

14 Appendix 4: Target Notes

No.	Description
1	Belt of dense planted trees around perimeter of Begbroke Science Park. Ca. 5 m wide and 7 m tall. Containing: hazel <i>Corylus avellana</i> , wayfaring tree <i>Viburnum opulus</i> , field maple <i>Acer campestre</i> , dogwood <i>Cornus sanguinea</i> , ash <i>Fraxinus excelsior</i> , blackthorn <i>Prunus spinosa</i> , and osier willow <i>Salix viminalis</i> .
2	Stream. Rowel Brook. Moderately fast flowing, gravel or silt bottom, meanders. Channel ca. 0.5 to 1.5 m deep. Water ca. 0.1 to 0.5 m. Width 1–1.5 m. Very limited or marginal vegetation visible (mainly pendulous sedge <i>Carex pendula</i>). Forms site boundary to north west, where north bank runs along multiple private gardens. Abundant ad-hoc bank stabilisation along north bank and informal access bridges to gardens.
3	Woodland strip along stream. Generally dominated by pedunculate oak <i>Quercus robur</i> with understory of hazel <i>Corylus avellana</i> and hawthorn <i>Crataegus monogyna</i> , and field layer of bramble <i>Rubus fruticosus</i> agg. and ivy <i>Hedera helix</i> . Ash <i>Fraxinus excelsior</i> and sycamore <i>Acer pseudoplatanus</i> present in some areas, and crack willow <i>Salix fragilis</i> close to the stream. Stands of tall ruderals (e.g. great willowherb <i>Epilobium hirsutum</i>) and bramble on southern edge.
4	Large patch of variegated yellow archangel <i>Lamiastrum galeobdolon</i> ssp. <i>argentatum</i> growing in woodland adjacent to stream, presumably this has escaped from adjacent gardens. Also rose-of-Sharon <i>Hypericum calycinum</i> . Perhaps from adjacent gardens, or possibly planted.
5	Old access road to Science Park. Flanked by amenity grassland and two heavily trimmed species-poor hedges (dominated by ivy) and informal rows of semi-mature walnut trees <i>Juglans regia</i> .
6	Vegetated earth mounds screening hot heap composting facility. Supports semi-improved neutral grassland and tall ruderal vegetation.
7	Mixed plantation woodland, including semi-mature Scots pine <i>Pinus sylvestris</i> , birch <i>Betula pendula</i> , and Italian alder <i>Alnus cordata</i> .
8	Small stream which emerges from culvert under railway line and flows northwest into Rowel Brook. Fool's-water-cress <i>Apium nodiflorum</i> abundant in some areas.
9	Semi-natural broad-leaved woodland along small stream dominated by pedunculate oak <i>Quercus robur</i> , hazel <i>Corylus avellana</i> and alder <i>Alnus glutinosa</i> . Some wood avens <i>Geum urbanum</i> and false brome <i>Brachypodium sylvaticum</i> in the field layer.
10	Small area of swamp around pond with common reed <i>Phragmites australis</i> and lesser pond sedge <i>Carex acutiformis</i> .
11	Residential property with prefabricated buildings outside Site, surrounded by tall fences/hedgerows.
12	Rough semi-improved neutral grassland, scrub and tall ruderal vegetation outside, but surrounded by, the Site. With common nettle <i>Urtica dioica</i> , hemlock <i>Conium maculatum</i> , and some scrub (especially hawthorn <i>Crataegus monogyna</i>). Understood to have been formerly used as a landfill site and subsequently for agricultural research. Appeared to have recently been flail mown to ground level in September 2018.

13	Ditch. Wet in January 2018 with some flow west to east. Depth ca. 40 cm, width ca. 1 m. Containing abundant aquatic plants including water-cress <i>Nasturtium officinale</i> , fool's-water-cress <i>Apium nodiflorum</i> , sweet-grass <i>Glyceria</i> sp. and creeping bent <i>Agrostis stolonifera</i> . Dry and grass dominated by July 2018.
14	Small triangular field dominated by dense hawthorn <i>Crataegus monogyna</i> scrub, with some tussocky poor semi-improved grassland (dominated by cock's-foot <i>Dactylis glomerata</i>) and tall ruderals (common nettle <i>Urtica dioica</i>) around edges. Also creeping bent <i>Agrostis stolonifera</i> , hogweed <i>Heracleum sphondylium</i> , a St. John's-wort <i>Hypericum</i> sp., hairy tare <i>Vicia hirsuta</i> , curled dock <i>Rumex crispus</i> , a forget-me-not <i>Myosotis</i> sp., hairy bitter-cress <i>Cardamine hirsuta</i> , and rough-stalked feather-moss <i>Brachythecium rutabulum</i> and dog rose <i>Rosa canina</i> .
15	Area of short improved grassland behind tall fence, with poultry and other animal shelters. Used for deer rearing.
16	Large mature hybrid black poplar <i>Populus x canadensis</i> close to site boundary.
17	Yarnton Lane. Unsurfaced byway between Sandy Lane and A44 Woodstock Road. Deep ditches on both sides and mature hedgerows with abundant oak <i>Quercus robur</i> , willow <i>Salix</i> species and alder <i>Alnus glutinosa</i> trees.
18	Meadow. Poor semi-improved grassland with abundant false oat-grass <i>Arrhenatherum elatius</i> . Partially flooded in January 2018. Dry in May 2018.
19	Stand of spotted variegated yellow archangel <i>Lamiatstrum galeobdolon</i> ssp. <i>argentatum</i> growing on ditch bank.
20	Defunct hedgerow. Ditch adjacent containing lesser pond sedge <i>Carex riparia</i> , water cress <i>Nasturtium aquaticum</i> , water mint <i>Mentha aquatica</i> , soft rush <i>Juncus effusus</i> , and reed-mace <i>Typha latifolia</i> . Tufted hair-grass <i>Deschampsia cespitosa</i> adjacent. Dry in September 2018.
21	Large damp meadow, dominated by Italian rye-grass <i>Lolium multiflorum</i> in May 2018. Field to south dominated by tall fescue <i>Schedonorus arundinaceus</i> .
22	Area of impenetrable bramble <i>Rubus fruticosus</i> agg. scrub.
23	Damp semi-improved neutral grassland, dominated by false oat-grass <i>Arrhenatherum elatius</i> , with some creeping bent <i>Agrostis stolonifera</i> , cocksfoot <i>Dactylis glomerata</i> , common nettle <i>Urtica dioica</i> , hogweed <i>Heracleum sphondylium</i> , meadowsweet <i>Filipendula ulmaria</i> and cleavers <i>Galium aparine</i> . Extensive dense bramble <i>Rubus fruticosus</i> agg. scrub towards edges.
24	Ditch with standing water in winter and aquatic vegetation, including greater pond sedge <i>Carex riparia</i> , lesser pond sedge <i>Carex acutiformis</i> , tufted hair-grass <i>Deschampsia cespitosa</i> and floating sweet-grass <i>Glyceria fluitans</i> .
25	Small stream flowing around canal lock. Adjacent swamp – see target Note 26.
26	Small area of swamp dominated by reed sweet-grass <i>Glyceria maxima</i> and creeping bent <i>Agrostis stolonifera</i> .
27	Poor semi-improved grassland in south-west of Science Park (and similar in north).
28	Bed of rose-of-Sharon <i>Hypericum calycinum</i> , ornamental shrub with a line of mature hybrid black poplars <i>Populus x canadensis</i> .

29	Area of amenity grassland with mature black pine <i>Pinus nigra</i> and Scots pine <i>Pinus sylvestris</i> , and several apple trees <i>Malus pumila</i> .
30	Area of semi-improved neutral grassland dominated by red fescue <i>Festuca rubra</i> with abundant forbs and ephemeral species. This grassland has colonised bare sandy ground following demolition of buildings here.
31	Amenity grass verge with mature field maple <i>Acer campestre</i> and pedunculate oak <i>Quercus robur</i> .
32	Short-mown lawn adjacent to farmhouse, contains various grass, forb and bryophyte species including common bent <i>Agrostis capillaris</i> , red fescue <i>Festuca rubra</i> , yarrow <i>Achillea millefolium</i> daisy <i>Bellis perennis</i> , common cat's-ear <i>Hypochaeris radicata</i> and springy turf-moss <i>Rhytidiadelphus squarrosus</i> . Because of this species richness, this grassland is classed as semi-improved neutral grassland in the Phase 1 habitat survey.

15 Appendix 5: Botanical Data

Field A

Table A5-1: Botanical data collected in May 2018 from 5 quadrats within field A, damp good semi-improved grassland in the north-east of the Site. See Figure 4 for quadrat locations. FEP: Farm Environment Plan (Natural England 2010), LM: indicator species for lowland meadows.

Scientific Name	Common Name	Frequency (% cover range)	FEP Frequency	FEP Indicators
<i>Arrhenatherum elatius</i>	False meadow-grass	V (30-70)	Frequent	
<i>Filipendula ulmaria</i>	Meadowsweet	IV (3-40)	Frequent	LM
<i>Galium aparine</i>	Cleavers	IV (3-15)	Frequent	
<i>Urtica dioica</i>	Common nettle	IV (2-10)	Frequent	
<i>Geranium dissectum</i>	Cut-leaved crane's-bill	III (1-2)	Frequent	
<i>Festuca rubra</i>	Red fescue	III (2-30)	Frequent	
<i>Deschampsia cespitosa</i>	Tufted hair-grass	II (5-5)	Occasional	
<i>Dactylis glomerata</i>	Cock's-foot	II (10-15)	Occasional	
<i>Poa pratensis</i>	Annual meadow-grass	II (10-15)	Occasional	
<i>Convolvulus arvensis</i>	Field bindweed	II (2-3)	Occasional	
<i>Angelica sylvestris</i>	Wild angelica	II (2-5)	Occasional	
<i>Humulus lupulus</i>	Hop	I (5-5)	Rare	
<i>Ranunculus acris</i>	Meadow buttercup	I (2-2)	Rare	SI
<i>Rumex crispus</i>	Curled dock	I (3-3)	Rare	
<i>Heracleum sphondylium</i>	Hogweed	I (5-5)	Rare	
<i>Alopecurus pratensis</i>	Meadow foxtail	I (3-3)	Rare	
<i>Ranunculus repens</i>	Creeping buttercup	0	N/A	
<i>Carduus crispus</i>	Wetted thistle	0	N/A	
<i>Vicia sativa</i>	Common vetch	0	N/A	
Average number of species per quadrat (and range)			7.6 (6-9)	

Field B

Table A5-2: Botanical data collected in May 2018 from 5 quadrats within field B, poor semi-improved grassland in the north-east of the Site. See Figure 4 for quadrat locations. FEP: Farm Environment Plan (Natural England 2010), LM: indicator species for lowland meadows.

Scientific	Common	Frequency (and % cover range)	FEP Frequency	FEP Indicators
<i>Poa pratensis</i>	Smooth meadow-grass	V (5-20)	Frequent	
<i>Holcus lanatus</i>	Yorkshire fog	V (3-15)	Frequent	
<i>Lolium multiflorum</i>	Italian ryegrass	V (2-80)	Frequent	
<i>Senecio jacobaea</i>	Common ragwort	IV (2-2)	Frequent	
<i>Festuca arundinacea</i>	Tall fescue	III (2-3)	Frequent	
<i>Epilobium tetragonum</i>	Square-stalked willowherb	II (1-1)	Occasional	
<i>Bromus sterilis</i>	Barren brome	I (1-1)	Rare	
<i>Epilobium parviflorum</i>	Hoary willowherb	I (1-1)	Rare	
<i>Rumex crispus</i>	Curled dock	I (1-1)	Rare	
<i>Lysimachia nummularia</i>	Creeping jenny	I (2-2)	Rare	
<i>Cerastium fontanum</i>	Common mouse-ear	0	N/A	

<i>Senecio erucifolius</i>	Hoary ragwort	0	N/A	
<i>Arrhenatherum elatius</i>	false oat-grass	0	N/A	
<i>Bromus hordaceus</i>	Soft brome	0	N/A	
<i>Sonchus oleraceus</i>	Smooth sow-thistle	0	N/A	
<i>Leontodon autumnalis</i>	Autumn hawkbit	0	N/A	LM
Average number of species per quadrat (and range)			5.6 (5–6)	

Field C

Table A5-3: Botanical data collected in May 2018 from 5 quadrats within field C, poor semi-improved grassland in the north-east of the Site. See Figure 4 for quadrat locations. FEP: Farm Environment Plan (Natural England 2010), SI: indicator species for semi-improved grassland.

Scientific	Common	Frequency (and % cover range)	FEP Frequency	FEP Indicators
<i>Festuca arundinacea</i>	Tall fescue	V (10-95)	Frequent	
<i>Holcus lanatus</i>	Yorkshire fog	V (5-85)	Frequent	
<i>Poa pratensis</i>	Smooth meadow-grass	II (2-5)	Frequent	
<i>Epilobium tetragonum</i>	Square-stalked willowherb	I (1-1)	Rare	
<i>Geranium dissectum</i>	Cut-leaved willowherb	I (10-10)	Rare	
<i>Rumex crispus</i>	Curled dock	I (1-1)	Rare	
<i>Potentilla reptans</i>	Rumex crispus	0	N/A	
<i>Angelica sylvestris</i>	Wild angelica	0	N/A	
<i>Heracleum sphondylium</i>	Hogweed	0	N/A	
<i>Ranunculus repens</i>	Creeping buttercup	0	N/A	
<i>Dactylis glomerata</i>	Cock's-foot	0	N/A	
<i>Deschampsia cespitosa</i>	Tufted hair-grass	0	N/A	
<i>Senecio jacobaea</i>	Common ragwort	0	N/A	
<i>Plantago lanceolata</i>	Ribwort plantain	0	N/A	SI
<i>Lolium multiflorum</i>	Italian ryegrass	0	N/A	
Average number of species per quadrat (and range)			3 (2–4)	

Field D

Table A5-4: Botanical data collected in May 2018 from 5 quadrats within field D, damp good semi-improved grassland in the east of the Site. See Figure 4 for quadrat locations. FRP: Farm Environment Plan (Natural England 2010), LM: indicator species for lowland meadows, SI: indicator species for semi-improved grassland.

Scientific	Common	Frequency (and % cover range)	FEP Frequency	FEP Indicators
<i>Arrhenatherum elatius</i>	False oat-grass	V (20-40)	Frequent	
<i>Holcus lanatus</i>	Yorkshire fog	V (20-30)	Frequent	
<i>Poa pratensis</i>	Cock's-foot	V (5-15)	Frequent	
<i>Alopecurus pratensis</i>	Meadow foxtail	IV (5-5)	Frequent	
<i>Geranium dissectum</i>	Common nettle	IV (2-5)	Frequent	
<i>Heracleum sphondylium</i>	Cow parsley	IV (2-10)	Frequent	
<i>Dactylis glomerata</i>	Cock's-foot	IV (5-20)	Frequent	
<i>Festuca rubra</i>	Red fescue	III (5-20)	Frequent	
<i>Rumex acetosa</i>	Lady's bedstraw	III (3-5)	Frequent	LM
<i>Ranunculus repens</i>	Creeping buttercup	III (3-5)	Frequent	

<i>Veronica chamaedrys</i>	Germander speedwell	II (10-10)	Occasional	SI
<i>Stellaria graminea</i>	Lesser stitchwort	I (2-2)	Rare	
<i>Urtica dioica</i>	Common nettle	I (2-2)	Rare	
<i>Cerastium fontanum</i>	Common mouse-ear	I (2-2)	Rare	
<i>Taraxacum officinalis</i> agg.	Dandelion	I (1-1)	Rare	
<i>Anthriscus sylvestris</i>	Cow parsley	0	N/A	
<i>Galium verum</i>	Lady's-bedstraw	0	N/A	
<i>Tragopogon pratensis</i>	Goat's-beard	0	N/A	LM
<i>Rumex obtusifolius</i>	Broad-leaved dock	0	N/A	
<i>Ranunculus acris</i>	Meadow buttercup	0	N/A	SI
<i>Cirsium arvense</i>	Creeping thistle	0	N/A	
<i>Sanguisorba officinalis</i>	Greater burnet	0	N/A	LM
<i>Leucanthemum vulgare</i>	Oxeye daisy	0	N/A	LM
<i>Ajuga reptans</i>	Bugle	0	N/A	LM
<i>Trifolium repens</i>	White clover	0	N/A	
<i>Lathyrus pratensis</i>	Meadow vetchling	0	N/A	LM
<i>Juncus effusus</i>	Soft rush	0	N/A	
<i>Rumex crispus</i>	Curled dock	0	N/A	
<i>Vicia tetrasperma</i>	Smooth tare	0	N/A	
<i>Common vetch</i>	<i>Vicia sativa</i>	0	N/A	
<i>Potentilla reptans</i>	Creeping cinqfoil	0	N/A	
Average number of species per quadrat (and range)			9.2 (6-13)	

Field E

Table A5-5: Botanical data collected from two quadrats in May 2018 from field E, poor semi-improved grassland in the east of the Site. See Figure 4 for quadrat locations. Relative Abundance is based on the DAFOR Scale (D: dominant, A: abundant, F: frequent, O: occasional; R: rare). FEP: Farm Environment Plan (Natural England 2010), LM: indicator species for lowland meadows.

Scientific	Common	Relative Abundance	FEP Indicators
<i>Arrhenatherum elatius</i>	False oat-grass	D	
<i>Rubus fruticosus</i> agg.	Bramble	A	
<i>Urtica dioica</i>	Common nettle	F	
<i>Agrostis stolonifera</i>	Creeping bent	F	
<i>Dactylis glomerata</i>	Cock's-foot	F	
<i>Fraxinus excelsior</i> (seedling)	Ash (seedling)	R	
<i>Cirsium arvense</i>	Creeping thistle	R	
<i>Crepis capillaris</i>	Smooth hawk's-beard	R	
<i>Senecio jacobaea</i>	Common ragwort	R	
<i>Vicia cracca</i>	Tufted vetch	R	
Average number of species per quadrat			6 (5-7)

Good Semi-Improved grassland at Begbroke Science Park (source: BSG Ecology, 2015)

- 15.1 Table A5-6: Botanical data collected in July 2015, based on one 2 m × 2 m quadrat and reported in BSG Ecology (2015). This is an area of recently disturbed sandy soil now developing into grassland. See Figure 4 for location. Relative Abundance is based on the DAFOR Scale (D: dominant, A: abundant, F: frequent, O: occasional; R: rare). FEP: Farm Environment Plan (Natural England 2010), LM: indicator species for lowland meadows.

Common Name	Scientific Name	DAFOR Abundance	FEP Indicators
Black medick	<i>Medicago lupulina</i>	A	SI
Smooth hawk's-beard	<i>Crepis capillaris</i>	F	
Smooth meadow-grass	<i>Poa pratensis</i>	F	
Red clover	<i>Trifolium pratense</i>	F	SI
Rat's-tail fescue	<i>Vulpia myuros</i>	F	
Fern grass	<i>Catapodium rigidum</i>	O	
Bristly ox-tongue	<i>Helminthotheca echioides</i>	O	
Rough hawkbit	<i>Leontodon hispidus</i>	O	LM
Buck's-horn plantain	<i>Plantago coronopus</i>	O	
Ribwort plantain	<i>Plantago lanceolata</i>	O	
Greater plantain	<i>Plantago major</i>	O	
Dandelion	<i>Taraxacum agg.</i>	O	
Hop trefoil	<i>Trifolium campestre</i>	O	
Scentless mayweed	<i>Tripleurospermum inodorum</i>	O	
Canadian fleabane	<i>Conyza canadensis</i>	R	
Weld	<i>Reseda luteola</i>	R	
Number of species per quadrat			18

Poor semi-improved neutral grassland in north of Science Park (source: BSG Ecology, 2015)

- 15.2 *Table A5-7: Botanical data collected in July 2015, based on eight 2 m × 2 m quadrats reported in BSG Ecology (2015). Relative Abundance is based on the DAFOR Scale (D: dominant, A: abundant, F: frequent, O: occasional; R: rare). The abundance of highland bent Agrostis castellana suggests there has been previous seeding with an agricultural or amenity grass mix.*

Common Name	Scientific Name	DAFOR Abundance	FEP Indicators
Common bent	<i>Agrostis capillaris</i>	A	
Highland bent	<i>Agrostis castellana</i>	F	
Red fescue	<i>Festuca rubra</i>	F	
Yorkshire fog	<i>Holcus lanatus</i>	O	
Perennial rye-grass	<i>Lolium perenne</i>	O	
White clover	<i>Trifolium repens</i>	O	
Creeping bent	<i>Agrostis stolonifera</i>	R	
Common mouse-ear	<i>Cerastium fontanum</i>	R	
Field bindweed	<i>Convolvulus arvensis</i>	R	
Cock's-foot	<i>Dactylis glomerata</i>	R	
Cut-leaved crane's-bill	<i>Geranium dissectum</i>	R	
Prickly lettuce	<i>Lactuca serriola</i>	R	
Common ragwort	<i>Senecio jacobaea</i>	R	
Average number of species per quadrat (and range)			8.43 (4–18)

Poor semi-improved neutral grassland in south-west of Science Park

- 15.3 *Table A5-8: Botanical data collected in July 2015, based on two 2 m × 2 m quadrats reported in BSG Ecology (2015). Relative Abundance is based on the DAFOR Scale (D: dominant, A:*

abundant, F: frequent, O: occasional; R: rare). The abundance of highland bent *Agrostis castellana* suggests there has been previous seeding with an agricultural or amenity grass mix.

Common Name	Scientific Name	DAFOR Abundance	FEP Indicators
Red fescue	<i>Festuca rubra</i>	A	
Highland bent	<i>Agrostis castellana</i>	F	
Common bent	<i>Agrostis capillaris</i>	F	
Dandelion	<i>Taraxacum officinalis</i>	O	
Lesser trefoil	<i>Trifolium dubium</i>	O	
Common mouse-ear	<i>Cerastium fontanum</i>	R	
Hawthorn seedling	<i>Crataegus monogyna</i>	R	
Tall fescue	<i>Schedonorus arundinaceus</i>	R	
Common ragwort	<i>Senecio jacobaea</i>	R	
Autumn hawkbit	<i>Leontodon autumnalis</i>	R	
White clover	<i>Trifolium repens</i>	R	
Average number of species per quadrat (and range)			6 (4–8)

16 Appendix 6: Hedgerow Data

Table A6-1: Hedgerow data.

ID	Schedule 3 woody species	Woody Species per 30 m	Important	Justification/Notes	Species-rich
1	Fe, Up, Rc, Lv, Cm, Ps, Vi, Rhc, Ac, Sn, Pa	7	Important	7 woody species.	Species-rich
2	Rc, Cm, Ca, Ps, Rhc, Vi, Ac	6		6 woody species and 3 features, but <30 years old (planted around 2011).	Species-rich
3	Cm, Fe, Sxf	2			
4	Up, Sn, Ps, Ap, fe, Rhc, Rc, Ca, Ms	7	Important	7 woody species.	Species-rich
5	Cm, Sn, Ia, Up, Fe	5	Important	4 woody species and adjacent to public right of way.	Species-rich
6	Rc, Cm, Ca, Ps, Rhc, Vi, Ac	6			Species-rich
7	Fe, Cm, Ps, Rhc, Ca, Sn	4		Adjacent to residential property.	
8	Sxf, Fe, Cm, Sn, Up, Rc, Ac, Fs	5	Important	5 woody species and 4 features.	Species-rich
9	Fe, Cm, Ca, Rhc, Sn, Sxf, Ac, Up, Qr, Rc	8	Important	7 woody species.	Species-rich
10	Cm, Ms, Ac, Sn, Qr	5	Important	4 woody species and adjacent to public right of way.	Species-rich
11	Ac, Cm, Cs, Up, Ps, Sn	5			Species-rich
12	Fe, Rc, Rhc, Cm, Up, Ps, Sn	4			
13	Ac, Ca, Ps	3			
14	Up, Sn, Fe, Ac, Ca	3			
15	Fe, Ac, Rhc, Sn, C, Ps, Up, Qr	6			Species-rich
16	Cm, Ps, Qr, Up, Rc, Fe, Rhc,	7	Important	7 woody species	Species-rich
17	Cm	1		Adjacent to residential property.	
18	Fe, PS, Cm, Rc, Ac, Sn	4			
19	Cm, Ca, Vi, Rhc, Rc, Ps	6			Species-rich
20	Ee, Cm, Ac, Qr, Ps, Fe,	4			
21	Cm, Ca, Cs, Ee, Qr, Vi, Ac, Ia, Ps	7		Adjacent to residential property.	Species-rich
22	Up, Cm, Ac, Qr, Rc, Ps, Ca	5			Species-rich

ID	Schedule 3 woody species	Woody Species per 30 m	Important	Justification/Notes	Species-rich
23	Cm, Ac, Qr, Sxcap,	4	Important	4 woody species and adjacent to public right of way.	
24	Cm, Rc, Ac, Qr, Up	4	Important	4 woody species and adjacent to public right of way.	
25	Ps, Cm, Ac, Sn, Ca, Qr, Cs, Sxcap, Up, Fe, Rhc, Jr	8	Important	7 woody species	Species-rich
26	Ac, Cm, Fe, Up, Rc	4			
27	Ps, Ca, Fe, Cm, Ac	4		Adjacent to public right of way.	
28	Up, Ac, Ps, Cm, Ca, Fe, Qr	5			Species-rich
29	Cm, Ac, Sn, Iag, Ps, Ee	4			
30	PS, Sn, Sxf, Sxcap, Cm, Ac, Qr,	5			Species-rich
31	Cm, Sxf, Fe, Qr, Sxcap, Ps, Rc	7	Important	7 woody species	Species-rich
32	Cm, Fe, Sn, Ac	3			
33	Ac, Ps, Cm, Qr, Ca, Sn	6	Important	6 woody species and 3 features	Species-rich
34	Ca, Cm, Ps, Sn, Up, Fe, Ee, Ac, Cs	7	Important	7 woody species	Species-rich
34	Cm, Sn, Ac, Sxf	4			
35	Qr, Fe, Ca, Cm, Ms, Sxcap, Cs	7	Important	7 woody species	Species-rich
36	Ac, Fe, Ps, Cm, Up, Cs, Rc, Qr, Sxf, Vo	7	Important	7 woody species	Species-rich
37	Cm, Qr, Up, Sn, Sxcap, Rc, Fe, Vo	6	Important	6 woody species and 3 features	Species-rich
38	Cm, Ca, Cs, Qr, Fe, Rc, Rhc, Sxf	4			
39	Ca, Cm, Fe, Qr, Cs, Ps, Rc, Ia, Sn	6	Important	6 woody species and 3 features	Species-rich
40	Ac, Cm, Fe, Qr, Ca, Sxcap, Ps, Ac	6	Important	6 woody species and 3 features	Species-rich
41	Sxcap, Ca, Rc, Cm, Qr, Sxf, Ps, Ac	6	Important	6 woody species and 3 features	Species-rich
42	Ac, Cm, Ca, Sn, Sxf, Ag, Ps, Ms, Fe, Qr, Rc	9	Important	7 woody species	Species-rich
43	Cm, Sxf, Sxv, Ag, Qr, Ps, Sn, Cl, Rc	6	Important	6 woody species and 3 features	Species-rich
44	Ac, Cm, Sxf, Sn, Lp, Ag, Sxcap, Up, Qr, Ps, Ia, Ms, Rc	7.7	Important	7 woody species	Species-rich
45	Cm, Fe, Rc, Sn, Ac, Ca, Qr, Ma	7	Important	7 woody species	Species-rich
46	Ca, Sn, Rc, Sn, Cm, Qr, Ac, Iq, Ps, Lv, Sxcap, Ca, Sxf, Up	8	Important	7 woody species	Species-rich
47	Sxf, Ps, Up, Sn, Cm, Fe, Rc, Ms, Ia, Cs,	7.5	Important	7 woody species	Species-rich
48	Cm, Ac, Ca, Rc, Fe, Ag, Rc, Ps, Qr, Sxf, Sn	7	Important	7 woody species	Species-rich

ID	Schedule 3 woody species	Woody Species per 30 m	Important	Justification/Notes	Species-rich
49	Sxcap, Ug, Sn, Fe, Rc, Cm, Up, Qr, Cs, Ia	10	Important	7 woody species	Species-rich
50	Rc, Ug, Sxf, Up, Cm, Cs, Sn, Fe, Ia, Ac, Rc, Ca	7.33	Important	7 woody species	Species-rich
51	Cm, Ac, Ca, Rc, Fe, Qr, Sxf, Sn, Up, Sxcap, Sn, Lv	7	Important	7 woody species	Species-rich
52	Cm, Ac, Fe, Up, Ms, Ag, Lv, Ee, Sn, Sxcap, Cs, Qr	5.67	Important	5 woody species and 4 features	Species-rich
53	Cm, Sn, Ac, Sxf	4			
<p>Abbreviations used for woody species:</p> <p>Ac field maple <i>Acer campestre</i> Ag alder <i>Alnus glutinosa</i> Cm hawthorn <i>Crataegus monogyna</i> Cs dogwood <i>Cornus sanguinea</i> Ee spindle <i>Euonymus europaeus</i> Fe ash <i>Fraxinus excelsior</i> La holly <i>Ilex aquifolium</i> Lv wild privet <i>Ligustrum vulgare</i> Lp honeysuckle <i>Lonicera periclymenum</i> Ms crab apple <i>Malus sylvestris</i> Pa wild cherry <i>Prunus avium</i></p> <p>Ps blackthorn <i>Prunus spinosa</i> Qr pedunculate oak <i>Quercus robur</i> Rc dog rose <i>Rosa canina</i> Rca buckthorn <i>Rhamnus cathartica</i> Sn elder <i>Sambucus nigra</i> Sxcap goat willow <i>Salix caprea</i> Sxf crack willow <i>Salix fragilis</i> Ug wych elm <i>Ulmus glabra</i> Up English elm <i>Ulmus procera</i> Vl guelder rose <i>Viburnum lantana</i> Vo wayfaring tree <i>Viburnum opulus</i></p>					

From: Charlotte Watkins <Charlotte.Watkins@Cherwell-DC.gov.uk>
Sent: 20 October 2022 09:51
To: Kai Hayes <k.hayes@bsg-ecology.com>
Subject: RE: Consultation regarding ecology surveys at Begbroke PR8 site

Dear Kai

The scope seems appropriate to me although I do not know this site particularly well. As long as anything omitted (such as Otter) is justified within your reports then I would not anticipate any issues with scope.

Kind regards

Charlotte

Dr Charlotte Watkins

Ecology Officer

Tel: 01295 227912

Email: Charlotte.Watkins@Cherwell-DC.gov.uk

Communities Directorate

Cherwell District Council

www.cherwell.gov.uk

My usual working hours are: Monday-Thursday mornings.

From: Kai Hayes <k.hayes@bsg-ecology.com>
Sent: 19 October 2022 15:06
To: Charlotte Watkins <Charlotte.Watkins@Cherwell-DC.gov.uk>
Cc: Tom Flynn <t.flynn@bsg-ecology.com>
Subject: RE: Consultation regarding ecology surveys at Begbroke PR8 site

You don't often get email from k.hayes@bsg-ecology.com. [Learn why this is important](#)

CAUTION: This email originated from outside of the Council. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear Charlotte,

Please could you confirm whether you are happy with the scope of the ecological surveys undertaken for the Begbroke PR8 site, as detailed below?

Kind regards,

□ □ □ □ □ □ □ □

Ecologist

□ □ □ □ □ □ □ □

Phone: 01865 883833 | Mobile: 07496 624340

From: Kai Hayes

Sent: 30 May 2022 16:21

To: Charlotte.Watkins@Cherwell-DC.gov.uk

Subject: RE: Consultation regarding ecology surveys at Begbroke PR8 site

Dear Charlotte,

Further to my previous email would you be able to confirm that you are happy with the proposed scope of the surveys for the Begbroke PR8 site, as detailed below?

Thank you,

□ □ □ □ □ □ □ □

Ecologist

□ □ □ □ □ □ □ □

Phone: 01865 883833 | Mobile: 07904518471

From: Kai Hayes

Sent: 13 May 2022 10:21

To: Charlotte.Watkins@Cherwell-DC.gov.uk

Cc: Tom Flynn <t.flynn@bsg-ecology.com>

Subject: Consultation regarding ecology surveys at Begbroke PR8 site

Dear Charlotte,

I'm writing to you regarding proposed update ecology surveys at the Begbroke PR8 site. A planning application is intended to be submitted in the summer of 2023. Initial baseline surveys were carried out in 2018, and updated in 2021, and further ecology surveys are expected to take place throughout 2022.

The table below summarises our proposed scope for these update ecology surveys:

Task	Scope/Method	Timing of survey(s)
Ecology desk study	Initial data obtained from TVERC in Dec 2017. Data search updated in October 2021 to inform 2022 surveys.	N/A
Phase 1 habitat survey of tip area	The tip area, recently acquired by Oxford University, is the only part of the site not covered by the 2021 Phase 1 habitat survey update. We will undertake an extended Phase 1 habitat survey of this area based on standard industry guidance at the optimal period of the year.	1 x visit in June
Botanical condition assessment of grassland areas	In order to provide strong evidence to underpin the biodiversity net gain calculation, we will carry out a condition assessment of the grassland fields at the site (mainly east of the railway line, but also including the tip area), based on Natural England's condition assessment criteria.	1 x visit in June
Breeding bird characterisation survey	We will carry out three survey visits, timed approximately monthly, to characterise the breeding bird assemblage at the site and produce indicative breeding territory maps. This is our standard approach to providing baseline information on breeding birds. The survey timing relates to the period of peak bird breeding activity.	3 x visits, April, May and June
Wintering bird survey	We have carried out three survey visits, in December 2021 and in January and February 22. There is no significant use of the site by wintering waterfowl.	3 x visits, Dec, Jan Feb

Task	Scope/Method	Timing of survey(s)
Ecology desk study	Initial data obtained from TVERC in Dec 2017. Data search updated in October 2021 to inform 2022 surveys.	N/A
Reptile survey	We will carry out a targeted survey of the habitats suitable for reptiles at the site which were surveyed in 2018 (e.g., semi-improved neutral grassland, field margins and scrub). This will involve one visit to lay artificial reptile shelters (squares of roofing felt) and seven visits to check these to determine the presence or absence of these species. The survey will be based on standard industry guidance and standing advice from Natural England.	8 x visits March to June
Great crested newt survey	Following the eDNA surveys in 2018 and 2021, this species is likely to be absent from all but one pond at the site: the ornamental pond at the science park. We will confirm the population size in this pond based on the industry standard method for population size class assessment which involves six overnight survey visits using a torchlight search and bottle trapping.	6 x overnight visits March to June
Bat activity survey – walked transects	We will carry out monthly walked transects after dusk using appropriate ultrasonic bat detectors for the period April–October to obtain updated information on the use of the site by bats. The same two transect routes as employed in 2018 will be used.	7 x visits, monthly at dusk or dawn between April and October
Bat activity survey – automated detector survey	We will also deploy four static bat detectors (each deployed for five days per month) over this period. This level of survey effort and timing is based on standard industry guidance.	7 x 5-night deployments, monthly between April and October
Bat roost emergence survey at science park	We will carry out dusk and dawn bat emergence and re-entry surveys of the farmhouse and attached buildings based on industry guidance. Based on our 2018 and 2021 work we have assumed that three dawn or dusk visits with seven surveyors will be required to adequately cover the main building, plus up to two visits with two surveyors to cover the stone structure at Parker’s Farm.	Up to 3 x visits at dawn or dusk between May and August
Bat roost emergence survey at tip site	The poplar trees along the eastern boundary of the tip have some suitability to support roosting bats due to the presence of cracks and holes in some of the trunks. Based on standard industry guidance, we will carry out a dusk and a dawn survey to determine the level of use by bats. Each visit will involve two surveyors, each using a thermal imaging camera. These trees are not considered safe to climb.	2 x visits dawn or dusk between May and August
Water vole survey	Two survey visits will be carried out (one in spring and one in autumn), based on standard industry guidance. The survey will cover Rowel Brook (and the small connected stream to the south) and selected ditches, and will involve bank side searches for field signs.	2 x visits, in April-May and October

Task	Scope/Method	Timing of survey(s)
Ecology desk study	Initial data obtained from TVERC in Dec 2017. Data search updated in October 2021 to inform 2022 surveys.	N/A
Badger survey	We will carry out a detailed update badger survey of the tip area to map individual sett entrance holes. We will classify all setts and sett entrances, based on the level of activity associated with them. If, following the survey, any further surveys are required (such as bait marking surveys to identify separate badger groups), these could then be carried out later in 2022. A general update badger survey of the wider site was carried out in 2021.	1x visit in April
Dormouse survey	We will carry out a survey of hedgerows and other suitable habitat (e.g., suitable areas of woodland and scrub) that could be affected by the development for the presence of this species using nest tubes, placed out in April and monitored monthly by a licensed surveyor until the end of September. Survey effort and timing will follow current standard industry guidance. Based on the 2018 survey, we estimate between 150 and 200 nest tubes will be required.	6 visits, monthly April to September 2022
Terrestrial invertebrate survey	We have carried out a winter search for brown hairstreak eggs in February 2022. Due to the limited value for invertebrates of habitats that will be directly affected by the development (the majority of development areas are currently under intensive arable farming), we consider that further invertebrate surveys are not appropriate.	1 visit, February 2022
Aquatic invertebrate survey	Baseline survey to inform an assessment of the need for WFD and to have a baseline in case of future pollution incidents. The survey will include 3 samples along Rowel Brook in the spring and autumn. We will identify all sampled invertebrates to family level via microscopy to allow characterisation of the invertebrate assemblage and the biological water quality of the Brook. We will store samples and if WFD compliance assessment is required the samples can be reanalysed to species level.	2 x visits, in April and October 2022

Are you able to confirm that you are happy with the scope of the above surveys for this site and for a planning application to be submitted in the summer of 2023?

Regards and thanks

Dr [redacted] [redacted]
Principal Ecologist

[redacted] [redacted]
Phone: 01865 883833 | Mobile: 07827 815617

Kai Hayes
Ecologist



Worton Park, Worton, Oxford,
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Park, Newport, NP18 2HJ

From: Charlotte Watkins <Charlotte.Watkins@Cherwell-DC.gov.uk>
Sent: Thursday, May 20, 2021 10:33 PM
To: Tom Flynn <t.flynn@bsg-ecology.com>
Cc: Oliver Kemp <o.kemp@bsg-ecology.com>
Subject: RE: Consultation regarding scope of update ecology surveys for PR8 site

Hello

Thank you for your email.

I have had little involvement with the Partial Review sites and PR8 to date but having looked at the scope attached I cannot see any obvious issues with this plan. The proposed update surveys and justifications all look reasonable.

The planning Officer dealing with development briefs may also need to see this scope therefore I will send this on with these comments.

Kind regards

Charlotte

Dr Charlotte Watkins
Ecology Officer

Tel: 01295 227912

Email: Charlotte.Watkins@Cherwell-DC.gov.uk
www.cherwell.gov.uk

My usual working hours are: Monday and Wednesday mornings.

Coronavirus (COVID-19): In response to the latest Government guidance and until further notice, the Planning Service has been set up to work remotely, from home. Customers are asked not to come to Bodicote House but instead to phone or email the Planning Service on 01295 227006: planning@cherwell-dc.gov.uk. For the latest information about how the Planning Service is impacted by COVID-19, please check the website: www.cherwell-dc.gov.uk

From: Tom Flynn <t.flynn@bsg-ecology.com>
Sent: 12 May 2021 12:16
To: Charlotte Watkins <Charlotte.Watkins@Cherwell-DC.gov.uk>
Cc: Oliver Kemp <o.kemp@bsg-ecology.com>
Subject: Consultation regarding scope of update ecology surveys for PR8 site

Hi Charlotte,

I am keen to discuss the scope of the proposed update surveys at the Begbroke PR8 site.

If you could comment on the attached scope that would be very helpful. I will be away 17 to 21 May, but my colleague Oliver Kemp (copied in and available on 07585 138747) would be happy to discuss the matter in my absence.

Regards and thanks
Tom

Dr [redacted] **F** [redacted]
Principal Ecologist

[redacted]
Phone: 01865 883833 | **Mobile:** 07827 815617