

Botanical Survey 2020

Project: Oakhurst Rise, Cheltenham

Technical Briefing Note TN09: Results of Botanical and NVC Survey

Date: 05 August 2020

Background

1. Aspect Ecology Ltd has been appointed by William Morrison to carry out a botanical and vegetation classification survey of the site at Oakhurst Rise, Cheltenham. The site is proposed for residential development and associated landscape enhancements.

Method

NVC survey

2. The National Vegetation Classification (NVC) survey was carried out using the methodology outlined in the NVC Users' Handbook (Rodwell 2006) on 1st August 2020. Firstly, a familiarisation exercise was undertaken to identify areas of homogenous vegetation. This exercise identified that one plant community dominated the site, but two other somewhat distinct communities were present at much smaller extents. Therefore, each of these three communities was sampled using quadrats.
3. There is no definitive number of quadrats required in NVC survey, although it is customary to take five quadrats from each homogenous stand of vegetation (Rodwell 2006). As the dominant community covered a large area, ten quadrats were taken across the site, while five quadrats were taken from each of the two smaller-sized communities. Therefore, 20 quadrats were recorded in total. The quadrats were placed in areas considered to be representative of the community.

4. Each quadrat measured 2x2 m, which is the size 'almost always' used for the original NVC sampling of mesotrophic grassland (Rodwell 1992). Within each quadrat, the percentage cover of all plant species was recorded, with Domin scores of 1-3 used where cover was less than 4%. Bryophytes were included in the NVC survey, but none were noted in the quadrats. The height of the grassland sward was recorded along with a 10-figure grid reference using a GPS smartphone app, which gave an accuracy of 7 m. The NVC survey was undertaken by an ecologist with over ten years of botanical survey experience, including of grassland communities and NVC surveys throughout the UK (see Appendix 1).
5. The quadrat data was analysed and interpreted using a combination of experience and the keys and community descriptions in Rodwell (1992). The data was also analysed using the Modular Analysis of Vegetation Information System software (MAVIS version 1.04). MAVIS results were interpreted with caution and used only as an aid to identification¹. The NVC quadrat data is presented at Appendix 2.

Botanical survey

6. In addition to the quadrat data, a transect was walked across the entire site comprising a series of parallel lines spaced 10 m apart, to record a representative list of field-layer vascular plant species within the site. The abundance of each species was estimated according to the DAFOR scale. Notes on the distribution of each species were made where appropriate, including for those species included in Table 5Hc of the Key Wildlife Site (KWS) selection criteria. Additional species recorded from a survey by Aspect Ecology in July 2019 were added to the list where appropriate. The species list is provided at Appendix 3.

¹ The limitations of NVC analysis software are described in the NVC Users' Handbook (Rodwell 2006), for example, "*they are no substitute for the experience of the ecologist and should never be used alone to provide identifications. Like written keys, they are simply a guide to negotiating a way around a complex classificatory landscape and to understanding variation that, in reality, is extremely complex.*" (p.48)

Constraints

7. The species lists are not intended to be exhaustive but rather provide a representative list of the botanical composition of the grassland. Nevertheless, the survey covered the entire site in detail. The survey was undertaken towards the end of the optimal period of grassland botanical survey work, and as such species which appear early in the season may not have been visible. However, the species lists are bolstered by an additional survey undertaken in July 2019, which allowed recording of early species such as Pignut *Conopodium majus*.

Results and Interpretation

Overview

8. The majority of the site supported a tall, coarse grassland sward with little evidence of management in this growing season, aside of grazing by Roe Deer and a group of alpacas, which appear to be usually contained within an enclosure in the south of the site but given occasional access to the wider site. Grazing pressure was generally very low, although parts of the south of the site, near the alpaca enclosure, were more moderately grazed. The alpaca enclosure itself was noted to be very heavily grazed, with patches of bare ground throughout.
9. Three main areas of homogenous grassland vegetation were identified within the site:
- a. Area A: False Oat-grass *Arrhenatherum elatius* dominant vegetation, which comprises the vast majority of the site;
 - b. Area B: Tor-grass *Brachypodium pinnatum* dominant vegetation, which forms small stands mainly in the north of the site;
 - c. Area C: Yorkshire-fog *Holcus lanatus* dominant grassland, which occupies a small part of the western field.
10. In addition, small patches of Tufted Hair-grass *Deschampsia cespitosa* dominant vegetation were recorded, particularly in small hollows in the northern part of the western field, and along parts

of the southern site margin. This vegetation was insufficient in extent to record quadrats, but is likely to represent the MG9 NVC community.

11. Each of the three main vegetation types is described in the following sections, followed by a discussion of the KWS selection criteria.

False Oat-grass vegetation (Area A)

12. Area A occupies the vast majority of the site, and therefore ten quadrats were taken to investigate any variability in this vegetation type across the site. The area was characterised by a dominance of False Oat-grass, which was recorded in all ten quadrats with a frequency of 35% to 95%. Other constant species included Creeping Bent *Agrostis stolonifera* and Red Fescue *Festuca rubra*, which formed a mat of vegetation below the taller grasses, and were recorded in nine and eight of the ten quadrats respectively. Yorkshire-fog and Common Sorrel *Rumex acetosa* were recorded in all ten quadrats.
13. Forb species were notably infrequent in the quadrats, generally occupying 5% to 10% of the coverage. Aside of Common Sorrel, the only species which occurred frequently were Meadow Vetchling *Lathyrus pratensis* and Bird's-foot Trefoil *Lotus corniculatus*, recorded in six and two of the ten quadrats, respectively.
14. Based on surveyor experience and following the keys in Rodwell (1992), this area is considered to have the closest affinity to MG1a *Arrhenatherum elatius* grassland, *Festuca rubra* sub-community. This is a grass-dominated community characterised by abundant False Oat-grass over Red Fescue.
15. Analysis of the quadrat data using the MAVIS software identified MG9 *Holcus lanatus*-*Deschampsia cespitosa* as the best matching community for this area (Table 1). Based on experience, MG9 is often returned where Yorkshire-fog is constant, but in this case is not considered to closely match the vegetation on site due to the scarcity of Tufted Hair-grass, which is very characteristic of MG9. The next highest matching sub-communities were MG1c and MG1a. MG1c is a damper community characterised by constant Meadowsweet *Flilipendula ulmaria*,

which was not recorded during the survey. Nevertheless, a similar score was returned for MG1a.

The average number of species per quadrat was 9 (Table 1 and Appendix 2), compared to the average of 12 for the described sub-community (Rodwell 1992).

Tor-grass vegetation (Area B)

16. Area B occupies several small stands across the site, mostly occupying patches of 25 to 100 m², although two slightly larger areas were noted around quadrats 1 and 7. This vegetation is similar in structure and community composition to Area A, except that Tor-grass replaces False Oat-grass as the dominant species. Tor-grass was recorded in all five quadrats, with a frequency of between 70% and 80%, while False Oat-grass dropped in frequency with a maximum coverage of 20%. As in Area A, Creeping Bent and Red Fescue occupied the ground layer below the taller grasses, and were recorded in all five quadrats. Sweet Vernal-grass *Anthoxanthum odoratum* and Yorkshire-fog were also recorded in all five quadrats. Forb species were similar to those recorded in Area A, including constant Common Sorrel with more occasional Meadow Vetchling and Bird's-foot Trefoil.
17. Due to the prevalence of Tor-grass, this area has some affinity to the CG4 *Brachypodium pinnatum* community, particularly the *Holcus lanatus* sub-community (CG4c), which is a more mesotrophic example of this calcareous community. However, the area lacks some characteristic species of the community such as Sheep's Fescue *Festuca ovina*, possibly due to its small size which limits opportunities for colonisation by more calcareous species. Instead, False Oat-grass remains prevalent, recorded in four of the five quadrats, while Red Fescue was constant. These two species are more characteristic of MG1a. Therefore, the area is considered to represent an intermediate between MG1a and CG4c. Intermediates are commonly encountered in NVC survey².

² 'stands of vegetation intermediate in composition and structure between two (or more) NVC plant communities are commonly encountered in the field' (Rodwell 2006)

18. The MAVIS software provided unclear results for this area, with maritime cliff communities scoring highest, followed by MG9b and MG1e (Table 1), indicating the mesotrophic nature of the grassland. The species richness of quadrats averaged 9.6 (Table 1), compared to an average of 16 for CG4c (Rodwell 1992).

Yorkshire-fog vegetation (Area C)

19. Area C was recorded in one patch in the centre of the western field, and is characterised by a slightly shorter sward height with a reduced frequency of False Oat-grass compared to Area A. Yorkshire-fog was recorded as the dominant grass, with Sweet Vernal-grass and Creeping Bent also recorded in all five quadrats. The forb cover was somewhat higher in these quadrats, up to 15%, mostly attributable to Meadow Vetchling.
20. The area has some affinities with both the MG1a and MG9 communities. MG9 scored highly in the MAVIS analysis (Table 1), while the keys in Rodwell (1992) led to MG1a. Tufted Hair-grass, which is characteristic of MG9, was not recorded in any of the quadrats but was noted elsewhere. The MG4 *Alopecurus pratensis-Sanguisorba officinalis* community also scored highly, and although there are some affinities with this community, the area lacks the species richness and herbaceous cover typically associated with MG4, with an average of nine species per quadrat (Table 1). This area is therefore considered to represent an intermediate between MG1a and MG9.

Table 1. Summary of NVC survey results. NVC keys refer to Rodwell (1992). The MAVIS software output only includes grassland communities.

Area	Community considered to have closest affinity	Outcome of NVC keys	MAVIS output	Species richness (mean average and range)
A	MG1a	MG1a	MG9b: 56.6% MG9: 53.3% MG1c: 50.0% MG1a: 49.6% MG4c: 47.2%	9 (7-11)
B	MG1a / CG4c intermediate	MG1a or CG4c	MG9b: 44.3% MG1e: 43.5% MG12a: 41.2%	9.6 (8-13)

C	MG1a / MG9 intermediate	MG1a	MG9: 52.6% MG4c: 51.3% MG9b: 50.4% MG9a: 45.8% MG1c: 45.8%	9 (7-11)
---	----------------------------	------	--	----------

Conclusion

21. The majority of the site (Area A) is considered to have the closest affinity to MG1a, which is a grass-dominant, species-poor community typical of fields subject to infrequent management. Small areas of the grassland (Area B) are considered to represent an intermediate between MG1a and CG4c, based on the localised dominance of Tor-grass, but lack many of the calcareous species typically associated with CG4. A small part of the western field (Area C) is considered to represent a transition between MG1 and MG9, with a somewhat greater forb cover, but remains species-poor. In all cases, the sward is seen to be grass dominated (mostly 90 – 95% with a low herb cover 5 – 10%) while the average number of species recorded per quadrat is lower than the averages for the described NVC communities, suggesting that the areas are relatively poor examples of the communities.

References

Rodwell JS (ed.) (1992) *British Plant Communities Volume 3: Grasslands and Montane Communities*. Cambridge University Press, Cambridge.

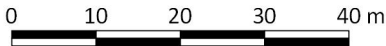
Rodwell JS (2006) *National Vegetation Classification: Users' Handbook*. Joint Nature Conservation Committee, Peterborough.

Plan 5487/NVC:

NVC communities and quadrat distribution



- Key:
- Site Boundary
 - Area A (False Oat-grass dominant: MG1a)
 - Area B (Tor grass dominant: intermediate between MG1a and CG4c)
 - Area C (Yorkshire-fog dominant: intermediate between MG1a and MG9)
 - Alpaca enclosure
 - Quadrat location



aspect ecology

Aspect Ecology Limited - West Court - Hardwick Business Park
Noral Way - Banbury - Oxfordshire - OX16 2AF
01295 279721 - info@aspect-ecology.com - www.aspect-ecology.com

Oakhurst Rise, Cheltenham

NVC communities and quadrat distribution

5487/NVC



July 2020

Appendix 5487/1:

CV of botanist: Tom Staton



Tom Staton

Principal Ecologist

Personal Profile

Tom is an Ecologist with over 12 years of experience and a MSc in Biological Recording, with an expert knowledge of the UK's habitats, flora and fauna. He has extensive experience in carrying out ecological survey work, designing and leading surveys, report writing, designing and delivering mitigation, project management, staff management and liaison with clients and stakeholders on a wide variety of projects. Tom holds Natural England licenses for bats, Dormouse, Great Crested Newt and Smooth Snake. Tom specialises in botanical survey and assessment and has excellent plant identification skills and an expert knowledge of UK habitat classification and assessment, including use of the National Vegetation Classification (NVC) survey.

Key Skills and Expertise

- Specialist in carrying out botanical survey work in all UK habitats, with particular expertise in grassland, woodland, and Open Mosaic Habitats on previously developed land.
- Extensive experience of carrying more detailed and specialist botanical survey and habitat classification, such as NVC surveys.
- Excellent plant identification skills and essential associated knowledge, such as indicator species for specific soil types, management regimes and Priority Habitats.
- Regularly analyses survey data to assess and classify habitat types (e.g. by use of MAVIS) in order to produce high quality survey reports and detailed Management Plans across a range of habitats including grassland.

Professional Memberships

- Full Member of the Chartered Institute for Ecology and Environmental Management (MCIEEM)

Qualifications / Accreditations

- PhD in Agro-ecology (in progress), Reading University
- MSc Biological Recording (Distinction)
- BSc (Hons) Biology with placement (First Class)
- CS38 – Tree Climbing and Aerial Rescue

Years of Technical Experience

12 years

Project Profiles

- **Echoraise Quarry, Kent:** Carried out NVC surveys of woodland and grassland in order to classify the habitat types present within a former quarry in order to inform a plan for its restoration following additional sand and gravel extraction works. Produced a survey report, 5 year Restoration Plan appropriate to the habitats identified, and a 20 year Management Plan.
- **Thames Enterprise Park, Thurrock:** Carried out detailed surveys of areas of Open Mosaic Habitat in order to determine areas of greater and lesser value habitat. Designed a bespoke mitigation package to ensure an overall net gain in OMH across the 200ha development site.

- **Holland Road, Hurst Green:** Carried out NVC surveys of a series of grassland fields in order to classify the grassland community types present and determine their ecological value in order to inform a potential allocation of the site in the Local Plan.
- **Sheffield Motorway Service Area:** Carried out NVC surveys of woodland and grassland to inform the layout for a proposed new motorway service area.
- **Snod Coppice, nr Shrewsbury:** Undertook detailed survey work and prepared an ES chapter for proposed poultry sheds affecting ancient woodland. Tom led a detailed survey of the woodland, including the mapping of ancient woodland plant indicator species (1a), to inform the scheme design in consultation with the design team.
- **Thames Oilport, Thurrock:** Carried out botanical surveys of grassland, and classified and evaluated different areas of OMH in order to inform proposals to bring a disused diesel tank bund back into use. That habitats were located at a coastal location and adjacent to a SSSI and SAC and so a survey for notable/rare species was also carried out.
- **The Grove Hotel, Chanders Cross:** Carried out a botanical survey of the ground flora of an ancient woodland to inform an assessment of feasibility to install glamping units within the woodland. The survey involved identifying and mapping ancient woodland vascular plants (as defined in the list published for the south of England) to allow any variation in the ecological quality of the woodland to be mapped to a high level of precision, to inform design constraints.
- **Little Preston, Aylesford:** Carried out a botanical survey of the ground flora of a woodland mapped as ancient adjacent to a quarry to inform an assessment of feasibility of development. The survey involved identifying and mapping ancient woodland indicator species, which, coupled with an assessment of the tree canopy was used to determine whether the mapped woodland was indeed ancient.

Appendix 5487/2:

NVC quadrat data

Appendix 2. NVC quadrat data. Numbers for each species refer to percentage cover (which can exceed 100% due to vegetation layering). Community reference letters refer to the descriptions in the text and are colour-coded.

Quadrats		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Community reference		B	A	A	A	A	A	B	A	A	B	A	B	A	B	A	C	C	C	C	C
OS grid reference		SO96604 21578	SO96552 21590	SO96448 21656	SO96412 21567	SO96462 21556	SO96483 21607	SO96493 21632	SO96525 21680	SO96545 21643	SO96577 21637	SO96601 21632	SO96609 21603	SO96576 21559	SO96547 21605	SO96413 21609	SO96430 21621	SO96425 21618	SO96422 21604	SO96430 21595	SO96426 21596
Maximum sward height (cm)		70	80	80	70	80	80	70	80	80	70	90	80	90	70	80	60	60	70	60	60
Grass % cover		90	90	95	95	95	95	90	95	95	90	95	80	95	90	95	90	85	90	85	90
Forb % cover		10	10	5	5	5	5	10	5	5	10	5	20	5	10	5	10	15	10	15	10
Species	Vernacular																				
<i>Agrostis stolonifera</i>	Creeping Bent	10	25	30	40	40	40	15	30	40	15		10	10	25	10	30	30	30	20	10
<i>Alopecurus pratensis</i>	Meadow Foxtail		5	5			20					5		1		2			1		
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	5	10	10	5	20	30	20	15	5	5		10		5		30	10	10	20	10
<i>Arrhenatherum elatius</i>	False Oat-grass	20	80	70	50	40	35	10	50	80	20	90	10	95		60			10	5	
<i>Brachypodium pinnatum</i>	Tor-grass	70	5					85			80		80	5	80						
<i>Dactylis glomerata</i>	Cock's-foot		5	1					1			5	5			2		1			1
<i>Festuca rubra</i>	Red Fescue	5		20		20	15	10	20	20	5	30	20	20	10	20	10	10	10		
<i>Galium verum</i>	Lady's Bedstraw		5										20								
<i>Geranium dissectum</i>	Cut-leaved Cranesbill																				1
<i>Helictotrichon pratense</i>	Meadow Oat-grass					1															
<i>Heracleum sphondylium</i>	Hogweed					1					1	1	1	1	2				2		1
<i>Holcus lanatus</i>	Yorkshire-fog	10	5	30	40	30	20	10	40	20	5	15	5	5	10	40	60	70	80	70	70
<i>Lathyrus pratensis</i>	Meadow Vetchling	10	5	5	5	1	2				1	1	1			1	15	20	10	2	10
<i>Lolium perenne</i>	Perennial Rye-grass																1			5	1
<i>Lotus corniculatus</i>	Bird's-foot Trefoil				15	2		10			5		5		10					15	
<i>Lotus pedunculatus</i>	Greater Bird's-foot Trefoil						5														
<i>Phleum pratense</i>	Timothy																				5
<i>Plantago lanceolata</i>	Ribwort Plantain		1						1				1	1							
<i>Potentilla</i> cf. <i>x mixta</i>	Hybrid Cinquefoil																		1		
<i>Quercus robur</i>	Pedunculate Oak (seedling)									1											
<i>Ranunculus acris</i>	Meadow Buttercup				5				1							1	1		1		
<i>Rumex acetosa</i>	Common Sorrel	2	15	2	2	5	2	5	2	5	5	5	2	5	2	2		1	1	1	1
<i>Rumex conglomeratus</i>	Clustered Dock																				1
<i>Veronica chamaedrys</i>	Germander Speedwell							1													
<i>Vicia sepium</i>	Bush Vetch								2											5	
Total number of species		8	11	9	8	10	9	9	10	7	10	8	13	9	8	9	7	7	11	9	11

Appendix 5487/3:

Grassland species list

Appendix 3. List of field layer plant species recorded within the site. Species included in Table H5c of the Key Wildlife Site selection criteria are marked in bold. Abundance values refer to the DAFOR scale, where D = dominant, A = abundant, F = frequent, O = occasional, R = rare, and a preceding 'L' refers to localised abundance.

Species	Vernacular	Abundance	Comments
<i>Grasses, sedges and rushes</i>			
<i>Agrostis stolonifera</i>	Creeping Bent	A	
<i>Alopecurus pratensis</i>	Meadow Foxtail	O	
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	F	
<i>Arrhenatherum elatius</i>	False Oat-grass	D	
<i>Brachypodium pinnatum</i>	Tor-grass	LA	
<i>Brachypodium sylvaticum</i>	Wood False-brome	O	Recorded under tree cover
<i>Bromus erectus</i>	Upright Brome	R	
<i>Calamagrostis epigejos</i>	Wood Small-Reed	R	
<i>Carex pendula</i>	Pendulous Sedge	R	Single specimen noted adjacent to garden along the northern boundary, possible garden escape
<i>Dactylis glomerata</i>	Cock's-foot	O	
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	O	
<i>Festuca arundinacea</i>	Tall Fescue	O	Only recorded in 2019
<i>Festuca rubra</i>	Red Fescue	F	
<i>Helictotrichon pratense</i>	Meadow Oat-grass	R	Recorded in quadrat 5 at SO96462 21556, but could be under-recorded
<i>Holcus lanatus</i>	Yorkshire-fog	F-A	
<i>Hordeum secalinum</i>	Meadow Barley	R	
<i>Juncus conglomeratus</i>	Compact Rush	R	
<i>Lolium perenne</i>	Perennial Rye-grass	O	
<i>Luzula campestris</i>	Field Woodrush	R	Single specimen noted at SO96460 21550, could be more frequent earlier in the season
<i>Phleum pratense</i>	Timothy	O	
<i>Poa annua</i>	Annual Meadow-grass	O	Only recorded in 2019
<i>Poa pratensis</i>	Smooth Meadow-grass	O	
<i>Poa trivialis</i>	Rough Meadow-grass	O	
<i>Broadleaved herbs and other species</i>			
<i>Alliaria petiolata</i>	Garlic Mustard	O	Recorded under or near tree cover
<i>Arum maculatum</i>	Lords-and-Ladies	R	
<i>Bellis perennis</i>	Daisy	O	Only recorded in 2019
<i>Centaurea nigra</i>	Common Knapweed	R-O	Several small patches recorded near the in-field Oak tree in the eastern part of the site
<i>Circaea lutetiana</i>	Enchanter's Nightshade	R	Only recorded under trees in the south-east corner of the site
<i>Cirsium arvense</i>	Creeping Thistle	O-LA	
<i>Cirsium vulgare</i>	Spear Thistle	R	
<i>Conopodium majus</i>	Pignut	F	Only recorded in 2019 (spring species)
<i>Dryopteris filix-mas</i>	Male Fern	R	Under an Oak along the northern boundary
<i>Epilobium hirsutum</i>	Great Willowherb	R	Single specimen noted adjacent to garden
<i>Epilobium parviflorum</i>	Hoary Willowherb	R	Under the in-field Oak in the eastern part of the site
<i>Euphorbia peplus</i>	Petty Spurge	R	Recorded on disturbed ground in proximity to the tree belt
<i>Galium aparine</i>	Cleavers	R	Mainly recorded at field margins
<i>Galium verum</i>	Lady's Bedstraw	O-LF	Mainly to the north and east of the in-field Oak tree, in the eastern part of the site
<i>Geranium dissectum</i>	Cut-leaved Cranesbill	O	
<i>Geranium molle</i>	Dove's-foot Cranesbill	R	
<i>Geranium robertianum</i>	Herb-Robert	R	Recorded under or near tree cover

<i>Geum urbanum</i>	Wood Avens	O	Mainly under tree cover
<i>Glechoma hederacea</i>	Ground-ivy	R	Recorded under or near tree cover
<i>Hedera helix</i>	Ivy	LF	Recorded under or near tree cover
<i>Heracleum sphondylium</i>	Hogweed	O	
<i>Hieracium</i> agg.	Hawkweed	R	Recorded near the tree belt
<i>Hypochaeris radicata</i>	Common Cat's-ear	O	Recorded in the northern part of the site, near field edges
<i>Iris foetidissima</i>	Stinking Iris	R	Single specimen noted under trees in the south-east corner of the site
<i>Lapsana communis</i>	Nipplewort	R	
<i>Lathyrus pratensis</i>	Meadow Vetchling	F	Almost ubiquitous across the site, but mostly at low frequency in the sward
<i>Leucanthemum vulgare</i>	Oxeye Daisy	R	Only recorded in 2019
<i>Linaria purpurea</i>	Purple Toadflax	R	One specimen recorded along eastern margin
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	O-F	Recorded sporadically throughout the site
<i>Lotus pedunculatus</i>	Greater Bird's-foot Trefoil	O	Recorded in damper areas at SO96490 21611, SO96566 21540, and along eastern part of the southern site margin. Notably less frequent than <i>Lotus corniculatus</i>.
<i>Malva moschata</i>	Musk-mallow	R	Single specimen noted in proximity to the eastern boundary
<i>Medicago lupulina</i>	Black Medick	R	
<i>Papaver somniferum</i>	Opium Poppy	R	In the tree belt, towards the southern boundary
<i>Plantago lanceolata</i>	Ribwort Plantain	O	
<i>Polygonum aviculare</i>	Common Knotgrass	R	
<i>Potentilla</i> cf. x <i>mixta</i>	Hybrid Cinquefoil	O	Provisional identification based on vegetative characteristics. Mixture of 3 and 5 leaflets.
<i>Quercus robur</i>	Pedunculate Oak (seedling)	R	
<i>Ranunculus acris</i>	Meadow Buttercup	O	
<i>Ranunculus bulbosus</i>	Bulbous Buttercup	R	Single specimen noted at SO96485 21601. Could be under-recorded to some extent, but much less frequent than other <i>Ranunculus</i> species recorded.
<i>Ranunculus repens</i>	Creeping Buttercup	O	
<i>Rubus fruticosus</i> agg.	Bramble	LF	Around tree cover with minor encroachment into the fields
<i>Rumex acetosa</i>	Common Sorrel	F	
<i>Rumex conglomeratus</i>	Clustered Dock	O	
<i>Rumex obtusifolius</i>	Broadleaved Dock	R	
<i>Sonchus asper</i>	Prickly Sow-thistle	R	One specimen recorded along eastern margin
<i>Stachys sylvatica</i>	Hedge Woundwort	R	Recorded near tree cover
<i>Tanacetum parthenium</i>	Feverfew	R	In the tree belt, towards the southern boundary
<i>Taraxacum</i> agg.	Dandelion	R	
<i>Tragopogon pratensis</i>	Goat's-beard	R	Recorded in two locations: SO96621 21610 and SO96574 21571
<i>Trifolium pratense</i>	Red Clover	R	
<i>Trifolium repens</i>	White Clover	R	
<i>Urtica dioica</i>	Common Nettle	O	Mainly recorded at field margins
<i>Veronica chamaedrys</i>	Germander Speedwell	R	
<i>Vicia hirsuta</i>	Hairy Tare	R	Only recorded in 2019
<i>Vicia sativa</i>	Common Vetch	O	Only recorded in 2019
<i>Vicia sepium</i>	Bush Vetch	O	
<i>Vicia tetrasperma</i>	Smooth Tare	R	Only recorded in 2019

Annex 5487/2 Review of the Site Against the General Criteria

General Criteria Category	Criteria Checklist (from KWS handbook Part 2)	Review of Site against the criteria
Size or Extent	<p><i>a. The site is an exceptionally large area of an important natural or semi-natural habitat e.g. the largest in the county, or the largest within a distinct region of the county</i></p> <p><i>b. The site supports an exceptionally large and/or thriving population of an important species (as defined in the Species Criteria)</i></p> <p><i>c. The site supports a high proportion of the total area of an important habitat or the total numbers of an important species in the county and/or in a wider national or international context</i></p>	<p>The site is small in size at approx. 3.9ha and is set in a suburban environment surrounded by residential properties and a school. It therefore does not comprise an exceptionally large area (such as the largest in the county or distinct region of the county), whilst survey work has also confirmed it does not comprise important natural or semi-natural habitat.</p> <p>The survey work carried out at the site has included a full suite of botanical and faunal surveys and these have not recorded any “large or thriving populations of important species”, and would therefore not meet the criteria under point b. Correspondingly, the site would therefore also not qualify under point c.</p> <p>Accordingly, the site is not considered to meet the criteria to qualify under this general category.</p>
Diversity	<p><i>a. The site contains many of the typical species and assemblages - including stages of succession, subtypes and variations - for which a habitat type is considered important</i></p> <p><i>b. The site contains the majority of species typical of the habitat as it is found in the county in its most favourable condition</i></p> <p><i>c. The site contains a range of semi-natural habitats in close proximity</i></p> <p><i>d. A range of successional stages of habitat development are present on the site</i></p> <p><i>e. The habitats present exhibit a wide range of natural structural diversity</i></p>	<p>The site comprises a semi-improved grassland field partially separated by a hedgerow with trees. A hedgerow with trees is present on the western boundary and a small number of isolated hedgerows are present on the other boundaries. Small areas of scrub are present and a pond is present on the northern boundary of the site. Survey work has confirmed the grassland is not notable or diverse, either in terms of its species richness or structural diversity (such as having a variety of different sward lengths, tussocky areas etc.).</p> <p>Accordingly, the site is not considered to meet the criteria to qualify under this general category.</p>
Naturalness and Typicalness	<p><i>a. Compared with other examples in the county, the habitat present is notable for its lack of human disturbance, introduced plant or animal species, mechanical damage, litter, agricultural spray drift or other factors which could adversely affect the vegetation structure and/or species composition of the community</i></p>	<p>The site is located in a suburban location and survey work has confirmed it does not contain a notable vegetation structure, notable habitats beyond the context of the site itself, a notable mosaic of habitats or support significant populations of notable species.</p> <p>The KWS Handbook notes that in relation to this category, site protection is more likely to be considered a priority if the habitats involved are considered to be unusually pristine examples, exceptionally diverse, a recognised locally distinctive type, or impossible to</p>

	<p><i>b. The site is an excellent representative of a habitat or species population that forms a distinctive element of Gloucestershire's biodiversity</i></p> <p><i>c. The site represents an excellent example of a mosaic of associated habitats typical of Gloucestershire, e.g. floodplain grazing marsh, traditional orchards, species-rich hedgerows</i></p>	<p>restore once degraded or lost. None of these points would be applicable to the habitats recorded within the site during the survey work.</p> <p>Accordingly, the site is not considered to meet the criteria to qualify under this general category.</p>
Rare or Exceptional Feature	<p><i>a. The habitats and/or species present are rare, either in an international, national or county context</i></p> <p><i>b. The site is the only example of a particular habitat sub-type or variation that cannot be protected elsewhere in the county</i></p> <p><i>c. the scientific interest of the site is dependent on a rare or unique combination of site-related factors such as geology, aspect, soil type, microclimate, hydrology or altitude. Consequently, if the site was damaged or destroyed, the habitat and species communities present would be irreplaceable to the county</i></p> <p><i>d. the site supports habitats or species which are on the very edge of their natural range</i></p>	<p>Survey work has confirmed that none of these points would be applicable to the site.</p>
Fragility	<p><i>a. The habitats and/or species present are fragile or vulnerable to loss, damage or exploitation, either in an international, national or county context</i></p>	<p>Survey work has confirmed the habitats within the site are not of importance beyond the context of the site i.e. below the county context, and therefore the fragility criteria is not applicable to the site.</p>
Recorded History or Cultural Associations	<p><i>a. The nature conservation interest of the site is dependent on a rare or unique combination of historical factors such as long-term land use and management patterns</i></p> <p><i>b. the habitats and species present have become established over a very long period of time and consequently represent a limited resource in the county, as they could not be replaced or substituted</i></p> <p><i>c. The site is a particularly good example of the positive influence of long-established cultural practice on biodiversity</i></p> <p><i>d. the site in question has exceptional potential for education and/or public appreciation of nature due to its longstanding recorded history</i></p>	<p>It is not considered any of these points are of relevance to the site, as it has not been subject to historic/long-term/traditional management practices.</p>

Wildlife Corridors and Other Connected Habitat	<p><i>a. The site forms part of an important, larger ecological unit which would be reduced in value as a whole if the site was damaged or destroyed</i></p> <p><i>b. The site forms a vital part of a sequence of habitats all of which are required in order to conserve a key population of an important species (e.g. semi-aquatic invertebrates)</i></p> <p><i>c. The site contributes significantly to a landscape-scale "corridor" of habitat(s) to enable species to adapt/move in response to climate change</i></p>	<p>The site is located in a suburban setting and is surrounded on three sides by residential development. It therefore does not contribute to any form of wider landscape corridor, or function as part of a larger ecological unit.</p> <p>The north-south hedgerows with trees within the site form the northern portion of longer linear features which extend off-site to the south and run through the school. Beyond the school to the south is further residential development, and therefore even when taken together, these linear features do not connect with the wider landscape and are therefore isolated in nature.</p> <p>Accordingly, the site is not considered to meet the criteria to qualify under this general category.</p>
Value for Appreciation of Nature	<p><i>a. Three or more of the following factors apply:</i></p> <ul style="list-style-type: none"> <i>- The site is adjacent to, or overlooked by, a residential area</i> <i>- There are well-used footpaths/cycleways/bridleways providing access to the site (official or permissive)</i> <i>- The site and its features of interest are accessible to people who are physically disabled</i> <i>- There is space to park at, or within easy walking distance of, the site</i> <i>- There is a local 'friends' type group concerned with beneficial conservation management on the site</i> <i>- The site is used by community groups</i> <p><i>b. There is a well-established history of community involvement with positive nature conservation management of the site</i></p>	<p>The site is surrounded on three sides by residential properties, with the site beyond the rear gardens and therefore some distance from the houses. There may be some views of the site from residential properties, albeit these may be distant and/or obscured by trees. The site does not meet any other criteria in point a, or for point b. There are no Public Rights of Way (PRoW) running around or through the site and therefore it is not accessible to the public at all.</p> <p>Accordingly, the site is not considered to meet the criteria to qualify under this general category.</p>
Value for Learning	<p><i>a. The site provides the best or only Gloucestershire example of a situation where a threatened or declining habitat or species of high nature conservation interest for which there is a research need may effectively be studied</i></p> <p><i>b. The site has one or more features of nature conservation importance that would not ordinarily qualify for KWS or SSSI selection, but which are known to be declining or having to adapt due to factors which cannot be prevented, and for which research over the medium or long term is crucial for the success of conservation efforts elsewhere</i></p>	<p>Based on the survey work carried out, no features are present within the site which could be regarded as having any research need / need for further study which might benefit other habitats or features in the County.</p> <p>The southern boundary of the site is located adjacent to St Edward's Preparatory School. The school does have access to the field although at the present time, little use of the grassland is made for educational purposes. Given the currently herb poor nature of the sward, it is considered that this would not be a resource the school would turn to for grassland botanical studies.</p>

	<i>c. The site is exceptionally well-placed to offer educational opportunities either by its proximity to a school or other place of learning, or its easy accessibility for study of the species and habitats present without causing unacceptable damage or disturbance</i>	Accordingly, the site is considered unlikely to meet the criteria to qualify under this general category.
--	---	---