

Appendix 7.2

Phase 1 Habitat Survey

Methods

Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey was carried out in fine and dry weather conditions on 01 August 2016 by Michelle Bullock MCIEEM, encompassing the Site and immediately adjacent habitats that could be viewed.

Phase 1 Habitat survey (JNCC, 1990) is a method of classification and mapping wildlife habitats in Great Britain. It was originally intended to provide "...relatively rapidly, a record of semi-natural vegetation and wildlife habitat over large areas of the countryside". Phase 1 Habitat Survey methodology has been widely 'extended' beyond its original purpose to allow the capture of information at an intermediate level between Phase 1 and Phase 2 Habitat surveys. For clarity, the standard Phase 1 Habitat survey methodology has been 'extended' in this report to include the following:

- More detailed floral species lists for each identified habitat
- Descriptions of habitat structure, the evidence of management and a broad assessment of habitat condition
- Mapping of additional habitat types (e.g. hardstanding)
- Identification of Priority Habitats under Section 41 of the NERC Act
- Identification of Habitats Directive Annex I habitat types
- Evidence of, or potential for, European Protected Species (EPS) including bats, great crested newt, dormouse and otter;
- Evidence of, or potential for, other protected species (including birds, reptiles, water vole, badger and certain invertebrates)
- Evidence of, or potential for, other notable species (including S41 Priority Species as well as notable, rare, protected or controlled plants and invertebrates)

Results of the extended Phase 1 Habitat survey are presented on **Figure 7.1** and in Table 7.3.1 below, which includes a list of floral species recorded in each habitat.

Limitations

There were no limitations to the survey.

Results

Table 7.3.1. Habitats and Flora Species List

Habitat	Phase 1 Reference Codes	S41/Annex I status	Flora	
			Common name	Latin name
Poor semi-improved grassland	B6	-	Yarrow	<i>Achillea millefolium</i>
			Bent	<i>Agrostis sp.</i>
			Garlic mustard	<i>Alliaria petiolata</i>
			Scarlet pimpernel	<i>Anagallis arvensis</i>
			Cow parsley	<i>Anthriscus sylvestris</i>
			Horse-radish	<i>Armoracia rusticana</i>
			False oat-grass	<i>Arrhenatherum elatius</i>
			False-brome	<i>Brachypodium sylvaticum</i>
			Soft-brome	<i>Bromus hordeaceus</i>
			Large bindweed	<i>Calystegia silvatica</i>
			Common mouse-ear	<i>Cerastium fontanum</i>
			Rosebay willowherb	<i>Chamerion angustifolium</i>
			Creeping thistle	<i>Cirsium arvense</i>
			Spear thistle	<i>Cirsium vulgare</i>
			Hemlock	<i>Conium maculatum</i>
			Field bindweed	<i>Convolvulus arvensis</i>
			Cock's-foot	<i>Dactylis glomerata</i>
			Wild carrot	<i>Daucus carot</i>
			Teasel	<i>Dipsacus fullonum</i>
			Couch	<i>Elytrigia repens</i>
			Great willowherb	<i>Epilobium hirsutum</i>
			Willowherb	<i>Epilobium sp.</i>
			Cut-leaved crane's-bill	<i>Geranium dissectum</i>
			Ground-ivy	<i>Glechoma hederacea</i>
			Hogweed	<i>Heracleum sphondylium</i>
			Yorkshire-fog	<i>Holcus lanatus</i>
			Hard rush	<i>Juncus inflexus</i>
			Soft-rush	<i>Juncus effusus</i>
			Grass vetchling	<i>Lathyrus nissolia</i>
			Perennial rye-grass	<i>Lolium perenne</i>
			Common bird's-foot trefoil	<i>Lotus corniculatus</i>
			Narrow-leaved bird's-foot trefoil	<i>Lotus glaber</i>
			Common mallow	<i>Malva sylvestris</i>
			Mayweed	<i>Matricaria sp.</i>
Black medick	<i>Medicago lupulina</i>			
Field forget-me-not	<i>Myosotis arvensis</i>			

Habitat	Phase 1 Reference Codes	S41/Annex I status	Flora	
			Common name	Latin name
			Red bartsia	<i>Odontites vernus</i>
			Bee orchid	<i>Ophrys apifera</i>
			Common poppy	<i>Papaver rhoeas</i>
			Timothy	<i>Phleum pratense</i>
			Bristly oxtongue	<i>Picris echioides</i>
			Ribwort plantain	<i>Plantago lanceolata</i>
			Greater plantain	<i>Plantago major</i>
			Annual meadow grass	<i>Poa annua</i>
			Smooth Meadow grass	<i>Poa pratensis</i>
			Creeping cinquefoil	<i>Potentilla reptans</i>
			Selfheal	<i>Prunella vulgaris</i>
			Common fleabane	<i>Pulicaria dysenterica</i>
			Creeping buttercup	<i>Ranunculus repens</i>
			Weld	<i>Reseda luteola</i>
			Bramble	<i>Rubus fruticosus</i> agg.
			Broad-leaved dock	<i>Rumex obtusifolius</i>
			Common ragwort	<i>Senecio jacobaea</i>
			Groundsel	<i>Senecio vulgaris</i>
			Smooth sow-thistle	<i>Sonchus oleraceus</i>
			Comfrey	<i>Symphytum</i> sp.
			Upright hedge-parsley	<i>Torilis japonica</i>
			Red clover	<i>Trifolium pratense</i>
			White clover	<i>Trifolium repens</i>
			Colt's-foot	<i>Tussilago farfara</i>
			Common nettle	<i>Urtica dioica</i>
			Hairy tare	<i>Vicia hirsuta</i>
			Common vetch	<i>Vicia sativa</i>
Smooth tare	<i>Vicia tetrasperma</i>			
Arable	J1.1		Bent	<i>Agrostis</i> sp.
			Black grass	<i>Alopecurus myosuroides</i>
			Wild-oat	<i>Avena fatua</i>
			Wheat	<i>Triticum</i> sp.
			Cut-leaved crane's-bill	<i>Geranium dissectum</i>
			Bittercress	<i>Cardamine</i> sp.
			Creeping thistle	<i>Cirsium arvense</i>
			Cock's-foot	<i>Dactylis glomerata</i>
			Cut-leaved crane's-bill	<i>Geranium dissectum</i>
			Common field-speedwell	<i>Veronica persica</i>
			Hogweed	<i>Heracleum sphondylium</i>
			Yorkshire-fog	<i>Holcus lanatus</i>

Habitat	Phase 1 Reference Codes	S41/Annex I status	Flora	
			Common name	Latin name
			Perennial rye-grass	<i>Lolium perenne</i>
			Broad-leaved dock	<i>Rumex obtusifolius</i>
			white clover	<i>Trifolium repens</i>
			Common nettle	<i>Urtica dioica</i>
Hedgerow (intact)	J2.1, J2.2 & J2.3	S41 Priority Habitat "Hedgerows"	Field maple	<i>Acer campestre</i>
			Sycamore	<i>Acer pseudoplatanus</i>
			Cow Parsley	<i>Anthriscus sylvestris</i>
			Lords-and-ladies	<i>Arum maculatum</i>
			Hazel	<i>Corylus avellana</i>
			Hawthorn	<i>Crataegus monogyna</i>
			Cock's-foot	<i>Dactylis glomerata</i>
			Ash	<i>Fraxinus excelsior</i>
			Cleavers	<i>Galium aparine</i>
			Herb-robert	<i>Geranium robertianum</i>
			Wood avens	<i>Geum urbanum</i>
			Ivy	<i>Hedera helix</i>
			Hogweed	<i>Heracleum sphondylium</i>
			Yorkshire-fog	<i>Holcus lanatus</i>
			Holly	<i>Ilex aquifolium</i>
			Perennial rye-grass	<i>Lolium perenne</i>
			Apple	<i>Malus</i> sp.
			Blackthorn	<i>Prunus spinosa</i>
			Pedunculate oak	<i>Quercus robur</i>
			Lesser celandine	<i>Ranunculus ficaria</i>
Dog-rose	<i>Rosa canina</i> agg.			
Bramble	<i>Rubus fruticosus</i> agg.			
Elder	<i>Sambucus nigra</i>			
Elm	<i>Ulmus</i> sp.			
Common nettle	<i>Urtica dioica</i>			
Broadleaved semi-natural woodland	A1.1.1	S41 Priority Habitat "Lowland Mixed Deciduous Woodland"	Horse-chestnut	<i>Aesculus hippocastanum</i>
			Field maple	<i>Acer campestre</i>
			Sycamore	<i>Acer pseudoplatanus</i>
			Garlic mustard	<i>Alliaria petiolata</i>
			Burdock	<i>Articum</i> sp.
			Lords-and-ladies	<i>Arum maculatum</i>
			Daisy	<i>Bellis perennis</i>
			Silver birch	<i>Betula pendula</i>
			Pendulous sedge	<i>Carex pendula</i>
			Enchanter's-nightshade	<i>Circaea lutetiana</i>
			Hawthorn	<i>Crataegus monogyna</i>
			Cock's-foot	<i>Dactylis glomerata</i>
Great willowherb	<i>Epilobium hirsutum</i>			

Habitat	Phase 1 Reference Codes	S41/Annex I status	Flora	
			Common name	Latin name
			Spindle	<i>Euonymus europaeus</i>
			Meadowsweet	<i>Filipendula ulmaria</i>
			Ash	<i>Fraxinus excelsior</i>
			Herb Robert	<i>Geranium robertianum</i>
			Wood avens	<i>Geum urbanum</i>
			Ivy	<i>Hedera helix</i>
			Holly	<i>Ilex aquifolium</i>
			European larch	<i>Larix decidua</i>
			Privet	<i>Ligustrum vulgare</i>
			Honeysuckle	<i>Lonicera</i> sp.
			Crab apple	<i>Malus sylvestris</i>
			Spruce	<i>Picea</i> sp.
			Greater plantain	<i>Plantago major</i>
			Self-heal	<i>Prunella vulgaris</i>
			Wild cherry	<i>Prunus avium</i>
			Blackthorn	<i>Prunus spinosa</i>
			Bracken	<i>Pteridium aquilinum</i>
			Turkey oak	<i>Quercus cerris</i>
			Pedunculate oak	<i>Quercus robur</i>
			Lesser celandine	<i>Ranunculus ficaria</i>
			Creeping buttercup	<i>Ranunculus repens</i>
			Rhododendron	<i>Rhododendron ponticum</i>
			Dog-rose	<i>Rosa canina</i> agg.
			Bramble	<i>Rubus fruticosus</i> agg.
			Elder	<i>Sambucus nigra</i>
			Red campion	<i>Silene dioica</i>
			Hedge woundwort	<i>Stachys sylvatica</i>
			Snowberry	<i>Symphoricarpos albus</i>
			Elm	<i>Ulmus</i> sp.
			Common nettle	<i>Urtica dioica</i>
			Violet	<i>Viola</i> sp.
			Broadleaved plantation woodland	A1.1.2
Alder	<i>Alnus glutinosa</i>			
Cow parsley	<i>Anthriscus sylvestris</i>			
False oat-grass	<i>Arrhenatherum elatius</i>			
Hazel	<i>Corylus avellana</i>			
Hawthorn	<i>Crataegus monogyna</i>			
Cock's-foot	<i>Dactylis glomerata</i>			
Willowherb	<i>Epilobium</i> sp.			
Spindle	<i>Euonymous europaea</i>			
Beech	<i>Fagus sylvatica</i>			
Fescue	<i>Festuca</i> sp.			
Ash	<i>Fraxinus excelsior</i>			

Habitat	Phase 1 Reference Codes	S41/Annex I status	Flora	
			Common name	Latin name
			Sea-buckthorn	<i>Hippophae rhamnoides</i>
			Yorkshire-fog	<i>Holcus lanatus</i>
			Holly	<i>Ilex aquifolium</i>
			Pine	<i>Pinus</i> sp.
			Aspen	<i>Populus tremula</i>
			Pedunculate oak	<i>Quercus robur</i>
			Creeping buttercup	<i>Ranunculus repens</i>
			Bramble	<i>Rubus fruticosus</i> agg.
			Goat willow	<i>Salix caprea</i>
			Crack-willow	<i>Salix fragilis</i>
			Willow	<i>Salix</i> sp.
			Common nettle	<i>Urtica dioica</i>
Trees	A3.1		Ash	<i>Fraxinus excelsior</i>
			Pedunculate oak	<i>Quercus robur</i>
			Willow	<i>Salix</i> sp.
Scrub (dense /continuous)	A2.1		Hawthorn	<i>Crataegus monogyna</i>
			Blackthorn	<i>Prunus spinosa</i>
			Dog-rose	<i>Rosa canina</i> agg.
			Bramble	<i>Rubus fruticosus</i> agg.
			Japanese knotweed	<i>Fallopia japonica</i>
Tall ruderal	C3.1		Oil-seed rape	<i>Brassica</i> sp.
			Teasel	<i>Dipsacus sylvestris</i>
			Willowherbs	<i>Epilobium</i> sp.
			Comfrey	<i>Symphytum</i> sp.
			Common nettle	<i>Urtica dioica</i>
Open water	G1	-	-	-

Assessment

Poor Semi-improved grassland

Given the high levels of alteration of this habitat (i.e. due to its use a landfill Site and golf course landscaping) the origin of the grassland (i.e. calcareous/neutral/acidic) is difficult to establish, although nutrient levels appear to be high (i.e. vigorous grass/weed growth). The species recorded during the current survey are synonymous with the previous survey undertaken in 2013. The grassland is dominated by common grasses (including cock's-foot *Dactylis glomerata*, perennial rye-grass *Lolium perenne*, Yorkshire-fog *Holcus lanatus* and smooth meadow-grass *Poa pratensis*), supports a reasonable diversity of forbs and has a high frequency of undesirables (predominantly bristly oxtongue *Picris echioides*). A very low number of neutral and calcareous grassland indicator species are present including bee orchid *Ophrys apifera**, which was recorded along the road verge adjacent to H5. A route at the periphery of the grassland has been

* It should be noted that bee orchid is an opportunistic orchid species, which appears within grassland swards under moderately disturbed conditions and is often out-competed when grasslands develop. Unlike some other orchid species, bee orchid does not have strong mycorrhizal associations and therefore isn't reliant on well-established, and often important, habitats/conditions.

trampled by walkers and as such comprises species typical of more disturbed ground including annual meadow grass *Poa annua* and red bartsia *Odontites vernus*.

A total of 64 grassland species were recorded at the Site at the time of survey, well above the threshold of 50 required to meet County Wildlife Selection criteria for both 'calcareous grassland' and 'neutral grassland'. However, the grassland has undergone extensive alteration and supports an abundance of coarse grasses and 'undesirables' and as such the grassland is considered 'poor' in nature. In addition, the grassland is unlikely to meet the criteria for any Section 41 habitat of principal importance or Northamptonshire BAP habitat such as "lowland meadow" or "lowland calcareous grassland". As such, this habitat at the Site is not considered to be of ecological importance beyond the Local Level.

Arable

The arable land at the Site was in wheat crop was in cultivation at the time of survey (2016). Occasional common arable weeds, including black-grass *Alopecurus myosuroides*, wild-oat *Avena fatua*, common field-speedwell *Veronica persica* and creeping thistle *Cirsium arvense* were recorded within the wheat crop. The narrow, species-poor field margins are dominated by common grasses with occasional tall ruderal species such as common nettle *Urtica dioica*. These field margins do not meet the criteria for the section 41 habitat of principal importance "arable field margins" because they are not managed specifically to provide benefits to wildlife.

In summary, given this habitat at the Site is dominated by an intensively managed crop monoculture, this habitat is considered to fall short of the threshold for local importance.

Semi-natural broadleaved woodland

The woodland in the north of the Site is designated as Brackmills Small Wood Potential Wildlife Site (PWS) and is of older (unlikely ancient) origin than the other surrounding woodland. The canopy is dominated by pedunculated oak and ash. A reasonably developed understory is present comprising common and widespread species, predominantly hawthorn *Crataegus monogyna*. The ground flora comprises common and widespread species typically associated with woodlands and is dominated by ivy *Hedera helix*.

A small number of Northamptonshire ancient woodland indicator species (field maple *Acer campestre*, pendulous sedge *Carex pendula*, hazel *Corylus avellana* and spindle *Euonymus europaeus*) were recorded in association with the woodland. However, these species are commonly found in recently planted woodland and in the absence of any more conclusive evidence, the woodland is not considered to be ancient. "Lowland mixed deciduous woodland" is a priority habitat under the Section 41 list of the NERC Act 2006 and is included within Northamptonshire Biodiversity Action Plan. Taking into account all species recorded during the current survey and the

previous survey undertaken in 2013, based on the Selection Criteria for Local Wildlife Sites in Northamptonshire the woodland just meets the Criteria under 'Woodland, Trees and Shrubs: 3ii' as it includes 31 of the woodland plants listed. A minimum of 30 is required to qualify. The woodland is therefore considered to be of ecological importance at the County Level.

Broadleaved plantation woodland

This habitat at the Site is primarily located at the periphery of the southern land parcel and is understood to have been planted, c. 12 years ago, as part of the golf course landscaping. The species composition includes a good variety of predominantly native woody species, although many are not native or of local provenance (e.g. sea-buckthorn).

The ground flora of the broadleaved plantations is generally dominated by common shade-tolerant species including common nettle and cow parsley *Anthriscus sylvestris* as well as species associated with the adjacent grassland. Given the young age of the broadleaved plantation coupled with the species composition of common and widespread species, this habitat is considered to fall short of the threshold for Local importance.

Scrub

Patches of continuous scrub are present at the Site, predominantly at the periphery of Hampton Green South, comprising dense bramble *Rubus fruticosus* agg. and blackthorn *Prunus spinosa*. This habitat at the Site is considered to fall short of the threshold for Local importance.

Tall ruderal

Occasional tall ruderal vegetation, dominated by common nettle, is present at the Site, notably associated with hedgerow H2. This habitat at the Site is considered to fall short of the threshold for local importance.

Hedgerows

There are ten hedgerows present at the Site labelled H1-H10 on **Figure 7.1**.

A hedgerow survey was undertaken at the Site in 2013 which found six out of the ten hedgerows at the Site (H1, H3, H4, H5, H6 and H8) to be 'important' when assessed against ecological criteria set out in the Hedgerows Regulations, 1997. The hedgerows appear unchanged from the descriptions set out within the previous reports.

The majority of the hedgerows at the Site are dense and continuous, save for H2 which has large gaps. The hedgerows within Hampton Green North are managed through flail cutting whilst hedgerows within Hampton Green South appear to have received no recent management, save for those that run adjacent to the road. The ground flora of the hedgerows is generally restricted to common shade-tolerant species. Ancient woodland indicator species such as lords-and-ladies *Arum maculatum*, herb-Robert *Geranium robertianum* and wood avens *Geum urbanum* were recorded in association

with most of the hedgerows at the Site save for H7. Bee Orchid was recorded in association with H5.

All hedgerows “consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species” are covered by the UK BAP Priority Habitat ‘Hedgerows’. As such, all hedgerows within the site would likely qualify as Priority Habitats. In addition, the Hedgerow Survey Handbook¹ defines a species-rich hedgerow as that which contains at least 5 woody species which are native somewhere in the UK, and as such all hedgerows at the Site are species-rich. However, only hedgerows H1, H3 and H4 would qualify as Northamptonshire BAP habitats. Based on the detailed hedgerow survey data collected in 2013, the remaining hedgerows would not qualify under the definition of Northamptonshire BAP habitat for hedgerows given that they comprise fewer than five woody species per 30m. None of the hedgerows present at the Site meet the Selection Criteria for Local Wildlife Sites in Northamptonshire.

Given the favourable condition and species-richness of the hedgerows at the Site coupled with the connectivity of these hedgerows within the Site and to the surrounding habitat, the hedgerow network is considered to be of ecological importance at the Local level.

Trees

There are numerous trees present at the Site. These are largely present within the broadleaved woodland, broadleaved plantations and hedgerows and as such are assessed under the corresponding headings above. In addition, a small group of semi-mature/mature willow *Salix* sp. are present towards the western corner of Hampton Green South. In accordance with standard guidelines², none of the trees present at the Site are considered to be veteran or truly ancient. All mature/semi-mature trees at the Site, given their size and age, likely contribute to the biodiversity of the local area and as such are considered to be of ecological importance at the Local Level, unless classified as being of greater importance under the habitats discussed above.

Invasive species

Occasional stands of Japanese knotweed *Fallopia japonica* are present towards the eastern and southern boundaries of Hampton Green South, adjacent to the broadleaved plantation. Japanese knotweed is an invasive, non-native species listed under Schedule 9 Part II of the Wildlife and Countryside Act, 1981 (as amended). It is an offence to cause to grow in the wild any plant listed under this schedule.

¹ Defra (2007). “Hedgerow Survey Handbook: A standard procedure for local surveys in the UK” (2nd Ed).

² Read, H. (2000) “Veteran trees: a Guide to good management”. English Nature. Peterborough. adapted from Mitchell, A.F., (1974). “A Field Guide to the trees of Britain and Northern Europe”. Collins, London.