I (1)
<i>Cirsium vulgare</i>	1	NS	NS	NS	NS	I (1)
<i>Epilobium montanum</i>	1	NS	NS	NS	NS	I (1)

## The Mere, Mere (CH7353\_L46235\_F008\_PH2\_120820)

### Site description and reasons for selection for survey

2.3.177 Mixed, wetland, tall-herb vegetation fringing The Mere, Mere Ramsar site and SSSI. Not mapped on Natural England's PHI.

### Vegetation communities present

2.3.178 Dense, tall-herb, wetland vegetation at the edge of The Mere. Yellow loosestrife (*Lysimachia vulgaris*), purple loosestrife (*Lythrum salicaria*) and yellow-flag iris are dominant with scattered alder saplings. Bramble is straggled through the tall-herb vegetation and bare ground is abundant underneath. A small area of this vegetation was present (approximately 20m x 5m). It is likely that more stands of this vegetation occur around The Mere; however, many areas of shore are not accessible owing to steep slopes. The vegetation is an example of NVC type S23 Other Water Margin vegetation. This vegetation is distinctive because it contains abundant yellow loosestrife which is rarely a constant species in NVC communities. This vegetation does not qualify as a HoPI.

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2.3.179 Table 46 sets out the NVC survey data from The Mere, Mere (F008). One quadrat sample was adequate to achieve full coverage of this small stand of swamp.

**Table 46: NVC survey data from The Mere, Mere (CH7353\_L46235\_F008\_PH2\_120820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Lysimachia vulgaris</i>	7	-	-	-	-	I (7)
<i>Iris pseudacorus</i>	5	NS	NS	NS	NS	I (5)
<i>Rubus fruticosus agg.</i>	5	NS	NS	NS	NS	I (5)
<i>Lythrum salicaria</i>	4	NS	NS	NS	NS	I (4)
<i>Epilobium angustifolium</i>	3	NS	NS	NS	NS	I (3)
<i>Alnus glutinosa</i>	2	NS	NS	NS	NS	I (2)
<i>Angelica sylvestris</i>	2	NS	NS	NS	NS	I (2)
<i>Fallopia japonica</i>	2	NS	NS	NS	NS	I (2)
<i>Lycopus europeus</i>	2	NS	NS	NS	NS	I (2)
<i>Mentha aquatica</i>	2	NS	NS	NS	NS	I (2)
<i>Salix cinerea</i>	2	NS	NS	NS	NS	I (2)

## The Mere, Mere (CH7353\_L46235\_F009\_PH2\_120820)

### Site description and reasons for selection for survey

2.3.180 Aquatic vegetation in The Mere, Mere Ramsar site and SSSI. Not mapped on Natural England's PHI.

### Vegetation communities present

2.3.181 Floating mats of white water-lily (*Nymphaea alba*) covering approximately 0.5ha at the south of The Mere and in a second location on its west shore. This vegetation is in standing water and is not accessible. Other submerged and floating aquatic plant species are likely to be present in

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the mass of white water-lily. This vegetation is an example of NVC community A7 *Nymphaea alba* community. It does not qualify as a HoPI. No floristic table is provided as the vegetation was dominated by a single species and was inaccessible for close sampling.

## The Mere, Mere (CH7353\_L46235\_F010\_PH2\_130820)

### Site description and reasons for selection for survey

2.3.182 Grassland with scattered trees located in an area of land mapped by Natural England's PHI as wood pasture and parkland.

### Vegetation communities present

- 2.3.183 Short, poor semi-improved grassland along the west edge of a golf course. The grassland is short and tussocky and is dominated by Yorkshire fog and common bent and is relatively species-poor. A number of scattered oak and sycamore trees were present, although none were ancient trees and only a single tree had veteran tree features. This grassland has affinities to NVC community MG6b *Lolium perenne-Cynosurus cristatus* grassland, *Anthoxanthum odoratum* sub-community. However, agricultural species (e.g. perennial rye-grass) were not present making this vegetation a relatively weak match. The grassland is likely somewhat intermediate between MG6; and the newly proposed NVC type described as a species-poor, mesotrophic grassland, comprised of *Holcus lanatus*, *Festuca rubra* and *Anoxanthum odoratum* cited by the Joint Nature Conservation Committee<sup>30</sup>. Thought none of these classifications are entirely satisfactory. This habitat is a species-poor, semi-improved grassland and does not qualify as a HoPI.
- 2.3.184 Table 47 sets out the NVC survey data from The Mere, Mere (F010). Two quadrat samples were adequate to achieve full coverage of this small stand of grassland/scattered trees.

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<sup>30</sup> Joint Nature Conservation Committee (2011). *A compilation of proposed additions and revisions to vegetation types in the National Vegetation Classification*. JNCC. Peterborough.

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**Table 47: NVC survey data from The Mere, Mere (CH7353\_L46235\_F010\_PH2\_130820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	5	8	NS	NS	NS	II (5 - 8)
<i>Acer pseudoplatanus</i>	4	1	NS	NS	NS	I (4 - 4)
<b>Ground flora layer (4m x 4m)</b>						
<i>Agrostis capillaris</i>	9	9	NS	NS	NS	II (9 - 9)
<i>Holcus lanatus</i>	9	9	NS	NS	NS	II (9 - 9)
<i>Rumex acetosa</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Taraxacum officianale</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Populus nigra ssp. italica</i>	5	-	NS	NS	NS	I (5)
<i>Dactylis glomerata</i>	3	-	NS	NS	NS	I (3)
<i>Hedera helix</i>	3	-	NS	NS	NS	I (3)
<i>Ranunculus repens</i>	-	3	NS	NS	NS	I (3)
<i>Rumex acetosella</i>	2	-	NS	NS	NS	I (2)

## Mere Old Hall (CH458512-CH575462-CH586994-U206342\_L5396\_F001\_PH2\_130820)

### Site description and reasons for selection for survey

2.3.185 Grassland with scattered trees located in an area of land mapped by Natural England's PHI as wood pasture and parkland.

### Vegetation communities present

2.3.186 Horse pasture surrounded by electric fencing. The grassland is species-poor and is dominated by a small number of grass species including creeping bent, red fescue, Yorkshire fog and perennial rye-grass. This is an improved grassland and is an example of NVC community MG7 *Lolium perenne* leys and related grasslands. A small number of scattered mature and semi-mature trees are present including English oak and

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sycamore. The majority of trees were not ancient and contained few veteran features. Two trees are present which may be ancient trees. A sycamore (SJ7269681873) with a diameter at breast height of approximately 5m and a small-leaved lime (SJ7269881871) with a diameter at breast height of approximately 6m.

2.3.187 Table 48 sets out the NVC survey data from Mere Old Hall. One quadrat sample was adequate to achieve full coverage of this small stand of improved grassland.

**Table 48: NVC survey data from Mere Old Hall (CH458512-CH575462-CH586994-U206342\_L5396\_F001\_PH2\_130820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	3	NS	NS	NS	NS	I (3)
<i>Tilia cordata</i>	1	NS	NS	NS	NS	I (1)
<i>Acer pseudoplatanus</i>	1	NS	NS	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Agrostis stolonifera</i>	8	NS	NS	NS	NS	I (8)
<i>Lolium perenne</i>	7	NS	NS	NS	NS	I (7)
<i>Holcus lanatus</i>	6	NS	NS	NS	NS	I (6)
<i>Festuca rubra</i>	5	NS	NS	NS	NS	I (5)
<i>Ranunculus repens</i>	2	NS	NS	NS	NS	I (2)
<i>Taraxacum officinale</i>	2	NS	NS	NS	NS	I (2)
<i>Dactylis glomerata</i>	1	NS	NS	NS	NS	I (1)
<i>Rumex obtusifolius</i>	1	NS	NS	NS	NS	I (1)

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### Daisybank Wood (also know as Woodland near Daisy Bank Farm) (CH517829\_L6290\_F001\_PH2\_050718)

#### Site description and reasons for selection for survey

2.3.188 Small, unnamed woodland located to the north-east of Winterbottom and south-west of Daisy Bank Farm. This woodland is not an LWS and is not on Natural England’s PHI. It is recognised by Natural England as ancient woodland on the basis of heritage information provided by HS2 Ltd but was not added to the AWI as it is of insufficient size.

#### Vegetation communities present

2.3.189 Hybrid crack willow is the most abundant species in the canopy, with sub-dominant cover of ash, alder and silver birch. The shrub layer comprises hybrid crack willow and rhododendron. The ground flora is dominated by common nettle and bramble with bittersweet and cleavers. Two mostly, dry ponds were present in the woodland and with wetland species present including cypress sedge (*Carex pseudocyperus*) and soft rush. The species composition is characteristic of NVC W6b *Alnus glutinosa-Urtica dioica Salix fragilis* sub-community. However, alder is not the dominant canopy species suggesting that this community is at the drier end of the vegetation encompassed by W6 woodland in the NVC. The TABLEFIT analysis returned a result of W6 at a 63% goodness of fit. This woodland qualifies as wet woodland HoPI.

2.3.190 One vascular plant species that is indicative of ancient woodland was recorded from Daisybank Wood: remote sedge.

2.3.191 Table 49 sets out the NVC survey data from Daisybank Wood. One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

**Table 49: NVC survey data from Daisybank Wood (CH517829\_L6290\_F001\_PH2\_050718)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	8	NS	NS	NS	NS	I (8)
<i>Fraxinus excelsior</i>	4	NS	NS	NS	NS	I (4)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Pinus sylvestris</i>	4	NS	NS	NS	NS	I (4)
<i>Fagus sylvatica</i>	4	NS	NS	NS	NS	I (4)
<i>Salix fragilis</i>	4	NS	NS	NS	NS	I (4)
<i>Alnus glutinosa</i>	4	NS	NS	NS	NS	I (4)
<i>Tilia platyphyllos</i>	1	NS	NS	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Rhododendron ponticum</i>	7	NS	NS	NS	NS	I (7)
<i>Salix fragilis</i>	5	NS	NS	NS	NS	I (5)
<i>Alnus glutinosa</i>	4	NS	NS	NS	NS	I (4)
<i>Fraxinus excelsior</i>	3	NS	NS	NS	NS	I (3)
<i>Quercus robur</i>	2	NS	NS	NS	NS	I (2)
<i>Sambucus nigra</i>	2	NS	NS	NS	NS	I (2)
<i>Corylus avellana</i>	2	NS	NS	NS	NS	I (2)
<i>Crataegus monogyna</i>	2	NS	NS	NS	NS	I (2)
<i>Sorbus aucuparia</i>	1	NS	NS	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus agg.</i>	7	NS	NS	NS	NS	I (7)
<i>Dryopteris dilatata</i>	5	NS	NS	NS	NS	I (5)
<i>Carex remota</i>	4	NS	NS	NS	NS	I (4)
<i>Urtica dioica</i>	3	NS	NS	NS	NS	I (3)
<i>Kindbergia praelonga</i>	3	NS	NS	NS	NS	I (3)
Leaf Litter	5	NS	NS	NS	NS	I (5)
Bare Soil	4	NS	NS	NS	NS	I (4)

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### Broom Manor (CH548895\_L4736\_F001\_PH2\_130618)

#### Site description and reasons for selection for survey

2.3.192 An unnamed woodland which is mapped on Natural England's PHI as deciduous woodland.

#### Vegetation communities present

2.3.193 The canopy is dominated by pedunculate oak with occasional ash. Planted species included copper beech (*Fagus sylvatica* 'purpurea'), grey poplar (*Populus x canescens*) and large leaved lime. The shrub layer is relatively diverse with abundant wild cherry, and ash, holly, rowan, hawthorn and hazel also present. Ivy and common nettle are the most abundant species in the ground flora, with other species including bramble, field rose and bluebell present. The species composition is characteristic of NVC W10c *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland, *Hedera helix* sub-community, although, there are numerous introduced species such as copper beech, grey poplar and Wilson's honeysuckle (*Lonicera nitida*). The TABLEFIT analysis returned a result of W21b at a 54% goodness of fit. NVC type W21 is a dense scrub community not a woodland community and thus W10 is considered a better fit. This woodland is plantation woodland and contains numerous introduced species. It is unlikely to qualify as a HoPI.

2.3.194 Four vascular plant species that is indicative of ancient woodland were recorded from Broom Manor: holly, wild cherry, field rose and large-leaved lime.

2.3.195 Table 50 sets out the NVC survey data from Broom Manor (F001). One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

**Table 50: NVC survey data from Broom Manor (CH548895\_L4736\_F001\_PH2\_130618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	8	NS	NS	NS	NS	I (8)
<i>Fagus sylvatica</i>	4	NS	NS	NS	NS	I (4)
<i>Fraxinus excelsior</i>	4	NS	NS	NS	NS	I (4)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Populus x. canescens</i>	4	NS	NS	NS	NS	I (4)
<i>Tilia platyphyllos</i>	4	NS	NS	NS	NS	I (4)
<i>Prunus avium</i>	1	NS	NS	NS	NS	I (1)
<i>Sorbus aucuparia</i>	1	NS	NS	NS	NS	I (1)
<i>Plantanus x. hispanica</i>	1	NS	NS	NS	NS	I (1)
<i>Sequoiadendron giganteum</i>	1	NS	NS	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Prunus avium</i>	5	NS	NS	NS	NS	I (5)
<i>Corylus avellana</i>	4	NS	NS	NS	NS	I (4)
<i>Fraxinus excelsior</i>	4	NS	NS	NS	NS	I (4)
<i>Prunus laurocerasus</i>	4	NS	NS	NS	NS	I (4)
<i>Rhododendron ponticum</i>	4	NS	NS	NS	NS	I (4)
<i>Sorbus aucuparia</i>	4	NS	NS	NS	NS	I (4)
<i>Sambucus nigra</i>	3	NS	NS	NS	NS	I (3)
<i>Acer pseudoplatanus</i>	2	NS	NS	NS	NS	I (2)
<i>Betula pendula</i>	2	NS	NS	NS	NS	I (2)
<i>Crataegus monogyna</i>	2	NS	NS	NS	NS	I (2)
<i>Ilex aquifolium</i>	2	NS	NS	NS	NS	I (2)
<i>Prunus spinosa</i>	2	NS	NS	NS	NS	I (2)
<i>Quercus robur</i>	2	NS	NS	NS	NS	I (2)
<i>Lonicera nitida</i>	1	NS	NS	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	7	NS	NS	NS	NS	I (7)
<i>Rumex sanguineus</i>	4	NS	NS	NS	NS	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Urtica dioica</i>	4	NS	NS	NS	NS	I (4)
<i>Kindbergia praelonga</i>	3	NS	NS	NS	NS	I (3)
<i>Rubus fruticosus</i> agg.	3	NS	NS	NS	NS	I (3)
<i>Geum urbanum</i>	3	NS	NS	NS	NS	I (3)
<i>Hyacinthoides</i> sp.	2	NS	NS	NS	NS	I (2)
<i>Poa trivialis</i>	2	NS	NS	NS	NS	I (2)
<i>Rosa arvensis</i>	2	NS	NS	NS	NS	I (2)
<i>Stachys sylvatica</i>	1	NS	NS	NS	NS	I (1)
Leaf litter	7	NS	NS	NS	NS	I (7)
Bare soil	7	NS	NS	NS	NS	I (7)

## Broom Manor (CH548895\_L4736\_F002\_PH2\_130618)

### Site description and reasons for selection for survey

- 2.3.196 Grassland to the east of High Legh village which forms part of large garden. The grassland is in an area mapped by Natural England's PHI as 'no main habitat but additional habitats present'.

### Vegetation communities present

- 2.3.197 The grassland contains abundant common bent and springy turf-moss (*Rhytidiadelphus squarrosus*). Species including red fescue, Yorkshire fog, sweet vernal-grass (*Anthoxanthum odoratum*) and perennial rye-grass, bird's-foot-trefoil (*Lotus corniculatus*), selfheal (*Prunella vulgaris*) and dandelion were occasional but constant. Frequent species included field woodrush (*Luzula campestris*) and autumn hawkbit (*Scorzoneroides autumnalis*). The species composition is characteristic of NVC type MG5 *Cynosurus cristatus*-*Centaurea nigra* grassland, MG5a *Lathyrus pratensis* sub-community. The TABLEFIT analysis returned a result of U4b with an 81% goodness of fit. The grassland lacks acid indicator species and cannot be U4 grassland which is an unimproved or semi-improved acid grassland. NVC type MG5 grassland qualifies as lowland meadow HoPI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.198 Table 51 sets out the NVC survey data from Broom Manor (F002).

**Table 51: NVC survey data from Broom Manor (CH548895\_L4736\_F002\_PH2\_130618)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rhytiadelphus squarrosus</i>	7	7	4	7	5	V (4 - 7)
<i>Lolium perenne</i>	4	4	5	4	4	V (4 - 5)
<i>Agrostis capillaris</i>	7	7	6	7	7	V (4 - 5)
<i>Ranunculus repens</i>	4	3	5	5	3	V (3 - 5)
<i>Lotus corniculatus</i>	5	4	4	5	3	V (3 - 5)
<i>Holcus lanatus</i>	5	5	3	4	4	V (3 - 5)
<i>Trifolium repens</i>	4	4	5	3	4	V (3 - 5)
<i>Festuca rubra</i>	3	3	3	4	4	V (3 - 4)
<i>Taraxacum officinale agg.</i>	2	2	2	3	2	V (2 - 6)
<i>Anthoxanthum odoratum</i>	3	2	2	4	4	V (2 - 4)
<i>Prunella vulgaris</i>	2	4	4	3	4	V (2 - 4)
<i>Rumex acetosa</i>	2	3	3	3	1	V (1 - 3)
<i>Bellis perennis</i>		3	2	3	2	IV (2 - 6)
<i>Plantago lanceolata</i>	1	2	-	1	1	IV (1 - 2)
<i>Luzula campestris</i>	1	3	-	-	3	III (1 - 3)
<i>Scorzoneroides autumnalis</i>	1	-	-	1	1	III (1 - 1)
<i>Cerastium fontanum</i>	-	-	-	1	-	I (1)
<i>Dactylis glomerata</i>	-	-	2	-	-	I (2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Broom Manor (CH548895\_L4736\_F003\_PH2\_130618)

#### Site description and reasons for selection for survey

2.3.199 Grassland habitat to the east of High Legh and forms part of a large garden. This stand is mapped by Natural England's PHI as deciduous woodland.

#### Vegetation communities present

2.3.200 Grassland with an abundance of common bent and springy turf-moss with red fescue, Yorkshire fog, perennial rye-grass, selfheal, daisy (*Bellis perennis*), creeping buttercup, dandelion and white clover also present. The species composition is characteristic of NVC MG6b *Lolium perenne-Cynosurus cristatus* grassland, *Anthoxanthum odoratum* sub-community. The TABLEFIT analysis returned a result of U4b *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland, *Holcus lanatus-Trifolium repens* sub-community with a 72% goodness of fit. U4b is a semi-improved acid grassland. The dominance of common bent, red fescue and mosses make this grassland has floristic similarities to a semi-improved acid grassland but the absence of acid indicators (e.g. heath bedstraw) and presence of white clover and perennial rye-grass make it a better fit for a neutral semi-improved grassland such as MG6b which can occur when acid grassland is improved.

2.3.201 Table 52 sets out the NVC survey data from Broom Manor (F003). Three quadrat samples were adequate to achieve full coverage of this small stand of grassland.

**Table 52: NVC survey data from Broom Manor (CH548895\_L4736\_F003\_PH2\_130618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Agrostis capillaris</i>	8	7	8	NS	NS	V (7 - 8)
<i>Rhytiadelphus squarrosus</i>	7	6	5	NS	NS	V (5 - 7)
<i>Festuca rubra</i>	4	6	4	NS	NS	V (4 - 6)
<i>Ranunculus repens</i>	5	3	3	NS	NS	V (3 - 5)
<i>Holcus lanatus</i>	4	3	3	NS	NS	V (3 - 4)

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Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Lolium perenne</i>	3	4	3	NS	NS	V (3 - 4)
<i>Trifolium repens</i>	3	4	3	NS	NS	V (3 - 4)
<i>Prunella vulgaris</i>	2	4	2	NS	NS	V (2 - 4)
<i>Bellis perennis</i>	2	2	2	NS	NS	V (2 - 2)
<i>Taraxacum officinale agg.</i>	1	2	1	NS	NS	V (1 - 2)
<i>Plantago major</i>	-	1	1	NS	NS	IV (1 - 1)
<i>Senecio jacobaea</i>	-	1	1	NS	NS	IV (1 - 1)
<i>Agrostis stolonifera</i>	-	-	4	NS	NS	II (4 - 4)
<i>Anthoxanthum odoratum</i>	3	-	-	NS	NS	II (3 - 3)
<i>Cerastium fontanum</i>	-	-	1	NS	NS	II (1 - 1)
<i>Rumex obtusifolius</i>	-	-	1	NS	NS	II (1 - 1)

## Broomedge to Glazebrook (MA04)

## Fox Covert and Meadows (GM451813-MAN44064\_L5970\_PH2\_240718)

### Site description and reasons for selection for survey

- 2.3.202 Grassland listed as 'good quality semi-improved grassland' on Natural England's PHI. Within Fox Covert Site of Biological Importance (SBI) and managed under higher-level stewardship.

### Vegetation communities present

- 2.3.203 A soft rush dominated sward with frequent marsh horsetail (*Equisetum palustre*), occasional meadow foxtail (*Alopecurus pratensis*), Yorkshire fog, red shank (*Persicaria maculosa*) and locally, common reed. A range of other broadleaved herb associates are present at low cover levels, including marsh bedstraw (*Galium palustre*), ragged robin (*Silene flos-cuculi*), meadowsweet and greater bird's-foot trefoil. The vegetation is

## Background Information and Data

Ecology and biodiversity

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### Ecological baseline data – National Vegetation Classification and ancient woodland

patchy and alternately rush or grass dominated, with both vegetation in an intricate mosaic. This vegetation is a not a good fit to any single NVC type. It has affinities to MG10a *Holcus lanatus-Juncus effusus* typical sub-community but is too diverse. It also has affinities to M23b *Juncus effusus/acutiflorus-Galium palustre* rush-pasture, *Juncus effusus* sub-community but contained a high cover of grasses which is not characteristic of M23. The TABLEFIT 'goodness of fit' statistic for this grassland was 30% for NVC type M27c *Filipendula ulmaria-Angelica sylvestris* mire, *Juncus effusus-Holcus lanatus* sub-community and the vegetation also has affinities to this community. It is suspected that management (cutting, grazing, eutrophication) has modified this vegetation resulting in its intermediate character. This marshy grassland is not a close match for any HoPI description, but it is of comparable quality to meadow or rush pasture HoPI.

- 2.3.204 Table 53 sets out the NVC survey data from Fox Covert and Meadows. Three quadrat samples were adequate to achieve full coverage of this small stand of marshy grassland.

**Table 53: NVC survey data from Fox Covert and Meadows (GM451813-MAN44064\_L5970\_PH2\_240718)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Juncus effusus</i>	8	5	7	NS	NS	III (5 - 8)
<i>Equisetum palustre</i>	4	4	5	NS	NS	III (4 - 5)
<i>Phalaris arundinacea</i>	4	3	5	NS	NS	III (3 - 5)
<i>Persicaria maculosa</i>	3	4	4	NS	NS	III (3 - 4)
<i>Phleum pratense</i>	-	-	2	NS	NS	III (2 - 6)
<i>Arrhenatherum elatius</i>	-	-	1	NS	NS	III (1 - 5)
<i>Holcus lanatus</i>	4	1	4	NS	NS	III (1 - 4)
<i>Silene flos-cuculi</i>	1	2	2	NS	NS	III (1 - 2)
<i>Phragmites australis</i>	-	-	5	NS	NS	II (5 - 5)
<i>Poa trivialis</i>	-	3	4	NS	NS	II (3 - 4)
<i>Calliergonella cuspidata</i>	-	3	3	NS	NS	II (3 - 3)
<i>Kindbergia prealona</i>	6	2	-	NS	NS	II (2 - 6)
<i>Filipendula ulmaria</i>	2	-	4	NS	NS	II (2 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Lotus pedunculatus</i>	1	4	-	NS	NS	II (1 - 4)
<i>Rumex sanguineus</i>	-	4	1	NS	NS	II (1 - 4)
<i>Rumex obtusifolius</i>	-	1	1	NS	NS	II (1 - 1)
<i>Alopecurus pratensis</i>	-	1	1	NS	NS	II (1 - 1)
<i>Juncus inflexus</i>	-	7	-	NS	NS	I (7)
<i>Lathyrus pratensis</i>	-	-	4	NS	NS	I (4)
<i>Stellaria alsine</i>	-	4	-	NS	NS	I (4)
<i>Galium palustre</i>	-	4	-	NS	NS	I (4)
<i>Lysimachia vulgaris</i>	3	-	-	NS	NS	I (3)
<i>Epilobium parviflorum</i>	-	3	-	NS	NS	I (3)
<i>Ranunculus repens</i>	-	-	1	NS	NS	I (1)
<i>Urtica dioica</i>	1	-	-	NS	NS	I (1)
<i>Rumex crispus</i>	-	-	1	NS	NS	I (1)
<i>Cerastium fontanum</i>	-	-	1	NS	NS	I (1)
<i>Ranunculus acris</i>	-	-	1	NS	NS	I (1)
<i>Epilobium hirsutum</i>	-	1	-	NS	NS	I (1)
Bare ground	1	4	4	NS	NS	(1 - 4)

## Fox Covert and Meadows (U200332-U200992\_L6113\_F001\_PH2\_270619)

### Site description and reasons for selection for survey

- 2.3.205 Broadleaved semi-natural woodland in Fox Covert and Meadows LWS. This woodland is also mapped by Natural England's PHI as deciduous woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.206 Pedunculate oak is the canopy dominant with abundant sycamore. Areas of the shrub layer are dominated by rhododendron. Large areas of bare ground/litter are present in shaded areas. Bramble and bracken are both occasional. Himalayan balsam is frequent throughout. The woodland is an example of NVC type W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland but is not assigned to sub-community level owing to the species-poor ground flora which prevents further identification. This woodland may qualify as lowland mixed deciduous woodland HoPI but it unlikely to be a high-quality example on account of its species poverty and presence of frequent non-native species.
- 2.3.207 Four vascular plant species that are indicative of ancient woodland were recorded from Fox Covert: dog's mercury, narrow buckler-fern (*Dryopteris carthusiana*), wood anemone and bluebell.
- 2.3.208 Table 54 sets out the NVC survey data from Fox Covert and Meadows (F001). Two quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 54: NVC survey data from Fox Covert and Meadows (U200332-U200992\_L6113\_F001\_PH2\_270619)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	7	8	NS	NS	NS	II (7 - 8)
<i>Acer pseudoplatanus</i>	5	5	NS	NS	NS	II (5 - 5)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	-	2	NS	NS	NS	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Pteridium aquilinum</i>	3	8	NS	NS	NS	II (3 - 8)
<i>Impatiens glandulifera</i>	9	-	NS	NS	NS	I (9)
<i>Ilex aquifolium</i>	-	1	NS	NS	NS	I (1)
<i>Rhododendron ponticum</i>	-	3	NS	NS	NS	I (3)
<i>Dryopteris carthusiana</i>	-	1	NS	NS	NS	I (1)
Bare ground	-	9	NS	NS	NS	I (9)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Fox Covert and Meadows (U200332-U200992\_L6113\_F002\_PH2\_270619)

#### Site description and reasons for selection for survey

- 2.3.209 Two ditches with running water present in the south of Fox Covert and Meadows SBI, surrounded by swamp and willow scrub. This vegetation is shown as deciduous woodland on the Natural England's PHI.

#### Vegetation communities present

- 2.3.210 Vegetation containing yellow iris and hemlock water-dropwort (*Oenanthe crocata*) with occasional scaly male-fern, bittersweet and marsh marigold (*Caltha palustris*). This habitat is an example of M28 *Iris pseudacorus-Fillipendula ulmaria* mire. This vegetation does not qualify as a HoPI.

### Saracens Head Wood (GM852664-MAN90718\_L5831\_PH2\_250618)

#### Site description and reasons for selection for survey

- 2.3.211 Broadleaved semi-natural woodland, the majority of which is listed as deciduous woodland on Natural England's PHI.

#### Vegetation communities present

- 2.3.212 The woodland canopy is dominated by beech, sycamore and pedunculate oak. The understorey and ground flora comprise several non-native and/or invasive species including cherry laurel and mock-orange (*Philadelphus* sp.). The shrub layer is species-poor with holly the main component. The field layer was generally sparse and species-poor with bramble the most prominent species. The species composition is characteristic of NVC W14 *Fagus sylvatica-Rubus fruticosus* woodland. The TABLEFIT analysis returned a result of W8f with a 29% goodness of fit. W14 is considered a better reference community for this vegetation as it lacked sufficient cover of distinctive calcicolous species to be regarded as W8 woodland. This woodland contains a high cover of non-native species and is unlikely to qualify as a HoPI.
- 2.3.213 The only Ancient Woodland Indicator present was Solomon's seal (*Polygonatum multiflorum*) but this is likely to be a garden escape/introduction.

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BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.214 Table 55 sets out the NVC survey data from Saracens Head Wood.

**Table 55: NVC survey data from Saracens Head Wood (GM852664-MAN90718\_L5831\_PH2\_250618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Fagus sylvatica</i>	6	6	6	6	6	V (6 - 6)
<i>Acer pseudoplatanus</i>	6	6	6	6	6	V (6 - 6)
<i>Quercus robur</i>	5	5	5	5	5	V (5 - 5)
<i>Populus nigra</i>	1	1	1	1	1	V (1 - 1)
<i>Prunus avium</i>	1	1	1	1	1	V (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	4	4	4	4	4	V (4 - 4)
<i>Ilex aquifolium</i>	4	4	4	4	4	V (4 - 4)
<i>Sambucus nigra</i>	2	2	2	2	2	V (2 - 2)
<i>Philadelphus coronaries</i>	2	2	2	2	2	V (2 - 2)
<i>Rhododendron ponticum</i>	2	2	2	2	2	V (2 - 2)
<i>Sorbus aucuparia</i>	1	1	1	1	1	V (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelonga</i>	1	4	4	5	4	V (1 - 5)
<i>Brachythecium rutabulum</i>	1	4	4	5	4	V (1 - 5)
<i>Heracleum sphondylium</i>	-	-	2	4	4	III (2 - 4)
<i>Rubus fruticosus agg.</i>	5	3	-	4	-	III (3 - 5)
<i>Fallopia japonica</i>	-	5	1	-	2	III (1 - 5)
<i>Hedera helix</i>	6	-	6	1	-	III (1 - 6)
<i>Fraxinus excelsior (seedling)</i>	-	-	3	5	-	II (3 - 5)
<i>Silene dioica</i>	-	-	3	3	-	II (3 - 3)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Poa nemoralis</i>	-	-	1	3	-	II (1 - 3)
<i>Dryopteris dilatata</i>	1	-	-	-	3	II (1 - 3)
<i>Mnium hornum</i>	3	2	-	-	-	II (1 - 2)
<i>Taxus baccata</i> (seedling)	1	-	2	-	-	II (1 - 2)
<i>Ilex aquifolium</i> (seedling)	-	-	-	1	1	II (1 - 1)
<i>Prunus avium</i> (seedling)	1	-	1	-	-	II (1 - 1)
<i>Geranium robertianum</i>	-	-	3	-	-	I (3)
<i>Urtica dioica</i>	-	-	1	-	-	I (1)
<i>Galium aparine</i>	-	-	-	1	-	I (1)
<i>Crataegus monogyna</i> (seedlings)	1	-	-	-	-	I (1)
<i>Prunus laurocerasus</i> (seedling)	1	-	-	-	-	I (1)
Leaf litter/bare ground	7	8	6	7	9	V (6 - 9)

## Coroners Wood Complex (GM269989-GM320678\_L5863\_MAN294058\_L21508\_PH2\_290518)

### Site description and reasons for selection for survey

- 2.3.215 Broadleaved semi-natural woodland Coroner's Wood Complex also mapped as deciduous woodland PHI. Part of this woodland is also an AWI site.

### Vegetation communities present

- 2.3.216 The canopy is dominated by sycamore, with ash and pedunculate oak. The understorey contains hawthorn, bramble, holly and hazel. The ground flora is species-poor, with occasional bluebell and wild garlic. The species composition of this habitat is broadly characteristic of NVC type W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, but several constant species are missing, and the fit is weak. The

## Background Information and Data

Ecology and biodiversity

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### Ecological baseline data – National Vegetation Classification and ancient woodland

TABLEFIT analysis returned a result of W21b with a 38% goodness of fit. NVC type W21, a form of hawthorn scrub, is not representative of the woodland present in Coroners Wood. The woodland is likely to qualify as lowland mixed deciduous woodland HoPI.

2.3.217 Four vascular plant species that are indicative of ancient woodland were recorded from Coroner's Wood: holly, wild cherry, wild garlic and bluebell.

2.3.218 Table 56 sets out the NVC survey data from Coroners Wood Complex.

**Table 56: NVC survey data from Coroners Wood Complex (GM269989- GM320678\_L5863\_MAN294058\_L21508\_PH2\_290518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudoplatanus</i>	10	10	10	10	10	V (10 - 10)
<i>Quercus robur</i>	3	3	3	3	3	V (3 - 3)
<i>Fraxinus excelsior</i>	3	3	3	3	3	V (3 - 3)
<i>Crataegus monogyna</i>	2	2	2	2	2	V (2 - 2)
<i>Salix fragilis</i>	1	1	1	1	1	V (1 - 1)
<i>Salix caprea</i>	1	1	1	1	1	V (1 - 1)
<i>Hedera helix</i>	1	1	1	1	1	V (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	5	5	5	5	5	V (5 - 5)
<i>Rubus fruticosus agg.</i>	5	5	5	5	5	V (5 - 5)
<i>Prunus avium</i>	5	5	5	5	5	V (5 - 5)
<i>Ilex aquifolium</i>	4	4	4	4	4	V (4 - 4)
<i>Corylus avellana</i>	3	3	3	3	3	V (3 - 3)
<i>Symphoricarpos albus</i>	1	1	1	1	1	V (1 - 1)
<i>Quercus robur</i>	1	1	1	1	1	V (1 - 1)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelonga</i>	9	8	5	-	10	IV (5 - 10)
<i>Hedera helix</i>	7	2	5	10	-	IV (2 - 10)
<i>Heracleum sphondylium</i>	-	4	5	2	1	IV (1 - 5)
<i>Impatiens glandulifera</i>	-	4	1	3	4	IV (1 - 4)
<i>Fraxinus excelsior</i>	3	-	1	3	1	IV (1 - 3)
<i>Acer pseudoplatanus</i>	2	2	2	-	1	IV (1 - 2)
<i>Crataegus monogyna</i>	2	1	-	2	1	IV (1 - 2)
<i>Rubus fruticosus</i> agg.	8	-	-	4	7	III (4 - 7)
<i>Urtica dioica</i>	-	5	4	3	-	III (3 - 5)
<i>Brachythecium rutabulum</i>	3	3	2	-	-	III (2 - 6)
<i>Silene dioica</i>	-	3	8	-	1	III (1 - 8)
<i>Galium aparine</i>	-	1	1	-	1	III (1 - 1)
<i>Hyacinthoides non-scripta</i>	-	8	5	-	-	II (5 - 8)
<i>Holcus mollis</i>	-	1	4	-	-	II (1 - 4)
<i>Dryopteris dilatata</i>	2	-	-	1	-	II (1 - 2)
<i>Plagiomnium undulatum</i>	-	-	7	-	-	I (7)
<i>Atrichum undulatum</i>	-	-	7	-	-	I (7)
<i>Poa trivialis</i>	-	5	-	-	-	I (5)
<i>Arrhenatherum elatius</i> ssp. <i>bulbosum</i>	-	-	-	-	5	I (5)
<i>Viola</i> sp.	3	-	-	-	-	I (3 - 3)
<i>Stachys sylvatica</i>	-	3	-	-	-	I (3 - 3)
<i>Anthriscus sylvestris</i>	-	-	3	-	-	I (3 - 3)
<i>Taraxacum</i> agg.	-	-	3	-	-	I (3 - 3)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Ficaria verna</i>	-	3	-	-	-	I (3 - 3)
<i>Poa nemoralis</i>	-	1	-	-	-	I (1 - 1)
<i>Dryopteris filix-mass</i>	-	1	-	-	-	I (1 - 1)
<i>Senecio jacobaea</i>	-	1	-	-	-	I (1 - 1)
<i>Lamium album</i>	-	1	-	-	-	I (1 - 1)
<i>Lapsana communis</i>	-	1	-	-	-	I (1 - 1)
<i>Veronica chamaedrys</i>	-	-	-	1	-	I (1 - 1)
Bare Ground and Leaf Litter (cover)	4	4	3	-	-	III (3 - 4)

## Coroners Wood Complex (MAN107024\_L5926\_F001\_PH2\_280619)

### Site description and reasons for selection for survey

2.3.219 Coroners Wood is a complex of broadleaved woods situated close to one another, located near the southern banks of the Manchester Ship Canal, west of Partington. This stand (F001) is an area mapped by Natural England as deciduous woodland PHI and is due south of an area of housing. It is not an AWI site.

### Vegetation communities present

2.3.220 This woodland canopy comprises sycamore, ash and hornbeam with some pedunculate oak, field maple and goat willow. The structure of the understorey is sparse with occasional elder, hawthorn, holly and hazel. Large areas of bare ground are present due to high levels of recreational trampling. The shrub layer is limited with occasional hawthorn and bramble. A diverse range of ground flora species are present, all at low frequency and abundance including hogweed, bramble, herb Robert (*Geranium robertianum*), wood avens (*Geum urbanum*), rough-stalked meadow grass, common nettle, and ivy. This habitat is broadly characteristic of W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. The TABLEFIT analysis returned a result of W8e with a 22% 'goodness of fit' which is a very weak match – the vegetation is best

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### Ecological baseline data – National Vegetation Classification and ancient woodland

referred to the W8 main community only without further sub-community division. This woodland may qualify as lowland mixed deciduous woodland HoPI but it is a relatively disturbed example.

2.3.221 Eight vascular plant species that are indicative of ancient woodland were recorded from Coroner's Wood: hornbeam, ramsons, bearded couch, field maple, crab apple, dogwood (*Cornus sanguinea*), scaly male-fern and bluebell.

2.3.222 Table 57 sets out the NVC survey data from Coroners Wood Complex (F001).

**Table 57: NVC survey data from Coroners Wood Complex (MAN107024\_L5926\_F001\_PH2\_280619)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudoplatanus</i>	-	5	5	-	10	III (5 - 10)
<i>Carpinus betulus</i>	-	8	7	8	-	III (7 - 8)
<i>Fraxinus excelsior</i>	3	-	8	-	3	III (3 - 8)
<i>Acer campestre</i>	6	4	-	-	-	II (4 - 6)
<i>Salix caprea</i>	-	6	3	-	-	II (3 - 6)
<i>Quercus robur</i>	-	4	-	-	3	II (3 - 4)
<i>Crataegus monogyna</i>	-	7	-	-	2	II (2 - 7)
<i>Betula pendula</i>	-	-	4	2	-	II (2 - 4)
<i>Corylus avellana</i>	8	-	-	-	-	I (8)
<i>Cornus sanguinea</i>	-	-	-	5	-	I (5)
<i>Sorbus aucuparia</i>	-	-	-	1	-	I (1)
<i>Salix fragilis</i>	-	-	-	-	1	I (1)
<i>Hedera helix</i>	-	-	-	-	1	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Corylus avellana</i>	2	-	5	-	3	III (2 - 5)
<i>Ilex aquifolium</i>	-	-	-	4	4	II (4 - 4)

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Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Sambucus nigra</i>	-	1	-	6	-	II (1 - 6)
<i>Crataegus monogyna</i>	-	1	-	-	5	II (1 - 5)
<i>Rubus fruticosus</i> agg.	-	-	-	-	5	I (5)
<i>Prunus avium</i>	-	-	-	-	5	I (5)
<i>Acer campestre</i>	5	-	-	-	-	I (5)
<i>Cornus sanguinea</i>	-	-	3	-	-	I (3)
<i>Acer platanoides</i>	-	-	2	-	-	I (2)
<i>Sorbus aucuparia</i>	-	-	-	1	-	I (1)
<i>Symphoricarpos albus</i>	-	-	-	-	1	I (1)
<i>Quercus robur</i>	-	-	-	-	1	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Herecleum sphondylium</i>	1	1	5	-	-	III (1 - 5)
<i>Rubus fruticosus</i> agg.	-	-	7	-	8	II (7 - 8)
<i>Geranium robertianum</i>	-	8	6	-	-	II (6 - 8)
<i>Geum urbanum</i>	-	7	5	-	-	II (5 - 7)
<i>Poa trivialis</i>	-	4	4	-	-	II (4 - 4)
<i>Fraxinus excelsior</i> seedlings	-	6	-	-	3	II (3 - 6)
<i>Urtica dioica</i>	-	3	3	-	-	II (3 - 3)
<i>Hedera helix</i>	-	-	-	1	7	II (1 - 7)
<i>Alliaria petiolata</i>	4	-	1	-	-	II (1 - 1)
<i>Taraxacum officinale</i>	1	-	1	-	-	II (1 - 1)
<i>Allium ursinum</i>	-	1	1	-	-	II (1 - 1)
<i>Kindbergia praelonga</i>	-	-	-	-	9	I (9)
<i>Galium aparine</i>	-	-	8	-	-	I (8)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Holcus lanatus</i>	-	-	6	-	-	I (6)
<i>Brachythecium rutabulum</i>	-	-	-	-	3	I (3)
<i>Dryopteris dilatata</i>	-	-	-	-	2	I (2)
<i>Viola sp.</i>	-	-	-	-	2	I (2)
<i>Acer pseudoplatanus</i>	-	-	-	-	2	I (2)
<i>Crataegus monogyna</i>	-	-	-	-	2	I (2)
<i>Dactylis glomerata</i>	-	1	-	-	-	I (1)
<i>Ilex aquifolium</i>	-	-	-	1	-	I (1)
<i>Myosotis sylvatica</i>	-	-	-	1	-	I (1)
<i>Hyacinthoides non-scripta</i>	-	-	-	1	-	I (1)
Bare ground	10	8	5	10	-	IV (5 - 10)

## Coroners Wood Complex (MAN107024\_L5926\_F002\_PH2\_280619)

### Site description and reasons for selection for survey

- 2.3.223 Coroners Wood is a complex of broadleaved woods situated close to one another, located near the southern banks of the Manchester Ship Canal, west of Partington. This stand (F002) is an area mapped by Natural England as deciduous woodland PHI and is west of an area of housing. It is not an AWI site.

### Vegetation communities present

- 2.3.224 Hornbeam is dominant with cherry laurel rare in the understorey and occasional hornbeam saplings. Variegated yellow-archangel is present in this woodland. This vegetation is a species-poor hornbeam woodland. It is not possible to classify this type of vegetation further using the NVC as sufficient indicator species are absent to place it clearly within NVC types W10 or W8. The wood may qualify as lowland mixed deciduous woodland HoPI but it is a relatively specie-poor, shaded example.

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Ecological baseline data – National Vegetation Classification and ancient woodland

### **Coroners Wood Complex (MAN107024\_L5926\_F003\_PH2\_280619)**

#### **Site description and reasons for selection for survey**

- 2.3.225 Coroners Wood is a complex of broadleaved woods situated close to one another, located near the southern banks of the Manchester Ship Canal, west of Partington. This stand (F003) is an area mapped by Natural England as deciduous woodland PHI and is west of an area of housing. It is not an AWI site. It is close to stand F002 but separated from it by an area of grassland.

#### **Vegetation communities present**

- 2.3.226 A small area of broadleaved woodland dominated by hornbeam with rare silver birch. No understorey is present. The field layer is dominated by ivy with a low cover and abundance of bluebell. This vegetation is a species-poor hornbeam woodland. It is not possible to classify this type of vegetation further using the NVC as sufficient indicator species are absent to place it clearly within NVC types W10 or W8. The wood may qualify as lowland mixed deciduous woodland HoPI but it is a relatively specie-poor, shaded example.

### **Coroners Wood Complex (MAN107024\_L5926\_F004\_PH2\_280619)**

#### **Site description and reasons for selection for survey**

- 2.3.227 Coroners Wood is a complex of broadleaved woods situated close to one another, located near the southern banks of the Manchester Ship Canal, west of Partington. This stand (F004) is not designated as an AWI site or an LWS, it is a linear woodland surrounding the north and west boundary of a small water treatment works. Part of the woodland is identified by Natural England on the PHI as deciduous woodland.

#### **Vegetation communities present**

- 2.3.228 Broadleaved woodland dominated by sycamore. The understorey contains dense, locally abundance blackthorn. The ground flora is dominated by ivy. There are no signs of recent management within the woodland. Himalayan balsam is frequent in the south of this woodland. This vegetation is species-poor, young sycamore woodland. It is not possible to classify this type of vegetation further using the NVC as sufficient indicator species are absent to place it clearly within NVC types W10 or W8. This young, species-poor woodland is unlikely to qualify as a HoPI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Coroners Wood Complex (MAN107024\_L5926\_F005\_PH2\_280619)

## Site description and reasons for selection for survey

2.3.229 Coroners Wood is a complex of broadleaved woods situated close to one another, located near the southern banks of the Manchester Ship Canal, west of Partington. This stand (F005) is an AWI site, is designated as Coroners Wood SBI and is identified as deciduous woodland PHI by Natural England.

## Vegetation communities present

2.3.230 A large area of broadleaved woodland dominated by pedunculate oak with abundant sycamore. The canopy is gappy in places. The understorey is sparse with occasional hawthorn and elder. Himalayan balsam is frequent in the ground flora. The woodland is a loose match to NVC community W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, indicated by the relatively species-rich ground flora and presence of indicators of slight base-enrichment. However, the woodland also contains main non-typical W8 woodland plants and does not align closely with any single sub-community strongly. This woodland is likely to qualify as lowland mixed deciduous woodland HoPI.

2.3.231 Thirteen vascular plant species that is indicative of ancient woodland were recorded from Coroner's Wood (either on quadrats or incidentally): field maple, holly, wild cherry, wych elm, ramsons, pendulous sedge (*Carex pendula*), remote sedge, goldilocks buttercup (*Ranunculus auricomus*), wood sorrel, bluebell, bearded couch, golden-scaly male-fern, wood millet.

2.3.232 Table 58 sets out the NVC survey data from Coroners Wood Complex (F005).

**Table 58: NVC survey data from Coroners Wood Complex (MAN107024\_L5926\_F005\_PH2\_280619)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	9	9	5	8	8	V (5 - 9)
<i>Betula pendula</i>	-	4	1	2	3	IV (1 - 4)
<i>Quercus robur</i>	-	-	8	6	5	III (5 - 8)
<i>Salix alba</i>	-	4	-	-	-	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Fraxinus excelsior</i>	1	-	-	-	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	1	-	-	-	7	III (1 - 7)
<i>Sambucus nigra</i>	1	-	-	8	-	II (1 - 8)
<i>Fraxinus excelsior</i>	-	1	3	-	-	II (1 - 3)
<i>Ligustrum ovalifolium</i>	-	-	-	6	-	I (6)
<i>Ilex aquifolium</i>	-	-	-	-	3	I (3)
<i>Quercus robur</i>	-	2	-	-	-	I (2)
<i>Acer pseudoplatanus</i>	1	-	-	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	9	-	-	2	2	III (2 - 9)
<i>Hyacinthoides non-scripta</i>	-	-	5	5	3	III (3 - 5)
<i>Galium aparine</i>	-	-	2	9	5	III (2 - 9)
<i>Impatiens glandulifera</i>	5	-	1		5	III (1 - 5)
<i>Urtica dioica</i>	-	-	-	4	7	II (4 - 7)
<i>Geranium robertianum</i>	-	-	-	3	5	II (3 - 5)
<i>Fraxinus excelsior</i>	-	-	-	2	4	II (2 - 4)
<i>Geum urbanum</i>	-	3	-	-	2	II (2 - 3)
<i>Heracleum sphondylium</i>	-	1	1	-	-	II (1 - 1)
<i>Allium ursinum</i>	7	-	-	-	-	I (7)
<i>Silene dioica</i>	-	7	-	-	-	I (7)
<i>Pteridium aquilinum</i>	-	-	7	-	-	I (7)
<i>Elymus caninus</i>	-	6	-	-	-	I (6)
<i>Agrostis stolonifera</i>	-	-	5	-	-	I (5)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Fraxinus excelsior</i>	-	4	-	-	-	I (4)
<i>Stachys sylvatica</i>	-	-	-	4	-	I (4)
<i>Holcus lanatus</i>	-	-	-	-	4	I (4)
<i>Carex pendula</i>	-	-	-	-	4	I (4)
<i>Carex remota</i>	-	3	-	-	-	I (3)
<i>Dryopteris dilata</i>	-	3	-	-	-	I (3)
<i>Dryopteris filix-mas</i>	-	3	-	-	-	I (3)
<i>Arrhenatherum elatius</i>	-	-	3	-	-	I (3)
<i>Rubus idaeus</i>	-	-	3	-	-	I (3)
<i>Rubus fruticosus</i> agg	-	-	3	-	-	I (3)
<i>Alliaria petiolata</i>	-	-	-	-	3	I (3)
<i>Anthriscus sylvestris</i>	-	2	-	-	-	I (2)
<i>Dactylis glomerata</i>	-	-	2	-	-	I (2)
<i>Arum maculatum</i>	-	-	-	2	-	I (2)
<i>Taraxacum officinale</i>	-	-	-	-	1	I (1)
<i>Agrostis capillaris</i>	-	-	-	-	1	I (1)
Bare ground	8	-	7	7	8	IV (7 - 8)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

# Risley to Bamfurlong (MA05)

## Holcroft Moss (CH329686\_L21217\_F001\_PH2\_260618)

### Site description and reasons for selection for survey

2.3.233 Broadleaved semi-natural woodland in Holcroft Moss SSSI which is part of Manchester Mosses SAC, east of Gorse Covert. The majority of this stand is shown as deciduous woodland, and the rest as lowland raised bog on Natural England’s PHI. The woodland is not an AWI site.

### Vegetation communities present

2.3.234 The woodland is dominated by a mixture of willow species including hybrid crack willow, grey willow, eared willow (*Salix aurita*) and goat willow. Downy birch is abundant in the canopy. The understorey comprises elder, grey willow, silver birch, hawthorn and other species. The ground flora is relatively species-poor, with common nettle, bracken, bramble, cleavers, broad buckler-fern and few other species.

2.3.235 The species composition is characteristic of NVC W6e *Alnus glutinosa-Urtica dioica* woodland, *Betula pubescens* sub-community. The TABLEFIT analysis returned a result of W6 with a 75% goodness of fit. It is unusual, but not without precedent, to have a W6 woodland without alder as is the case here. The vegetation is also a loose match for NVC type W4a *Betula pubescens-Molinia caerulea* woodland, *Dryopteris dilatata-Rubus fruticosus* sub-community; however, it lacks a key indicator of this community - purple moor-grass (*Molinia caerulea*). The woodland qualifies as wet woodland HoPI.

2.3.236 Two vascular plant species that are indicative of ancient woodland were recorded: holly and guelder rose (*Viburnum opulus*).

2.3.237 Table 59 sets out the NVC survey data from Holcroft Moss (F001).

**Table 59: NVC survey data from Holcroft Moss (CH329686\_L21217\_F001\_PH2\_260618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Betula pubescens</i>	8	8	NS	NS	NS	II (8 - 8)

## Background Information and Data

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Salix fragilis</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Salix alba</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Prunus avium</i>	2	2	NS	NS	NS	II (2 - 2)
<b>Understorey (10m x 10m)</b>						
<i>Salix cinerea</i> subsp. <i>cinerea</i>	7	7	NS	NS	NS	II (7 - 7)
<i>Sambucus nigra</i>	4	4	NS	NS	NS	II (4 - 4)
<i>Betula pubescens</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Crataegus monogyna</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Rosa canina</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Viburnum opulus</i>	1	1	NS	NS	NS	II (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Urtica dioica</i>	9	8	NS	NS	NS	II (8 - 9)
<i>Galium aparine</i>	5	4	NS	NS	NS	II (4 - 5)
<i>Kindbergia praelonga</i>	2	6	NS	NS	NS	II (2 - 6)
<i>Rubus fruticosus</i> agg.	1	6	NS	NS	NS	II (1 - 6)
<i>Eurhynchium striatum</i>	9	-	NS	NS	NS	I (9)
<i>Hedera helix</i>	-	7	NS	NS	NS	I (7)
<i>Impatiens glandulifera</i>	-	4	NS	NS	NS	I (4)
<i>Poa trivialis</i>	2	-	NS	NS	NS	I (2)
<i>Ranunculus repens</i>	-	2	NS	NS	NS	I (2)
<i>Brachythecium rutabulum</i>	2	-	NS	NS	NS	I (2)
<i>Heracleum sphondylium</i>	2	-	NS	NS	NS	I (2)
<i>Geranium robertianum</i>	-	1	NS	NS	NS	I (1)
<i>Solanum dulcamara</i>	1	-	NS	NS	NS	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Cardamine flexuosa</i>	1	-	NS	NS	NS	I (1)
Bare ground/leaf litter	1	5	NS	NS	NS	II (1 - 5)

### Holcroft Moss (CH329686\_L21217\_F002\_PH2\_260618)

#### Site description and reasons for selection for survey

- 2.3.238 Broadleaved semi-natural woodland in Holcroft Moss SSSI and Manchester Mosses SAC and LWS, east of Gorse Covert. The stand is shown as partly deciduous woodland, partly lowland fen and partly lowland raised bog on Natural England's PHI. The woodland is not an AWI site.

#### Vegetation communities present

- 2.3.239 The woodland canopy is young and is dominated by silver birch. The understorey comprises grey willow, hawthorn, holly, young pedunculate oak and rowan. The ground flora consists of bracken, broad buckler-fern, bramble and purple moor-grass. This woodland habitat is comparable to the W16a *Quercus* spp.-*Betula* spp.-*Deschampsia flexuosa* woodland, *Quercus robur* sub-community due to the dominance of silver birch and downy birch, but it lacks key indicator species of that community (e.g. wavy hair-grass *Deschampsia flexuosa*). The woodland also has affinities to the W4 *Betula pubescens*-*Molinia caerulea* woodland, but purple moor-grass is rare (it would normally be frequent in W4 woodland). The woodland is likely to qualify as lowland mixed deciduous woodland HoPI or wet woodland HoPI. The woodland may have grown on former raised bog vegetation.
- 2.3.240 One vascular plant species that is indicative of ancient woodland was recorded: holly.
- 2.3.241 Table 60 sets out the NVC survey data from Holcroft Moss (F002).



## Background Information and Data

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Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 60: NVC survey data from Holcroft Moss (CH329686\_L21217\_F002\_PH2\_260618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Betula pendula</i>	10	-	-	-	-	I (10 - 10)
<i>Betula pubescens</i>	-	-	-	8	-	I (8)
<i>Salix fragilis</i>	-	-	-	3	-	I (3)
<i>Salix alba</i>	-	-	-	3	-	I (3)
<i>Prunus avium</i>	-	-	-	2	-	I (2)
<b>Understorey (10m x 10m)</b>						
<i>Salix cinerea subsp. cinerea</i>	2	-	-	7	-	II (2 - 7)
<i>Crataegus monogyna</i>	3	-	-	2	-	II (2 - 3)
<i>Betula pendula</i>	4	-	-	-	-	I (4)
<i>Sambucus nigra</i>	-	-	-	4	-	I (4)
<i>Quercus robur</i>	3	-	-	-	-	I (3)
<i>Sorbus aucuparia</i>	3	-	-	-	-	I (3)
<i>Betula pubescens</i>	-	-	-	3	-	I (3)
<i>Ilex aquifolium</i>	1	-	-	-	-	I (1)
<i>Viburnum opulus</i>	-	-	-	1	-	I (1)
<i>Salix aurita</i>	1	-	-	-	-	I (1)
<i>Rosa canina</i>	-	-	-	1	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	4	6	5	1	6	V (1 - 6)
<i>Kindbergia praelonga</i>	7	7	7	-	-	III (7 - 7)
<i>Pteridium aquilinum</i>	5	5	7	-	-	III (5 - 7)
<i>Dryopteris dilatata</i>	8	7	1	-	-	III (1 - 8)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Urtica dioica</i>	-	-	-	9	8	II (8 - 9)
<i>Galium aparine</i>	-	-	-	5	4	II (4 - 5)
<i>Kindbergia praelonga</i>	-	-	-	2	6	II (2 - 6)
<i>Brachythecium rutabulum</i>	3	2	-	-	-	II (2 - 3)
<i>Molinia caerulea</i>	-	-	3	2	-	II (2 - 3)
<i>Eurhynchium striatum</i>	-	-	-	9	-	I (9)
<i>Hedera helix</i>	-	-	-	-	7	I (7)
<i>Impatiens glandulifera</i>	-	-	-	-	4	I (4)
<i>Ranunculus repens</i>	-	-	-	-	2	I (2)
<i>Poa trivialis</i>	-	-	-	2	-	I (2)
<i>Geranium robertianum</i>	-	-	-	-	1	I (1)
<i>Solanum dulcamara</i>	-	-	-	1	-	I (1)
<i>Cardamine flexuosa</i>	-	-	-	1	-	I (1)
<i>Heracleum sphondylium</i>	-	-	-	2	-	I (1)

## Holcroft Moss (CH329686\_L21217\_F003\_PH2\_010917)

### Site description and reasons for selection for survey

- 2.3.242 Bog vegetation in Holcroft Moss SSSI, Manchester Mosses SAC and LWS. The vegetation is mapped by Natural England's PHI as lowland raised bog.

### Vegetation communities present

- 2.3.243 A homogenous area of bog vegetation dominated by purple moor-grass with frequent heather (*Calluna vulgaris*), bog mosses (*Sphagnum* spp.) and soft rush. The species composition is characteristic of M17a *Trichophorum cespitosum*-*Eriophorum vaginatum* blanket mire - *Drosera*

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

*rotundifolia-Sphagnum* spp. sub-community. The TABLEFIT analysis returned a result of M25a with a 78% 'goodness of fit' which is a plausible classification given the high cover of purple moor-grass. However, the presence of frequent *Sphagnum papillosum* is an indicator of the M17 community. This vegetation qualifies as lowland raised bog HoPI.

2.3.244 Table 61 sets out the NVC survey data from Holcroft Moss (F003).

**Table 61: NVC survey data from Holcroft Moss (CH329686\_L21217\_F003\_PH2\_010917)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Molinia caerulea</i>	9	8	7	6	7	V (6 - 9)
<i>Sphagnum papillosum</i>	5	5	6	8	-	IV (5 - 8)
<i>Erica tetralix</i>	-	4	3	2	2	IV (2 - 4)
<i>Calluna vulgaris</i>	4	-	3	2	2	IV (2 - 4)
<i>Polytrichum commune</i> var. <i>commune</i>	4	-	6	-	6	III (4 - 6)
<i>Sphagnum tenellum</i>	-	4	-	-	5	II (4 - 5)
<i>Vaccinium oxycoccus</i>	-	1	-	4	-	II (1 - 4)
<i>Eriophorum angustifolium</i>	-	-	2	-	-	I (4)
<i>Betula pubescens</i>	1	-	-	-	-	I (1)

## Land adjacent to Holcroft Moss (CH414713\_L21396\_F001\_PH2\_310719)

### Site description and reasons for selection for survey

2.3.245 A narrow strip of tall ruderal vegetation between arable habitat and woodland. This vegetation is mapped by Natural England's PHI as 'no main habitat but additional habitats present', it is due west/adjacent to the Holcroft Moss SAC, SSSI and LWS.

## Background Information and Data

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### Vegetation communities present

2.3.246 Creeping thistle is constant with common nettle and white clover. Other species present are false oat-grass (locally) and common ragwort. This habitat is an example of the OV25a *Urtica dioica-Cirsium arvense* community, *Holcus lanatus-Poa annua* sub-community. The TABLEFIT 'goodness of fit' result was 47% in support of NVC community OV25a. It does not qualify as a HoPI.

2.3.247 Table 62 sets out the NVC survey data from Holcroft Moss (F001).

**Table 62: NVC survey data from land adjacent to Holcroft Moss (CH414713\_L21396\_F001\_PH2\_310719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Cirsium arvense</i>	6	6	6	6	5	V (5 - 6)
<i>Senecio jacobaea</i>	-	-	-	2	3	II (2 - 3)
<i>Epilobium parviflorum</i>	-	-	-	-	4	I (4)
<i>Rubus fruticosus agg.</i>	-	-	-	-	4	I (4)
<i>Trifolium dubium</i>	3	-	-	-	-	I (3)
<i>Urtica dioica</i>	-	-	-	2	-	I (2)
<i>Sonchus asper</i>	2	-	-	-	-	I (2)
<i>Impatiens glandulifera</i>	-	1	-	-	-	I (1)
<i>Cirsium arvense</i>	6	6	6	6	5	V (5 - 6)

### Land adjacent to Holcroft Moss (CH414713\_L21396\_F002\_PH2\_310719)

#### Site description and reasons for selection for survey

2.3.248 Young broadleaved semi-natural woodland designated as Woods by Holcroft Moss LWS and mapped by Natural England's PHI as part 'no main habitat but additional habitats present' and part deciduous woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

2.3.249 Grey willow and silver birch form the canopy with a ground flora of common nettle, cleavers, bare ground, broad buckler-fern and few other species. This woodland is an example of NVC type W1 *Salix cinerea-Galium palustre* woodland. It qualifies as wet woodland HoPI but it is a relatively species-poor example.

2.3.250 Table 63 sets out the NVC survey data from Land adjacent to Holcroft Moss.

**Table 63: NVC survey data from land adjacent to Holcroft Moss (CH414713\_L21396\_F002\_PH2\_310719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Understorey (10m x 10m)</b>						
<i>Salix caprea</i>	9	9	9	9	9	V (9 - 9)
<i>Betula pendula</i>	5	5	5	5	5	V (5 - 5)
<b>Ground flora layer (4m x 4m)</b>						
<i>Urtica dioica</i>	6	7	6	7	4	V (4 - 7)
<i>Galium aparine</i>	4	6	5	6	7	V (4 - 7)
<i>Impatiens glandulifera</i>	-	2	3	4	6	IV (2 - 6)
<i>Heracleum sphondylium</i>	-	-	1	5	7	III (1 - 7)
<i>Dryopteris filix-mas</i>	6		2	-	-	II (2 - 6)
<i>Kindbergia praelonga</i>	5	4	-	-	-	II (4 - 5)
<i>Chamerion angustifolium</i>	-	-	-	3	2	II (2 - 3)
Bare ground	5	4	6	4	1	V (1 - 6)

### Pestfurlong Moss (CH398628-CH398941\_L7069\_F001\_PH2\_010819)

#### Site description and reasons for selection for survey

2.3.251 An area of continuous bracken in the southern part of Pestfurlong Moss LWS adjacent to rabbit-grazed grassland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

2.3.252 Bracken is dominant, an example of to the W25 *Pteridium aquilinum-Rubus fruticosus* underscrub community. This vegetation does not qualify as a HoPI.

2.3.253 Table 64 sets out the NVC survey data from Pestfurlong Moss.

**Table 64: NVC survey data from Pestfurlong Moss (CH398628-CH398941\_L7069\_F001\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora (4m x 4m)</b>						
<i>Pteridium aquilinum</i>	9	9	10	10	10	V (9 - 10)
<i>Epilobium montanum</i>	2	2	1	-	-	III (1 - 2)
<i>Ranunculus repens</i>	1	5	-	-	-	II (1 - 5)
<i>Sonchus asper</i>	-	1	-	-	1	II (1 - 1)
<i>Odontites vernus</i>	1	1	-	-	-	II (1 - 1)
<i>Rumex crispus</i>	1	1	-	-	-	II (1 - 1)
<i>Epilobium parviflorum</i>	2	-	-	-	-	I (2)
<i>Senecio jacobaea</i>	1	-	-	-	-	I (1)
<i>Rubus fruticosus</i> agg.	1	-	-	-	-	I (1)
<i>Heracleum sphondylium</i>	1	-	-	-	-	I (1)
<i>Urtica dioica</i>	-	1	-	-	-	I (1)
<i>Aegopodium podagraria</i>	-	-	-	1	-	I (1)
<i>Epilobium hirsutum</i>	-	-	-	-	3	I (3 - 3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Pestfurlong Moss (CH398628-CH398941\_L7069\_F002\_PH2\_010819)

#### Site description and reasons for selection for survey

2.3.254 A small area of unmanaged, scattered scrub in the north-west of Pestfurlong Moss LWS.

#### Vegetation communities present

2.3.255 Bramble is dominant. This vegetation is an example of the W24 *Rubus fruticosus* agg.- *Holcus lanatus* underscrub community. This vegetation does not qualify as a HoPI.

2.3.256 Table 65 sets out the NVC survey data from Pestfurlong Moss. One quadrat sample was adequate to achieve full coverage of this small stand of scrub.

**Table 65: NVC survey data from Pestfurlong Moss (CH398628-CH398941\_L7069\_F002\_PH2\_010819)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	9	NS	NS	NS	NS	I (9)
<i>Filipendula ulmaria</i>	5	NS	NS	NS	NS	I (5)
<i>Odontites vernus</i>	2	NS	NS	NS	NS	I (2)
<i>Cirsium arvense</i>	3	NS	NS	NS	NS	I (3)
<i>Epilobium montanum</i>	2	NS	NS	NS	NS	I (2)
<i>Rumex crispus</i>	1	NS	NS	NS	NS	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Pestfurlong Moss (CH398628-CH398941\_L7069\_F003\_PH2\_010819)

#### Site description and reasons for selection for survey

2.3.257 Semi-improved grassland on the west side of Pestfurlong Moss LWS, a small watercourses/drain is present through the grassland.

#### Vegetation communities present

2.3.258 The sward is comprised of constant and locally abundant Yorkshire fog with red fescue rare to locally frequent and creeping bent locally abundant. A number of species are present which indicate damp soil conditions including soft rush, great willowherb and hoary willowherb (*Epilobium parviflorum*). This grassland is not a close fit for any single NVC community but is an example of semi-natural, damp grassland with affinities to the MG11 *Festuca rubra*-*Agrostis stolonifera*-*Potentilla anserina* grassland. It does not qualify as a HoPI.

2.3.259 Table 66 sets out the NVC survey data from Pestfurlong Moss.

**Table 66: NVC survey data from Pestfurlong Moss (CH398628-CH398941\_L7069\_F003\_PH2\_010819)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Holcus lanatus</i>	8	6	4	4	4	V (4 - 8)
<i>Ranunculus acris</i>	1	5	6	7	7	V (1 - 7)
<i>Cirsium arvense</i>	2	-	3	1	2	IV (1 - 3)
<i>Plantago lanceolata</i>	-	6	8	4	-	III (4 - 8)
<i>Epilobium montanum</i>	2	-	3	2	-	III (2 - 3)
<i>Cerastium fontanum</i>	-	2	-	2	1	III (1 - 2)
<i>Odontites vernus</i>	5	5	-	-	-	II (5 - 5)
<i>Epilobium parviflorum</i>	-	-	-	2	4	II (2 - 2)
<i>Agrostis stolonifera</i>	-	-	-	6	8	II (2 - 2)
<i>Juncus effusus</i>	-	-	-	6	-	I (6)



## Background Information and Data

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Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Carex nigra</i>	-	-	5	-	-	I (5)
<i>Festuca rubra</i>	-	-	4	-	-	I (4)
<i>Trifolium repens</i>	-	1	-	-	-	I (4)
<i>Rumex crispus</i>	-	-	-	2	-	I (2)
<i>Lathyrus pratensis</i>	-	-	-	-	1	I (1)
<i>Epilobium hirsutum</i>	-	-	-	1	-	I (1)
Bare ground	4	-	-	-	-	I (4)

## Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F001\_PH2\_010819)

### Site description and reasons for selection for survey

- 2.3.260 Broadleaved semi-natural woodland in Pestfurlong Moss LWS and partly overlapping Gorse Covert Mounds LWS and Woodland Trust nature reserve. The surveyed vegetation is identified by Natural England's PHI as lowland raised bog with small areas of deciduous woodland. The location is used by the public as an open space.

### Vegetation communities present

- 2.3.261 Semi-mature, semi-natural broadleaved woodland on flat ground with gentle undulations and a network of small banks and drains. The species-poor canopy layer is closed and comprises predominantly silver birch with some locally frequent grey willow on the edges of the woodland. The sub-canopy is species-poor and relatively sparse with occasional rowan and hazel. The ground flora is open with large areas of bare ground and some patches of frequent bracken. The TABLEFIT 'goodness of fit' statistic is 33% for NVC community W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland, typical sub-community, which is a weak match, to be expected for an early successional woodland. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.262 No vascular plant species that are indicative of ancient woodland are present.

## Background Information and Data

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2.3.263 Table 67 sets out the NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (F001).

**Table 67: NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F001\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Betula pendula</i>	8	8	8	8	8	V (8 – 8)
<b>Understorey (10m x 10m)</b>						
<i>Sorbus aucuparia</i>	5	5	5	5	5	V (5 – 5)
<i>Corylus avellana</i>	1	1	1	1	1	V (1 - 1)
<i>Quercus robur</i>	1	1	1	1	1	V (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Dryopteris filix-mas</i>	3	4	-	5	4	IV (3 – 5)
<i>Kindbergia praelongia</i>	1	4	3	4	4	IV (1 – 4)
<i>Dryopteris dilatata</i>	-	4	5	-	3	III (3 – 5)
<i>Rubus fruticosus</i> agg.	5	-	-	5	-	II (5 – 5)
<i>Pteridium aquilinum</i>	-	-	-	-	4	I (4)
Bare ground	8	9	9	8	9	V (8 – 9)

## Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F002\_PH2\_010819)

### Site description and reasons for selection for survey

2.3.264 Marshy grassland/modified bog in Pestfurlong Moss LWS, near to the boundary and continuous with Gorse Covert Mounds LWS and Woodland Trust nature reserve. The surveyed vegetation is identified by Natural England's PHI as lowland raised bog. The location is used by the public as an open space.

## Background Information and Data

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### Vegetation communities present

- 2.3.265 Species-poor purple moor-grass mire habitat occurring on flat terrain. Silver birch is occasional which suggests that the mire may become woodland if left unmanaged. The mire is homogenous in structure and species composition, and is an example of NVC type M25 *Molinia caerulea* -*Potentilla erecta* mire community. It is too species-poor to further classify to sub-community level. The TABLEFIT 'goodness of fit' statistic was 31% match to NVC type H9 which is weak match for a heath community rather than a marshy grassland type, and is therefore discounted. The M25 NVC type falls under the definition of lowland raised bog HoPI but bogs with large areas of M25 are considered to represent disturbance from drainage or peat cutting<sup>31</sup>. The relatively more species-rich bog vegetation characteristic of good condition raised bogs is not present.
- 2.3.266 Table 68 sets out the NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (F002).

**Table 68: NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F002\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Molinia caerulea</i>	10	10	10	10	10	V (10 – 10)
<i>Betula pendula</i>	3	2	1	1	-	IV (1 – 3)

### Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F003\_PH2\_010819)

#### Site description and reasons for selection for survey

- 2.3.267 Semi-improved neutral grassland in Gorse Covert Mounds LWS and Woodland Trust nature reserve, partly overlapping the north of Pestfurlong Moss LWS. Approximately a third of the surveyed vegetation is identified by Natural England's PHI as 'no main habitat but additional habitats

<sup>31</sup> Biodiversity Reporting and Information Group (2011). *UK Biodiversity Action Plan – Priority Habitat Descriptions*. Joint Nature Conservation Committee, Peterborough.

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may be present' with additional description that the unconfirmed habitat may include deciduous woodland. The location is used by the public as an open space.

### Vegetation communities present

- 2.3.268 Grassland of approximately 0.3m height, on a shallow, south-facing slope, which is not in active management. Coarse grasses including Yorkshire fog dominate the sward. Red clover (*Trifolium pratense*) is frequent with occasional to frequent creeping buttercup, bird's-foot-trefoil, ribwort plantain (*Plantago lanceolata*), common knapweed, tufted vetch (*Vicia cracca*), and common mouse-ear (*Cerastium fontanum*). The grassland is an example of NVC type MG5a *Cynosurus cristatus-Centaurea nigra* grassland, *Lathyrus pratensis* sub-community. However, it lacks some of the fine grass species characteristic of this NVC type, and it is dominated by Yorkshire fog with only a sparse cover of broadleaved herb species. The strongest TABLETFIT 'goodness of fit' statistic is 49% for NVC type MG9b 46.63 but this is inappropriate for this vegetation as it lacks the constant of that community, tufted hair-grass. It is a relatively atypical and species poor example of lowland meadow HoPI. Certain constant species are missing which would typically occur in a MG5 sward.
- 2.3.269 Table 69 sets out the NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (F003).

**Table 69: NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F003\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Holcus lanatus</i>	8	7	6	4	4	V (4 – 8)
<i>Vicia cracca</i>	1	1	3	3	1	V (1 – 3)
<i>Trifolium pratense</i>	4	5	5	6	3	V (3 – 6)
<i>Odontites vernus</i>	3	4	-	3	5	IV (3 – 5)
<i>Cirsium arvense</i>	2	4	-	2	4	IV (2 – 4)
<i>Lotus corniculatus</i>	6	5	-	5	-	III (5 – 6)
<i>Centaurea nigra</i>	-	-	7	3	-	II (7 – 3)
<i>Agrostis stolonifera</i>	-	-	-	6	5	II (5 – 6)
<i>Lathyrus pratensis</i>	-	-	3	3	-	II (3 – 3)

## Background Information and Data

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Ranunculus acris</i>	-	-	-	2	5	II (2 – 5)
<i>Prunella vulgaris</i>	-	2	4	-	-	II (2 – 4)
<i>Rumex crispus</i>	1	-	1	-	-	II (2 – 2)
<i>Ranunculus repens</i>	-	1	-	-	2	II (1 – 2)
<i>Plantago lanceolata</i>	-	1	-	4	-	II (1 – 4)
<i>Prunus spinosa</i> (seedlings)	-	-	-	-	4	I (4)
<i>Trifolium dubium</i>	-	-	-	-	1	I (1)
<i>Cerastium fontanum</i>	-	-	-	-	2	I (2)
<i>Festuca rubra</i>	-	-	2	-	-	I (2)
<i>Succisa pratensis</i>	-	-	2	-	-	I (2)
<i>Carex hirta</i>	-	-	-	2	-	I (2)
<i>Trifolium repens</i>	-	4	-	-	-	I (4)

## Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F004\_PH2\_010819)

### Site description and reasons for selection for survey

2.3.270 Dense scrub on the boundary and in both of Pestfurlong Moss LWS and Gorse Covert Mounds LWS and Woodland Trust nature reserve.

### Vegetation communities present

2.3.271 A small area of scrub comprised of bramble with small amounts of hoary willowherb, Yorkshire fog and cleavers. This habitat is an example of NVC type W24 *Rubus fruticosus* -*Holcus lanatus* underscrub. It does not qualify as a HoPI. No TABLEFIT analysis is required as this is species-poor scrub, unambiguously attributable to the W24 community.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.272 Table 70 sets out the NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F004\_PH2\_010819). One quadrat sample was adequate to achieve full coverage of this small stand of scrub.

**Table 70: NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F004\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Understorey (10m x 10m)</b>						
<i>Rubus fruticosus</i> agg.	10	NS	NS	NS	NS	I (10)
<i>Epilobium parviflorum</i>	4	NS	NS	NS	NS	I (4)
<i>Galium aparine</i>	2	NS	NS	NS	NS	I (2)
<i>Holcus lanatus</i>	1	NS	NS	NS	NS	I (1)

## Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F005\_PH2\_010819)

### Site description and reasons for selection for survey

2.3.273 Young broadleaved semi-natural woodland in the east of Gorse Covert Mounds LWS and Woodland Trust nature reserve close to the boundary of Pestfurlong Moss LWS. The woodland is identified by Natural England's PHI as deciduous woodland and part of it as 'no main habitat but additional habitats present' PHI, with a note that the additional habitat is likely to be woodland.

### Vegetation communities present

2.3.274 The canopy is closed and is dominated by ash along with birch spp. and limes (*Tilia* spp). The sub-canopy comprises occasional elder, rowan, hazel and dog rose. The woodland is situated on a steep north-faced slope with a very species-poor ground flora dominated by common feather-moss and sparse common nettle, male fern and ash seedlings. The woodland is an example of NVC type W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, but it is a weak fit for this NVC type as many of the ground flora species are absent/there is a very sparse ground flora. The TABLEFIT 'goodness of fit' statistic is 25% in support of NVC type W10, which is a type of oak woodland, but the match statistic is very weak. This woodland qualifies as lowland mixed deciduous woodland HoPI but it is an immature, species-poor example.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.275 No vascular plant species indicative of ancient woodland are present.

2.3.276 Table 71 sets out the NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (F005).

**Table 71: NVC survey data from Pestfurlong Moss / Gorse Covert Mounds (CH398941\_L7073\_F005\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Fraxinus excelsior</i>	7	7	7	7	7	V (7 – 7)
<i>Betula</i> spp.	4	4	4	4	4	V (4 – 4)
<i>Tilia</i> spp.	4	4	4	4	4	V (4 – 4)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	4	4	4	4	4	V (4 – 4)
<i>Sorbus aucuparia</i>	4	4	4	4	4	V (4 – 4)
<i>Corylus avellana</i>	4	4	4	4	4	V (4 – 4)
<i>Rosa canina</i>	4	4	4	4	4	V (4 – 4)
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelonga</i>	9	9	9	8	8	V (8 – 9)
<i>Urtica dioica</i>	4	4	-	-	-	II (4 – 4)
<i>Fraxinus excelsior</i> (seedlings)	4	2	-	-	-	II (4 – 2)
<i>Dryopteris filix-mas</i>	3	-	-	-	-	I (3)
Bare ground	4	4	4	6	5	V (4 – 6)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Gorse Covert Mounds (CH367601-CH398941\_L7070\_F001\_PH2\_200819)

#### Site description and reasons for selection for survey

2.3.277 Young broadleaved plantation woodland in Gorse Covert Mounds LWS and Woodland Trust nature reserve. The woodland is various mapped on Natural England's PHI as deciduous woodland or 'no main habitat but additional habitats present'. The woodland is not an AWI site.

#### Vegetation communities present

2.3.278 A young, plantation woodland comprised of young/semi-mature trees. Silver birch, aspen (*Populus tremula*), pedunculate oak and ash are all frequent. The understorey is dense and is dominated by hawthorn, field maple, hazel and wild plum (*Prunus domestica* agg.). The ground flora is sparse with abundant bare ground, bramble, wood avens, common feather-moss (*Kindbergia praelonga*), rough-stalked feather-moss and tree seedlings. The habitat most closely resembles the W8a *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. The TABLEFIT 'goodness of fit' result was 33% in support of NVC community W12b which is not a good fit for the vegetation as it is not a semi-natural beech woodland. The woodland is best considered a young, variant of W8 woodland undifferentiated to sub-community level. This woodland may qualify as lowland mixed deciduous woodland HoPI but it is a young, immature example.

2.3.279 Ten vascular plant species that are indicative of ancient woodland were recorded from Gorse Covert Mounds (F001): aspen, alder buckthorn (*Frangula alnus*), field maple, dogwood, hazel, holly, wild cherry, guelder rose, primrose (*Primula vulgaris*) and redcurrant. Many of these species are obviously planted, however.

2.3.280 Table 72 sets out the NVC survey data from Gorse Covert Mounds (F001).

**Table 72: NVC survey data from Gorse Covert Mounds (CH367601-CH398941\_L7070\_F001\_PH2\_200819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Betula pendula</i>	6	6	6	6	6	V (6 - 6)
<i>Populus tremula</i>	6	6	6	6	6	V (6 - 6)
<i>Quercus robur</i>	5	5	5	5	5	V (5 - 5)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Fraxinus excelsior</i>	5	5	5	5	5	V (5 - 5)
<i>Acer campestre</i>	3	3	3	3	3	V (3 - 3)
<i>Pinus sylvestris</i>	2	2	2	2	2	V (2 - 2)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	5	5	5	5	5	V (5 - 5)
<i>Acer campestre</i>	4	4	4	4	4	V (4 - 4)
<i>Corylus avellana</i>	4	4	4	4	4	V (4 - 4)
<i>Prunus domestica</i> agg.	4	4	4	4	4	V (4 - 4)
<i>Quercus robur</i> sapling	2	2	2	2	2	V (2 - 2)
<i>Sorbus aucuparia</i>	2	2	2	2	2	V (2 - 2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Fraxinus excelsior</i> seedling	3	3	5	5	8	V (3 - 8)
<i>Kindbergia praelonga</i>	4	4	7	4	-	IV (4 - 7)
<i>Acer campestre</i> seedling	1	-	1	2	1	IV (1 - 2)
<i>Rubus fruticosus</i> agg.	4	-	6	3	-	III (3 - 6)
<i>Brachythecium rutabulum</i>	3	4	-	4	-	III (3 - 4)
<i>Ilex aquifolium</i> seedling	2	3	-	3	-	III (2 - 3)
<i>Geum urbanum</i>	-	-	5	1	1	III (1 - 5)
<i>Populus tremula</i>	1	1	-	4	-	III (1 - 4)
<i>Epilobium montanum</i>	-	-	3	3	-	II (3 - 3)
<i>Crataegus monogyna</i> seedling	-	-	-	3	1	II (1 - 3)
<i>Ribes rubrum</i>	-	5	-	-	-	I (5)
<i>Hedera helix</i>	-	3	-	-	-	I (3)
<i>Poa annua</i>	-	-	3	-	-	I (3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rosa canina</i> seedling	-	-	-	3	-	I (3)
<i>Prunus domestica</i> ssp. <i>insititia</i>	2	-	-	-	-	I (2)
<i>Dryopteris filix-mas</i>	-	-	-	1	-	I (1)
<i>Prunus spinosa</i> seedling	-	-	1	-	-	I (1)
<i>Sorbus aucuparia</i> seedling	-	-	1	-	-	I (1)
<i>Sambucus nigra</i> seedling	-	-	-	1	-	I (1)
<i>Corylus avellana</i> seedling	-	-	-	1	-	I (1)
<i>Prunus avium</i> seedling	-	-	-	1	-	I (1)
Bare ground	9	8	5	7	7	V (5 - 9)

## Gorse Covert Mounds (CH367601-CH398941\_L7070\_F002\_PH2\_200819)

### Site description and reasons for selection for survey

- 2.3.281 Narrow areas of wet woodland around ponds in the south-east sections of Gorse Covert Mounds LWS and Woodland Trust nature reserve. The woodland is mapped as deciduous woodland on Natural England's PHI. The woodland is not an AWI site.

### Vegetation communities present

- 2.3.282 The woodland canopy comprises mainly grey willow with some ash, silver birch and alder. The understorey is sparse including ash and hybrid crack willow saplings and some hazel, dog rose (*Rosa canina* agg.), blackthorn, guelder-rose and elder. The ground flora is dominated by common nettle and common feather-moss. The habitat is identified as W1 *Salix cinerea-Galium palustre* woodland community. The TABLEFIT 'goodness of fit' result was 40% in support of NVC community W6d. However, the W1 community is considered a better fit given the dominance of grey willow and young, scrubby nature of the wood. This habitat qualifies as wet woodland HoPI.
- 2.3.283 Six vascular plant species which are inactive of ancient woodland were recorded in low numbers comprising guelder-rose, hart's-tongue fern, remote sedge, soft shield-fern (*Polystichum setiferum*), field maple and guelder rose.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.284 Table 73 sets out the NVC survey data from Gorse Covert Mounds (F002). Two quadrat sample was adequate to achieve full coverage of this small stand.

**Table 73: NVC survey data from Gorse Covert Mounds (CH367601-CH398941\_L7070\_F002\_PH2\_200819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Salix cinerea</i> subsp. <i>oleifolia</i>	8	8	NS	NS	NS	II (8 - 8)
<i>Fraxinus excelsior</i>	4	4	NS	NS	NS	II (4 - 4)
<i>Betula pendula</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Alnus glutinosa</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Alnus cordata</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Alnus incana</i>	1	1	NS	NS	NS	II (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Fraxinus excelsior</i> sapling	3	3	NS	NS	NS	II (3 - 3)
<i>Corylus avellana</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Rosa canina</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Prunus spinosa</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Viburnum opulus</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Salix fragilis</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Sambucus nigra</i>	1	1	NS	NS	NS	II (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Urtica dioica</i>	7	5	NS	NS	NS	II (5 - 7)
<i>Kindbergia praelonga</i>	5	7	NS	NS	NS	II (5 - 7)
<i>Brachythecium rutabulum</i>	5	-	NS	NS	NS	I (5)
<i>Dryopteris filix-mas</i>	-	5	NS	NS	NS	I (5)
<i>Geum urbanum</i>	-	4	NS	NS	NS	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Epilobium montanum</i>	-	3	NS	NS	NS	I (3)
<i>Rumex sanguineus</i>	-	3	NS	NS	NS	I (3)
<i>Dryopteris dilatata</i>	-	2	NS	NS	NS	I (2)
<i>Geranium robertianum</i>	1	-	NS	NS	NS	I (1)
<i>Ranunculus repens</i>	-	1	NS	NS	NS	I (1)
<i>Crataegus monogyna seedling</i>	-	1	NS	NS	NS	I (1)
Bare ground	6	6	NS	NS	NS	II (6 - 6)

## Gorse Covert Mounds (CH367601-CH398941\_L7070\_F003\_PH2\_200819)

### Site description and reasons for selection for survey

2.3.285 Broadleaved semi-natural woodland in Gorse Covert Mounds LWS and Woodland Trust nature reserve which is mapped by Natural England as deciduous woodland PHI.

### Vegetation communities present

2.3.286 Young/semi-mature pedunculate oak, wild cherry and silver birch were present amongst mature hawthorn. The habitat present is characteristic of the W21a *Crataegus monogyna-Hedera helix* scrub community, due the dominance of hawthorn within the canopy layer with constant bramble. The TABLEFIT statistic for this vegetation is 40% in support of NVC community W6d *Alnus glutinosa-Urtica dioica* woodland, *Sambucus nigra* sub-community but this is not a suitable classification as no alder was present and the vegetation is not wet woodland. This vegetation is unlikely to qualify as lowland mixed deciduous woodland as it is dense scrub.

2.3.287 Ten vascular plant species that are indicative of ancient woodland were recorded (all at lower cover and frequency): field maple, dogwood, hazel, wild cherry, guelder rose, remote sedge, wood meadow-grass, hart's tongue, honeysuckle, redcurrant.

2.3.288 Table 74 sets out the NVC survey data from Gorse Covert Mounds (F003).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 74: NVC survey data from Gorse Covert Mounds (CH367601-CH398941\_L7070\_F003\_PH2\_200819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	3	3	3	3	3	V (3 - 3)
<i>Corylus avellana</i>	3	3	3	3	3	V (3 - 3)
<i>Betula pendula</i>	3	3	3	3	3	V (3 - 3)
<i>Prunus avium</i>	3	3	3	3	3	V (3 - 3)
<i>Salix cinerea</i> subsp. <i>oleifolia</i>	3	3	3	3	3	V (3 - 3)
<i>Crataegus monogyna</i>	10	10	10	10	10	V (10 - 10)
<b>Understorey (10m x 10m)</b>						
<i>Rosa canina</i>	4	4	4	4	4	I (4 - 4)
<i>Fraxinus excelsior</i> sapling	3	3	3	3	3	I (3 - 3)
<i>Cornus sanguinea</i>	3	3	3	3	3	I (3 - 3)
<i>Sambucus nigra</i>	3	3	3	3	3	I (3 - 3)
<i>Prunus spinosa</i>	3	3	3	3	3	I (3 - 3)
<i>Ulex europaeus</i>	2	2	2	2	2	I (2 - 2)
<i>Acer campestre</i> sapling	2	2	2	2	2	I (2 - 2)
<i>Viburnum opulus</i>	2	2	2	2	2	I (2 - 2)
<i>Lonicera periclymenum</i>	1	1	1	1	1	I (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelonga</i>	7	5	4	6	5	V (4 - 7)
<i>Urtica dioica</i>	2	2	3	3	4	V (2 - 4)
<i>Dryopteris filix-mas</i>	2	2	3	4	3	V (2 - 4)
<i>Plagiomnium undulatum</i>	7	8	7	-	4	IV (4 - 8)
<i>Epilobium montanum</i>	3	3	-	4	4	IV (3 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rubus fruticosus</i> agg.	3	1	-	3	7	IV (1 - 7)
<i>Geum urbanum</i>	-	1	1	3	4	IV (1 - 4)
<i>Cardamine flexuosa</i>	-	-	3	2	3	III (2 - 3)
<i>Poa nemoralis</i>	-	1	-	1	5	III (1 - 5)
<i>Dryopteris dilatata</i>	-	1	3	-	3	III (1 - 3)
<i>Crataegus monogyna</i> seedling	1	1	-	-	2	III (1 - 2)
<i>Fraxinus excelsior</i> seedling	1	1	-	1	-	III (1 - 1)
<i>Prunus spinosa</i> seedling	3	3	-	-	-	II (3 - 3)
<i>Geranium robertianum</i>	-	-	-	1	1	II (1 - 1)
<i>Acer campestre</i> seedling	-	-	-	1	1	II (1 - 1)
<i>Brachythecium rutabulum</i>	-	-	-	4	-	I (4)
<i>Juncus effusus</i>	-	-	-	-	2	I (2)
<i>Ranunculus repens</i>	-	-	1	-	-	I (1)
<i>Iris foetidissima</i>	1	-	-	-	-	I (1)
<i>Lonicera periclymenum</i>	1	-	-	-	-	I (1)
<i>Sambucus nigra</i> seedling	1	-	-	-	-	I (1)
<i>Potentilla reptans</i>	-	-	-	-	1	I (1)
<i>Rosa canina</i> seedling	-	-	-	1	-	I (1)
<i>Veronica serpyllifolia</i>	-	-	-	1	-	I (1)
<i>Taraxacum officinalis</i> agg.	-	-	-	1	-	I (1)
<i>Senecio jacobaea</i>	-	-	-	1	-	I (1)
<i>Prunella vulgaris</i>	-	-	-	1	-	I (1)
<i>Carex remota</i>	1	-	-	-	-	I (1)
Bare ground	4	4	7	7	4	V (4 - 7)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Gorse Covert Mounds (CH367601-CH398941\_L7070\_F004\_PH2\_200819)

#### Site description and reasons for selection for survey

2.3.289 Broadleaved semi-natural woodland in Gorse Covert Mounds LWS and Woodland Trust nature reserve. This habitat is mapped by Natural England's PHI as deciduous woodland.

#### Vegetation communities present

2.3.290 The woodland canopy is dominated by semi-mature silver birch with an understorey of elder, grey willow, holly and hawthorn. The ground flora is species-poor and comprised mainly bramble, common nettle, cleavers, ivy and broad-leaved willowherb (*Epilobium montanum*). Bare ground is abundant. This woodland is not a strong match for any single NVC community and is better referenced as young birch woodland with species loosely indicative of W8 woodland (e.g. species which indicate some base enrichment in the soils including dogwood, wood dock and wood avens). The TABLEFIT 'goodness of fit' result was 37% in support of NVC community W12b, which is a type of beech woodland on basic soils and is not representative of the vegetation present. This woodland is unlikely to qualify as lowland mixed deciduous woodland HoPI as it is very young woodland which may be of plantation origin.

2.3.291 Seven vascular plant species that is indicative of ancient woodland were recorded (all at lower cover and frequency: field maple, dogwood, hazel, holly, wild cherry, guelder rose, remote sedge, redcurrant).

2.3.292 Table 75 sets out the NVC survey data from Gorse Covert Mounds (F004).

**Table 75: NVC survey data from Gorse Covert Mounds (CH367601-CH398941\_L7070\_F004\_PH2\_200819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Betula pendula</i>	10	10	10	10	10	V (10 - 10)
<i>Salix caprea</i>	1	1	1	1	1	V (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	4	4	4	4	4	V (4 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Salix cinerea</i> subsp. <i>oleifolia</i>	4	4	4	4	4	V (4 - 4)
<i>Ilex aquifolium</i>	4	4	4	4	4	V (4 - 4)
<i>Crataegus monogyna</i>	4	4	4	4	4	V (4 - 4)
<i>Prunus laurocerasus</i>	3	3	3	3	3	V (3 - 3)
<i>Rosa canina</i>	3	3	3	3	3	V (3 - 3)
<i>Cornus sanguinea</i>	3	3	3	3	3	V (3 - 3)
<i>Prunus avium</i>	1	1	1	1	1	V (1 - 1)
<i>Ribes rubrum</i>	1	1	1	1	1	V (1 - 1)
<i>Corylus avellana</i>	1	1	1	1	1	V (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	2	4	4	-	7	IV (2 - 7)
<i>Kindbergia praelonga</i>	4	4	-	-	7	III (4 - 7)
<i>Hedera helix</i>	-	-	9	9	3	III (3 - 9)
<i>Urtica dioica</i>	6	6	-	-	3	III (3 - 6)
<i>Galium aparine</i>	-	3	4	-	2	III (2 - 4)
<i>Epilobium montanum</i>	2	3	2	-	-	III (2 - 3)
<i>Geum urbanum</i>	2	-	2	-	3	III (2 - 3)
<i>Crataegus monogyna</i> seedling	-	-	1	2	1	III (1 - 2)
<i>Carex remota</i>	3	4	-	-	-	II (3 - 4)
<i>Fraxinus excelsior</i> seedling	3	-	-	-	3	II (3 - 3)
<i>Brachythecium rutabulum</i>	-	3	-	-	3	II (3 - 3)
<i>Ranunculus repens</i>	2	3	-	-	-	II (2 - 3)
<i>Equisetum arvense</i>	1	-	1	-	-	II (1 - 1)
<i>Geranium robertianum</i>	-	-	3	-	-	I (3)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rosa canina</i> seedling	-	-	-	-	3	I (3)
<i>Cardamine flexuosa</i>	2	-	-	-	-	I (2)
<i>Epilobium hirsutum</i>	-	2	-	-	-	I (2)
<i>Prunus avium</i> seedling	-	-	-	2	-	I (2)
<i>Rumex sanguineus</i>	-	1	-	-	-	I (1)
<i>Juncus effusus</i>	-	1	-	-	-	I (1)
<i>Sorbus aucuparia</i>	-	-	-	1	-	I (1)
<i>Dryopteris dilatata</i>	-	-	-	1	-	I (1)
<i>Heracleum sphondylium</i>	-	-	-	-	1	I (1)
Bare ground	7	6	9	9	8	V (6 - 9)

## Gorse Covert Mounds (CH367601-CH398941\_L7070\_F005\_PH2\_200819)

### Site description and reasons for selection for survey

2.3.293 Broadleaved semi-natural woodland in Gorse Covert Mounds LWS and Woodland Trust nature reserve. This habitat is mapped by Natural England's PHI as deciduous woodland.

### Vegetation communities present

2.3.294 A closed canopy of ash, with occasional birch and lime. The sub-canopy comprises occasional elder, rowan, hazel and dog rose. The species-poor, ground flora contained dominant common feather-moss with infrequent and sparse common nettle, male fern and ash seedlings. The woodland is loosely referable to the W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, but it is young woodland and not a strong match. This woodland is unlikely to qualify as lowland mixed deciduous woodland HoPI as it is very young woodland which may be of plantation origin.

2.3.295 No vascular plant species that is indicative of ancient woodland were recorded.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.296 Table 76 sets out the NVC survey data from Gorse Covert Mounds (F005).

**Table 76: NVC survey data from Gorse Covert Mounds (CH367601-CH398941\_L7070\_F005\_PH2\_200819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Fraxinus excelsior</i>	7	7	7	7	7	V (7 - 7)
<i>Betula</i> sp.	4	4	4	4	4	V (4 - 4)
<i>Tilia</i> sp.	4	4	4	4	4	V (4 - 4)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	4	4	4	4	4	V (4 - 4)
<i>Sorbus aucuparia</i>	4	4	4	4	4	V (4 - 4)
<i>Corylus avellana</i>	4	4	4	4	4	V (4 - 4)
<i>Rosa canina</i>	4	4	4	4	4	V (4 - 4)
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelonga</i>	9	9	9	8	8	V (8 - 9)
<i>Urtica dioica</i>	4	4	-	-	-	II (4 - 4)
<i>Dryopteris filix-mas</i>	3	-	-	-	-	I (3)
<i>Fraxinus excelsior</i> (seedlings)	-	2	-	-	-	I (2)
Bare ground	4	4	4	6	5	V (4 - 6)

## Gorse Covert Mounds (CH398941\_L7071\_F001\_PH2\_010819)

### Site description and reasons for selection for survey

2.3.297 A young, semi-mature woodland on an embankment above the A574 road in Gorse Covert Mounds Woodland Trust Reserve and LWS and Woodland Trust nature reserve. The woodland had thick vegetation on the most southern boundary thus preventing easy access.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

2.3.298 The canopy is comprised of abundant, young silver birch with ash. The sub-canopy is comprised of hazel, hawthorn and field maple. Ivy is locally dominant in the species-poor, ground flora. The bryophyte layer is comprised of sparse common feather-moss. This is a young, species-poor example of W8d *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland-*Hedera helix* sub-community.

2.3.299 Table 77 sets out the NVC survey data from Gorse Covert Mounds (F001).

**Table 77: NVC survey data from Gorse Covert Mounds (CH398941\_L7071\_F001\_PH2\_010819)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Betula pendula</i>	7	7	7	7	7	V (7 - 7)
<i>Prunus avium</i>	2	2	2	2	2	V (2 - 2)
<i>Larix decidua</i>	2	2	2	2	2	V (2 - 2)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	2	2	2	2	2	V (2 - 2)
<i>Acer campestre</i>	2	2	2	2	2	V (2 - 2)
<i>Ilex aquifolium</i>	2	2	2	2	2	V (2 - 2)
<i>Corylus avellana</i>	2	2	2	2	2	V (2 - 2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Fraxinus excelsior</i> seedlings	5	4	2	1	1	V (1 - 5)
<i>Hedera helix</i>	6	-	6	9	7	IV (6 - 9)
<i>Kindbergia praelonga</i>	-	3	3	-	4	III (3 - 4)
<i>Rubus fruticosus</i> agg.	-	3	-	3	4	III (3 - 4)
<i>Ribes</i> spp.	5	-	-	3	-	II (3 - 5)
<i>Acer campestre</i> seedlings	-	-	2	-	3	II (2 - 3)
<i>Ilex aquifolium</i> seedlings	1	-	-	2	-	II (1 - 2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Geum urbanum</i>	-	4	-	-	-	I (4)
<i>Prunus avium</i> seedlings	-	-	2	-	-	I (2)
<i>Corylus avellana</i> seedlings	-	-	2	-	-	I (2)
Bare ground	9	9	8	5	6	V (5 - 9)

## Gorse Covert Mounds (CH398941\_L7071\_F002\_PH2\_010819)

### Site description and reasons for selection for survey

- 2.3.300 Semi-improved grassland within Gorse Covert Mounds LWS and Woodland Trust nature reserve. The habitat is not mapped on Natural England's PHI.

### Vegetation communities present

- 2.3.301 False oat-grass is locally dominant with perennial rye-grass and Timothy grass frequent throughout. Other species are occasional to locally abundant including common bent, creeping bent and smooth meadow-grass (*Poa pratensis*). This grassland has the character/appearance of a seeded grassland which has accumulated species through low intensity management. The presence of frequent meadow vetchling, occasional common bird's-foot-trefoil and occasional yellow rattle (*Rhinanthus minor*) suggest that certain areas contain low nutrient soil or have been seeded. Other forbs species present at low density include ribwort plantain, curled dock (*Rumex crispus*), meadow buttercup (*Ranunculus acris*) and dandelion. This grassland is intermediate between MG1 *Arrhenatherum elatius* grassland and MG7b *Lolium perenne-Poa trivialis* leys. Small patches within the grassland are referable to MG5 *Cynosurus cristatus - Centaurea nigra* grassland. MG5 grassland qualifies as lowland meadow HoPI but MG7 and MG1 grassland are not HoPIs.
- 2.3.302 Table 78 sets out the NVC survey data from Gorse Covert Mounds (F002).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 78: NVC survey data from Gorse Covert Mounds (CH398941\_L7071\_F002\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Phleum pratense</i>	5	5	4	6	6	V (4 - 6)
<i>Lolium perenne</i>	4	1	2	4	4	V (1 - 4)
<i>Plantago lanceolata</i>	2	3	-	3	1	IV (1 - 3)
<i>Holcus lanatus</i>	-	1	2	2	2	IV (1 - 2)
<i>Lathyrus pratensis</i>	4	-	-	4	6	III (4 - 6)
<i>Rumex crispus</i>	-	-	2	1	4	III (1 - 4)
<i>Ranunculus acris</i>	2	2	-	-	2	III (2 - 2)
<i>Agrostis capillaris</i>	8	6	-	-	-	II (6 - 8)
<i>Arrhenatherum elatius</i>	-	4	9	-	-	II (4 - 9)
<i>Lotus corniculatus</i>	-	4	-	4	-	II (4 - 4)
<i>Rhinanthus minor</i>	4	1	-	-	-	II (1 - 4)
<i>Agrostis stolonifera</i>	-	-	-	6	-	I (6)
<i>Juncus effusus</i>	-	-	-	4	-	I (4)
<i>Odontites vernus</i>	2	-	-	-	-	I (2)
<i>Poa pratensis</i>	-	-	-	1	-	I (1)
<i>Taraxacum officinale</i> agg.	-	-	-	-	1	I (1)

## Silver Lane Ponds (CH510589\_L5485\_CH510589-CH571149-CH575176\_L5095\_CH103951\_L5080\_PH2\_250718)

### Site description and reasons for selection for survey

2.3.303 An area of semi-natural grassland inside Silver Land Ponds LWS. The grassland is not listed on Natural England's PHI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.304 Species-poor rush dominated vegetation with no clear dominant species and a weedy appearance. Soft rush, compact rush, Yorkshire fog and creeping buttercup are all occasional to locally frequent with fleabane (*Pulicaria dysenterica*) abundant locally, and reed canary-grass frequent locally. Creeping bent and rough-stalked meadow-grass are constant and occasional. The grassland is broadly referable to NVC type MG10 *Holcus lanatus*-*Juncus effusus* rush-pasture but also has elements that are referable to NVC type S28b *Phalaris arundinacea* tall-herb fen, *Epilobium hirsutum*-*Urtica dioica* sub-community. The TABLEFIT analysis returned a result of MG10c with a 40% goodness of fit. This relatively weak match is anticipated for mixed marshy vegetation without a clear dominant species. This vegetation is not a match for any HoPI description; however, it is moderately species-rich marshy grassland.
- 2.3.305 Table 79 sets out the NVC survey data from Silver Lane Ponds.

**Table 79: NVC survey data from Silver Lane Ponds (CH510589\_L5485\_CH510589-CH571149-CH575176\_L5095\_CH103951\_L5080\_PH2\_250718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Poa trivialis</i>	4	4	3	6	5	V (3 - 6)
<i>Ranunculus repens</i>	2	2	1	7	7	V (1 - 7)
<i>Brachythecium mildeanum</i>	1	5	1	2	1	V (1 - 5)
<i>Juncus conglomeratus</i>	1	5	5	3	5	V (1 - 5)
<i>Calliergonella cuspidata</i>	8	5	8	-	4	IV (4 - 8)
<i>Holcus lanatus</i>	5	-	3	4	4	IV (3 - 5)
<i>Agrostis stolonifera</i>	-	4	2	5	4	IV (2 - 5)
<i>Epilobium hirsutum</i>	4	1	3	2	-	IV (1 - 4)
<i>Senecio jacobaea</i>	2	1	3	-	1	IV (1 - 3)
<i>Pulicaria dysenterica</i>	-	8	5	-	-	III (5 - 8)
<i>Phalaris arundinacea</i>	5	-	5	4	-	III (4 - 5)
<i>Juncus effusus</i>	-	4	-	3	4	III (3 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Epilobium montanum</i>	2	-	1	-	3	III (1 - 3)
<i>Epilobium parviflorum</i>	2	-	1	-	3	III (1 - 3)
<i>Ranunculus acris</i>	1	-	-	1	2	III (1 - 2)
<i>Equisetum arvense</i>	4	-	4	-	-	II (4 - 4)
<i>Phleum pratense</i>	-	-	-	1	2	II (1 - 2)
<i>Angelica sylvestris</i>	-	-	-	-	3	I (3 - 3)
<i>Alopecurus pratensis</i>	-	-	2	-	-	I (2 - 2)
<i>Lathyrus pratensis</i>	-	-	-	2	-	I (2 - 2)
<i>Cirsium vulgare</i>	-	-	1	-	-	I (1 - 1)
<i>Odontites vernus</i>	-	-	1	-	-	I (1 - 1)
<i>Elytrigia repens</i>	-	-	1	-	-	I (1 - 1)
<i>Cerastium fontanum</i>	-	-	1	-	-	I (1 - 1)
<i>Rumex obtusifolius</i>	-	-	-	-	1	I (1 - 1)
<i>Lolium perenne</i>	-	-	-	1	-	I (1 - 1)
<i>Rumex crispus</i>	-	1	-	-	-	I (1 - 1)
<i>Taraxacum officinale</i> agg.	-	-	1	-	-	I (1 - 1)
Bare ground	1	4	1	2	1	(1 - 4)

## Silver Lane Ponds (CH510589\_L4916\_PH2\_250718)

### Site description and reasons for selection for survey

2.3.306 Semi-natural grassland in the west part of Silver Lane Ponds LWS. The grassland is not listed on Natural England's PHI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.307 Relatively diverse marshy vegetation with locally abundant compact rush and occasional soft rush and hard rush (*Juncus inflexus*). Yorkshire fog, rough-stalked meadow-grass, creeping bent and false oat-grass are all occasional to rare. Marsh thistle (*Cirsium palustre*) and black knapweed are locally frequent. Meadow vetchling, and greater birds-foot trefoil are occasional and early marsh-orchid (*Dactylorhiza incarnata*) is rarely in the sward. This species composition is loosely referable to NVC type M23 *Juncus effusus/acutiflorus-Galium palustre* rush-pasture but the habitat is not dominated by soft rush or sharp-flowered rush and lacks marsh bedstraw which is inconsistent with the description of M23 vegetation in NVC. The vegetation has similarities to MG10 *Holcus lanatus-Juncus effusus* rush-pasture but is too diverse in broadleaved herbaceous species for this NVC community, which is typically a semi-improved habitat. The TABLEFIT analysis returned a result of MG9a with a 31% 'goodness of fit' which is a weak match and not an adequate description of the vegetation as tufted hair-grass is not a prominent species. This vegetation is not a clear match to any HoPI type but is moderately species-rich, unimproved marshy grassland.
- 2.3.308 Table 80 sets out the NVC survey data from Silver Lane Ponds. Three quadrat samples were adequate to achieve full coverage of this small stand of marshy grassland.

**Table 80: NVC survey data from Silver Lane Ponds (CH510589\_L4916\_PH2\_250718)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Brachythecium mildeanum</i>	5	4	7	NS	NS	III (4-7)
<i>Holcus lanatus</i>	2	4	4	NS	NS	III (2-4)
<i>Ranunculus repens</i>	1	2	4	NS	NS	III (1-4)
<i>Cerastium fontanum</i>	1	3	2	NS	NS	III (1-3)
<i>Senecio jacobaea</i>	1	1	3	NS	NS	III (1-3)
<i>Juncus conglomeratus</i>	6	6	-	NS	NS	II (6-6)
<i>Poa trivialis</i>	-	5	5	NS	NS	II (5-5)
<i>Centaurea nigra</i>	6	-	4	NS	NS	II (4-6)
<i>Lotus pedunculatus</i>	4	4	-	NS	NS	II (4-4)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Carex aquatilis</i>	4	3	-	NS	NS	II (3-4)
<i>Cirsium arvense</i>	-	4	3	NS	NS	II (3-4)
<i>Juncus effusus</i>	3	4	-	NS	NS	II (3-4)
<i>Agrostis stolonifera</i>	3	-	3	NS	NS	II (3-3)
<i>Taraxacum officinale</i> agg.	-	2	2	NS	NS	II (2-4)
<i>Plantago lanceolata</i>	-	1	3	NS	NS	II (1-3)
<i>Juncus inflexus</i>	1	3	-	NS	NS	II (1-3)
<i>Epilobium parviflorum</i>	-	1	2	NS	NS	II (1-2)
<i>Equisetum arvense</i>	1	-	2	NS	NS	II (1-2)
<i>Quercus robur</i> (sapling)	-	1	1	NS	NS	II (1-1)
<i>Lathyrus pratensis</i>	-	6	-	NS	NS	I (6)
<i>Cirsium palustre</i>	5	-	-	NS	NS	I (5)
<i>Angelica sylvestris</i>	4	-	-	NS	NS	I (4)
<i>Arrhenatherum elatius</i>	-	3	-	NS	NS	I (3)
<i>Rubus fruticosus</i> agg.	-	3	-	NS	NS	I (3)
<i>Festuca rubra</i>	-	-	2	NS	NS	I (2)
<i>Dactylorhiza incarnata</i>	-	-	2	NS	NS	I (2)
<i>Agrimonia eupatoria</i>	-	1	-	NS	NS	I (1)
<i>Rumex crispus</i>	-	-	1	NS	NS	I (1)
<i>Ranunculus acris</i>	-	-	1	NS	NS	I (1)
<i>Geranium pusillum</i>	-	-	1	NS	NS	I (1)
<i>Myosotis</i> sp.	1	-	-	NS	NS	I (1)
<i>Dryopteris filix-mas</i>	1	-	-	NS	NS	I (1)
<i>Crataegus monogyna</i> (sapling)	-	1	-	NS	NS	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rumex obtusifolius</i>	-	1	-	NS	NS	I (1)
Bare ground	5	5	4	NS	NS	III (4-5)

## Ponds near Lightshaw Lane (GM413560-GM490996-GM917075\_L5298\_PH2\_151019)

### Site description and reasons for selection for survey

2.3.309 An unimproved grassland in Ponds near Lightshaw Lane SBI. This vegetation is listed as lowland fen on Natural England's PHI.

### Vegetation communities present

2.3.310 A mosaic of coarse, tussocky grasses intermixed with areas of finer, shorter grasses. The sampled vegetation included the finer grassland areas. Red fescue, sorrel, meadow buttercup, common bent, ribwort plantain, wild angelica, Yorkshire fog, false-oat grass and soft rush were all frequent to occasional species. A number of broadleaved herb species were present at low cover including black knapweed, tufted vetch and greater birds-foot trefoil. This grassland is considered a weak match to NVC type MG1e *Arrhenatherum elatius* grassland, *Centaurea nigra* sub-community. False oat-grass is present but at low cover (it would normally be high cover in MG1 grassland) and the presence of marshy species (e.g. soft rush, wild angelica) at low cover is not strongly characteristic of MG1 grassland. The TABLEFIT analysis returned a result of MG1 with a 71% goodness of fit. This grassland does not qualify as a HoPI but it is moderately species-rich grassland.

2.3.311 Table 81 sets out the NVC survey data from Ponds near Lightshaw Lane. Post-survey analysis considered it best to group all ten quadrat samples of this habitat into a single homogeneous stand of data. The standard for HS2 NVC surveys is five quadrats per stand. However, having more than five quadrats further strengthens the data.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 81: NVC survey data from Ponds near Lightshaw Lane (GM413560-GM490996-GM917075\_L5298\_PH2\_151019)**

Species	Quadrat locations										Constancy (Domin range)	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
<b>Ground flora layer (4m x 4m)</b>												
<i>Festuca rubra</i>	8	7	9	4	7	4	2	2	3	-	V (4 - 9)	
<i>Rumex acetosa</i>	2	5	6	6	5	-	5	6	5	6	V (2 - 6)	
<i>Agrostis capillaris</i>		5	6	9	8	-	3	4	3	-	IV (5 - 9)	
<i>Ranunculus acris</i>	2	3	6	3	5	4	2	-	-	-	IV (2 - 6)	
<i>Holcus lanatus</i>	-	4	5	3	2	-	2	4	4	4	IV (2 - 5)	
<i>Arrhenatherum elatius</i>	3	-	4	-	3	8	9	9	10	9	IV (3 - 4)	
<i>Dactylis glomerata</i>	4	2	-	-	-	7	4	3	2	7	IV (2 - 4)	
<i>Plantago lanceolata</i>	2	6	-	3	4	4	-	-	-	-	III (2 - 6)	
<i>Angelica sylvestris</i>	2	-	4	3	2	-	-	-	-	3	III (2 - 4)	
<i>Cirsium arvense</i>	-	-	-	-	-	5	4	-	6	7	II (5 - 7)	
<i>Vicia cracca</i>	3	3	-	-	-	-	2	-	-	3	II (3 - 3)	
<i>Centaurea nigra</i>		2	-	-	4	6	-	-	-	-	II (2 - 4)	
<i>Juncus effusus</i>	-	-	1	2	1	-	-	-	-	-	II (1 - 2)	
<i>Lophocolea bidentata</i>	-	-	-	-	-	5	-	-	-	-	I (5 - 5)	
<i>Rumex crispus</i>	-	-	-	-	-	-	4	5	-	-	I (4 - 4)	
<i>Trifolium pratense</i>	-	-	-	-	-	4	-	-	-	-	I (4 - 4)	
<i>Kindbergia praelonga</i>	-	-	-	-	-	-	-	-	3	-	I (3 - 3)	
<i>Heracleum sphondylium</i>	3	-	-	-	-	-	-	-	4	3	I (3 - 3)	
<i>Lotus pedunculatus</i>	-	3	-	-	-	-	-	3	-	-	I (3 - 3)	
<i>Rumex crispus</i>	-	-	2	1	-	-	-	-	-	-	I (1 - 2)	
<i>Equisetum arvense</i>	-	-	2	2	3	-	-	-	-	-	I (2 - 3)	
<i>Ranunculus repens</i>	-	-	-	-	-	2	-	-	-	-	I (2 - 2)	

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Species	Quadrat locations										Constancy (Domin range)	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
<i>Cirsium vulgare</i>	-	-	-	-	-	-	-	-	-	-	2	I (2 - 2)
<i>Vicia sativa</i>	-	-	-	1			-	-	-	-	-	I (1 - 1)
<i>Cerastium fontanum</i>	-	-	-	-		1	-	-	-	-	-	I (1 - 1)

### Ponds near Lightshaw Lane (GM413560-GM490996-GM917075\_L5298\_F003\_PH2\_151019)

#### Site description and reasons for selection for survey

- 2.3.312 Bramble scrub occurred in patches within the grassland (GM413560-GM490996-GM917075\_L5298\_PH2\_151019) in Ponds near Lightshaw Lane SBI.

#### Vegetation communities present

- 2.3.313 Bramble is dominant. The vegetation present is likely to be NVC typer W24 *Rubus fruticosus-Holcus lanatus* underscrub which is not a HoPI.

### Abram Flashes (MAN250230\_L4977\_PH2\_010819)

#### Site description and reasons for selection for survey

- 2.3.314 A linear grassland adjacent to the Leeds/Liverpool Canal in Abram Flashes SSSI and SBI. The grassland is in an area mapped by Natural England's PHI as lowland fen.

#### Vegetation communities present

- 2.3.315 False oat-grass, cock's-foot and Yorkshire-fog are frequent to locally abundant. Creeping bent and red fescue are constant with occasional Timothy grass, crested dog's-tail (*Cynosurus cristatus*), perennial rye-grass and common bent. Red clover, bird's-foot trefoil, ribwort plantain and black knapweed are present a low abundant and frequency. This grassland is MG1e *Arrhenatherum elatius* grassland, *Centaurea nigra* sub-

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Ecological baseline data – National Vegetation Classification and ancient woodland

community but is a relatively species-poor example with broadleaved herb species at low cover. The TABLEFIT analysis returned a result of 40% for NVC type MG11 which is a type of natural floodplain/wet grassland. NVC type MG1e is considered a better match for this vegetation as false oat-grass is prominent and the MG11 indicator species, silver weed (*Potentilla anserina*), is not present. This grassland does not qualify as a HoPI.

2.3.316 Table 82 sets out the NVC survey data from Abram Flashes.

**Table 82: NVC survey data from Abram Flashes (MAN250230\_L4977\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Festuca rubra</i>	7	5	4	-	4	IV (4-7)
<i>Agrostis stolonifera</i>	-	4	4	5	7	IV (4-7)
<i>Trifolium pratense</i>	-	4	7	1	4	IV (1-7)
<i>Holcus lanatus</i>	1	3	6	-	4	IV (1-6)
<i>Arrhenatherum elatius</i>	-	6	4	-	5	III (4-6)
<i>Dactylis glomerata</i>	4	-	2	-	3	III (2-4)
<i>Plantago lanceolata</i>	2	4	-	2	-	III (2-4)
<i>Trifolium repens</i>	-	2	4	2	-	III (2-4)
<i>Taraxacum officinale agg.</i>	2	-	3	-	2	III (2-3)
<i>Rhynchospora squarrosa</i>	4	-	-	7	-	II (4-7)
<i>Phleum pratense</i>	-	-	3	6	-	II (3-6)
<i>Cynosurus cristatus</i>	-	-	1	5	-	II (1-5)
<i>Plantago major</i>	-	1	-	3	-	II (1-3)
<i>Lolium perenne</i>	-	1	-	1	-	II (1-1)
<i>Agrostis capillaris</i>	7	-	-	-	-	I (7)
<i>Centaurea nigra</i>	-	6	-	-	-	I (6)
<i>Lotus corniculatus</i>	-	-	-	5	-	I (5)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Prunella vulgaris</i>	-	-	-	3	-	I (3)
<i>Cerastium fontanum</i>	-	-	-	-	2	I (2)
<i>Poa pratensis</i>	-	-	1	-	-	I (1)
<i>Trifolium dubium</i>	-	-	-	1	-	I (1)
<i>Ranunculus acris</i>	-	-	-	1	-	I (1)

### Abram Flashes (MAN250230\_L4948\_PH2\_010819)

#### Site description and reasons for selection for survey

- 2.3.317 An unmanaged, linear semi-natural grassland adjacent to the Leeds/Liverpool canal which is outside of Abram Flashes SSSI but inside the Abram Flashes SBI. This land is listed as 'no main habitat but additional habitats present' on Natural England's PHI.

#### Vegetation communities present

- 2.3.318 Tall, unmown grassland with common bent, red clover, crested dog's-tail, Yorkshire fog and red fescue all more-or-less constant at varying levels of abundance. A range of broadleaved herb species are occasional including bird's-foot trefoil, black knapweed, white clover, cat's ear (*Hypochaeris radicata*), devils-bit scabious (*Succisa pratensis*) and ox-eye daisy (*Leucanthemum vulgare*). This grassland is characteristic of NVC type MG5a *Cynosurus cristatus*-*Centaurea nigra* grassland, *Lathyrus pratensis* sub-community. The TABLEFIT analysis returned a result of with a 30% 'goodness of fit' for NVC type U4b, but this is not a suitable match as the sampled grasslands is not acid grassland contains no acid indicator species. MG5a grassland is likely to qualify as lowland meadow HoPI.
- 2.3.319 Table 83 sets out the NVC survey data from Abram Flashes.

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Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 83: NVC survey data from Abram Flashes (MAN250230\_L4948\_PH2\_010819)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Agrostis capillaris</i>	3	3	4	8	6	V (3 - 8)
<i>Trifolium pratense</i>	7	6	5	2	7	V (2 - 7)
<i>Cynosurus cristatus</i>	4	3	3	2	3	V (2 - 4)
<i>Holcus lanatus</i>	1	7	5	5	5	V (1 - 7)
<i>Festuca rubra</i>	4	1	7	1	6	V (1 - 7)
<i>Taraxacum officinale</i> agg.	-	6	3	3	2	IV (2 - 6)
<i>Lolium perenne</i>	2	1	1	5	-	IV (1 - 5)
<i>Dactylis glomerata</i>	4	5	-	4	-	III (4 - 5)
<i>Plantago lanceolata</i>	5	4	-	-	3	III (3 - 5)
<i>Trifolium repens</i>	-	-	2	4	4	III (2 - 4)
<i>Arrhenatherum elatius</i>	-	1	-	1	2	III (1 - 2)
<i>Lotus corniculatus</i>	5	-	5	-	-	II (5 - 5)
<i>Centaurea nigra</i>	3	-	-	-	3	II (3 - 3)
<i>Hypochaeris radicata</i>	-	-	-	3	2	II (2 - 3)
<i>Leucanthemum vulgare</i>	-	1	-	-	-	II (1 - 1)
<i>Calliergonella cuspidata</i>	7	-	-	-	-	I (7)
<i>Ranunculus repens</i>	4	-	-	-	-	I (4)
<i>Succisa pratensis</i>	2	-	-	-	-	I (2)
<i>Phleum pratense</i>	-	-	2	-	-	I (2)
<i>Senecio jacobaea</i>	-	-	-	2	-	I (2)
<i>Quercus robur</i> (seedling)	-	-	1	-	-	I (1)
<i>Juncus effusus</i>	-	-	-	-	1	I (1)
<i>Rubus fruticosus</i> agg.	-	-	-	-	1	I (1)

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Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

# Abram Flashes (GM719324\_L21153\_U201104\_L21305\_PH2\_F001\_270618)

## Site description and reasons for selection for survey

2.3.320 Unimproved grassland in Abram Flashes SSSI and SBI. This vegetation is mapped as lowland fens on Natural England's PHI.

## Vegetation communities present

2.3.321 A grassland dominated by false oat-grass with common nettle, broadleaved dock and several other species which indicate high soil nutrient levels. This species composition is characteristic of NVC MG1b *Arrhenatherum elatius* grassland *Urtica dioica* sub-community. The TABLEFIT analysis returned a result of MG1 with a 71% goodness of fit. This vegetation is not a HoPI.

2.3.322 Table 84 sets out the NVC survey data from Abram Flashes. A single quadrat was adequate to sample this species-poor vegetation.

**Table 84: NVC survey data from Abram Flashes (GM719324\_L21153\_U201104\_L21305\_PH2\_F001\_270618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Arrhenatherum elatius</i>	8	NS	NS	NS	NS	I (8)
<i>Cirsium arvense</i>	4	NS	NS	NS	NS	I (4)
<i>Rumex obtusifolius</i>	4	NS	NS	NS	NS	I (4)
<i>Urtica dioica</i>	2	NS	NS	NS	NS	I (2)
<i>Holcus lanatus</i>	2	NS	NS	NS	NS	I (2)
<i>Dactylis glomerata</i>	1	NS	NS	NS	NS	I (1)
<i>Cirsium palustre</i>	1	NS	NS	NS	NS	I (1)
<i>Agrostis capillaris</i>	1	NS	NS	NS	NS	I (1)
<i>Alopecurus pratensis</i>	1	NS	NS	NS	NS	I (1)
Bare ground	4	NS	NS	NS	NS	I (4)



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# Abram Flashes (GM719324\_L21153\_U201104\_L21305\_PH2\_F002\_270618)

## Site description and reasons for selection for survey

2.3.323 Swamp vegetation in Abram Flashes SSSI and SBI. The vegetation is in an area mapped by Natural England as lowland fen PHI.

## Vegetation communities present

2.3.324 An intricate mixed of rushes, tall graminoid (grass-like) swamp plants and water horsetail (*Equisetum fluviatile*). A diverse array of wetland and aquatic plants was present in the sward which occurred over a varying water table – small patches of standing water were present in places. This vegetation does not match closely to any single NVC type. It is best described as containing elements of at least three NVC communities, firstly rush pasture - NVC type M23b *Juncus effusus/acuteiflorus-Galium palustre* rush-pasture, *Juncus effusus* sub-community; secondly water horsetail swamp – NVC type S10a *Equisetum fluviatile* swamp, *Equisetum fluviatile* sub-community; and thirdly bur-reed swamp – NVC type S14c *Sparganium erectum* swamp, *Mentha aquatica* sub-community. The composition was approximately 40% (M23b), 20% (S10a) and 40% (S14c). The communities were intricately intermixed and thus had to be sampled as a single stand. The TABLEFIT analysis returned a result of 39% 'goodness of fit' to S11c *Carex vesicaria* swamp, *Carex rostrata* sub-community which is not a suitable classification as it is a poor fit and bladder sedge (*Carex vesicaria*) is lacking in the sample. The vegetation is not a direct match to any HoPI but elements of it may fall under purple moor-grass and rush pasture HoPI. The habitat is a species-rich wetland.

2.3.325 Table 85 sets out the NVC survey data from Abram Flashes.

**Table 85: NVC survey data from Abram Flashes (GM719324\_L21153\_U201104\_L21305\_PH2\_F002\_270618)**

Species	Quadrat locations					Constancy (Domin range)	
	Q1	Q2	Q3	Q4	Q5		
<b>Ground flora layer (4m x 4m)</b>							
<i>Equisetum fluviatile</i>	5	4	7	7	8	V (4 - 8)	
<i>Juncus effusus</i>	4	4	5	3	4	V (3 - 4)	
<i>Apium nodiflorum</i>	4	7	2	4	5	V (2 - 7)	
<i>Galium palustre</i>	3	2	3	3	1	V (1 - 3)	

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Mentha aquatic</i>	5	-	5	5	6	IV (5 - 6)
<i>Cratoneuron filicinum</i>	5	3	-	8	7	IV (3 - 8)
<i>Epilobium hirsutum</i>	4	1	-	1	3	IV (1 - 4)
<i>Poa trivialis</i>	1	-	1	4	3	IV (1 - 4)
<i>Lycopus europaeus</i>	3	4	4	-	-	III (3 - 4)
<i>Lemna minor</i>	4	8	-	-	2	III (2 - 8)
<i>Oenanthe crocata</i>	4	-	-	2	5	III (2 - 5)
<i>Cirsium palustre</i>	4	-	-	4	2	III (2 - 4)
<i>Phalaris arundinacea</i>	-	-	5	1	3	III (1 - 5)
<i>Typha latifolia</i>	4	5	-	-	1	III (1 - 5)
<i>Epilobium parviflorum</i>	1	-	-	4	3	III (1 - 4)
<i>Agrimonia eupatoria</i>	-	-	3	1	1	III (1 - 3)
<i>Juncus articulatus</i>	-	1	-	2	1	III (1 - 2)
<i>Salix cinerea</i>	1	-	-	2	2	III (1 - 2)
<i>Sparganium erectum</i>	5	7	-	-	-	II (5 - 7)
<i>Holcus lanatus</i>	1	-	-	5	3	II (3 - 5)
<i>Scutellaria galericulata</i>	-	-	2	-	4	II (2 - 4)
<i>Rumex sanguineus</i>	-	-	1	1	-	II (1 - 1)
<i>Rumex acetosa</i>	-	-	-	1	1	II (1 - 1)
<i>Ranunculus repens</i>	1	-	-	1	-	II (1 - 1)
<i>Myosotis scorpioides</i>	-	-	1	1	-	II (1 - 1)
<i>Juncus inflexus</i>	-	-	-	4	-	I (4 - 4)
<i>Epilobium palustre</i>	-	-	-	3	-	I (3 - 3)
<i>Stellaria alsine</i>	-	-	-	2	-	I (2 - 2)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Carex otrubae</i>	-	-	1	-	-	I (1 - 1)
<i>Cerastium fontanum</i>	-	-	-	1	-	I (1 - 1)
<i>Rumex crispus</i>	-	-	-	-	1	I (1 - 1)
<i>Epilobium montanum</i>	-	-	1	-	-	I (1 - 1)
<i>Senecio jacobaea</i>	-	-	-	1	-	I (1 - 1)
<i>Cardamine flexuosa</i>	-	-	1	-	-	I (1 - 1)
<i>Dactylorhiza</i> sp. (a marsh orchid)	-	-	-	1	-	I (1 - 1)
<i>Glyceria fluitans</i>	-	-	-	1	-	I (1 - 1)
<i>Luzula multiflora</i>	-	-	-	1	-	I (1 - 1)
Bare ground	3	4	4	2	1	V (1 - 4)

## Abram Flashes (MAN247592\_L4907\_F001\_PH2\_300719)

### Site description and reasons for selection for survey

2.3.326 Linear grassland adjacent to the Leeds/Liverpool Canal and in the north-east of Abram Flashes SSSI and SBI. The woodland is in an area mapped by Natural England's PHI as lowland fen.

### Vegetation communities present

2.3.327 Infrequently managed, tall grassland adjacent to the Leeds/Liverpool canal. The grassland is relatively species-poor with much bare ground. This grassland is an example of the MG1a *Arrhenatherum elatius* grassland *Festuca rubra* sub-community. Although false oat-grass is locally dominant not present in all samples. This grassland does not qualify as a HoPI.

2.3.328 Table 86 sets out the NVC survey data from Abram Flashes.

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Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 86: NVC survey data from Abram Flashes (MAN247592\_L4907\_F001\_PH2\_300719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	2	5	4	6	4	V (2 – 6)
<i>Arrhenatherum elatius</i>				6	9	II (6 – 9)
<i>Rhytiadelphus squarrosus</i>			6	5		II (5 – 6)
<i>Festuca rubra</i>			4	7		II (4 – 6)
<i>Plantago lanceolata</i>	2			3		II (2 – 3)
<i>Hieracium</i> spp.	1			3		II (1 – 3)
<i>Galium aparine</i>		1				I (1)
<i>Kindbergia praelonga</i>		1				I (1)
<i>Leucanthemum vulgare</i>	3					I (3)
<i>Leontodon autumnalis</i>	4					I (4)
<i>Centaurea nigra</i>	2			4		I (2)
<i>Lotus corniculatus</i>	6					I (6)
<i>Agrostis capillaris</i>			3			I (3)
<i>Agrostis stolonifera</i>				4		I (4)
<i>Taraxacum officinale</i> agg.				3		I (3)
<i>Trifolium pratense</i>				2		I (2)
<i>Dactylis glomerata</i>					2	I (2)
<i>Elytrigia repens</i>					2	I (2)
Bare ground	2	9	6	4	4	V (2 – 9)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Abram Flashes (MAN247592\_L4907\_F002\_PH2\_300719)

#### Site description and reasons for selection for survey

2.3.329 Linear, broadleaved woodland adjacent to the Leeds/Liverpool Canal and in the north-east of Abram Flashes SSSI and SBI. The woodland is in an area mapped by Natural England's PHI as lowland fen.

#### Vegetation communities present

2.3.330 A sparse canopy of semi-mature birch. The sub canopy is dense with hawthorn, goat willow, grey willow, with rowan and wild cherry. The ground flora layer was open and species-poor with bramble, red fescue, bracken and broad buckler-fern. This vegetation is an example of W1 *Salix cinerea-Galium palustre* woodland. TABLEFIT analysis not required to confirm identification of NVC type. This woodland qualifies as wet woodland HoPI.

2.3.331 Table 87 sets out the NVC survey data from Abram Flashes.

**Table 87: NVC survey data from Abram Flashes (MAN247592\_L4907\_F002\_PH2\_300719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Betula</i> spp.	3	3	3	3	3	V (3 - 3)
<b>Understorey (10m x 10m)</b>						
<i>Salix cinerea</i>	5	5	5	5	5	V (5 - 5)
<i>Salix caprea</i>	7	7	7	7	7	V (7 - 7)
<i>Crataegus monogyna</i>	7	7	7	7	7	V (7 - 7)
<i>Sorbus aucuparia</i>	1	1	1	1	1	V (1 - 1)
<i>Prunus avium</i>	1	1	1	1	1	V (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	6	6	4	-	-	III (4 - 6)

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Pteridium aquilinum</i>	-	-	8	-	-	I (8 - 8)
<i>Festuca rubra</i>	-	-	5	-	-	I (5 - 5)
<i>Dryopteris dilatata</i>	-	-	4	-	-	I (5 - 8)
<i>Kindbergia praelonga</i>	-	-	3	-	-	I (3 - 3)
<i>Galium aparine</i>	-	1		-	-	I (1 - 1)
Bare ground	8	8	5	-	-	III (5 - 8)

## Abram Flashes (GM830198\_L20982\_PH2\_300719)

### Site description and reasons for selection for survey

- 2.3.332 Tall swamp vegetation, directly east of Hey Brook. This area is in Abram Flashes SSSI and SBI and is mapped on Natural England's PHI as lowland fen.

### Vegetation communities present

- 2.3.333 Reed canary-grass is dominant with locally abundant, encroaching bramble scrub. Himalayan balsam, common nettle, hogweed, cleavers and wild angelica are all occasional. The habitat can be attributed to the NVC type S28a *Phalaris arundinacea* tall-herb fen, *Phalaris arundinacea* sub-community. This vegetation, of its own right, does not qualify as a HoPI. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S28a swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.
- 2.3.334 Table 88 sets out the NVC survey data from Abram Flashes.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 88: NVC survey data from Abram Flashes (GM830198\_L20982\_PH2\_300719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Petasites hybridus</i>	6	4	6	9	6	V (4 - 9)
<i>Urtica dioica</i>	3	3	2	3	4	V (2 - 4)
<i>Phalaris arundinacea</i>	7	6	8	-	2	IV (2 - 8)
<i>Impatiens glandulifera</i>	5	6	3	4	-	IV (3 - 6)
<i>Galium aparine</i>	2	-	5	4	4	IV (2 - 5)
<i>Rubus fruticosus</i> agg.	7	7	4	-	-	III (4 - 7)
<i>Heracleum sphondylium</i>	2	-	-	4	2	III (2 - 4)
<i>Holcus lanatus</i>	2	-	-	-	1	II (1 - 2)
<i>Cirsium arvense</i>	-	2	-	-	5	II (2 - 5)
<i>Angelica sylvestris</i>	4	1	-	-	-	II (1 - 4)
<i>Epilobium montanum</i>	-	3	-	1	-	II (1 - 3)
<i>Chamerion angustifolium</i>	-	-	-	-	7	I (7 - 7)
<i>Epilobium hirsutum</i>	-	-	-	-	1	I (1 - 1)

## Abram Flashes (GM909356\_L6071\_F001\_PH2\_110718)

### Site description and reasons for selection for survey

- 2.3.335 An area of swamp vegetation in Abram Flashes SSSI and SBI. This vegetation is in an area mapped by Natural England's PHI as reedbed and lowland fen.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.336 Bulrush is dominant with frequent water mint and occasional gypsywort. This habitat can be attributed to NVC type S12b *Typha latifolia* swamp, *Mentha aquatica* sub-community. The TABLEFIT analysis returned a result of S12b with an 81% goodness of fit. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S12 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.
- 2.3.337 Table 89 sets out the NVC survey data from Abram Flashes (F001). Two quadrat samples are sufficient to identify this small stand of vegetation.

**Table 89: NVC survey data from Abram Flashes (GM909356\_L6071\_F001\_PH2\_110718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Typha latifolia</i>	6	8	NS	NS	NS	II (8-8)
<i>Mentha aquatica</i>	8	3	NS	NS	NS	II (3-8)
<i>Lycopus europaeus</i>	5	2	NS	NS	NS	II (2-5)
<i>Lemna minor</i>	-	3	NS	NS	NS	I (3-3)
<i>Phalaris arundinacea</i>	-	2	NS	NS	NS	I (2-2)
<i>Solanum dulcamara</i>	1	-	NS	NS	NS	I (1-1)
Bare ground	4	6	NS	NS	NS	I (4-6)

### Abram Flashes (GM909356\_L6071\_F002\_PH2\_110718)

#### Site description and reasons for selection for survey

- 2.3.338 Rush pasture vegetation south-west (and outside) of Abram Flashes SSSI and SBI. The vegetation is not mapped by Natural England's PHI.



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.339 This vegetation is dominated by soft rush and common grasses such as Yorkshire fog and is cattle grazed. Numerous wetland and marsh plants are present including marsh bedstraw and marsh thistle. This habitat may be attributed as M23b *Juncus effusus/acutiflorus-Galium palustre* rush-pasture, *Juncus effusus* sub-community. The TABLEFIT analysis returned a result of M23b with a 74% goodness of fit. This vegetation may qualify as purple moor-grass and rush pasture HoPI.
- 2.3.340 Table 90 sets out the NVC survey data from Abram Flashes (F002).

**Table 90: NVC survey data from Abram Flashes (GM909356\_L6071\_F002\_PH2\_110718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Juncus effusus</i>	8	8	9	6	8	V (6 - 9)
<i>Holcus lanatus</i>	5	3	4	4	2	V (2 - 5)
<i>Rumex acetosa</i>	3	4	3	2	3	V (2 - 4)
<i>Poa trivialis</i>	5	4	-	2	4	IV (2 - 5)
<i>Cerastium fontanum</i>	-	3	2	1	1	IV (2 - 3)
<i>Taraxacum officinale agg.</i>	-	1	1	1	2	IV (1 - 2)
<i>Cirsium palustre</i>	1	4	3	1	3	IV (1 - 4)
<i>Ranunculus acris</i>	1	1	3	3	-	IV (1 - 3)
<i>Epilobium ciliatum</i>	-	3	1	1	2	IV (1 - 3)
<i>Epilobium parviflorum</i>	1	1	2	-	1	IV (1 - 2)
<i>Ranunculus repens</i>	3	4	2	-	3	IV (2 - 4)
<i>Calliergonella cuspidata</i>	-	6	3	6	4	III (3 - 6)
<i>Anthoxanthum odoratum</i>	-	3	2	5	-	III (3 - 5)
<i>Agrostis stolonifera</i>	4	-	2	1	-	III (1 - 4)
<i>Urtica dioica</i>	3	1	-	-	3	III (1 - 3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Galium palustre</i>	1	1	-	-	1	III (1 - 1)
<i>Alopecurus pratensis</i>	-	2	-	3	1	III (1 - 3)
<i>Lotus corniculatus</i>	-	4	-	-	5	II (4 - 5)
<i>Angelica sylvestris</i>	-	-	2	-	1	II (1 - 2)
<i>Senecio jacobaea</i>	-	1	-	-	1	II (1 - 1)
<i>Agrostis capillaris</i>	-	-	-	5	-	I (5)
<i>Rumex obtusifolius</i>	-	4	-	-	-	I (4)
<i>Cirsium arvense</i>	4	-	-	-	3	I (4)
<i>Cynosurus cristatus</i>	-	-	-	3	-	I (3)
<i>Scutellaria galericulata</i>	3	-	-	-	-	I (3)
<i>Carex hirta</i>	-	-	-	3	-	I (3)
<i>Lolium perenne</i>	-	-	-	2	-	I (2)
<i>Juncus conglomeratus</i>	-	-	-	2	-	I (2)
<i>Persicaria amphibia</i>	2	-	-	-	-	I (2)
<i>Trifolium repens</i>	-	-	-	2	-	I (2)
<i>Cardamine flexuosa</i>	-	-	1	-	-	I (1)
<i>Epilobium hirsutum</i>	-	-	-	-	1	I (1)
<i>Epilobium montanum</i>	-	-	-	1	-	I (1)
<i>Stellaria graminea</i>	-	-	-	-	1	I (1)
<i>Dryopteris filix-mas</i>	-	-	-	-	1	I (1)
Bare ground/leaf litter	5	5	5	4	4	V (4 - 5)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Abram Flashes (GM909356\_L6071\_F003\_PH2\_110718)

#### Site description and reasons for selection for survey

2.3.341 Swamp vegetation forming part of Abram Flashes SSSI and SBI. The surveyed habitat is in an area mapped on Natural England's PHI mainly as reedbed with a small area mapped as lowland fen.

#### Vegetation communities present

2.3.342 Species-poor vegetation dominated by reed canary-grass with occasional Himalayan balsam. Water runoff containing 'grey' water with an unpleasant odour was observed in a ditch running through the vegetation. This community can be attributed to the S28b *Phalaris arundinacea* tall-herb fen, *Epilobium hirsutum-Urtica dioica* sub-community. The TABLEFIT analysis returned a result of S28b with a 68% goodness of fit. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S28 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.

2.3.343 Table 91 sets out the NVC survey data from Abram Flashes (F003).

**Table 91: NVC survey data from Abram Flashes (GM909356\_L6071\_F003\_PH2\_110718)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Phalaris arundinacea</i>	9	9	9	10	10	V (9 - 10)
<i>Impatiens glandulifera</i>	5	5	5	-	3	IV (3 - 5)
<i>Urtica dioica</i>	1	-	4	3	-	III (1 - 4)
<i>Typha latifolia</i>	-	-	2	-	2	II (2 - 2)
<i>Epilobium hirsutum</i>	-	-	1	-	1	II (1 - 1)
<i>Galium aparine</i>	1	-	-	1	-	II (1 - 1)
<i>Mentha aquatic</i>	-	-	-	-	4	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Solanum dulcamara</i>	-	-	1	-	-	I (1)
<i>Epilobium parviflorum</i>	1	-	-	-	-	I (1)
<i>Epilobium montanum</i>	1	-	-	-	-	I (1)
<i>Lycopus europaeus</i>	-	-	-	-	1	I (1)
<i>Cirsium arvense</i>	1	-	-	-	-	I (1)
Bare ground/leaf litter	4	4	3	2	4	V (2 - 4)

## Abram Flashes (GM425997-GM917074\_L6100\_PH2\_F001\_120718)

### Site description and reasons for selection for survey

2.3.344 Swamp vegetation in Abram Flashes SSSI and SBI. The vegetation is in an area mapped on Natural England's PHI as reedbed.

### Vegetation communities present

2.3.345 Species-poor vegetation dominated by reed canary-grass with occasional grey willow, encroaching from both the east and west. Tall ruderal species were present along a ditch running across the swamp. The species composition is characteristic of NVC S28b *Phalaris arundinacea* tall-herb fen *Epilobium hirsutum-Urtica dioica* sub-community. The TABLEFIT analysis returned a result of S28 with a 92% goodness of fit. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S28 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.

2.3.346 Table 92 sets out the NVC survey data from Abram Flashes.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 92: NVC survey data from Abram Flashes (GM425997-GM917074\_L6100\_PH2\_F001\_120718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Phalaris arundinacea</i>	9	9	NS	NS	NS	II (9 - 9)
<i>Urtica dioica</i>	-	4	NS	NS	NS	I (4)
<i>Galium aparine</i>	-	3	NS	NS	NS	I (3)
Bare ground	1	1	NS	NS	NS	II (1 - 1)

## Abram Flashes (GM425997-GM917074\_L6100\_PH2\_F002\_120718)

### Site description and reasons for selection for survey

2.3.347 Rushy vegetation in Abram Flashes SSSI and SBI. The vegetation is in an area mapped on Natural England's PHI as lowland fen.

### Vegetation communities present

2.3.348 Vegetation dominated by soft rush with numerous broadleaved herb and grass species and reed canary-grass constant and locally abundant. The habitat is referable to NVC type M23b *Juncus effusus/acutiflorus-Galium palustre* rush-pasture, *Juncus effusus* sub-community, and also similar to NVC type S28a *Phalaris arundinacea* tall-herb fen, *Phalaris arundinacea* sub-community locally. The TABLEFIT analysis returned a result of NVC type M23 with a 56% goodness of fit. NVC type M23 vegetation may qualify as purple moor-grass and rush pasture HoPI.

2.3.349 Table 93 sets out the NVC survey data from Abram Flashes (F002).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 93: NVC survey data from Abram Flashes (GM425997-GM917074\_L6100\_PH2\_F002\_120718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Juncus effusus</i>	5	7	8	8	7	V (5 - 8)
<i>Phalaris arundinacea</i>	6	6	7	4	5	V (4 - 7)
<i>Mentha aquatica</i>	1	5	4	4	3	V (1 - 5)
<i>Ranunculus repens</i>	3	1	1	2	3	V (1 - 3)
<i>Galium palustre</i>	2	1	1	2	1	V (1 - 2)
<i>Urtica dioica</i>	1	1	-	3	1	IV (1 - 3)
<i>Myosotis arvensis</i>	1	1	1	-	1	IV (1 - 1)
<i>Poa trivialis</i>	4	-	-	3	3	III (3 - 4)
<i>Deschampsia cespitosa</i>	-	2	4	-	1	III (1 - 4)
<i>Scutellaria galericulata</i>	-	-	1	3	3	III (1 - 3)
<i>Persicaria maculosa</i>	3	1	2	-	-	III (1 - 3)
<i>Lycopus europaeus</i>	1	-	1	-	1	III (1 - 1)
<i>Lotus pedunculatus</i>	-	-	-	4	3	II (3 - 4)
<i>Valeriana officinalis</i>	-	-	-	3	4	II (3 - 4)
<i>Filipendula ulmaria</i>	-	4	-	-	3	II (3 - 4)
<i>Cratoneuron filicinum</i>	-	-	1	2	-	II (1 - 2)
<i>Agrostis capillaris</i>	-	-	-	1	1	II (1 - 1)
<i>Carex hirta</i>	-	-	1	-	1	II (1 - 1)
<i>Agrostis stolonifera</i>	6	-	-	-	-	I (6 - 6)
<i>Juncus inflexus</i>	-	-	-	-	4	I (4)
<i>Alopecurus pratensis</i>	-	-	-	-	3	I (3)
<i>Glyceria fluitans</i>	3	-	-	-	-	I (3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Festuca rubra</i>	-	-	-	-	2	I (2)
<i>Potentilla reptans</i>	-	-	-	1	-	I (1)
<i>Rumex acetosa</i>	-	-	-	1	-	I (1)
<i>Juncus articulatus</i>	1	-	-	-	-	I (1)
<i>Carex nigra</i>	-	-	-	-	1	I (1)
<i>Cirsium palustre</i>	-	-	-	-	1	I (1)
<i>Stellaria media</i>	1	-	-	-	-	I (1)
<i>Rumex obtusifolius</i>	-	-	-	1	-	I (1)
<i>Rumex conglomeratus</i>	1	-	-	-	-	I (1)
Bare ground	2	4	4	4	4	V (2 - 4)

## Abram Flashes (GM425997-GM917074\_L6100\_PH2\_F003\_120718)

### Site description and reasons for selection for survey

2.3.350 Rushy vegetation in Abram Flashes SSSI and SBI. The vegetation is present in land mapped on Natural England's PHI as lowland fen.

### Vegetation communities present

2.3.351 Rush pasture dominated by soft rush, water mint with occasional marsh bedstraw, fool's water cress (*Apium nodiflorum*) and nodding bur-marigold (*Bidens cernua*) and a small number of other species. The species composition is characteristic of NVC type M23 *Juncus effusus/acutiflorus-Galium palustre* rush-pasture, *Juncus effusus* sub-community. The TABLEFIT analysis returned a result of M23b with a 64% goodness of fit. NVC type M23 vegetation may qualify as purple moor-grass and rush pasture HoPI.

2.3.352 Table 94 sets out the NVC survey data from Abram Flashes (F003). Two quadrats were sufficient to identify this small stand of vegetation.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 94: NVC survey data from Abram Flashes (GM425997-GM917074\_L6100\_PH2\_F003\_120718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Juncus effusus</i>	8	8	NS	NS	NS	II (8 - 8)
<i>Mentha aquatica</i>	6	6	NS	NS	NS	II (6 - 6)
<i>Agrostis stolonifera</i>	4	3	NS	NS	NS	II (3 - 4)
<i>Galium palustre</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Bidens cernua</i>	1	4	NS	NS	NS	II (1 - 4)
<i>Myosotis laxa</i>	1	2	NS	NS	NS	II (1 - 2)
<i>Apium nodiflorum</i>	4	-	NS	NS	NS	I (4)
<i>Callitriche sp.</i>	-	4	NS	NS	NS	I (4)
<i>Lycopus europaeus</i>	-	2	NS	NS	NS	I (2)
<i>Iris pseudacorus</i>	-	1	NS	NS	NS	I (1)
<i>Eleocharis palustris</i>	1	-	NS	NS	NS	I (1)
<i>Epilobium palustre</i>	1	-	NS	NS	NS	I (1)
Bare ground	4	4	NS	NS	NS	II (4 - 4)

## Abram Flashes (GM425997-GM917074\_L6100\_PH2\_F004\_120718)

### Site description and reasons for selection for survey

2.3.353 Swamp vegetation in Abram Flashes SSSI and SBI. The vegetation is present in land mapped on Natural England's PHI as lowland fen.

### Vegetation communities present

2.3.354 The swamp is dominated by bulrush with abundant soft rush, gypsywort and a small number of additional species. The species composition is characteristic of S12b *Typha latifolia* swamp, *Mentha aquatica* sub-community. The TABLEFIT analysis returned a result of S12b with a 78%



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

### Ecological baseline data – National Vegetation Classification and ancient woodland

goodness of fit. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S12 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.

2.3.355 Table 95 sets out the NVC survey data from Abram Flashes (F004). Two quadrats were sufficient to identify this small stand of vegetation.

**Table 95: NVC survey data from Abram Flashes (GM425997-GM917074\_L6100\_PH2\_F004\_120718)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Typha latifolia</i>	6	6	NS	NS	NS	II (6 - 6)
<i>Mentha aquatica</i>	6	5	NS	NS	NS	II (5 - 6)
<i>Juncus effusus</i>	3	7	NS	NS	NS	II (3 - 7)
<i>Apium nodiflorum</i>	5	1	NS	NS	NS	II (1 - 5)
<i>Lycopus europaeus</i>	6	-	NS	NS	NS	I (6 - 6)
<i>Lemna minor</i>	4	-	NS	NS	NS	I (4 - 4)
<i>Phalaris arundinacea</i>	-	2	NS	NS	NS	I (2 - 2)
<i>Galium palustre</i>	2	-	NS	NS	NS	I (2 - 2)
<i>Agrostis stolonifera</i>	-	1	NS	NS	NS	I (1 - 1)
Bare ground	3	5	NS	NS	NS	II (3 - 5)

## Abram Flashes (MAN250270\_L5007\_F001\_PH2\_090719)

### Site description and reasons for selection for survey

2.3.356 Two area of linear woodland either side of the Leeds Mersey Canal. The west woodland is inside Abram Flashes SSSI and SBI and an area mapped by Natural England's PHI as lowland fen. The east woodland is not in any designated site or area of PHI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.357 A narrow band of broadleaved semi-natural woodland with a relatively dense canopy dominated by young/semi-mature silver birch and pedunculate oak. The woodland understorey comprised rowan saplings, hawthorn, silver birch, pedunculate oak and grey willow saplings and some dog rose. The ground flora was relatively sparse including mainly wavy hair-grass, common bent, bramble, broad buckler-fern, seedlings of canopy tree species and mosses. The oak and birch dominated canopy with a patchy but grassy ground flora of common bent and wavy hair-grass (without heathy species) is indicative of W11 *Quercus petraea*-*Betula pubescens*-*Oxalis acetosella* woodland. However, the woodland sampled lacks some of the north-western species. The TABLEFIT analysis returned a result of U2a with a 31% 'goodness of fit' but U2 is a grassland not a woodland type. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.358 No vascular plant species that are indicative of ancient woodland were recorded.
- 2.3.359 Table 96 sets out the NVC survey data from Abram Flashes (F001).

**Table 96: NVC survey data from Abram Flashes (MAN250270\_L5007\_F001\_PH2\_090719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Betula pendula</i>	7	7	7	7	7	V (7 - 7)
<i>Quercus robur</i>	6	6	6	6	6	V (6 - 6)
<i>Salix cinerea</i> subsp. <i>cinerea</i>	4	4	4	4	4	V (4 - 4)
<b>Understorey (10m x 10m)</b>						
<i>Sorbus aucuparia</i> sapling	7	7	7	7	7	V (7 - 7)
<i>Crataegus monogyna</i>	5	5	5	5	5	V (5 - 5)
<i>Quercus robur</i> sapling	6	6	6	6	6	V (6 - 6)
<i>Salix cinerea</i> sapling	3	3	3	3	3	V (3 - 3)
<i>Rosa canina</i>	2	2	2	2	2	V (2 - 2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelonga</i>	8	7	3	4	5	V (3 - 8)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Deschampsia flexuosa</i>	5	7	5	3	5	V (3 - 7)
<i>Agrostis capillaris</i>	3	4	3	3	4	V (3 - 4)
<i>Brachythecium rutabulum</i>	2	4	5	3	4	V (2 - 5)
<i>Dryopteris dilatata</i>	-	1	2	7	2	IV (1 - 7)
<i>Rubus fruticosus</i> agg.	-	-	3	5	6	III (3 - 6)
<i>Quercus</i> sp. (sapling)	4	3	3	-	-	III (3 - 4)
<i>Arrhenatherum elatius</i>	1	-	-	3	2	III (1 - 3)
<i>Rhytidadelphus squarrosus</i>	4	3	-	-	-	II (3 - 4)
<i>Crepis</i> sp.	-	-	1	-	4	II (1 - 4)
<i>Chamerion angustifolium</i>	1	-	-	-	3	II (1 - 3)
<i>Holcus lanatus</i>	-	-	1	1	-	II (1 - 1)
<i>Polytrichastrum formosum</i>	-	-	-	-	4	I (4)
<i>Pleurozium scheberi</i>	3	-	-	-	-	I (3)
<i>Dicranum scoparium</i>	-	-	3	-	-	I (3)
<i>Sorbus aucuparia</i> seedling	-	-	2	-	-	I (2)
<i>Betula pendula</i> seedling	-	2	-	-	-	I (2)
<i>Anthoxanthum odoratum</i>	1	-	-	-	-	I (1)
<i>Rosa canina</i> seedling	-	-	-	-	1	I (1)
<i>Crataegus monogyna</i> (seedling)	-	1	-	-	-	I (1)
Bare ground	5	4	6	7	5	V (4 - 7)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Abram Flashes (MAN250270\_L5007\_F002\_PH2\_090719)

#### Site description and reasons for selection for survey

2.3.360 An area of semi-natural grassland in Abram Flashes SSSI and SBI. The sampled grassland was between an area of woodland and the Leeds and Liverpool Canal. It is in an area mapped by Natural England's PHI as 'no main habitat but additional habitats present'.

#### Vegetation communities present

2.3.361 A relatively species-rich sward with dominant/constant Yorkshire fog and common bent. Rough meadow-grass, crested dog's-tail and sweet vernal-grass are constant but less abundant. Red clover and ribwort plantain are constant at low cover. White clover, common bird's-foot-trefoil are occasional. Small areas within the grassland were damp supporting reed canary-grass, soft rush, hard rush and slender rush (*Juncus tenuis*). Where the grassland was adjacent to woodland, several species which are characteristic of acid grassland were present including wavy hair-grass and heather; however, these formed a minor part of the sward overall. Meadow vetchling was present in the wider grassland but was not within the quadrat sampling. The grassland may be attributed to the MG5a *Cynosurus cristatus-Centaurea nigra* grassland, *Lathyrus pratensis* sub-community. The TABLEFIT analysis returned a result of MG5 with a 66% goodness of fit. NVC type MG5 is likely to qualify as lowland meadow HoPI.

2.3.362 Table 97 sets out the NVC survey data from Abram Flashes (F002).

**Table 97: NVC survey data from Abram Flashes (MAN250270\_L5007\_F002\_PH2\_090719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Holcus lanatus</i>	7	6	7	4	4	V (4 - 7)
<i>Agrostis capillaris</i>	6	7	6	4	3	V (3 - 7)
<i>Poa trivialis</i>	3	4	4	2	3	V (2 - 4)
<i>Cynosurus cristatus</i>	3	4	3	2	4	V (2 - 4)
<i>Trifolium pratense</i>	1	4	4	5	5	V (1 - 5)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Plantago lanceolata</i>	4	4	1	4	4	V (1 - 4)
<i>Trifolium repens</i>	-	5	5	4	5	IV (4 - 5)
<i>Lotus corniculatus</i>	6	6	3	-	5	IV (3 - 6)
<i>Dactylis glomerata</i>	3	-	4	3	3	IV (3 - 4)
<i>Anthoxanthum odoratum</i>	3	4	4	3	-	IV (3 - 4)
<i>Juncus effusus</i>	2	4	-	3	3	IV (2 - 4)
<i>Hypochaeris radicata</i>	4	3	4	-	-	III (3 - 4)
<i>Lolium perenne</i>	-	-	4	3	4	III (3 - 4)
<i>Festuca rubra</i>	-	2	-	3	3	III (2 - 3)
<i>Vicia sativa</i>	1	-	-	3	2	III (1 - 3)
<i>Taraxacum officinalis</i> agg.	-	-	3	3	1	III (1 - 3)
<i>Centaurea nigra</i>	-	-	-	4	5	II (4 - 5)
<i>Leucanthemum vulgare</i>	4	-	-	-	3	II (3 - 4)
<i>Leontodon autumnalis</i>	-	3	4	-	-	II (3 - 4)
<i>Trifolium dubium</i>	-	3	3	-	-	II (3 - 3)
<i>Ranunculus acris</i>	-	-	-	2	3	II (2 - 3)
<i>Ranunculus repens</i>	-	-	-	2	3	II (2 - 3)
<i>Cerastium fontanum</i>	-	2	2	-	-	II (2 - 2)
<i>Agrostis stolonifera</i>	-	-	-	5	-	I (5)
<i>Phalaris arundinacea</i>	-	-	-	4	-	I (4)
<i>Juncus tenuis</i>	-	3	-	-	-	I (3)
<i>Arrhenatherum elatius</i>	-	-	3	-	-	I (3)
<i>Deschampsia flexuosa</i>	-	-	3	-	-	I (3)
<i>Lotus pedunculatus</i>	-	-	-	3	-	I (3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Achillea millefolium</i>	-	-	-	3	-	I (3)
<i>Galium verum</i>	-	-	-	3	-	I (3)
<i>Plantago major</i>	-	-	-	-	3	I (3)
<i>Rhinanthus minor</i>	2	-	-	-	-	I (2)
<i>Rubus fruticosus</i> agg.	-	-	-	2	-	I (2)
<i>Juncus inflexus</i>	-	-	-	-	2	I (2)
<i>Phleum pratense</i>	2	-	-	-	-	I (2)
<i>Odontites vernus</i>	-	-	-	-	1	I (1)
<i>Rumex crispus</i>	-	-	-	1	-	I (1)
<i>Crepis</i> sp.	1	-	-	-	-	I (1)
Bare ground	1	5	1	1	5	V (1 - 5)

## Abram Flashes (MAN135566\_L4554\_F001\_PH2\_300719)

### Site description and reasons for selection for survey

- 2.3.363 Swamp vegetation adjacent to Hey Brook in Abram Flashes SSSI and SBI. The vegetation is in an area mapped by Natural England's PHI as lowland fen.

### Vegetation communities present

- 2.3.364 Reed canary-grass is constant but sub-dominant to creeping thistle, which is the most abundant species. Common nettle, rosebay willowherb and Himalayan balsam are frequent. Bramble was locally frequent and encroaching into the swamp habitat. This habitat most closely resembles the S28b *Phalaris arundinacea* tall-herb fen *Epilobium hirsutum-Urtica dioica* sub-community. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

HoPI. However, S28 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.

2.3.365 Table 98 sets out the NVC survey data from Abram Flashes (F001).

**Table 98: NVC survey data from Abram Flashes (MAN135566\_L4554\_F001\_PH2\_300719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Cirsium arvense</i>	4	6	6	7	4	V (4 - 7)
<i>Impatiens glandulifera</i>	4	4	5	4	1	V (1 - 5)
<i>Chamerion angustifolium</i>	8	6	-	6	5	IV (5 - 8)
<i>Phalaris arundinacea</i>	3	3	3	-	2	IV (2 - 3)
<i>Urtica dioica</i>	2	3	-	2	2	IV (2 - 3)
<i>Rubus fruticosus agg.</i>	-	-	7	6	8	III (6 - 8)
<i>Oenanthe crocata</i>	-	7	-	-	-	I (7)
<i>Calystegia sepium</i>	-	-	3	-	-	I (3)
<i>Galium aparine</i>	-	2	-	-	-	I (2)
<i>Heracleum sphondylium</i>	-	1	-	-	-	I (1)
<i>Epilobium montanum</i>	-	-	-	-	1	I (1)
Bare ground	4	4	4	4	4	V (4 - 4)

## Abram Flashes (MAN135566\_L4554\_F002\_PH2\_300719)

### Site description and reasons for selection for survey

2.3.366 Young, semi-natural broadleaved woodland in Abram Flashes SSSI and SBI. This vegetation is in an area mapped by Natural England's PHI as lowland fen.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.367 Grey willow is dominant in the sub-canopy layer with no canopy layer. Bare ground is extensive at ground level flora and occasional Himalayan balsam, mosses and common nettle. This woodland is indicative of W1 *Salix cinerea-Galium palustre* woodland. NVC type W1 qualifies as wet woodland HoPI but this example is species-poor.
- 2.3.368 Only AWI was recorded: giant fescue (*Schedonorus giganteus*).
- 2.3.369 Table 99 sets out the NVC survey data from Abram Flashes (F002).

**Table 99: NVC survey data from Abram Flashes (MAN135566\_L4554\_F002\_PH2\_300719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Understorey (10m x 10m)</b>						
<i>Salix cinerea</i>	9	9	9	9	9	V (9 - 9)
<b>Ground flora layer (4m x 4m)</b>						
<i>Impatiens glandulifera</i>	4	1	5	1	-	IV (1 - 5)
<i>Kindbergia praelonga</i>	5	4	-	4	5	IV (4 - 5)
<i>Rubus fruticosus agg.</i>	-	5	5	-	5	III (1 - 8)
<i>Urtica dioica</i>	5	-	1		1	III (1 - 5)
<i>Epilobium montanum</i>	-	2	-	3	3	III (2 - 3)
<i>Arrhenatherum elatius</i>	-	6	-	-	3	II (3 - 6)
<i>Didymon fallax</i>	-	-	-	2	3	II (2 - 3)
<i>Poa pratensis</i>	1	-	-	3	-	II (1 - 3)
<i>Equisetum spp.</i>	-	-	2	1	-	II (1 - 2)
<i>Crataegus monogyna</i> (seedlings)	-	-	2	-	1	II (1 - 2)
<i>Bryonia dioica</i>	1	-	-	-	-	I (1)
<i>Salix cinerea</i> (seedlings)	3	-	-	-	-	I (3)
<i>Phalaris arundinacea</i>	-	-	3	-	-	I (3)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Ranunculus acris</i>	-	2	-	-	-	I (2)
<i>Petasites hybridus</i>	2	-	-	-	-	I (2)
<i>Dryopteris dilatata</i>	-	-	-	2	-	I (2)
<i>Festuca gigantea</i>	-	1	-	-	-	I (1)
<i>Acer pseudoplatanus</i> (seedlings)	-	1	-	-	-	I (1)
<i>Calystegia sepium</i>	-	-	1	-	-	I (1)
<i>Heracleum sphondylium</i>	-	-	-	-	1	I (1)
Bare ground	8	7	1	8	8	V (1 - 8)

## Abram Flashes (GM721001-GM917074-U205947\_L5332\_F001\_PH2\_060820)

### Site description and reasons for selection for survey

- 2.3.370 Swamp vegetation at the north end of north end of Abram Flashes SSSI and SBI. This vegetation is in an area mapped on Natural England's PHI as lowland fen.

### Vegetation communities present

- 2.3.371 Species-poor swamp vegetation is present dominated by floating sweet-grass (*Glyceria fluitans*) with frequent bulrush, occasional marsh bedstraw and occasional gypsywort. The vegetation is an example of NVC community S22b *Glyceria fluitans* water-margin vegetation *Sparganium erectum-Mentha aquatica* sub-community. Although it is a relatively species-poor example of community S22b with bulrush, the only S22b preferential species in evidence. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S22 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.
- 2.3.372 Table 100 sets out the NVC survey data from Abram Flashes (F001). One quadrat sample was adequate to achieve full coverage of this small stand of swamp.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 100: NVC survey data from Abram Flashes (GM721001-GM917074-U205947\_L5332\_F001\_PH2\_060820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Glyceria fluitans</i>	10	NS	NS	NS	NS	I (10 - 10)
<i>Typha latifolia</i>	5	NS	NS	NS	NS	I (5 - 5)
<i>Galium palustre</i>	4	NS	NS	NS	NS	I (4 - 4)
<i>Lycopus europaeus</i>	1	NS	NS	NS	NS	I (1 - 1)

## Abram Flashes (GM721001-GM917074-U205947\_L5332\_F002\_PH2\_060820)

### Site description and reasons for selection for survey

- 2.3.373 Broadleaved, semi-natural, wet woodland vegetation at the north end of north end of Abram Flashes SSSI and SBI. This vegetation is in an area partly mapped on Natural England's PHI as lowland fen. This vegetation is on the edge of a pond and adjacent to Hey Brook.

### Vegetation communities present

- 2.3.374 This vegetation was in standing water and it was unsafe to gather a detailed species list. However, Grey willow is overwhelmingly dominant with occasional hybrid crack willow. Few other species are present and thus a frequency table is not presented for this vegetation. This vegetation is an example of NVC community W1 *Salix cinerea-Galium palustre* woodland which qualifies as wet woodland HoPI. There are no documented sub-communities of W1 woodland in the NVC.
- 2.3.375 No vascular plant species that are indicative of ancient woodland were recorded.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Abram Flashes (GM721001-GM917074-U205947\_L5332\_F003\_PH2\_060820)

## Site description and reasons for selection for survey

2.3.376 Swamp vegetation at the north end of north end of Abram Flashes SSSI and SBI. This vegetation is in an area mapped on Natural England’s PHI as lowland fen.

## Vegetation communities present

2.3.377 This species-poor, tall herbaceous vegetation, adjacent to Hey Brook comprised of frequent to locally dominant reed canary-grass with Himalayan balsam, common nettle and great willowherb all occasional to rarely present. The following species were also present but not in quadrat samples: common couch (*Elytrigia repens*), hedge bindweed (*Calystegia sepium*), creeping thistle, smooth meadow-grass, wild angelica, water mint and cleavers.

2.3.378 This vegetation is an example of S28b *Phalaris arundinacea* tall-herb fen community *Epilobium hirsutum-Urtica dioica* sub-community. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S28 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.

2.3.379 Table 101 sets out the NVC survey data from Abram Flashes (F001). One quadrat sample was adequate to achieve full coverage of this small stand of swamp.

**Table 101: NVC survey data from Abram Flashes (GM721001-GM917074-U205947\_L5332\_F003\_PH2\_060820)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Phalaris arundinacea</i>	9	NS	NS	NS	NS	I (9 - 9)
<i>Impatiens glandulifera</i>	4	NS	NS	NS	NS	I (4 - 4)
<i>Urtica dioica</i>	3	NS	NS	NS	NS	I (3 - 3)
<i>Epilobium hirsutum</i>	2	NS	NS	NS	NS	I (2 - 2)
<i>Arrhenatherum elatius</i>	-	NS	NS	NS	NS	O (0)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Abram Flashes (GM917074\_L21296\_PH2\_F001\_060820)

#### Site description and reasons for selection for survey

2.3.380 Swamp vegetation in Abram Flashes SSSI and SBI. This vegetation is in an area mapped on Natural England's PHI as lowland fen.

#### Vegetation communities present

- 2.3.381 This species-poor, tall herbaceous vegetation, adjacent to Hey Brook is comprised of frequent to locally dominant reed canary-grass with Himalayan balsam, common nettle and great willowherb all occasional to rarely present. Numerous other species were present at rare or occasional abundance or very locally frequent (but not in quadrat samples), including soft rush, floating sweet-grass, gypsywort, bulrush, broad-leaved willowherb (*Epilobium montanum*), water mint, cleavers, marsh woundwort (*Stachys palustris*), false oat-grass, bramble, butterbur (*Petasites hybridus*), common couch, water pepper (*Persicaria hydropiper*), meadowsweet and broadleaved dock (*Rumex obtusifolius*) and marsh bedstraw. This vegetation is an example of S28b *Phalaris arundinacea* tall-herb fen community *Epilobium hirsutum-Urtica dioica* sub-community. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S28 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.
- 2.3.382 Table 102 sets out the NVC survey data from Abram Flashes. One quadrat sample was adequate to achieve full coverage of this small stand of swamp.

**Table 102: NVC survey data from Abram Flashes (GM917074\_L21296\_PH2\_F001\_060820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Phalaris arundinacea</i>	9	NS	NS	NS	NS	I (9 - 9)
<i>Epilobium hirsutum</i>	4	NS	NS	NS	NS	I (4 - 4)
<i>Impatiens glandulifera</i>	1	NS	NS	NS	NS	I (1 - 1)
<i>Urtica dioica</i>	1	NS	NS	NS	NS	I (1 - 1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Abram Flashes (GM909356-GM917074\_L6071\_PH2\_F001\_070820)

#### Site description and reasons for selection for survey

2.3.383 Broadleaved, semi-natural, wet woodland vegetation in Abram Flashes SSSI and SBI. This vegetation is in an area partly mapped on Natural England's PHI as lowland fen.

#### Vegetation communities present

2.3.384 An area of grey willow dominated, but relatively open canopy woodland with a footpath/boardwalk through it. The ground flora is reed canary-grass dominated swamp with a number of other wetland and water margin herbs present such as water mint and wild angelica.

2.3.385 The habitat is an example of S28b *Phalaris arundinacea* tall-herb fen community *Epilobium hirsutum-Urtica dioica* sub-community which has been invaded by grey willow. It could equally be mapped as an area of W1 *Salix cinerea-Galium palustre* woodland and is likely transitional between the two communities (woodland and swamp). This vegetation qualifies as wet woodland HoPI.

2.3.386 No vascular plant species that are indicative of ancient woodland were recorded.

2.3.387 Table 103 sets out the NVC survey data from Abram Flashes.

**Table 103: NVC survey data from Abram Flashes (GM909356-GM917074\_L6071\_PH2\_F001\_070820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy flora layer (50m x 50m)</b>						
<i>Salix cinerea</i>	6	6	6	6	6	V (6 - 6)
<b>Ground flora layer (4m x 4m)</b>						
<i>Phalaris arundinacea</i>	3	10	10	10	7	V (3 - 10)
<i>Mentha aquatica</i>	3	4	4	1	2	V (3 - 4)
<i>Ranunculus repens</i>	2	1	-	4	2	IV (1 - 4)
<i>Angelica sylvestris</i>	-	2	-	6	8	III (2 - 8)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Urtica dioica</i>	3	-	-	1	1	III (1 - 3)
<i>Impatiens glandulifera</i>	3	-	-	1	2	III (1 - 3)
<i>Lycopus europaeus</i>	-	-	3	-	1	II (3 - 3)
<i>Juncus effusus</i>	3	-	-	2	-	II (2 - 3)
<i>Vicia cracca</i>	-	3	-	-	-	I (3)
<i>Rumex obtusifolius</i>	-	-	1	-	-	I (1)

### Abram Flashes (GM909356-GM917074\_L6071\_PH2\_F002\_070820)

#### Site description and reasons for selection for survey

2.3.388 Swamp vegetation in Abram Flashes SSSI and SBI. This vegetation is in an area mapped on Natural England's PHI as lowland fen.

#### Vegetation communities present

2.3.389 An area dominated by reed canary-grass in shallow, standing water. No other species present. No frequency table is required to describe this monospecific vegetation, it is an example of S28 *Phalaris arundinacea* tall-herb fen, *Phalaris arundinacea* sub-community. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S28 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.

### Abram Flashes (GM719324-GM909356-U201102-U205947\_L6100\_PH2\_F001\_070820)

#### Site description and reasons for selection for survey

2.3.390 Marshy grassland in Abram Flashes SSSI and SBI. This vegetation is in an area partly mapped on Natural England's PHI as lowland fen.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.391 Relatively species-poor, marshy grassland comprised predominantly of soft rush. A small number of associated wetland species are present including water mint, great bird's-foot-trefoil and water pepper. A range of additional species are present at low frequency and none represented in quadrat samples, these are: gypsywort, skullcap (*Scutellaria galericulata*), Yorkshire fog, creeping buttercup and water forget-me-not (*Myosotis scorpioides*). This vegetation is an example of MG10a *Holcus lanatus*-*Juncus effusus* rush-pasture, typical sub-community. The MG10 community is typically a vegetation type of improved to semi-improved marshy grazing pasture. However, the inclusion of several wetland species that are uncommon in improved conditions (e.g. skullcap, water pepper and greater bird's-foot trefoil) could indicate that this vegetation was derived from a more species-rich community such as the M23 *Juncus effusus/acuteiflorus*-*Galium palustre* rush-pasture. This vegetation does not qualify as a HoPI but may have potential for restoration to one.
- 2.3.392 Table 104 sets out the NVC survey data from Abram Flashes. One quadrat sample was adequate to achieve full coverage of this small stand of vegetation.

**Table 104: NVC survey data from Abram Flashes (GM719324-GM909356-U201102-U205947\_L6100\_PH2\_F001\_070820)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Juncus effusus</i>	8	NS	NS	NS	NS	I (8)
<i>Mentha aquatica</i>	5	NS	NS	NS	NS	I (5)
<i>Urtica dioica</i>	4	NS	NS	NS	NS	I (4)
<i>Lotus pedunculatus</i>	4	NS	NS	NS	NS	I (4)
<i>Rumex acetosa</i>	2	NS	NS	NS	NS	I (2)
<i>Persicaria hydropiper</i>	2	NS	NS	NS	NS	I (2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Abram Flashes (GM719324-GM909356-U201102-U205947\_L6100\_PH2\_F002\_070820)

#### Site description and reasons for selection for survey

2.3.393 Swamp vegetation in Abram Flashes SSSI and SBI. This vegetation is in an area partly mapped on Natural England's PHI as lowland fen.

#### Vegetation communities present

2.3.394 Vegetation in standing water dominated by bulrush with soft rush and water mint both frequent but the only other species present. No frequency table was constructed for this vegetation as it is a species-poor swamp type. This vegetation is an example of NVC community S12 *Typha latifolia* swamp, *Mentha aquatica* sub-community. This vegetation does not qualify as a HoPI in its own right. It may, when in mosaic with other extensive swamp and marshy grassland habitats, become a constituent of lowland fen HoPI. However, S12 swamp vegetation is a relatively commonplace/widespread vegetation type in areas of high water table and the margins of standing and flowing waters in the British lowlands.

### Abram Flashes (MAN135564 -MAN247591\_L4983\_F001\_PH2\_300719)

#### Site description and reasons for selection for survey

2.3.395 Small parcel of broadleaved, semi-natural woodland, on flat ground, directly east of the Leeds and Liverpool Canal. The woodland is outside of Abram Flashes SSSI and is not identified on Natural England's PHI.

#### Vegetation communities present

2.3.396 The canopy layer is sparse with a sub-canopy layer of dense goat willow with small amounts of pedunculate oak and hybrid black-poplar *Populus x canadensis*. Bramble is abundant in the shrub and ground layers. The ground flora is species-poor and sparse with extensive bare ground, constant bramble, infrequent hawthorn seedlings, common nettle and rare soft rush, broad buckler-fern, meadow buttercup, creeping buttercup, yellow loosestrife, Himalayan balsam and reed canary-grass. The bryophyte layer is comprised of constant common feather-moss. The woodland is a loose fit for NVC community W1 *Salix cinerea-Galium palustre* woodland but lacks grey willow, which is a constant in the W1 community. The TABLEFIT 'goodness of fit' statistic for this community is 30% for NVC type W6 *Alnus glutinosa-Urtica dioica* woodland.



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Excluding sand-dune communities (not relevant to this vegetation), the highest frequencies of goat willow are in the alder woodland sections of the NVC. The sampled vegetation is likely to fall somewhere between a W1 and a W6 woodland and may be an intermediate. It qualifies as wet woodland HoPI.

2.3.397 This woodland did not contain any vascular plant species which are indicative of ancient woodland.

2.3.398 Table 105 sets out the NVC survey data from Abram Flashes (F001).

**Table 105: NVC survey data from Abram Flashes (MAN135564 -MAN247591\_L4983\_F001\_PH2\_300719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Betula pendula</i>	2	2	2	2	2	V (2 – 2)
<b>Understorey (10m x 10m)</b>						
<i>Salix caprea</i>	10	10	10	10	10	V (10 – 10)
<i>Quercus robur</i>	2	2	2	2	2	V (2 – 2)
<i>Populus x canadensis</i>	2	2	2	2	2	V (2 – 2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	4	7	5	8	6	V (4 – 8)
<i>Kindbergia praelonga</i>	4	6	7	-	6	IV (4 – 7)
<i>Crataegus monogyna</i> (seedling)	2	-	-	-	3	II (2 – 3)
<i>Urtica dioica</i>	-	-	1	2	-	II (1 – 2)
<i>Poa pratensis</i>	7	-	-	-	-	I (7)
<i>Sorbus aucuparia</i> (seedling)	2	-	-	-	-	I (2)
<i>Juncus effusus</i>	-	3	-	-	-	I (3)
<i>Dryopteris dilatata</i>	-	2	-	-	-	I (2)
<i>Ranunculus acris</i>	-	-	1	-	-	I (1)
<i>Ranunculus repens</i>	-	-	1	-	-	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Phalaris arundinacea</i>	-	-	-	1	-	I (1)
<i>Impatiens glandulifera</i>	-	-	-	1	-	I (1)
<i>Lysimachia vulgaris</i>	-	-	-	1	-	I (1)
Bare ground	7	4	5	5	7	V (4 – 7)

## Abram Flashes (MAN135564 -MAN247591\_L4983\_F002\_PH2\_300719)

### Site description and reasons for selection for survey

2.3.399 A linear strip of semi-improved, rough grassland adjacent to the Leeds/Liverpool canal. It is in Abram Flashes LWS but outside of Abram Flashes SSSI. The grassland is mapped by Natural England's PHI as lowland fen.

### Vegetation communities present

2.3.400 False oat-grass is constant and locally abundant along with frequent creeping bent and cock's foot. A range of occasional species are present including black knapweed, common nettle, common sedge (*Carex nigra*), creeping thistle and hogweed. The grassland is an example of NVC type MG1a *Arrhenatherum elatius* grassland *Festuca rubra* sub-community. The TABLETFIT 'goodness of fit' statistic for this community is 58 for MG9b (which is unsuitable as the vegetation lacks tufted hair-grass) and 58% MG1a. This grassland does not qualify as a HoPI.

2.3.401 Table 106 sets out the NVC survey data from Abram Flashes (F002).

**Table 106: NVC survey data from Abram Flashes (MAN135564 -MAN247591\_L4983\_F002\_PH2\_300719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Arrhenatherum elatius</i>	7	6	5	8	7	V (5 – 8)
<i>Agrostis stolonifera</i>	6	6	5	4	3	V (3 – 6)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Dactylis glomerata</i>	2	4	5	5	6	V (2 – 6)
<i>Rubus fruticosus</i> agg.	7	6	6	-	-	III (7 – 6)
<i>Festuca rubra</i>	4	-	7	-	3	III (4 – 7)
<i>Centaurea nigra</i>	5	3	4	-	-	III (3 – 5)
<i>Holcus lanatus</i>	-	5	-	-	4	II (4 – 5)
<i>Urtica dioica</i>	-	-	1	4	-	II (1 – 4)
<i>Poa pratensis</i>	-	-	-	3	3	II (3 – 3)
<i>Cirsium arvense</i>	-	-	2	-	2	II (2 – 2)
<i>Petasites hybridus</i>	-	-	4	-	-	I (4)
<i>Potentilla anserina</i>	-	-	-	-	4	I (4)
<i>Heracleum sphondylium</i>	-	-	-	4	-	I (4)
<i>Brachytecium rutabulum</i>	-	-	-	-	4	I (4)
<i>Phleum pratense</i>	-	3	-	-	-	I (3)
<i>Phalaris arundinacea</i>	-	3	-	-	-	I (3)
<i>Lolium perenne</i>	-	-	-	-	2	I (2)
<i>Geranium pratense</i>	-	2	-	-	-	I (2)
<i>Carex nigra</i>	-	-	1	-	-	I (1)
<i>Anthoxanthum odoratum</i>	-	1	-	-	-	I (1)
<i>Plantago lanceolata</i>	-	1	-	-	-	I (1)
<i>Galium aparine</i>	-	-	-	-	1	I (1)
<i>Elytrigia repens</i>	-	-	-	-	1	I (1)
Bare ground	4	-	-	-	-	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Abram Flashes (MAN135564 -MAN247591\_L4983\_F003\_PH2\_300719)

#### Site description and reasons for selection for survey

2.3.402 Linear broadleaved, semi-natural woodland west of the Leeds/Liverpool Canal. The woodland is outside of Arbams Flashes SSSI and LWS and is not on Natural England's PHI. The woodland slopes sharply downwards towards the canal and it is situated on an embankment.

#### Vegetation communities present

2.3.403 The canopy is open and sparse and dominated by semi-mature sycamore. The sub-canopy has occasional hawthorn, pedunculate oak, elder and domestic apple. The ground flora is species-poor and very sparse with much bare ground and frequent cock's-foot, false oat-grass and occasional creeping bent. The bryophyte layer comprises constant common feather-moss. The woodland is a loose fit for NVC type W8 woodland, but may also be regarded as a type of scrub, potentially NVC type W21a *Crataegus monogyna-Hedera helix* scrub, *Hedera helix-Urtica dioica* sub-community. The TABLEFIT 'goodness of fit' statistic for this community is 35% for W21a. This vegetation is a young woodland/scrub and does not qualify as a HoPI yet.

2.3.404 No vascular plant species which are indicative of ancient woodland were present.

2.3.405 Table 107 sets out the NVC survey data from Abram Flashes (F003).

**Table 107: NVC survey data from Abram Flashes (MAN135564 -MAN247591\_L4983\_F003\_PH2\_300719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudoplatanus</i>	5	5	5	5	5	V (5 – 5)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	5	5	5	5	5	V (5 – 5)
<i>Quercus robur</i>	5	5	5	5	5	V (5 – 5)
<i>Sambucus nigra</i>	5	5	5	5	5	V (5 – 5)
<i>Malus domestica</i>	1	1	1	1	1	V (1 – 1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	4	4	-	4	5	IV (4 - 5)
<i>Kindbergia praelonga</i>	3	-	1	4	5	IV (1 - 5)
<i>Arrhenatherum elatius</i>	4	3	-	3	-	III (3 - 4)
<i>Dactylis glomerata</i>	-	-	2	3	2	III (2 - 3)
<i>Urtica dioica</i>	-	2	3	-	-	II (2 - 3)
<i>Agrostis stolonifera</i>	3	-	-	1	-	II (1 - 3)
<i>Taraxacum officinale</i> agg.	-	-	1	1	-	II (1 - 1)
<i>Hieracium</i> spp.	-	4	-	-	-	I (4)
<i>Impatiens glandulifera</i>	-	3	-	-	-	I (3)
<i>Heracleum sphondylium</i>	-	-	3	-	-	I (3)
<i>Quercus robur</i> seedlings	-	2	-	-	-	I (2)
<i>Crataegus monogyna</i> seedlings	-	-	1	-	-	I (1)
<i>Epilobium montanum</i>	-	1	-	-	-	I (1)
Bare ground	9	10	10	9	8	V (8 - 10)

## Hulseheath to Manchester Airport (MA06)

### Birkin Brook Grassland (CH561505\_L3654\_PH2\_230719)

#### Site description and reasons for selection for survey

- 2.3.406 Semi-natural grassland on a south-west slope between arable land and Birkin Brook, not designated or part of an area mapped on Natural England's PHI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.407 Semi-improved grassland with Yorkshire fog dominant and sweet vernal-grass, creeping bent and Italian rye-grass (*Lolium multiflorum*) frequent. The most abundant forbs were creeping buttercup and meadow buttercup. The grassland resembles NVC communities MG7d and MG6b due to the frequent presence of rye-grass (*Lolium* sp.) – a sown agricultural species – and coarser grasses such as Yorkshire fog and sweet vernal-grass. The TABLEFIT analysis returned a result of MG10a with a 47% goodness of fit, but this is not a suitable identification as rushes form a minor component of the vegetation. This grassland does not qualify as a HoPI.
- 2.3.408 Table 108 sets out the NVC survey data from Birkin Brook Grassland.

**Table 108: NVC survey data from Birkin Brook Grassland (CH561505\_L3654\_PH2\_230719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Holcus lanatus</i>	7	8	9	7	8	V (7 - 9)
<i>Anthoxanthum odoratum</i>	4	7	-	7	6	IV (4 - 7)
<i>Agrostis stolonifera</i>	8	-	4	-	4	III (4 - 8)
<i>Lolium multiflorum</i>	-	5	3	-	3	III (3 - 5)
<i>Poa pratensis</i>	-	3	-	3	4	III (3 - 4)
<i>Juncus conglomeratus</i>	-	1	-	4	2	III (1 - 4)
<i>Ranunculus acris</i>	-	4	1	2	-	III (1 - 4)
<i>Ranunculus repens</i>	-	-	-	4	2	II (2 - 4)
<i>Alopecurus pratensis</i>	-	-	5	-	-	I (5)
<i>Carex nigra</i>	-	3	-	-	-	I (3)
<i>Juncus effusus</i>	-	-	-	-	2	I (2)
<i>Rumex obtusifolius</i>	1	-	-	-	-	I (1)
<i>Veronica serpyllifolia</i>	1	-	-	-	-	I (1)
Bare ground	1	1	1	1	1	V (1 - 1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Millington Clough (CH448367\_L5290\_PH2\_010618)

#### Site description and reasons for selection for survey

2.3.409 Semi-natural broadleaved woodland on the north-west of side of Millington Clough on a steep slope. The woodland is mapped as deciduous woodland on Natural England’s PHI and it is a AWI site.

#### Vegetation communities present

2.3.410 Sycamore and pedunculate oak are abundant canopy species with a subordinate cover of ash, alder and wych elm. The shrub layer comprises a mixture of young trees as well as shrub species such as elder and holly. Bluebell and ivy are locally dominant. Other ground flora species present at low cover levels include wood anemone, wood speedwell, and opposite-leaved golden-saxifrage. Overall, the ground flora is relatively species-poor. The woodland is considered characteristic of NVC type W10e *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland, *Acer pseudoplatanus-Oxalis acetosella* sub-community. The TABLEFIT analysis returned a result of W10e at 67% goodness of fit. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.411 Eight vascular plant species that are indicative of ancient woodland were recorded from Millington Clough: holly, wych elm, wood anemone, opposite-leaved golden-saxifrage, wood speedwell, greater stitchwort, bluebell and scaly male-fern.

2.3.412 Table 109 sets out the NVC survey data from Millington Clough. Two quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 109: NVC survey data from Millington Clough (CH448367\_L5290\_PH2\_010618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	7	8	NS	NS	NS	II (7 - 8)
<i>Quercus robur</i>	7	5	NS	NS	NS	II (5 - 7)
<i>Fraxinus excelsior</i>	5	4	NS	NS	NS	II (4 - 5)
<i>Alnus glutinosa</i>	4	4	NS	NS	NS	II (4 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Acer pseudolatanus</i>	7	8	NS	NS	NS	II (7 - 8)
<i>Ulmus glabra</i>	-	4	NS	NS	NS	I (4)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	5	4	NS	NS	NS	II (4 - 5)
<i>Acer pseudoplatanus</i>	3	4	NS	NS	NS	II (3 - 4)
<i>Ulmus glabra</i>	2	7	NS	NS	NS	II (2 - 7)
<i>Alnus glutinosa</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Crataegus monogyna</i>	1	2	NS	NS	NS	II (1 - 2)
<i>Quercus robur</i>	1	2	NS	NS	NS	II (1 - 2)
<i>Ilex aquifolium</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Salix caprea</i>	1	-	NS	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Holcus mollis</i>	4	5	NS	NS	NS	II (4 - 5)
<i>Hyacinthoides non-scripta</i>	5	3	NS	NS	NS	II (3 - 5)
<i>Kindberia praelonga</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Brachythecium rutabulum</i>	3	2	NS	NS	NS	II (2 - 3)
<i>Hedera helix</i>	-	7	NS	NS	NS	I (7)
<i>Pteridium aquilinum</i>	4	-	NS	NS	NS	I (4)
<i>Circaea lutetiana</i>	-	3	NS	NS	NS	I (3)
<i>Poa trivialis</i>	2	-	NS	NS	NS	I (2)
<i>Dryopteris dilatata</i>	-	2	NS	NS	NS	I (2)
Bare Soil	-	-	NS	NS	NS	II (7)
Leaf Litter	-	-	NS	NS	NS	II (7)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Rostherne Mere (U201015\_L6143\_F001\_PH2\_230719)

#### Site description and reasons for selection for survey

2.3.413 Wet woodland in Gale Bog which is part of Rostherne Mere Ramsar Site, SSSI and National Nature Reserve (NNR). A narrow woodland bisected by several small drainage channels, connecting it to standing water in Rostherne Mere. The woodland is shown as deciduous woodland on the Natural England PHI.

#### Vegetation communities present

2.3.414 Grey willow is dominant with goat willow frequent in the canopy and occasional large, mature pedunculate oak trees in the drier parts of the wood. No shrub layer is present in places. The most frequent ground flora species present in channels are common reed, lesser pond-sedge (*Carex acutiformis*), meadowsweet, reed canary-grass and heart-leaved spear-moss (*Calliargon cordifolium*). Common reed is not present in the quadrat samples as it was confined to the ditches. This vegetation is an example of W1 *Salix cinerea-Galium palustre* woodland. The TABLEFIT 'goodness of fit' result was 49% in support of NVC community W1. This habitat qualifies as wet woodland HoPI.

2.3.415 Table 110 sets out the NVC survey data from Rostherne Mere (F001).

**Table 110: NVC survey data from Rostherne Mere (U201015\_L6143\_F001\_PH2\_230719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Salix cinerea</i>	9	8	7	3	8	V (3 - 9)
<i>Salix caprea</i>	-	6	8	-	6	III (6 - 8)
<i>Salix fragilis</i>	5	-	3	8	-	III (3 - 8)
<i>Quercus robur</i>	-	-	3		2	II (2 - 3)
<i>Betula pubescens</i>	-	-	-	4	-	I (4 - 4)
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelonga</i>	5	2	3	2	2	V (2 - 5)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Carex acutiformis</i>	7	3	3	7	-	IV (3 - 7)
<i>Phalaris arundinacea</i>	-	5	3	3	4	IV (3 - 5)
<i>Calliergon cordifolium</i>	4	8	-	-	4	III (4 - 8)
<i>Solanum dulcamara</i>	2	2	-	-	2	III (2 - 2)
<i>Filipendula ulmaria</i>	-	-	-	7	6	II (6 - 7)
<i>Urtica dioica</i>	-	-	3	-	3	II (3 - 3)
<i>Ribes nigrum</i>	-	-	-	6	2	II (2 - 6)
<i>Mentha aquatica</i>	-	2	-	-	4	II (2 - 4)
<i>Iris pseudacorus</i>	-	3	-	-	2	II (2 - 3)
<i>Galium palustre</i>	2	-	-	2	--	II (2 - 2)
<i>Circaea lutetiana</i>	-	-	1	-	2	II (1 - 2)
<i>Scutellaria galericulata</i>	-	-	-	-	5	I (5)
<i>Epilobium montanum</i>	-	-	4	-	-	I (4)
<i>Rhizomniun punctatum</i>	3	-	-	-	-	I (3)
<i>Veronica beccabunga</i>	-	-	3	-	-	I (3)
<i>Rumex crispus</i>	-	-	2	-	-	I (2)
<i>Salix cinerea</i>	9	8	7	3	8	V (3 - 9)

## Rostherne Mere (U202295\_L21600\_F002\_PH2\_230719)

### Site description and reasons for selection for survey

- 2.3.416 Tall swamp vegetation present in a clearing in the north of Gale Bog woodland (F001). This vegetation is in Rostherne Mere Ramsar Site, SSSI and NNR. This habitat is shown on the Natural England PHI as deciduous woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.417 The most frequent species are the herbs purple loosestrife and meadowsweet, although the greatest coverage is provided by the grass species purple small-reed (*Calamagrostis canescens*) and lesser pond-sedge. Mapping of the survey site appears to show the clearing as being connected to the main body of Rostherne Mer by a narrow, inlet into the middle of the woodland at Gale Bog. The most appropriate NVC classification for this area is S7 *Carex acutiformis* swamp. However, the vegetation also has affinities to M27 *Filipendula ulmaria-Angelica sylvestris* mire, which is dominated by meadowsweet. The TABLEFIT 'goodness of fit' result was 27% in support of NVC community M27c. Purple small-reed is mentioned in the SSSI citation as occurring at Rostherne Mere and as being uncommon in this part of the country<sup>32</sup>. The habitat is not a close match to any HoPI type, but it is a distinctive swamp/tall herb fen vegetation.
- 2.3.418 Table 111 sets out the NVC survey data from Rostherne Mere (F002).

**Table 111: NVC survey data from Rostherne Mere (U202295\_L21600\_F002\_PH2\_230719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Filipendula ulmaria</i>	-	5	6	6	5	IV (5 - 6)
<i>Lythrum salicaria</i>	5	4	-	7	5	IV (4 - 7)
<i>Calamagrostis canescens</i>	10	6	8	-	-	III (6 - 10)
<i>Carex acutiformis</i>	5	-	-	9	8	III (5 - 9)
<i>Juncus effusus</i>	-	4	-	5	6	III (4 - 6)
<i>Lysimachia vulgaris</i>	4	-	-	5	4	III (4 - 5)
<i>Phalaris arundinacea</i>	2	6	5	-	-	III (2 - 6)
<i>Typha latifolia</i>	-	5	-	2	6	III (2 - 6)

<sup>32</sup> It is locally scarce in Vice County 58 Cheshire – Botanical Society for Britain and Ireland (2015). Cheshire Rare Plant Register [on-line] [https://bsbi.org/Cheshire\\_RDB\\_2015.pdf](https://bsbi.org/Cheshire_RDB_2015.pdf) (accessed November 2020).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Lycopus europaeus</i>	-	-	4	-	3	II (3 - 4)
<i>Iris pseudacorus</i>	4	-	-	-	-	I (4)
<i>Solanum dulcamara</i>	-	-	3	-	-	I (3)
<i>Galium palustre</i>	-	2	-	-	-	I (2)
<i>Salix fragilis</i>	-	-	-	-	2	I (2)

## Rostherne Mere (U201015\_L6143\_F003\_PH2\_230719)

### Site description and reasons for selection for survey

2.3.419 Reed swamp in a clearing to the south-east of Gale Bog (F002), at north-west edge of Mere Covert woodland (F011). There were frequent tree stumps present indicating that the area had been subject to recent management operations. The surveyed area is shown on the Natural England PHI as deciduous woodland. It forms part of Rostherne Mere Ramsar site, NNR and SSSI.

### Vegetation communities present

2.3.420 Common reed is constant but at relatively low cover with a range of other wetland plants frequent. Creeping bent locally dominant. Despite the low coverage of common reed, the most appropriate NVC classification for this area is S26 *Phragmites australis-Urtica dioica* fen. The TABLEFIT 'goodness of fit' result is a 39% fit for NVC community S4f *Phragmites* reedbed community. However, the habitat is slightly more characteristic of S26 because although common reed is constant, it is not as dominant as it would be in S4 *Phragmites* swamp and reedbeds community, and the habitat has the characteristically patchy mosaic of S26. Reedbed HoPI is defined as wetland dominated by stands of common reed, that tend to incorporate areas of open water and ditches, and small areas of wet grassland and carr woodland may be associated with them. Although the sampled vegetation is not currently dominated by common reed, it lies adjacent to reedbeds to the south (F007) and forms an associated part of the reedbed HoPI.

2.3.421 Table 112 sets out the NVC survey data from Rostherne Mere (F003).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 112: NVC survey data from Rostherne Mere (U201015\_L6143\_F003\_PH2\_230719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Agrostis stolonifera</i>	5	6	7	8	7	V (5 - 8)
<i>Lythrum salicaria</i>	4	5	4	4	6	V (4 - 6)
<i>Solanum dulcamara</i>	4	3	4	4	4	V (3 - 4)
<i>Phragmites australis</i>	4	4	5	6	-	IV (4 - 6)
<i>Lysimachia vulgaris</i>	-	-	6	7	8	III (6 - 8)
<i>Phalaris arundinacea</i>	-	9	-	2	4	III (2 - 9)
<i>Filipendula ulmaria</i>	2	4	-	-	-	II (2 - 4)
<i>Carex acutiformis</i>	7	-	-	-	-	I (7)
<i>Calamagrostis canescens</i>	6	-	-	-	-	I (6)
<i>Ribes nigrum</i>	3	-	-	-	-	I (3)

## Rostherne Mere (U204258\_L8913\_F004\_PH2\_240719)

### Site description and reasons for selection for survey

- 2.3.422 Reed swamp west of Shaw Green Willows (F011 and F012). Representative of large stands of reeds also present around the southern end of Rostherne Mere. On the Natural England PHI, the area adjacent to Shaw Green Willows is shown as reedbed. The habitat forms part of Rostherne Mere Ramsar site, National Nature Reserve, and SSSI.

### Vegetation communities present

- 2.3.423 Samples provide a good match to the S26 *Phragmites-Urtica dioica* community, with constant common reed at a high coverage. The TABLEFIT 'goodness of fit' result was 60% in support of NVC community S26. Other herbaceous species, typical of this community, were also present including common nettle, cleavers, meadowsweet, hemlock water-dropwort and gypsywort. This vegetation forms part of reedbed HoPI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.424 Table 113 sets out the NVC survey data from Rostherne Mere.

**Table 113: NVC survey data from Rostherne Mere (U204258\_L8913\_F004\_PH2\_240719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Phragmites australis</i>	10	10	10	10	10	V (10 - 10)
<i>Impatiens glandulifera</i>	2	1	4	2	2	V (1 - 4)
<i>Urtica dioica</i>	2	-	-	2	5	III (2 - 5)
<i>Phalaris arundinacea</i>	3	-	-	2	-	II (2 - 3)
<i>Carex acutiformis</i>	-	-	2	3	-	II (2 - 3)
<i>Filipendula ulmaria</i>	1	-	4	-	-	II (1 - 4)
<i>Lysimachia vulgaris</i>	2	-	-	-	-	I (2)
<i>Galium aparine</i>	2	-	-	-	-	I (2)
<i>Equisetum palustre</i>	-	2	-	-	-	I (2)
<i>Oenanthe crocata</i>	-	-	-	2	-	I (2)
<i>Galium palustre</i>	-	-	-	-	2	I (2)
<i>Angelica sylvestris</i>	1	-	-	-	-	I (1)
<i>Lycopus europaeus</i>	-	-	1	-	-	I (1)

## Rostherne Mere (CH5603\_L5349\_F005\_PH2\_250719)

### Site description and reasons for selection for survey

2.3.425 Marshy grassland in Rostherne Mere SSSI and Rostherne Mere NNR (but outside of the Rostherne Mere Ramsar site). This area of grassland is in the hollow between Wood Bongs and Rostherne Mere. The Natural England PHI lists this area as 'good quality semi-improved grassland'.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.426 Soft rush is dominant and constant with the following species also constant but and at varying levels of abundant: Yorkshire fog, marsh horsetail, common bent, the moss (*Kindbergia praelonga*), common nettle, marsh thistle and curled dock. This vegetation is identified as NVC type MG10a *Holcus lanatus*-*Juncus effusus* rush-pasture typical sub-community due to the dominance of soft rush and abundant Yorkshire fog with frequent perennial rye-grass. The TABLEFIT 'goodness of fit' result is 61% in support of NVC community M23 – the vegetation present was more diverse that is commonly encountered in MG10 vegetation and may be intermediate between M23 and MG10.
- 2.3.427 Table 114 sets out the NVC survey data from Rostherne Mere (F005).

**Table 114: NVC survey data from Rostherne Mere (CH5603\_L5349\_F005\_PH2\_250719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Juncus effusus</i>	8	9	9	7	8	V (7 - 9)
<i>Urtica dioica</i>	2	2	7	2	6	V (2 - 7)
<i>Equisetum palustre</i>	3	3	4	3	7	V (3 - 7)
<i>Holcus lanatus</i>	5	4	7	5	5	V (4 - 7)
<i>Agrostis capillaris</i>	4	3	5	6	4	V (3 - 6)
<i>Cirsium palustre</i>	4	5	2	4	4	V (2 - 5)
<i>Kindbergia praelonga</i>	3	4	4	4	3	V (3 - 4)
<i>Rumex crispus</i>	1	1	4	2	2	V (1 - 4)
<i>Festuca rubra</i>	6	5	4	-	7	IV (4 - 7)
<i>Epilobium palustre</i>	4	6	4	-	4	IV (4 - 6)
<i>Galium palustre</i>	-	2	7	7	3	IV (2 - 7)
<i>Rumex acetosa</i>	2	-	4	2	1	IV (1 - 4)
<i>Lolium perenne</i>	2	-	2	2	2	IV (2 - 2)
<i>Brachythecium rutabulum</i>	3	1	3	2	-	IV (1 - 3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Anthoxanthum odoratum</i>	6	5	-	-	3	III (3 - 6)
<i>Cynosurus cristatus</i>	3	4	-	6	-	III (3 - 6)
<i>Cerastium fontanum</i>	-	2	2	-	2	III (2 - 2)
<i>Rhytiadelphus squarrosus</i>	3	-	-	3	-	II (3 - 3)
<i>Calliergonella cuspidata</i>	3	-	2	-	-	II (2 - 3)
<i>Ranunculus repens</i>	2	3	-	-	-	II (2 - 3)
<i>Trifolium repens</i>	2	-	-	2	-	II (2 - 2)
<i>Carex hirta</i>	2	-	2	-	-	II (2 - 2)
<i>Alopecurus pratensis</i>	-	-	1	-	3	II (1 - 3)
<i>Phragmites australis</i>	-	-	-	1	-	I (1)
<i>Cirsium vulgare</i>	-	-	-	2	-	I (2)
<i>Phleum pratense</i>	-	-	-	-	1	I (1)
<i>Dryopteris dilatata</i>	1	-	-	-	-	I (1)

## Rostherne Mere (U203052\_L8912\_F006\_PH2\_250719)

### Site description and reasons for selection for survey

- 2.3.428 Woodland surrounding Rostherne Mere in Wood Bongs and Mere Covert. A small drainage channel runs through Wood Bongs, leaving the woodland and passing through improved grassland before entering Rostherne Mere. Wood Bongs is in Rostherne Mere Ramsar site, SSSI and NNR. This stand is mapped as deciduous woodland on the Natural England PHI, it is not an AWI site.

### Vegetation communities present

- 2.3.429 Wood Bongs' canopy is dominated by pedunculate oak with a fern species bracken, male fern (*Dryopteris filix-mas*) and broad buckler-fern and bramble dominant in the ground-flora. The vegetation present is a good match for the W10a *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus*



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

woodland typical sub-community, due to the dominance of pedunculate oak in the canopy and bracken and bramble in the ground layer. The TABLEFIT 'goodness of fit' result was 55% in support of NVC community W10. This vegetation qualifies as lowland mixed deciduous woodland HoPI.

2.3.430 A single vascular plant species that is indicative of ancient woodland was recorded from Wood Bongs: holly.

2.3.431 Table 115 sets out the NVC survey data from Rostherne Mere (F006).

**Table 115: NVC survey data from Rostherne Mere (U203052\_L8912\_F006\_PH2\_250719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	7	8	9	8	9	V (7 - 9)
<i>Pinus sylvestris</i>	4	4	2	-	2	IV (2 - 4)
<i>Betula pendula</i>	2	2	-	1	1	IV (1 - 2)
<i>Sorbus aucuparia</i>	2	-	1	1	1	IV (1 - 2)
<i>Picea sp.</i>	-	-	-	2	1	II (1 - 2)
<i>Castanea sativa</i>	-	-	-	-	2	I (2)
<i>Alnus glutinosa</i>	-	-	-	-	1	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i>	6	6	3	2	-	IV (2 - 6)
<i>Taxus baccata</i>	2	2	-	2	1	IV (1 - 2)
<i>Ilex aquifolium</i>	3	2	-	-	1	III (1 - 3)
<i>Rhododendron ponticum</i>	-	-	-	4	4	II (4 - 4)
<i>Alnus glutinosa</i>	-	-	6	-	3	II (3 - 6)
<i>Sorbus aucuparia</i>	2	-	-	-	2	II (2 - 2)
<i>Betula pendula</i>	-	2	-	-	-	I (2)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Pteridium aquilinum</i>	8	4	4	3	9	V (3 - 9)
<i>Dryopteris dilatata</i>	6	5	4	3	-	IV (3 - 6)
<i>Rubus fruticosus</i> agg.	2	1	7	4	-	IV (1 - 7)
<i>Atrichum undulatum</i>	-	1	1	2	-	III (1 - 2)
<i>Hypnum cupressiforme</i>	1	1	-	1	-	III (1 - 1)
<i>Dryopteris filix-mas</i>	-	-	6	4	-	II (4 - 6)
<i>Circaea lutetiana</i>	-	-	1	1	-	II (1 - 1)
<i>Urtica dioica</i>	-	-	3	-	-	I (3)
<i>Silene dioica</i>	-	-	2	-	-	I (2)
<i>Kindbergia praelonga</i>	-	-	-	2	-	I (2)
<i>Juncus effusus</i>	-	-	-	2	-	I (2)
<i>Polytrichastrum formosum</i>	-	-	-	2	-	I (2)
<i>Brachythecium rutabulum</i>	1	-	-	-	-	I (1)
<i>Lysimachia nemorum</i>	-	-	-	1	-	I (1)
<i>Digitalis purpurea</i>	-	-	-	1	-	I (1)
<i>Impatiens glandulifera</i>	-	-	1	-	-	I (1)
<i>Mnium hornum</i>	-	-	-	1	-	I (1)
<i>Solanum dulcamara</i>	-	-	-	1	-	I (1)
<i>Rubus idaeus</i>	-	-	-	1	-	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Rostherne Mere (U201015\_L6143\_F011\_PH2\_250719)

#### Site description and reasons for selection for survey

2.3.432 Woodland in Mere Covert and Shaw Green Willows is to the east of Rostherne Mere but is separated from The Mere by stand F007 and stand F003 swamp. This woodland was shown as deciduous woodland on the Natural England PHI, and lies within Rostherne Mere Ramsar site, SSSI and NNR.

#### Vegetation communities present

2.3.433 The canopy is dominated by pedunculate oak with bracken and broad buckler-fern dominating the ground-flora. The vegetation present is a match for the W10a *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland NVC typical sub-community. The TABLEFIT 'goodness of fit' result is a 75% fit for NVC community W10a. The sampled vegetation is representative of lowland mixed deciduous woodland HoPI.

2.3.434 Table 116 sets out the NVC survey data from Rostherne Mere (F011).

**Table 116: NVC survey data from Rostherne Mere (U201015\_L6143\_F011\_PH2\_250719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	9	9	8	8	7	V (7 - 9)
<i>Pinus sylvestris</i>	4	2	3	2	2	V (2 - 4)
<i>Acer pseudoplatanus</i>	-	4	8	8	6	IV (4 - 8)
<i>Hedera helix</i>	-	-	-	1	-	I (1)
<i>Sorbus aucuparia</i>	-	-	-	-	1	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i>	5	8	6	8	6	V (5 - 8)
<i>Betula pendula</i>	7	2	3	3	4	V (2 - 7)
<i>Ilex aquifolium</i>	3	4	5	5	2	V (2 - 5)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Sambucus nigra</i>	2	2	3	-	3	IV (2 - 3)
<i>Rhododendron ponticum</i>	-	2	2	5	-	III (2 - 5)
<i>Sorbus aucuparia</i>	2	-	-	-	5	II (2 - 5)
<i>Corylus avellana</i>	-	4	2	-	-	II (2 - 4)
<i>Taxus baccata</i>	-	-	2	-	-	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	7	8	9	9	9	V (7 - 9)
<i>Dryopteris dilatata</i>	5	2	-	2	2	IV (2 - 5)
<i>Kindbergia praelonga</i>	2	1	-	-	2	III (1 - 2)
<i>Pteridium aquilinum</i>	8	-	-	-	4	II (4 - 8)
<i>Atrichum undulatum</i>	-	-	2	-	-	I (2)
<i>Sorbus aucuparia</i>	-	-	-	-	2	I (2)
<i>Pseudotaxiphyllum elegans</i>	-	-	3	-	-	I (3)

## Rostherne Mere (U204258\_L8913\_F009\_PH2\_230719)

### Site description and reasons for selection for survey

2.3.435 Swamp vegetation west of the boat houses in the south-west corner of The Mere. The stand lies within Rostherne Mere Ramsar site, SSSI and NNR.

### Vegetation communities present

2.3.436 The vegetation is a monospecific stand of bulrush, with other sparsely occurring herbs including branched bur-reed (*Sparganium erectum*), purple loosestrife, yellow loosestrife and bittersweet. The species composition is most characteristic of S12 *Typha latifolia* swamp. This vegetation does not qualify as a HoPI.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Rostherne Mere (U204258\_L8913\_F010\_PH2\_250719)

#### Site description and reasons for selection for survey

- 2.3.437 A ditch at the eastern boundary of Shaw Green Willows, to the south-east of Rostherne Mere. The southern part of the ditch is shown as lowland fen on the PHI. The northern part of the ditch is not classified on the PHI. The surveyed area is located within Rostherne Mere NNR, and SSSI, and the majority of the ditch is also just within the boundary of Rostherne Mere Ramsar site.

#### Vegetation communities present

- 2.3.438 Branched bur-reed is dominant and constant, with less abundant reed canary grass, and sparsely occurring water forget-me-not and water horsetail. The species composition is characteristic of S14d *Sparganium erectum* swamp *Phalaris arundinacea* sub-community. The TABLEFIT 'goodness of fit' result was an 87% fit for NVC community S14d. The sample vegetation does not qualify as a HoPI in its own right.
- 2.3.439 Table 117 sets out the NVC survey data from Rostherne Mere (F010). One quadrat sample was adequate to achieve full coverage of this small stand of swamp.

**Table 117: NVC survey data from Rostherne Mere (U204258\_L8913\_F010\_PH2\_250719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Sparganium erectum</i>	9	NS	NS	NS	NS	I (9)
<i>Phalaris arundinacea</i>	4	NS	NS	NS	NS	I (4)
<i>Equisetum fluviatile</i>	3	NS	NS	NS	NS	I (3)
<i>Myosotis scorpioides</i>	1	NS	NS	NS	NS	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Rostherne Mere (U204258\_L8913\_F012\_PH2\_250719)

#### Site description and reasons for selection for survey

2.3.440 A large expanse of swamp vegetation to the east of Shaw Green Willows (F011). The majority of this stand is mapped as lowland fen on the Natural England PHI and the rest as deciduous woodland or 'good quality semi-improved grassland'. Vegetation is in Rostherne Mere Ramsar site, SSSI and NNR.

#### Vegetation communities present

2.3.441 Lesser pond-sedge is dominant with the following additional species constant and at relatively high cover reed canary-grass, marsh bedstraw. The sampled vegetation is a good match for the S7 *Carex acutiformis* swamp NVC community. The TABLEFIT 'goodness of fit' result was a 56% fit for NVC community S28 *Phalaris arundinacea* tall-herb fen community, due to the abundance of reed canary-grass, and a 44% fit for S7; however, the habitat is slightly more characteristic of S7 due to the dominance of lesser pond sedge. The sampled vegetation does not qualify as a HoPI in its own right.

2.3.442 Table 118 sets out the NVC survey data from Rostherne Mere (F012).

**Table 118: NVC survey data from Rostherne Mere (U204258\_L8913\_F012\_PH2\_250719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Carex acutiformis</i>	10	9	10	10	9	V (9 - 10)
<i>Phalaris arundinacea</i>	8	7	6	9	7	V (6 - 9)
<i>Galium palustre</i>	2	3	4	2	-	IV (2 - 4)
<i>Solanum dulcamara</i>	3	-	4	2	-	III (2 - 4)
<i>Filipendula ulmaria</i>	2	-	-	-	3	II (2 - 3)
<i>Lythrum salicaria</i>	-	4	-	1	-	II (1 - 4)
<i>Juncus effusus</i>	-	3	-	-	1	II (1 - 3)
<i>Angelica sylvestris</i>	-	-	2	-	-	I (2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Rostherne Mere (U202295\_L21600\_F007\_PH2\_240719)

#### Site description and reasons for selection for survey

- 2.3.443 Reed swamp approximately 10m wide, fringing the eastern edge of Mere Covert. This vegetation is on the Natural England PHI as 'no main habitat but additional habitat present' with reedbed listed under candidate for main habitat. It lies within Rostherne Mere Ramsar site, SSSI and NNR.

#### Vegetation communities present

- 2.3.444 This vegetation is dominated by common reed and is NVC type S4a *Phragmites australis* swamp and reed-beds, *Phragmites australis* sub-community. No floristic table and TABLEFIT analysis are required to confirm this monospecific vegetation. The vegetation qualifies as reedbed HoPI.

### Rostherne Mere (U202295\_L21600\_F008\_PH2\_240719)

#### Site description and reasons for selection for survey

- 2.3.445 Swamp vegetation located to the south of Gale Bog woodland at the north-eastern edge of Rostherne Mere along the waterside (western) edge of F003 swamp, and also at the southern edge of The Mere, fringing a larger expanse of S26 swamp (F004), and at the south-western corner of The Mere where it forms a narrow band fringing dry land. The habitat areas in the south were surveyed using binoculars due to access being refused in this area. The habitat forms part of Rostherne Mere Ramsar site, NNR, and SSSI. It is not listed on the PHI.

#### Vegetation communities present

- 2.3.446 Lesser bulrush (*Typha angustifolia*) is dominant, with common reed and purple loosestrife both recorded at lower abundances within the stand. The species composition is most characteristic of S13 *Typha angustifolia* swamp community. The sampled vegetation is not a HoPI in its own right.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Hancock's Bank South (CH561486-U204199\_L5494\_PH2\_240719)

#### Site description and reasons for selection for survey

2.3.447 Hancock's Bank South is an AWI site (ancient semi-natural woodland) and it is mapped by Natural England's PHI as deciduous woodland. The woodland is also designated as Hancock's Bank South LWS. The woodland is crossed north to south by a 5m wide stream called Blackburn's Brook.

#### Vegetation communities present

2.3.448 Ash is dominant in the canopy, aside from adjacent to the stream where a small number of alder trees are present. Pedunculate oak and sycamore are occasional. The sub-canopy layer is open with scattered holly, hawthorn, elder and blackthorn. There are open areas with wood meadow-grass in the field layer. There are also dense stands of Himalayan balsam adjacent to the stream. Common nettle and hogweed are frequent. This woodland has characteristics of the W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. The W8a *Primula vulgaris-Glechoma hederacea* sub-community has the greatest affinity with this woodland with violet species *Viola* spp., ground-ivy and bluebell present within the ground flora. The TABLEFIT statistic for this woodland was 32% 'goodness of fit' for NVC type W6d. However, alder only forms a minor part of the canopy and W8 is a more accurate description of this vegetation. The woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.449 Seven vascular plant species that are indicative of ancient woodland were recorded from Hancock's Bank South: holly, moschatel, wood anemone, false brome, wood sedge, wood speedwell, wood sorrel.

2.3.450 Table 119 sets out the NVC survey data from Hancock's Bank South.

**Table 119: NVC survey data from Hancock's Bank South (CH561486-U204199\_L5494\_PH2\_240719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Fraxinus excelsior</i>	6	6	6	6	6	V (6 - 6)
<i>Quercus robur</i>	4	4	4	4	4	V (4 - 4)



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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Alnus glutinosa</i>	4	4	4	4	4	V (4 - 4)
<i>Acer pseudoplatanus</i>	3	3	3	3	3	V (3 - 3)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	4	4	4	4	4	V (4 - 4)
<i>Sambucus nigra</i>	4	4	4	4	4	V (4 - 4)
<i>Prunus spinosa</i>	4	4	4	4	4	V (4 - 4)
<i>Ilex aquifolium</i>	2	2	2	2	2	V (2 - 2)
<i>Alnus glutinosa</i> (sapling)	2	2	2	2	2	V (2 - 2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Kindbergia praelongia</i>	4	4	8	6	6	V (4 - 8)
<i>Silene dioica</i>	-	5	1	5	3	IV (1 - 5)
<i>Urtica dioica</i>	5	-	-	3	3	III (3 - 5)
<i>Taraxacum officinale</i> agg.	-	2	-	2	3	III (2 - 3)
<i>Geum urbanum</i>	-	3	-	1	6	III (1 - 6)
<i>Poa nemoralis</i>	-	1	-	3	4	III (1 - 4)
<i>Crataegus monogyna</i> (seedling)	-	1	-	2	1	III (1 - 2)
<i>Hyacinthoides non-scripta</i>	-	2	1	1	-	III (1 - 2)
<i>Epilobium montanum</i>	-	1	1	-	1	III (1 - 1)
<i>Rubus fruticosus</i> agg.	-	7	8	-	-	II (7 - 8)
<i>Hedera helix</i>	-	-	-	5	5	II (5 - 5)
<i>Viola</i> spp.	-	2	-	-	3	II (2 - 3)
<i>Impatiens glandulifera</i>	5	-	-	1	-	II (1 - 5)
<i>Fraxinus excelsior</i> (seedling)	-	-	-	1	3	II (1 - 3)
<i>Veronica montana</i>	-	3	-	-	1	II (1 - 3)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Stellaria media</i>	-	-	1	2	-	II (1 - 2)
<i>Sonchus oleraceus</i>	-	-	-	1	1	II (1 - 1)
<i>Anemone nemorosa</i>	-	-	1	1	-	II (1 - 1)
<i>Brachythecium rutabulum</i>	-	5	-	-	-	I (5)
<i>Heracleum sphondylium</i>	4	-	-	-	-	I (4)
<i>Dryopteris dilatata</i>	-	-	-	3	-	I (3)
<i>Dryopteris filix-mas</i>	-	2	-	-	-	I (2)
<i>Lapsana communis</i>	-	-	-	2	-	I (2)
<i>Digitalis purpurea</i>	-	-	-	2	-	I (2)
<i>Ballota nigra</i>	-	-	-	1	-	I (1)
<i>Oxalis acetosella</i>	-	-	-	1	-	I (1)
Bare ground	7	7	5	6	7	V (5 - 7)

## Ryecroft Covert (also referred to as Lambsbank Covert) (CH561505\_L5425\_F001\_PH2\_270619)

### Site description and reasons for selection for survey

- 2.3.451 Broadleaved semi-natural woodland in the west and east ends of Ryecroft Covert LWS. This woodland is present on the relatively flat shelf next to a river and extending up the south-westerly facing slope. The woodland is listed as deciduous woodland on the Natural England PHI and is an AWI site.

### Vegetation communities present

- 2.3.452 Constant species in the canopy are abundant pedunculate oak and frequent hybrid crack willow, alder and sycamore. White willow (*Salix alba*) is frequent in the canopy but at low cover levels and restricted to the edge of the stand near the river. Conifers are rare. The shrub layer is

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relatively diverse with constant hawthorn, elder, and hazel and young canopy species. The ground flora included bluebell, bramble, wood avens, red campion (*Silene dioica*) and false-brome. Frequent species included Himalayan balsam and common nettle. This stand is classified as W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland as it contains a mixed canopy, a diverse understorey and a ground flora containing several species indicative of slight base-enrichment, e.g. false brome, wood avens, ground ivy, herb Robert. However, it is not a strong match to any single sub-community. The TABLEFIT statistic for this woodland was 42% 'goodness of fit' for NVC type W8d *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Hedera helix* sub-community but ivy does not feature strongly in this wood. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.453 Eleven vascular plant species that are indicative of ancient woodland were recorded from Ryecroft Covert (incidentally or in quadrats): hazel, wild cherry, wych elm, bearded couch, yellow pimpernel, dog's mercury, wood speedwell, wood anemone, pignut, opposite-leaved golden-saxifrage, remote sedge.

2.3.454 Table 120 sets out the NVC survey data from Ryecroft Covert (also referred to as Lambsbank Covert; F001).

**Table 120: NVC survey data from Ryecroft Covert (also referred to as Lambsbank Covert) (CH561505\_L5425\_F001\_PH2\_270619)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	7	8	7	5	7	V (5 - 8)
<i>Acer pseudoplatanus</i>	4	4	4	4	4	V (4 - 4)
<i>Alnus glutinosa</i>	4	1	5	5	4	V (1 - 5)
<i>Salix fragilis</i>	-	5	5	7	7	IV (5 - 7)
<i>Salix alba</i>	-	1	-	1	1	III (1 - 1)
<i>Fraxinus excelsior</i>	6	-	-	-	-	I (6)
<i>Pinus sylvestris</i>	5	-	-	-	-	I (5)
<i>Castanea sativa</i>	4	-	-	-	-	I (4)
<i>Larix decidua</i>	-	-	1	-	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	3	3	3	5	4	V (3 - 5)

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Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Sambucus nigra</i>	3	4	4	4	4	V (3 - 4)
<i>Acer pseudoplatanus</i>	-	4	4	4	4	IV (4 - 4)
<i>Corylus avellana</i>	4	2	-	2	4	IV (2 - 4)
<i>Alnus glutinosa</i>	2	-	2	2	2	IV (2 - 2)
<i>Salix fragilis</i>	-	-	4	6	5	III (4 - 6)
<i>Fraxinus excelsior</i>	-	4	-	2	2	III (2 - 4)
<i>Quercus robur</i>	-	-	2	2	1	III (1 - 2)
<i>Ulmus glabra</i>	4	-	-	-	2	II (2 - 4)
<i>Salix alba</i>	-	2	-	-	1	II (1 - 2)
<i>Ilex aquifolium</i>	1	-	-	-	-	I (1)
<i>Rosa canina</i>	1	-	-	-	-	I (1)
<i>Salix cinerea</i>	-	-	-	-	1	I (1)
<i>Sorbus aucuparia</i>	1	-	-	-	-	I (1)
<i>Symphoricarpos</i> sp.	1	-	-	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Geum urbanum</i>	3	7	6	4	4	V (3 - 7)
<i>Rubus fruticosus</i> agg.	2	4	4	4	5	V (2 - 5)
<i>Brachypodium sylvaticum</i>	1	4	5	5	5	V (1 - 5)
<i>Poa trivialis</i>	3	1	2	3	3	V (1 - 3)
<i>Eurhynchium striatum</i>	3	3	-	4	3	IV (3 - 4)
<i>Silene dioica</i>	4	-	2	4	2	IV (2 - 4)
<i>Impatiens glandulifera</i>	5	-	-	4	3	III (3 - 5)
<i>Kindbergia praelonga</i>	4	3	3	-	-	III (3 - 4)
<i>Urtica dioica</i>	4	-	-	4	2	III (2 - 4)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rumex sanguineus</i>	-	1	-	2	2	III (1 - 2)
<i>Alliaria petiolata</i>	-	2	1	2	-	III (1 - 2)
<i>Dryopteris filix-mas</i>	-	-	-	4	5	II (4 - 5)
<i>Heracleum sphondylium</i>	-	-	-	4	4	II (4 - 4)
<i>Dryopteris dilatata</i>	4	4	-	-	-	II (4 - 4)
<i>Brachythecium rutabulum</i>	3	-	-	3	-	II (3 - 3)
<i>Galium aparine</i>	4	-	-	2	-	II (2 - 4)
<i>Veronica montana</i>	-	3	2	-	-	II (2 - 3)
<i>Juncus effusus</i>	-	-	-	2	2	II (2 - 2)
<i>Geranium robertianum</i>	-	-	4	-	1	II (1 - 4)
<i>Glechoma hederacea</i>	1	-	2	-	-	II (1 - 2)
<i>Epilobium montanum</i>	-	2	-	1	-	II (1 - 2)
<i>Lysimachia nemorum</i>	4	-	-	-	-	I (4 - 4)
<i>Stachys sylvatica</i>	-	-	4	-	-	I (4 - 4)
<i>Carex sylvatica</i>	-	-	-	-	4	I (4 - 4)
<i>Hyacinthoides</i> sp.	3	-	-	-	-	I (3 - 3)
<i>Atrichum undulatum</i>	3	-	-	-	-	I (3 - 3)
<i>Plagiothecium undulatum</i>	3	-	-	-	-	I (3 - 3)
<i>Anemone nemorosa</i>	2	-	-	-	-	I (2 - 2)
<i>Plagiomnium undulatum</i>	1	-	-	-	-	I (1 - 1)
<i>Prunus avium</i>	-	-	-	1	-	I (1 - 1)
<i>Fraxinus excelsior</i>	-	-	-	-	1	I (1 - 1)
Leaf Litter	7	4	5	5	7	V (4 - 7)
Bare Soil	5	3	4	3	4	V (3 - 5)

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### Ryecroft Covert (also referred to a Lambsbank Covert) (CH561505\_L5425\_F002\_PH2\_270619)

#### Site description and reasons for selection for survey

2.3.455 Broadleaved semi-natural woodland on the south margin of Ryecroft Covert LWS. This woodland is mapped by Natural England's PHI as deciduous woodland. The majority of the woodland occurred on a shallow westerly facing slope with a small hedge bank on the southern side and other earth banks at the western end near a small pond. The woodland is an AWI site.

#### Vegetation communities present

2.3.456 Canopy dominated by pedunculate oak with frequent and locally abundant Scot's pine. The shrub layer features pedunculate oak at low cover with frequent hazel, rowan and sycamore. The ground flora is dominated by a mixture of bramble and bracken with a low cover of creeping soft-grass and bluebell. Himalayan balsam is frequent throughout. This stand is classified as W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland typical sub-community on account of the dominance of pedunculate oak with bramble and bracken in the ground layer. The TABLEFIT statistic for this woodland was 88% 'goodness of fit' for NVC type W10 undifferentiated to sub-community. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.457 Six vascular plant species that are indicative of ancient woodland were recorded from Ryecroft Covert: hazel, holly, wild cherry, creeping soft-grass, wood sorrel, wood anemone.

2.3.458 Table 121 sets out the NVC survey data from Ryecroft Covert (also referred to as Lambsbank Covert; F002).

**Table 121: NVC survey data from Ryecroft Covert (also referred to as Lambsbank Covert) (CH561505\_L5425\_F002\_PH2\_270619)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	8	8	7	7	8	V (7 - 8)
<i>Betula pendula</i>	-	4	4	6	5	IV (4 - 6)

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Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Pinus sylvestris</i>	4	-	7	5	-	III (4 - 7)
<i>Acer pseudoplatanus</i>	1	1	-	-	-	II (1 - 1)
<i>Fraxinus excelsior</i>	4	-	-	-	-	I (4)
<b>Understorey (10m x 10m)</b>						
<i>Quercus robur</i>	1	1	4	1	-	IV (1 - 4)
<i>Corylus avellana</i>	7	4	-	4	-	III (4 - 7)
<i>Sorbus aucuparia</i>	-	1	-	2	5	III (1 - 5)
<i>Acer pseudoplatanus</i>	1	4	-	-	1	III (1 - 4)
<i>Sambucus nigra</i>	-	-	-	4	5	II (4 - 5)
<i>Betula pendula</i>	-	-	-	3	4	II (3 - 4)
<i>Ilex aquifolium</i>	1	-	1	-	-	II (1 - 1)
<i>Crataegus monogyna</i>	-	7	-	-	-	I (7)
<i>Prunus</i> sp.	-	4	-	-	-	I (4)
<i>Prunus spinosa</i>	-	4	-	-	-	I (4)
<i>Pinus sylvestris</i>	-	4	-	-	-	I (4)
<i>Fraxinus excelsior</i>	3	-	-	-	-	I (3)
<i>Alnus glutinosa</i>	1	-	-	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	8	8	7	5	8	V (5 - 8)
<i>Pteridium aquilinum</i>	4	4	7	8	7	V (4 - 8)
<i>Holcus mollis</i>	4	5	5	4	3	V (3 - 5)
<i>Hyacinthoides</i> sp.	3	3	2	4	2	V (2 - 4)
<i>Impatiens glandulifera</i>	-	2	-	2	2	III (2 - 2)
<i>Kindbergia praelonga</i>	-	-	-	4	-	I (4)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Poa trivialis</i>	3	-	-	-	-	I (3)
<i>Oxalis acetosella</i>	-	-	-	3	-	I (3)
<i>Mnium hornum</i>	3	-	-	-	-	I (3)
<i>Viola</i> sp.	-	2	-	-	-	I (2)
<i>Juncus effusus</i>	-	-	2	-	-	I (2)
<i>Dryopteris dilatata</i>	-	-	-	1	-	I (1)
<i>Anemone nemorosa</i>	1	-	-	-	-	I (1)
<i>Juncus inflexus</i>	-	-	1	-	-	I (1)
Leaf Litter	8	8	8	7	8	V (7 - 8)
Bare Soil	4	3	3	4	3	V (3 - 4)

## Ryecroft Covert (also referred to a Lambsbank Covert) (CH561505\_L5425\_F003\_PH2\_270619)

### Site description and reasons for selection for survey

- 2.3.459 Broad leaved semi-natural woodland forming the main body of Ryecroft Covert LWS. The woodland is mapped as deciduous woodland on the Natural England PHI. The canopy and shrub layer has been influenced by planting, but more than 30% of the canopy appears semi-natural in origin. The stand occurs on a gently sloping plateau and a shallow slope down to the M56. The woodland is an AWI site.

### Vegetation communities present

- 2.3.460 The canopy comprises constant ash, pedunculate oak and downy birch. Silver birch and hawthorn are frequent. The shrub layer features hawthorn and young canopy tree saplings. Rhododendron occurs primarily on the M56 embankment. Bramble and common nettle are the most abundant ground flora species. Himalayan balsam is present locally. This stand is classified as W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland typical sub-community. The TABLEFIT statistic for this woodland was 52% 'goodness of fit' for NVC type W21b but



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W21 is a hawthorn scrub community and W10 is considered a closer match. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.461 Nine vascular plant species that are indicative of ancient woodland were recorded from Ryecroft Covert: field maple, wych elm, wild cherry, creeping soft-grass, wood speedwell, bush vetch (*Vicia sepium*), dog's mercury, remote sedge, bluebell.

2.3.462 Table 122 sets out the NVC survey data from Ryecroft Covert (also referred to as Lambsbank Covert).

**Table 122: NVC survey data from Ryecroft Covert (also referred to as Lambsbank Covert) (CH561505\_L5425\_F003\_PH2\_270619)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Fraxinus excelsior</i>	8	7	5	5	4	V (4 - 8)
<i>Quercus robur</i>	4	5	6	7	7	V (4 - 7)
<i>Betula pubescens</i>	4	5	7	5	4	V (4 - 7)
<i>Betula pendula</i>	-	4	5	4	4	IV (4 - 5)
<i>Salix caprea</i>	-	4	1	4	5	IV (1 - 5)
<i>Crataegus monogyna</i>	-	4	-	4	5	III (4 - 5)
<i>Alnus glutinosa</i>	4	-	-	-	-	I (4 - 4)
<i>Salix cinerea</i>	-	-	-	1	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	4	4	6	5	5	V (4 - 6)
<i>Fraxinus excelsior</i>	5	5	4	4	4	V (4 - 5)
<i>Quercus robur</i>	2	4	2	4	4	V (2 - 4)
<i>Sambucus nigra</i>	4	-	4	4	-	III (4 - 4)
<i>Salix cinerea</i>	-	-	4	1	4	III (1 - 4)
<i>Betula pendula</i>	-	-	-	4	2	II (2 - 4)
<i>Rhododendron ponticum</i>	2	2	-	-	-	II (2 - 2)

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Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Salix caprea</i>	-	1	-	-	1	II (1 - 1)
<i>Malus</i> sp.	-	-	1	-	1	II (1 - 1)
<i>Ulmus glabra</i>	4	-	-	-	-	I (4)
<i>Alnus glutinosa</i>	-	-	-	-	2	I (2)
<i>Rosa canina</i>	-	1	-	-	-	I (1)
<i>Prunus avium</i>	-	-	1	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	8	5	7	5	5	V (5 - 8)
<i>Urtica dioica</i>	4	8	5	5	-	IV (4 - 8)
<i>Atrichum undulatum</i>	4	-	4	4	3	IV (3 - 4)
<i>Galium aparine</i>	5	5	7	-	-	III (5 - 7)
<i>Kindbergia praelonga</i>	3	-	3	-	4	III (3 - 4)
<i>Geum urbanum</i>	4	-	-	-	6	II (4 - 6)
<i>Glechoma hederacea</i>	4	4	-	-	-	II (4 - 4)
<i>Epilobium montanum</i>	4	-	-	-	4	II (4 - 4)
<i>Brachythecium rutabulum</i>	4	-	-	-	3	II (3 - 4)
<i>Holcus lanatus</i>	-	-	-	3	4	II (3 - 4)
<i>Juncus inflexus</i>	-	-	-	3	4	II (3 - 4)
<i>Dryopteris filix-mas</i>	-	2	2	-	-	II (2 - 2)
<i>Stachys sylvatica</i>	-	1	4	-	-	II (1 - 4)
<i>Holcus mollis</i>	-	-	-	4	-	I (4 - 4)
<i>Carex remota</i>	-	-	-	-	4	I (4 - 4)
<i>Festuca rubra</i>	-	-	-	-	3	I (3 - 3)
<i>Poa trivialis</i>	-	-	-	-	3	I (3 - 3)

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Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Silene dioica</i>	-	-	3	-	-	I (3 - 3)
<i>Deschampsia cespitosa</i>	-	-	-	3	-	I (3 - 3)
<i>Galium palustre</i>	-	-	-	3	-	I (3 - 3)
<i>Vicia sepium</i>	2	-	-	-	-	I (2 - 2)
<i>Impatiens glandulifera</i>	-	-	-	-	2	I (2 - 2)
<i>Phalaris arundinacea</i>	-	-	-	-	2	I (2 - 2)
<i>Heracleum sphondylium</i>	-	-	1	-	-	I (1)
<i>Taraxacum officinale agg.</i>	1	-	-	-	-	I (1)
<i>Ranunculus repens</i>	-	-	1	-	-	I (1)
<i>Angelica sylvestris</i>	-	-	-	1	-	I (1)
Leaf Litter	5	8	7	7	7	V (5 - 8)
Bare Soil	4	4	4	4	4	V (4 - 4)

## Brickhill Wood (CH480792\_L5149\_PH2\_150618)

### Site description and reasons for selection for survey

- 2.3.463 Broadleaved semi-natural woodland forming the east end of Brickhill Wood LWS. The majority of this wood is inaccessible for survey owing to land access constraints. The area surveyed is listed by Natural England as an AWI site (PAWS). It is also mapped on the Natural England PHI as deciduous woodland.

### Vegetation communities present

- 2.3.464 The canopy composition is mixed with ash the most abundant species, followed by pedunculate oak. Other species present include hybrid crack willow, beech and sycamore. A mature poplar (*Populus* sp.) is present in the woodland. The shrub layer is mixed with elder the most frequent, as well species such as hawthorn, hornbeam and holly. A small amount of rhododendron and cherry laurel are present. Ivy is

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abundant in the ground flora with leaf litter making the next most significant contribution, as well as bramble. The diverse canopy, understorey and ground flora containing indicators of base-enrichment are indicative of W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. The high cover of ivy and comparatively low species diversity in the ground flora is most characteristic of sub-community W8d the *Hedera helix* sub-community. TABLEFIT analysis was not necessary to characterise this woodland. This woodland qualifies as lowland mixed deciduous woodland HoPI.

- 2.3.465 Six vascular plant species that are indicative of ancient woodland were recorded from Brickhill Wood: field rose, dog's mercury, greater stitchwort, wood millet, pendulous sedge and remote sedge.
- 2.3.466 Table 123 sets out the NVC survey data from Brickhill Wood. Two quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 123: NVC survey data from Brickhill Wood (CH480792\_L5149\_PH2\_150618)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Fraxinus excelsior</i>	7	7	NS	NS	NS	II (7 - 7)
<i>Quercus robur</i>	4	7	NS	NS	NS	II (4 - 7)
<i>Fagus sylvatica</i>	5	4	NS	NS	NS	II (4 - 5)
<i>Salix fragilis</i>	7	-	NS	NS	NS	I (7)
<i>Carpinus betulus</i>	-	5	NS	NS	NS	I (5)
<i>Acer pseudoplatanus</i>	4	-	NS	NS	NS	I (4)
<i>Populus sp.</i>	4	-	NS	NS	NS	I (4)
<b>Understorey (10m x 10m)</b>						
<i>Sambucus nigra</i>	6	5	NS	NS	NS	II (5 - 6)
<i>Crataegus monogyna</i>	4	3	NS	NS	NS	II (3 - 4)
<i>Carpinus betulus</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Fraxinus excelsior</i>	3	3	NS	NS	NS	II (3 - 3)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Acer pseudoplatanus</i>	3	2	NS	NS	NS	II (2 - 3)
<i>Ilex aquifolium</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Salix cinerea</i>	2	1	NS	NS	NS	II (1 - 2)
<i>Prunus laurocerasus</i>	4	-	NS	NS	NS	I (4)
<i>Salix fragilis</i>	-	4	NS	NS	NS	I (4)
<i>Corylus avellana</i>	2	-	NS	NS	NS	I (2)
<i>Ligustrum vulgare</i>	2	-	NS	NS	NS	I (2)
<i>Rhododendron ponticum</i>	-	2	NS	NS	NS	I (2)
<i>Fagus sylvatica</i>	-	1	NS	NS	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedra helix</i>	8	8	NS	NS	NS	II (8 - 8)
<i>Rosa arvensis</i>	4	2	NS	NS	NS	II (2 - 4)
<i>Kindbergia praelonga</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Circaea lutetiana</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Fraxinus excelsior</i> (seedling)	2	2	NS	NS	NS	II (2 - 2)
<i>Dryopteris dilatata</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Alliaria petiolata</i>	2	-	NS	NS	NS	I (2)
<i>Brachythecium rutabulum</i>	-	3	NS	NS	NS	I (3)
<i>Urtica dioica</i>	-	3	NS	NS	NS	I (3)
<i>Glechoma hederacea</i>	-	2	NS	NS	NS	I (2)
<i>Rubus fruticosus</i> agg.	-	2	NS	NS	NS	I (2)
<i>Galium aparine</i>	-	1	NS	NS	NS	I (1)
Bare Ground	3	4	NS	NS	NS	II (3 - 4)
Leaf Litter (cover)	6	5	NS	NS	NS	II (5 - 6)

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# Erlam Wood / Mill Wood, Castle Mill (CH542392\_L5218\_PH2\_180518)

## Site description and reasons for selection for survey

2.3.467 Broadleaved semi-natural woodland on the southern bank of the River Bollin. All of this woodland is in Mill Wood, Castle Mill LWS, and most of it is mapped by Natural England’s PHI as deciduous woodland. Much of this woodland was unsafe to survey (steep banks leading to a river) thus quadrat samples were not collected.

## Vegetation communities present

2.3.468 Sycamore is abundant with pedunculate oak, alder and ash also present. The shrub layer includes frequent hazel, wych elm, holly, hawthorn, wild cherry and elder. The woodland is characteristic of W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland due to the abundance of pedunculate oak with the canopy layer and its assemblage of neutral to slightly acid indicator species. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.469 Fourteen vascular plant species that are indicative of ancient woodland were recorded from Earlam Wood: holly, wild cherry, wych elm, wild garlic, wood anemone, pignut, early dog-violet (*Viola reichenbachiana*), greater stitchwort, wood sorrel, dog’s mercury, yellow archangel, bluebell, scaly male-fern.

2.3.470 Table 124 sets out the NVC survey data from Erlam Wood. Plant species abundance was gathered using the DAFOR method owing to health and safety restrictions as explained in Section 2.2.

**Table 124: NVC survey data from Erlam Wood / Mill Wood, Castle Mill (CH542392\_L5218\_PH2\_180518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Quercus robur</i>	F	NS	NS	NS	NS	N/A
<i>Acer pseudoplatanus</i>	F	NS	NS	NS	NS	N/A
<i>Alnus glutinosa</i>	F	NS	NS	NS	NS	N/A
<i>Fraxinus excelsior</i>	O	NS	NS	NS	NS	N/A

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Understorey (10m x 10m)</b>						
<i>Corylus avellana</i>	F	NS	NS	NS	NS	N/A
<i>Rubus fruticosus</i> agg.	O	NS	NS	NS	NS	N/A
<i>Acer pseudoplatanus</i>	O	NS	NS	NS	NS	N/A
<i>Crataegus monogyna</i>	O	NS	NS	NS	NS	N/A
<i>Fraxinus excelsior</i>	R	NS	NS	NS	NS	N/A
<i>Fagus sylvatica</i>	R	NS	NS	NS	NS	N/A
<i>Ilex aquifolium</i>	R	NS	NS	NS	NS	N/A
<i>Prunus avium</i>	R	NS	NS	NS	NS	N/A
<i>Prunus spinosa</i>	R	NS	NS	NS	NS	N/A
<i>Quercus robur</i>	R	NS	NS	NS	NS	N/A
<i>Sambucus nigra</i>	R	NS	NS	NS	NS	N/A
<i>Ulex europaeus</i>	R	NS	NS	NS	NS	N/A
<i>Ulmus glabra</i>	O (LA)	NS	NS	NS	NS	N/A
<b>Ground flora layer (4m x 4m)</b>						
<i>Anemone nemorosa</i>	O	NS	NS	NS	NS	N/A
<i>Conopodium majus</i>	O	NS	NS	NS	NS	N/A
<i>Dryopteris dilatata</i>	O	NS	NS	NS	NS	N/A
<i>Ficaria verna</i> ssp. <i>fertilis</i>	O	NS	NS	NS	NS	N/A
<i>Geum urbanum</i>	O	NS	NS	NS	NS	N/A
<i>Hedera helix</i>	R (LA)	NS	NS	NS	NS	N/A
<i>Oxalis acetosella</i>	R	NS	NS	NS	NS	N/A
<i>Allium ursinum</i>	R	NS	NS	NS	NS	N/A
<i>Aegopodium podagraria</i>	R	NS	NS	NS	NS	N/A

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Arum maculatum</i>	R	NS	NS	NS	NS	N/A
<i>Cerastium fontanum</i>	R	NS	NS	NS	NS	N/A
<i>Circaea lutetiana</i>	R	NS	NS	NS	NS	N/A
<i>Dryopteris affinis</i> agg.	R	NS	NS	NS	NS	N/A
<i>Dryopteris filix-mas</i>	R	NS	NS	NS	NS	N/A
<i>Fragaria vesca</i>	R	NS	NS	NS	NS	N/A
<i>Heracleum sphondylium</i>	R	NS	NS	NS	NS	N/A
<i>Holcus mollis</i>	R	NS	NS	NS	NS	N/A
<i>Hyacinthoides non-scripta</i>	R	NS	NS	NS	NS	N/A
<i>Lamium galeobdolon</i> ssp. <i>montanum</i>	R	NS	NS	NS	NS	N/A
<i>Mercurialis perennis</i>	R	NS	NS	NS	NS	N/A
<i>Rubus fruticosus</i> agg.	R	NS	NS	NS	NS	N/A
<i>Silene dioica</i>	R	NS	NS	NS	NS	N/A
<i>Stachys sylvatica</i>	R	NS	NS	NS	NS	N/A
<i>Stellaria holostea</i>	R	NS	NS	NS	NS	N/A
<i>Taraxacum officinale</i> agg.	R	NS	NS	NS	NS	N/A
<i>Veronica montana</i>	R	NS	NS	NS	NS	N/A
<i>Viola riviniana</i>	R	NS	NS	NS	NS	N/A
<i>Taraxacum officinale</i> agg.	R	NS	NS	NS	NS	N/A
<i>Atrichum undulatum</i>	R	NS	NS	NS	NS	N/A
<i>Brachythecium rutabulum</i>	O	NS	NS	NS	NS	N/A
<i>Kindbergia praelonga</i>	O	NS	NS	NS	NS	N/A
<i>Mnium hornum</i>	O	NS	NS	NS	NS	N/A



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# Sunbank Wood & Ponds and Bollin Bank (GM207519\_L5210\_F001\_PH2\_230518)

## Site description and reasons for selection for survey

2.3.471 Broadleaved semi-natural woodland along forming the south-west edge of Sunbank Wood SBI. The wood is a AWI site (ancient semi-natural woodland) and is also mapped by Natural England’s PHI as deciduous woodland.

## Vegetation communities present

2.3.472 Sycamore is dominant with occasional pedunculate oak and other canopy species local. The shrub layer is quite diverse but without any species gaining dominance. It includes hazel, rowan and holly. The ground flora contains bramble, enchanter’s nightshade, ivy and pendulous sedge. The TABLEFIT statistic for this woodland was 52% ‘goodness of fit’ for W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. Although numerous ground flora species are present, their low cover and frequency do not strongly indicate one of the W8 sub-communities. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.473 Twenty eight vascular plant species that are indicative of ancient woodland were recorded from Sunbank Wood (all parcels combined): moschatel, wild garlic, false brome, wood anemone, pendulous sedge, remote sedge, wood sedge, opposite-leaved golden-saxifrage, pignut, dogwood, scaly male-fern, woodruff, bluebell, holly, yellow archangel, honeysuckle, yellow pimpernel, crab apple, wood melick, dog’s mercury, wood millet, wood sorrel, hart’s tongue, wych elm, goldilocks buttercup, field rose, greater stitchwort and wood speedwell.

2.3.474 Table 125 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank (F001). Four quadrat samples were adequate to achieve coverage of this woodland.

**Table 125: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM207519\_L5210\_F001\_PH2\_230518)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	9	9	9	9	NS	V (9 - 9)
<i>Quercus robur</i>	-	4	4	4	NS	V (4 - 4)
<i>Castanea sativa</i>	-	-	4	4	NS	III (4 - 4)

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Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Fraxinus excelsior</i>	-	-	-	4	NS	III (1 - 4)
<i>Fagus sylvatica</i>	4	-	-	-	NS	II (4 - 4)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i>	3	4	-	3	NS	V (3 - 4)
<i>Fraxinus excelsior</i>	3	-	3	2	NS	V (2 - 3)
<i>Corylus avellana</i>	2	1	4	-	NS	V (1 - 5)
<i>Quercus robur</i>	1	1	2	4	NS	V (1 - 4)
<i>Crataegus monogyna</i>	2	1	1	2	NS	V (1 - 2)
<i>Sorbus aucuparia</i>	2	1	1	1	NS	V (1 - 2)
<i>Ilex aquifolium</i>	1	3	2	-	NS	IV (1 - 3)
<i>Alnus glutinosa</i>	2	3	-	-	NS	III (2 - 3)
<i>Sambucus nigra</i>	-	-	2	1	NS	III (1 - 2)
<i>Castanea sativa</i>	-	-	1	-	NS	II (1 - 1)
<i>Fagus sylvatica</i>	-	-	1	-	NS	II (1 - 1)
<i>Prunus spinosa</i>	-	-	1	-	NS	II (1 - 1)
<i>Betula</i> sp.	-	-	-	1	NS	II (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	-	7	8	4	NS	V (4 - 8)
<i>Kindbergia praelonga</i>	4	4	4	3	NS	V (3 - 4)
<i>Circaea lutetiana</i>	4	2	3	3	NS	V (2 - 4)
<i>Dryopteris dilatata</i>	3	2	2	2	NS	V (2 - 3)
<i>Anemone nemorosa</i>	2	3	3	3	NS	V (2 - 3)
<i>Brachythecium rutabulum</i>	-	3	3	3	NS	IV (3 - 3)
<i>Atrichum undulatum</i>	2	5	2	-	NS	IV (2 - 5)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Hedera helix</i>	4	2	-	4	NS	IV (2 - 4)
<i>Carex pendula</i>	5	5	1	-	NS	IV (1 - 5)
<i>Stachys sylvatica</i>	3	1	2	-	NS	IV (1 - 3)
<i>Eurhynchium striatum</i>	-	4	4	-	NS	III (4 - 4)
<i>Cardamine flexuosa</i>	3	3	-	-	NS	III (3 - 3)
<i>Deschampsia cespitosa</i>	3	2	-	-	NS	III (2 - 3)
<i>Dryopteris filix-mas</i>	-	-	1	4	NS	III (1 - 4)
<i>Impatiens glandulifera</i>	1	3	-	-	NS	III (1 - 3)
<i>Allium ursinum</i>	-	-	-	4	NS	II (4 - 4)
<i>Fissidens taxifolius</i>	3	-	-	-	NS	II (3 - 3)
<i>Veronica montana</i>	-	-	-	3	NS	II (3 - 3)
<i>Hyacinthoides non-scripta</i>	-	-	3	-	NS	II (3 - 3)
<i>Oxalis acetosella</i>	-	-	3	-	NS	II (3 - 3)
<i>Lysimachia nemorum</i>	2	-	-	-	NS	II (2 - 2)
<i>Mercurialis perennis</i>	2	-	-	-	NS	II (2 - 2)
<i>Solanum dulcamara</i>	2	-	-	-	NS	II (2 - 2)
<i>Plagiomnium undulatum</i>	-	-	-	2	NS	II (2 - 2)
<i>Arum maculatum</i>	1	-	-	-	NS	II (1 - 1)
<i>Carex sylvatica</i>	1	-	-	-	NS	II (1 - 1)
<i>Juncus effusus</i>	-	-	1	-	NS	II (1 - 1)
<i>Rumex acetosa</i>	1	-	-	-	NS	II (1 - 1)
<i>Silene dioica</i>	1	-	-	-	NS	II (1 - 1)
Leaf Litter	4	4	4	4	NS	V (4 - 4)
Bare Soil	3	3	4	4	NS	V (3 - 4)

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# Sunbank Wood & Ponds and Bollin Bank (GM207519\_L5210\_F002\_PH2\_230518)

## Site description and reasons for selection for survey

2.3.475 Broadleaved semi-natural woodland forming the north-west end of the Sunbank Wood SBI. The woodland is an AWI site (ancient semi-natural woodland) and is mapped on Natural England's PHI as deciduous woodland. The woodland is within a steep sided valley (clough) with a watercourse at the bottom.

## Vegetation communities present

2.3.476 Ash and sycamore dominate the canopy with a subordinate cover of pedunculate oak and local occurrence of alder at the valley bottom. The shrub layer contains frequent sycamore and ash but also hazel, holly, yew, dogwood and hawthorn. The ground flora contains frequent bramble, with enchanter's-nightshade and ivy. Opposite-leaved golden-saxifrage was locally frequent where the soils were damper. Parts of this woodland are characteristic of W8e *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Geranium robertianum* sub-community and others W8f *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Allium ursinum* sub-community. The TABLEFIT 'goodness of fit' statistic for this woodland was 61% for NVC type W8e. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.477 Vascular plant indicator species for the whole of Sunbank Wood & Ponds and Bollin Bank (F001) are listed under stand GM207519\_L5210\_F001\_PH2\_230518.

2.3.478 Table 126 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank (F002).

**Table 126: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM207519\_L5210\_F002\_PH2\_230518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	7	7	-	8	9	IV (7 - 9)
<i>Fraxinus excelsior</i>	6	7	9	4	-	IV (4 - 9)
<i>Alnus glutinosa</i>	4	1	1	1	-	IV (1 - 4)
<i>Quercus robur</i>	5	-	-	1	1	III (1 - 5)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Sorbus aucuparia</i>	4	-	1	-	-	II (1 - 4)
<i>Salix caprea</i>	-	-	1	1	-	II (1 - 1)
<i>Crataegus monogyna</i>	1	-	-	-	-	I (1)
<i>Fagus sylvatica</i>	-	1	-	-	-	I (1)
<i>Populus</i> sp.	-	-	1	-	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Ilex aquifolium</i>	2	2	2	1	7	V (1 - 7)
<i>Fraxinus excelsior</i>	5	4	-	2	3	IV (2 - 5)
<i>Acer pseudoplatanus</i>	4	4	3	-	3	IV (3 - 4)
<i>Fagus sylvatica</i>	-	1	2	4		IV (1 - 4)
<i>Sambucus nigra</i>	1	3	-	2	3	IV (1 - 3)
<i>Taxus baccata</i>	2	1	4	-	-	III (1 - 4)
<i>Corylus avellana</i>	2	2	3	-	-	III (2 - 3)
<i>Crataegus monogyna</i>	-	3	-	1	2	III (1 - 3)
<i>Sorbus aucuparia</i>	1	-	2	-	2	III (1 - 2)
<i>Cornus sanguinea</i>	-	-	-	4		II (4 - 4)
<i>Aesculus hippocastanum</i>	-	-	-		1	II (1 - 1)
<i>Quercus robur</i>	1	-	-	-	1	II (1 - 1)
<i>Salix caprea</i>	-	-	-	1		II (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	5	6	2	4	4	V (2 - 6)
<i>Chrysosplenium oppositifolium</i>	4	3	3	2	2	V (2 - 4)
<i>Eurhynchium striatum</i>	3	4	3	3	3	V (3 - 4)
<i>Hedera helix</i>	3	4	-	5	5	IV (3 - 5)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Ficaria verna</i>	4	4	4	-	4	IV (4 - 4)
<i>Lamium galeobdolon ssp. montanum</i>	3	2	4	-	3	IV (2 - 4)
<i>Dryopteris filix-mas</i>	1	1	-	2	1	IV (1 - 2)
<i>Allium ursinum</i>	-	-	4	8		III (4 - 8)
<i>Kindbergia praelonga</i>	3	-	6	-	5	III (3 - 6)
<i>Circaea lutetiana</i>	5	3	-	-	1	III (1 - 5)
<i>Anemone nemorosa</i>	-	-	4	3	1	III (1 - 4)
<i>Deschampsia cespitosa</i>	2	3	-	-	1	III (1 - 3)
<i>Geranium robertianum</i>	3	3	3	-	-	III (3 - 3)
<i>Urtica dioica</i>	3	1	3	-	-	III (1 - 3)
<i>Geum urbanum</i>	1	1	-	2	-	III (1 - 2)
<i>Glechoma hederacea</i>	2	2	2	-	-	III (2 - 2)
<i>Ranunculus ficaria</i>	-	-	5	2	-	II (2 - 5)
<i>Carex sylvatica</i>	-	4	1	-	-	II (1 - 4)
<i>Dryopteris dilatata</i>	-	2	-	-	4	II (2 - 4)
<i>Brachythecium rutabulum</i>	3	3	-	-	-	II (3 - 3)
<i>Geum urbanum</i>	-	-	2	-	3	II (2 - 3)
<i>Mercurialis perennis</i>	-	3	-	3	-	II (3 - 3)
<i>Mnium hornum</i>	-	-	3	3	-	II (3 - 3)
<i>Oxalis acetosella</i>	-	3	3	-	-	II (3 - 3)
<i>Stachys sylvatica</i>	3	-	-	-	3	II (3 - 3)
<i>Asplenium scolopendrium</i>	2	2	-	-	-	II (2 - 2)
<i>Carex pendula</i>	-	2	2	-	-	II (2 - 2)
<i>Poa trivialis</i>	-	4	-	-	-	I (4)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Hyacinthoides non-scripta</i>	-	-	3	-	-	I (3)
<i>Arum maculatum</i>	-	2	-	-	-	I (2)
<i>Atrichum undulatum</i>	2	-	-	-	-	I (2)
<i>Cardamine flexuosa</i>	2	-	-	-	-	I (2)
<i>Galium aparine</i>	2	-	-	-	-	I (2)
<i>Milium effusum</i>	-	-	-	-	2	I (2)
<i>Silene dioica</i>	-	-	-	2	-	I (2)
<i>Rosa arvensis</i>	-	1	-	-	-	I (1)
Bare Soil	4	5	6	3	3	V (3 - 6)
Leaf Litter	5	4		3	6	V (3 - 6)

## Sunbank Wood & Ponds and Bollin Bank (GM207519\_L5210\_F003\_PH2\_120618)

### Site description and reasons for selection for survey

2.3.479 Broadleaved semi-natural woodland forming the central plateau of the Sunbank Wood SBI. The woodland is an AWI site (ancient semi-natural woodland) and is mapped on Natural England's PHI as deciduous woodland.

### Vegetation communities present

2.3.480 The canopy contains abundant pedunculate oak, sycamore and ash and frequent silver birch. Other canopy species are only rare and scattered. Planted larch, cedar (*Cedrus* sp.), Scot's pine and Turkey oak (*Quercus cerris*) is occasional in the canopy in the eastern part of the stand. The shrub layer contains constant ash, hazel, hawthorn, rowan which are all frequent and holly and wych elm which are occasional. The ground flora contains abundant bramble with enchanter's-nightshade and wood avens, and numerous other species at low cover levels. Leaf litter and bare ground are frequent, especially along paths through the woodland as a result of frequent recreational use. The TABLEFIT statistic for this woodland is 66% 'goodness of fit' for W8c *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Deschampsia cespitosa*

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Ecology and biodiversity

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### Ecological baseline data – National Vegetation Classification and ancient woodland

sub-community. The vegetation present is considered a broad match for NVC type W8c, although tufted hair-grass is generally present below the cover levels than are characteristic of this W8 sub-community. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.481 Vascular plant indicator species for the whole of Sunbank Wood & Ponds and Bollin Bank are listed under stand GM207519\_L5210\_F001\_PH2\_230518.

2.3.482 Table 127 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank (F003).

**Table 127: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM207519\_L5210\_F003\_PH2\_120618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	7	8	6	4	8	V (4 - 8)
<i>Acer pseudoplatanus</i>	5	5	4	4	4	V (4 - 5)
<i>Fraxinus excelsior</i>	5	-	8	8	2	IV (5 - 8)
<i>Betula pendula</i>	4	1	-	-	4	III (1 - 4)
<i>Salix caprea</i>	5	-	-	-	1	II (1 - 5)
<i>Quercus petraea</i>	-	1	-	-	-	I (1)
<i>Sorbus aucuparia</i>	-	-	-	-	1	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Fraxinus excelsior</i>	3	3	5	4	3	V (3 - 5)
<i>Acer pseudoplatanus</i>	3	4	3	4	4	V (3 - 4)
<i>Corylus avellana</i>	4	4	3	4	4	V (3 - 4)
<i>Crataegus monogyna</i>	3	3	2	2	2	V (2 - 3)
<i>Quercus robur</i>	1	2	-	-	4	III (1 - 4)
<i>Sorbus aucuparia</i>	1	4	2	-	-	III (1 - 4)
<i>Salix caprea</i>	3	-	1	-	-	II (1 - 3)
<i>Sambucus nigra</i>	-	-	3	-	1	II (1 - 3)



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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Ilex aquifolium</i>	1	1	-	-	-	II (1 - 1)
<i>Betula pendula</i>	-	-	-	-	2	I (2)
<i>Quercus petraea</i>	-	1	-	-	-	I (1)
<i>Taxus baccata</i>	-	-	-	-	1	I (1)
<i>Ulmus glabra</i>	1	-	-	-	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	8	7	8	8	6	V (6 - 8)
<i>Circaea lutetiana</i>	5	5	5	5	3	V (3 - 5)
<i>Geum urbanum</i>	3	3	3	2	2	V (2 - 6)
<i>Kindbergia praelonga</i>	4	4	4	3	-	IV (3 - 4)
<i>Lonicera periclymenum</i>	-	3	3	-	4	III (3 - 4)
<i>Dryopteris filix-mas</i>	4	-	-	-	5	II (4 - 5)
<i>Dryopteris dilatata</i>	-	4	-	4	-	II (4 - 4)
<i>Mnium hornum</i>	3	-	3	-	-	II (3 - 3)
<i>Brachythecium rutabulum</i>	-	-	3	-	3	II (3 - 3)
<i>Deschampsia cespitosa</i>	4	-	2	-	-	II (2 - 4)
<i>Carex pendula</i>	-	-	4	-	-	I (4)
<i>Eurhynchium striatum</i>	3	-	-	-	-	I (3)
<i>Epilobium montanum</i>	-	-	-	1	-	I (1)
<i>Fraxinus excelsior</i> seedlings	1	-	-	-	-	I (1)
<i>Pteridium aquilinum</i>	-	-	-	-	1	I (1)
Leaf litter	8	8	7	7	8	V (7 - 8)
Bare soil	5	5	4	5	3	V (3 - 5)

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# Sunbank Wood & Ponds and Bollin Bank (GM207519\_L5210\_F004\_PH2\_120618)

## Site description and reasons for selection for survey

2.3.483 Broadleaved semi-natural woodland forming the south-east part of the Sunbank Wood SBI. The woodland is an AWI site (ancient semi-natural woodland) and is mapped on Natural England's PHI as deciduous woodland. This woodland (F004) is a small clough (valley) woodland with watercourse through it.

## Vegetation communities present

- 2.3.484 The canopy contains abundant sycamore, with pedunculate oak and ash occasional and beech rare. Sycamore is the most frequent species in the shrub / sub-canopy layer, along with young canopy species trees and holly and wych elm. The ground flora contains abundant ramsons and frequent broad buckler-fern. Himalayan balsam occurs along the watercourse. This woodland is characteristic of W8f *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Allium ursinum* sub-community. TABLEFIT analysis returned a result of 62% 'goodness of fit' for W8f. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.485 Eight vascular plant species that are indicative of ancient woodland were recorded from Sunbank Wood & Ponds and Bollin Bank (stand F004): holly, ramsons, yellow archangel, wood melick, wood sedge, pignut, opposite-leaved golden saxifrage and wood speedwell.
- 2.3.486 Table 128 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank (F004). Three quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 128: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM207519\_L5210\_F004\_PH2\_120618)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	9	8	7	NS	NS	III (7 - 9)
<i>Quercus robur</i>	4	5	5	NS	NS	III (4 - 5)
<i>Fraxinus excelsior</i>	-	5	7	NS	NS	II (5 - 7)
<i>Castanea sativa</i>	4	-	-	NS	NS	I (4)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Betula pendula</i>	-	-	4	NS	NS	I (4)
<i>Corylus avellana</i>	-	-	4	NS	NS	I (4)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i>	4	4	4	NS	NS	III (4 - 4)
<i>Fraxinus excelsior</i>	4	4	4	NS	NS	III (4 - 4)
<i>Sambucus nigra</i>	2	2	4	NS	NS	III (2 - 4)
<i>Corylus avellana</i>	1	6	5	NS	NS	III (1 - 6)
<i>Ilex aquifolium</i>	4		4	NS	NS	II (4 - 4)
<i>Ulmus glabra</i>	-	1	2	NS	NS	II (1 - 2)
<i>Crataegus monogyna</i>	1	-	1	NS	NS	II (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Allium ursinum</i>	8	8	7	NS	NS	III (7 - 8)
<i>Kindbergia praelonga</i>	5	4	4	NS	NS	III (4 - 5)
<i>Dryopteris dilatata</i>	4	5		NS	NS	II (4 - 5)
<i>Plagiomnium undulatum</i>	3	-	3	NS	NS	II (3 - 3)
<i>Mnium hornum</i>	2	-	3	NS	NS	II (2 - 6)
<i>Hedera helix</i>	-	1	7	NS	NS	II (1 - 7)
<i>Lamium galeobdolon</i> ssp. <i>montanum</i>	1	-	2	NS	NS	II (1 - 2)
<i>Circaea lutetiana</i>	-	1	2	NS	NS	II (1 - 2)
<i>Heracleum sphondylium</i>	-	-	4	NS	NS	I (4)
<i>Rubus fruticosus</i> agg.	-	-	4	NS	NS	I (4)
<i>Chrysosplenium oppositifolium</i>	-	2	-	NS	NS	I (2)
<i>Melica uniflora</i>	-	-	2	NS	NS	I (2)
<i>Stachys sylvatica</i>	-	-	2	NS	NS	I (2)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Dryopteris filix-mas</i>	-	-	1	NS	NS	I (1)
<i>Veronica montana</i>	-	-	1	NS	NS	I (1)
Leaf litter	3	3	4	NS	NS	III (3 - 4)
Bare soil	5	5	5	NS	NS	III (5 - 5)

## Sunbank Wood & Ponds and Bollin Bank (GM478972-MAN157768\_L5040\_F001\_PH2\_090818)

### Site description and reasons for selection for survey

- 2.3.487 Semi-natural grassland habitat with patches of bramble scrub. This vegetation is next to the Birkin Brook but is not in a designated site or mapped on Natural England's PHI.

### Vegetation communities present

- 2.3.488 Yorkshire fog is the dominant grass with occasional sweet vernal-grass, meadow foxtail (*Alopecurus pratensis*) and common bent. Tall herbs present include common knapweed, wild angelica, common sorrel and Himalayan balsam. Other scrambling herbs in the sward include meadow vetchling, common bird's-foot trefoil and with creeping buttercup. The TABLEFIT 'goodness of fit' statistic for this grassland was 39% for MG1e *Arrhenatherum elatius* grassland, *Centaurea nigra* sub-community. But MG1 grassland is not an appropriate match as false oat-grass (a dominant of MG1) is lacking from this grassland. The grassland also shows affinities with the MG5a *Cynosurus cristatus-Centaurea nigra* grassland- *Lathyrus pratensis* sub-community. This is due to sweet vernal-grass and common bent being present within the sward. Yorkshire fog can also be a constant species within this composition. The grassland is not a direct match for any HoPI type, but it is unimproved grassland of moderate species-diversity.
- 2.3.489 Table 129 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank (F001).

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**Table 129: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM478972-MAN157768\_L5040\_F001\_PH2\_090818)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Holcus lanatus</i>	8	7	5	4	8	V (4 - 8)
<i>Angelica sylvestris</i>	2	4	5	4	3	V (2 - 5)
<i>Centaurea nigra</i>	4	1	5	4	4	V (1 - 5)
<i>Rumex acetosa</i>	2	3	2	1	3	V (1 - 3)
<i>Lotus corniculatus</i>	4	5	-	3	3	IV (3 - 5)
<i>Agrostis capillaris</i>	1	1	4	3	-	IV (1 - 4)
<i>Ranunculus repens</i>	3	3	-	1	1	IV (1 - 3)
<i>Impatiens glandulifera</i>	1	3	3	-	3	IV (1 - 3)
<i>Heracleum sphodylium</i>	1	1	-	1	1	IV (1 - 1)
<i>Anthoxanthum odoratum</i>	1	-	-	4	1	III (1 - 4)
<i>Plantago lanceolata</i>	-	-	-	4	2	II (2 - 4)
<i>Alopecurus pratensis</i>	-	1	-	-	1	II (1 - 1)
<i>Trisetum flavescens</i>	-	-	1	-	4	II (1 - 4)
<i>Lathyrus pratensis</i>	-	1	3	-	-	II (1 - 3)
<i>Stellaria graminea</i>	-	-	1	1	-	II (1 - 1)
<i>Ranunculus acris</i>	-	-	-	1	1	II (1 - 1)
<i>Dactylis glomerata</i>	-	-	-	6	-	I (6)
<i>Agrostis stolonifera</i>	-	-	-	5	-	I (5)
<i>Rubus fruticosus</i> agg.	-	-	5	-	-	I (5)
<i>Brachythecium rutabulum</i>	-	-	-	4	-	I (4)
<i>Carex hirta</i>	-	-	2	-	-	I (2)
<i>Equisetum palustre</i>	-	-	-	1	-	I (1)

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BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Sunbank Wood & Ponds and Bollin Bank (GM478972-MAN157768\_L5040\_F002\_PH2\_090818)

## Site description and reasons for selection for survey

- 2.3.490 Broadleaved semi-natural woodland surrounding grassland in stand GM478972-MAN157768\_L5040\_F001\_PH2\_090818. Part of this woodland is mapped by Natural England's PHI as deciduous woodland and approximately half of this woodland is inside Sunbank Wood and Ponds SBI. The part of this stand which is inside the SBI is also an AWI site (Bollin Bank).

## Vegetation communities present

- 2.3.491 Pedunculate oak (several with features indicating that they are veteran trees) and ash are dominant in the canopy with frequent sycamore. The shrub layer comprises elder, hawthorn, hazel and holly which are all frequent. The ground flora is heavily shaded by the canopy and contained locally frequent patches of dog's mercury, false-brome, wood sedge and bramble. Ivy was abundant in the ground flora and canopy, particularly along stream. Quadrat four was of woodland along the stream. Alder attained local dominance but not to a degree that resulted in characterisation of this area as a separate stand. Opposite-leaved golden saxifrage and Himalayan balsam are locally abundant with alder. This woodland is characteristic of NVC type W8d *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Hedera helix* sub-community. The TABLEFIT statistic for this woodland was a 58% 'goodness of fit' to W21b vegetation but this is not an adequate classification as W21b is hawthorn scrub and not woodland. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.492 Twelve vascular plant species that is indicative of ancient woodland were recorded from Sunbank Wood & Ponds and Bollin Bank (stand F002): holly, field rose, pendulous sedge, opposite-leaved golden saxifrage, wood speedwell, greater stitchwort, hart's tongue, wood millet, dog's mercury, wood melick, yellow archangel, bluebell.
- 2.3.493 Table 130 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank (F002).

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**Table 130: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM478972-MAN157768\_L5040\_F002\_PH2\_090818)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Quercus robur</i>	8	9	7	1	8	V (1 - 9)
<i>Acer pseudoplatanus</i>	-	4	7	1	4	IV (1 - 7)
<i>Fraxinus excelsior</i>	5	-	-	7	1	III (1 - 7)
<i>Alnus glutinosa</i>	-	-	-	7	-	I (7 - 7)
<i>Fagus sylvatica</i>	-	-	1	-	-	I (1 - 7)
<i>Betula pendula</i>	-	-	-	1	-	I (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	1	4	4	5	5	V (1 - 5)
<i>Acer pseudoplatanus</i>	4	3	3	1	3	V (1 - 4)
<i>Corylus avellana</i>	-	4	5	7	1	IV (1 - 7)
<i>Hedera helix</i>	4	3	-	-	5	III (3 - 5)
<i>Ilex aquifolium</i>	1	1	5	-	-	III (1 - 5)
<i>Sambucus nigra</i>	5	-	-	-	4	II (4 - 5)
<i>Fraxinus excelsior</i>	-	2	-	1	-	II (1 - 2)
<i>Salix caprea</i>	-	-	-	1	-	I (1 - 1)
<i>Malus sylvestris</i>	-	-	1	-	-	I (1 - 1)
<i>Quercus robur</i>	-	-	-	1	-	I (1 - 1)
<i>Sorbus aucuparia</i>	-	-	1	-	-	I (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	7	7	2	8	7	V (2 - 8)
<i>Mercurialis perennis</i>	4	3	-	-	5	III (3 - 5)
<i>Dryopteris dilatata</i>	2	-	2	2	-	III (2 - 2)

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Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Brachypodium sylvaticum</i>	-	1	1	3	-	III (1 - 3)
<i>Kindbergia praelongum</i>	4	-	-	4	-	II (4 - 4)
<i>Kindbergia striatum</i>	4	3	-	-	-	II (3 - 4)
<i>Rubus fruticosus</i> agg.	-	-	-	2	3	II (2 - 6)
<i>Carex sylvatica</i>	1	3	-	-	-	II (1 - 3)
<i>Geum urbanum</i>	-	1	-	2	-	II (1 - 2)
<i>Lamiastrum galeobdolon</i>	1	1	-	-	-	II (1 - 1)
<i>Acer pseudoplatanus</i>	-	1	1	-	-	II (1 - 1)
<i>Impatiens glandulifera</i>	1	-	-	-	1	II (1 - 1)
<i>Deschampsia cespitosa</i>	1	-	1	-	-	II (1 - 1)
<i>Mnium hornum</i>	-	-	-	5	-	I (5)
<i>Urtica dioica</i>	3	-	-	-	-	I (3)
<i>Circaea lutetiana</i>	-	-	1	-	-	I (1)
<i>Glechoma hederacea</i>	1	-	-	-	-	I (1)
<i>Fraxinus excelsior</i>	-	1	-	-	-	I (1)
<i>Rosa arvensis</i>	-	1	-	-	-	I (1)
<i>Geranium robertianum</i>	1	-	-	-	-	I (1)
<i>Dryopteris filix-mas</i>	1	-	-	-	-	I (1)
<i>Hyacinthoides non-scripta</i>	-	-	-	-	2	I (2)
<i>Veronica montana</i>	-	-	-	-	1	I (1)



## Background Information and Data

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Ecological baseline data – National Vegetation Classification and ancient woodland

### **Sunbank Wood & Ponds and Bollin Bank (GM347593-GM579478\_L6042\_GM225194\_L2137\_MAN157768-MAN56379\_L5352\_GM225194\_L4633\_PH2\_240518)**

#### **Site description and reasons for selection for survey**

- 2.3.494 Broadleaved semi-natural woodland forming the north-west most arm of the Sunbank Wood and Ponds SBI. This woodland is mapped as an AWI site (ancient semi-natural woodland) and is also mapped on Natural England's PHI as deciduous woodland. The woodland is in a steep sided gully with a small watercourse.

#### **Vegetation communities present**

- 2.3.495 This woodland is dominated by sycamore with a subordinate cover of pedunculate oak, ash, beech and rarely recorded planted conifers. The shrub layer is diverse with dogwood, holly, hazel, yew, wych elm all frequent as well as young trees and saplings of canopy species. The ground flora is sparse with both bare ground and leaf litter abundant. The most frequent species were ivy, bluebell and lesser celandine (*Ficaria verna*). The non-native species rhododendron: cherry laurel and variegated yellow-archangel (*Lamiastrum galeobdolon* ssp. *argentatum*) are all present at low cover levels. This woodland is an example of the W8d *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Hedera helix* sub-community. The TABLEFIT statistic for this woodland was 57% 'goodness of fit' for NVC community W8b *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Anemone nemorosa* sub-community. However, W8d is considered a better description of the woodland given the ground flora was mainly sparse with ivy the most frequent ground flora species. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.496 Fifteen vascular plant species that are indicative of ancient woodland were recorded from Sunbank Wood & Ponds and Bollin Bank (stand L4633\_PH2\_240518): dogwood, holly, wych elm, moschatel, wood anemone, wood sedge, opposite-leaved golden saxifrage, wood speedwell, hart's tongue, wood sorrel, wood millet, dog's mercury, yellow pimpernel, yellow archangel, bluebell.
- 2.3.497 Table 131 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 131: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM347593-GM579478\_L6042\_GM225194\_L2137\_MAN157768-MAN56379\_L5352\_GM225194\_L4633\_PH2\_240518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	7	7	9	8	9	V (7 - 9)
<i>Quercus robur</i>	5	-	1	1	1	IV (1 - 5)
<i>Alnus glutinosa</i>	4	1	1	1	-	IV (1 - 4)
<i>Fraxinus excelsior</i>	6	7	-	4	-	III (4 - 7)
<i>Fagus sylvatica</i>	-	1	1	-	-	II (1 - 1)
<i>Salix caprea</i>	-	-	1	1	-	II (1 - 1)
<i>Sorbus aucuparia</i>	4	-	-	-	-	I (4)
<i>Crataegus monogyna</i>	1	-	-	-	-	I (1)
<i>Populus</i> sp.	-	-	1	-	-	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Fraxinus excelsior</i>	5	4	3	2	3	V (2 - 5)
<i>Ilex aquifolium</i>	2	2	4	1	7	V (1 - 7)
<i>Sambucus nigra</i>	1	3	2	2	3	V (1 - 3)
<i>Acer pseudoplatanus</i>	4	4	3	-	3	IV (3 - 4)
<i>Crataegus monogyna</i>	-	3	2	1	2	IV (1 - 3)
<i>Corylus avellana</i>	2	2	2	-	-	III (2 - 2)
<i>Fagus sylvatica</i>	-	1	-	4	-	II (1 - 4)
<i>Sorbus aucuparia</i>	1	-	-	-	2	II (1 - 2)
<i>Taxus baccata</i>	2	1	-	-	-	II (1 - 2)
<i>Quercus robur</i>	1	-	-	-	1	II (1 - 1)
<i>Cornus sanguinea</i>	-	-	-	4	-	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Aesculus hippocastanum</i>	-	-	-	-	1	I (1)
<i>Salix caprea</i>	-	-	-	1	-	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	5	6	3	4	4	V (3 - 6)
<i>Hedera helix</i>	3	4	6	5	5	V (3 - 6)
<i>Eurhynchium striatum</i>	3	4	3	3	3	V (3 - 4)
<i>Chrysosplenium oppositifolium</i>	4	3	4	2	2	V (2 - 4)
<i>Circaea lutetiana</i>	5	3	2		1	IV (1 - 5)
<i>Dryopteris filix-mas</i>	1	1	-	2	1	IV (1 - 2)
<i>Geum urbanum</i>	1	1	1	2	-	IV (1 - 2)
<i>Ficaria verna</i>	4	4	-	-	4	III (4 - 4)
<i>Anemone nemorosa</i>	-	-	3	3	1	III (3 - 6)
<i>Kindbergia praelonga</i>	3	-	4	-	5	III (3 - 5)
<i>Brachythecium rutabulum</i>	3	3	3	-	-	III (3 - 3)
<i>Stachys sylvatica</i>	3	-	3	-	3	III (3 - 3)
<i>Mercurialis perennis</i>	-	3	3	3	-	III (3 - 3)
<i>Lamium galeobdolon</i> ssp. <i>montanum</i>	3	2	-	-	3	III (2 - 6)
<i>Dryopteris dilatata</i>	-	2	4		4	III (2 - 4)
<i>Deschampsia cespitosa</i>	2	3	-	-	1	III (1 - 3)
<i>Geranium robertianum</i>	3	3	-	-	-	II (3 - 3)
<i>Asplenium scolopendrium</i>	2	2	-	-	-	II (2 - 2)
<i>Galium aparine</i>	2	-	2	-	-	II (2 - 2)
<i>Glechoma hederacea</i>	2	2	-	-	-	II (2 - 2)
<i>Arum maculatum</i>	-	2	2	-	-	II (2 - 2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Silene dioica</i>	-	-	2	2	-	II (2 - 2)
<i>Urtica dioica</i>	3	1	-	-	-	II (1 - 3)
<i>Ranunculus ficaria</i>	-	-	4	2	-	II (1 - 3)
<i>Allium ursinum</i>	-	-	5	8	-	II (1 - 1)
<i>Carex sylvatica</i>	-	4	-	-	-	I (4)
<i>Poa trivialis</i>	-	4	-	-	-	I (4)
<i>Hyacinthoides non-scripta</i>	-	-	3	-	-	I (3)
<i>Geum urbanum</i>	-	-	-	-	3	I (3)
<i>Oxalis acetosella</i>	-	3	-	-	-	I (3)
<i>Mnium hornum</i>	-	-	-	3	-	I (3)
<i>Carex pendula</i>	-	2	-	-	-	I (2)
<i>Atrichum undulatum</i>	2	-	-	-	-	I (2)
<i>Cardamine flexuosa</i>	2	-	-	-	-	I (2)
<i>Milium effusum</i>	-	-	-	-	2	I (2)
<i>Rosa arvensis</i>	-	1	-	-	-	I (1)
Leaf Litter	5	4	6	3	6	V (3 - 6)
Bare Soil	4	5	6	3	3	V (3 - 6)

## Sunbank Wood & Ponds and Bollin Bank (GM742096\_L5923\_F001\_PH2\_240518)

### Site description and reasons for selection for survey

- 2.3.498 Broadleaved semi-natural woodland forming the west most spur of the Sunbank Wood and Ponds SBI, but also extending further west, beyond the SBI boundary, along the eastern banks of the River Bollin. The woodland is mapped by Natural England as deciduous woodland PHI but is not part of an AWI site. The north-east part of this stand (Bollin Bank) was identified as an AWI site.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.499 A small area of woodland spanning valley slopes and valley bottom. The valley slopes contain abundant sycamore and occasional pedunculate oak. The shrub layer contains young trees of the canopy species and bramble, hawthorn, hazel, holly and field maple. The ground flora contains lesser celandine, wood anemone and ivy. This woodland is an example of characteristic of the W8b *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Anemone nemorosa*-subcommunity. However, it is transitional to W6d *Alnus glutinosa-Urtica dioica* woodland, *Sambucus nigra* sub-community at the valley bottom and is best regarded as an intermediate. The TABLEFIT statistic for this woodland is 55% 'goodness of fit' for NVC type W8b. This woodland qualifies as lowland mixed deciduous woodland HoPI or wet woodland HoPI.
- 2.3.500 Thirteen vascular plant species that is indicative of ancient woodland were recorded from Sunbank Wood & Ponds and Bollin Bank: field maple, holly, field rose, ramsons, wood anemone, pendulous sedge, wood sedge, opposite-leaved golden saxifrage, pignut, wood speedwell, hart's tongue, yellow archangel, scaly male-fern.
- 2.3.501 Table 132 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank (F001). Two quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 132: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM742096\_L5923\_F001\_PH2\_240518)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudoalatanus</i>	7	5	NS	NS	NS	II (5 - 7)
<i>Quercus robur</i>	6	6	NS	NS	NS	II (6 - 6)
<i>Crataegus monogyna</i>	4	3	NS	NS	NS	II (3 - 4)
<i>Alnus glutinosa</i>	1	6	NS	NS	NS	II (1 - 6)
<i>Fraxinus excelsior</i>	1	4	NS	NS	NS	II (1 - 4)
<i>Salix fragilis</i>	-	5	NS	NS	NS	I (5)
<b>Understorey (10m x 10m)</b>						
<i>Rubus fruticosus agg.</i>	5	5	NS	NS	NS	II (5 - 5)
<i>Fraxinus excelsior</i>	4	4	NS	NS	NS	II (4 - 4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Crataegus monogyna</i>	3	4	NS	NS	NS	II (3 - 4)
<i>Acer pseudo-platanus</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Quercus robur</i>	2	2	NS	NS	NS	II (2 - 2)
<i>Corylus avellana</i>	2	1	NS	NS	NS	II (1 - 2)
<i>Ilex aquifolium</i>	2	1	NS	NS	NS	II (1 - 2)
<i>Acer campastre</i>	1	-	NS	NS	NS	I (1)
<i>Taxus baccata</i>	1	-	NS	NS	NS	I (1)
<i>Alnus glutinosa</i>	-	2	NS	NS	NS	I (2)
<i>Salix fragilis</i>	-	3	NS	NS	NS	I (3)
<i>Sambucus nigra</i>	-	3	NS	NS	NS	I (3)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	5	3	NS	NS	NS	II (3 - 5)
<i>Brachythecium rutabulum</i>	3	3	NS	NS	NS	II (3 - 3)
<i>Ficaria verna</i>	6	2	NS	NS	NS	II (2 - 6)
<i>Impatiens glandulifera</i>	1	8	NS	NS	NS	II (1 - 8)
<i>Dryopteris filix-mas</i>	1	1	NS	NS	NS	II (1 - 1)
<i>Anemone nemerosa</i>	5		NS	NS	NS	I (5)
<i>Urtica dioica</i>	-	3	NS	NS	NS	I (3)
<i>Atrichum undulatum</i>	3	-	NS	NS	NS	I (3)
<i>Mnium hornum</i>	3	-	NS	NS	NS	I (3)
<i>Galium aparine</i>	-	3	NS	NS	NS	I (3)
<i>Poa trivialis</i>	-	3	NS	NS	NS	I (3)
<i>Aegopodium podagraria</i>	2	-	NS	NS	NS	I (2)
<i>Deschampsia cespitosa</i>	2	-	NS	NS	NS	I (2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Geum urbanum</i>	2	-	NS	NS	NS	I (2)
<i>Arrhenatherum elatius</i>	-	2	NS	NS	NS	I (2)
<i>Heracleum sphondylium</i>	-	2	NS	NS	NS	I (2)
<i>Kindbergia praelonga</i>	-	2	NS	NS	NS	I (2)
<i>Rosa arvensis</i>	1	-	NS	NS	NS	I (1)
<i>Angelica sylvestris</i>	-	1	NS	NS	NS	I (1)
<i>Ranunculus repens</i>	-	1	NS	NS	NS	I (1)
<i>Silene dioica</i>	-	1	NS	NS	NS	I (1)
<i>Carex sylvatica</i>	1	-	NS	NS	NS	I (1)
Bare Soil	5	3	NS	NS	NS	II (3 - 5)
Leaf Litter	4	3	NS	NS	NS	II (3 - 4)

## Sunbank Wood & Ponds and Bollin Bank (GM742096\_L5923\_F002\_PH2\_030718)

### Site description and reasons for selection for survey

- 2.3.502 Semi-natural grassland on a south-westerly facing slope to the east of the River Bollin. Not in a designated site or mapped by Natural England's PHI.

### Vegetation communities present

- 2.3.503 A diverse range of constant grass species are present including red fescue, sweet vernal-grass, common bent, cock's-foot and Yorkshire fog. The sward includes the following occasional to rare broadleaved herb species: black knapweed, lady's mantle (*Alchemilla xanthochlora*), yarrow (*Achillea millefolium*), ribwort plantain, sorrel and red clover. The land appears not to be in active management (i.e. as a meadow or grazed). The sward is quite tussocky with dense bramble locally frequent. This grassland is an example of the MG5 *Cynosurus cristatus*-*Centaurea nigra* grassland. The TABLEFIT statistic for this grassland was 69% 'goodness of fit' for MG1e *Arrhenatherum elatius* grassland, *Centaurea nigra* sub-

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

community, which is consistent with this grassland being a coarse, tussocky example of NVC MG5 grassland, the former NVC type commonly de-generating to the later in the absence of suitable management. NVC type MG5 is considered a better fit because of the absence of false oat-grass in this grassland. However, the grassland is likely to be transitional between the two NVC types. NVC type MG5 grassland may qualify as lowland meadow HoPI.

2.3.504 Table 133 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank (F002).

**Table 133: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM742096\_L5923\_F002\_PH2\_030718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Festuca rubra</i>	7	7	7	6	7	V (6 - 7)
<i>Holcus lanatus</i>	6	7	6	5	4	V (4 - 7)
<i>Centaurea nigra</i>	4	5	4	5	5	V (4 - 5)
<i>Dactylis glomerata</i>	4	4	5	4	4	V (4 - 5)
<i>Anthoxanthum odoratum</i>	5	4	5	5	4	V (4 - 5)
<i>Cirsium arvense</i>	5	6	5	3	3	V (3 - 6)
<i>Alopecurus pratensis</i>	3	2	3	3	2	V (2 - 6)
<i>Galium aparine</i>	3	3	3	3	2	V (2 - 6)
<i>Brachythecium rutabulum</i>	3	3	2	3	3	V (2 - 6)
<i>Heracleum sphondylium</i>	3	4	4	2	5	V (2 - 5)
<i>Achillea millefolium</i>	3	1	2	2	1	V (1 - 3)
<i>Agrostis capillaris</i>	2	3	2	-	2	IV (2 - 6)
<i>Plantago lanceolata</i>	3	2	1	2	-	IV (1 - 3)
<i>Cerastium fontanum</i>	2	1	-	2	1	IV (1 - 2)
<i>Rumex acetosa</i>	-	2	2	1	2	IV (1 - 2)
<i>Kindbergia praelonga</i>	3	-	-	3	3	III (3 - 3)
<i>Alchemilla xanthochlora</i>	2	-	2	-	2	III (2 - 2)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Urtica dioica</i>	2	-	2	-	-	II (2 - 2)
<i>Impatiens glandulifera</i>	-	2	1	-	-	II (1 - 2)
<i>Epilobium hirsutum</i>	-	-	-	2	-	I (2 - 2)
<i>Carex hirta</i>	-	-	-	1	-	I (1 - 1)
<i>Epilobium montanum</i>	-	-	-	-	1	I (1 - 1)
<i>Trifolium pratense</i>	-	-	-	1	-	I (1 - 1)

## Sunbank Wood and Ponds and Bollin Bank (GM742096\_L5923\_F003\_PH2\_030718)

### Site description and reasons for selection for survey

- 2.3.505 Semi-natural grassland on a south-westerly facing slope to the east of the River Bollin. Not in a designated site or mapped by Natural England's PHI. This grassland surrounds the grassland present in survey area GM742096\_L5923\_F002\_PH2\_030718.

### Vegetation communities present

- 2.3.506 The sward contains abundant cock's-foot, with hogweed locally frequent. Yorkshire fog, red fescue and sweet vernal-grass are present at occasional to rare cover levels. Black knapweed is constant, but at low cover levels and wild angelica is occasional. The sward is unmanaged and is tussocky with areas of dense bramble present locally. Creeping thistle is constant and Himalayan balsam is locally frequent close to the valley bottom. This grassland is an example of MG1e *Arrhenatherum elatius* grassland, *Centaurea nigra* sub-community. Although false oat-grass is absent, cock's foot and weedy species are dominant and the grassland is fairly rank. The TABLEFIT statistic for the grassland was 57% 'goodness of fit' for W24 *Rubus fruticosus-Holcus lanatus* underscrub. This is considered a poor fit for the grassland as bramble is not present in quadrat samples. Encroachment of grasslands by bramble often converts NVC type MG1 grassland to NVC type W24 scrub. This grassland does not qualify as a HoPI but could potentially be restored to lowland meadow HoPI with appropriate management.
- 2.3.507 Table 134 sets out the NVC survey data from Sunbank Wood & Ponds and Bollin Bank.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 134: NVC survey data from Sunbank Wood & Ponds and Bollin Bank (GM742096\_L5923\_F003\_PH2\_030718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Dactylis glomerata</i>	8	7	7	8	8	V (7 - 8)
<i>Heracleum sphondylium</i>	2	4	5	6	5	V (2 - 6)
<i>Holcus lanatus</i>	4	5	4	3	3	V (3 - 5)
<i>Festuca rubra</i>	4	4	3	4	3	V (3 - 4)
<i>Galium aparine</i>	3	2	4	3	3	V (2 - 4)
<i>Cirsium arvense</i>	4	2	3	3	2	V (2 - 4)
<i>Centaurea nigra</i>	4	3	1	2	3	V (1 - 4)
<i>Brachythecium rutabulum</i>	3	3	3	3	3	V (3 - 3)
<i>Anthoxanthum odoratum</i>	3	3	3	3	2	V (2 - 3)
<i>Alopecurus pratensis</i>	-	3	2	3	2	IV (2 - 3)
<i>Kindbergia praelonga</i>	3	-	3	-	3	III (3 - 3)
<i>Epilobium hirsutum</i>	-	1	3	-	2	III (1 - 3)
<i>Urtica dioica</i>	-	-	3	1	-	II (1 - 3)
<i>Angelica sylvestris</i>	-	-	-	1	2	II (1 - 2)
<i>Senecio jacobaea</i>	-	-	1	-	1	II (1 - 1)
<i>Agrostis capillaris</i>	-	-	-	-	3	I (3)
<i>Cerastium fontanum</i>	-	2	-	-	-	I (2)
<i>Rumex acetosa</i>	-	2	-	-	-	I (2)
<i>Epilobium montanum</i>	-	1	-	-	-	I (1)
<i>Impatiens glandulifera</i>	-	-	-	-	1	I (1)
<i>Plantago lanceolata</i>	-	1	-	-	-	I (1)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Sunbank Wood and Ponds (GM354762\_L6041\_PH2\_240518 and GM865079\_L5823\_PH2\_240518)

## Site description and reasons for selection for survey

- 2.3.508 Broadleaved semi-natural woodland at the east end of Sunbank Wood and Ponds LWS. The woodland is an AWI site (ancient semi-natural woodland) and is also mapped by Natural England as deciduous woodland PHI. The woodland is on a steep sided gully with a small watercourse at the bottom.

## Vegetation communities present

- 2.3.509 Woodland overwhelmingly dominated by sycamore with scattered individuals of pedunculate oak, ash, beech and alder. The shrub layer is diverse and without any species gaining dominance, including holly, dogwood, hazel, and elder. The field layer features significant amounts of bare soils and leaf litter, and the most abundant vegetation was ivy, ramsons, opposite-leaved golden-saxifrage, broad-buckler fern and lesser celandine. This woodland bears a broad similarity to NVC type W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. The TABLEFIT statistic for the woodland had a 49% 'goodness of fit' for both W8b *Anemone nemorosa* sub-community and the W8e *Geranium robertianum* sub-community. It also had a 45% 'goodness of fit' for W8 in general (no particular sub-community). The woodland is an example of lowland mixed deciduous woodland HoPI.
- 2.3.510 Eight vascular plant species that are indicative of ancient woodland were recorded from this stand: wood anemone, opposite-leaved golden-saxifrage, ramsons, yellow archangel, dog's mercury, wood millet, bluebell and wood speedwell.
- 2.3.511 Table 135 sets out the NVC survey data from Sunbank Wood and Ponds (GM354762\_L6041\_PH2\_240518 and GM865079\_L5823\_PH2\_240518 and GM865079\_L5823\_PH2\_240518). Four quadrats were adequate to sample this small stand of woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 135: NVC survey data from Sunbank Wood and Ponds (GM354762\_L6041\_PH2\_240518 and GM865079\_L5823\_PH2\_240518 and GM865079\_L5823\_PH2\_240518)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	9	8	9	8	NS	V (9 - 8)
<i>Quercus robur</i>	1	2	1	1	NS	V (2 - 1)
<i>Alnus glutinosa</i>	1	1	-	-	NS	III (1 - 1)
<i>Salix caprea</i>	1	1	-	-	NS	III (1 - 1)
<i>Betula pendula</i>	-	-	-	1	NS	II (1 - 1)
<i>Crataegus monogyna</i>	-	1	-	-	NS	II (1 - 1)
<i>Fagus sylvatica</i>	1	-	-	-	NS	II (1 - 1)
<i>Fraxinus excelsior</i>	-	4	-	-	NS	II (4 - 4)
<i>Populus sp.</i>	1	-	-	-	NS	II (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Fraxinus excelsior</i>	3	2	3	4	NS	V (4 - 2)
<i>Ilex aquifolium</i>	4	1	7	1	NS	V (7 - 1)
<i>Sambucus nigra</i>	2	2	3	1	NS	V (3 - 1)
<i>Crataegus monogyna</i>	2	1	2	-	NS	IV (2 - 1)
<i>Acer pseudoplatanus</i>	3	-	3	-	NS	III (3 - 3)
<i>Aesculus hippocastanum</i>	-	-	1	2	NS	III (2 - 1)
<i>Quercus robur</i>	-	-	1	4	NS	III (4 - 1)
<i>Cornus sanguinea</i>	-	4	-	-	NS	II (4 - 4)
<i>Corylus avellana</i>	2	-	-	-	NS	II (2 - 2)
<i>Salix caprea</i>	-	1	-	-	NS	II (1 - 1)
<i>Sorbus aucuparia</i>	-	-	2	-	-	II (2 - 2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Anemone nemorosa</i>	3	3	1	3	NS	V (3 - 1)
<i>Geum urbanum</i>	1	2	3	2	NS	V (3 - 1)
<i>Ranunculus ficaria</i>	4	2	4	4	NS	V (4 - 2)
<i>Rubus fruticosus agg.</i>	3	4	4	5	NS	V (5 - 3)
<i>Chrysosplenium oppositifolium</i>	4	2	2	-	NS	IV (4 - 2)
<i>Circaea lutetiana</i>	2	-	1	5	NS	IV (5 - 1)
<i>Dryopteris dilatata</i>	4	-	4	2	NS	IV (4 - 2)
<i>Eurhynchium striatum</i>	3	3	3	-	NS	IV (3 - 3)
<i>Hedera helix</i>	6	5	5	-	NS	IV (6 - 5)
<i>Kindbergia praelonga</i>	4	-	5	4	NS	IV (5 - 4)
<i>Silene dioica</i>	2	2	-	3	NS	IV (3 - 2)
<i>Stachys sylvatica</i>	3	-	3	3	NS	IV (3 - 3)
<i>Allium ursinum</i>	5	8	-	-	NS	III (8 - 5)
<i>Deschampsia cespitosa</i>	-	-	1	3	NS	III (3 - 1)
<i>Dryopteris filix-mas</i>	-	2	1	-	NS	III (2 - 1)
<i>Lamium galeobdolon ssp. montanum</i>	-	-	3	3	NS	III (3 - 3)
<i>Mercurialis perennis</i>	3	3	-	-	NS	III (3 - 3)
<i>Millium effusum</i>			2	3	NS	III (3 - 2)
<i>Mnium hornum</i>	3	3	-	-	NS	III (3 - 3)
<i>Arum maculatum</i>	2	-	-	-	NS	II (2 - 2)
<i>Brachythecium rutabulum</i>	3	-	-	-	NS	II (3 - 3)
<i>Galium aparine</i>	2	-	-	-	NS	II (2 - 2)
<i>Hyacinthoides non-scripta</i>	3	-	-	-	NS	II (3 - 3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Veronica montana</i>	-	-	-	1	NS	II (1 - 1)
Bare soil	6	3	6	5	NS	V (6 - 3)
Leaf Litter	6	3	3	3	NS	V (6 - 3)

## Sunbank Wood and Ponds (MAN157768-MAN56379\_L5352\_PH2\_210818)

### Site description and reasons for selection for survey

- 2.3.512 A very steep-sided ravine containing broadleaved semi-natural woodland at the eastern end of Sunbank Wood and Ponds LWS. This parcel is mapped on the Ancient Woodland Inventory as ASNW and identified by Natural England as deciduous woodland PHI. There are a number of small watercourses draining the slope, which generally flow south-westerly.

### Vegetation communities present

- 2.3.513 The canopy is dominated by ash, with locally frequent sycamore, as well as rare pedunculate oak, wych elm and European larch. The shrub layer contains constant wych elm and hazel, as well as sycamore, elder and hawthorn. Holly and wild cherry are rarely present. Ivy is the most abundant ground layer species and is constant across the stand. Other constant vascular plant ground flora species include broad-buckler fern, hart's-tongue fern, dog's mercury and wood speedwell. This woodland is a broad match for NVC community W8 *Fraxinus excelsior*-*Acer campestre*-*Mercurialis perennis* woodland. The TABLETFIT 'goodness of fit' statistic was 47% for NVC type W8e *Geranium robertianum* sub-community and 45% for W8f *Allium ursinum* sub-community. This woodland is an example of lowland mixed deciduous woodland HoPI.
- 2.3.514 Five vascular plant species that are indicative of ancient woodland were recorded from this stand in Sunbank Wood and Ponds: wych elm, hart's tongue fern, dog's mercury, bluebell and wood speedwell.
- 2.3.515 Table 136 sets out the NVC survey data from Sunbank Wood and Ponds (MAN157768-MAN56379\_L5352\_PH2\_210818).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 136: NVC survey data from Sunbank Wood and Ponds (MAN157768-MAN56379\_L5352\_PH2\_210818)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Fraxinus excelsior</i>	8	8	8	8	7	V (7 - 8)
<i>Acer pseudoplatanus</i>	2	-	-	1	6	III (1 - 6)
<i>Quercus robur</i>	4	4	4	-	-	III (4 - 4)
<i>Ulmus glabra</i>	-	4	4	-	-	II (4 - 4)
<i>Larix sp.</i>	1	-	1	-	-	II (1 - 1)
<i>Prunus avium</i>	-	-	-	-	1	I (1 - 1)
<b>Understorey (10m x 10m)</b>						
<i>Ulmus glabra</i>	5	5	6	5	7	V (5 - 7)
<i>Corylus avellana</i>	6	7	4	5	3	V (3 - 7)
<i>Acer pseudoplatanus</i>	2	2	3	2	4	V (2 - 4)
<i>Sambucus nigra</i>	3	3	5	2	-	IV (2 - 5)
<i>Crataegus monogyna</i>	3	4	2	-	2	IV (2 - 4)
<i>Sorbus aucuparia</i>	2	2	1	-	-	III (1 - 2)
<i>Fraxinus excelsior</i>	3	-	3	-	-	II (3 - 3)
<i>Ilex aquifolium</i>	2	-	1	-	-	II (1 - 2)
<i>Quercus robur</i>	3	-	-	-	-	I (3 - 3)
<i>Prunus avium</i>	-	-	-	-	1	I (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	5	7	8	7	8	V (5 - 8)
<i>Kindbergia praelonga</i>	4	5	3	6	4	V (3 - 6)
<i>Fissidens taxifolius</i>	4	3	3	3	3	V (3 - 4)
<i>Dryopteris dilatata</i>	1	1	4	1	-	IV (1 - 4)

## Background Information and Data

Ecology and biodiversity

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Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Eurhynchium striatum</i>	2	3	3	-	-	III (2 - 3)
<i>Stachys sylvatica</i>	-	-	2	3	2	III (2 - 3)
<i>Rubus fruticosus agg.</i>	-	-	4	5	-	II (4 - 5)
<i>Asplenium scolopendrium</i>	2	5	-	-	-	II (2 - 5)
<i>Plagiomnium undulatum</i>	-	2	-	2	-	II (2 - 2)
<i>Brachypodium sylvaticum</i>	-	-	-	1	2	II (1 - 2)
<i>Fraxinus excelsior</i>	-	-	2	-	1	II (1 - 2)
<i>Mercurialis perennis</i>	-	4	-	-	-	I (4 - 4)
<i>Brachythecium rutabulum</i>	3	-	-	-	-	I (3 - 3)
<i>Hyacinthoides sp.</i>	-	-	-	-	3	I (3 - 3)
<i>Veronica montana</i>	2	-	-	-	-	I (2 - 2)

## Hennersley Bank / Wood near Chapel Lane (MAN157547-MAN43748\_L5131\_PH2\_030718)

### Site description and reasons for selection for survey

- 2.3.516 Broadleaved semi-natural woodland mapped on Natural England's PHI as deciduous woodland and designated as Wood near Chapel Lane SBI. This woodland is identified as an AWI site by Natural England.

### Vegetation communities present

- 2.3.517 Sycamore, ash and pedunculate oak are co-dominant in the canopy, with wych elm, sycamore and hawthorn abundant within the understorey. The ground flora contains abundant ivy, bare earth and frequent mosses. A range of other ground flora plants were present at low cover levels. This woodland is characteristic of W8e *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Geranium robertianum* sub-community. The TABLEFIT statistic for this woodland is 77% 'goodness of fit' for NVC type W8e woodland. Although a W8 constant, dog's mercury, is absent,



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

### Ecological baseline data – National Vegetation Classification and ancient woodland

a range of calcicolous herbs are present supporting a classification of W8 woodland. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.518 Fifteen vascular plant species that is indicative of ancient woodland were recorded from Hennesley Bank Wood: holly, crab apple, field rose, wych elm, wild garlic, pendulous sedge, opposite-leaved golden-saxifrage, pignut, wood speedwell, sanicle (*Sanicula europea*), hart's tongue, wood millet, wood melick, yellow archangel and scaly male-fern.

2.3.519 Table 137 sets out the NVC survey data from Hennesley Bank / Wood near Chapel Lane. Three quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 137: NVC survey data from Hennesley Bank / Wood near Chapel Lane (MAN157547-MAN43748\_L5131\_PH2\_030718)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	5	7	7	NS	NS	III (5 - 7)
<i>Quercus robur</i>	6	5	6	NS	NS	III (5 - 6)
<i>Fraxinus excelsior</i>	7	4	5	NS	NS	III (4 - 7)
<i>Salix fragilis</i>	-	4	4	NS	NS	II (4 - 4)
<i>Ulmus glabra</i>	2	2	-	NS	NS	II (2 - 2)
<i>Alnus glutinosa</i>	-	4	-	NS	NS	I (4 - 4)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i>	5	5	5	NS	NS	III (5 - 5)
<i>Ulmus glabra</i>	6	5	3	NS	NS	III (3 - 6)
<i>Crataegus monogyna</i>	3	4	5	NS	NS	III (3 - 5)
<i>Sambucus nigra</i>	3	4	4	NS	NS	III (3 - 4)
<i>Ilex aquifolium</i>	4	2	2	NS	NS	III (2 - 4)
<i>Corylus avellana</i>	4	-	3	NS	NS	II (3 - 4)
<i>Fraxinus excelsior</i>	-	3	2	NS	NS	II (2 - 3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Malus sylvestris</i>	1	-	1	NS	NS	II (1 - 1)
<i>Prunus spinosa</i>	-	-	5	NS	NS	I (5 - 5)
<i>Fagus sylvatica</i>	-	1	-	NS	NS	I (1 - 1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	7	8	7	NS	NS	III (7 - 8)
<i>Kindbergia praelonga</i>	5	5	4	NS	NS	III (4 - 5)
<i>Brachythecium rutabulum</i>	4	4	3	NS	NS	III (3 - 4)
<i>Dryopteris dilatata</i>	2	2	1	NS	NS	III (1 - 2)
<i>Silene dioica</i>	1	1	2	NS	NS	III (1 - 2)
<i>Veronica montana</i>	3	-	4	NS	NS	II (3 - 4)
<i>Poa trivialis</i>	3	-	3	NS	NS	II (3 - 3)
<i>Geum urbanum</i>	3	-	3	NS	NS	II (3 - 3)
<i>Melica uniflora</i>	2	3	-	NS	NS	II (2 - 3)
<i>Geranium robertianum</i>	2	-	3	NS	NS	II (2 - 3)
<i>Brachypodium sylvaticum</i>	2	2	-	NS	NS	II (2 - 2)
<i>Taraxacum officinale</i> agg.	-	1	1	NS	NS	II (1 - 1)
<i>Circaea lutetiana</i>	-	-	4	NS	NS	I (4 - 4)
<i>Rosa arvensis</i>	4	-	-	NS	NS	I (4 - 4)
<i>Fissidens taxifolius</i>	-	3	-	NS	NS	I (3 - 3)
<i>Plagiomnium undulatum</i>	3	-	-	NS	NS	I (3 - 3)
<i>Eurhynchium striatum</i>	3	-	-	NS	NS	I (3 - 3)
<i>Fraxinus excelsior</i> seedlings	2	-	-	NS	NS	I (2 - 2)
<i>Mnium hornum</i>	-	-	2	NS	NS	I (2 - 2)
<i>Rubus fruticosus</i> agg.	-	-	2	NS	NS	I (2 - 2)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Dryopteris filix-mas</i>	-	-	1	NS	NS	I (1 - 1)
<i>Stachys sylvatica</i>	1	-	-	NS	NS	I (1 - 1)
<i>Crataegus monogyna</i> seedlings	1	-	-	NS	NS	I (1 - 1)
<i>Sanicula europaea</i>	-	-	1	NS	NS	I (1 - 1)
<i>Urtica dioica</i>	1	-	-	NS	NS	I (1 - 1)
Bare Soil	5	4	4	NS	NS	III (4 - 5)
Leaf Litter	4	6	7	NS	NS	III (4 - 7)

## Davenport Green Wood (GM79805\_L24000\_PH2\_150618)

### Site description and reasons for selection for survey

- 2.3.520 Broadleaved woodland forming the west end of Davenport Green Wood SBI. A very small part of the eastern section of the surveyed woodland overlaps woodland mapped as an AWI site, but the majority of the sampled woodland is not an AWI site. Timperley Brook runs through the woodland with steep banks leading to an upper raised terrace to the south of the watercourse. The surveyed woodland is mapped by Natural England as deciduous woodland PHI.

### Vegetation communities present

- 2.3.521 The canopy comprised ash and pedunculate oak with approximately 10% planted Scot's pine, larch and horse chestnut. The shrub layer is well developed featuring hazel, holly, sycamore and elder. Bluebell is abundant in the field layer. The woodland is an example of NVC type W10e *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland, *Acer pseudoplatanus-Oxalis acetosella* sub-community. The TABLEFIT analysis returned a result of W10e with a 65% 'goodness of fit'. The woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.522 Eleven vascular plant species that is indicative of ancient woodland were recorded from Davenport Green Wood: holly, field rose, moschatel, wild garlic, wood anemone, pendulous sedge, wood sorrel, wood millet, dog's mercury, wood melick and water avens (*Geum rivale*).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

2.3.523 Table 138 sets out the NVC survey data from Davenport Green Wood. One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

**Table 138: NVC survey data from Davenport Green Wood (GM79805\_L24000\_PH2\_150618)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Fraxinus excelsior</i>	7	NS	NS	NS	NS	I (7)
<i>Quercus robur</i>	7	NS	NS	NS	NS	I (7)
<i>Larix</i> sp.	4	NS	NS	NS	NS	I (4)
<i>Pinus sylvestris</i>	2	NS	NS	NS	NS	I (2)
<i>Aesculus hippocastanum</i>	1	NS	NS	NS	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Corylus avellana</i>	5	NS	NS	NS	NS	I (5)
<i>Ilex aquifolium</i>	5	NS	NS	NS	NS	I (5)
<i>Acer pseudoplatanus</i>	4	NS	NS	NS	NS	I (4)
<i>Sambucus nigra</i>	4	NS	NS	NS	NS	I (4)
<i>Aesculus hippocastanum</i>	2	NS	NS	NS	NS	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hyacinthoides</i> sp.	7	NS	NS	NS	NS	I (7)
<i>Hedera helix</i>	4	NS	NS	NS	NS	I (4)
<i>Kindbergia praelonga</i>	4	NS	NS	NS	NS	I (4)
<i>Dryopteris dilatata</i>	4	NS	NS	NS	NS	I (1)
<i>Milium effusum</i>	1	NS	NS	NS	NS	I (1)
Leaf litter	8	NS	NS	NS	NS	I (8)
Bare Soil	4	NS	NS	NS	NS	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Davenport Green to Ardwick (MA07)

## Black Carr Wood (MAN32145\_L5133\_PH2\_260619)

### Site description and reasons for selection for survey

2.3.524 Broadleaved semi-natural woodland listed on Natural England’s PHI as deciduous woodland and within Blackcarr Wood and Baguley Bottoms LWS. The woodland is west of the M56 near Baguley, south of Manchester. It is an AWI site.

### Vegetation communities present

2.3.525 Pedunculate oak dominant with abundant sycamore. The understorey is dominated by thick rhododendron, in the north and snowberry (*Symphoricarpos albus*) in the south. The rest of the woodland has a dense understory comprised of hawthorn, hazel and sycamore saplings. The ground flora includes locally abundant ramsons and bluebell with frequent wood millet, golden-scaly male-fern, bearded couch and redcurrant. There is a small area of variegated yellow archangel along the western boundary of the residential gardens to the west of the wood. The woodland is identified as W10a *Quercus robur-Pteridium aquilinum-Rubus fruticosus* woodland, typical sub-community. The TABLEFIT statistic for this woodland was 41% ‘goodness of fit’ for NVC type W10. This woodland qualifies as lowland mixed deciduous woodland HoPI.

2.3.526 Thirteen vascular plant species that are indicative of ancient woodland were recorded from Black Carr Wood: field maple, hazel, holly, wild cherry, wych elm, scaly male-fern, narrow buckler fern, bearded couch, bluebell, dog’s mercury, remote sedge, wood millet, goldilocks buttercup.

2.3.527 Table 139 sets out the NVC survey data from Black Carr Wood.

**Table 139: NVC survey data from Black Carr Wood (MAN32145\_L5133\_PH2\_260619)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	6	8	7	8	5	V (5 - 8)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Quercus robur</i>	7	6	7	7	-	IV (6 - 7)
<i>Fraxinus excelsior</i>	5	3	-	5	-	III (3 - 5)
<i>Ulmus glabra</i>	5	-	-	-	8	II (5 - 8)
<i>Pinus sylvestris</i>	-	3	3	-	-	II (3 - 3)
<i>Crataegus monogyna</i>	3	-	-	-	-	I (3 - 3)
<i>Betula pendula</i>	-	-	3	-	-	I (3 - 3)
<i>Populus alba</i>	-	-	3	-	-	I (3 - 3)
<b>Understorey (10m x 10m)</b>						
<i>Acer pseudoplatanus</i> sapling	7	6	-	-	3	III (3 - 7)
<i>Ilex aquifolium</i>	3	3	5	-	-	III (3 - 5)
<i>Crataegus monogyna</i>	-	2	-	7	5	III (2 - 7)
<i>Sorbus aucuparia</i> sapling	1	1	-	-	-	II (1 - 1)
<i>Sambucus nigra</i>	-	-	-	8	-	I (8)
<i>Ulmus glabra</i>	6	-	-	-	-	I (6)
<i>Fagus sylvatica</i>	-	6	-	-	-	I (6)
<i>Ulmus glabra</i> sapling	-	-	-	-	6	I (6)
<i>Corylus avellana</i>	-	-	5	-	-	I (5)
<i>Fraxinus excelsior</i> sapling	3	-	-	-	-	I (3)
<i>Sorbus aucuparia</i>	-	-	2	-	-	I (2)
<i>Viburnum lantana</i>	-	-	-	-	1	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	9	3	-	-	5	III (3 - 9)
<i>Allium ursinum</i>	3	-	-	8	4	III (3 - 8)
<i>Hyacinthoides non-scripta</i>	3	6	6	-	-	III (3 - 6)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Rubus fruticosus</i> agg.	9	5	1	-	-	III (1 - 9)
<i>Milium effusum</i>	6	-	-	-	-	I (6)
<i>Geum urbanum</i>	-	-	-	-	5	I (5)
<i>Poa trivialis</i>	-	-	-	-	5	I (5)
<i>Ribes uva-crispa</i>	4	-	-	-	-	I (4)
<i>Heracleum sphondylium</i>	-	-	-	-	4	I (4)
<i>Mercurialis perennis</i>	3	-	-	-	-	I (3)
<i>Dryopteris affinis</i>	2	-	-	-	-	I (2)
<i>Dryopteris carthusiana</i>	2	-	-	-	-	I (2)
<i>Dryopteris filix-mas</i>	2	-	-	-	-	I (2)
<i>Galium aparine</i>	1	-	-	-	-	I (1)
Bare ground	-	9	9	8	8	IV (8 - 9)

## Wrengate Wood Complex (GM53625-GM686564\_L4904\_GM370272\_L8827\_F001\_PH2\_030719)

### Site description and reasons for selection for survey

- 2.3.528 Several, small broadleaved semi-natural woodlands around the edge of Withington Golf Course. Some of this woodland is mapped by Natural England and deciduous woodland PHI and a small area overlaps Wrengate Wood SBI.
- 2.3.529 Within the Wrengate Wood Complex of woods, within the wider woodland to which stand F001 is connected, is a small woodland called Heyscroft, which is considered to be ancient woodland by HS2 Ltd on the basis of heritage data, the woodland was not added to the AWI as it is of insufficient size. Heyscroft was not accessible for survey.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

### Vegetation communities present

- 2.3.530 Five areas of woodland in the north and south-west of Withington Golf Course. One area is dominated by ash, and the understorey contains locally abundant holly. The ground flora is dominated by ivy. A second area is dominated by sycamore with common lime and has a cherry laurel and holly understorey with dense carpets of ivy on the ground flora. A third area is dominated by ash with frequent sycamore. A stream forms the eastern boundary of this wood. The understorey is dense in places with non-native species, including Wilson's honeysuckle, bamboo and cherry laurel. The ground flora has large patches of common ivy and Himalayan balsam. A fourth and fifth area are dominated by ash with frequent pedunculate oak and canopy gaps. The understorey is absent in places and is dense in others with abundant hawthorn. The ground flora contains locally abundant Himalayan balsam with common ivy dominant. This woodland showed signs of recreational use and some areas were used for storing equipment. The woodland had frequent non-native, planted tree and shrub species such as horse chestnut, common lime, Lombardy poplar and Wilson's honeysuckle. These woodlands are broad matches for NVC type W8d *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Hedera helix* sub-community. They are relatively species-poor ash and sycamore woodlands with a small number of species which indicate slightly basic soils such as wood avens, wood dock and ramsons. The ground flora is dominated by ivy. TABLEFIT analysis was not necessary given the weak match to W8 woodland. These woodlands are likely to be ornamental plantings and technically fall within the definition of lowland mixed deciduous woodland HoPI, but they are atypical examples.
- 2.3.531 A total of 20 vascular plant species which are indicative of ancient woodland were recorded in all the stands of Wrengate Wood Complex: field maple, ramsons, wood speedwell, holly, bluebell, pendulous sedge, remote sedge, wood anemone, red currant, wood millet, hazel, large-leaved lime, wych elm, pignut, dog's mercury, honeysuckle, wood sorrel, wild cherry, red currant and bearded couch.
- 2.3.532 Table 140 sets out the NVC survey data from Wrengate Wood Complex. Four quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 140: NVC survey data from Wrengate Wood Complex (GM53625-GM686564\_L4904\_ GM370272\_L8827\_F001\_PH2\_030719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Fraxinus excelsior</i>	6	2	7	6	NS	IV (2 - 7)
<i>Acer pseudoplatanus</i>	3	7	4	-	NS	III (3 - 7)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Tilia x europaea</i>	-	3	6	2	NS	III (3 - 6)
<i>Quercus robur</i>	3	-	-	5	NS	II (3 - 3)
<i>Fagus sylvatica</i>		5	-	-	NS	I (5)
<i>Salix alba</i>	4	-	-	-	NS	I (4)
<i>Cupressus x leylandii</i>	4	-	-	-	NS	I (4)
<i>Populus nigra 'Italica'</i>	-	-	-	3	NS	I (3)
<i>Betula pendula</i>	2	-	-	-	NS	I (2)
<i>Prunus avium</i>	-	-	-	1	NS	I (1)
<b>Understorey (10m x 10m)</b>						
<i>Ilex aquifolium</i>	9	2		2	NS	III (2 - 9)
<i>Crataegus monogyna</i>	3	-	2	8	NS	III (2 - 8)
<i>Prunus laurocerasus</i>	-	3	5	-	NS	II (3 - 5)
<i>Fraxinus excelsior</i> sapling	1	6		-	NS	II (1 - 6)
<i>Lonicera nitida</i>	-	-	5	-	NS	I (5)
<i>Bamboo</i> sp.	-	-	3	-	NS	I (3)
<i>Aesculus hippocastinum</i> sapling	1	-	-	-	NS	I (1)
<b>Ground flora layer (4m x 4m)</b>						
<i>Fraxinus excelsior</i> seedling	2	5	2	3	NS	IV (2 - 5)
<i>Hedera helix</i>	2	9	8	-	NS	III (2 - 9)
<i>Geum urbanum</i>	3	2	4	-	NS	III (2 - 4)
<i>Rubus fruticosus</i> agg.	4	-	-	7	NS	II (4 - 7)
<i>Ilex aquifolium</i> seedling	4	4	-	-	NS	II (4 - 4)
<i>Impatiens grandulifera</i>	-	-	3	9	NS	II (3 - 9)
<i>Urtica dioica</i>	-	-	2	5	NS	II (2 - 5)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Alliaria petiolata</i>	2	-	1	-	NS	II (1 - 2)
<i>Herecleum sphondylium</i>	-	-	6	-	NS	I (6)
<i>Milium effusum</i>	-	-	5	-	NS	I (5)
<i>Rumex sanguineus</i>	-	-	3	-	NS	I (3)
<i>Allium ursinum</i>	-	-	3	-	NS	I (3)
<i>Hyacinthoides non-scripta</i>	-	-	1	-	NS	I (1)
<i>Anemone nemorosa</i>	-	-	1	-	NS	I (1)
Bare Ground	9	4	2	8	NS	IV (2 - 9)

## Wrengate Wood Complex (GM53625-GM686564\_L4904\_GM370272\_L8827\_F002\_PH2\_030719)

### Site description and reasons for selection for survey

2.3.533 Two broadleaved semi-natural woodlands in the north-east of Withington Golf Course, on the southern edge of Didsbury. Both woods are mapped on the Natural England deciduous woodland PHI. The woodlands are not AWI sites.

### Vegetation communities present

2.3.534 Ash is dominant with sycamore frequent. The understorey is sparse with occasional hazel coppice. One area of woodland contains a large compost storage area. In other areas, ash is dominant with an understorey including cherry laurel and holly. The ground flora contains locally abundant Himalayan balsam, abundant cleavers and numerous other species at low cover. This vegetation is a loose match to W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland as it is predominantly an ash wood. The TABLEFIT statistic for this woodland was 56% 'goodness of fit' for NVC type W10 undifferentiated to sub-community. It is considered that W8 woodland is a better fit owing to the canopy dominance of ash but the match to both communities is relatively weak. These woodlands are likely to be ornamental plantings and technically fall within the definition of lowland mixed deciduous woodland HoPI, but they are atypical examples.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

- 2.3.535 An additional two vascular plant species which are indicative of ancient woodland were recorded in all stands of Wrengate Wood Complex: hornbeam and wood speedwell.
- 2.3.536 Table 141 sets out the NVC survey data from Wrengate Wood Complex. Two quadrat samples were adequate to achieve full coverage of this small stand of woodland.

**Table 141: NVC survey data from Wrengate Wood Complex (GM53625-GM686564\_L4904\_GM370272\_L8827\_F002\_PH2\_030719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Fraxinus excelsior</i>	7	9	NS	NS	NS	II (7 - 9)
<i>Acer pseudoplatanus</i>	5	2	NS	NS	NS	II (2 - 5)
<i>Tilia x europaea</i>	5	-	NS	NS	NS	I (5)
<i>Quercus robur</i>	-	3	NS	NS	NS	I (3)
<i>Carpinus betulus</i>	2	-	NS	NS	NS	I (2)
<i>Populus alba</i>	-	2	NS	NS	NS	I (2)
<b>Understorey (10m x 10m)</b>						
<i>Fraxinus excelsior</i>	2	9	NS	NS	NS	II (2 - 9)
<i>Crataegus monogyna</i>	4	-	NS	NS	NS	I (4)
<i>Corylus avellana</i>	3	-	NS	NS	NS	I (3)
<b>Ground flora layer (4m x 4m)</b>						
<i>Impatiens glandulifera</i>	5	9	NS	NS	NS	II (5 - 9)
<i>Galium aparine</i>	-	8	NS	NS	NS	I (8)
<i>Ranunculus repens</i>	7	-	NS	NS	NS	I (7)
<i>Veronica montana</i>	6	-	NS	NS	NS	I (6)
<i>Lolium perenne</i>	5	-	NS	NS	NS	I (5)
<i>Epilobium montanum</i>	4	-	NS	NS	NS	I (4)
<i>Urtica dioica</i>	4	-	NS	NS	NS	I (4)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Euphorbia peplus</i>	3	-	NS	NS	NS	I (3)
<i>Arrhenatherum elatius</i>	2	-	NS	NS	NS	I (2)
<i>Plantago major</i>	2	-	NS	NS	NS	I (2)
<i>Geum urbanum</i>	2	-	NS	NS	NS	I (2)
<i>Crataegus monogyna</i> seedling	2	-	NS	NS	NS	I (2)
<i>Acer pseudoplatanus</i> seedling	1	-	NS	NS	NS	I (1)
<i>Dactylis glomerata</i>	1	-	NS	NS	NS	I (1)
<i>Taraxacum officinale</i> agg.	1	-	NS	NS	NS	I (1)
<i>Cardamine hirsuta</i>	1	-	NS	NS	NS	I (1)
Bare ground	9	4	NS	NS	NS	II (4 - 9)

## Wrengate Wood Complex (MAN344335\_L8860\_F002\_PH2\_030719)

### Site description and reasons for selection for survey

2.3.537 Several lines of mixed trees in the centre of Withington Golf Course. This vegetation is not an AWI site or an area of PHI.

### Vegetation communities present

2.3.538 Trees of a range of ages with no understorey. Few individuals of weeping willow, aspen and black poplar were present. The ground flora was dominated by short mown amenity grassland. No NVC classification was undertaken for these ornamental plantings.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Wrengate Wood Complex (MAN344335\_L8860\_F003\_PH2\_030719)

## Site description and reasons for selection for survey

2.3.539 Broadleaved plantation woodland on the south-east boundary of Withington Golf Course adjacent to the River Mersey. This woodland is not an AWI site and is not mapped on the PHI.

## Vegetation communities present

2.3.540 A small area of broadleaved plantation woodland dominated by silver birch. The understorey is sparse with occasional rowan. The ground flora is dominated by poor-semi-improved neutral grassland comprising Yorkshire fog and false-oat grass. There are large patches of Himalayan balsam. This broadleaved plantation woodland is an example of W10d *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland, *Holcus lanatus* sub-community. This is a species-poor plantation/secondary birch/oak wood where the woodland canopy consists of silver birch and pedunculate oak. This woodland qualifies as lowland mixed deciduous woodland HoPI but it is a species-poor/secondary woodland example.

2.3.541 Table 142 sets out the NVC survey data from the Wrengate Wood Complex. One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

**Table 142: NVC survey data from Wrengate Wood Complex (MAN344335\_L8860\_F003\_PH2\_030719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Betula pendula</i>	9	NS	NS	NS	NS	I (9)
<i>Quercus robur</i>	3	NS	NS	NS	NS	I (3)
<b>Understorey (10m x 10m)</b>						
<i>Crataegus monogyna</i>	3	NS	NS	NS	NS	I (3)
<i>Sorbus aucuparia</i>	2	NS	NS	NS	NS	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Impatiens grandiflora</i>	7	NS	NS	NS	NS	I (7)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<i>Holcus lanatus</i>	5	NS	NS	NS	NS	I (5)
<i>Dactylis glomerata</i>	2	NS	NS	NS	NS	I (2)
<i>Ranunculus repens</i>	1	NS	NS	NS	NS	I (1)
Bare ground	9	NS	NS	NS	NS	I (9)

## Wrengate Wood Complex (MAN344335\_L8860\_F004\_PH2\_030719)

### Site description and reasons for selection for survey

- 2.3.542 A small area of broadleaved semi-natural woodland on the west boundary of Withington Golf Course. The woodland is not an AWI site and is not mapped on the PHI.

### Vegetation communities present

- 2.3.543 A small area of broadleaved semi-natural woodland dominated by ash and sycamore. The understorey is sparse with occasional blackthorn. The ground flora is dominated by ramsons. This woodland is an example of W8f *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland, *Allium ursinum* sub-community. This woodland qualifies as lowland mixed deciduous woodland HoPI.
- 2.3.544 Table 143 sets out the NVC survey data from Wrengate Wood Complex.

**Table 143: NVC survey data from Wrengate Wood Complex (MAN344335\_L8860\_F004\_PH2\_030719)**

Species	Quadrat locations					Constancy (Domin range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m × 50m)</b>						
<i>Acer pseudoplatanus</i>	8	8	8	8	8	V (8 - 8)
<i>Fraxinus excelsior</i>	5	5	5	5	5	V (5 - 5)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Understorey (10m x 10m)</b>						
<i>Prunus spinosa</i>	7	7	7	7	7	V (7 - 7)
<i>Sambucus nigra</i>	5	5	5	5	5	V (5 - 5)
<i>Crataegus monogyna</i>	5	5	5	5	5	V (5 - 5)
<i>Fraxinus excelsior</i>	3	3	3	3	3	V (3 - 3)
<b>Ground flora layer (4m x 4m)</b>						
<i>Allium ursinum</i>	8	8	8	8	8	V (8 - 8)
<i>Fraxinus excelsior</i> (seedling)	1	-	-	-	-	I (1)
Bare ground	10	10	10	10	10	V (10 - 10)

## Wrengate Wood Complex (GM643659-LA33758\_L8837\_F001\_PH2\_030719)

### Site description and reasons for selection for survey

- 2.3.545 Broadleaved semi-natural woodland on Natural England's PHI in the north of Withington Golf Course. The woodland is not a AWI site. It overlaps a small part of Wrengate Wood SBI.

### Vegetation communities present

- 2.3.546 This woodland is present between residential development to the west and the Withington Golf Course to the east. Sycamore is dominant with frequent ash and a gappy canopy. A stream is present along the eastern boundary of the wood. The understorey is dense in places, with Wilson's honeysuckle, bamboo and cherry laurel. The ground flora comprised large patches of common ivy, which is locally dominant, and large areas dominated by Himalayan balsam and variegated yellow archangel. This vegetation is comprised mainly of non-native species, does not closely match any NVC community and does not qualify as a HoPI.
- 2.3.547 Table 144 sets out the NVC survey data from Wrengate Wood Complex. One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 144: NVC survey data from Wrengate Wood Complex (LA33758\_L8837\_F001\_PH2\_030719)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Canopy (50m x 50m)</b>						
<i>Acer pseudoplatanus</i>	6	NS	NS	NS	NS	I (6)
<i>Pinus sylvestris</i>	3	NS	NS	NS	NS	I (3)
<i>Fraxinus excelsior</i>	3	NS	NS	NS	NS	I (3)
<i>Fagus sylvatica</i>	2	NS	NS	NS	NS	I (2)
<b>Understorey (10m x 10m)</b>						
<i>Lonicera nitida</i>	6	NS	NS	NS	NS	I (6)
<i>Bamboo sp.</i>	3	NS	NS	NS	NS	I (3)
<i>Prunus laurocerasus</i>	2	NS	NS	NS	NS	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Hedera helix</i>	7	NS	NS	NS	NS	I (7)
<i>Fraxinus excelsior</i> seedling	7	NS	NS	NS	NS	I (7)
<i>Rubus fruticosus</i> agg.	6	NS	NS	NS	NS	I (6)
<i>Lamium galeobdolon subsp. argentatum</i>	4	NS	NS	NS	NS	I (4)
<i>Carex remota</i>	4	NS	NS	NS	NS	I (4)
<i>Rumex sanguineus</i>	4	NS	NS	NS	NS	I (4)
<i>Galium aparine</i>	4	NS	NS	NS	NS	I (4)
<i>Ilex aquifolium</i>	3	NS	NS	NS	NS	I (3)
<i>Urtica dioica</i>	3	NS	NS	NS	NS	I (3)
<i>Acer pseudoplatanus</i> seedling	3	NS	NS	NS	NS	I (3)
<i>Geum urbanum</i>	2	NS	NS	NS	NS	I (2)
<i>Hyacinthoides non-scripta</i>	2	NS	NS	NS	NS	I (2)
<i>Heracleum sphondylium</i>	2	NS	NS	NS	NS	I (2)



## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

# Manchester Piccadilly Station (MA08)

## Limekiln Lane Woodland/Pin Mill Brow (LA80010\_L4590\_F001\_PH2\_040719)

### Site description and reasons for selection for survey

2.3.548 A small area of non-native woodland. Not included in Natural England's PHI and not an AWIS.

### Vegetation communities present

- 2.3.549 A small area of mixed, plantation woodland dominated by white poplar (*Populus alba*) with ash. The understorey was dense in places with hawthorn, snowberry and holly. The ground flora was very sparse with large areas of bare ground and abundant leaf litter. Some areas were dominated by dense ivy, extending from the ground to the shrub layer and canopy. The woodland is a plantation of predominantly non-native species and does not typify any NVC community. The woodland does not qualify as a HoPI.
- 2.3.550 Table 145 sets out the NVC survey data from Limekiln Lane Woodland/Pin Mill Brow. One quadrat sample was adequate to achieve full coverage of this small stand of woodland.

**Table 145: NVC survey data from Limekiln Lane Woodland/Pin Mill Brow (LA80010\_L4590\_F001\_PH2\_040719)**

Species	Quadrat locations					Constancy (Domin range)	
	Q1	Q2	Q3	Q4	Q5		
<b>Canopy (50m × 50m)</b>							
<i>Acer platanoides</i>	6	NS	NS	NS	NS	I (6)	
<i>Fraxinus excelsior</i>	5	NS	NS	NS	NS	I (5)	
<i>Populus alba</i>	5	NS	NS	NS	NS	I (5)	
<i>Prunus avium</i>	5	NS	NS	NS	NS	I (5)	
<i>Aesculus hippocastanum</i>	3	NS	NS	NS	NS	I (3)	
<i>Pinus sylvestris</i>	3	NS	NS	NS	NS	I (3)	

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Understorey (10m x 10m)</b>						
<i>Symphoricarpos albus</i>	8	NS	NS	NS	NS	I (8)
<i>Crataegus monogyna</i>	5	NS	NS	NS	NS	I (5)
<i>Prunus avium</i>	3	NS	NS	NS	NS	I (3)
<i>Sorbus aucuparia</i>	2	NS	NS	NS	NS	I (2)
<i>Corylus avellana</i>	2	NS	NS	NS	NS	I (2)
<b>Ground flora layer (4m x 4m)</b>						
<i>Rubus fruticosus</i> agg.	7	NS	NS	NS	NS	I (7)
<i>Cornus sanguinea</i>	1	NS	NS	NS	NS	I (1)
Bare ground	10	NS	NS	NS	NS	I (10)

## Limekiln Lane Woodland/Pin Mill Brow (GM300408\_L4928\_F002\_PH2\_070818)

### Site description and reasons for selection for survey

2.3.551 An area of semi-improved grassland present within open areas in woodland. Not identified by Natural England as priority habitat.

### Vegetation communities present

2.3.552 Common grass and forb species were dominant including false oat-grass. This habitat is typical of NVC type MG1a *Arrhenatherum elatius* grassland, *Festuca rubra* sub-community. It does not qualify as a HoPI.

2.3.553 Table 146 sets out the NVC survey data from Limekiln Lane Woodland/Pin Mill Brow (F002).

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

**Table 146: NVC survey data from Limekiln Lane Woodland/Pin Mill Brow (GM300408\_L4928\_F002\_PH2\_070818)**

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<b>Ground flora layer (4m x 4m)</b>						
<i>Festuca rubra</i>	5	7	4	8	5	V (4 - 7)
<i>Plantago lanceolata</i>	-	4	4	3	4	IV (4 - 4)
<i>Ranunculus acris</i>	-	2	4	4	1	IV (1 - 4)
<i>Agrostis stolonifera</i>	4	3	-	3	5	IV (3 - 5)
<i>Poa trivialis</i>	-	3	2	3	3	IV (2 - 3)
<i>Holcus lanatus</i>	4	6	-	2	2	IV (2 - 6)
<i>Calliergonella cuspidata</i>	-	-	9	5	6	III (5 - 9)
<i>Taraxacum officinale</i> agg.	-	2	2	1	-	III (3 - 5)
<i>Cirsium arvense</i>	5	4	-	3	-	III (3 - 3)
<i>Vicia cracca</i>	3	-	3	3	-	III (3 - 3)
<i>Lathyrus pratensis</i>	-	5	1	-	4	III (1 - 5)
<i>Arrhenatherum elatius</i>	3	-	1	-	4	III (1 - 4)
<i>Lotus corniculatus</i>	-	-	-	3	3	II (3 - 3)
<i>Rubus fruticosus</i> agg.	-	1	3	-	-	II (1 - 3)
<i>Phleum pratense</i>	2	1	-	-	-	II (1 - 2)
<i>Senecio jacobaea</i>	-	1	1	-	-	II (1 - 1)
<i>Cerastium fontanum</i>	-	1	-	1	-	II (1 - 1)
<i>Dactylis glomerata</i>	-	-	-	1	1	II (1 - 1)
<i>Centaurea nigra</i>	-	-	5	-	-	I (5)
<i>Geranium pratense</i>	4	-	-	-	-	I (4)
<i>Ranunculus repens</i>	4	-	-	-	-	I (4)
<i>Rumex obtusifolius</i>	3	-	-	-	-	I (3)

## Background Information and Data

Ecology and biodiversity

BID EC-004-00001

Ecological baseline data – National Vegetation Classification and ancient woodland

Species	Quadrat locations					Constancy (Dominance range)
	Q1	Q2	Q3	Q4	Q5	
<i>Trifolium pratense</i>	-	3	-	-	-	I (3)
<i>Carex hirta</i>	-	-	3	-	-	I (3)
<i>Alopecurus pratensis</i>	3	-	-	-	-	I (3)
<i>Vicia hirsuta</i>	2	-	-	-	-	I (2)
<i>Equisetum arvensis</i>	-	-	1	-	-	I (1)
<i>Rosa canina</i> (seedling)	-	-	1	-	-	I (1)
<i>Tragopogon pratensis</i>	-	-	-	1	-	I (1)
<i>Agrostis capillaris</i>	-	-	1	-	-	I (1)
<i>Cynosurus cristatus</i>	-	1	-	-	-	I (1)
<i>Epilobium parviflorum</i>	-	-	1	-	-	I (1)
<i>Quercus robur</i> (sapling)	-	-	1	-	-	I (1)
Bare ground	4	4	1	3	3	V (1 - 4)

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