

HAWKESWOOD ECOLOGY

Specialists in Ecological Survey and Assessment

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PRELIMINARY ECOLOGICAL APPRAISAL

LLANTARNAM PLAYING FIELDS

ON BEHALF OF

TORFAEN COUNTY BOROUGH COUNCIL

May 2021

Ref: HE/47/2020 – Issue 1

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All habitat and protected species surveys present a ‘snapshot’ of conditions existing and species present, or considered having potential to be present, at the time of survey. Many species are mobile and distributions can vary across time. Results and findings presented in this report should be considered with these factors in mind.

Protected species surveys are recognised as having a ‘shelf life’ of two years maximum. Surveys older than this are unlikely to be accepted by a Local Planning Authority or Natural Resources Wales as viable documentation.

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SUMMARY

Hawkeswood Ecology was instructed to carry out a Preliminary Ecological Appraisal on land identified for development of sports facilities at Llantarnam Playing fields. The Playing fields are currently unmanaged and consist of amenity grassland with low species diversity. The Site is bounded to the south west by the Dowlais Brook wooded corridor and the development includes replacement of an existing footbridge over the Brook linking the Site to a wider footpath network. The Playing Fields are bounded to the south and west by unmanaged and gappy planted trees with rarely occurring mature trees suggesting former field hedgerows. To the north is housing and Llantarnam School, to the east is a small copse of planted trees which is subject to a high level of disturbance.

It is proposed to construct a synthetic all weather sports pitch on the Playing Fields along with car parking facilities and access footpaths. The pitch will be floodlit by 15 metre masts giving an average illuminance of 180 lux to comply with FA guidelines. Consideration of lighting impacts in relation to night foraging animals, particularly bats, must be considered.

The area where the footbridge is to be replaced sits in semi-natural ancient woodland and is immediately adjacent to a County Site of Importance for Nature Conservation. It is extremely disturbed by heavy footfall and use of off road bikes (including motorbikes). As such, development impacts from the provision of a hard footpath should be minimal if current desire lines are used with constraints on impacts around the works. The Dowlais Brook does have records of white clawed crayfish approximately 1 kilometre downstream and as such a survey for this species is required before any works commence.

Japanese knotweed and Himalayan balsam have been identified from the wooded areas around the Dowlais Brook and procedures on how to prevent the spread of these species should be prepared before any works commence. A pre-start check within and up to 100 metres from the Site should also be undertaken to assess if there are any otter resting places or holts present; whilst considered unlikely due to the high levels of disturbance, should they be present there could be a need to cease works whilst a derogation licence is sought.

It is assumed the proposed development will impact mainly upon the areas of amenity grassland, and as such it is considered that any potential impacts are limited. Long term potential impacts are mainly related to light spill from the 15 metre floodlight masts and recommendations are made in regard to this. If the recommendations made in Section 8 are fully implemented, it is considered that there are no apparent overriding ecological reasons that would prevent the proposal proceeding.

1 INTRODUCTION

- 1.1 Hawkeswood Ecology was instructed by Torfaen County Borough Council to carry out a Preliminary Ecological Appraisal (PEA) on land at Llantarnam Industrial Estate (approximate central Grid Reference ST 301 934). It is proposed to develop a synthetic all weather football pitch on the Site along with associated car parking and access footpaths.
- 1.2 The Site is presently dominated by unmanaged amenity grassland having been formally managed football pitches until recently. A wooded section at the south west of the Site supports semi-natural ancient woodlands in the Dowlais Brook corridor. The Dowlais Brook corridor is heavily disturbed in this location. A number of woodland indicator plants were noted in this area and the Brook has potential to support protected species. The playing fields are bounded to the west and south by unmanaged tree plantings with a wide buffer of dense bramble in places.
- 1.3 The objectives of the survey are:
 - To ascertain the habitats and species present within the Site;
 - To assess the ecological and nature conservation value of the Site;
 - To assess the potential ecological impacts of the proposed works;
 - To provide recommendations to mitigate the proposed works.
- 1.4 The PEA was carried out on 21st April 2021.

2 SURVEYOR EXPERIENCE

- 2.1 The surveyor and report author is Eric Hawkeswood. Eric has many years experience of broad habitat and detailed botanical and species surveying. He has extensive experience of protected species survey and holds Natural Resources Wales and Natural England scientific and conservation licenses for bats and dormice. He has been a professional in the nature conservation field for thirty two years formerly working as Reserves Manager and Conservation Officer at Gwent Wildlife Trust and Woodland Manager for the Ruperra Conservation Trust. Eric has worked as an Ecological Consultant as joint proprietor of Hawkeswood Ecology since 2001.

3 METHODOLOGY AND CONSTRAINTS

Desktop Study

- 3.1 The South East Wales Biodiversity Records Centre (SEWBRc) was asked to provide records of protected or important species from a 1 kilometre radius of the Site. Information on internationally, nationally and locally designated sites was also sought from a radius of 1 kilometre.
- 3.2 The Natural Resources Wales and MAGIC websites were also searched for designated sites over a 10 kilometres radius.

Preliminary Ecological Appraisal

- 3.3 The Preliminary Ecological Appraisal (PEA) was carried out in line with the guidance issued by The Chartered Institute for Ecology and Environmental Management (2013) and consisted of a

walk-over survey of the proposed Site taking into account features within and adjacent to it. Habitats were categorised according to the Phase 1 Habitat Survey guidelines (JNCC, 2010) and annotated onto a map (Figure 1). Plant assemblages were described using the DAFOR scale of cover abundance (Appendix 1) and each habitat was recorded using Target notes (Appendix 2); a species list of plants identified during survey is given in Appendix 3 and photographs are given in Appendix 4.

- 3.4 In addition, the Site was assessed for its potential to support protected species.

Constraints

- 3.5 No specific constraints to the survey were noted.

4 DESKTOP STUDY FINDINGS

- 4.1 SEWBRc reported a total of 358 Priority and Protected Species from the 1 kilometre search area. No records were clearly reported from the development Site itself but a number of moths were recorded from the Industrial Estate itself. The closest bat record was from approximately 300 metres north west of the Site where a soprano pipistrelle roost was associated with housing. All other records are over 450 metres from the Site and include common pipistrelle, brown long eared, noctule, whiskered, Daubenton's and unspecified *Myotis* species. Lesser horseshoe bats are also reported from known sites roosts with the nearest record coming from approximately 110 metres distance from Site.
- 4.2 A large number of records relate to birds and many species could occur on, near or over the Site. Typically, these relate to those species commonly associated with woodland and also urban areas. A number of species are likely to use the brook corridor for breeding and foraging although the high level of disturbance is likely to be a limiting factor for some species. There has also been a significant moth recording effort locally, with one recording point immediately adjacent to the Site. It is likely that many of the species recorded here could occur in the brook corridor in suitable habitat.
- 4.3 Bony fish species reported include Atlantic salmon, brown/sea trout and eel. Records are from over one kilometre from the Site but although no specific location is noted some records dating from the 1990's appear to relate to the Dowlais Brook itself near Llantarnam Abbey. Of particular note are three records relating to white clawed crayfish from the Dowlais Brook; they are reported from the Dowlais Brook in Llantarnam Abbey grounds, approximately 1 kilometre from the Site. Other species records of note reported near the Site include reptiles, with common lizard and slow worm noted 270 metres to the east of the Site.
- 4.4 With regard to herpetofauna, common frog and common toad are reported approximately 420 and 475 metres to the south of the Site respectively. The only reptile record is of grass snake also from approximately 475 metres south of the Site.
- 4.5 Mammal records excluding bats are of otter, the nearest record from 300 metres to the south, badger, the nearest record over 800 metres from the Site. Hedgehog is recorded from a number of locations in the search area and is likely to occur on or near the Site. Water vole is also reported

from two sites, both in excess of one kilometre from the Site and polecat is reported from approximately 1 kilometre from the Site. There is also an unverified record of dormouse approximately 900 metres to the north of the Site in a built up area.

- 4.6 With regard to flowering plants, only bluebell and tubular water dropwort are reported with the closest record being of bluebell some 99 metres distant from the Site.
- 4.7 These and other species that are relevant to the habitat types present on Site are given in Table 1 below. Table 1 below shows the status of Protected and Priority Species considered relevant to the Site with records dated from 2000.

Preliminary Ecological Appraisal, Llantarnam Playing Fields.
Hawkeswood Ecology – May 2021

Table 1: Status of Relevant Priority and Protected Species

Common name	Scientific name	Group	Status
August Thorn	<i>Ennomos quercinaria</i>	Insect - moth	S7, LBAP (GWY, VOG), LI(BIS)
Autumnal Rustic	<i>Eugnorisma glareosa</i>	Insect - moth	S7, LBAP (GWY, VOG)
Badger	<i>Meles meles</i>	terrestrial mammal	BA, Bern, LBAP (CLY, CON, DEN, FLI, PEM, POW, TRF, WRE) WCA1.1, WCA9, Bern, CITES, LBAP (ANG, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, VOG, WRE), WBAm(RSPB), LI(VC43)
Barn Owl	<i>Tyto alba</i>	bird	S7, LBAP (GWY, VOG)
Beaded Chestnut	<i>Agrochola lychnidis</i>	Insect - moth	BDIr22, S7, WBR(RSPB), LBAP (GWY, VOG), UKBAm(RSPB)
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	bird	WCA8, LBAP (ANG, CLY, CON, FLI, SNP, TRA, TRF)
Bluebell	<i>Hyacinthoides non-scripta</i>	flowering plant	WCA1.1, LBAP (CON)
Brambling	<i>Fringilla montifringilla</i>	bird	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, DEN, FLI, GWY, POW, SNP, TRA, TRF)
Brandt's Bat	<i>Myotis brandtii</i>	terrestrial mammal	S7, LBAP (GWY, VOG)
Brindled Beauty	<i>Lyca hirtaria</i>	Insect - moth	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
Brown Long-eared Bat	<i>Plecotus auritus</i>	terrestrial mammal	S7, LBAP (GWY, VOG)
Buff Ermine	<i>Spilosoma lutea</i>	Insect - moth	S7, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, TRF, VOG), UKBAm(RSPB)
Bullfinch	<i>Pyrrhula pyrrhula</i>	bird	S7, LBAP (GWY, VOG)
Cinnabar	<i>Tyria jacobaeae</i>	Insect - moth	HDir, WCA5, Bern, LBAP (ANG, CLY, CON, FLI, POW, TRA)
Common Frog	<i>Rana temporaria</i>	amphibian	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	terrestrial mammal	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, TRA, VOG)
Common Toad	<i>Bufo bufo</i>	amphibian	S7, LI(BIS)
Crescent	<i>Helotropha leucostigma</i>	Insect - moth	S7, LBAP (GWY, VOG)
Dark-barred Twin-spot Carpet	<i>Xanthorhoe ferrugata</i>	Insect - moth	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF)
Daubenton's Bat	<i>Myotis daubentonii</i>	terrestrial mammal	S7
Deep-brown Dart	<i>Aporophyla luteola</i>	Insect - moth	S7, LBAP (GWY, VOG)
Dot Moth	<i>Melanchnra persicariae</i>	Insect - moth	S7, Bern, LBAP (CON, POW, VOG), UKBAm(RSPB)
Dunnoch	<i>Prunella modularis</i>	bird	S7, LBAP (GWY, VOG)
Dusky Thorn	<i>Ennomos fuscantaria</i>	Insect - moth	S7, RDB1 (UK) - CR, LBAP (CLY, CON, GWY, VOG)
Eel	<i>Anguilla anguilla</i>	bony fish (Actinopterygii)	S7
Feathered Gothic	<i>Tholera declimalis</i>	Insect - moth	BDIr22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB)
Fieldfare	<i>Turdus pilaris</i>	bird	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, VOG), LBAP (ANG, CLY, DEN, FLI, POW, SNP, TRA, VOG)
Grass Snake	<i>Natrix helvetica</i>	reptile	S7, LBAP (GWY, VOG)
Green-brindled Crescent	<i>Allophyes oxyacanthae</i>	Insect - moth	S7, Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB), UKBR(RSPB)
Hawfinch	<i>Coccothraustes coccothraustes</i>	bird	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRA, TRF, VOG)
Hazel Dormouse	<i>Muscardinus avellanarius</i>	terrestrial mammal	S7, LBAP (GWY, VOG)
Hedge Rustic	<i>Tholera cespitis</i>	Insect - moth	S7, Bern, LBAP (ANG, BGW, BRG, CON, FLI, GWY, NEW, POW, RCT, VOG)
Hedgehog	<i>Erinaceus europaeus</i>	terrestrial mammal	BDIr22, S7, WBR(RSPB), LBAP (CON, GWY, POW, VOG), UKBR(RSPB)
Herring Gull	<i>Larus argentatus</i>	bird	S7, LBAP (CLY, CON, FLI, GWY, VOG), WBAm(RSPB), UKBR(RSPB)
House Sparrow	<i>Passer domesticus</i>	bird	S7, Bern, CITES, WBR(RSPB), LBAP (ANG, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), LI(VC43), UKBAm(RSPB)
Kestrel	<i>Falco tinnunculus</i>	bird	BDIr1, WCA1.1, Bern, LBAP (CLY, CON, DEN, FLI, GWY, POW, TRA), WBAm(RSPB), UKBAm(RSPB)
Kingfisher	<i>Alcedo atthis</i>	bird	S7, LBAP (GWY, VOG)
Knot Grass	<i>Acronicta rumicis</i>	Insect - moth	S7, LBAP (BRG, GWY)
Large Wainscot	<i>Rhizodra lutosa</i>	Insect - moth	S7, LBAP (GWY, VOG)
Latticed Heath	<i>Chiasmia clathrata</i>	Insect - moth	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRA, TRF, VOG, WRE)
Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>	terrestrial mammal	S7, WBR(RSPB), LBAP (CON), LBAP (DEN, POW, VOG), UKBR(RSPB)
Lesser Redpoll	<i>Acanthis cabaret</i>	bird	WCA5, S7, RDB1 (UK) - NT
Lesser Silver Water Beetle	<i>Hydrochara caraboides</i>	Insect - beetle (Coleoptera)	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, DEN, FLI, PEM, VOG), LBAP (CON, GWY), UKBR(RSPB)
Linnet	<i>Linaria cannabina</i>	bird	BDIr1, WCA1.1, Bern, CITES, LBAP (CON, DEN, FLI, GWY, POW), WBAm(RSPB), LI(VC43), UKBR(RSPB)
Merlin	<i>Falco columbarius</i>	bird	S7, LBAP (GWY, VOG)
Mottled Rustic	<i>Caradrina morpheus</i>	Insect - moth	S7, LBAP (GWY, VOG)
Mouse Moth	<i>Amphipyra tragopoginis</i>	Insect - moth	S7, LBAP (GWY, VOG)
Myotis Bat Species	<i>Myotis</i>	terrestrial mammal	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Natterer's Bat	<i>Myotis nattereri</i>	terrestrial mammal	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF)
Noctule Bat	<i>Nyctalus noctula</i>	terrestrial mammal	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
Otter	<i>Lutra lutra</i>	terrestrial mammal	EPS, HDir, WCA5, S7, Bern, CITES, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG, WRE)
Pipistrellus Bat Species	<i>Pipistrellus</i>	terrestrial mammal	EPS, WCA5, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
Polecat	<i>Mustela putorius</i>	terrestrial mammal	HDir, S7, Bern, RDB2 (UK), LBAP (BGW, BRG, CON, FLI, GWY, NEW, POW, SNP, VOG)
Powdered Quaker	<i>Orthosia gracilis</i>	Insect - moth	S7, LBAP (GWY, VOG)
Red Kite	<i>Milvus milvus</i>	bird	BDIr1, WCA1.1, WCA9, CITES, LBAP (CON, CRM, GWY, POW), WBAm(RSPB)
Redwing	<i>Turdus iliacus</i>	bird	BDIr22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB)
Reed Bunting	<i>Emberiza schoeniclus</i>	bird	S7, Bern, LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), WBAm(RSPB), UKBAm(RSPB)
Rosy Minor	<i>Litologia literosa</i>	Insect - moth	S7, LBAP (GWY, VOG)
Rosy Rustic	<i>Hydraecia micacea</i>	Insect - moth	S7, LBAP (GWY, VOG)
Rustic	<i>Hoplodrina blanda</i>	Insect - moth	S7, LBAP (GWY, VOG)
Sallow	<i>Cirrhia icteritia</i>	Insect - moth	S7, LBAP (GWY, VOG)
September Thorn	<i>Ennomos erosaria</i>	Insect - moth	S7, LBAP (VOG)
Shaded Broad-bar	<i>Scotopteryx chenopodiata</i>	Insect - moth	S7, LBAP (GWY, VOG)
Small Emerald	<i>Hemistola chrysoprasaria</i>	Insect - moth	S7, LBAP (GWY, VOG)

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Small Phoenix	<i>Ecliptopera silaceata</i>	Insect - moth	S7, LBAP (GWY, VOG)
Small Square-spot	<i>Diarsia rubi</i>	Insect - moth	S7, LBAP (GWY, VOG)
Smooth Newt	<i>Lissotriton vulgaris</i>	amphibian	WCAS, Bern, LBAP (CLY, CON, DEN, FLI, POW, TRA), LI(BIS) BDir22, S7, Bern, LBAP (ANG, BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG, WRE), WBAm(RSPB), UKBR(RSPB)
Song Thrush	<i>Turdus philomelos</i>	bird	EPS, HDlr, WCAS, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CLY, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	terrestrial mammal	
Starling	<i>Sturnus vulgaris</i>	bird	BDir22, S7, Bern, WBR(RSPB), LBAP (BBNP, CON, FLI, GWY, VOG), UKBR(RSPB)
Ten-spotted Pot Beetle	<i>Cryptocephalus decemmaculatus</i>	Insect - beetle (Coleoptera)	S7, RDB1 (UK) - EN, RDB2 (UK) - R
Tubular Water-dropwort	<i>Oenanthe fistulosa</i>	flowering plant	S7, RDB1 (UK) - VU, LBAP (GWY, VOG), LI(SEWBReC), LI(VC43), LI(VC47), LI(VC48, LR), LI(VC49, LS), LI(VC50, LS), LI(VC51, LS), LI(VC52, LS)
Wall	<i>Lasioommata megera</i>	Insect - butterfly	S7, RDB1 (UK) - NT, LBAP (GWY, VOG) WCAS, S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VoG)
Water Vole	<i>Arvicola amphibius</i>	terrestrial mammal	NRW, Bern, LBAP (ANG, BGW, BRG, CON, FLI, NEW, POW)
Weasel	<i>Mustela nivalis</i>	terrestrial mammal	
White Ermine	<i>Spilosoma lubricipeda</i>	Insect - moth	S7, LBAP (GWY, VOG)
White-clawed Freshwater Crayfish	<i>Austropotamobius pallipes</i>	crustacean	HDlr, WCAS, S7, Bern, RDB1 (UK) - EN, LBAP (BBNP, CLY, PEM, POW, TRA, TRF) S7, Bern, WBR(RSPB), LBAP (BBNP, DEN, FLI, POW, VOG), LBAP (CON, GWY), LI(VC43), UKBR(RSPB)
Willow Tit	<i>Poecile montana</i>	bird	

- 4.8 Two hundred and three records of Other Species of Conservation Concern are reported of which the majority relate to birds. Of these a large number could occur on or over the Site including long tailed tit, coal tit, garden warbler, dipper, mallard, green woodpecker, goldcrest, common whitethroat and willow warbler. Relevant flowering plants could include charlock and red-tailed mason bee could occur.
- 4.9 Three hundred and fifty three Species of Local Conservation Concern are reported of which most relate to bryophytes. Few of the records are relevant to the Site. Species which could occur include mistle thrush and some of the feather mosses. Invertebrates include two beetles, *Rutpela maculata* and wasp beetle. both likely to occur on or near the Site. Midland hawthorn is recorded approximately one kilometre from the Site.
- 4.10 A number of invasive species reported including Himalayan balsam, Jenkins's spire-snail, Himalayan honeysuckle, cherry laurel and harlequin ladybird all recorded within 400 metres of the Site.
- 4.11 No statutory sites were identified in the SEWBReC data search. Non statutory Sites of Importance for Nature Conservation (SINC) include an area of undefined semi-natural ancient woodland running along the Dowlais Brook corridor immediately south of the proposed working area. Approximately 150 metres to the south of the Site is Llantarnam Ponds SINC, a standing water site
- 4.12 No habitat types are identified from the Site; semi-natural ancient woodland lies to the immediate south of the river corridor.
- 4.13 SEWBReC data is confidential and cannot be released into the public domain without prior permission in writing from SEWBReC. Hawkeswood Ecology holds the data on the client's behalf for one year (in accordance with conditions) in case of further query. SEWBReC have given this data search a unique reference number, 0201-866, which should be quoted in any communications with them.
- 4.14 MAGIC shows the nearest Special Area of Conservation (SAC) is The River Usk SAC, the primary reason for selection of this site as a SAC is '*Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation*'. Primary qualifying species are white-clawed crayfish, sea lamprey, brook lamprey and river lamprey, twaite shad, Atlantic salmon, bullhead and otter. The River Usk is also designated as a Site of Special Scientific Interest (SSSI), with the lower Usk SSSI reaching from Newport to Abergavenny. The Dowlais Brook enters the River Usk near Caerleon approximately 5 kilometres from the Site. Henllys's Bog SSSI lies approximately 3.5 kilometres to the west. This is an important valley mire habitat site; it has no hydrological connection to the proposed development Site.

5 FIELD SURVEY FINDINGS

- 5.1 The proposed working area consists mainly of unmanaged amenity grassland with low species diversity. This is bounded by housing and Llantarnam School to the north and north east, unmanaged hedgerows to the west and south with a small wooded copse to the east. See Figure 1, Phase 1 map and Appendix 4 for photographs.

Amenity Grassland

- 5.2 The majority of the Site is dominated by the former football fields (TN1) and is now apparently unmanaged. The condition of the grassland suggests it was not cut last year; although some tussocks are forming in the grassland it would not yet be accurately described as rank grassland. Grasses are dominant with sweet vernal grass, common bent, red fescue species, perennial ryegrass and Yorkshire fog throughout. False oat-grass and cock's-foot are also occasionally present particularly around the boundaries of the grassland. Broad leaved herbs present include yarrow, creeping buttercup, common sorrel, creeping thistle, lady's smock and dandelion; common knapweed occurs occasionally.

Field Boundaries

- 5.3 To the south and west of the playing fields are tree plantings with young flowering cherry, ash, beech and sycamore forming a low canopy layer (Target Note 2). There is no defined shrub layer but hazel is present throughout. The ground flora is dominated by bramble with occasional lesser celandine, locally abundant Himalayan balsam, ivy, common nettle and common cleavers. The spread of bramble is up to 3 metres from the trees.

Woodland

- 5.4 At Target Note 3 is a planted woodland copse with a semi-mature canopy dominated by ash, sycamore and field maple; ornamental *Acer* species are also present. The shrub layer is poorly developed and absent over most of the copse consisting of occasional hazel and goat willow. The ground layer is heavily disturbed with large areas of bare ground. Species present include bramble, ivy, hogweed, common nettle and rosebay willowherb.
- 5.5 At Target Note 4 is the wooded Dowlais Brook corridor. The canopy here is relatively open and consists of ash, common oak and goat willow with a poorly developed shrub layer including hazel, blackthorn and ash. The ground flora is heavily disturbed and trampled with abundant bare ground. Some species present are indicative of long term woodland cover and relate to the semi-natural ancient woodland reported immediately adjacent to the survey area. Species present include wood anemone, ramsons, dog's mercury, wood speedwell, bluebell and common dog violet. Himalayan balsam and Japanese knotweed are also present in this locality. Japanese knotweed and Himalayan balsam are throughout.

Dowlais Brook

- 5.6 The Dowlais Brook (Target note 5) flows through the woodland at TN4 and is overshadowed by the tree canopy. There is no associated aquatic vegetation and the banks are largely bare, hemlock water dropwort and lesser celandine do occur occasionally

Other habitats

- 5.7 There is a footbridge over the Dowlais Brook and the adjacent banks are protected against flooding by sandbags, also stone filled gabions on the western bank of the Brook near the southern Site boundary.

Summary

- 5.8 The Site is dominated by the amenity grassland, an area of semi-natural ancient woodlands, planted woodland and the Dowlais Brook.

Fauna

- 5.9 Faunal species observed during the survey were limited to birds with a number of common species noted either from the wooded areas or flying over the Site. Species noted were willow warbler, blue tit, great tit, wren, chiff chaff, dunnock, blackbird and jackdaw.
- 5.10 The mature and semi-mature trees at Target Note 4 did show some features that could support roosting bats and further survey of these may be necessary if they are to be affected by the development. Bats are also likely to forage along the Brook corridor and the boundary features and must be considered in the design of the development. The woodland is also likely to support breeding and foraging birds, typically those species adapted to urban situations. Paths were noticeable across the field but were considered to be largely desire lines used by the public walking dogs, no evidence of badgers was found although some digging was noted, although this is more probably rabbits or even dogs. Given the disturbance from public use of the playing fields and their apparently recent abandonment, the amenity grassland area is not considered to be of importance for ground nesting birds.
- 5.11 The woodland and field boundaries support suitable habitat for otters passing through but it is considered unlikely it would be used for lying up due to the obvious heavy public pressure in the area. White-clawed water crayfish have been identified downstream of the Site and may be present in the Dowlais Brook at this location. There is limited potential for reptiles around the field edges, particularly where the bramble encroaches. Currently, with the very recent abandonment of the playing field management, it is considered the Site will not support large populations of reptiles and if the works proceed habitat manipulations to remove them from working areas will be a satisfactory method of safe clearance in regard to them.
- 5.12 This section of the Dowlais Brook corridor is heavily disturbed and unlikely to support resting otter although there is potential for them to pass through; it does not support suitable habitat for water vole.
- 5.13 Generally, the Site does not support suitable habitat or show connectivity for great crested newt or dormouse. The woodland is likely to support invertebrate populations including those on the Environment (Wales) Act 2016, however, the works largely impact the amenity grassland where invertebrate populations are unlikely to be significant or supporting important species.

6 DISCUSSION AND IMPACT ASSESSMENT

- 6.1 The Site consists mainly of amenity grassland with planted field boundaries and woodland and an area of semi-natural broad leaved ancient woodland. The proposed works are limited largely to the eastern section of the Playing fields impacting largely upon the amenity grassland area. It is possible that a small area of the planted woodland copse may be affected, and a path is to be formalised through the ancient woodland area along with replacement of a bridge over the Dowlais Brook. Playing Fields. It is proposed to construct the path through the amenity grassland however a section of the path will cross the woodland at the western end of the Site to make use of an existing bridge across the Dowlais Brook. At the time of reporting Hawkeswood Ecology has not seen detailed development proposals.
- 6.2 The data search also shows the area to the immediate east and south of the Site as being a Site of Importance for Nature Conservation (SINC) with semi-natural ancient woodland (SNAW) described from that location. Some of the species present in the eastern end of the survey area would suggest a slight overlap to that SNAW. The whole search area is identified as B-Lines SINC, indicating that it is considered for the protection and enhancement of habitats for pollinators. Other notable SINC's are Llantarnam Pool SINC and Ty Coch Tip, both approximately 100 metres distant from the Site. Llantarnam Pools SINC have aquatic connectivity to the Site.
- 6.3 The works are unlikely to impacts upon any mature trees within the ancient woodland but there is some potential to cause damage to the already heavily disturbed and damaged ground flora in this area. It is proposed to replace the existing footbridge and it is assumed this will also involve ancillary works affecting the Brook and banks either side of the existing bridge. As such, survey for white-clawed crayfish would be considered necessary before works commence and appropriate mitigation features to be implemented should they be found; survey for this species is time constrained and should be undertaken from late May to August. The presence of otters is considered unlikely due to the high levels of disturbance locally but a pre commencement check for their presence should be undertaken as a precaution.
- 6.4 The Site supports semi-natural broad-leaved ancient woodland in the south west section and the Dowlais Brook, both form Broad Habitats in the UK Biodiversity Action Plan and Section 7 of the Environment (Wales) Act 2016. The damage caused by public pressure in the woodland area has impacted on flowering plants over a large area, but this part of the Site may still be suitable for designation as a SINC site. No other habitats on Site qualify as SINC when compared to the Wales Biodiversity Partnership guidelines (2008) supporting no habitats or species of value.
- 6.5 The Site may have some value for breeding and foraging birds. The more common species of woodland and urban bird species can be expected to breed in the trees and wooded areas; however, the Site is not considered to be important for birds with many similar and less disturbed habitats in the locality. The wider open grassland is considered too disturbed to support breeding birds. Dormouse was reported from a greenhouse approximately 700 metres north of the Site; this record was unassessed and related to an animal found in a greenhouse in a location with little or no apparent connectivity to suitable habitat, the description of the nest could equally apply to a wood mouse and there could be some confusion.

- 6.6 The Site may have potential for hedgehog and measures should be taken in any future Site design to ensure that passage of hedgehog across the Site is possible; recommendations are made in Section 9. In general, the Site is not important for habitats or species outlined in Section 7 of the Environment (Wales) Act 2016, however, consideration to bats and white clawed crayfish must be given depending upon final Site design.
- 6.7 Under the Environment (Wales) Act 2016 and Well Being of Future Generations Act 2015 require Local Planning Authorities (LPA's) and other public bodies must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems. Assessment of the Ecosystem Resilience is therefore an integral part of the LPA's duty and they will need to consider the impacts of the proposed development upon the resilience of the adjacent wooded areas in this context. LPAs are directed to consider the resilience of ecosystems early in the planning process to aid assessment of the impacts of any proposed development upon biodiversity. In addition, a letter from the Chief Planning Officer clarified planning requirements in relation to biodiversity impacts (see Section 8, Relevant Legislation and Policies paragraphs 8.17-8.19) points out the responsibility of the LPA to maintain and enhance biodiversity and to provide '*a net benefit for biodiversity*'.
- 6.8 At its most simple, this would mean that the LPA must protect any biodiversity value of the of the Site and any impacts likely to affect adjacent areas. In this instance, it is considered that there are not likely to be any significant impacts but bats and possibly white-clawed crayfish could suffer disturbance from the works, in the case of bats, and other nocturnal animals, there is potential for foraging areas to be disturbed by artificial light spill. Without mitigation, these impacts could be considered to be significant. Recommendations are made in Section 8 to ensure that any impacts are properly negated.

Predicted Development Impacts

- 6.9 The majority of the Site can be considered to be of limited value to wildlife and the immediate area. The woodland at Target Note 4 forms part of a continuous wooded corridor along the Dowlais Brook and contains flowering plants important in identifying ancient woodland. Given the small area of woodland within the proposed development Site it is considered that the habitats on Site are of **minor significant value** in a local context and of **no significant value** in a wider regional (county) context. There is potential for the Brook to support white-clawed crayfish further survey will be required to assess their presence or likely absence from this area. As Hawkeswood Ecology currently understand the proposals, they are considered to be of **minor significance** in a Local context but of **no significance** in a wider (County) context. This predicted impact assessment may need be amended should the final Site design significantly impact upon the ancient woodland and following the results of the white-clawed crayfish survey.
- 6.10 Impacts can be direct or indirect and affect both the habitats and species on Site and in areas adjacent to the Site. Direct impacts are that the indicative development will largely impact upon amenity grassland, woodlands and the Dowlais Brook. There is further potential for pollution incidents to occur during construction.
- 6.11 The impacts are most likely to be a loss of amenity grassland to the sports pitch and associated parking and pathways; there may be a loss of a small area of planted woodland. Works to replace

the bridge and upgrade the footpath in the Dowlais Brook corridor should not impact upon the ancient woodland if carefully planned and controlled and recommendations are made to this effect in Section 8. Impacts may also include the spread of Schedule 9 invasive species present in the works area, in particular Japanese knotweed and Himalayan balsam and protocols must be put in place to prevent this.

- 6.12 Indirect impacts are likely to be increased disturbance from use of the Site and pathways plus spill from the new floodlighting into adjacent areas that may be of importance for nocturnal animals.
- 6.13 Further survey for white-clawed crayfish is considered necessary prior to the replacement of the exiting footbridge and any predicted impact will need to be re-assessed following conclusion of that survey. Without any mitigation, the impacts from floodlighting and works within the semi-natural ancient woodland are potentially of **major negative** significance in a local context but of **no significance** in a wider County context.
- 6.14 A number of recommendations are made in Section 8 to mitigate this impact and, assuming any factors relating to white-clawed crayfish are resolved, it is considered the mitigated proposed works will be of **no significance** in a local or county context.
- 6.15 These impacts may require re-assessment following the outcomes of survey for white-clawed crayfish and if any trees are to be removed or the works impinge upon the woodland at Target Note 4.

7 RELEVANT LEGISLATION AND POLICIES

Birds

- 7.1 Part I of the Wildlife and Countryside Act 1981 (as amended) makes it an offence (with certain limited exceptions and in the absence of a licence) intentionally to kill, injure or take any wild bird, or intentionally to damage, take or destroy its nest whilst being built or in use, or to take or destroy its eggs. Consequently, even common birds such as blackbirds or robins, and their nests and eggs are protected in this way. Any works involving removal or other management of trees or shrubs must be undertaken outside the breeding bird season (March- August).
- 7.2 Further, section 1(5) of Part 1 of the W&C Act states any person intentionally disturbing any wild bird included in Schedule 1 whilst it is building a nest or is in or near a nest containing eggs or young or disturbs the young of such a bird is committing an offence and liable to a special penalty.
- 7.3 The Conservation of Habitats and Species Regulations 2017 (as amended) has strengthened the protection of wild birds and their habitats. The Regulations now serve “To help preserve, maintain and re-establish habitats for wild birds.”
- 7.4 Under the amended Regulations, Local Planning Authorities (as well as national statutory conservation bodies such as Natural Resources Wales) are required to protect and create bird habitat.

Bats

- 7.5 All UK bats are protected under the Wildlife and Countryside Act 1981. Schedule 5 of this act makes it illegal to intentionally kill, injure or take bats. It is also an offence to intentionally damage or destroy their place of rest. In 2007 the offences of killing, injuring or taking species under Section 9(1), 9(2) and 9(4)a of European Protected Species listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) were removed to avoid duplication with their protection under Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (The Habitats Directive) as amended. The regulations remove the defence of inadvertent or accidental damage to roosts and make the offence ‘absolute’.
- 7.6 They are also protected under Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (The Habitats Directive) as amended which requires the United Kingdom government to provide European Protected Species with strict protection.
- 7.7 The Habitats Directive is transcribed into England and Wales Law by The Conservation of Habitats and Species Regulations 2017, this legislation consolidates amendments made to the earlier 2010 act. This legislation states in Part 3, Protection of Species, paragraph 43(1) that a person who:
- (a) deliberately captures, injures or kills any wild animal of a European Protected Species,
 - (b) deliberately disturbs wild animals of any such species,
 - (c) deliberately takes or destroys the eggs of such an animal, or
 - (d) damages or destroys a breeding site or resting place of such an animal,
- is committing an offence.
- 7.8 Further, with regard to disturbance of EPS, Paragraph 43(2) that disturbance is an act which is likely to:
- (a) to impair their ability—
 - (i) to survive, to breed or reproduce, or to rear or nurture their young, or
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - (b) to affect significantly the local distribution or abundance of the species to which they belong.
- 7.9 In the case of a development involving the loss or modification of a habitat which may affect an EPS the above legislation must be considered and it may be necessary to apply to Natural Resources Wales for a European Protected Species Derogation Licence EPSL.
- 7.10 The introduction of the Conservation of Habitats and Species Regulations 2017, has removed the defence of killing or injuring a protected species during a lawful operation, thus even in an instance where planning permission is granted, the presence of EPS must be considered and mitigated for prior to commencement of works. Under the above regulations, a derogation licence can only be given if three tests are satisfied:
- The action proposed is in the interest of preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance to the environment;
 - That there is not a satisfactory alternative;

- That the action proposed will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

- 7.11 Failure to satisfy the regulations and obtain an EPSL where required is likely to result in prosecution and can lead to severe fines of up to £5000 per animal and possible imprisonment.
- 7.12 Eight species of bat are listed under section 7 of the Environment Wales Act (2106). Section 7 of the Act provides a list of living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. This is a list of species considered at threat within Wales and in need of conservation management to maintain and enhance population numbers.
- 7.13 A duty is placed on the Local Authority by the Welsh Assembly Government to maintain and enhance populations of species listed in Section 7.

White-clawed crayfish

- 7.14 White-clawed crayfish receive partial protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) prohibiting the taking of any native crayfish for any purpose except under licence and their sale. They are listed on Annex II and V of the European Communities Habitats Directive (EU Commission 1992), which allows sites to be designated based on the species being present.

Hedgehogs

- 7.15 Hedgehogs are protected under the Wildlife and countryside Act 1981 (as amended) as a Schedule 6 species and Wild Mammals Protection Act (1996) from capture, deliberate killing and cruel treatment.

Invasive Species

- 7.16 Japanese knotweed and Himalayan Balsam have been identified from the Site. These species are listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); as such it is an offence to allow them to spread in the wild. The removal from Site of plant material or contaminated soils must be undertaken by an appropriately licensed carrier and it can only be removed to an authorised and properly licensed waste control site.

8 RECOMMENDATIONS

- 8.1 Further survey for white clawed crayfish is required. If any trees are to be removed or managed during the project a bat roost assessment should be undertaken before any works commence. Should bat be found it may be necessary to obtain a derogation licence from Natural Resources Wales to allow works to proceed. This may lead to time constraints so should be planned at as early stage in the process as possible.
- 8.2 Immediately prior to commencement of any works, a survey for the presence of otter should be undertaken.

- 8.3 Prior to commencement a control plan to prevent the spread of invasive plant species will be prepared.
- 8.4 Any works on trees and shrubs and vegetation clearance should be undertaken outside the accepted bird breeding season of March to August. If this is not possible, the affected areas will be searched by a suitably experienced ecologist prior to commencement of works. There is no licence for the destruction of active bird nests and nest translocations invariably fail. Any active nest found will be protected by a buffer zone until such time as it is no longer in use.
- 8.5 Artificial lighting spill into the surrounding habitats may present a significant impact upon nocturnal wildlife using the field boundaries and potentially the wooded river corridor. A predicted illuminance contour map (lux plots) should be produced and a methodology for reducing light spill into the neighbouring habitats to less than 1 lux if possible (i.e. by use of baffles). If this lux level cannot be achieved, further measures must be investigated to reduce light spill impacts.
- 8.6 Illuminance surveys should be undertaken by an appropriately qualified engineer and accord with the survey guidance presented in the Bat Conservation Trust guidance note 08/18 of 2018.
- 8.7 We understand that the pathway and new footbridge at TN4 will not be lit however should lighting be considered it should be noted that nocturnal animals, including otters and bats, can be affected by artificial light spill. Similar concerns will relate to lighting in the woodland even though unlikely to be as intense as the floodlights. A predicted illumination contours (lux) plot will need to be produced along with measures to mitigate its impact on the habitats.
- 8.8 Any landscaping plan should introduce native species reflecting those present in the local area (all native species should be of local provenance). Plantings should include species known to be valuable to foraging birds and bats and mirror those in the adjacent semi-natural ancient woodland.
- 8.9 An area will be identified during the construction phase where chemicals and building materials can be safely stored and bonded to prevent contamination of the adjacent habitats. Measures to prevent and deal with any pollution incidents will be clearly outlined in a Construction Environmental Management Plan (CEMP).

9 CONCLUSIONS

- 9.1 The Site is presently dominated by amenity grassland with areas of semi-natural and planted woodland and the Dowlais Brook. The semi-natural woodland and Dowlais Brook are of biodiversity value but the works should have a limited impact upon them.
- 9.2 There is potential for the Dowlais Brook to support white-clawed crayfish and survey for this species is recommended before any works commence. Additionally, a pre-start check around the footbridge for the presence of otters should be undertaken before works commence.
- 9.3 Should the works result in the removal of management of any trees, particularly in the semi-natural ancient woodland a Preliminary Roost Assessment of the affected trees must be undertaken

- 9.4 A plan for control of invasive species will be prepared to prevent the potential for their spread.
- 9.5 Impacts from the floodlight masts on the surrounding habitats need to be understood and a predictive lighting plan showing probable Lux levels should be produced and a mitigation plan to protect adjacent habitats from stray light spill.
- 9.6 A number of other recommendations are made in Section 9 which if implemented should negate any potential negative impacts arising from the scheme.

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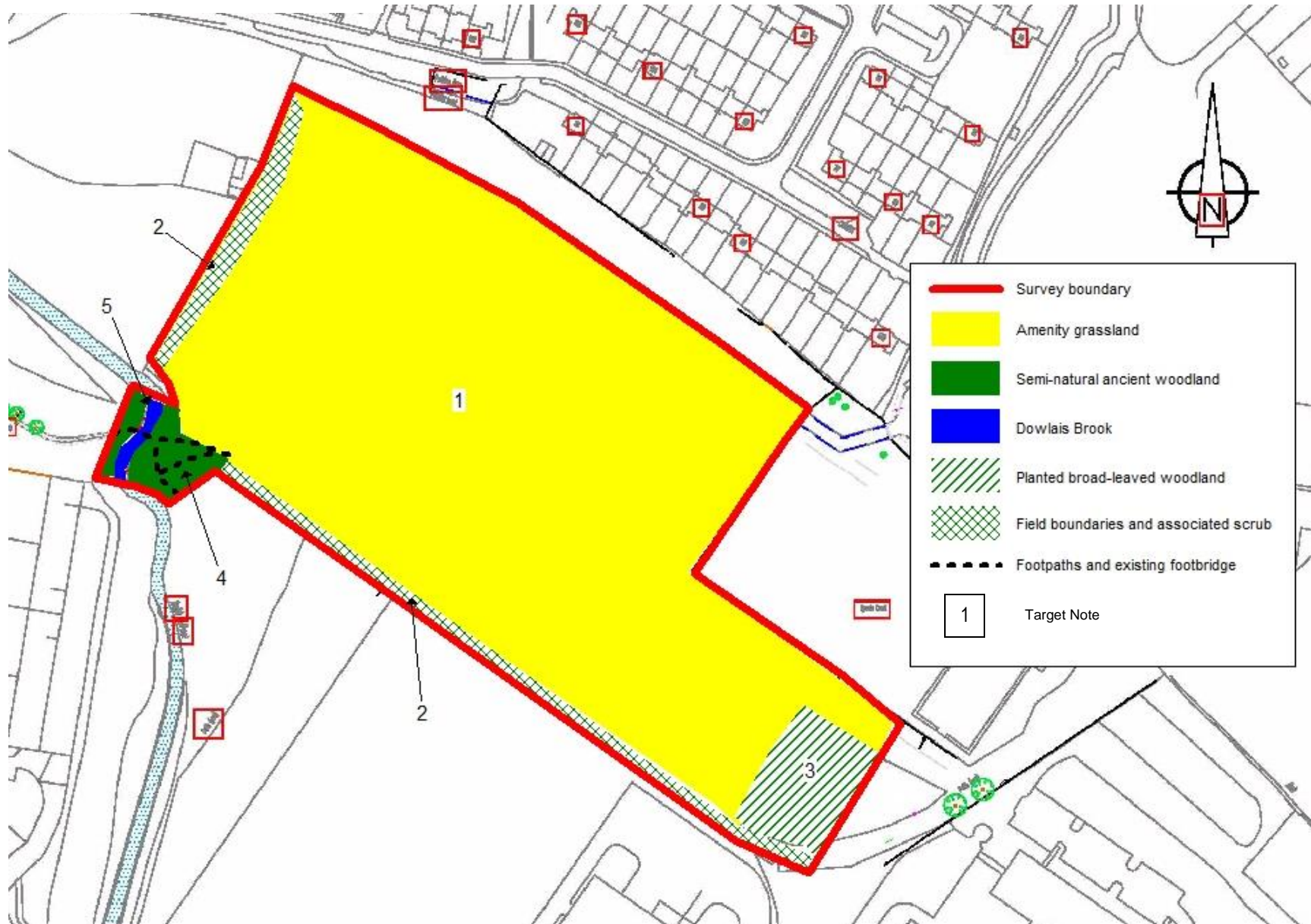
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**FIGURE 1:
PHASE 1 HABITAT MAP**

Figure 1: Phase 1 Habitat Survey map



APPENDIX 1
DAFOR SCALE OF COVER ABUNDANCE

The DAFOR scale is used as a simple measure of cover abundance for individual plant species within a habitat. The scale is as follows:

- D Dominant
- A Abundant
- F Frequent
- O Occasional
- R Rare
- (L Locally – sometimes used as a prefix to the above)

APPENDIX 2
PHASE 1 HABITAT SURVEY TARGET NOTES

1. Amenity grassland, not yet rank but unmanaged, species poor. This area has historically been managed as football fields. Species noted were:

<i>Species</i>	<i>Frequency</i>
Common bent	A
Common dock	O
Common knapweed	O
Common sorrel	LF
Creeping bent	LF
Creeping buttercup	F
Creeping thistle	LF
Dandelion	F
False oat-grass	O
Lady' smock	R
Red fescue	F
Sweet vernal grass	F
Yarrow	F/LA
Yorkshire fog	O

2. Field boundaries, consisting of planted and self-set trees, unmanaged with a strong buffer to the open field of dense bramble. The canopy is open with limited shrubs, all canopy trees are semi-mature. The ground flora is largely shaded out. Species present were:

<i>Species</i>	<i>Frequency</i>
Ash	F
Beech	O
Bramble	A
Common cleavers	F/LA
Common nettle	F/LA
Cow parsley	O/LF
Flowering cherry	F
Hazel	R
Himalayan balsam	O/LA
Ivy	A
Lesser celandine	O
Sycamore	o
Wild arum	O

3. Woodland planting with semi-mature ash, field maple and *Acer* species, shrub layer absent/poor with occasional hazel and locally frequent goat willow. The ground flora is heavily disturbed with much bare ground, species present include locally abundant ivy, frequent bramble and occasionally occurring common nettle, rosebay willowherb and hogweed.
4. Area of semi-natural ancient woodland along the Dowlais Brook corridor. Heavily disturbed with much bare ground from foot passage and use of illegal motorbikes but retaining areas with significant woodland flora. The canopy is dominated by ash and goat willow with occasional common oak. The shrub and field layers are poorly developed and heavily disturbed; Himalayan balsam and Japanese knotweed occur throughout. Species recorded were:

<i>Species</i>	<i>Frequency</i>
Ash	A
Bare	A
Blackcurrant	LF
Blackthorn	O/LF
Bluebell	O
Bramble	LA
Common dog violet	F
Cow parsley	F
Dogs mercury	LA
Goat willow	A
Hazel	O
Himalayan balsam	A
Japanese knotweed	O
Lesser celandine	LA
Ramsons	LA
Sycamore	F
Wild arum	F
Wood anemone	LF
Wood speedwell	LF

5. Dowlais Brook, fairly fast flowing and shallow at the time of survey, no associated aquatic vegetation noted, the brook having a stony bed and maybe suitable for white-clawed crayfish. Hemlock water dropwort, lesser celandine, ramsons and pendulous sedge were noted from the immediate bank side habitat.

APPENDIX 3
LIST OF PLANT SPECIES RECORDED IN THE SURVEY

<i>Species</i>	<i>Scientific Name</i>
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Blackcurrant	<i>Ribes nigrum</i>
Blackthorn	<i>Prunus spinosa</i>
Bluebell	<i>Hyacinthoides non-scripta</i>
Bramble	<i>Rubus fruticosus</i> agg
Common bent	<i>Agrostis capillaris</i>
Common cleavers	<i>Gallium aparine</i>
Common dock	<i>Rumex obtusifolius</i>
Common dog violet	<i>Viola riviniana</i>
Common knapweed	<i>Centaurea nigra</i>
Common nettle	<i>Urtica dioica</i>
Common oak	<i>Quercus robur</i>
Common sorrel	<i>Rumex acetosa</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping thistle	<i>Cirsium arvense</i>
Dandelion	<i>Taraxacum officinale</i> agg
Dogs mercury	<i>Mercurialis perennis</i>
False oat-grass	<i>Arrhenatherum elatius</i>
Field maple	<i>Acer campestre</i>
Flowering cherry	<i>Prunus</i> sp
Goat willow	<i>Salix caprea</i>
Hazel	<i>Corylus avellana</i>
Hemlock water dropwort	<i>Oenanthe crocata</i>
Himalayan balsam	<i>Impatiens glandulifera</i>
Hogweed	<i>Heracleum sphondylium</i>
Ivy	<i>Hedera helix</i>
Japanese knotweed	<i>Fallopian japonica</i>
Lady' smock	<i>Cardamine pratensis</i>
Lesser celandine	<i>Ranunculus ficaria</i>
Maple sp	<i>Acer</i> sp
Pendulous sedge	<i>Carex pendula</i>
Ramsons	<i>Allium ursinum</i>
Red fescue	<i>Festuca rubra</i> agg
Rosebay willowherb	<i>Chamerion angustifolium</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Sycamore	<i>Acer psuedoplatanus</i>
Wild arum	<i>Arum maculatum</i>
Wood anemone	<i>Anemone nemorosa</i>

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Wood speedwell	<i>Veronica montana</i>
Yarrow	<i>Achillea millefolium</i>
Yorkshire fog	<i>Holcus lanatus</i>

APPENDIX 4
PHOTOGRAPHS



The playing fields amenity area (TN1)



Field boundaries TN2



Planted woodland at TN3



Woodland at TN4



Woodland at Target Note 4 showing high levels of disturbance



The footbridge over Dowlais Brook TN5



The Dowlais Brook downstream of the footbridge

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