

List of species used to calculate the Species Richness Score as part of Biodiversity Hotspot Mapping

Species Group	Family	Scientific Name	English Name	Taxon Version Key
Insect - Dragonfly (Odonata)	Aeshnidae	Anaciaeschna isoceles	Norfolk Hawker	NHMSYS0021009091
Reptile	Anguillidae	Anguilla fragilis	Slow-worm	NBNSYS0000005072
Flowering Plant	Apiaceae	Apium inundatum	Lesser Marshwort	NHMSYS0000455995
Terrestrial Mammal	Cricetidae	Arvicola amphibius	Water Vole	NHMSYS0020546253
Crustacean	Astacidae	Austroptamobius pallipes	White-clawed Crayfish	NBNSYS0000033009
Terrestrial Mammal	Vespertilionidae	Barbastella barbastellus	Western Barbastelle	NHMSYS0000080178
Flowering Plant	Poaceae	Briza media	Quaking-grass	NBNSYS0000002565
Amphibian	Bufo	Bufo bufo	Common Toad	NHMSYS0000080159
Flowering Plant	Ericaceae	Calluna vulgaris	Heather	NBNSYS0000003902
Flowering Plant	Campanulaceae	Campanula rotundifolia	Harebell	NBNSYS0000004288
Terrestrial Mammal	Cervidae	Capreolus capreolus	Roe Deer	NHMSYS0000080203
Flowering Plant	Cyperaceae	Carex elata	Tufted-sedge	NBNSYS0000002456
Flowering Plant	Poaceae	Catabrosa aquatica	Whorl-grass	NHMSYS0000456975
Insect - True Fly (Diptera)	Tephritidae	Chetostoma curvinerve		NBNSYS0000012863
Terrestrial Mammal	Chiroptera		Bat	NHMSYS0000376160
Insect - Hymenopteran	Chrysididae	Chrysis gracillima		NHMSYS00000875659
Flowering Plant	Asteraceae	Cichorium intybus	Chicory	NBNSYS0000004514
Flowering Plant	Lamiaceae	Clinopodium acinos	Basil Thyme	NBNSYS0000004216
Bony Fish (Actinopterygii)	Cottidae	Cottus gobio	Bullhead	NHMSYS0000544660
Flowering Plant	Boraginaceae	Cynoglossum officinale	Hound's-tongue	NBNSYS0000003980
Flowering Plant	Orchidaceae	Dactylorhiza incarnata	Early Marsh-orchid	NHMSYS0000457908
Terrestrial Mammal	Vespertilionidae	Eptesicus serotinus	Serotine	NHMSYS0000528008
Flowering Plant	Ericaceae	Erica cinerea	Bell Heather	NBNSYS0000003909
Terrestrial Mammal	Erinaceidae	Erinaceus europaeus	Hedgehog	NBNSYS0000005078
Flowering Plant	Brassicaceae	Erysimum cheiranthoides	Treacle-mustard	NBNSYS0000002903
Flowering Plant	Euphorbiaceae	Euphorbia esula x waldsteinii = E. x pseudovirgata	Twiggy Spurge	NBNSYS0000161666
Flowering Plant	Euphorbiaceae	Euphorbia helioscopia	Sun Spurge	NBNSYS0000003732
Flowering Plant	Euphorbiaceae	Euphorbia peplus	Petty Spurge	NBNSYS0000003733
Flowering Plant	Asteraceae	Filago minima	Small Cudweed	NHMSYS0000458842
Flowering Plant	Asteraceae	Filago vulgaris	Common Cudweed	NBNSYS0000004403
Flowering Plant	Potamogetonaceae	Groenlandia densa	Opposite-leaved Pondweed	NBNSYS0000002147
Marine Mammal	Phocidae	Halichoerus grypus	Grey Seal	NBNSYS0000005137
Flowering Plant	Asteraceae	Hieracium sabaudum	Autumn Hawkweed	NHMSYS00000857318
Flowering Plant	Primulaceae	Hottonia palustris	Water-violet	NBNSYS0000003932
Flowering Plant	Hydrocharitaceae	Hydrocharis morsus-ranae	Frogbit	NBNSYS0000002109
Flowering Plant	Araliaceae	Hydrocotyle vulgaris	Marsh Pennywort	NBNSYS0000003633
Terrestrial Mammal	Cervidae	Hydropotes inermis	Chinese Water Deer	NBNSYS0000005148
Flowering Plant	Asteraceae	Hypochaeris glabra	Smooth Cat's-ear	NBNSYS0000004519
Flowering Plant	Asteraceae	Jacobaea aquatica	Marsh Ragwort	NHMSYS0021241532
Flowering Plant	Caprifoliaceae	Knautia arvensis	Field Scabious	NHMSYS0000460024
Jawless Fish (Agnatha)	Petromyzontidae	Lampetra planeri	Brook Lamprey	NHMSYS0000544685
Insect - Butterfly	Nymphalidae	Lasiommata megera	Wall	NHMSYS0000503020
Flowering Plant	Brassicaceae	Lepidium campestre	Field Pepperwort	NHMSYS0000460248
Insect - Butterfly	Nymphalidae	Limenitis camilla	White Admiral	NBNSYS0100003750
Amphibian	Salamandridae	Lissotriton helveticus	Palmate Newt	NHMSYS0020194828
Amphibian	Salamandridae	Lissotriton vulgaris	Smooth Newt	NHMSYS0020194827
Terrestrial Mammal	Mustelidae	Lutra lutra	Otter	NBNSYS0000005133
Flowering Plant	Fabaceae	Medicago minima	Bur Medick	NHMSYS0000460638
Terrestrial Mammal	Cricetidae	Micromys minutus	Harvest Mouse	NHMSYS0000080211
Insect - Hymenopteran	Crabronidae	Mimesa bicolor	Two-coloured Mimic Wasp	NHMSYS0000876333
Flowering Plant	Plantaginaceae	Misopates orontium	Weasel's-snout	NBNSYS0000004059
Terrestrial Mammal	Cervidae	Muntiacus reevesi	Chinese Muntjac	NHMSYS0000080204
Terrestrial Mammal	Mustelidae	Mustela erminea	Stoat	NBNSYS0000005127
Terrestrial Mammal	Mustelidae	Mustela nivalis	Weasel	NBNSYS0000005128
Terrestrial Mammal	Mustelidae	Mustela putorius	Polecat	NBNSYS0000005129
Terrestrial Mammal	Vespertilionidae	Myotis	Myotis Bat species	NBNSYS0000040730
Terrestrial Mammal	Vespertilionidae	Myotis brandtii	Brandt's Bat	NHMSYS0000528026
Terrestrial Mammal	Vespertilionidae	Myotis daubentonii	Daubenton's Bat	NHMSYS0000528028
Terrestrial Mammal	Vespertilionidae	Myotis mystacinus/brandtii	Whiskered/Brandt's Bat	NHMSYS0000528030
Terrestrial Mammal	Vespertilionidae	Myotis nattereri	Natterer's Bat	NHMSYS0000080184
Flowering Plant	Poaceae	Nardus stricta	Mat-grass	NBNSYS0000002676
Reptile	Colubridae	Natrix helvetica	Grass Snake	NHMSYS0021178937
Terrestrial Mammal	Soricidae	Neomys fodiens	Water Shrew	NHMSYS0000080174
Insect - Hymenopteran	Apidae	Nomada ferruginata	Yellow-shouldered Nomad Bee	NHMSYS0000876418
Terrestrial Mammal	Vespertilionidae	Nyctalus leisleri	Lesser Noctule	NHMSYS0000080185
Terrestrial Mammal	Vespertilionidae	Nyctalus noctula	Noctule Bat	NHMSYS0000080186
Flowering Plant	Apiaceae	Oenanthe fistulosa	Tubular Water-dropwort	NBNSYS0000003689
Flowering Plant	Fabaceae	Onobrychis vicifolia	Sainfoin	NBNSYS0000003279
Flowering Plant	Orchidaceae	Ophrys apifera	Bee Orchid	NHMSYS0000461294
Flowering Plant	Oxalidaceae	Oxalis acetosella	Wood-sorrel	NBNSYS0000003175
Insect - Hymenopteran	Crabronidae	Philanthus triangulum	Bee Wolf	NHMSYS0000876577
Fern	Marsileaceae	Pilularia globulifera	Pillwort	NBNSYS0000002089
Terrestrial Mammal	Vespertilionidae	Pipistrellus	Pipistrelle Bat species	NBNSYS0000136578
Terrestrial Mammal	Vespertilionidae	Pipistrellus nathusii	Nathusius's Pipistrelle	NHMSYS0000080187
Terrestrial Mammal	Vespertilionidae	Pipistrellus pipistrellus	Common Pipistrelle	NHMSYS0020001355
Terrestrial Mammal	Vespertilionidae	Pipistrellus pipistrellus	Pipistrelle	NHMSYS0020001356
Terrestrial Mammal	Vespertilionidae	Pipistrellus pygmaeus	Soprano Pipistrelle	NBNSYS0100004720
Terrestrial Mammal	Vespertilionidae	Plecotus auritus	Brown Long-eared Bat	NBNSYS0000005102

Flowering Plant	Rosaceae	Potentilla argentea	Hoary Cinquefoil	NBNSYS000003342
Flowering Plant	Rosaceae	Potentilla erecta	Tormentil	NBNSYS000003349
Flowering Plant	Rosaceae	Potentilla palustris	Marsh Cinquefoil	NBNSYS000003338
Amphibian	Ranidae	Rana temporaria	Common Frog	NBNSYS000005060
Flowering Plant	Ranunculaceae	Ranunculus flammula	Lesser Spearwort	NBNSYS000002718
Flowering Plant	Lamiaceae	Salvia verbenaca	Wild Clary	NBNSYS000004222
Insect - Butterfly	Lycaenidae	Satyrrium w-album	White-letter Hairstreak	NHMSYS0000504085
Terrestrial Mammal	Sciuridae	Sciurus vulgaris	Red Squirrel	NBNSYS000005108
Insect - True Fly (Diptera)	Xylomyidae	Solva marginata	Drab Wood-soldierfly	NBNSYS000007844
Terrestrial Mammal	Soricidae	Sorex araneus	Common Shrew	NBNSYS000005081
Terrestrial Mammal	Soricidae	Sorex minutus	Pygmy Shrew	NBNSYS000005082
Flowering Plant	Caryophyllaceae	Spergula arvensis	Corn Spurrey	NBNSYS000003066
Flowering Plant	Caryophyllaceae	Stellaria palustris	Marsh Stitchwort	NHMSYS0000464012
Flowering Plant	Caprifoliaceae	Succisa pratensis	Devil's-bit Scabious	NBNSYS000004352
Insect - Dragonfly (Odonata)	Libellulidae	Sympetrum striolatum	Common Darter	NBNSYS000005645
Flowering Plant	Juncaginaceae	Triglochin palustre	Marsh Arrowgrass	NBNSYS000002120
Flowering Plant	Plantaginaceae	Veronica scutellata	Marsh Speedwell	NBNSYS000004101
Reptile	Lacertidae	Zootoca vivipara	Common Lizard	NHMSYS0001706186
Terrestrial Mammal	Mustelidae	Meles meles	Badger	NHMSYS0000080191
Mollusc	Valvatidae	Valvata macrostoma	Large-mouthed Valve Snail	NHMSYS0021055992
Insect - True Fly (Diptera)	Platypzidae	Agathomyia falleni		NBNSYS0000028792
Insect - True Fly (Diptera)	Syrphidae	Anasimyia interpuncta		NBNSYS000007040
Insect - Hymenopteran	Andrenidae	Andrena bimaculata	Large Gorse Mining Bee	NHMSYS0000875172
Insect - Hymenopteran	Andrenidae	Andrena humilis	Buff-tailed Mining Bee	NHMSYS0000875218
Insect - Hymenopteran	Andrenidae	Andrena tibialis	Grey-gastered Mining Bee	NHMSYS0000875283
Bony Fish (Actinopterygii)	Anguillidae	Anguilla anguilla	Eel	NBNSYS0000188599
Insect - Earwig (Dermaptera)	Forficulidae	Apterygida media	Short-winged Earwig	NHMSYS0001387259
Insect - Hymenopteran	Pompilidae	Arachnospila minutula		NHMSYS0000875439
Insect - Hymenopteran	Pompilidae	Arachnospila wesmaeli		NBNSYS0000009419
Insect - Hymenopteran	Crabronidae	Argogorytes fargeii		NHMSYS0000875445
Insect - Beetle (Coleoptera)	Cerambycidae	Aromia moschata	Musk Beetle	NBNSYS0000011038
Fungus	Agaricaceae	Battarraea phalloides	Sandy Stiltball	NHMSYS0001475539
Insect - Hymenopteran	Apidae	Bombus humilis	Brown-banded Carder Bee	NHMSYS0000875563
Insect - Hymenopteran	Apidae	Bombus ruderarius	Red-shanked Carder Bee	NHMSYS0000875582
Insect - Hymenopteran	Apidae	Bombus ruderatus	Large Garden Bumblebee	NHMSYS0000875583
Insect - Hymenopteran	Apidae	Bombus rupestris	Hill Cuckoo Bee	NBNSYS0100002028
Insect - True Fly (Diptera)	Syrphidae	Brachyopa bicolor		NBNSYS0000007012
Flowering Plant	Brassicaceae	Brassica oleracea	Wild Cabbage	NBNSYS0000002800
Insect - Hymenopteran	Crabronidae	Cerceris quinquefasciata	Five-banded Weevil-wasp	NHMSYS0000875632
Insect - True Fly (Diptera)	Stratiomyidae	Chorisops nagatomii	Bright Four-spined Legionnaire	NHMSYS0020734178
Insect - Hymenopteran	Chrysididae	Chrysis illigeri		NHMSYS0000875662
Insect - Hymenopteran	Chrysididae	Chrysura radians		NHMSYS0000875679
Insect - Hymenopteran	Crabronidae	Crossocerus distinguendus		NHMSYS0000875784
Insect - True Bug (Hemiptera)	Miridae	Dichroscytus gustavi		NHMSYS0020309152
Insect - Hymenopteran	Vespidae	Dolichovespula media		NHMSYS0000875846
Insect - Hymenopteran	Crabronidae	Ectemnius ruficornis		NHMSYS0000875894
Insect - Hymenopteran	Crabronidae	Ectemnius sexcinctus		NBNSYS0000009512
Centipede	Dignathodontidae	Henia brevis		NBNSYS0000011401
Insect - Beetle (Coleoptera)	Coccinellidae	Hippodamia variegata	Adonis' Ladybird	NBNSYS0000008315
Flowering Plant	Asparagaceae	Hyacinthoides non-scripta	Bluebell	NBNSYS00000002185
Insect - Hymenopteran	Colletidae	Hylaeus cornutus	Spined Hylaeus	NHMSYS0000876101
Insect - Hymenopteran	Colletidae	Hylaeus signatus	Large Yellow-face Bee	NHMSYS0000876116
Insect - Hymenopteran	Halictidae	Lasioglossum malachurum	Sharp-collared Furrow Bee	NBNSYS0100003670
Insect - Hymenopteran	Halictidae	Lasioglossum pauxillum	Lobe-spurred Furrow Bee	NHMSYS0000876200
Insect - Hymenopteran	Formicidae	Lasius brunneus	Brown Tree Ant	NHMSYS0000876221
Spider (Araneae)	Gnaphosidae	Micaria subopaca		NBNSYS0000008672
Insect - Hymenopteran	Vespidae	Microdynerus exilis		NHMSYS0000876330
Stonewort	Characeae	Nitella mucronata	Pointed Stonewort	NHMSYS0000461051
Insect - Hymenopteran	Apidae	Nomada fucata	Painted Nomad Bee	NHMSYS0000876422
Insect - Hymenopteran	Crabronidae	Nysson dimidiatus	Small Spurred Digger Wasp	NHMSYS0000876469
Insect - Hymenopteran	Megachilidae	Osmia bicolor	Red-tailed Mason Bee	NHMSYS0000876508
Spider (Araneae)	Lycosidae	Pardosa saltans		NBNSYS0100004475
Insect - Beetle (Coleoptera)	Cerambycidae	Phytoecia cylindrica		NBNSYS0000011063
Conifer	Pinaceae	Pinus sylvestris	Scots Pine	NBNSYS0000004629
Flowering Plant	Poaceae	Poa bulbosa	Bulbous Meadow-grass	NBNSYS0000002546
Insect - Beetle (Coleoptera)	Cerambycidae	Prionus coriarius	Tanner Beetle	NBNSYS0000010996
Insect - Hymenopteran	Chrysididae	Pseudomalus violaceus		NBNSYS0100004923
Bony Fish (Actinopterygii)	Salmonidae	Salmo trutta	Brown/Sea Trout	NBNSYS0000188607
Bony Fish (Actinopterygii)	Salmonidae	Salmo trutta subsp. trutta	Sea Trout	NHMSYS0000544745
Spider (Araneae)	Theridiidae	Sardinidion blackwalli		NHMSYS0020785991
Insect - True Fly (Diptera)	Scenopinidae	Scenopinus fenestralis	House Windowfly	NBNSYS0000007935
Insect - Hymenopteran	Halictidae	Sphecodes crassus	Swollen-thighed Blood Bee	NBNSYS0000009728
Insect - Hymenopteran	Halictidae	Sphecodes reticulatus	Reticulate Blood Bee	NHMSYS0000876692
Insect - Hymenopteran	Tiphidae	Tiphia minuta	Small Tiphia	NHMSYS0000876758
Flowering Plant	Scrophulariaceae	Verbascum pulverulentum	Hoary Mullein	NHMSYS0000464794
Terrestrial Mammal	Leporidae	Lepus europaeus	Hare	NHMSYS0000080218
Flowering Plant	Potamogetonaceae	Potamogeton coloratus	Fen Pondweed	NBNSYS0000002128

## Supporting information BBS 3: Stakeholder Groups

Table 1: Stakeholder groups mapped by most relevant BCAs.

Stakeholder	River Wensum	River Yare	Wooded Ridge	Green Streets	Heathland	Historic Habitats	Community and Active Spaces
Anglian Water	X	X		X			X
Broads Authority	X	X					
Chapelfield Society						X	X
Diocese	X		X	X		X	
Environment Agency	X	X	X	X	X	X	X
Flagship Housing			X	X			
Friends of Danby Woods		X	X				
Friends of Earlham Cemetery						X	
Friends of Eaton Park			X			X	
Friends of Heigham Park							X
Friends of Jubilee Park Norwich						X	X
Friends of Ketts Heights			X		X		
Friends of Marlpit Wood	X						
Friends of Mousehold Heath			X		X		
Friends of Norwich in Bloom				X			X
Friends of Rosary Cemetery			X			X	
Friends of Strawberry Fields		X	X				

Friends of the Earth Norwich Local Group	X	X	X	X	X	X	X
Friends of Train Wood & Marriott's Way	X		X				
Friends of Waterloo Park						X	X
Friends of West Earlham Woods			X				
Gardening for Wildlife							
Grapes Hill Community Garden Group				X			X
Hawk and Owl Trust	X	X	X	X	X	X	X
Heavenly Gardens			X	X		X	
Lakenham and Town Close Green Spaces				X			X
Lion Wood Conservation Group			X				
Natural England	X	X	X	X	X	X	X
Norfolk and Norwich Naturalists' Society	X	X	X	X	X	X	X
Norfolk Flora Group	X	X	X	X	X	X	X
Norfolk Green Care Network						X	X
Norfolk Rivers Trust	X	X					
Norfolk Wildlife Trust - Norwich Local Group	X	X	X	X	X	X	X
Norfolk Wildlife Trust	X	X	X	X	X	X	X
Norwich Bat Group	X	X	X	X	X	X	X
Norwich City Council Development Management	X	X	X	X	X	X	X
Norwich City Council Housing/Property				X	X		X
Norwich City Council Landscape	X	X	X	X	X	X	X

Norwich City Council Tree officer	X	X	X	X	X	X	X
Norwich City Council – Parks and Open Spaces Warden	X	X	X	X	X	X	X
Norwich Climate Commission	X	X	X	X	X	X	X
Norwich Environmental Weekender	X					X	
Norwich Fringe Project	X	X	X			X	
Norwich Over the Wensum Neighbourhood group	X			X			X
Norwich Society				X		X	
Norwich Swift Network	X	X	X	X	X	X	X
Plantation Garden Preservation Trust							X
RSPB	X	X	X	X	X	X	X
South Norfolk and Broadland District Council	X	X	X	X		X	X
The Landscape Partnership	X		X	X		X	X
The Old Library Wood Collective			X				
University of East Anglia		X	X	X			X
WRAP - Friends of Wensum Parks	X					X	X
Yare Valley Society		X	X				

## Supporting Information BBS5: List of Outputs (report sections, annexes, appendices and supporting information)

### BBS Final Report

Section Name	Description
<b>Executive Summary</b>	Short summary of each section, containing key points.
<b>Section 1: Introduction</b>	Introduction to the study area, aims, outputs, methods and wider policy context.
<b>Section 2: Results from Data Gathering and Gaps Identification</b>	Review of current data availability and gaps in site, species and habitat information. Contains an evaluation of issues related to recording effort, and insights from a stakeholder engagement workshop.
<b>Section 3: Norwich City Natural Assets</b>	Descriptions and mapping of Norwich's natural assets, including species, habitats, sites and their related land use and condition information.
<b>Section 4: Biodiversity Character Areas in Norwich City</b>	Presentation of 6 'biodiversity Character Areas' (BCAs) designed to thematically group areas with shared characteristics to allow for a more strategic approach to identifying opportunities.
<b>Section 5: Biodiversity Hotspots in Norwich City</b>	Results from a heatmapping analysis used to identify areas with the highest current biodiversity value, based on species, site and habitat information.
<b>Section 6: BNG 'Strategic Significance' uplift</b>	Recommendations for how the BCAs and associated habitats identified in this study can be used to determine areas for strategic significance uplift under mandatory Biodiversity Net Gain.
<b>Section 7: Threats to Biodiversity in Norwich City</b>	Description of threats to biodiversity, categorised both into thematic areas, and into BCAs they are relevant to.
<b>Section 8: Opportunities for Biodiversity Enhancement in Norwich City</b>	Details of opportunities for biodiversity, classified into the BCAs they are applicable to, with additional description and mapping of opportunities in relation to the Lawton Principles.
<b>Section 9: Development of a survey and monitoring Framework</b>	Introduction to the Survey and Monitoring Framework (Annex 1), which gives recommendations for addressing current data gaps, monitoring changes, and measuring successes.

<b>Section 10: Project recommendations for enhancing biodiversity in Norwich City</b>	Overall recommendations to be carried forwards by Norwich City Council and NBIS, relating to themes such as governance, planning, management, engagement and survey and monitoring.
<b>Section 11: Further developments of the study</b>	Discussion of next steps beyond the completion of the baseline study, with reference to feasibility analysis, prioritisation, and creating an action plan.
<b>Section 12: Conclusion</b>	Key messages from the baseline study overall, and for each BCA.
<b>Section 13: Definitions table</b>	Glossary of key terms used within the study documents.
<b>Section 14: References</b>	Bibliographic list of sources referenced in the study documents.
<b>Annex 1_Survey and Monitoring Framework</b>	Key study output, setting out a structured foundation for recording species, sites and habitats, in order to measure the success of biodiversity conservation actions, monitor changes, and fill the data gaps. <b><i>A breakdown of sections in this document is presented separately below.</i></b>
<b>Annex 2_Stakeholder Workshop Reports</b>	Report on key feedback and findings from the stakeholder workshop and additional consultation, and summary document that was presented to stakeholders after the event.
<b>Appendix BBS1_Study Approach and Methodology</b>	Details of the methods and broad approach used to develop the baseline, including data gathering, analysis, mapping and reporting.
<b>Appendix BBS2_Existing Data and Information Collated_INTERNAL USE ONLY</b>	Spreadsheet containing full sources of all information and data received and used within the baseline study, to be used internally.
<b>Appendix BBS2_Existing Data and Information Collated_PUBLIC</b>	Public use version of Appendix BBS2, with sensitive information removed.
<b>Appendix BBS3_Gaps Analysis</b>	Detailed information and summaries pertaining to gaps in the species, site, habitat and land use data available for this study.
<b>Appendix BBS4_Natural Assets</b>	Further quantitative and mapped information relating to the sites, species and habitats that make up the natural assets of Norwich.
<b>Appendix BBS5_BCA Profiles</b>	Detailed descriptions and definitions of each BCA identified in the baseline, including characteristic properties and

	methods used to derive specific boundaries.
<b>Appendix BBS6_Layered PDFs</b>	Compiled maps from each report document, containing interactive elements that allow a detailed look of individual map layers.
<b>Appendix BBS7_Threats and opportunities table</b>	Spreadsheet containing details of all threats and opportunities, including details of relevant locations and prioritisation.
<b>Supporting Information BBS1_Local Wildlife Citations</b>	Copies of relevant County Wildlife Site citation documents, including site descriptions and maps.
<b>Supporting Information BBS2_Species List_SpRichScore_BioHotspots</b>	List of species included within the biodiversity hotspot mapping and species richness analyses.
<b>Supporting Information BBS3_Stakeholders by BCA</b>	List of stakeholder groups categorised by the BCAs they have most relevance to.
<b>Supporting Information BBS4_Results from field survey</b>	An assessment of BBS field survey needs and the results of the field surveys undertaken to inform BCA development and provide specific management advice.
<b>Supporting Information BBS5_List of Outputs</b>	Short descriptions of each report section, and every annex, appendix and supporting information document.

## Annex 1: Survey and Monitoring Framework

<b>Section Name</b>	<b>Description</b>
<b>Section 1: Introduction</b>	Introduction to the framework and how it relates to the wider baseline study, including a description of its aims, scope and purpose.
<b>Section 2: Survey and Monitoring Policy Context</b>	Findings from a literature review of relevant guidance and legislation, including a statement on the statutory and non-statutory requirements for survey and monitoring.
<b>Section 3: Methodology for Setting Up a Survey and Monitoring Programme</b>	Considerations for setting up a survey and monitoring programme, including approach, survey design, sampling, resourcing issues, and carrying out revisions.
<b>Section 4: Developing a Survey and Monitoring List for Norwich</b>	Rationale and methods behind the development of the survey and monitoring list (Appendix SM1).
<b>Section 5: Recommendations</b>	Detailed key messages related to species, sites and habitats, providing recommendations for a survey and monitoring programme for Norwich.



<b>Section 6: Conclusions</b>	Key messages to be taken from the Survey and Monitoring Framework.
<b>Section 7: Definition of Terms</b>	Glossary of key terms used within the study documents.
<b>Section 8: References</b>	Bibliographic list of sources referenced in the Survey and Monitoring Framework.
<b>Section 9: List of Captions</b>	List of figure and map captions from the Survey and Monitoring Framework document.
<b>Appendix SM1_Survey and Monitoring List</b>	Spreadsheet containing detailed information on the survey type requirements for different situations, within the overall themes of addressing baseline gaps, measuring success, and monitoring change.
<b>Appendix SM2_Supplementary Methodology</b>	Summary of approaches for survey and monitoring, including types of recording; specific method considerations; and selecting a sampling approach.
<b>Appendix SM3_Guidance for conducting wildlife surveys</b>	Detailed recommendations for undertaking survey work, including considerations around funding, use of volunteers versus professionals, accessing and sharing resources, and managing data.
<b>Appendix SM4_Survey and Monitoring Questionnaire Results</b>	Summary of the questions and responses from the online stakeholder survey.

# Supporting Information BBS4: Assessment of BBS survey needs and results of field surveys

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## 1. Introduction

1. The assessments documented in this section aim to address key biodiversity evidence gaps identified through stakeholder consultation, providing updated inputs to strengthen the Norwich Biodiversity Baseline analysis. It compiles site-level findings that confirm status of vital habitats and indicators to directly feed into the Biodiversity Character Area evidence base. It also provides supportive management guidance for conserving remnant heathlands/acid grasslands and ancient woodlands sites, detailing specific sites, their conditions and priorities.

## 2. Review of field survey needs

2. Following stakeholder consultation and site visits with Norwich City Council (Norwich CC) site managers, it was apparent that most of the Norwich CC, Norfolk Wildlife Trust (NWT) and other partner-owned sites are visited regularly, have management plans in place, or have been surveyed recently (a number of woodland sites were surveyed in 2022), so further survey of these sites was not necessary. The exceptions to this were the sites described in the following section.

3. It is important to emphasize the context within which this Framework has been developed and the purposes of the Norwich Biodiversity Baseline Study (BBS) – these outputs are built on evidence-based data analysis and stakeholder engagement at the strategic level, where site-specific detail has been highlighted it has been reviewed, but this piece of work does not have the scope to survey every site within Norwich, this is not practical nor is it appropriate or effective use of project time. A significant proportion of the survey and monitoring time, due to the reasons detailed above, has been spent on expert review of the Survey and Monitoring Framework and the

development of the ecologically evidenced Biodiversity Character Area (BCA) opportunities and recommendations. Multiple specific surveys need to be targeted and a well thought through plan put in place, hence why the Survey and Monitoring Framework has been developed to aid that plan's production into an effective Survey and Monitoring Programme. Where the expert review has identified areas knowledge gaps, such as that regarding remnant heathland and acid grassland, further survey and stakeholder engagement has occurred to verify the baseline (see Heathland/Acid Grassland Management Advice section below).

4. Many of the Natural Areas across the city have management plans in place, these provide sufficient information and are sufficiently up to date and do not require survey for this BBS. Parks and Open Spaces mostly do not have management plans (except for a small number of sites including Mousehold Heath, Eaton and Waterloo Parks), but have a maintenance schedule, which can add valuable insight into how sites are managed and likely survey implications.
5. Good baseline information from site surveys was obtained from Norwich CC, NWT and other site managers and partners across the city to inform development of the BCAs and provide site managers with key management advice.
6. Sites and habitats identified as part of the BCA development process as requiring further investigation to confirm the presence of important habitats and/or their condition, have been assessed by either Norfolk County Council County Ecologists undertaking field surveys or through conversations with NWT, who undertook Rapid Woodland Assessment surveys of woodland County Wildlife Sites in 2022.
7. There are also opportunities to undertake further field survey, as detailed in OP5.1 (and potentially OP5.2, and OP5.4 led by South Norfolk Council) These sites (for example golf courses) have been identified as having the potential to support existing priority habitats within the BCA habitats or have the potential to be restored to priority habitats such as heathland. These sites are privately owned and will require liaison with landowners.

### 3. Site management advice from field surveys undertaken as part of this study

8. A summary of the management for heathland/grassland sites and woodland sites is set out below:

#### 3.1. Heathland/Acid grassland Management Advice

9. Heathland is one of the more fragmented habitats: there is potential to address this using a combination of desk study data (either from historic maps, or from site citations) and communications from stakeholders in the area.

#### *Disused Railway Hellesdon CWS*

10. The Disused Railway Hellesdon CWS was identified as having potential for acidic grassland which would be a characteristic of the Heathland BCA.

#### Site Survey

11. A walkover botanical survey of the site was undertaken on Wednesday 26<sup>th</sup> July, to look for acid grassland characteristics. Some acid grassland species such as yarrow (*Achillea millefolium*), red sorrel (*Rumex acetosella*), and sheep's fescue (*Festuca ovina*) were found at time of survey, which aligns with the CWS citation that the site is neutral to acidic. This allowed this site to be included in the Heathland BCA given the characteristic species identified on site corroborating the CWS citation and the historical mapping evidence.

#### **Mile Cross Meadows CWS**

12. In discussion with NWT, Mile Cross Meadows CWS could be a site that retains some remnant heathland characteristics, which is re-iterated in the citation for the site "*In contrast to the remainder of the site, the northern strip of grassland is on light sandy soils and has no standing water features. ... The sward supports hare's foot clover (Trifolium arvense), sheep's fescue (Festuca ovina) and yarrow, indicating an acid-neutral mosaic*".

13. This allowed this site to be included in the Heathland BCA given the characteristic species identified on site corroborating the CWS citation and the historical mapping evidence.

#### 3.2. Woodland Management Advice

14. As part of the survey element of this study, although limited survey was required, other than for verification of the baseline, as per Heathland/Acid Grassland Management Advice section above; Norwich CC land managers requested survey or review of survey details of three woodland Natural Area sites, as currently the overarching direction of management is uncertain and advice was sort from the project team.

#### **Sycamore Crescent Wood CWS**

##### **Site Description:**

15. A narrow strip of woodland leading down to and alongside the River Wensum. The boundary has recently been revised to exclude an area of allotments.

16. The woodland on the upper slopes consists of tall mature trees by the entrance comprising mainly beech *Fagus sylvatica* & sycamore *Acer pseudoplatanus* interspersed with oak *Quercus robur*. Elder *Sambucus nigra*, hazel *Corylus avellana*, horse chestnut *Aesculus hippocastanum* and elm *Ulmus procera* form the sub-canopy with ivy *Hedera helix* prevalent climbing up the trees.

17. There is evidence of past coppicing but uncertainty about current management. Dead wood is present. A wide central path runs down through the wood towards the river. Brash and household garden waste is dumped beside the houses on the west side.
18. A narrow strip runs along the river at first over damp alluvial soil. Many medium-aged trees, mostly sycamore sit fairly close together here, casting shade on the woodland flora. Ivy is therefore abundant with little other flora. Where wider the woodland becomes more diverse with various ferns, large trunks, fallen dead wood and areas carpeted in native bluebell *Hyacinthoides non-scripta*. The western central area has a more established shrub layer with a lot of regeneration. There is less ivy here with bird cherry *Prunus padus*, elm, horse chestnut and young beech. Garlic mustard *Alliaria petiolata*, bluebell, bramble *Rubus fruticosus* & ivy constitute the herb layer. Occasional lime *Tilia x europaea* trees sit on the path by the river.
19. Mostly hybrid bluebells are present along with some native plants and Spanish. Pendulous *Carex pendula* and greater pond sedge *Carex riparia* are found near the river. Wood anemone *Anemone nemorosa* is locally abundant and a variety of ferns including male fern *Dryopteris filix-mas*, broad-leaved buckler fern *Dryopteris dilatata* and soft shield fern *Polystichum setiferum*.

#### **Site Condition:**

20. Currently in favorable condition, but some issues were identified during the rapid assessment carried out by NWT in May 2022.

#### **Headline Management Priorities:**

21. The key focus should be on opening up the tree canopy to reduce shading and encourage good ground flora, particularly in and around areas where native bluebell are present. This should be achieved by thinning/ removing small to medium sized sycamore trees.

#### **Specific Management Recommendations:**

**Litter/ fly tipping:** currently lots of rubbish and household garden waste present, especially in the southern section of the woodland, therefore litter clearance is advised.

**Sycamore sapling removal:** it is advised that some thinning of young sycamore takes place particularly in the northern area of the woodland where native bluebells are present. However, it is not considered necessary to remove mature sycamore trees (taking account of climate change and their possible native status).

**Browsing pressure from deer:** there is currently not much natural regeneration of trees and shrubs however deer control is not practical here. Therefore, any coppicing should be protected from deer damage by placing dense brash over coppice stools. New tree saplings could be protected by adding tree guards.

**Elm regeneration:** it is advised that areas of taller elm which is threatened by Dutch Elm Disease is cut back to a lower height to both improve the shrub layer and maintain elm as a component of the woodland in the longer term.

**Riverbank:** it is advised that a more open marginal habitat is maintained and doesn't become overshadowed by trees over time, therefore tree management will be required.

**Non-native Plant Species:** Few-flowered garlic and garden yellow archangel are present (both non-native invasive species that are listed on Schedule 9 of the Wildlife and Countryside Act), therefore their removal is recommended. Snowberry is present, although fairly contained in one area in the west, and could be removed. Himalayan Balsam was also recorded and should be carefully removed.

## **Woodlands Park CWS**

### **Site Description:**

22. A small but diverse woodland largely isolated by development with a varied topography. It contains many mature trees, especially of sycamore *Acer pseudoplatanus* and beech *Fagus sylvatica* and large patches of bluebell *Hyacinthoides non-scripta*. It is well used by the public and contains many informal paths. Impressive veteran trees are present including oak *Quercus robur*, beech and hornbeam *Carpinus betulus*. A well-established shrub layer includes species such as bird cherry *Prunus padus*, hawthorn *Crataegus monogyna*, rowan *Sorbus aucuparia*, elm *Ulmus minor* and holly *Ilex aquifolium*. English bluebell is abundant as a component of the diverse general ground flora which also includes occasional wood meadow grass *Poa nemoralis*. There's a good regeneration of several tree and shrub species including beech, elm and holly.

23. A cluster of osier *Salix viminalis* is found by the entrance to the NW corner of the site. The grassland here is amenity with dandelion *Taraxacum officinalis* agg. and daisy *Bellis perennis* surrounded by *Prunus* sp. and *Elm* sp. hedgerows.

### **Site Condition:**

24. Currently in favorable condition following the rapid assessment carried out by NWT in May 2022.

### **Headline Management Priorities:**

25. The site is in good condition and ongoing management can be 'light touch'. Veteran trees should be protected and sensitively managed, including 'halo-thinning' around these trees to reduce competition from other trees and increase light levels etc.

### **Specific Management Recommendations:**

**Litter/ fly tipping:** some dumping of garden waste and fire sites noted, therefore litter clearance is advised.

**Wood meadow grass:** it is recommended that the location of this rare grass is noted, and the area kept open.

**Sycamore:** some limited thinning of sycamore saplings is advised.

**Amenity Grassland:** the northwest entrance is currently short-mown amenity grassland; it is therefore recommended that mowing frequency is reduced here to encourage a more diverse grassland habitat to form.

**Ancient Woodland Status:** considered to be potentially remnant ancient woodland due to ground flora recorded, however is not currently on the AW Inventory due to its small size. However, it is worth reconsidering this with the new AWI definition.

**County Wildlife Site**  
**(Ref No: 240)**

**Site Name:** River Yare (West and East), Bowthorpe **Parish:** Norwich/Colney  
**Grid Reference:** TG 175084-189083 **Length:** 2.9 km  
**Area:** 2.8 ha

**District:** Norwich

**Site Description:**

This site extends from the Bowthorpe Southern Park car park along the river to the B1108 Earlham Road. The river meanders through grazing marsh for most of the stretch with a small section of trees and shrub towards the eastern end and woodland towards the west. Colney weir stands just west of Tollgate road which crosses the river. Further east the river has been diverted from its old meandering course which holds the district boundary to a straighter course which continues to the B1108.

The marshes are grazed by horses in the north and cattle to the south with public access alongside much of the river. Four County Wildlife Sites lie adjacent to the river; 2012, 1451, 1450 and 235.

This site meets the following CWS criteria:

- Species-rich aquatic, marginal and emergent riverine flora.
- Rare or scarce plant species recorded.
- Presence of some natural physical features.
- Connected to habitats of biodiversity interest.

The channel flow is steady throughout except at the weir where it gets slightly slower. The width varies from an average of 6-10m to 20m at the woodland. There is some variation in water depth with shallow areas by the wooded section and deeper sections further west. There is an old wall by the narrowest section of river in the east where the flow is fastest. A wide sandy berm occurs near the Tollgate Road and still areas occur among the emergent vegetation in the channel. Aside from the wooded section there are very few scattered trees along the river banks providing little shade.

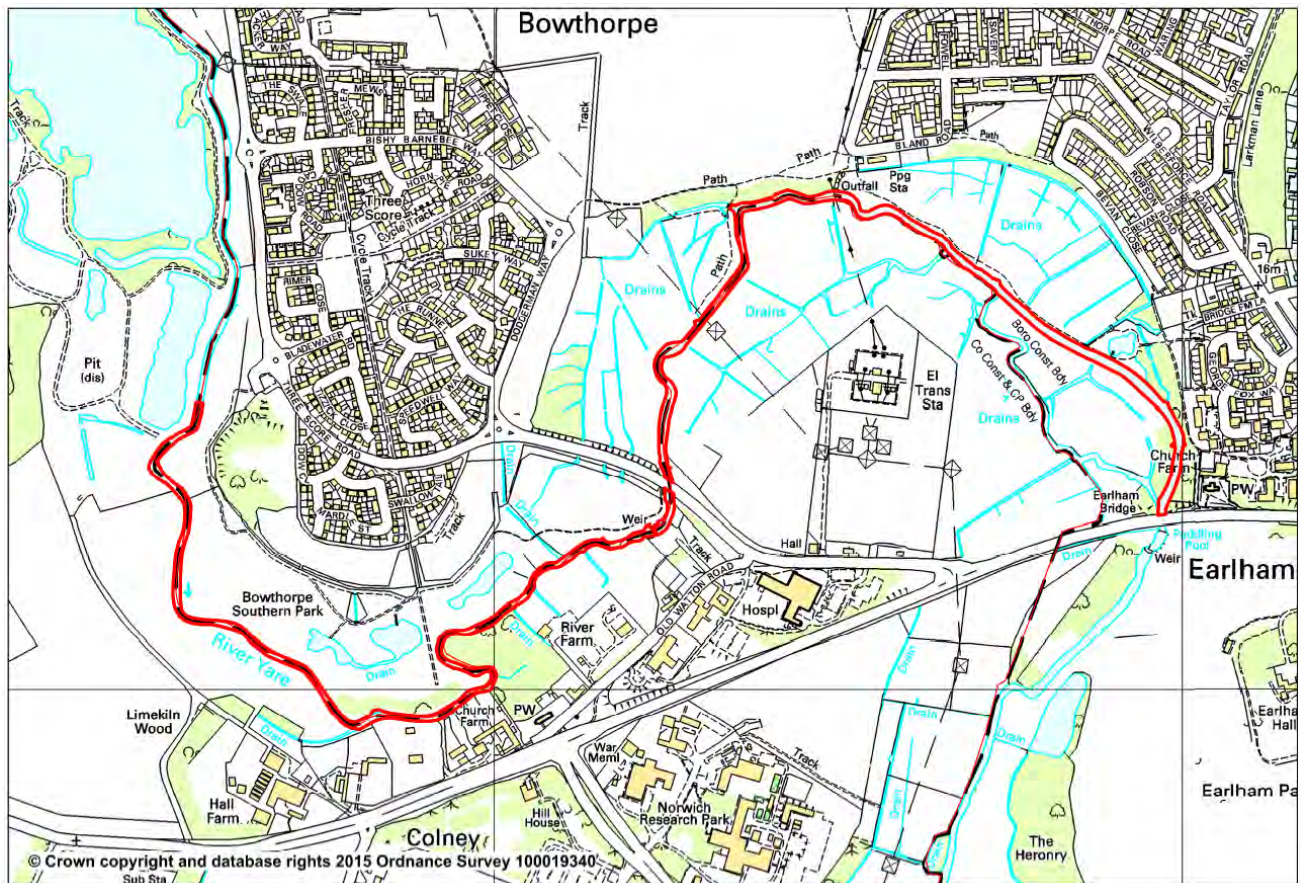
Yellow water lily *Nuphar lutea* and unbranched bur-reed *Sparganium emersum* occur frequently throughout the river. Lesser water parsnip *Berula erecta* and perfoliate pondweed *Potamogeton perfoliatus* are also locally frequent. Dense stands of emergent species such as bulrush *Schoenoplectus lacustris*, branched bur-reed *Sparganium erectum* and reed sweet-grass *Glyceria maxima* occur in the channel occasionally. Other emergent species include river water dropwort *Oenanthe fluviatilis* and arrowhead *Sagittaria sagittifolia*. Marginal vegetation such as blue water-speedwell *Veronica anagallis-aquatica*, great willowherb *Epilobium hirsutum*, gypsywort *Lycopus europaeus* and water forget-me-not *Myosotis scorpioides* are frequent. West of the woodland the margin widens to a small pond and additional species here include purple loosestrife *Lythrum salicaria* and hemp agrimony *Eupatoria cannabinum*. Occasional species include common meadow-rue *Thalictrum flavum*, meadowsweet *Filipendula ulmaria* and medium flowered winter-cress *Barbarea intermedia*.

A wooded area occurs where the river backs onto village houses in Colney. Trees grow on both sides of the river, species on the northern bank include grey willow *Salix cinerea*, crack willow *Salix fragilis*, hawthorn *Crataegus monogyna* elder *Sambucus nigra* and blackthorn *Prunus spinosa*. The southern bank has more grey



poplar *Populus x canescens*, ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*. Some trees overhang the river. The wood has standing water in winter.

Opposite-leaved pondweed *Groenlandia densa* and long-stalked pondweed *Potamogeton praelongus* have been previously recorded at the site.



**County Wildlife Site  
(Ref No: 1445)**

**Site Name:** Bluebell Marsh

**Parish:** Norwich

**Grid Reference:** TG 198065

**Area:** 12.7 ha

**District:** Norwich

**Site Description:**

This 12.7 ha site comprises two areas of the floodplain bordering the River Yare. It shares boundaries with three other county wildlife sites; University of East Anglia (UEA) Broad at the north-west corner, UEA Marsh to the north and Softley Drive Meadows (unmanaged wet woodland) along a section of its western boundary.

The southern compartment of the site has no public access and consists of marshy grassland, managed through grazing by Mr Bartram of Bartram Mowers, Bluebell Road. The northern compartment is largely reed bed and is managed by the UEA and open to the public. A strip of willow (*salix sp.*) and alder (*Alnus glutinosa*) dominated woodland connects the two areas.

The reed bed in the northern compartment is centrally almost 'pure' reed bed, consisting of around 90% reed (*Phragmites australis*), however the western side is dominated by lesser pond sedge (*Carex acutiformis*) and is tending more toward fen rather than pure reed bed. Other grasses include reed canary (*Phalaris arundinacea*) and reed sweet-grass (*Glyceria maxima*) towards the east and in the middle.

A pond in the north-west corner is open and light with branched bur-reed (*Sparganium erectum*), greater pond sedge (*Carex riparia*), bull rush (*Typha latifolia*) and water soldier (*Stratiotes aloides*). A dense circle of willow surrounds the pond.

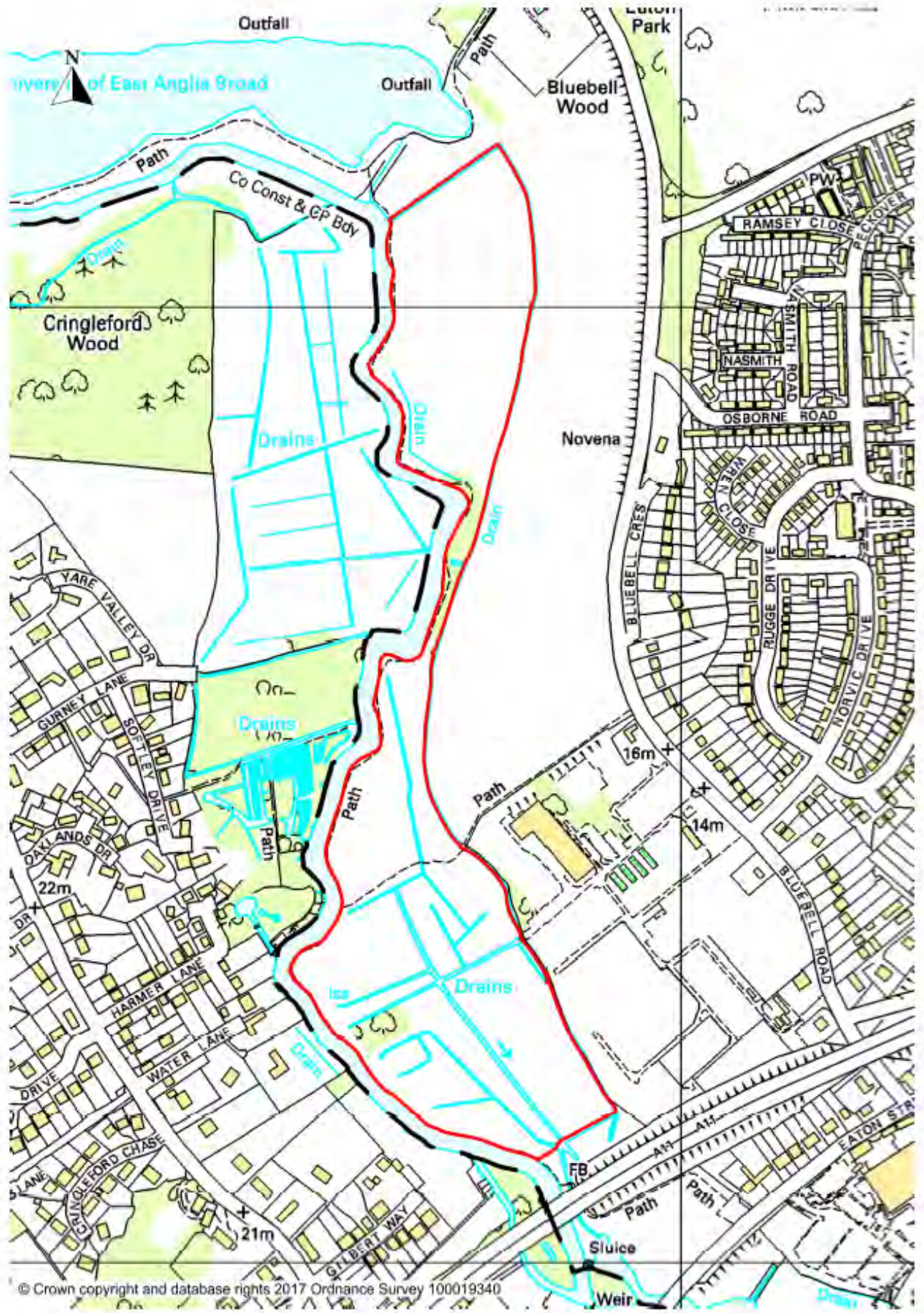
The northerly section of the marshy grassland compartment is the least diverse of two halves and comprises a sward of fairly uniform height and even mix of plants. The southern half of the grassland is dominated by pond sedges, hard (*Juncus inflexus*) and soft rush (*Juncus effusus*), creeping thistle (*Cirsium arvense*) and frequent meadow sweet (*Filipendula ulmaria*).

There is a small area of mainly willow and alder scrub to the western boundary and north-east corner of the southern compartment.

The site contains a series of drains, some narrow and heavily vegetated. The central drain is wide and open with frogbit (*Hydrocharis morsus-ranae*). Jointed rush (*Juncus articulatus*) is frequent across the meadow along with hairy sedge (*Carex hirta*).

A dry bank on the eastern side of the site is quite species poor. Here mostly sedges and rushes are present but also square-stalked St. John's wort (*Hypericum tetrapterum*).





Survey dates: 04/07/2009 and 01/06 – 31/08 2016  
 Year notified: 1985

<b>County Wildlife Site name</b>	<b>The Heronry and Violet Grove</b>
<b>County Wildlife Site number</b>	<b>1446</b>
<b>Grid reference</b>	<b>TG187077</b>
<b>Parish</b>	<b>Earlham</b>
<b>District</b>	<b>Norwich</b>
<b>Area (ha)</b>	<b>13.74ha</b>
<b>Notification category</b>	<b>Mosaic; Woodland, Grassland, fen</b>

### Site description:

A site with various habitats, including marsh, swamp and woodland. The River Yare forms the western border to the site with CWS 1447 UEA marsh sitting immediately to the south. The marsh supports mainly tall grasses and sedges with occasional herbs such as meadowsweet *Filipendula ulmaria* and common valerian *Valeriana officinalis*. The woodland areas vary across the site with ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus* to the north, and scattered oak *Quercus robur* and birch *Betula pendula* over acid soils to the south. Well-used footpaths cross the site, particularly in the woodland areas.

The northern section of woodland is called The Heronry. In the far northern corner sits a large pond and wetland area. Overhanging crack willow *Salix fragilis* and large ash trees dominate the margins whilst greater pond sedge *Carex riparia* inhabits the water alongside branched bur-reed *Sparganium erectum*. South of the pond the woodland is dominated by sycamore with holly *Ilex aquilinum*. Ash of various ages is also frequent in the canopy with occasional beech *Fagus sylvatica*. Ground flora is poor with ivy *Hedera helix* the dominant plant. Old alder *Alnus glutinosa* coppice is found to the west where soils are damper leading down to the marsh. Creeping jenny *Lysimachia nummularia* is found in this area with bittersweet *Solanum dulcamara*, water forget-me-not *Myosotis scorpioides*, and common hemp nettle *Galeopsis tetrahit*. Goat willow *Salix caprea*, redcurrant *Ribes rubrum*, and remote sedge *Carex remota* are also present.

The central section of drier woodland supports nettle *Urtica dioica* as the dominant ground flora but with patches of wood avens *Geum urbanum*, enchanter's nightshade *Circaea lutetiana* and herb robert *Geranium robertianum*. Wood dock *Rumex sanguineus* is abundant and male fern *Dryopteris filix-mas* occasional. Elm *Ulmus sp.* is fairly frequent throughout the woodland with some standing dead trees. There is the occasional mature oak and frequent tall, straight ash trees. Further south the woodland supports more mature oak, ash and beech with a similar understorey and ground flora to that previously described.

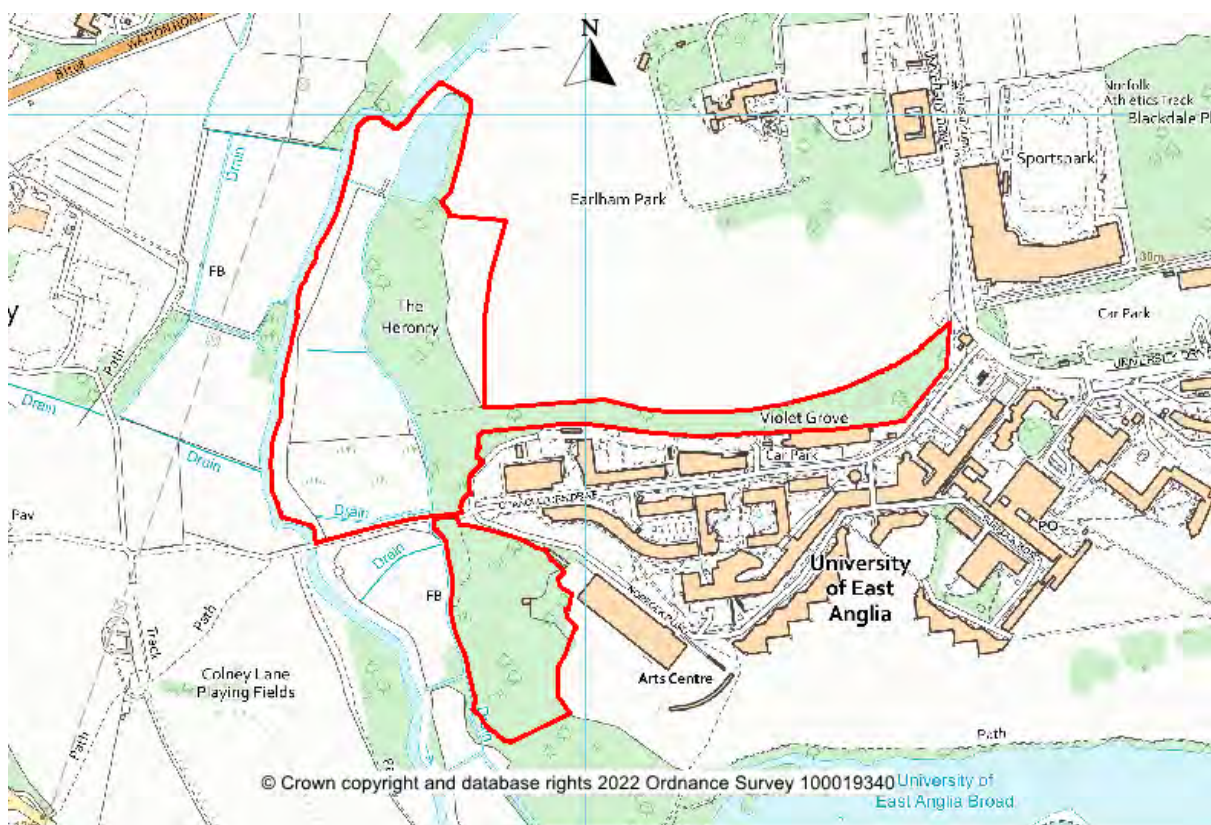
On higher ground the acidic soils support a typical herb layer of bracken *Pteridium aquilinum* and bluebell *Hyacinthoides non-scripta* amongst widely spaced oak and silver birch *Betula pendula*. On lower ground the woodland is similar to previous sections with oak and ash over hawthorn *Crataegus monogyna*, elder *Sambucus nigra* and hazel *Corylus avellana* with prolific young ash seedlings, nettle and bramble *Rubus fruticosus*. A row of tall lime *Tilia europaea* coppice (presumably planted) runs alongside a ditch.

Violet grove is a narrow ribbon of woodland running east-west just north of the UEA campus buildings and car park. A sinuous public footpath runs through it. Large mature oaks are frequent with additional canopy trees being sycamore and ash. The shrub layer comprises elder, hazel, holly, elm and field maple *Acer campestre*. The herb layer was mainly nettle and ground ivy *Glechoma hederacea* at the time of survey. Sycamore and elder are regenerating.



An area of fen swamp sits to the west of the site. It is divided into compartments and grazed by cattle. The southern block is mostly swamp with tall reed sweet grass *Glyceria maxima*, reed canary grass *Phalaris arundinaceae*, reed *Phragmites australis* and greater pond sedge with occasional broad-leaved dock *Rumex obtusifolius*, amphibious bistort *Persicaria amphibia*, tufted vetch *Vicia cracca* and abundant bindweed. Meadowsweet becomes denser in the central area & common valerian becomes frequent to the east interspersed within the meadowsweet. A stagnant ditch and fence separates the southern field from the northern one. Greater pond sedge is abundant in this northern field with reed canary grass, reed sweet grass & reed. Meadowsweet has been grazed off; occasional water mint *Mentha aquatica*, valerian and gypsywort *Lycopus europaeus* are apparent in the grazed sward. Beyond the cattle grazed area is an overgrown un-fenced section with abundant hogweed *Heracleum sphondylium*, bindweed, frequent reed canary grass, reed and tufted vetch and great willowherb *Epilobium hirsutum*. It supports a denser sward with occasional marsh woundwort *Stachys palustris* on the edges of the path.

An area of neutral grassland sits on the eastern boundary within Earlham Park. Whilst cut at the time of the 2021 survey species present include Yorkshire fog *Holcus lanatus*, nettle, creeping thistle, yarrow *Achillea millefolium* and creeping bent *Agrostis stolonifera*. An area further north appears to be amenity grassland and has been deleted from the CWS.



Survey dates: 14/08/1996 & 20/06/2009 & 15/7/21 & 16/7/21;  
 Area deleted: 2022  
 Year notified: 1985

## PLANT LIST

Species/scientific name	Common name	DAFOR
<i>Acer campestre</i>	Field maple	O
<i>Acer platanoides</i>	Norway maple	R
<i>Acer pseudoplatanus</i>	Sycamore	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Aegopodium podagraria</i>	Ground elder	O
<i>Aesculus hippocastanum</i>	Horse chestnut	O
<i>Agrostis stolonifera</i>	Creeping bent	O
<i>Alliaria petiolata</i>	Garlic mustard	O
<i>Alnus glutinosa</i>	Alder	LF
<i>Arctium minor</i>	Lesser burdock	O
<i>Betula pendula</i>	Silver birch	O
<i>Carex pseudocyperus</i>	Cyperus sedge	R
<i>Carex remota</i>	Remote sedge	O
<i>Carex riparia</i>	Greater pond sedge	LA
<i>Centaurea nigra</i>	Common knapweed	O
<i>Chamaenerion angustifolium</i>	Rosebay willowherb	O
<i>Circaea lutetiana</i>	Enchanter's nightshade	O
<i>Cirsium arvense</i>	Creeping thistle	LF
<i>Corydalis claviculata</i>	Climbing corydalis	O
<i>Corylus avellana</i>	Hazel	F
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Cytisus scoparius</i>	Broom	R
<i>Dactylis glomerata</i>	Cock's foot	O
<i>Digitalis purpurea</i>	Foxglove	R
<i>Dryopteris filix-mas</i>	Male fern	R
<i>Epilobium hirsutum</i>	Great willowherb	O
<i>Eupatoria cannabinum</i>	Hemp agrimony	O
<i>Fagus sylvaticum</i>	Beech	O
<i>Filipendula ulmaria</i>	Meadowsweet	LF
<i>Fraxinus excelsior</i>	Ash	F
<i>Galeopsis tetrahit</i>	Hemp nettle	O
<i>Galinsoga parviflora</i>	Gallant soldier	R
<i>Galium aparine</i>	Cleaver	F
<i>Geranium molle</i>	Dove's foot geranium	R
<i>Geranium robertianum</i>	Herb robert	F
<i>Geum urbanum</i>	Wood avens	O
<i>Glechoma hederacea</i>	Ground ivy	F
<i>Glyceria maxima</i>	Reed sweet grass	LA
<i>Hedera helix</i>	Ivy	F
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Holcus lanatus</i>	Yorkshire fog	LF
<i>Humulus lupulus</i>	Hop	R
<i>Hyacinthoides non-scriptus</i>	Bluebell	LA
<i>Ilex europaeus</i>	Holly	O
<i>Iris pseudacorus</i>	Yellow flag	O
<i>Lapsana communis</i>	Nipplewort	R
<i>Ligustrum ovalifolium</i>	Privet	R

Survey dates: 14/08/1996 & 20/06/2009 & 15/7/21 & 16/7/21;  
Area deleted: 2022  
Year notified: 1985

<i>Lolium perenne</i>	Perennial rye grass	LF
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Lysimachia nummularia</i>	Creeping jenny	R
<i>Mentha aquaticum</i>	Water mint	O
<i>Moehringia trinervia</i>	Three-nerved sandwort	R
<i>Myosotis scorpioides</i>	Water forget-me-not	O
<i>Persicaria amphibia</i>	Amphibious bistort	O
<i>Phalaris arundinacea</i>	Reed canary grass	LF
<i>Phleum pratense</i>	Timothy	O
<i>Phragmites australis</i>	Common reed	LA
<i>Plantago lanceolata</i>	Ribwort plantain	O
<i>Plantago major</i>	Greater plantain	O
<i>Poa pratensis</i>	Smooth meadow grass	O
<i>Populus album</i>	White poplar	O
<i>Populus x canadensis</i>	Hybrid black poplar	
<i>Prunella vulgaris</i>	Self-heal	O
<i>Pteridium aquilinum</i>	Bracken	LA
<i>Quercus robur</i>	Oak	A
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Reseda luteola</i>	Weld	R
<i>Ribes rubrum</i>	Redcurrant	R
<i>Rubus fruticosus</i>	Bramble	LF
<i>Rumex conglomeratus</i>	Clustered dock	F
<i>Rumex crispus</i>	Curled dock	O
<i>Rumex sanguineus</i>	Wood dock	LF
<i>Salix caprea</i>	Goat willow	LF
<i>Sambucus nigra</i>	Elder	F
<i>Senecio jacobaea</i>	Ragwort	R
<i>Solanum dulcamara</i>	Bittersweet	R
<i>Sonchus oleraceus</i>	Smooth sow thistle	O
<i>Stachys palustris</i>	Marsh woundwort	R
<i>Stachys sylvaticum</i>	Hedge woundwort	O
<i>Taxus baccata</i>	Yew	O
<i>Tilia europaea</i>	Lime	O
<i>Ulmus sp.</i>	Elm sp.	F-A
<i>Urtica dioica</i>	Common nettle	A
<i>Valeriana officinalis</i>	Common valerian	O
<i>Veronica chamaedrys</i>	Germander speedwell	O
<i>Vicia cracca</i>	Tufted vetch	LF

Survey dates: 14/08/1996 & 20/06/2009 & 15/7/21 & 16/7/21;  
Area deleted: 2022  
Year notified: 1985

<b>County Wildlife Site name</b>	<b>UEA Marsh</b>
<b>County Wildlife Site number</b>	<b>1447</b>
<b>Grid reference</b>	<b>TG 188 072</b>
<b>Parish</b>	<b>Norwich</b>
<b>District</b>	<b>Norwich</b>
<b>Area (ha)</b>	<b>6.45 ha</b>
<b>Notification category</b>	<b>Swamp and Fen; Grassland</b>

### Site description:

This site lies within the floodplain of the River Yare. The western part comprises a dense species-poor neglected marshy grassland of tall vegetation fringed on one side by grey willow *Salix cinerea* dominated carr, as well as compartments of fen and swamp. A corral and livestock fencing indicate previous grazing. The site extends eastwards to include the area between the river and the UEA Broad.

The western marsh comprises at its northern end marshy grassland dominated by reed canary grass *Phalaris arundinacea*, meadowsweet *Filipendula ulmaria*, frequent bindweed *Calystegia sp* and greater pond sedge *Carex riparia*. The area is mostly open and fringed by willow *Salix sp*, with a very small amount of encroachment. Smooth meadow grass *Poa pratensis* and water forget me not *Myosotis scorpioides* occur locally frequently. Both common valerian *Valeriana officinalis* and meadow rue *Thalictrum lucidum* appear in rare patches of abundance.

Towards the south and east, additional compartments of marshy grassland and swamp feature more encroachment and scrub, wetter ground, and species including abundant reed sweet grass *Glyceria maxima*, occasional hemp agrimony *Eupatorium cannabinum*, willowherbs *Epilobium spp* and bulrush *Typha latifolia*.

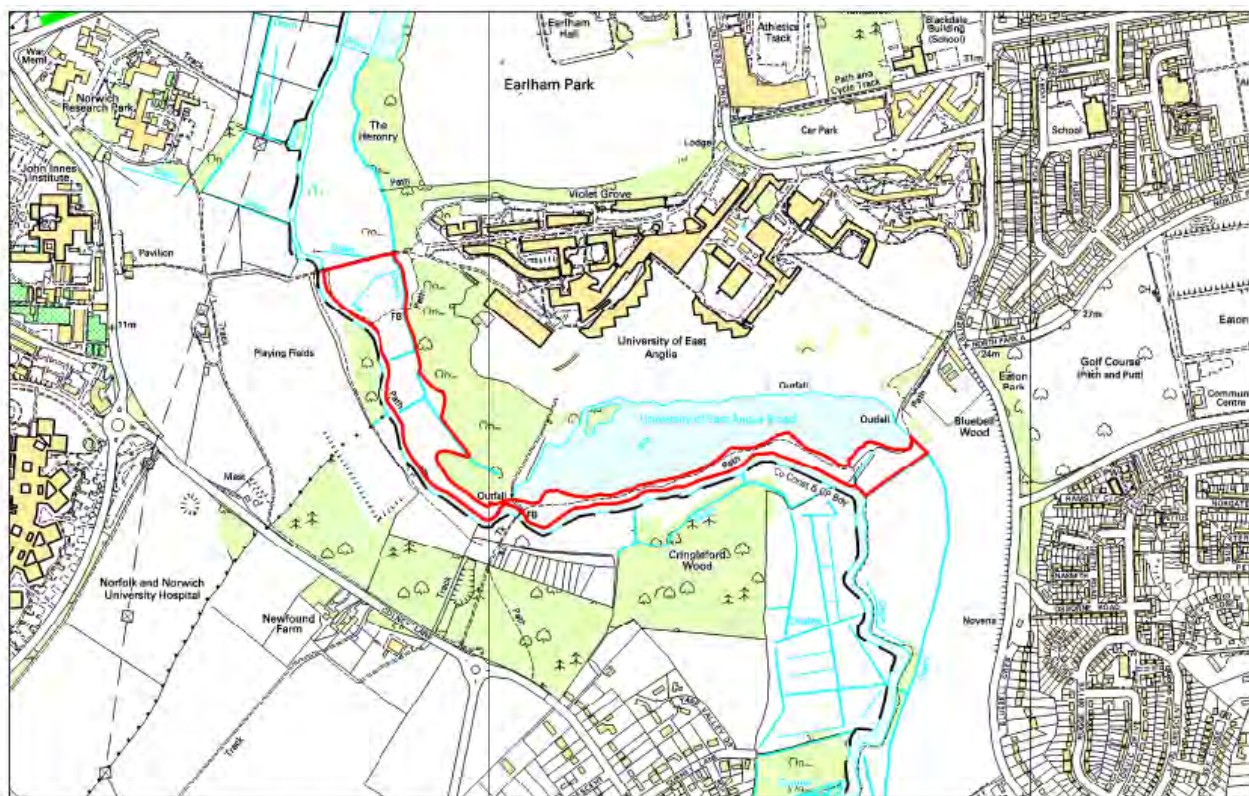
An area of fen and ditches holding standing water is more floristically interesting, with some typical calcareous rich fen indicator species. There are areas of greater pond sedge, hemp agrimony, meadow rue, meadowsweet and reed canary grass. Frequent gipsywort *Lycopus europaeus* and forget me not occur among the sward. Around the ditches, purple loosestrife *Lythrum salicaria*, water mint *Mentha aquatic*, branched bur-reed *Sparganium erectum*, pink water speedwell *Veronica catenata*, water starwort *Callitriche sp*, water figwort *Scrophularia auriculata* and brooklime *Veronica beccabunga* occur locally frequently.

There is a public footpath following the western CWS boundary between the fenced compartments and the River Yare. This path is mown and has edges consisting of occasional scattered trees and scrub, tall herbs and ruderals edging the river.

The higher and drier area either side of a maintained public footpath (circa 3m wide) adjacent to the Broad comprises ranker vegetation dominated by nettle *Urtica dioica*, but also includes willowherbs and creeping thistle *Cirsium arvense* together with hogweed *Heracleum sphondylium*, red campion *Silene dioica*, false oat grass *Arrhenatherum elatius* and bramble *Rubus fruticosus sp*.

Trees occur with increasing frequency along the footpath moving east, and include white willow *Salix alba*, alder *Alnus glutinosa*, hawthorn *Crataegus monogyna* and occasional elder *Sambucus nigra*, sycamore *Acer pseudoplatanus*, oak *Quercus robur*, hazel *Corylus avellana* and locally abundant dogwood *Cornus sanguinea*.





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## PLANT LIST

<b>Species/scientific name</b>	<b>Common name</b>	<b>DAFOR</b>
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Alliaria petiolata</i>	Garlic Mustard	R
<i>Alliaria petiolata</i>	Garlic Mustard	O
<i>Alnus glutinosa</i>	Alder	O – LF
<i>Arctium lappa</i>	Greater Burdock	O
<i>Arctium minus</i>	Lesser Burdock	O
<i>Arrhenatherum elatius</i>	False Oat Grass	O
<i>Artemisia vulgaris</i>	Mugwort	R
<i>Callitriche</i>	Water Starwort	R – LF
<i>Calystegia sp</i>	Bindweed	O – LF
<i>Carex riparia</i>	Greater Pond Sedge	O – LA
<i>Cirsium arvense</i>	Creeping Thistle	O
<i>Cirsium vulgare</i>	Spear Thistle	O
<i>Cornus sanguinea</i>	Dogwood	O – LF
<i>Corylus avellana</i>	Hazel	R
<i>Crataegus monogyna</i>	Hawthorn	O – LF
<i>Dactylis glomerata</i>	Cock's Foot	O
<i>Epilobium hirsutum</i>	Great Willowherb	O – LF

Survey dates: 1996; 1997; 2021  
Year notified: 1985

<i>Equisetum fluviatile</i>	Water Horsetail	R
<i>Eupatorium cannabinum</i>	Hemp Agrimony	LF
<i>Filipendula ulmaria</i>	Meadowsweet	LF
<i>Fraxinus excelsior</i>	Ash	O
<i>Galeopsis bifida</i>	Bifid Hemp Nettle	R
<i>Galeopsis tetrahit</i>	Common Hemp Nettle	O – LF
<i>Galium aparine</i>	Cleavers	O – LF
<i>Geranium robertianum</i>	Herb Robert	O
<i>Geum urbanum</i>	Wood Avens	R
<i>Glechoma hederacea</i>	Ground Ivy	O – LF
<i>Glyceria maxima</i>	Reed Sweet Grass	LF
<i>Hedera helix</i>	Ivy	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Iris pseudacorus</i>	Yellow Flag Iris	O
<i>Lathyrus pratensis</i>	Meadow Vetchling	R
<i>Lycopus europaeus</i>	Gipsywort	LF
<i>Lythrum salicaria</i>	Purple Loosestrife	R – LO
<i>Mentha aquatica</i>	Water Mint	O – LF
<i>Myosotis scorpioides</i>	Water Forget Me Not	LF
<i>Myosoton aquaticum</i>	Water Chickweed	R
<i>Persicaria amphibia</i>	Amphibious Bistort	R
<i>Phalaris arundinacea</i>	Reed Canary Grass	LF
<i>Plantago major</i>	Greater Plantain	O
<i>Poa pratensis</i>	Smooth Meadowgrass	LF
<i>Potentilla reptans</i>	Creeping Cinquefoil	R
<i>Quercus robur</i>	Oak	O
<i>Ranunculus acris</i>	Meadow Buttercup	R
<i>Ranunculus sceleratus</i>	Celery Leaved Buttercup	R
<i>Rubus fruticosus sp</i>	Bramble	O
<i>Rumex conglomeratus</i>	Clustered Dock	O – LF
<i>Rumex obtusifolius</i>	Broad Leaved Dock	O
<i>Salix alba</i>	White Willow	R – LF
<i>Salix spp</i>	Willow spp	O – LF
<i>Sambucus nigra</i>	Elder	O
<i>Scrophularia auriculata</i>	Water Figwort	R – LF
<i>Silene dioica</i>	Red Campion	O
<i>Sparganium erectum</i>	Branched Bur-reed	R - LA
<i>Stachys sylvatica</i>	Hedge Woundwort	R
<i>Thalictrum lucidum</i>	Meadow Rue	R – LA
<i>Typha latifolia</i>	Bulrush	R
<i>Urtica dioica</i>	Nettle	LF
<i>Valeriana officinalis</i>	Common Valerian	R – LA
<i>Veronica beccabunga</i>	Brooklime	R – LF
<i>Veronica catenata</i>	Pink Water Speedwell	R – LF
<i>Vicia cracca</i>	Tufted Vetch	O

**County Wildlife Site  
(Ref No: 1448)**

**Site Name: UEA Butterfly Meadow**

**District: Norwich**

**Grid Reference: TG 190072**

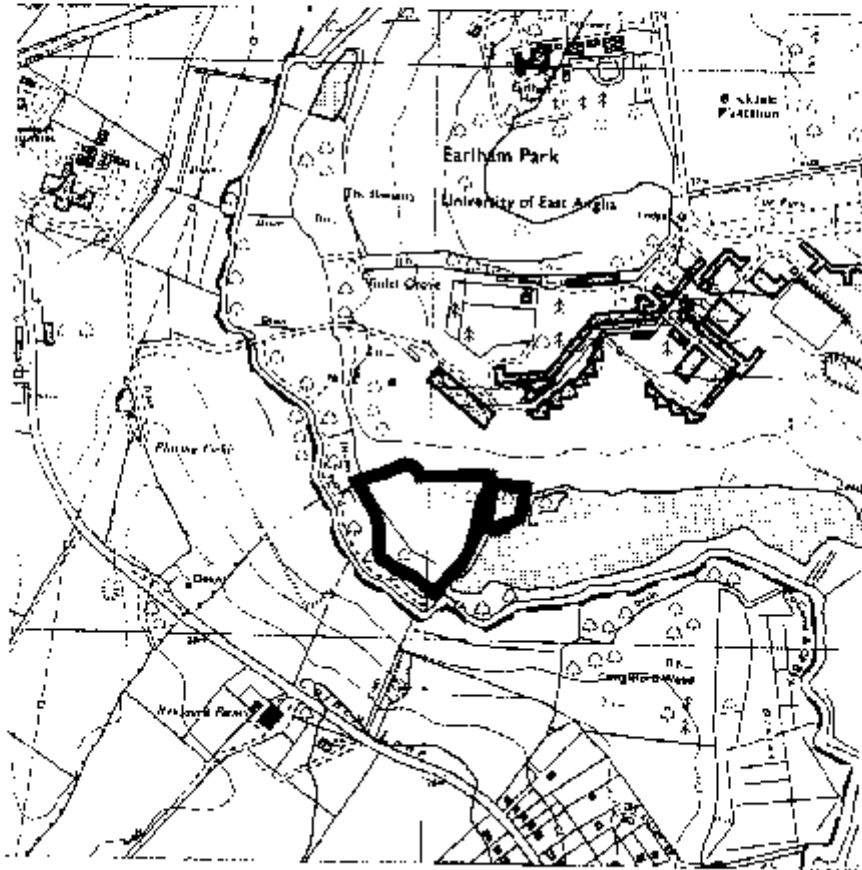
**Area: 3.2 ha**

**Site Description:**

The site comprises scattered neutral scrub underlain by grassland. It is being successfully managed as a butterfly breeding area. Also included within the site is a small area of fairly poor quality woodland.

The majority of the site is scrub made up of densely scattered young silver birch (*Betula pendula*) together with hawthorn (*Crataegus monogyna*). There are also some thickets of blackthorn (*Prunus spinosa*) and more rarely dog-rose (*Rosa canina*), gorse (*Ulex europaeus*) and willow (*Salix* sp.). Young oak (*Quercus robur*) is also present especially towards the north-west. The underlying neutral grassland is heavily rabbit grazed. It is dominated by grasses such as red fescue (*Festuca rubra*), false oat-grass (*Arrhenatherum elatius*) and locally by Yorkshire fog (*Holcus lanatus*). It is herb-rich though fairly low in species number. Yarrow (*Achillea millefolium*), creeping cinquefoil (*Potentilla reptans*) and ground-ivy (*Glechoma hederacea*) are frequent to abundant while other species present include bramble (*Rubus fruticosus*), ribwort plantain (*Plantago lanceolata*), hard rush (*Juncus inflexus*), agrimony (*Agrimonia eupatoria*), hogweed (*Heracleum sphondylium*) and yellow-rattle (*Rhinanthus minor*). Bracken (*Pteridium aquilinum*) is dominant towards the north of the site. Hoary mullein (*Verbascum pulverulentum*) is also present on the site.

The small area of woodland in the north of the site is co-dominated by fairly mature oak and ash (*Fraxinus excelsior*) with a dense shrub layer of hawthorn and occasional elder (*Sambucus nigra*) and grey willow (*Salix cinerea*). There is a very good dead wood content with several fallen oak trees. The ground flora is scattered and mainly consists of nettle (*Urtica dioica*) with patches of ivy (*Hedera helix*) and some herb robert (*Geranium robertianum*).



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**County Wildlife Site  
(Ref No: 1449)**

**Site Name: UEA Broad**

**District: Norwich**

**Grid Reference: TG 195072**

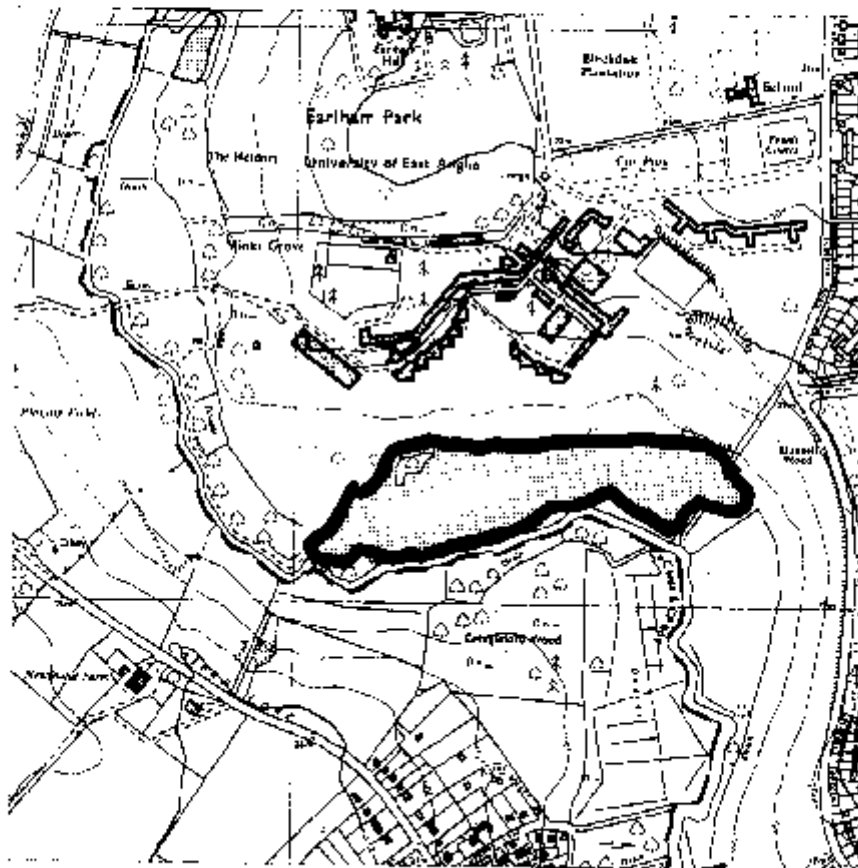
**Area: 7.8 ha**

**Site Description:**

A large mesotrophic lake with limited aquatic vegetation but which has a moderately species-rich marginal vegetation. It is partly fringed by scattered trees and shrub such as willows (*Salix* sp.) and alder (*Alnus glutinosa*).

The lake is largely mesotrophic in character with slightly turbid water and a muddy/stony substrate. Floating vegetation is reduced to small areas of white water-lily (*Nymphaea alba*), amphibious bistort (*Polygonum amphibium*) and broad-leaved pondweed (*Potamogeton natans*). Perfoliate pondweed (*Potamogeton perfoliatus*) is also present. The marginal vegetation is fairly thin and more or less complete. It is moderately species-rich with frequent greater pond sedge, great willowherb (*Epilobium hirsutum*), reed sweet-grass (*Glyceria maxima*) and in places common reed (*Phragmites australis*). Other species present include lesser pond sedge (*Carex acutiformis*), iris (*Iris* sp.), bulrush (*Typha latifolia*), water mint (*Mentha aquatica*), marsh woundwort (*Stachys palustris*) and water forget-me-not (*Myosotis scorpioides*).

There is a small island in the north west corner of the lake which is covered by tree and shrub species such as willows, oak (*Quercus robur*), alder (*Alnus glutinosa*) and ash (*Fraxinus excelsior*) over bramble (*Rubus fruticosus*) and ivy (*Hedera helix*).



Local Authority No. 076750

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 Norwich Date .....

**County Wildlife Site  
(Ref No: 1450)**

**Site Name:** Bowthorpe Riverside  
**Grid Reference:** TG 176 088  
**District:** Norwich

**Parish:** Norwich  
**Area:** 7.4 ha

**Site Description:**

Bowthorpe Riverside is situated to the west of Norwich and features as one of a network of County Wildlife Sites located along the River Yare. The site is divided into two areas, separated by a piece of land that is outside of the CWS boundary. The site is located on the eastern boundary of the river Yare, with Bawburgh Gravel Pits a fishery and County Wildlife Site (235) to the west. Recently there has been extensive housing built to the east of the site.

This site largely comprises unmanaged floodplain marshy grassland, scrub, woodland and small areas of neutral grassland.

The south eastern section of the site hosts a small area of woodland associated with a former pit and an area of neutral grassland bordering the housing estate to the east. In the woodland the tree canopy is quite closed and is dominated by willow *Salix sp.* species and silver birch *Betula pendula* with a scattered understory of occasional bird cherry *Prunus padas*. In the drier areas emerging through the woodland floor there are abundant thickets of bramble *Rubus sp.* and ivy *Hedera sp.* mixed with stinging nettle *Urtica dioica*, wood avens *Geum urbanum*, occasional spear thistle *Cirsium vulgare*, meadow buttercup *Ranunculus acris*, cleavers *Gallium aparine*, ground ivy *Glechoma hederacea*, great willow herb *Epilobium hirsutum*, yellow pimpernel *Lysimachia nemorum* and bugle *Ajuga reptans*. There are scattered large stagnant muddy pools with no aquatic vegetation except the occasional primrose *Primula vulgaris*. In the wetter areas species include frequent brooklime *Veronica beccabunga* and occasional water forget-me-not *Myosotis scorpioides*, common mouse-ear *Cerastium fontanum*, agrimony *Agrimonia eupatoria*, and gipsywort *Lycopus europaeus*.

The grassland slopes down to the woodland from the east where it is flat with sandy soils and heavily grazed by rabbits and ponies. Here low-lying herbs are abundant in the sward including white clover *Trifolium repens* and yarrow *Achillea millefolium*. Frequent species include creeping cinquefoil *Potentilla reptans*, common vetch *Vicia sativa*, black medick *Medicago lupulina*, doves foot cranesbill *Geranium molle* and hawksbit species *Leontodon sp.* Spotted medick *Medicago arabica* and lesser trefoil *Trifolium dubium* are occasional, hop trefoil *Trifolium campestre* is rare. Mouse-ear hawkweed *Pilosella officinalis* is locally abundant in areas that are very heavily grazed.

There are patches of taller vegetation adjoining the cropped parts with ranker taller grasses such as false oat grass *Arrhenatherum elatius* and cocksfoot *Dactylis glomerata*. Pepper saxifrage *Silaum silaus* is frequent in these areas and hoary mullein *Verbascum pulverulentum* occasional.

Moving down the slope the vegetation gets much denser and the soil more nutrient rich with less grazing evident. The grasses Yorkshire fog *Holcus lanatus*, false oat grass and cocksfoot dominate. Broad-leaved dock *Rumex obtusifolius* and nettle are abundant. Red campion *Silene latifolia*, hogweed *Heracleum sphondylium*, cut-leaved crane's-bill *Geranium dissectum* and hedgerow crane's-bill *Geranium pyrenaicum* are frequent.

At the bottom of the slope the ground flattens out with deeper richer soil. Rough meadow grass *Poa trivialis*, yorkshire fog and creeping buttercup are abundant. Creeping cinquefoil is locally

abundant as is cut-leaved crane's-bill. Germander speedwell *Veronica chamaedrys* and white clover are frequent here.

Two other small pockets of neutral grassland contain additional species such as red campion *Silene dioica*, red bartsia *Odontites verna*, wild carrot *Daucus carota*, field scabious *Knautia arvensis* and oxeye daisy *Leucanthemum vulgare*.

In the southern area of the site adjacent to the river, is mostly an un-managed floodplain marshy grassland. There is dense vegetation with a sward height of approximately two metres. The topography is generally undulating, with a shallow depression in the centre and a raised bank/ridge along the River Yare which bounds the site to the west. Vegetation in the depression is dominated by reed canary grass *Phalaris arundinacea*, whereas the sides are largely dominated by great willowherb. Throughout these areas a bindweed *Convolvulaceae* sp. covers vegetation. Notable species of ground flora here include occasional marsh woundwort *Stachys palustris* and water forget-me-not, and also locally abundant brooklime. Vegetation on the ridge area is rank and dominated by stinging nettle.

Further north (roughly central to the southern site) is a large, more open shallow depression with soft, waterlogged ground and a sward height of up to one metre. Here, reed sweet-grass *Glyceria maxima* dominates and common reed *Phragmites australis* is abundant further towards the northern side. Notable species here include occasional marsh horsetail *Equisetum palustre*. North of this depression is a strip of reed canary grass containing a locally dominant patch of yellow iris *Iris pseudacorus* which transitions into rank vegetation dominated by stinging nettle.

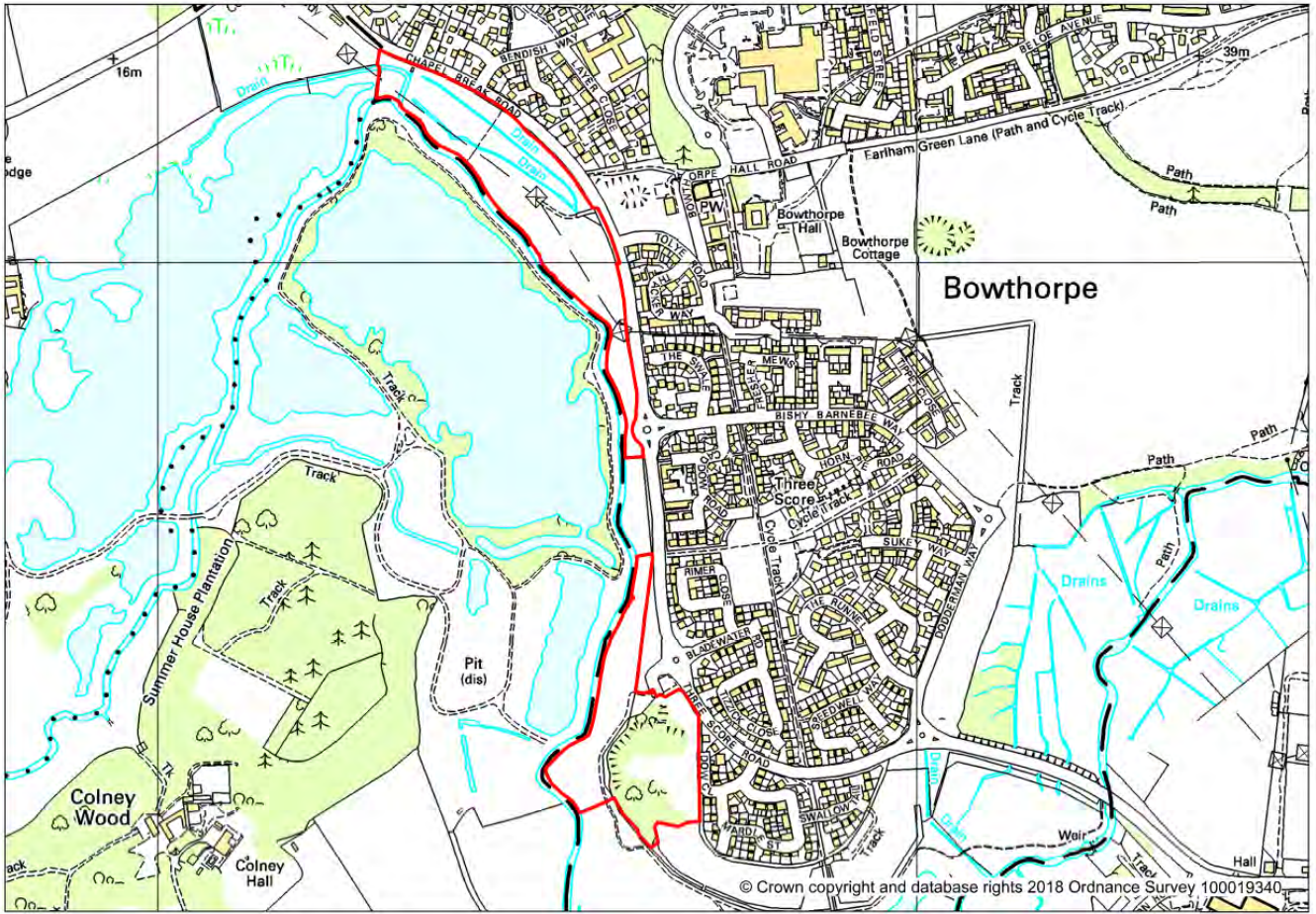
The most northern section of this area is bounded by an impenetrable bramble thicket and a water inlet to the river. Beside the river here, abundant great willowherb extends for up to three metres, with false oat-grass, cock's-foot, and hogweed all dominant in the area beyond. There is a noticeably higher ratio of grasses to flowering plants here.

The north section of the whole site is a mosaic of marshy grassland with either poor or good semi-improved grassland. This compartment is overgrazed and has been split into paddocks. In this area there are patches of bare ground and nettles and thistles are abundant. The marshy grassland is largely situated in the centre in shallow depressions. The vegetation is relatively species poor due to under grazing and the predominance of reed sweet-grass and overall has an even ratio of flowering plants to grasses. Towards the southern area where ground is wetter there is a higher occurrence of occasional bulrush *Typha* sp. and frequent reed sweet-grass. This transitions into drier areas with more flowering species including occasional common valerian *Valeriana officinalis* and purple-loosestrife *Lythrum salicaria*.

Towards the very northern end of the site the grassland is noticeably richer in species, most likely due to being further away from the horse grazing. This strip of land is bounded by a dyke to the north. Species here include frequent red bartsia and tansy *Tanacetum vulgare*, occasional wild teasel *Dipsacus fullonum* and water pepper *Persicaria hydropiper*.

Although not within the boundary of the county wildlife site the car park (TG17675 08455) for this site has a good population of bee orchid's (*Ophrys apifera*) growing on the verge.





Survey dates: 07/1996, 25/06 – 14/07/2016 & 02/06/2017  
Year notified: 1983

**County Wildlife Site  
(Ref No: 1451)**

**Site Name: Earlham and Colney Marshes**  
**Grid Reference: TG 185086**  
**District: Norwich & South Norfolk**

**Parish: Norwich**  
**Area: 16.6 ha**  
**Survey date: 2012**

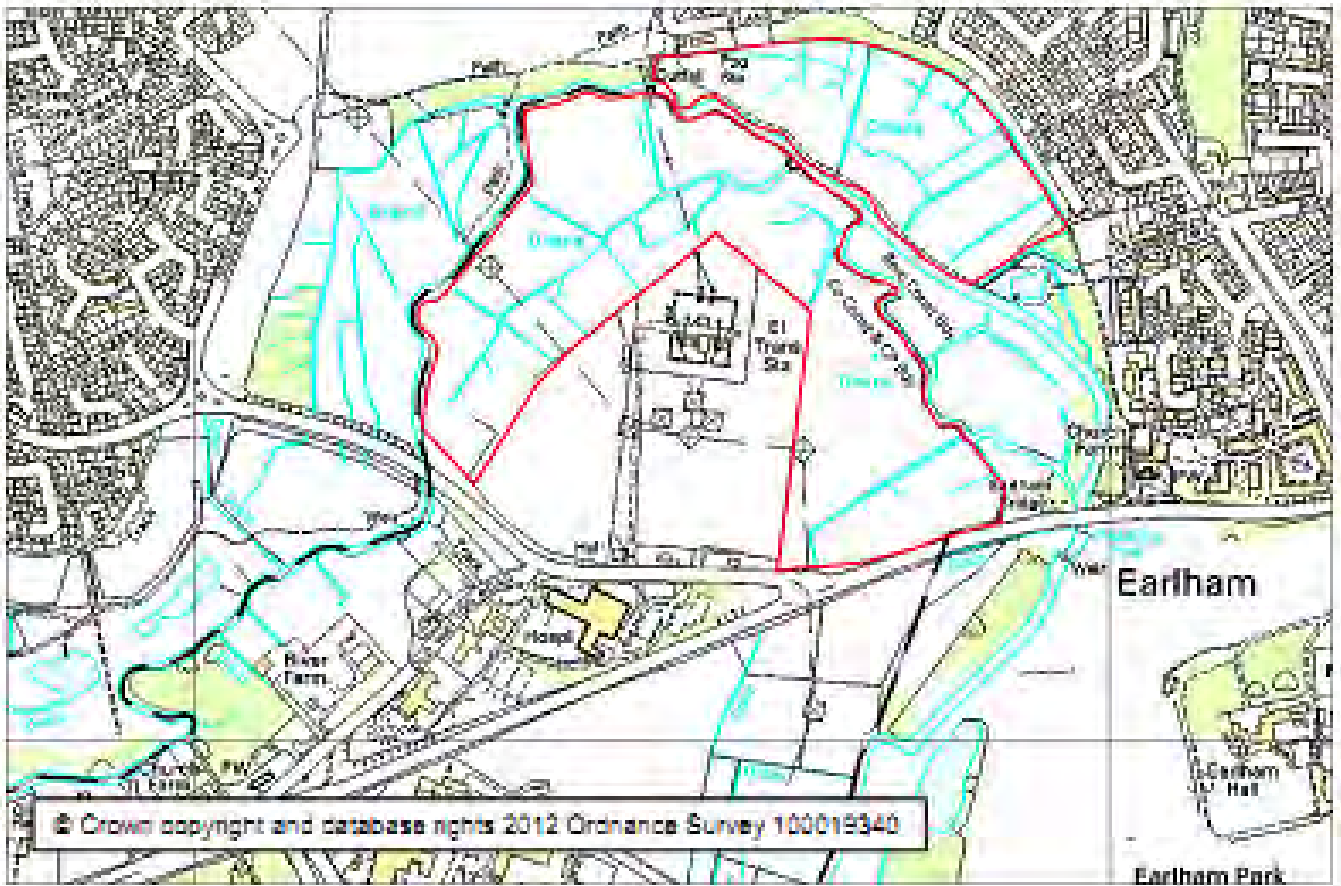
**Site Description:**

An area of grazed meadowland on both sides of the R.Yare. There is a wide assemblage of emergent plants along the river bank including purple loosestrife (*Lythrum salicaria*), water mint (*Mentha aquatica*), water forget-me-not (*Myosotis scorpioides*), reed canary grass (*Phalaris arundinacea*), common reed (*Phragmites australis*), reed sweet grass (*Glyceria maxima*), celery-leaved buttercup (*Ranunculus scleratus*), branched bur reed (*Sparganium erectum*), reedmace (*Typha latifolia*), blue water-speedwell (*Veronica anagallis-aquatica*), brooklime (*Veronica beccabunga*) and marsh speedwell (*Veronica scutellata*).

The northern side of the river, within Norwich, is bisected by a path which runs down to the river. The field to the west is drier than that on the eastern side. The drier grassland is composed of fairly patchy herbaceous vegetation. Grasses present include meadow foxtail (*Alopecurus pratensis*) and locally frequent creeping bent (*Agrostis stolonifera*). The herbs consist of a number of locally abundant species such as black horehound (*Ballota nigra*), broad-leaved dock (*Rumex obtusifolius*), creeping thistle (*Cirsium arvense*), good-King-Henry (*Chenopodium bonus-henricus*) and common meadow-rue (*Thalictrum flavum*). Denser areas of some of these species and others also occur, particularly nearer to the path. Species occurring in abundance here include

plicate sweet-grass (*Glyceria plicata*), spear-leaved orache (*Atriplex prostrata*), and common sedge (*Carex nigra*). The eastern more marshy grassland is covered by abundant plicate sweet-grass and in places spear-leaved orache as well as dense patches of common sedge and locally abundant pale persicaria (*Polygonum lapathifolium*). Other species to be found amongst this vegetation include tufted vetch (*Vicia cracca*), common valerian (*Valeriana officinalis*), tufted forget-me-not (*Myosotis laxa*) and celery-leaved buttercup.

The southern side of the river, in the parish of Colney, in South Norfolk, comprises an arc of lowland flood meadows which overly damp peaty soils. The undulating topography is notable, with slightly raised dryer areas of land and lower damper areas. There are numerous pronounced depressions which are thought to be ice age formations. A series of defunct drainage ditches occurs across the area and there are also raised areas forming banks which may be derived from ditch spoil. The area is a mosaic of semi-improved neutral grassland and marsh/marshy grassland/fen and is moderately species rich. The neutral grassland is heavily sheep grazed and occurs on higher land. The assemblage of plants includes tufted hair grass (*Deschampsia caespitosa*), Yorkshire fog (*Holcus lanatus*) red fescue (*Festuca rubra*), creeping buttercup (*Ranunculus repens*), tormentil (*Potentilla erecta*) and hard and soft rush (*Juncus effuses/inflexus*). The marshy grassland occurs within the ditches and in the lower lying areas. Greater pond sedge (*Carex riparia*) dominates although reed sweet grass is also abundant, forming continuous stands. The grazing pressure in these areas is light. The site boundary between the floodplain and higher ground is demarcated by an overgrown hedgerow, mainly composed of hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*). Within the hedgerow are numerous mature including some veteran oak (*Quercus robur*). A small area of mature dense gorse and hawthorn occurs on the south-west corner of the adjacent substation.



**County Wildlife Site  
(Ref No: 1452)**

**Site Name: Marlpit Paddocks**

**District: Norwich**

**Grid Reference: TG 199099**

**Area: 2.8 ha**

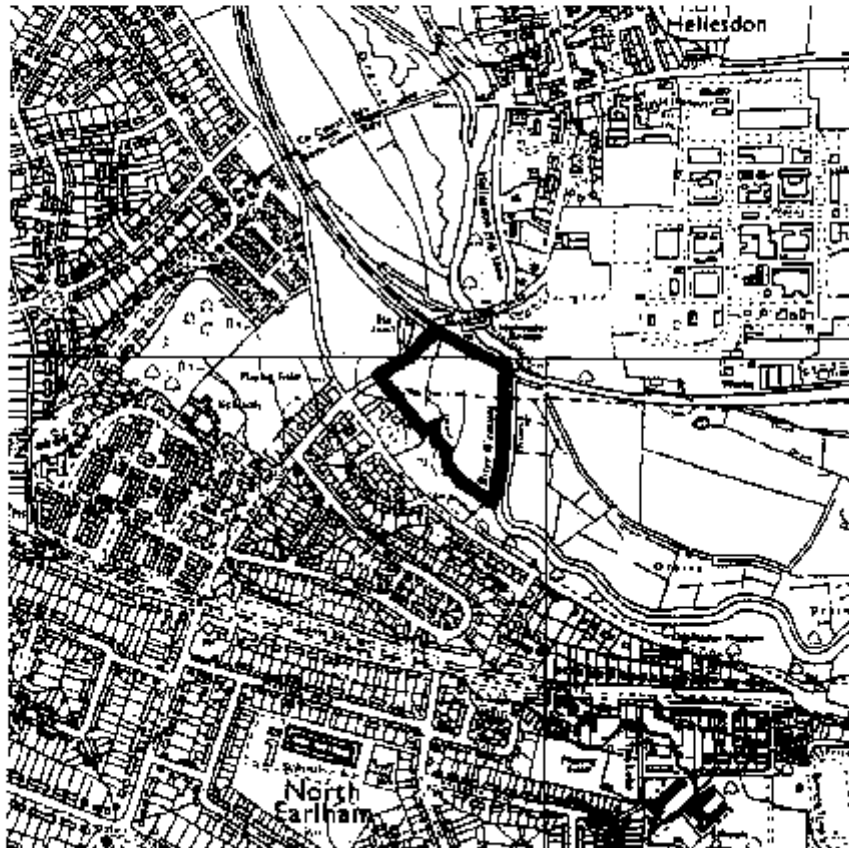
**Site Description:**

Horse grazed pasture beside the R.Wensum. The site is bisected by wet ditches and the notable plant species are between or on the sides of these. The eastern and westernmost areas are drier. The site is bordered by old dense hedges to north and south with pollarded willows to the east.

The grazed areas are characterised by Yorkshire fog (*Holcus lanatus*), meadow grass (*Poa annua*), white clover (*Trifolium repens*) and red clover (*Trifolium pratense*). Also present is silverweed (*Potentilla anserina*) interspaced with coarser grasses such as cock's-foot (*Dactylis glomerata*), false oat-grass (*Arrhenatherum elatius*) and creeping thistle (*Cirsium arvense*). Nearer the ditches yellow rattle (*Rhinanthus minor*), ragged robin (*Lychnis flos-cuculi*), early marsh orchid (*Dactylorhiza incarnata*) and southern marsh orchid (*Dactylorhiza praetermissa*) occur.

The ditches contain water mint (*Mentha aquatica*), water plantain (*Alisma plantago-aquatica*) and water speedwell (*Veronica anagallis-aquatica*). Bankside vegetation includes yellow flag (*Iris germanica*), common reed (*Phragmites australis*) and meadowsweet (*Filipendula ulmaria*).

\*Based on the Wensum Valley Project 1993 Survey.



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**County Wildlife Site  
(Ref No. 1453)**

**Site Name:** Disused Railway Hellesdon

**Parish:** Norwich

**Grid Reference:** TG 205099

**Area:** 5.7 ha

**District:** Norwich

**Site Description:**

A stretch of old railway line with scrub and woodland throughout, also with patches of open dry grassland. The Marriott's Way footpath runs much of its length as a wide, well-used tarmaced foot- and cycle path. For much of its length there is linear scrub and trees adjacent to the track, interspersed with small sections of grass verge.

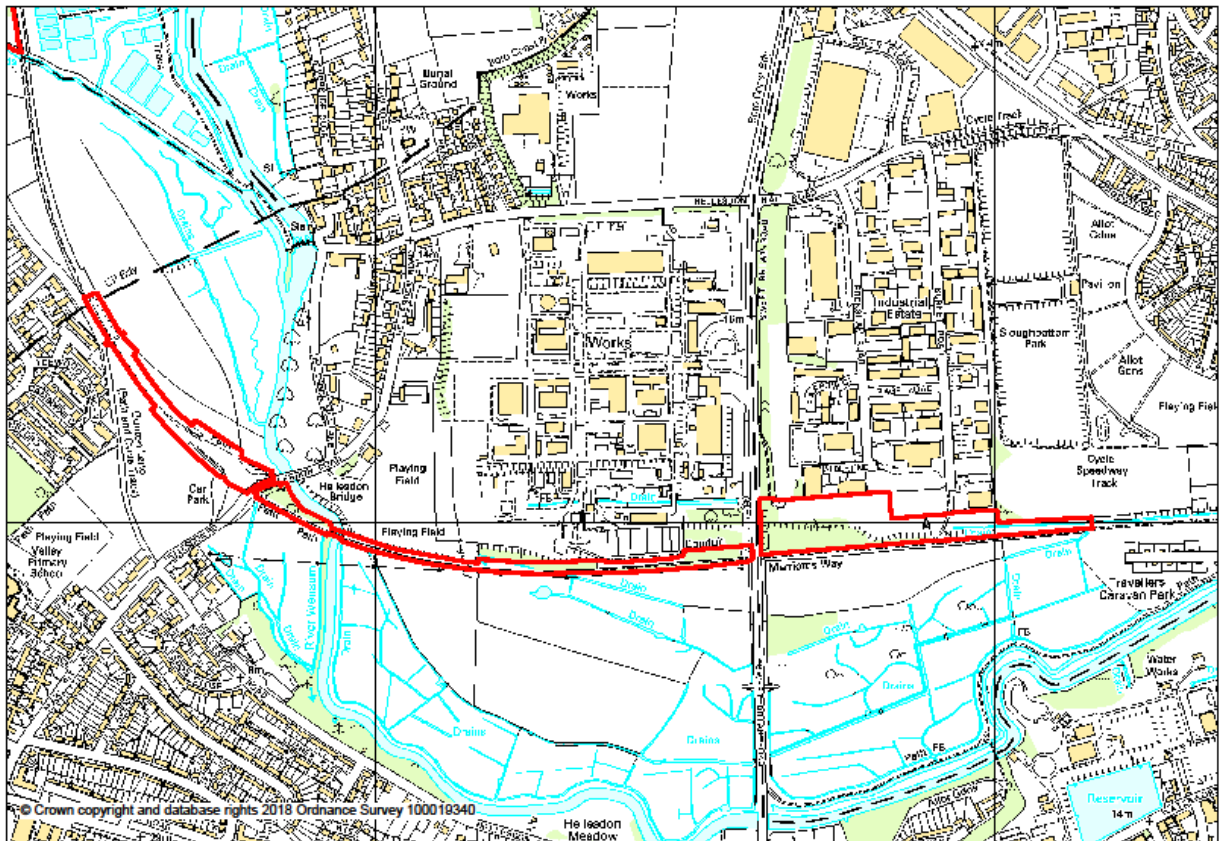
The area to the west of Sweet Briar road is a long linear curve of woodland and scrub following the old railway line and bordering the path. A wider, open patch of dry grassland occurs towards the Hellesdon Road. The River Wensum passes near/beneath the site here, supporting damper vegetation in places. To the east of Sweet Briar Road, a wider block of woodland and scrub, widens further and opens up to support grassland to the north, as the land rises. County Wildlife Sites 1454, 1452 and 1466 abut the site to the north and south.

Overlying the old station buildings and track, the western stretch of woodland/scrub has frequent oak (*Quercus robur*), sycamore (*Acer pseudoplatanus*), alder (*Alnus glutinosa*), aspen (*Populus tremula*), elder (*Sambucus nigra*) and blackthorn (*Prunus spinosa*). Hawthorn (*Crataegus monogyna*) and hazel (*Corylus avellana*) are frequent in the shrub layer, while ivy (*Hedera helix*) dominates the ground flora, with scattered garden escapees. An area of open, dry grassland with encroaching bramble (*Rubus fruticosus* agg.) occurs amongst the scrub to the east, with occasional meadow vetchling (*Lathyrus pratensis*), wild carrot (*Daucus carota*), oxeye daisy (*Leucanthemum vulgare*), creeping cinquefoil (*Potentilla reptans*), common knapweed (*Centaurea nigra*) and mugwort (*Artemisia vulgaris*), amongst frequent tough grasses species. Everlasting sweet pea (*Lathyrus latifolius*) and Canadian fleabane (*Solidago canadensis*) are occasional. Just beyond Hellesdon Road bridge, an area of wet woodland borders the river with occasional black and white poplar (*Populus nigra*, *P. alba*), marsh woundwort (*Stachys palustris*), flag iris (*Iris pseudocorus*), branched bur-reed (*Sparganium erectum*) and gypsywort (*Lycopus europaeus*).

To the east of Sweet Briar Road is a block of land, approximately three hectares in area, situated between the disused railway line and the Hellesdon Industrial Estate. Here the site is on two levels, separated by a steep, wooded and scrubby escarpment, and consists of a mosaic of neutral to acid grassland above, and mature scrub below. Frequent species across the eastern areas of grassland include meadow saxifrage (*Saxifraga granulata*), oxeye daisy (*Leucanthemum vulgare*), cat's-ear (*Hypochoeris radicata*), smooth hawk's beard (*Crepis capillaris*) and yarrow (*Achillea millefolium*). Also frequent are wild carrot, agrimony (*Agrimonia eupatoria*), while hoary mullein (*Verbascum pulverulentum*), yellow rattle (*Rhinanthus minor*) and knapweed (*Centaurea nigra*) are occasional. Dominant grasses include false oat-grass (*Arrhenatherum elatius*) and cocksfoot (*Dactylis glomerata*) with occasional red fescue (*Festuca rubra*). The surrounding scrub has frequent hawthorn blackthorn, dog rose (*Rosa canina* agg.) and bramble. Whitebeam (*Sorbus alba*), Swedish whitebeam (*Sorbus intermedia*), buckthorn (*Rhamnus cathartica*) and alder buckthorn (*Frangula alnus*) are occasional.



Wild parsnip (*Pastinaca sativa*) is frequent in the most eastern grassland. Also frequent here are field scabious (*Knautia arvensis*), tufted vetch (*Vicia cracca*), coltsfoot (*Tussilago farfara*), musk mallow (*Malva moschata*), common and knapweed broomrape (*Orobanche minor* and *O. elatior*) – these species only occurring here. A deep drainage culvert supports species including occasional fool's watercress (*Apium nodiflorum*), frequent Himalayan balsam (*Impatiens glandulifera*), rare bulrush (*Typha latifolia*) and marsh marigold (*Caltha palustris*).



**County Wildlife Site  
(Ref No: 1454)**

**Site Name: Hellesdon Mill Meadow**

**District: Norwich**

**Grid Reference: TG 198103**

**Area: 3.9 ha**

**Site Description:**

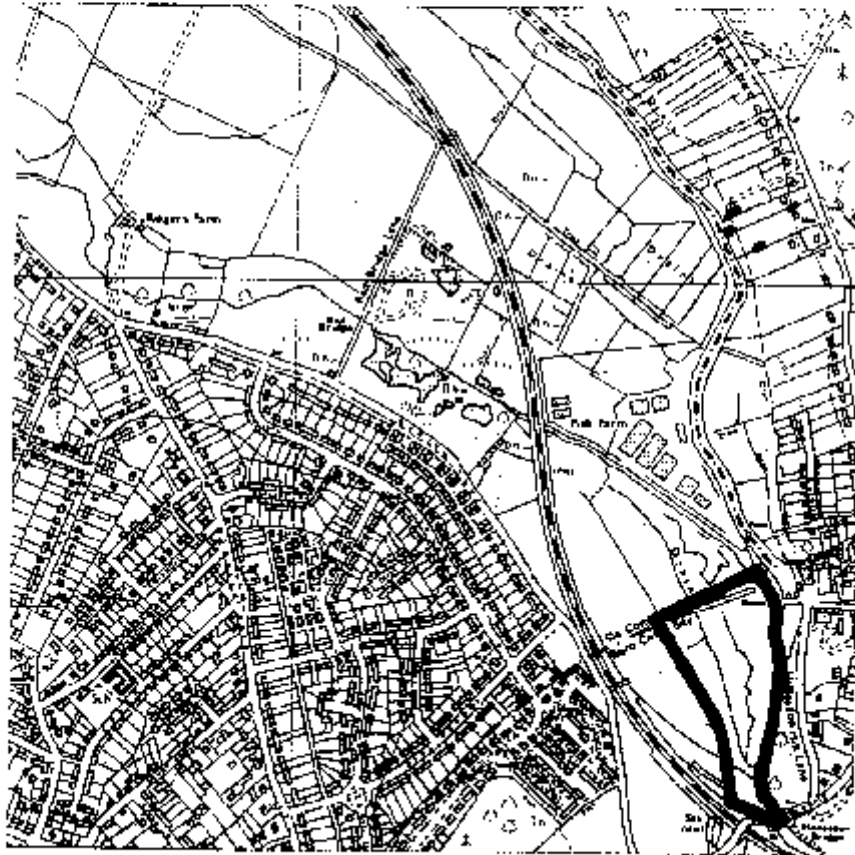
This site comprises marshy riverside grassland with wet drainage ditches, predominantly grazed by horses with some rough patches and scrub.

The ditches contain typical vegetation of reed canary grass (*Phalaris arundinacea*), lesser pond sedge (*Carex acutiformis*), brown sedge (*Carex disticha*) and common reed (*Phragmites australis*), together with ragged robin (*Lychnis flos-cuculi*), common marsh-bedstraw (*Galium palustre*) and water speedwell (*Veronica anagallis-aquatica*).

The semi-improved grassland is characterised by Yorkshire fog (*Holcus lanatus*), cock's-foot (*Dactylis glomerata*), meadow buttercup (*Ranunculus acris*), selfheal (*Prunella vulgaris*) and yarrow (*Archillea millefolium*). There are occasional rough patches with nettles (*Urtica dioica*) creeping thistle (*Cirsium arvense*) and ragwort (*Senecio jacobaea*). Some areas are progressing to scrub with brambles (*Rubus fruticosus*) and elder (*Sambucus nigra*) established.

\*Based on the Wensum Valley Project 1993 Survey.





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**County Wildlife Site  
(Ref No: 1455)**

**Site Name: Carrow Abbey Marsh**

**District: Norwich**

**Grid Reference: TG 247073**

**Area: 9.3 ha**

**Site Description:**

This site comprises a mosaic of mainly tall fen and tall herb vegetation, with large areas of young woodland and willow carr. The site lies within a meander of the River Yare and there are a number of derelict drains crossing the marsh.

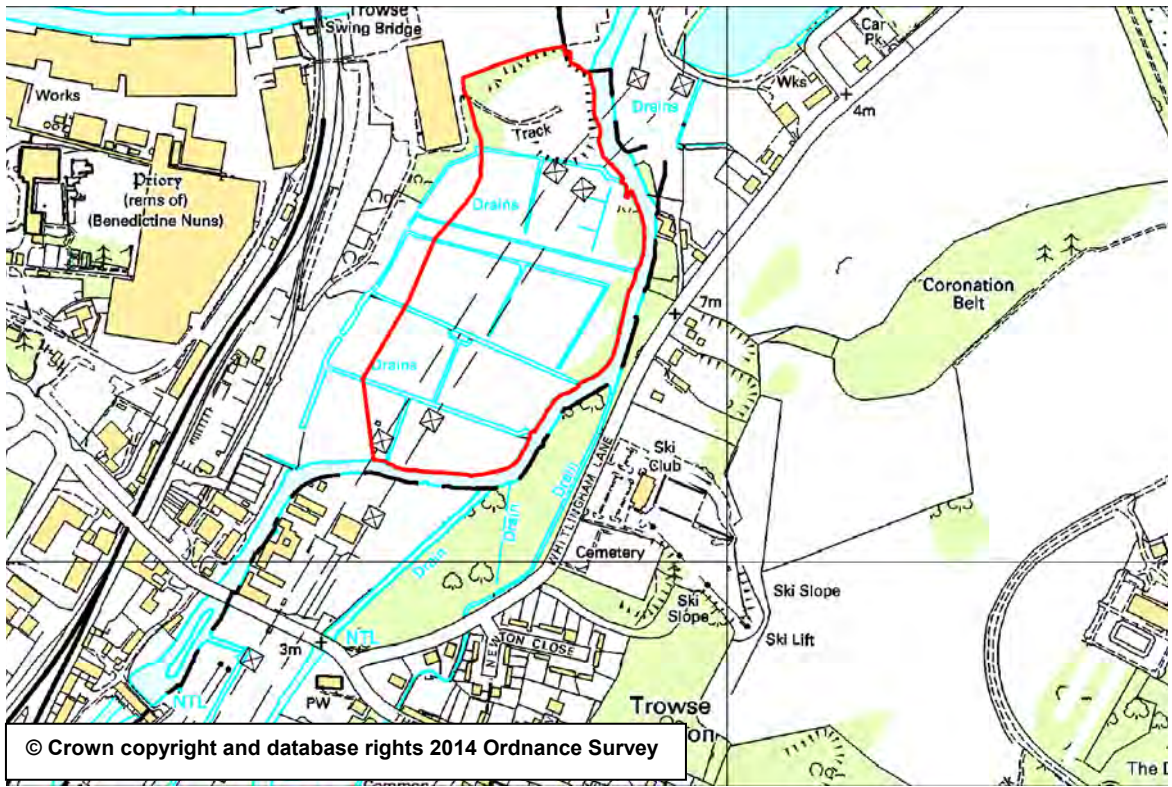
The fen vegetation is largely composed of reed sweet-grass (*Glyceria maxima*) and meadowsweet (*Filipendula ulmaria*) with some reed canary-grass (*Phalaris arundinacea*), great willowherb (*Epilobium hirsutum*), angelica (*Angelica sylvestris*) and marsh woundwort (*Stachys palustris*). Water forget-me-not (*Myosotis scorpioides*) and water chickweed (*Myosoton aquaticum*) were also noted growing near the drainage ditches.

The ditches themselves are choked with reed sweet-grass. Some contain bulrush (*Typha latifolia*), greater pond-sedge (*Carex riparia*), bittersweet (*Solanum dulcamara*), brooklime (*Veronica beccabunga*) and water-cress (*Nasturtium officinale*). Desmoulin's whorl snail (*Vertigo moulinsiana*) is known to occur in some of these ditches.

The areas of tall herb are mainly composed of nettles (*Urtica dioica*) and great willow-herb.

To the north of the site is a block of scrub, composed mainly of crack willow (*Salix fragilis*), sallow (*Salix cinerea*), occasional hawthorn (*Crataegus monogyana*) and some alder (*Alnus glutinosa*). This area also includes a derelict brick furnace. Where the land is drier and had been more disturbed in the past, elder (*Sambucus nigra*), silver birch (*Betula pendula*) and downy birch (*Betula pubescens*) occur, with thickets of bramble (*Rubus* spp.). Open areas are dominated by reed sweet grass, hoary willow-herb and nettles. Green figwort (*Scrophularia umbrosa*) is also known to occur in this area.

There are a few willow (*Salix* spp) and hawthorn bushes scattered throughout the site. An area of willow, sycamore (*Acer pseudoplatanus*) and elder borders the river in places.



**County Wildlife Site  
(Ref No: 1456)**

**Site Name:** Eaton Common  
**Parish:** Norwich  
**Grid Reference:** TG 204 055

**Area:** 6.1 ha

**District:** Norwich

**Site Description:**

Lying adjacent to the River Yare, this site comprises predominantly neutral grassland, with marshy grassland depressions and patches of broadleaved woodland at the eastern and western ends. The site forms part of a connecting string of CWSs and Local Nature reserves along the River Yare and its floodplain.

In the drier areas, the grassland is quite tussocky with abundant cock's-foot (*Dactylis glomerata*), false oat-grass (*Arrhenatherum elatius*), Yorkshire fog (*Holcus lanatus*) and perennial ryegrass (*Lolium perenne*). Meadow foxtail (*Alopecurus pratensis*), red fescue (*Festuca rubra*) and timothy (*Phleum pratense*) are locally occasional. Notable forb species here include lady's bedstraw (*Galium verum*), thyme-leaved speedwell (*Veronica serpyllifolia*), common knapweed (*Centaurea nigra*), yellow rattle (*Rhinanthus minor*), common meadow rue (*Thalictrum flavum*) and meadow saxifrage (*Saxifraga granulata*).

Damper ground in the east supports clumps of soft rush (*Juncus effusus*), hard rush (*Juncus inflexus*) silverweed (*Argentina anserina*), lesser stitchwort (*Stellaria graminea*), occasional common mouse-ear (*Cerastium fontanum*), greater willowherb (*Epilobium hirsutum*), red bartsia (*Odontites vernus*) and horsetail (*Equisetum spp.*). These wetter conditions continue down beyond a pond where meadowsweet (*Filipendula ulmaria*) becomes abundant. Blanketing the steep sides of the pond is abundant black sedge (*Carex nigra*), greater pond sedge, lesser pond sedge (*Carex acutiformis*), greater reed mace (*Typha latifolia*) and common fleabane (*Pulicaria dysenterica*). Emergents include Ivy-leaved duckweed (*Lemna trisulca*).

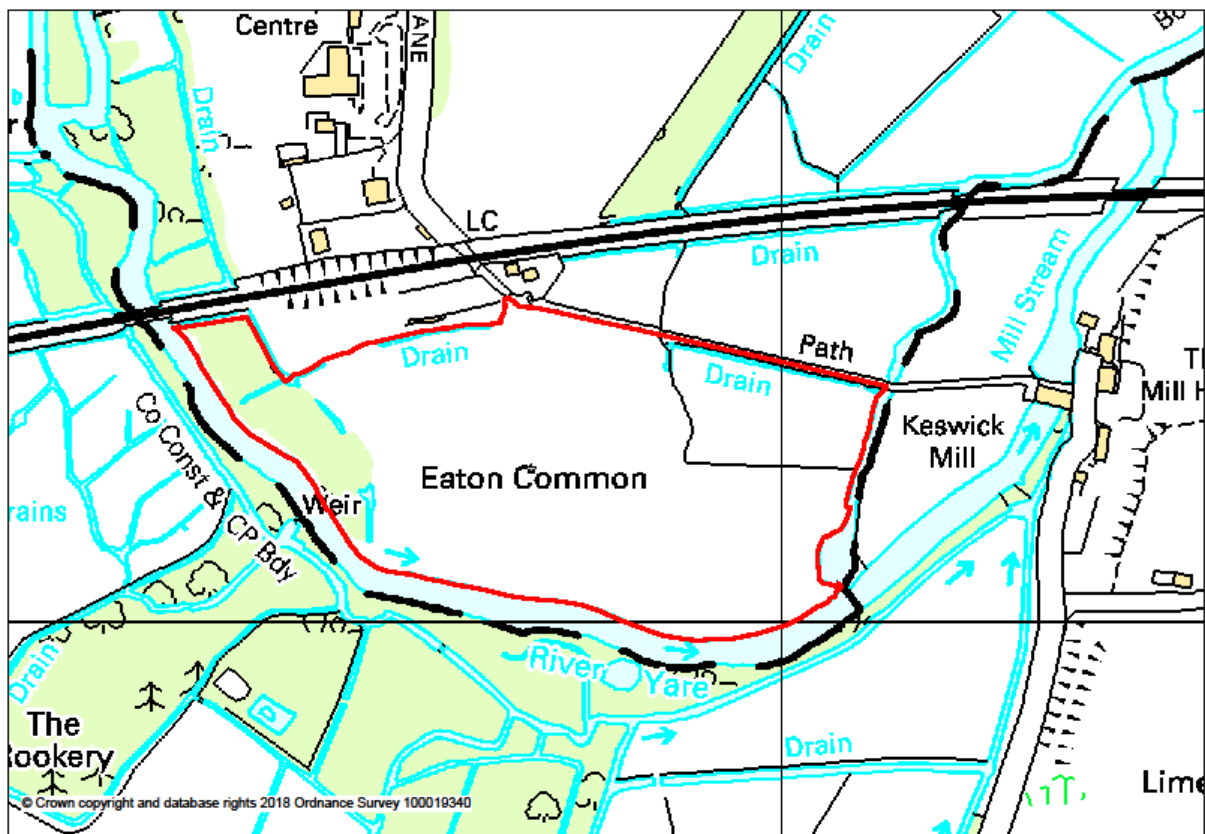
A species-rich ditch runs along the northeastern boundary. Sedges, rushes and reeds grow abundantly alongside, and water figwort (*Scrophularia auriculata*) is of note. Floating sweet-grass (*Glyceria fluitans*), water-starwort (*Callitriche sp.*), water violet (*Hottonia palustris*), frogbit (*Hydrocharis morsus-ranae*), common duckweed (*Lemna minor*) and water plantain (*Alisma plantago-aquatica*) are all found in the shallows. Branched bur-reed (*Sparganium erectum*) and a small patch of early marsh orchids (*Dactylorhiza incarnate*) have been recorded on the margins.

The boundary between the grassland and woodland is transitional patchy scrub of blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*) and tall ruderals. The areas of broadleaved woodland predominantly contain alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*), willow (*Salix sp.*), oak (*Quercus robur*), and elder (*Sambucus nigra*). The northern section of woodland has a herb layer characterised by frequent stinging nettles, brambles and dog's mercury (*Mercurialis perennis*), as well as red campion (*Silene dioica*)

and moschatel (*Adoxa moschatellina*). In damp areas of woodland, small tussocks of remote sedge (*Carex remota*) occur amongst common reed (*Phragmites australis*), valerian (*Valeriana officinalis*), hemp agrimony (*Eupatorium cannabinum*), gypsywort (*Lycopus europaeus*), purple loosestrife (*Lythrum salicaria*); and rare skullcap (*Scutellaria galericulata*).

The River Yare forms the southern boundary to the site and for the most part holds gently sloping banks of greater pond sedge (*Carex riparia*) and common reed. Occasional yellow water lily (*Nuphar lutea*) and locally frequent arrowhead (*Sagittaria sagittifolia*) flower in the river. Orange balsam, (*Impatiens capensis*) fool's watercress (*Apium nodiflorum*) and watercress (*Nasturtium officinale*) grow on the bank.

In the wet margins of the river, just north of a weir, reed canary-grass (*Phalaris arundinacea*) is found and in the initially shallow and calmer water, arrowhead floats. North of this, locally abundant tall reed sweet-grass (*Glyceria maxima*) and a clump of common club-rush (*Schoenoplectus lacustris*) emerge from the water.



**County Wildlife Site  
(Ref No: 1457)**

**Site Name: Eaton Street Meadow**

**District: Norwich**

**Grid Reference: TG 202059**

**Area: 1.1 ha**

**Site Description:**

A small semi-improved meadow situated between the R.Yare and a supermarket carpark.

The grassland is largely dominated by false oat-grass (*Arrhenatherum elatius*) together with patches of common knapweed (*Centaurea nigra*), yarrow (*Achillea millefolium*), spear thistle (*Cirsium vulgare*) and ribwort plantain (*Plantago lanceolata*). In wetter areas there is local abundance of water dock (*Rumex hydrolapathum*) and common reed (*Phragmites australis*). On the western side of the site there is a dense area of mainly nettle (*Urtica dioica*) and greater willowherb (*Epilobium hirsutum*) along with entangled cleavers (*Galium aparine*), hogweed (*Heracleum sphondylium*) and meadowsweet (*Filipendula ulmaria*). Further east the vegetation becomes less rank and includes species such as southern marsh orchid (*Dactylorhiza praetermissa*) and early marsh orchid (*Dactylorhiza incarnata*), with local abundance of self heal (*Prunella vulgaris*), ragged robin (*Lychnis flos-cuculi*), field mouse-ear (*Cerastium arvense*) and common marsh bedstraw (*Galium palustre*).

The ditch crossing the site supports quite a rich vegetation community including greater willowherb, hemp agrimony (*Eupatorium cannabinum*), angelica (*Angelica sylvestris*), common reed, reedmace (*Typha latifolia*) and hop (*Humulus lupulus*).

The hedge adjacent to the car park and the road is mainly hawthorn (*Crataegus mongyna*) and blackthorn (*Prunus spinosa*) with occasional alder (*Alnus glutinosa*) and sycamore (*Acer pseudoplatanus*). Hawthorn scrub extends down the bank and into the meadow.



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**County Wildlife Site  
(Ref No: 1458)**

**Site Name: Eaton Island**

**District: Norwich**

**Grid Reference: TG 205055**

**Area: 4.1 ha**

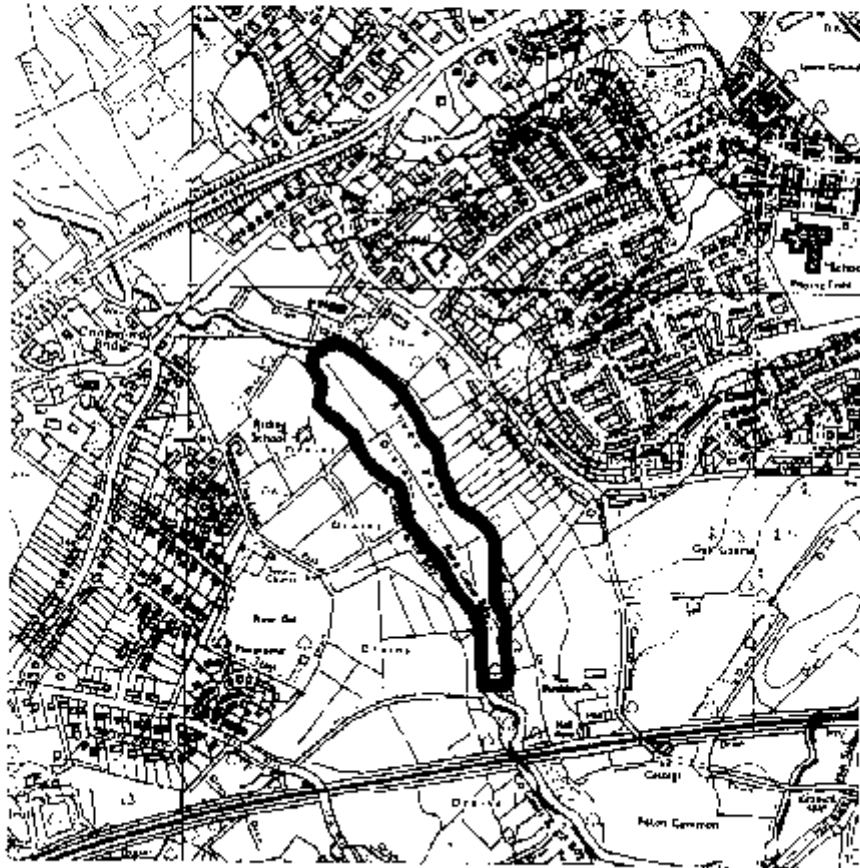
**Site Description:\***

An inaccessible island situated between two arms of the R.Yare.

The vegetation comprises neutral marshy grassland subject to flooding, There are some mature broadleaved trees also present within the site.

\*Based on the 1985 habitat survey (NWT)





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<b>County Wildlife Site name</b>	Marston Marshes
<b>County Wildlife Site number</b>	1459
<b>Grid reference</b>	TG215055
<b>Parish</b>	Eaton
<b>District</b>	Norwich
<b>Area (ha)</b>	28.15
<b>Notification category</b>	Grassland

### Site description

Marston Marshes lie within the floodplain of the River Yare bounded to the north by Marston Lane along the edge of the valley. The majority is unimproved grazing marsh, dissected by an extensive dyke network in which water levels can be controlled to allow summer cattle grazing, although the wetter parts often hold standing water in winter. The site includes drier grassland, fringing woodland and slightly higher ground by the river supporting mature trees and mixed scrub. The far western end is separated by a railway embankment. The site is managed as a Local Nature Reserve.

The grazing marshes support a rich assemblage of species characteristic of marshy grassland and fen meadow, its composition and diversity varying with the intensity of grazing as well as soil nutrient status and wetness. Typically, tall swamp species densely dominate the wettest areas such as lesser pond sedge *Carex acutiformis*, reed sweet-grass *Glyceria maxima* and reed canary-grass *Phalaris arundinacea*. Where better-drained, soft rush *Juncus effusus*, jointed rush *J. articulatus* and occasionally blunt-flowered rush *J. subnodulosus* are also widespread. Drier areas include abundant Yorkshire fog *Holcus lanatus*, red fescue *Festuca rubra* and creeping bent *Agrostis stolonifera*. Wetland herbs are widespread and frequent, in particular meadowsweet *Filipendula ulmaria*, amphibious bistort *Persicaria amphibia*, purple-loosestrife *Lythrum salicaria*, common valerian *Valeriana officinalis*, ragged-robin *Lychnis flos-cuculi*, greater bird's-foot trefoil *Lotus pedunculatus*, water forget-me-not *Myosotis scorpioides*, water mint *Mentha aquatica* and marsh-bedstraw *Galium palustre*. More ubiquitous species include meadow buttercup *Ranunculus repens*, ribwort plantain *Plantago lanceolata*, curled dock *Rumex crispus*, silverweed *Potentilla anserina* and meadow vetchling *Lathyrus pratensis*. Colonies of southern marsh-orchid *Dactylorhiza praetermissa* appear where the sward is shorter and more open, along with smaller sedges such as common sedge *Carex nigra* and carnation sedge *C. panicea*.

The dyke network holds a range of species indicating good water quality. Most prominently greater pond sedge *Carex riparia*, lesser pond sedge, reed sweet-grass and branched bur-reed *Sparganium erectum* form the margins with frequent lesser water-parsnip *Berula erecta* and occasional water-plantain *Alisma plantago-aquatica* and water dock *Rumex hydrolapathum*. Frogbit *Hydrocharis morsus-ranae* is particularly abundant together with common duckweed *Lemna minor* and ivy-leaved duckweed *L. trisulca*. Water-violet *Hottonia palustris* occurs in places, and Canadian pondweed *Elodea canadensis* dominates some dykes. Other aquatic species include lesser pondweed *Potamogeton pusillus*, rigid hornwort *Ceratophyllum demersum* and stonewort *Chara* sp. Several alders *Alnus glutinosa*, mature crack-willows *Salix fragilis* and areas of carr woodland and scrub border the dykes in the eastern part of the site. The dykes support a population of water voles *Arvicola terrestris* and some 16 dragonfly species including Norfolk hawkler *Anaciaeshna isosceles*.

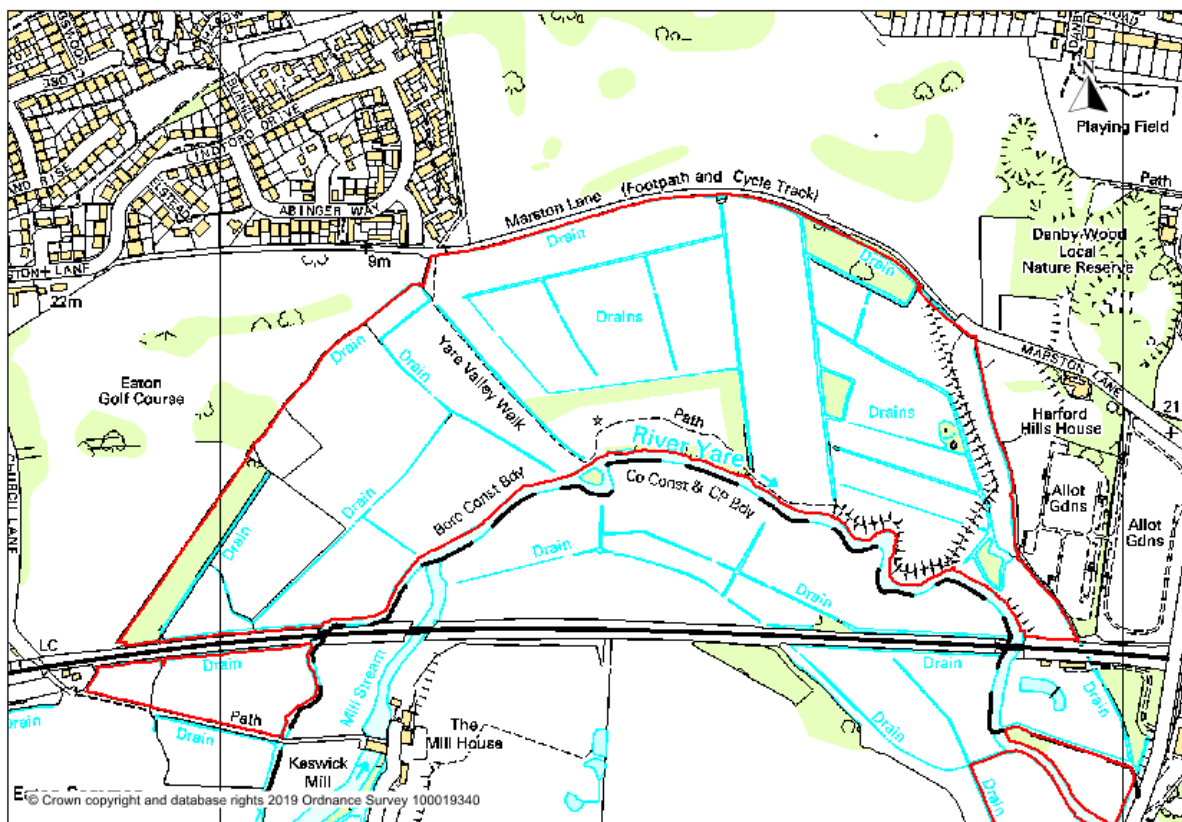
The western part of the marshes rise to a low ridge of dry neutral grassland dominated by Yorkshire-fog, common bent *Agrostis capillaris*, with frequent red fescue, cock's-foot *Dactylis glomerata* and occasional sweet vernal grass *Anthoxanthum odoratum*, perennial rye-grass *Lolium perenne* and other common grasses. Prominent herbs include sheep's sorrel *Rumex acetosella*, cat's-ear *Hypochoeris radicata*, smooth hawk's-beard *Crepis capillaris*, yarrow

*Achillea millefolium*, white clover *Trifolium repens* and in places yellow-rattle *Rhinanthus minor* and red bartsia *Odontites vernus*. Broad-leaved dock *Rumex obtusifolius* and creeping thistle *Cirsium arvense* are widespread.

A strip of tall fen and ruderal vegetation, alder and willow scrub around a series of small overgrown ponds adjoins Marston Lane in the central part of the site. A mown path runs throughout its length. Several of the afore mentioned wetland grasses dominate with common reed *Phragmites communis* also forming a dense bed on part of the area. Typical tall herbs include hemp-agrimony *Eupatorium cannabinum*, great willowherb *Epilobium hirsutum*, marsh thistle *Cirsium palustre* and wild angelica *Angelica sylvestris* with climbers bitter-sweet *Solanum dulcamara*, hop *Humulus lupulus* and hedge bindweed *Calystegia sepium* also widespread. Smaller herbs such as water mint, gipsywort *Lycopus europaeus* and marsh woundwort *Stachys palustris* are also relatively frequent along the path edges. Similar areas beside the eastern boundary appear to be less diverse.

Mature woodland fringes the northern and eastern boundaries with ash *Fraxinus excelsior* and pedunculate oak *Quercus robur* giving way to alder and willow with increasing wetness. An understorey of hawthorn *Crataegus monogyna* and willow *Salix* spp. along the more open boundary adjoining the grassland includes guelder-rose *Viburnum opulus* and bramble *Rubus fruticosus* agg. in places and a dense ground layer including tall fen species.

An open plantation of tall, mature hybrid black-poplar *Populus x canadensis*, some in senescence or remaining as standing deadwood occupies slightly higher ground by the river centrally in the site. Species-poor acidic and damp neutral grassland provides the ground layer, while dry scrub on higher ground alongside the river is predominantly blackthorn *Prunus spinosa* and hawthorn, with areas of gorse *Ulex europaeus*, broom *Cytisus scoparius* and bramble. Young silver birch *Betula pendula*, horse-chestnut *Aesculus hippocastanum* and Scots pine *Pinus sylvestris* also occur, while mature willows line the river.



<b>Species/Scientific name</b>	<b>Common name</b>
<i>Acer pseudoplatanus</i>	Sycamore
<i>Achillea millefolium</i>	Yarrow
<i>Aesculus hippocastanum</i>	Horse-chestnut
<i>Agrostis capillaris</i>	Common Bent
<i>Agrostis stolonifera</i>	Creeping Bent
<i>Alisma plantago-aquatica</i>	Water-plantain
<i>Alnus glutinosa</i>	Alder
<i>Alopecurus geniculatus</i>	Marsh Foxtail
<i>Angelica sylvestris</i>	Wild Angelica
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Apium nodiflorum</i>	Fool's-water-cress
<i>Arctium minus</i>	Lesser Burdock
<i>Arrhenatherum elatius</i>	False Oat-grass
<i>Artemisia vulgaris</i>	Mugwort
<i>Bellis perennis</i>	Daisy
<i>Berula erecta</i>	Lesser Water-parsnip
<i>Betula pendula</i>	Silver Birch
<i>Caltha palustris</i>	Marsh-marigold
<i>Calystegia sepium</i>	Hedge Bindweed
<i>Cardamine pratensis</i>	Cuckooflower
<i>Carex acutiformis</i>	Lesser Pond Sedge
<i>Carex disticha</i>	Brown Sedge
<i>Carex elata</i>	Tufted Sedge
<i>Carex hirta</i>	Hairy Sedge
<i>Carex nigra</i>	Common Sedge
<i>Carex panicea</i>	Carnation Sedge
<i>Carex pseudocyperus</i>	Cyperus Sedge
<i>Cerastium fontanum</i>	Common Mouse-ear
<i>Ceratophyllum demersum</i>	Rigid Hornwort
<i>Cirsium arvense</i>	Creeping Thistle
<i>Cirsium palustre</i>	Marsh Thistle
<i>Cirsium vulgare</i>	Spear Thistle
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Crepis capillaris</i>	Smooth Hawk's-beard
<i>Cynosurus cristatus</i>	Crested Dog's-tail
<i>Cytisus scoparius</i>	Broom
<i>Dactylis glomerata</i>	Cock's-foot
<i>Dactylorhiza praetermissa</i>	Southern Marsh-orchid
<i>Deschampsia cespitosa</i>	Tufted Hair-grass
<i>Eleocharis palustris</i>	Common Spike-rush
<i>Elodea canadensis</i>	Canadian Pondweed
<i>Epilobium hirsutum</i>	Great Willowherb
<i>Epilobium parviflorum</i>	Hoary Willowherb
<i>Equisetum arvense</i>	Field Horsetail
<i>Equisetum palustre</i>	Marsh Horsetail
<i>Eupatorium cannabinum</i>	Hemp-agrimony
<i>Festuca rubra</i>	Red Fescue
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Fraxinus excelsior</i>	Ash
<i>Galium palustre</i>	Marsh-bedstraw

<i>Galium uliginosum</i>	Fen Bedstraw
<i>Galium verum</i>	Lady's Bedstraw
<i>Geum rivale</i>	Water Avens
<i>Glechoma hederacea</i>	Ground-ivy
<i>Glyceria fluitans</i>	Floating Sweet-grass
<i>Glyceria maxima</i>	Reed Sweet-grass
<i>Hedera helix</i>	Ivy
<i>Heracleum sphondylium</i>	Hogweed
<i>Hippuris vulgaris</i>	Mare's-tail
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Hottonia palustris</i>	Water-violet
<i>Humulus lupulus</i>	Hop
<i>Hydrocharis morsus-ranae</i>	Frogbit
<i>Hypericum tetrapterum</i>	Square-stemmed St John's-wort
<i>Hypochoeris radicata</i>	Cat's-ear
<i>Ilex aquifolium</i>	Holly
<i>Iris pseudacorus</i>	Yellow Iris
<i>Juncus articulatus</i>	Jointed Rush
<i>Juncus effusus</i>	Soft Rush
<i>Juncus inflexus</i>	Hard Rush
<i>Juncus subnodulosus</i>	Blunt-flowered Rush
<i>Lamium album</i>	White Dead-nettle
<i>Larix x marschlinii</i>	Hybrid Larch
<i>Lathyrus pratensis</i>	Meadow Vetchling
<i>Lemna minor</i>	Common Duckweed
<i>Lemna trisulca</i>	Ivy-leaved Duckweed
<i>Leontodon autumnalis</i>	Autumn Hawkbit
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Lotus pedunculatus</i>	Greater Bird's-foot Trefoil
<i>Luzula campestris</i>	Field Woodrush
<i>Lychnis flos-cuculi</i>	Ragged-Robin
<i>Lycopus europaeus</i>	Gipsywort
<i>Lythrum salicaria</i>	Purple-loosestrife
<i>Matricaria discoidea</i>	Pineappleweed
<i>Mentha aquatica</i>	Water Mint
<i>Myosotis scorpioides</i>	Water Forget-me-not
<i>Nuphar lutea</i>	Yellow Water-lily
<i>Odontites vernus</i>	Red Bartsia
<i>Persicaria amphibia</i>	Amphibious bistort
<i>Persicaria maculosa</i>	Redshank
<i>Phalaris arundinacea</i>	Reed Canary-grass
<i>Phleum pratense</i>	Timothy
<i>Phragmites communis</i>	Common Reed
<i>Pinus sylvestris</i>	Scots Pine
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Plantago major</i>	Greater Plantain
<i>Polygonum aviculare</i>	Knotgrass
<i>Populus x canadensis</i>	Hybrid Black-poplar
<i>Potamogeton pusillus</i>	Lesser Pondweed
<i>Potentilla anserina</i>	Silverweed
<i>Potentilla palustris</i>	Marsh Cinquefoil
<i>Potentilla reptans</i>	Creeping Cinquefoil

<i>Prunus spinosa</i>	Blackthorn
<i>Pulicaria dysenterica</i>	Common Fleabane
<i>Quercus cerris</i>	Turkey Oak
<i>Quercus robor</i>	Pedunculate Oak
<i>Ranunculus acris</i>	Creeping Buttercup
<i>Ranunculus flammula</i>	Lesser Spearwort
<i>Ranunculus repens</i>	Meadow Buttercup
<i>Rhinanthus minor</i>	Yellow-rattle
<i>Rosa canina</i> agg.	Dog-rose
<i>Rubus fruticosus</i> agg.	Bramble spp.
<i>Rumex acetosa</i>	Common Sorrel
<i>Rumex acetosella</i>	Sheep's Sorrel
<i>Rumex crispus</i>	Curled Dock
<i>Rumex hydrolapathum</i>	Water Dock
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Sagittaria sagittifolia</i>	Arrowhead
<i>Salix caprea</i>	Goat Willow
<i>Salix caprea</i>	Goat Willow
<i>Salix fragilis</i>	Crack-willow
<i>Salix viminalis</i>	Osier
<i>Sambucus nigra</i>	Elder
<i>Scutellaria galericulata</i>	Skullcap
<i>Senecio jacobaea</i>	Common Ragwort
<i>Solanum dulcamara</i>	Bittersweet
<i>Sparganium erectum</i>	Branched Bur-reed
<i>Stachys palustris</i>	Marsh Woundwort
<i>Stellaria graminea</i>	Lesser Stitchwort
<i>Stellaria palustris</i>	Marsh Stitchwort
<i>Tamus communis</i>	Black Bryony
<i>Taraxacum</i> agg.	Dandelion
<i>Thalactrium flavum</i>	Common Meadow-rue
<i>Trifolium pratense</i>	Red Clover
<i>Trifolium repens</i>	White Clover
<i>Typha latifolium</i>	Greater Reedmace
<i>Ulex europaeus</i>	Gorse
<i>Ulmus</i> sp.	Elm sp.
<i>Urtica dioica</i>	Common Nettle
<i>Valeriana officinalis</i>	Common Valerian
<i>Veronica chamaedrys</i>	Germander Speedwell
<i>Viburnum opulus</i>	Guelder-rose
<i>Vicia cracca</i>	Tufted Vetch

**County Wildlife Site  
(Ref No: 1461)**

**Site Name: Earlham Cemetery**

**District: Norwich**

**Grid Reference: TG 210088**

**Area: 26.6 ha**

**Site Description:**

This site comprises a large cemetery within Norwich. It includes oramental tree gardens of both native and exotic species, interspaced with heavily managed gardens, cultivated beds and regularly mown grassland. There are also extensive areas of less intensively managed improved neutral and basic grassland, divided into compartments by the extensive network of roads and footpaths which cross the site.

The unimproved neutral grassland comprises the majority of the site although the area of greatest interest is situated in the north east corner of the site. The grass sward includes cat's-ear (*Hypochoeris radicata*), smooth hawk's-beard (*Crepis capillaris*) and black medick (*Medicago lupulina*) which are abundant, with frequent germander speedwell (*Veronica chamaedrys*), creeping buttercup (*Ranunculus repens*), common knapweed (*Centaurea nigra*), common bird's-foot-trefoil (*Lotus corniculatus*), creeping cinquefoil (*Potentilla reptans*) and occasional common sorrel (*Rumex acetosa*), oxeye daisy (*Leucanthemum vulgare*) and lesser stitchwort (*Stellaria graminea*). Grasses include tall fescue (*Festuca arundinacea*), red fescue (*Festuca rubra*), sweet vernal-grass (*Anthoxanthum odoratum*), false oat-grass (*Arrhenatherum elatius*), cock's-foot (*Dactylis glomerata*) and Yorkshire-fog (*Holcus lanatus*), with occasional hairy sedge (*Carex hirta*) and field wood-rush (*Luzula campestris*). There are also some areas of locally-frequent wild clary (*Salvia verbenaca*) and sheep's sorrel (*Rumex acetosella*).

Two areas adjacent to and south of the main chapel have characteristics of unimproved basic grassland, although both had been recently cut at the time of survey. Mouse-ear hawkweed (*Heiracium pilosella*) is abundant with frequent field scabious (*Knautia arvensis*) and occasional devil's-bit scabious (*Succisa pratensis*) and burnet-saxifrage (*Pimpinella saxifraga*).

The garden areas together with the path network give rise to a variety of native and exotic trees. There are distinctive avenues of horse chestnuts (*Aesculus hippocastanum*) and limes (*Tilia* sp.), and other exotics include sweet chestnut (*Castanea satavia*), walnut (*Juglans regia*), European larch (*Larix decidua*) and Norway spruce (*Picea abies*). Native species include oak (*Quercus robur*), ash (*Fraxinus excelsior*), silver birch (*Betula pendula*), elm (*Ulmus procera*), holly (*Ilex aquifolium*), hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), goat willow (*Salix caprea*), yew (*Taxus baccata*) and spindle (*Euonymus europaeus*). Bramble (*Rubus fruticosus*), gorse (*Ulex europaeus*) and dog-rose (*Rosa canina*) also occur. Where a groundlayer is allowed to develop, dog-violet (*Viola riviniana*), herb-Robert (*Geranium robertianum*), ground-ivy (*Glechoma hederacea*), wood avens (*Geum urbanum*) and hedge bedstraw (*Galium mollugo*) are occasional.



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**County Wildlife Site  
(Ref No: 1463)**

**Site Name:** Lion Wood, Telegraph Plant'n & Rosary Cemetery

**Parish:** Norwich

**Grid Reference:** TG 250 087

**Area:** 16.6 ha

**District:** Norwich

**Site Description:**

Lion Wood is a 16.27 hectare ancient semi-natural, broadleaved woodland (managed by Norwich City Council) that also encompasses the Lion Wood Local Nature Reserve. Lion Wood is the main portion of the slightly larger CWS designation (no.1463), which also includes the Rosary Cemetery to the south-west and Telegraph Plantation to the east.

From Telegraph Lane, the wide path begins with a long line of mature beech (*Fagus sylvatica*) and wide rides criss-cross the central path. The canopy is densely closed in with mature occasional sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*), and Scots pine (*Pinus sylvestris*). The under-storey consists of frequent holly (*Ilex auifolium*) and bramble (*Rubus fruticosus* agg.), with occasional alder (*Alnus glutinosa*). Ground cover is sparse.

The land slopes north-west to south-west quite steeply and paths here are steep, gravelly and sandy, undulating throughout with frequent silver birch, oak (*Quercus robur*), rowan (*Sorbus acuparia*), sweet chestnut (*Castanea sativa*), horse chestnut (*Aesculus hippocastanum*), and Scots pine. The open ride appears older than the previous, with a very large oak tree as well as large horse and sweet chestnuts. A fallen beech has allowed a small area of rough meadow grass (*Poa trivialis*) to grow. The path then returns to denser woodland.

From Telegraph Lane to Wellesley Avenue North, a narrow path alongside a high barbed-wire fence is bordered by frequent mature oak, beech, sycamore, birch and elm (*Ulmus minor* var. *vulgaris*). In places where the canopy is more open, younger trees, mixed shrubs and bluebells (*Hyacinthoides* sp.) are locally frequent and cow parsley (*Anthriscus sylvestris*) is abundant. Wood avens (*Geum urbanum*), herb robert (*Geranium robertianum*) and red campion (*Silene dioica*) are also frequent. As the path opens up there are patches of wild garlic (*Allium ursinum*) and the ground here falls away steeply towards the dry valley.

The valley is created by the land sloping west-east and the path runs north to south. The floor has a wide sandy gravel path. An area of grassland encompasses a circular patch of created amenity land, with bark chippings underneath buddleia (*Buddleia davidii*), holly, and a young fallen ash (*Fraxinus excelsior*) tree. Behind this on the rising bank is a patch of foxglove (*Digitalis purpurea*). The surrounding grassland contains rough meadow grass, perennial rye grass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), broad-leaved plantain (*Plantago major*) and creeping buttercup (*Ranunculus repens*). There is an understory of young rowan, hazel (*Corylus avellana*) and a thick stand of bramble beside the path. There are various canopy species including lime (*Tilia x europea*), oak, ash and an elder bush.

Moving to the eastern half of the wood and a grassy slope near the Cintra Road entrance, a variety of flora is found including: field pepperwort (*Lepidium campestre*), smooth hawkbeard (*Crepis capillaris*), creeping bent-grass (*Agrostis stolonifera*), timothy (*Phleum pratense*), rough meadow grass, occasional common knapweed (*Centaurea nigra*), selfheal (*Prunella vulgaris*), yarrow (*Achillea millefolium*), hemlock (*Conium maculatum*) and enchanter's nightshade (*Circaea lutetiana*).

The area is surrounded by mixed woodland, and extensive brambles. From the path, leading uphill from the grassy slope, is a small patch of false wood brome (*Brachypodium sylvaticum*) and some Japanese knotweed (*Fallopia japonica*).

Along the high ridge west of the valley floor, a narrow path traverses steeply uphill with tall oaks, beech, abundant ash and extensive brambles and bracken. Pockets of rowan and birch are also present, indicating a sandy soil. The understory is dense but less mature, with plenty of holly and young rowan. The path is very steep (wooden steps have been created), with valley sides dropping away on either side. There is a light canopy with occasional Scots pine; oak and silver birch. Bracken is dominant and holly frequent. A very large non-native poplar (*Populus*) grows by the flats, along with buddleia. Bracken here is dense, as is encroaching laurel (*Prunus laurocerasus* var).

The woodland floor in the valley comprises hornbeam (*Carpinus betulus*), tall silver birch and oaks as well as a patch of historically coppiced hazel (*Corylus avellana*). Continuing on a slight incline eastward there is hazel, holly, and young sycamore. The under-storey here is less developed.

Up the hill, on the flat top of the ridge mature sessile oak (*Quercus petraea*), silver birch and rowan are seen, with an understory of ash, holly and young rowan. Bracken follows sandy, gravelly rides and there are extensive brambles with scattered mature holly.

Near to the northern Pilling Park gate there is a patch of elm saplings and young sycamore. Flora in this area includes willow herb species, hedge woundwort (*Stachys sylvatica*), and lords and ladies (*Arum maculatum*). Descending towards Cintra Road, felled wood is frequently seen, along with very large oaks and some coppiced hazel.

To the south-west of the wood lies the Rosary which is a 12 acre cemetery established almost 200 years ago (7 acres originally, with 5 acres added in 1933), and is included in the same County Wildlife Site as Lion Wood. The older, lower cemetery has various (often extensively tree-planted) compartments which range from low, flat areas to very steep hills. Management in the various sections also varies and so compartments demonstrate a degree of individual character. Despite some previous unsympathetic management, the old cemetery is botanically really quite species rich. Found throughout the site are notable species such as meadow saxifrage (*Saxifrage granulata*), oxeye daisy (*Leucanthemum vulgare*), burnet saxifrage (*Pimpinella saxifrage*), pignut (*Conopodium majus*), cowslip (*Primula veris*), lady's bedstraw (*Galium verum*), violets (*Viola* spp.), pyramidal orchid (*Anacamptis pyramidalis*), English bluebells field scabious (*Knautia arvensis*), variousampions (*Silene* spp.), pheasant's eye (*Leycesteria formosa*), sheep's sorrel (*Rumex acetosella*) and several speedwells (*Veronica* spp.). The new part of the cemetery however has the character of intensively managed parkland, being closely mown and with many planted specimen trees. Botanically it could be quite diverse but would require more favourable management.



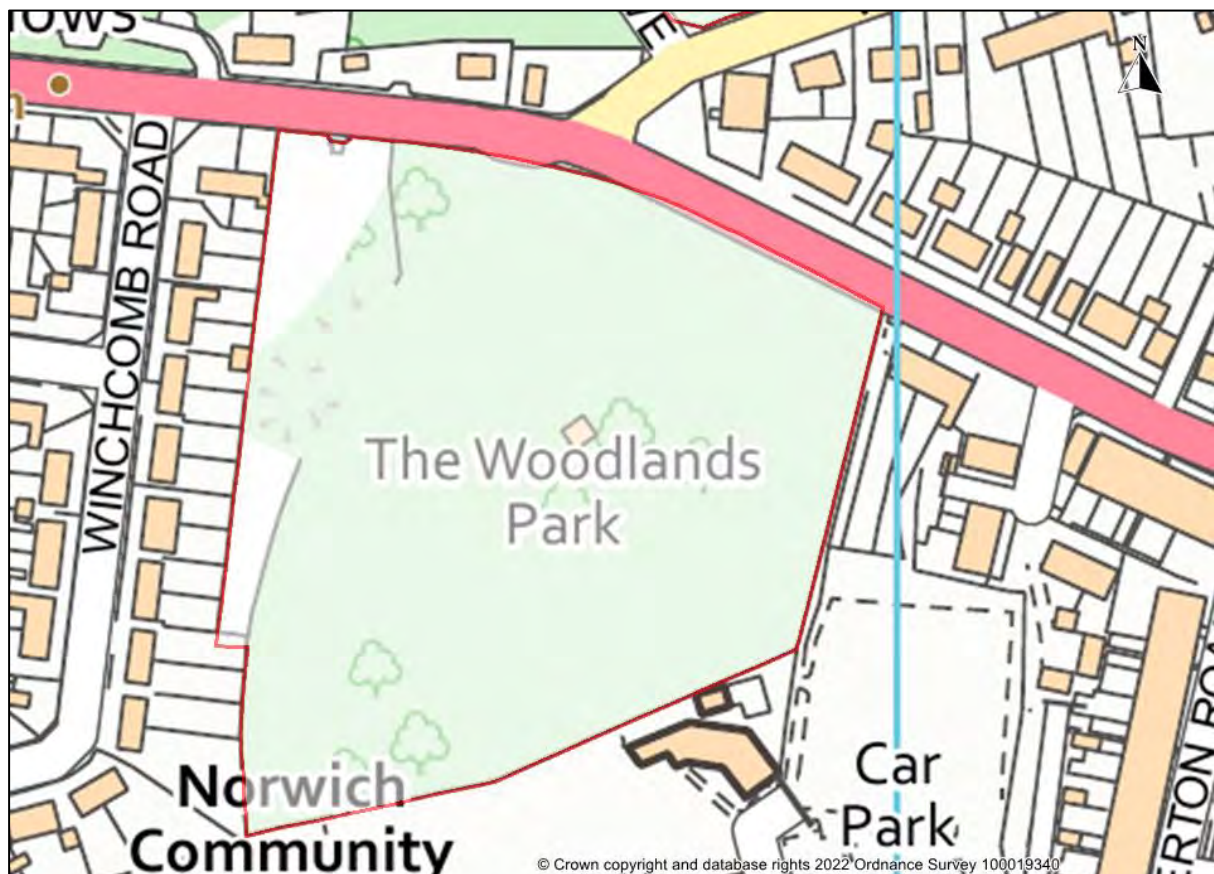


<b>County Wildlife Site name</b>	<b>Woodlands Park</b>
<b>County Wildlife Site number</b>	<b>1464</b>
<b>Grid reference</b>	<b>TG 209 093</b>
<b>Parish</b>	<b>Norwich</b>
<b>District</b>	<b>Norwich</b>
<b>Area (ha)</b>	<b>2.55 ha</b>
<b>Notification category</b>	<b>Woodland</b>

### Site description:

A small but diverse woodland largely isolated by development with a varied topography. It contains many mature trees, especially of sycamore *Acer pseudoplatanus* and beech *Fagus sylvatica* and large patches of bluebell *Hyacinthoides non-scripta*. It is well used by the public and contains many informal paths. Impressive veteran trees are present including oak *Quercus robur*, beech and hornbeam *Carpinus betulus*. A well-established shrub layer includes species such as bird cherry *Prunus padus*, hawthorn *Crataegus monogyna*, rowan *Sorbus aucuparia*, elm *Ulmus minor* and holly *Ilex aquifolium*. English bluebell is abundant as a component of the diverse general ground flora which also includes occasional wood meadow grass *Poa nemoralis*. There's a good regeneration of several tree and shrub species including beech, elm and holly.

A cluster of osier *Salix viminalis* is found by the entrance to the NW corner of the site. The grassland here is amenity with dandelion *Taraxacum officinalis* agg. and daisy *Bellis perennis* surrounded by *Prunus* sp. and *Elm* sp. hedgerows.



Survey dates: 03/05/2022; 1996; 1985  
Year notified: 1985

## PLANT LIST

Scientific name	Common name	DAFOR
<i>Acer campestre</i>	Field Maple	
<i>Acer platanoides</i>	Norway Maple	
<i>Acer pseudoplatanus</i>	Sycamore	
<i>Achillea millefolium</i>	Yarrow	
<i>Aesculus hippocastanum</i>	Horse-chestnut	
<i>Alliaria petiolata</i>	Garlic Mustard	
<i>Anemone nemorosa</i>	Wood Anemone	
<i>Anisantha sterilis</i>	Barren Brome	
<i>Anthriscus sylvestris</i>	Cow Parsley	
<i>Arum maculatum</i>	Lords-and-Ladies	
<i>Bellis perennis</i>	Daisy	
<i>Betula pubescens</i>	Downy Birch	
<i>Cardamine hirsuta</i>	Hairy Bitter-cress	
<i>Carpinus betulus</i>	Hornbeam	
<i>Cerastium fontanum</i>	Common Mouse-ear	
<i>Chelidonium majus</i>	Greater Celandine	
<i>Crataegus monogyna</i>	Hawthorn	
<i>Dactylis glomerata</i>	Cock's-foot	
<i>Fagus sylvatica</i>	Beech	
<i>Ficaria verna subsp. verna</i>	Lesser Celandine	
<i>Fraxinus excelsior</i>	Ash	
<i>Galium aparine</i>	Cleavers	
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	
<i>Geranium lucidum</i>	Shining Crane's-bill	
<i>Geranium molle</i>	Dove's-foot Crane's-bill	
<i>Geranium robertianum</i>	Herb-Robert	
<i>Geum urbanum</i>	Wood Avens	
<i>Glechoma hederacea</i>	Ground-ivy	
<i>Hedera helix</i>	Common Ivy	
<i>Holcus lanatus</i>	Yorkshire-fog	
<i>Holcus mollis</i>	Creeping Soft-grass	
<i>Hyacinthoides non-scripta</i>	Bluebell	
<i>Hypochaeris radicata</i>	Cat's-ear	
<i>Ilex aquifolium</i>	Holly	
<i>Iris foetidissima</i>	Stinking Iris	
<i>Jacobaea vulgaris</i>	Common Ragwort	
<i>Lamium album</i>	White Dead-nettle	
<i>Lamium purpureum</i>	Red Dead-nettle	
<i>Ligustrum vulgare</i>	Wild Privet	
<i>Lolium perenne</i>	Perennial Rye-grass	
<i>Lunaria annua</i>	Honesty	
<i>Myosotis sylvatica</i>	Wood Forget-me-not	
<i>Narcissus agg.</i>	Cultivated Daffodil	
<i>Pentaglottis sempervirens</i>	Green Alkanet	
<i>Petasites pyrenaicus</i>	Winter Heliotrope	
<i>Philadelphus sp.</i>	A Mock-orange	
<i>Plantago lanceolata</i>	Ribwort Plantain	
<i>Plantago major subsp. major</i>	Greater Plantain	
<i>Poa annua</i>	Annual Meadow-grass	
<i>Poa nemoralis</i>	Wood Meadow-grass	

Survey dates: 03/05/2022; 1996; 1985  
Year notified: 1985

<i>Poa trivialis</i>	Rough Meadow-grass	
<i>Prunus avium</i>	Wild Cherry	
<i>Prunus laurocerasus</i>	Cherry Laurel	
<i>Prunus padus</i>	Bird Cherry	
<i>Pteridium aquilinum</i>	Bracken	
<i>Quercus robur</i>	Pedunculate Oak	
<i>Ranunculus bulbosus</i>	Bulbous Buttercup	
<i>Ranunculus repens</i>	Creeping Buttercup	
<i>Salix viminalis</i>	Osier	
<i>Sambucus nigra</i>	Elder	
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	
<i>Sorbus aucuparia</i>	Rowan	
<i>Sorbus intermedia</i>	Swedish Whitebeam	
<i>Stellaria media</i>	Common Chickweed	
<i>Taraxacum agg.</i>	A dandelion	
<i>Taxus baccata</i>	Yew	
<i>Tilia x europaea</i>	Lime	
<i>Trifolium repens</i>	White Clover	
<i>Ulmus minor</i>	Small-leaved Elm (sensu Stace)	
<i>Urtica dioica</i>	Common Nettle	
<i>Veronica arvensis</i>	Wall Speedwell	
<i>Veronica chamaedrys</i>	Germander Speedwell	
<i>Veronica hederifolia</i>	Ivy-leaved Speedwell	
<i>Veronica persica</i>	Common Field-speedwell	
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell	
<i>Vicia sepium</i>	Bush Vetch	
<i>Vinca major</i>	Greater Periwinkle	

**County Wildlife Site  
(Ref No: 1465)**

**Site Name: Hellesdon Pastures**

**District: Norwich**

**Grid Reference: TG 203097**

**Area: 24.12 ha**

**Site Description:**

The site consists of herb-rich pasture, both damp and well-drained, and an extensive area of marsh lying adjacent to the R.Wensum. The site is crossed by a number of shallow dykes and is grazed mainly by horses.

The dykes contain tall fen vegetation of sedges (*Carex* spp.) and reed sweet-grass (*Glyceria maxima*), with meadowsweet (*Filipendula ulmaria*), bogbean (*Menyanthes trifoliata*), fool's water-cress (*Apium nodiflorum*) and gipsywort (*Lycopus europaeus*). The wet pasture includes southern marsh orchid (*Dactylorhiza praetermissa*), lesser spearwort (*Ranunculus flammula*) and marsh marigold (*Caltha palustris*) amongst other species.

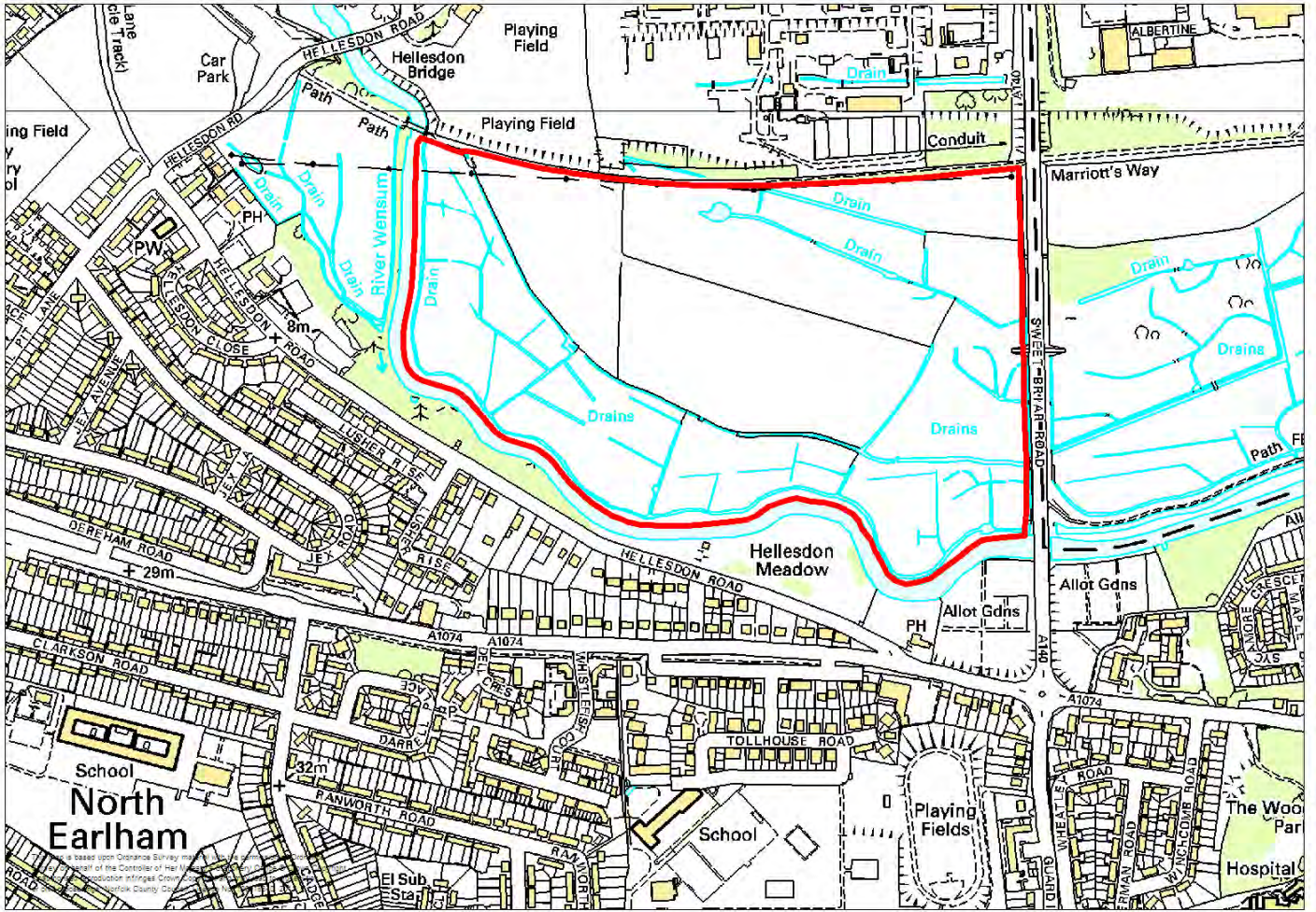
On the drier areas Yorkshire fog (*Holcus lanatus*) and false oat-grass (*Arrhenatherum elatius*) predominate with mugwort (*Artemisia vulgaris*), meadow vetchling (*Lathyrus pratensis*) and marsh thistle (*Cirsium palustre*). Crested dog's-tail (*Cynosurus cristatus*), bent grasses (*Agrostis* spp.) and silverweed (*Potentilla anserina*) occur around the more heavily grazed areas.

The two fields at the centre of the site are arable reversion and consist of unimproved neutral grassland dominated by false oat-grass and cock's-foot (*Dactylis glomerata*), with scattered and developing scrub consisting mainly of hawthorn (*Crataegus monogyna*) bramble (*Rubus fruticosus* agg.), and dog-rose (*Rosa canina*). Typical flowering plants in the sward include ribwort plantain (*Plantago lanceolata*), yellow-rattle (*Rhinanthus minor*), common cudweed (*Filago vulgaris*) and yarrow (*Achillea millefolium*). The smaller western field has patches of harebell (*Campanula rotundifolia*) and some gorse (*Ulex europaeus*) scrub. The east field has a large orchid colony, with common spotted-orchid (*Dactylorhiza fuchsia*), common spotted-orchid, southern marsh-orchid (*D. x grandis*), early marsh-orchid (*D. incarnata incarnata*), southern marsh-orchid and bee orchid (*Ophrys apifera*).

A damp depression in the south-east corner of the west field has marshy grassland with meadowsweet (*Filipendula ulmaria*) and lesser pond-sedge (*Carex acutiformis*), surrounded by tall ruderal growth of common nettle (*Urtica dioica*), bramble and Himalayan balsam (*Impatiens glandulifera*) and a dense patch of bracken (*Pteridium aquilinum*). Further patches of bracken occur around the eastern half of the larger field, where locally acidic conditions also support wood sage (*Teucrium scorodonia*) and bluebell (*Hyacinthoides non-scripta*).

There are a few scattered larger trees across the site, including an impressive crack-willow (*Salix fragilis*).







**County Wildlife Site  
(Ref No: 1466)**

**Site Name:** Mile Cross Meadows

**Grid Reference:** TG 210099

**Area:** 9.1 ha

**District:** Norwich

**Site Description:**

This urban site within the River Wensum floodplain encompasses Sweetbriar Road Meadows SSSI and consists of a range of habitats including neutral and marshy grassland, swamp/fen, scrub, boundary broadleaved woodland, a section of the river Wensum, and drainage ditches. Bounded by a main road to the west and the Marriott's Way cycle path and Marriot's Way CWS1453 to the north, the site overlaps with Mile Cross Marsh LNR and Sycamore Crescent Wood CWS 2011 lies to the south.

Southeast of the site is ditch-crossed swamp, bordered by willow (*Salix* spp.) and mature alder (*Alnus glutinosa*) woodland, and dominated by reed sweet-grass (*Glyceria Maxima*), reed canary grass (*Phalaris arundinacea*) and meadowsweet (*Filipendula ulmaria*). Fen species are present, including skullcap (*Scutellaria galericulata*), marsh marigold (*Caltha palustris*), flag iris (*Iris pseudacorus*), purple loosestrife (*Lythrum salicaria*), fen bedstraw (*Galium uliginosum*) and watermint (*Mentha aquatica*). Ditches are clogged with reed-sweet grass.

North of the swamp is characterised by drier neutral grassland with blackthorn (*Prunus spinosa*) scrub north and west, transitioning to wetter marshy grassland and willow scrub eastwards, interspersed with standing water. Boundary woodland here is predominantly alder with pedunculate oak (*Quercus robur*) along drier stretches. Meadow adjoining the Marriott's Way supports species such as: meadow fescue (*Festuca pratensis*), cock's-foot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), yellow rattle (*Rhinanthus minor*) and bird's-foot trefoil (*Lotus corniculatus*). Centrally within the marsh are southern marsh orchid (*Dactylorhiza praetermissa*), marsh marigold (*Caltha palustris*), jointed rush (*Juncus articulatus*), meadow buttercup (*Ranunculus acris*), cuckoo flower (*Cardamine pratensis*), marsh bedstraw (*Galium palustre*) and horsetail sp. (*Equisetum* sp.). New Zealand pigmyweed (*Crassula helmsii*) dominates some areas of standing water.

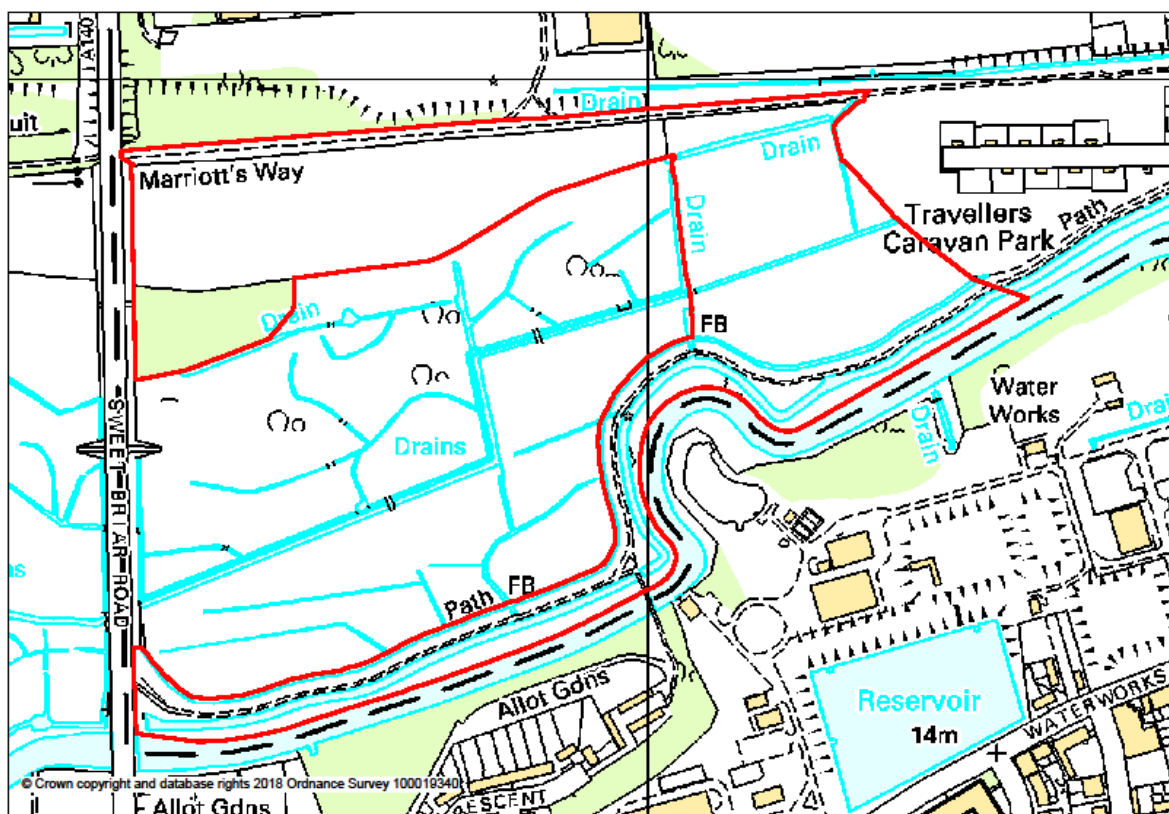
In contrast to the remainder of the site, the northern strip of grassland is on light sandy soils and has no standing water features. Bramble (*Rubus fruticosus* agg.) is abundant in the northeast corner and a patch of tall ruderals suggests localised nutrient enrichment. The sward supports hare's foot clover (*Trifolium arvense*), sheep's fescue (*Festuca ovina*) and yarrow, indicating an acid-neutral mosaic. The strip widens westwards, with scattered scrub of hawthorn (*Crataegus monogyna*), blackthorn, gorse (*Ilex europaea*) and dog rose (*Rosa canina* agg) in the grassland mosaic. Grazing creates narrow paths between the scrub - notable species include hoary mullein (*Verbascum pulverulentum*) and meadow saxifrage (*Saxifraga granulata*). The woodland belt here is of mature common lime (*Tilia x europaea*), pedunculate oak, hawthorn, elder (*Sambucus nigra*), and standing elm (*Ulmus minor*) deadwood. On the slope is a significant area of open grassland, unencroached by scrub and characterised by ant mounds, yellow rattle and a well-worn pony track.

The southern component of the site follows the Wensum, with marginal vegetation and woodland dominated by alder and willow in wet areas, and in drier patches by sycamore

(*Acer pseudoplatanus*), birch (*Betula pendula*) and poplar (*Populus sp.*). Two potential black poplar (*Populus nigra*) could not be confirmed due to inaccessibility.

The understorey is dominated by Himalayan balsam (*Impatiens glandulifera*), with great willowherb (*Epilobium hirsutum*), nettle (*Urtica dioica*), meadowsweet, goosegrass (*Galium aparine*) and hogweed (*Heracleum sphondylium*) elsewhere. Areas of water here are often quite smothered with duckweed (*lemna sp.*), but more open areas support pond sedge (*Carex acutiformis*), reed sweet-grass (*Glyceria maxima*) and a few arrowhead (*Sagittaria sagittifolia*).

Midwest is an area of mature mixed deciduous woodland containing several veteran oaks and a number of circular hollows which most likely hold water in the winter. These are dominated by damp grassland species, such as floating sweet-grass (*Glyceria fluitans*), soft rush (*Juncus effusus*), and fen/swamp species, including yellow flag iris, fool's watercress (*Apium nodiflorum*) and purple-loosestrife.



Survey date: May-August 2017 & 1993

## County Wildlife Site

(Ref No: 1467)

**Site Name:** Train Wood

**Grid Reference:** TG 224 096

**Area:** 5.1ha

**District:** Norwich

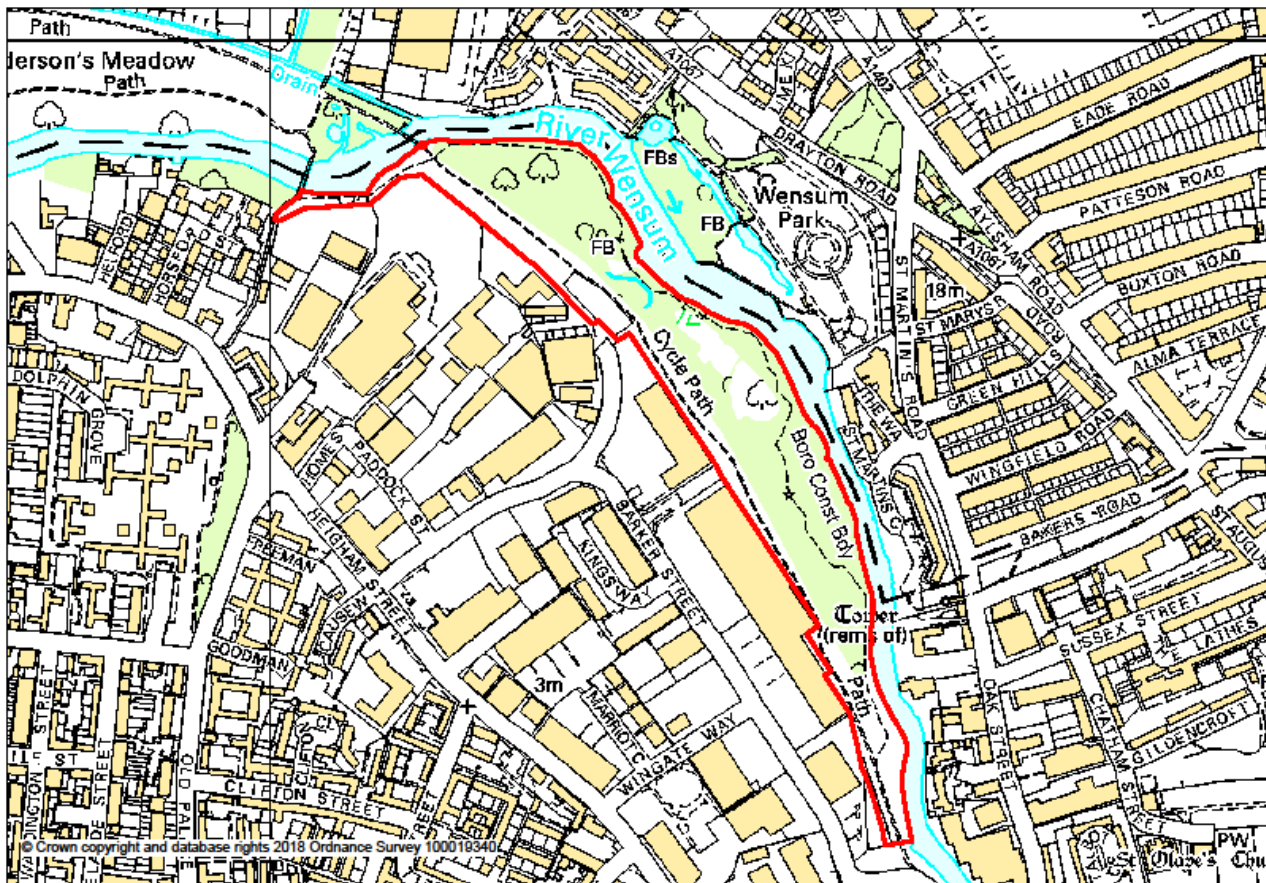
### Site Description:

An urban site on the north western fringe of Norwich city centre, adjacent to the River Wensum, where secondary habitats have developed on the former city railway station site north of Barn Road. The site lies on the west riverbank and is surrounded by light industrial and commercial land-use. There is open access and the site is used predominantly as a pedestrian route to and from the city centre. A surfaced cycle-track/footpath, constituting the first leg of the Marriott's Way, runs through the western side of the site.

A narrow, linear mosaic of wet woodland and drier scrub are dominant to the east of the site along the river edge. Wet woodland with alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*) crack (*Salix fragilis*) and white willow (*Salix alba*) dominates large patches of the site. Nettle (*Urtica dioica*) is abundant on the undulating woodland floor, with stands of lesser pond-sedge (*Carex acutiformis*) in the damp hollows. Grey willow (*Salix cinerea*) occurs along the riverbank and there is a narrow fringe of tall marginal and emergent vegetation, including reed sweet-grass (*Glyceria maxima*), great willowherb (*Epilobium hirsutum*), meadowsweet (*Filipendula ulmaria*), wild angelica (*Angelica sylvestris*) and purple-loosestrife (*Lythrum salicaria*). There are a few patches of opposite leaved golden saxifrage (*Chrysosplenium oppositifolium*), a rarity in Norfolk. Areas of scrub are dominated by goat willow (*Salix caprea*), silver birch (*Betula pendula*) and sycamore (*Acer pseudoplatanus*), with a ground layer dominated by dense bramble (*Rubus fruticosus* agg.).

At the southern end of the site, parts of the former railtrack bed remain exposed or close to the surface. There are several clearings on the western side of the woodland, managed to encourage grassland species which, alongside the path edges, support vervain (*Verbena officinalis*), wild carrot (*Daucus carota*) nationally scarce hoary mullein (*Verbascum pulverulentum*), yarrow (*Achillea millefolium*), common knapweed (*Centaurea nigra*) and perforate St John's wort (*Hypericum perforatum*), rare Lady's bedstraw (*Galium verum*) and ox eye daisy (*Leucanthemum vulgare*). These areas of grassland are backed by patches of dense bramble scrub, with traveller's joy (*Clematis vitalba*) and goldenrod (*Solidago canadensis*) with mature trees above.

To the west of the path there are occasional garden species, including butterfly bush (*Buddleia davidii*), cotoneaster (*Cotoneaster* sp.), firethorn (*Pyracanthus* sp.) and rose sp. (*Rosa* sp.).



**County Wildlife Site  
(Ref No: 1468)**

**Site Name: Fiddle Wood & Night Plantation**

**District: Norwich**

**Grid Reference: TG 227117**

**Area: 1.4 ha**

**Site Description:**

A small broad leaved plantation woodland with some young and very old coppice situated on light sandy neutral soil with urban surroundings. The wood is also situated on an incline from west to east which incorporates a variety of ridges, humps and hollows which assist drainage causing the ground to be fairly dry.

The woodland has an even aged canopy composed mainly of abundant sycamore (*Acer pseudoplatanus*) and frequent ash (*Fraxinus excelsior*). Also present are occasional hornbeam (*Carpinus betulus*) and locally frequent sweet chestnut (*Castanea sativa*). There is one particular old coppiced example of the taller of these species in the middle of the wood. The understorey is of mixed age and constitutes both coppiced and regenerated small-leaved elm (*Ulmus minor*), especially in the north eastern corner. Other understorey species include frequent hawthorn (*Crataegus monogyna*) and elder (*Sambucus nigra*) as well as occasional sycamore and lime (*Tilia x vulgaris*). The ground flora is fairly typical of such habitat displaying an abundance of ivy (*Hedera helix*) as well as areas of bramble (*Rubus fruticosus*) and common nettle (*Urtica dioica*). Wood avens (*Geum urbanum*) and dog's mercury (*Mercurialis perennis*) are also to be found in local abundance as well as herb robert (*Geranium robertianum*) and enchanter's-nightshade (*Circaea lutetiana*).



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**County Wildlife Site  
(Ref No: 1469)**

**Site Name: Mousehold Heath & Valley Drive**

**District: Norwich**

**Grid Reference: TF 244104**

**Area: 85.3 ha**

**Site Description:**

This is a large and complex site of former heathland, now mostly covered by recent woodland. Some patches of acid grassland and heath remain. The boundary of the site also includes a number of sports pitches where the grass has been improved.

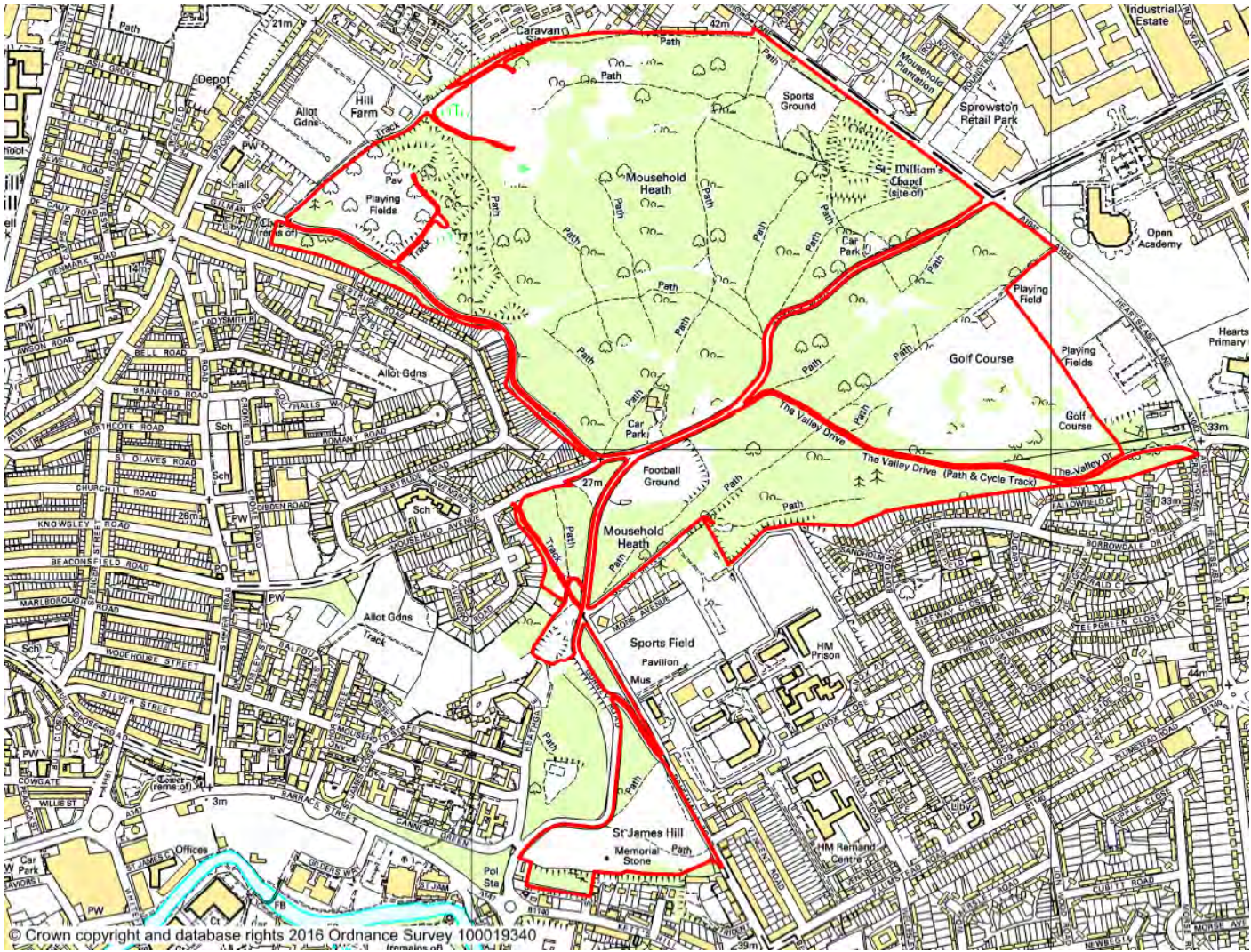
Broadleaved semi-natural woodland dominates most of the site and is of varying ages, the youngest including abundant small clearings with tall acid scrub present. Mature and semi-mature oak (*Quercus robur*) and silver birch (*Betula pendula*) dominate naturally regenerated areas in a fairly low canopy. Towards the south and east along main roads and tracks much older trees are present, many clearly having been planted. These include large beech (*Fagus sylvatica*) and lime (*Tilia x vulgaris*) as well as older specimens of the previous species. The ground flora and shrub layer are generally both poorly developed and much bare ground is present. Shrubs present include scattered hawthorn (*Crataegus monogyna*) and elder (*Sambucus nigra*). Sheep's-fescue (*Festuca ovina*) is common in recently wooded areas.

There are areas of tall acid scrub present throughout the site, including some patches which are particularly large. In these areas gorse dominates with broom (*Cytisus scoparius*) and other more neutral species such as hawthorn. Abundant silver birch and oak are nearly always present, and in places wild cherry (*Prunus avium*).

The heathland areas are situated within the woodland towards the north of the site. They comprise predominately acid grassland with a small proportion covered by heather (*Calluna vulgaris*) and gorse (*Ulex europaeus*). There is often abundant small seedlings of heather present in the mown/rabbit grazed turf. Sheep's fescue is the dominant grass with hair-grass (*Deschampsia flexuosa*) on the barest ground growing with mosses and common sorrel (*Rumex acetosa*). Rosebay willowherb (*Chamerion angustifolium*) is present in areas cleared of trees. There are two small seasonally dry ponds present in this part of the site which contain reed (*Phragmites australis*) and soft-rush (*Juncus effusus*). The extreme southern end of the site also comprises acid grassland but lacks heather and often has richer areas with cock's-foot (*Dactylis glomerata*) and other species.

The southern area, Spitalfields, consists of acid grassland with scrub and mature trees of ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*. Bee orchid *Ophrys apifera*.





Survey date: 08/05/1996  
Spitalfields (extension) surveyed in 2015  
Year notified: 1985

<b>County Wildlife Site name</b>	<b>Sycamore Crescent Wood</b>
<b>County Wildlife Site number</b>	<b>2011</b>
<b>Grid reference</b>	<b>TG 209 095</b>
<b>Parish</b>	<b>Norwich</b>
<b>District</b>	<b>Norwich</b>
<b>Area (ha)</b>	<b>1.75 ha</b>
<b>Notification category</b>	<b>Woodland</b>

**Site description:**

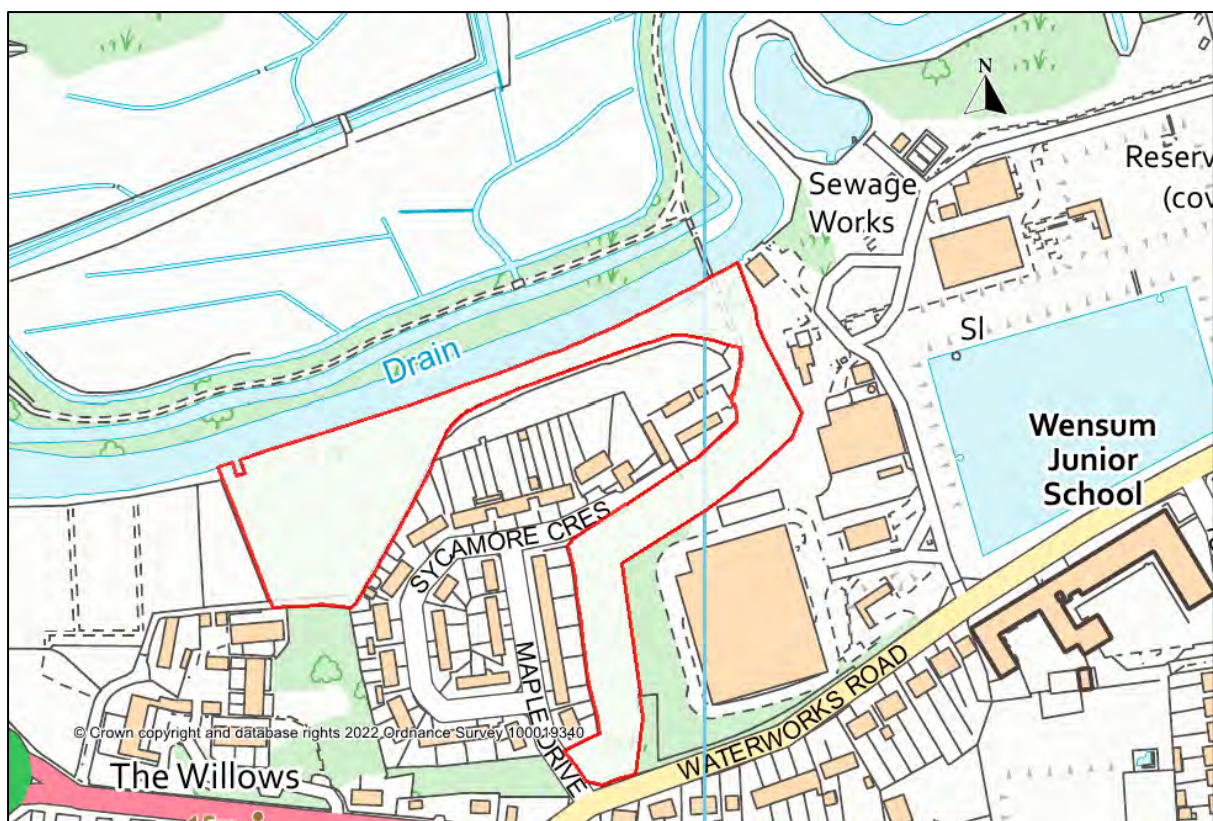
A narrow strip of woodland leading down to and alongside the River Wensum.

The woodland on the upper slopes consists of tall mature trees by the entrance comprising mainly beech *Fagus sylvatica* & sycamore *Acer pseudoplatanus* interspersed with oak *Quercus robur*. Elder *Sambucus nigra*, hazel *Corylus avellana*, horse chestnut *Aesculus hippocastanum* and elm *Ulmus procera* form the sub-canopy with ivy *Hedera helix* prevalent climbing up the trees. There is evidence of past coppicing and dead wood is present.

A wide central path runs down through the wood towards the river. Brash and household garden waste is dumped beside the houses on the west side.

A narrow strip runs along the river at first over damp alluvial soil. Many medium-aged trees, mostly sycamore sit fairly close together here, casting shade on the woodland flora. Ivy is therefore abundant with little other flora. Where wider the woodland becomes more diverse with various ferns, large trunks, fallen dead wood and areas carpeted in English bluebell *Hyacinthoides non-scripta*. The western central area has a more established shrub layer with a lot of regeneration. There is less ivy here with bird cherry *Prunus padus*, elm, horse chestnut and young beech. Garlic mustard *Alliaria petiolata*, bluebell, bramble *Rubus fruticosus* & ivy constitute the herb layer. Occasional lime *Tilia x europaea* trees sit on the path by the river. Pendulous *Carex pendula* and greater pond sedge *Carex riparia* fringe the river. Wood anemone *Anemone nemorosa* is locally abundant and a variety of ferns are present across the woodland including male fern *Dryopteris filix-mas*, broad-leaved buckler fern *Dryopteris dilatata* and soft shield fern *Polystichum setiferum*.





## PLANT LIST

Scientific name	Common name	DAFOR
<i>Acer pseudoplatanus</i>	Sycamore	
<i>Aegopodium podagraria</i>	Ground-elder	
<i>Aesculus hippocastanum</i>	Horse-chestnut	
<i>Alliaria petiolata</i>	Garlic Mustard	
<i>Allium paradoxum</i>	Few-flowered Garlic	
<i>Alnus glutinosa</i>	Alder	
<i>Anemone nemorosa</i>	Wood Anemone	
<i>Angelica sylvestris</i>	Wild Angelica	
<i>Anthriscus sylvestris</i>	Cow Parsley	
<i>Arctium minus</i>	Lesser Burdock	
<i>Arum maculatum</i>	Lords-and-Ladies	
<i>Bellis perennis</i>	Daisy	
<i>Brachypodium sylvaticum</i>	False-brome	
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	
<i>Carex divulsa subsp. divulsa</i>	Grey Sedge	
<i>Carex pendula</i>	Pendulous Sedge	
<i>Carex remota</i>	Remote Sedge	

Survey dates: 03/05/2022; 1993  
Year notified: 1991

<i>Carex riparia</i>	Greater Pond-sedge	
<i>Carpinus betulus</i>	Hornbeam	
<i>Circaea lutetiana</i>	Enchanter's-nightshade	
<i>Cornus sanguinea subsp. australis</i>	Dogwood	
<i>Corylus avellana</i>	Hazel	
<i>Crataegus monogyna</i>	Hawthorn	
<i>Dactylis glomerata</i>	Cock's-foot	
<i>Dryopteris dilatata</i>	Broad Buckler-fern	
<i>Dryopteris filix-mas</i>	Male-fern	
<i>Eranthis hyemalis</i>	Winter Aconite	
<i>Euphorbia peplus</i>	Petty Spurge	
<i>Fagus sylvatica</i>	Beech	
<i>Ficaria verna subsp. fertilis</i>	Lesser Celandine	
<i>Filipendula ulmaria</i>	Meadowsweet	
<i>Fraxinus excelsior</i>	Ash	
<i>Galanthus nivalis</i>	Snowdrop	
<i>Galium aparine</i>	Cleavers	
<i>Geranium lucidum</i>	Shining Crane's-bill	
<i>Geranium robertianum</i>	Herb-Robert	
<i>Geum urbanum</i>	Wood Avens	
<i>Hedera helix</i>	Common Ivy	
<i>Hedera hibernica</i>	Atlantic Ivy	
<i>Hyacinthoides hispanica</i>	Spanish Bluebell	
<i>Hyacinthoides non-scripta</i>	Bluebell	
<i>Hyacinthoides x massartiana</i>	Hybrid Bluebell (H. non-scripta x hispanica)	
<i>Ilex aquifolium</i>	Holly	
<i>Ilex x altaclerensis</i>	Highclere Holly (I. aquifolium x perado)	
<i>Iris foetidissima</i>	Stinking Iris	
<i>Lamiastrum galeobdolon subsp. argentatum</i>	Garden Yellow-archangel	
<i>Lamium album</i>	White Dead-nettle	
<i>Ligustrum ovalifolium</i>	Garden Privet	
<i>Ligustrum vulgare</i>	Wild Privet	
<i>Lonicera nitida</i>	Wilson's Honeysuckle	
<i>Mercurialis perennis</i>	Dog's Mercury	
<i>Milium effusum</i>	Wood Millet	
<i>Narcissus agg.</i>	Cultivated Daffodil	
<i>Pinus nigra subsp. laricio</i>	Corsican Pine	
<i>Plantago major subsp. major</i>	Greater Plantain	
<i>Poa annua</i>	Annual Meadow-grass	
<i>Poa nemoralis</i>	Wood Meadow-grass	
<i>Poa trivialis</i>	Rough Meadow-grass	
<i>Polystichum setiferum</i>	Soft Shield-fern	
<i>Prunus avium</i>	Wild Cherry	
<i>Prunus cerasifera</i>	Cherry Plum	
<i>Prunus laurocerasus</i>	Cherry Laurel	
<i>Prunus padus</i>	Bird Cherry	
<i>Quercus robur</i>	Pedunculate Oak	
<i>Ranunculus repens</i>	Creeping Buttercup	
<i>Ribes rubrum</i>	Red Currant	
<i>Ribes uva-crispa</i>	Gooseberry	

<i>Rubus fruticosus</i> agg.	Bramble	
<i>Rumex obtusifolius</i>	Broad-leaved Dock	
<i>Rumex sanguineus</i>	Wood Dock	
<i>Sambucus nigra</i>	Elder	
<i>Silene dioica</i>	Red Campion	
<i>Sorbus intermedia</i>	Swedish Whitebeam	
<i>Stachys sylvatica</i>	Hedge Woundwort	
<i>Symphoricarpos albus</i>	Snowberry	
<i>Taraxacum</i> agg.	Dandelion	
<i>Tilia x europaea</i>	Lime	
<i>Ulmus glabra</i>	Wych Elm	
<i>Ulmus procera</i>	English Elm	
<i>Urtica dioica</i>	Common Nettle	
<i>Veronica hederifolia</i>	Ivy-leaved Speedwell	

**County Wildlife Site  
(Ref No: 2012)**

**Site Name:** Bowthorpe Marsh

**Parish:** Norwich

**Grid Reference:** TG 181 085

**Area:** 9.2 ha

**District:** Norwich

**Site Description:**

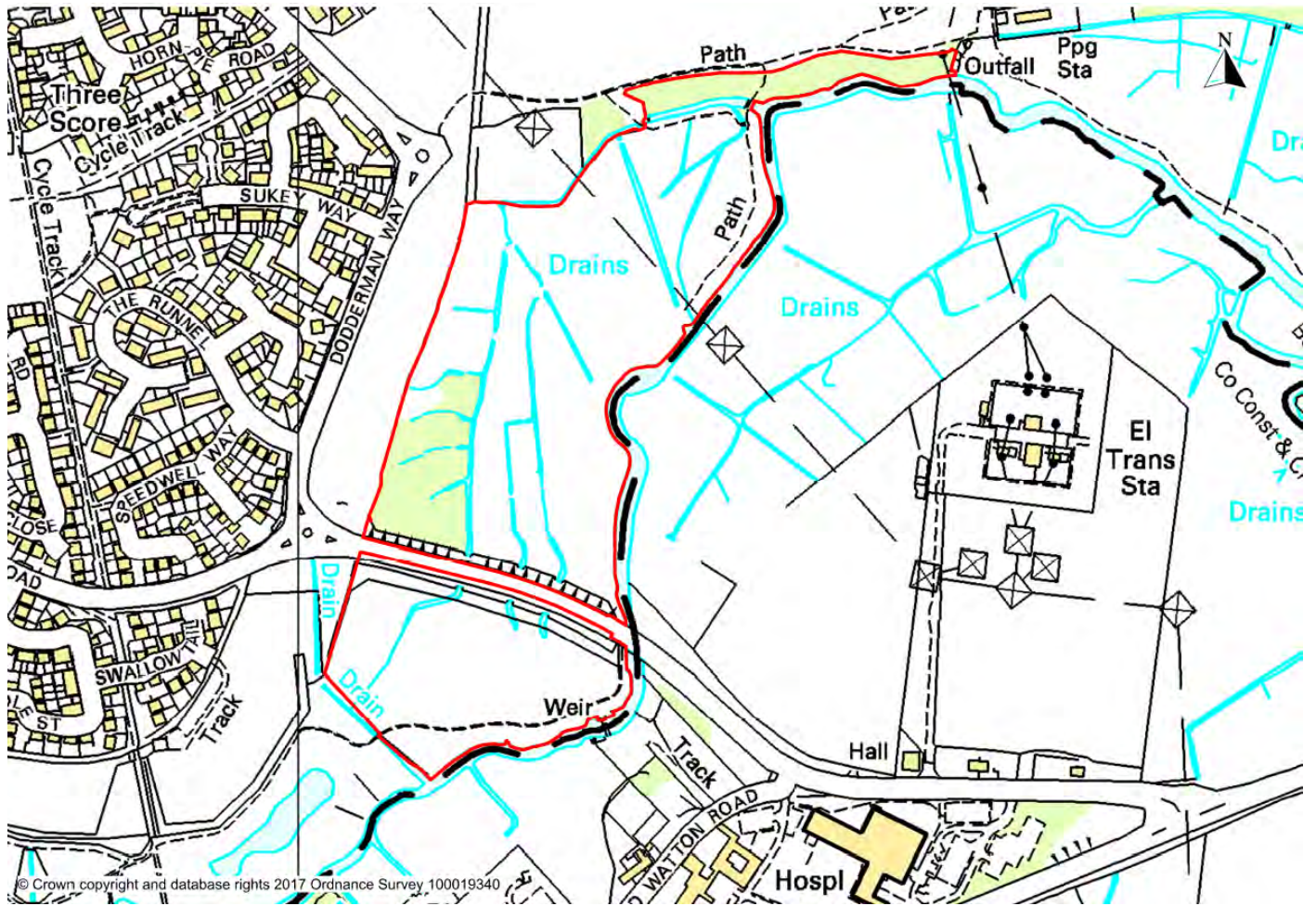
Managed by Norwich City Council, this site is predominantly marshy grassland, with the river Yare forming the boundary to the east. To the north and south of the site there are similar habitats. The western edge is bounded by a strip of scrub which is relatively wide in places. To the west of this is a road and a housing development. The river Yare itself is a County Wildlife Site (CWS) and its bordering marshlands form an almost continuous corridor of CWSs and Local Nature Reserves (LNR) from Bawburgh Gravel Pits to Depot Meadow.

The site is divided into two compartments by the Tollgate Way which runs across the site. The road and a planted buffer strip are sectioned off by a barbed-wire fence. The area has been planted with non-native oak and alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*) and willow *Salix sp.* - particularly towards the river end. The understorey is comprised of dogwood (*Cornus sanguinea*) and, bramble (*Rubus fruticosus*).

Compartment A (6 hectares) forms the larger, northern part of the site and over recent years has been horse grazed. It forms a mosaic of lower lying marshy grassland which constitutes the predominant habitat and higher dryer areas of neutral grassland. The marshy grassland is in general under grazed and the neutral grassland tightly grazed. Some areas of neutral grassland with a taller sward occur mainly along the western boundary of the site. Species of note in this compartment include the southern marsh orchid (*Dactylorhiza praetermissa*), lady's bedstraw (*Dactylorhiza praetermissa*), square-stalked St. John's wort (*Hypericum tetrapterum*), devil's-bit scabious (*Succisa pratensis*), skullcap (*Scutellaria galericulata*), common meadow-rue (*Thalictrum flavum*) and thread-leaved water-crowfoot (*Ranunculus trichophyllus*). There is a large area of scrub along the western edge, a small strip in the middle and a strip projecting out to the north of the main area, through a kissing gate.

Compartment B (2 hectares) is predominantly neutral grassland with small areas of scrub. It is gently undulating with dry depressions and there is a stark difference in the structure of the vegetation between the east and west sides. The western side is more diverse whereas the eastern side is influenced by the river and tending towards rough grassland. There is a notable strip (approx. 10 metres wide) of borderline neutral-acid grassland on the western side sloping gently west to east towards the dry ditch. Other very localised areas of neutral grassland with acid influence occur throughout the grassland. Species of note in this compartment include trifid bur-marigold (*Bidens tripartite*), sheep's sorrel (*Rumex acetosella*), square-stalked St. John's wort and common meadow-rue. Management in the form of mowing here is producing a healthy habitat for a range of wildlife.





Survey dates: 12/09/1997, 01/07/2016 – 09/2016  
Year notified: 1991



<b>County Wildlife Site name</b>	<b>Twenty Acre and Bunkers Woods</b>
<b>County Wildlife Site number</b>	<b>2013</b>
<b>Grid reference</b>	<b>TG 190 091</b>
<b>Parish</b>	<b>Norwich</b>
<b>District</b>	<b>Norwich</b>
<b>Area (ha)</b>	<b>11.69 ha</b>
<b>Notification category</b>	<b>Woodland</b>

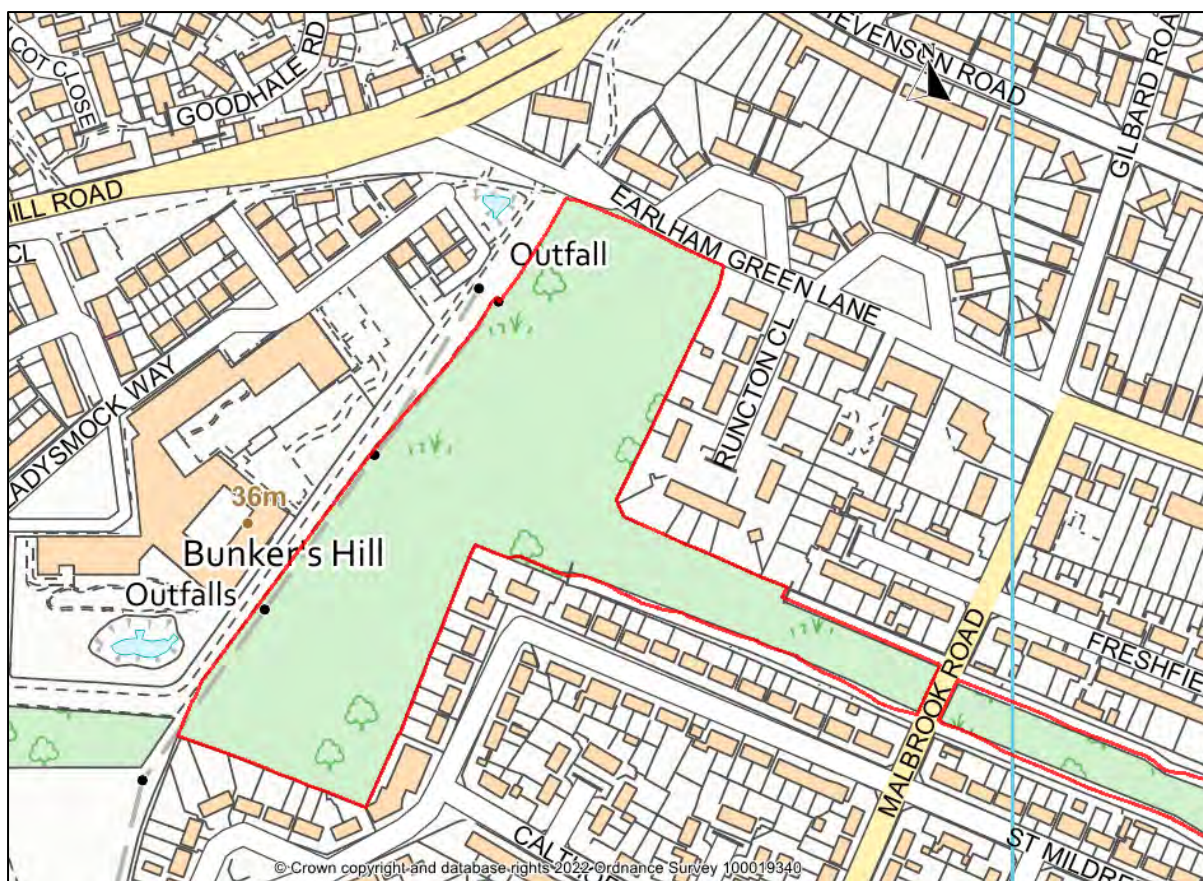
### Site description:

An area of mainly high forest broadleaf plantation enclosed on all but the western side by housing estates, and divided into a number of separate blocks by roads. There is also an area of coppice with standards woodland adjacent to Bunkers Hill on the western arm of the woodland. The soil is mainly sandy neutral to acid in places, and the south eastern arm of the wood slopes downwards from the top of the hill. The site is managed mainly for amenity.

The woodland is fairly similar throughout the site although in the middle section the canopy is more open resulting in a taller and more diverse ground flora. The eastern part of the site appears to have the oldest trees present, these comprising frequent oak *Quercus robur* and beech *Fagus sylvestris*, with occasional horse chestnut *Aesculus hippocastanum*, however it is becoming increasingly dominated by sycamore *Acer pseudoplatanus*. The understorey which is more complete in some areas than others is mainly elm *Ulmus glabra* with locally frequent bird cherry *Prunus avium* and occasional ash *Fraxinus excelsior* and field maple *Acer campestre*.

The ground flora varies depending upon the amount of shade. In the more open areas grasses such as wall barley *Hordeum murinum* and cock's-foot *Dactylis glomerata* are present together with rye grass *Lolium perenne* and false oat grass *Arrhenatherum elatium*. The north east part of the site supports locally abundant nettles *Urtica dioica*, bramble *Rubus fruticosus agg.* and rosebay willowherb *Chamerion angustifolium* with occasional red campion *Silene dioica* as well as angelica *Angelica sylvestris*. Other species occurring throughout this habitat include wood avens *Geum urbanum*, common bird's-foot-trefoil *Lotus corniculatus* and common calamint *Calamintha sylvatica*.

The coppice with standards woodland at the western end of the site is mainly sycamore coppice with frequent elm. Also present is occasional oak, sweet chestnut *Castanea sativa* and lime *Tilia cordata* and locally frequent rowan *Sorbus aucuparia*. Again the ground flora varies from being fairly sparse in the more enclosed areas to being more varied and abundant alongside the gravel path, and includes bluebell *Hyacinthoides non-scripta*, dog's mercury *Mercurialis perennis* and herb-robert *Geranium robertianum* and three-nerved sandwort *Moehringia trinervia*.



## PLANT LIST

Scientific name	Common name	DAFOR
<i>Acer campestre</i>	Field Maple	
<i>Acer platanoides</i>	Norway Maple	
<i>Acer pseudoplatanus</i>	Sycamore	
<i>Achillea millefolium</i>	Yarrow	
<i>Adoxa moschatellina</i>	Moschatel	
<i>Aegopodium podagraria</i>	Ground-elder	
<i>Aesculus hippocastanum</i>	Horse-chestnut	
<i>Agrostis capillaris</i>	Common Bent	
<i>Agrostis stolonifera</i>	Creeping Bent	
<i>Alliaria petiolata</i>	Garlic Mustard	
<i>Allium paradoxum</i>	Few-flowered Garlic	
<i>Allium triquetrum</i>	Three-cornered Garlic	

Survey dates: 03/05/2022; 16/07/1996; 1991  
 Year notified: 1991

<i>Allium ursinum</i>	Ramsons	
<i>Anemone blanda</i>	Balkan Anemone	
<i>Anemone nemorosa</i>	Wood Anemone	
<i>Anisantha diandra</i>	Great Brome	
<i>Anisantha sterilis</i>	Barren Brome	
<i>Anthriscus sylvestris</i>	Cow Parsley	
<i>Arabidopsis thaliana</i>	Thale Cress	
<i>Arctium minus sens. lat.</i>	Lesser or Wood Burdock	
<i>Arrhenatherum elatius</i>	False Oat-Grass	
<i>Artemisia vulgaris</i>	Mugwort	
<i>Arum maculatum</i>	Lords-and-Ladies	
<i>Ballota nigra</i>	Black Horehound	
<i>Bellis perennis</i>	Daisy	
<i>Brachypodium sylvaticum</i>	False-brome	
<i>Bryonia dioica</i>	White Bryony	
<i>Buddleja davidii</i>	Butterfly-bush	
<i>Capsella bursa-pastoris</i>	Shepherd's-purse	
<i>Cardamine hirsuta</i>	Hairy Bitter-cress	
<i>Carex pendula</i>	Pendulous Sedge	
<i>Carex sylvatica</i>	Wood-sedge	
<i>Carpinus betulus</i>	Hornbeam	
<i>Castanea sativa</i>	Sweet Chestnut	
<i>Cerastium fontanum</i>	Common Mouse-ear	
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	
<i>Chaerophyllum temulum</i>	Rough Chervil	
<i>Chamaenerion angustifolium</i>	Rosebay Willowherb	
<i>Chelidonium majus</i>	Greater Celandine	
<i>Chenopodium album</i>	Fat-hen	
<i>Cirsium arvense</i>	Creeping Thistle	
<i>Cirsium vulgare</i>	Spear Thistle	
<i>Clinopodium ascendens</i>	Common Calamint	
<i>Convolvulus arvensis</i>	Field Bindweed	
<i>Cordyline australis</i>	Cabbage-palm	
<i>Cornus sanguinea subsp. australis</i>	Dogwood	
<i>Cornus sanguinea subsp. sanguinea</i>	Dogwood	
<i>Corylus avellana</i>	Hazel	
<i>Crataegus monogyna</i>	Hawthorn	
<i>Crocasmia x crocosmiiflora</i>	Montbretia (C. aurea x pottsii)	
<i>Cupressus lawsoniana</i>	Lawson's Cypress	
<i>Cytisus scoparius</i>	Broom	
<i>Dactylis glomerata</i>	Cock's-foot	
<i>Daphne laureola</i>	Spurge-laurel	
<i>Digitalis purpurea</i>	Foxglove	
<i>Dryopteris dilatata</i>	Broad Buckler-fern	
<i>Dryopteris filix-mas</i>	Male-fern	
<i>Epilobium montanum</i>	Broad-leaved Willowherb	
<i>Epilobium parviflorum</i>	Hoary Willowherb	
<i>Erigeron sumatrensis</i>	Guernsey Fleabane	
<i>Erophila verna sens. lat.</i>	Common Whitlowgrass	
<i>Euonymus europaeus</i>	Spindle	
<i>Euphorbia peplus</i>	Petty Spurge	
<i>Fagus sylvatica</i>	Beech	

Survey dates: 03/05/2022; 16/07/1996; 1991  
Year notified: 1991

<i>Fallopia baldschuanica</i>	Russian-vine	
<i>Festuca brevipila</i>	Hard Fescue	
<i>Festuca rubra</i>	Red Fescue	
<i>Ficaria verna</i>	Lesser Celandine	
<i>Ficaria verna subsp. fertilis</i>	Lesser Celandine	
<i>Filago germanica</i>	Common Cudweed	
<i>Fraxinus excelsior</i>	Ash	
<i>Fumaria officinalis</i>	Common Fumitory	
<i>Galanthus nivalis</i>	Snowdrop	
<i>Galeopsis tetrahit agg.</i>	Common Hemp-nettle	
<i>Galium aparine</i>	Cleavers	
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	
<i>Geranium lucidum</i>	Shining Crane's-bill	
<i>Geranium molle</i>	Dove's-foot Crane's-bill	
<i>Geranium pusillum</i>	Small-flowered Crane's-bill	
<i>Geranium robertianum</i>	Herb-Robert	
<i>Geum urbanum</i>	Wood Avens	
<i>Glechoma hederacea</i>	Ground-ivy	
<i>Hedera helix</i>	Common Ivy	
<i>Hedera hibernica</i>	Atlantic Ivy	
<i>Heracleum sphondylium</i>	Hogweed	
<i>Holcus lanatus</i>	Yorkshire-fog	
<i>Holcus mollis</i>	Creeping Soft-grass	
<i>Hordeum distichon sens. lat.</i>	Barley	
<i>Hordeum murinum</i>	Wall Barley	
<i>Hyacinthoides non-scripta</i>	Bluebell	
<i>Hyacinthoides x massartiana</i>	Hybrid Bluebell (H. non-scripta x hispanica)	
<i>Hypericum calycinum</i>	Rose-of-Sharon	
<i>Hypochaeris radicata</i>	Cat's-ear	
<i>Ilex aquifolium</i>	Holly	
<i>Iris foetidissima</i>	Stinking Iris	
<i>Jacobaea vulgaris</i>	Common Ragwort	
<i>Juncus effusus</i>	Soft-rush	
<i>Lamiastrum galeobdolon subsp. argentatum</i>	Garden Yellow-archangel	
<i>Lamium album</i>	White Dead-nettle	
<i>Lamium purpureum</i>	Red Dead-nettle	
<i>Lapsana communis</i>	Nipplewort	
<i>Laurus nobilis</i>	Bay	
<i>Lepidium didymum</i>	Lesser Swine-cress	
<i>Ligustrum ovalifolium</i>	Garden Privet	
<i>Ligustrum vulgare</i>	Wild Privet	
<i>Linaria purpurea</i>	Purple Toadflax	
<i>Lolium perenne</i>	Perennial Rye-grass	
<i>Lonicera periclymenum</i>	Honeysuckle	
<i>Lunaria annua</i>	Honesty	
<i>Lysimachia nummularia</i>	Creeping-Jenny	
<i>Malus domestica</i>	Apple	
<i>Malva sylvestris</i>	Common Mallow	
<i>Medicago lupulina</i>	Black Medick	
<i>Mentha x villosa</i>	Apple-mint (M. spicata x M. suaveolens)	

<i>Mercurialis annua</i>	Annual Mercury	
<i>Moehringia trinervia</i>	Three-nerved Sandwort	
<i>Muscari armeniacum</i>	Garden Grape-hyacinth	
<i>Myosotis sylvatica</i>	Wood Forget-me-not	
<i>Narcissus agg.</i>	Cultivated Daffodil	
<i>Ornithogalum umbellatum sens. lat.</i>	Star-of-Bethlehem (sens. lat.)	
<i>Ornithogalum umbellatum subsp. umbellatum</i>	Garden Star-of-Bethlehem	
<i>Oxalis articulata</i>	Pink-sorrel	
<i>Papaver somniferum</i>	Opium Poppy	
<i>Pentaglottis sempervirens</i>	Green Alkanet	
<i>Philadelphus sp.</i>	A Mock-orange	
<i>Picea abies</i>	Norway Spruce	
<i>Pinus sylvestris</i>	Scots Pine	
<i>Plantago coronopus</i>	Buck's-horn Plantain	
<i>Plantago lanceolata</i>	Ribwort Plantain	
<i>Plantago major subsp. major</i>	Greater Plantain	
<i>Poa annua</i>	Annual Meadow-grass	
<i>Poa infirma</i>	Early Meadow-grass	
<i>Poa trivialis</i>	Rough Meadow-grass	
<i>Polygonum aviculare agg.</i>	Knotgrass	
<i>Polypodium vulgare sens. lat.</i>	Polypody	
<i>Populus trichocarpa</i>	Western Balsam-poplar	
<i>Potentilla anserina</i>	Silverweed	
<i>Primula vulgaris</i>	Primrose	
<i>Prunus avium</i>	Wild Cherry	
<i>Prunus cerasifera</i>	Cherry Plum	
<i>Prunus cerasifera var. pissardii</i>	Cherry Plum cultivar	
<i>Prunus laurocerasus</i>	Cherry Laurel	
<i>Prunus padus</i>	Bird Cherry	
<i>Prunus spinosa</i>	Blackthorn	
<i>Pteridium aquilinum</i>	Bracken	
<i>Quercus robur</i>	Pedunculate Oak	
<i>Ranunculus bulbosus</i>	Bulbous Buttercup	
<i>Ranunculus repens</i>	Creeping Buttercup	
<i>Ribes rubrum</i>	Red Currant	
<i>Rosa rugosa</i>	Japanese Rose	
<i>Rubus fruticosus agg.</i>	Bramble	
<i>Rubus idaeus</i>	Raspberry	
<i>Rubus laciniatus</i>	Cut-leaved Bramble	
<i>Rubus ulmifolius</i>	Elm-leaved Bramble	
<i>Rumex obtusifolius</i>	Broad-leaved Dock	
<i>Rumex sanguineus</i>	Wood Dock	
<i>Sagina filicaulis</i>	Slender Pearlwort	
<i>Sagina procumbens</i>	Procumbent Pearlwort	
<i>Sambucus nigra</i>	Elder	
<i>Sasa palmata</i>	Broad-leaved Bamboo	
<i>Senecio vulgaris</i>	Groundsel	
<i>Silene dioica</i>	Red Campion	
<i>Silene x hampeana</i>	Pink Campion (S. dioica x latifolia)	
<i>Smyrnium olusatrum</i>	Alexanders	

<i>Solanum nigrum</i>	Black Nightshade	
<i>Sonchus arvensis</i>	Perennial Sow-thistle	
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	
<i>Sorbus aucuparia</i>	Rowan	
<i>Sorbus intermedia</i> agg.	Swedish Whitebeam	
<i>Stachys sylvatica</i>	Hedge Woundwort	
<i>Stellaria media</i>	Common Chickweed	
<i>Symphoricarpos albus</i>	Snowberry	
<i>Symphytum orientale</i>	White Comfrey	
<i>Tanacetum parthenium</i>	Feverfew	
<i>Tanacetum vulgare</i>	Tansy	
<i>Taraxacum</i> agg.	A dandelion	
<i>Taxus baccata</i>	Yew	
<i>Tilia cordata</i>	Small-leaved Lime	
<i>Tilia x europaea</i>	Lime	
<i>Ulex europaeus</i>	Gorse	
<i>Ulmus glabra</i>	Wych Elm	
<i>Ulmus minor</i>	Small-leaved Elm (sensu Stace)	
<i>Urtica dioica</i>	Common Nettle	
<i>Veronica arvensis</i>	Wall Speedwell	
<i>Veronica hederifolia</i>	Ivy-leaved Speedwell	
<i>Veronica hederifolia</i> subsp. <i>lucorum</i>	Ivy-leaved Speedwell	
<i>Veronica persica</i>	Common Field-speedwell	
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell	
<i>Viburnum opulus</i>	Guelder-rose	
<i>Viburnum tinus</i>	Laurustinus	
<i>Vicia sativa</i> subsp. <i>segetalis</i>	Common Vetch	
<i>Vinca major</i>	Greater Periwinkle	
<i>Viola odorata</i>	Sweet Violet	

**County Wildlife Site  
(Ref No. 2014)**

**Site Name:** Danby Wood  
**Parish:** Norwich  
**Grid Reference:** TG 220056

**Area:** 3.9ha

**District:** Norwich

**Site Description:**

A small broadleaved semi-natural woodland, on the site of an old chalk quarry/mine with many banks, hills and hollows. Danby Wood is a Local Nature Reserve owned by Norwich City Council, and managed by the Norwich Fringe Project. It is widely used for recreation, with cycle tracks and paths criss-crossing the whole site. The soil is free-draining and slightly acidic.

Dominated by sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*), it has occasional English oak (*Quercus robur*), beech (*Fagus sylvatica*) and lime (*Tilia* sp.). Walnut (*Juglans regia*) is rare. The understorey consists of young sycamore, elm (*Ulmus* sp.) and elder (*Sambucus nigra*), with occasional holly and hawthorn, and with rare patches of gooseberry (*Ribes uva-crispa*), redcurrant (*Ribes rubrum*) and privet (*Ligustrum ovalifolium*).

There are a few patches of hawthorn (*Crataegus monogyna*) scrub across the site, and area of snowberry (*Symphoricarpos albus*) scrub towards the north of the site, beside the central path. There is dense nettle (*Urtica dioica*) coverage in places, particularly on the eastern side of the woodland.

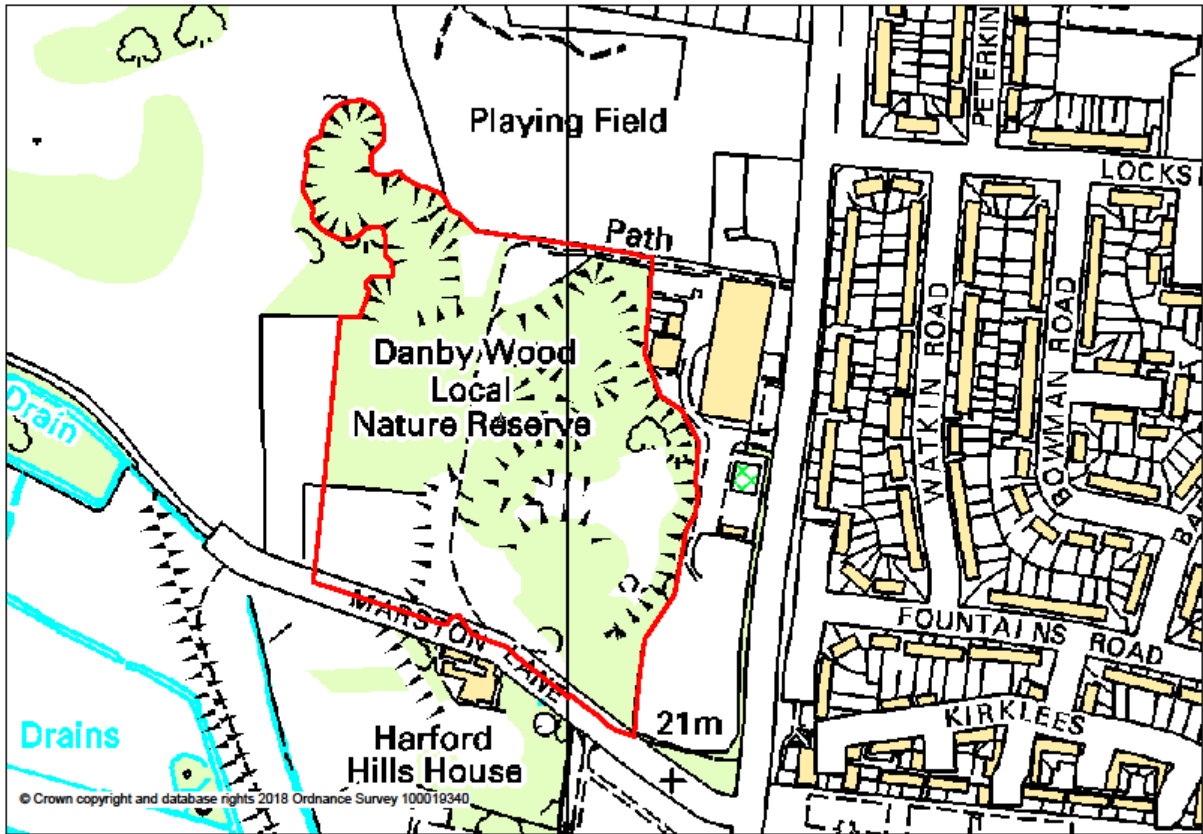
The site is mostly dry throughout, with a few damper areas in the central-eastern side of the wood, where the land slopes southwards. An area here has been intentionally managed to create a sunny opening amongst mature trees, and consequently the ground flora has species unique to this clearing, including great willowherb (*Epilobium hirsutum*), soft rush (*Juncus effusus*), brooklime (*Veronica beccabunga*), fleabane (*Pulicaria dysenterica*), coltsfoot (*Tusillago farfara*), ox eye daisy (*Leucanthemum vulgare*) and water figwort (*Scrophularia auriculata*).

The ground flora of the rest of the woodland is typically sparse with some patches of carpeting ivy (*Hedera helix*), abundant herb robert (*Geranium robertianum*) and herb bennett (*Geum urbanum*). Areas of the site are rich with enchanter's nightshade (*Circaea lutetiana*), sweet violet (*Viola odorata*) and, more rarely, hart's tongue fern (*Asplenium scolopendrium*).

Several garden species are to be found in the wood, including snowdrop (*Galanthus* sp.), crocus (*Crocus* sp.), primrose (*Primula vulgaris*) and daffodil (*Narcissus* sp.), and also patches of the invasive variegated archangel (*Lamium galeobdolon* spp. *Argentum*). Small balsam (*Impatiens parviflora*) occurs frequently through the site.

To the south west of the wood there is a managed, cleared area with recently planted native saplings, frequent pendulous sedge (*Carex pendula*), native bluebells (*Hyacinthoides non-scripta*) and a patch of ramsons (*Allium ursinum*). To the far north west, there is a very steep pit with several garden shrub species growing on its sides including cotoneaster (*Cotoneaster* sp.), buddleia (*Buddleia davidii*) and garden privet.





**County Wildlife Site  
(Ref No: 2015)**

**Site Name: Eaton Chalk Pit**

**District: Norwich**

**Grid Reference: TG 208064**

**Area: 2.3 ha**

**Site Description:**

Old chalk workings with steep slopes and hollows which now support broadleaved woodland. Up until the 1960s building spoil was dumped on the site. The tunnels associated with the chalk diggings are designated as SSSI due to their use by bats.

The woodland comprises sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), and grey willow (*Salix cinerea*) that has mainly developed since dumping ceased. Ground flora includes broad buckler-fern (*Dryopteris dilatata*), herb-robert (*Geranium robertianum*), lesser celandine (*Ranunculus ficaria*), greater celandine (*Chelidonium majus*) and garlic mustard (*Alliaria petiolata*). Within the woodland there are some areas containing blackthorn (*Prunus spinosa*) scrub and bramble (*Rubus fruticosus*).



**County Wildlife Site  
(Ref No: 2018)**

**Site Name: County Hall Woods**

**District: Norwich**

**Grid Reference: TG 237070**

**Area: 2.6 ha**

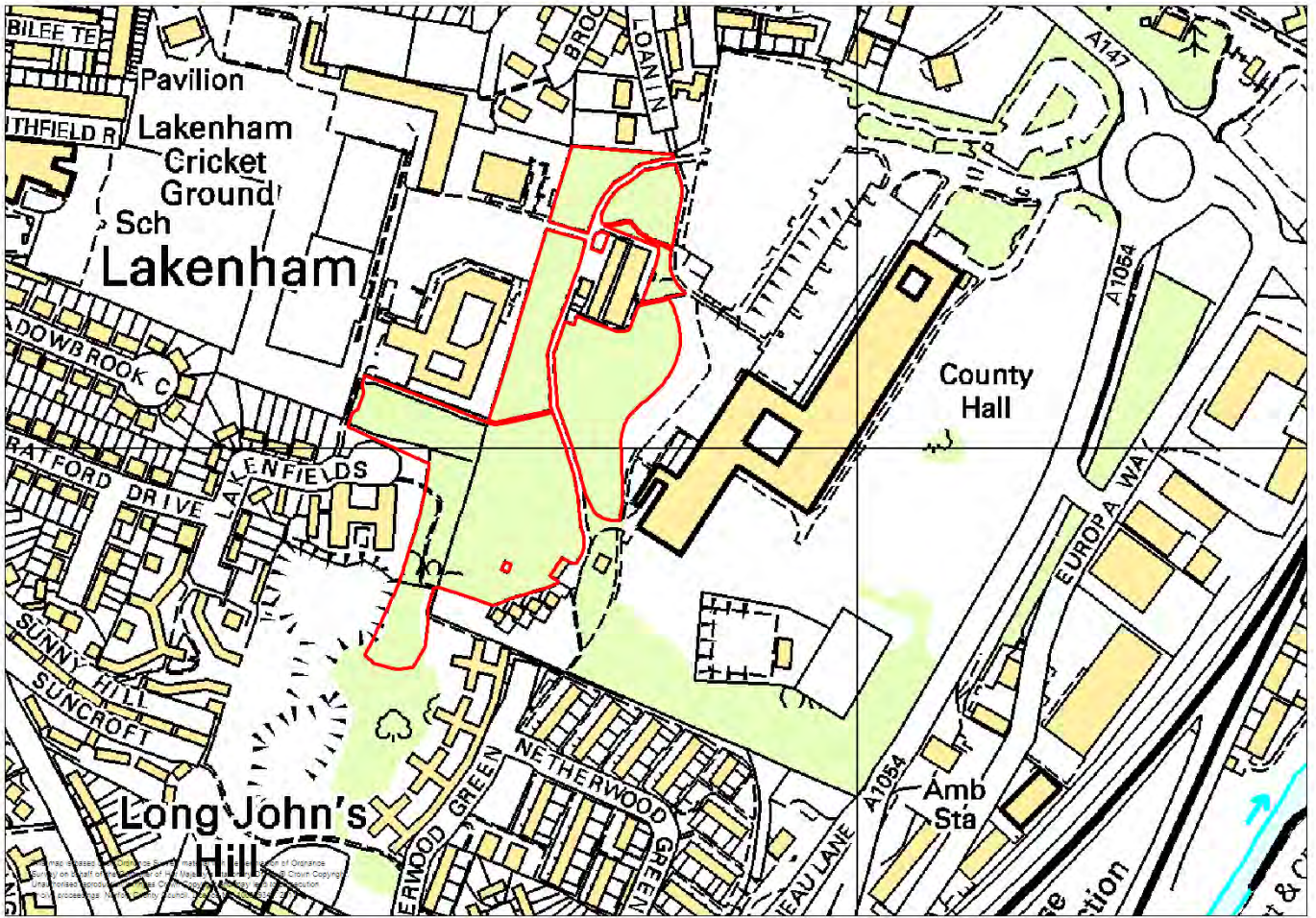
**Site Description:\***

A contiguous belt of woodland adjacent to Norfolk County Council offices and carpark. There has been some disturbance through development and storm damage, together with losses due to Dutch elm disease. There has been extensive underplanting of deciduous trees.

The woodland is dominated by oak (*Quercus robur*), sycamore (*Acer pseudoplatanus*) and beech (*Fagus sylvatica*) with some horse chestnut (*Aesculus hippocastanum*). The shrub layer is dense and dominated by holly (*Illex aquifolium*), elm (*Ulmus* sp), elder (*Sambucus nigra*) and bramble (*Rubus fruticosus*). The ground flora is largely composed of nettle (*Urtica dioica*) and cow parsley (*Anthriscus sylvestris*) but also has bluebell (*Hyacinthoides non-scriptus*) lords and ladies (*Arum maculatum*) and abundant wood anemone (*Anemone nemorosa*). The latter species is commoner at this site than any other wood in the Norwich area. Also present is an extensive patch of spring crocus (*Crocus purpureus*) and the native wild tulip (*Tulipa sylvestris*), both of which are found at only a few sites in Norfolk.

Included within the site is a small pit surrounded by scrub which merges into the woodland. It is dominated by hawthorn (*Crataegus monogyna*) as well as sycamore, bramble and elm, with small grassland patches dominated by cock's foot (*Dactylis glomerata*).

The site was extended in 2010 and additional species added include snow drop (*Galanthus nivalis*), yew (*Taxus baccata*), alexanders (*Smyrniium olustrum*), & sweet chestnut (*Castanea sativa*).

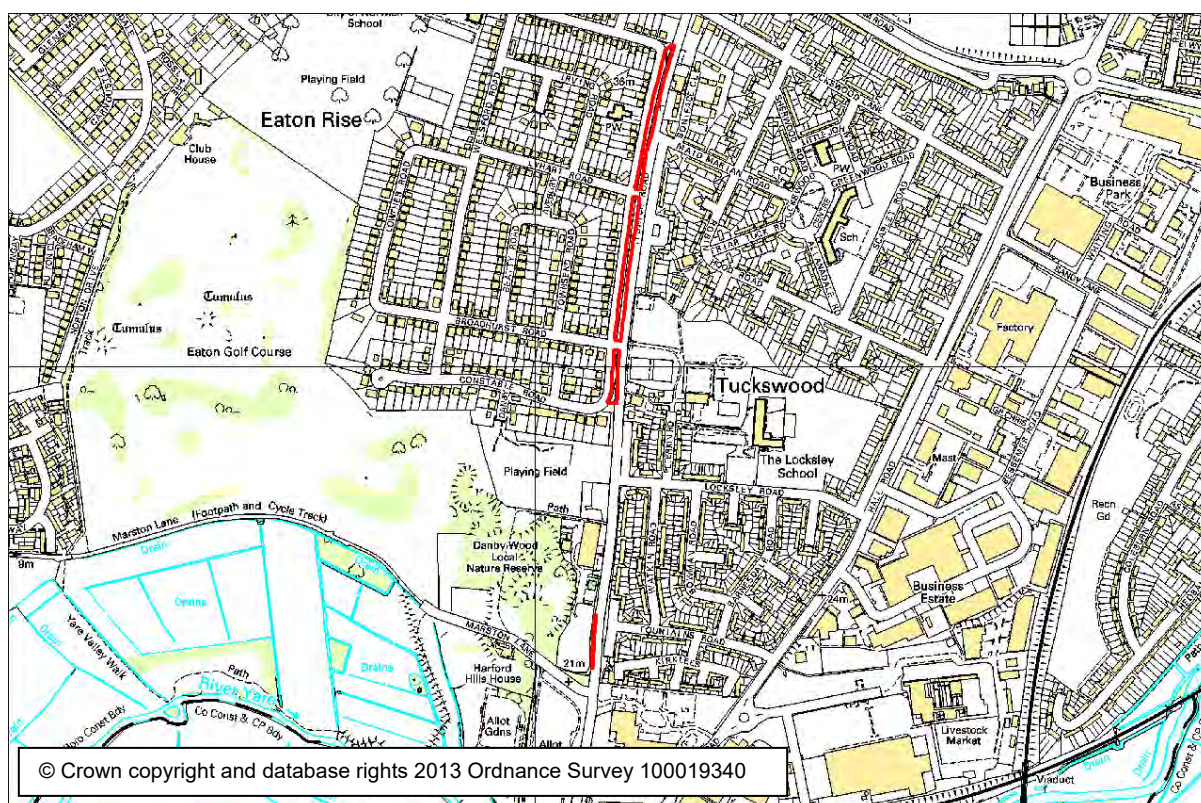




# NORFOLK ROADSIDE NATURE RESERVE MANAGEMENT PLAN

RNR No : 62  
Road No and Name : A140 – Ipswich Road  
Highway District and Ref No : Norwich: NORWICH-1  
Parish : Norwich South  
County District : Norwich City  
Grid Reference : TG220055

## LOCATION MAP



### 1. **SITE DESCRIPTION (location/setting):**

This RNR covers two separate sections on the western carriageway of the A140 Ipswich Road, South of Norwich's Outer ring road. The Southern section covers 87m of steep earth bank adjoining the metalled footway, and is topped by Scots pine trees.

The Northern section of the RNR covers approximately 500m of remnant hedgerow with standard oak trees and has recently been gapped up with native hedgerow species and replacement young oak trees by the residents association.

The hedgerow and part of the verge between No.1 Welesford Rd and No.1 Constable Rd, is managed by the residents association.

2. **HABITAT DESCRIPTION (phase 1 – soil type):**  
Sandy-Stilt Puffball is a Biodiversity Action Plan priority species.

Threats

Lack of management leading to sward becoming coarse and rank and eventually to scrub.

Litter and dumping

Grip digging and road widening.

Soil Type: Newport 4 brown sands

Natural Area: North Norfolk

3. **INTEREST (plant species BAP Status):**

*Battarraea phalloides* (Sandy-Stilt ball)

4. **MANAGEMENT CONSIDERATION:**

**Prescription:**

Timing : June -July

Frequency : Annually

Width :

Height :

Standard : Remove arisings.

Operator : Sandy stilt ball -NCC/ Hedgerow Residents, NCiC/  
Fringe project.

5. **FURTHER NOTES:**

Southern section will continue to be strimmed annually by NCC specifically to benefit the Sandy- stilt ball.

Northern section will be managed by the residents association, to include thickening the hedgerow, leaving grassland longer close to the hedge and promoting wildflowers and hedgerow species. Log piles, bat boxes and bird boxes could also be installed. This is an important wildlife corridor between the residential area outside of the ring road, and the wider countryside. Explore creating bare sandy soil to encourage sandy stilt ball.

Survey Date:



## Supporting Information BBS 6: Map data acknowledgements

Map Number	Map Name	Datasets	Source	Acknowledgements
Final Report Map 1	Location of the Norwich City study area within Greater Norwich Area	OS Boundary Line	Ordnance Survey	Contains © Ordnance Survey copyright 2023
Final Report Map 2	Proxy Recorder Effort	<b>Species Records</b>	<b>NBIS</b>	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Final Report Map 3	The distribution of statutory and non-statutory designated sites in and surrounding Norwich City	CWS, SSSI, SAC, SPA, RAMSAR, RNR, AWI, LNR, CGS	Natural England, <b>NBIS</b>	Contains information created by Norfolk Wildlife Trust (NWT) and Norfolk Biodiversity Information Service (NBIS) on behalf of the Local Sites Partnership. Reuse only by permission from the Partnership via NBIS. Contains information created by Norfolk Geodiversity Partnership. Reuse only by permission via the Partnership or NBIS. Contains public sector information licensed under the Open Government Licence v3.0.
Final Report Map 4	The distribution of candidate County Geodiversity Sites within Norwich and surroundings	<b>Ccgs, CGS</b>	<b>NBIS</b>	Contains information created by Norfolk Geodiversity Partnership. Reuse only by permission via the Partnership or NBIS.

Map Number	Map Name	Datasets	Source	Acknowledgements
Final Report Map 5	Habitats in Norwich from the Living England Habitat Map	Living England	Natural England	Contains public sector information licensed under the Open Government Licence v3.0.
Final Report Map 6	Habitats in Norwich from the Norfolk Living Map	Norfolk Living Map	Environment Systems Ltd.	Living Map data created using satellite and aerial imagery and ancillary datasets from 2011-2012 and 2018-2019. Developed from pilot stage analyses from the project "Making Earth Observation Work for UK Biodiversity – Phase 2", by Environment Systems Ltd, with further work by NBIS. Contains Ordnance Survey data ©Crown copyright and database right 2019.
Final Report Map 7	Priority Habitats identified from the Norfolk Living Map	Norfolk Living Map	Environment Systems Ltd.	Living Map data created using satellite and aerial imagery and ancillary datasets from 2011-2012 and 2018-2019. Developed from pilot stage analyses from the project "Making Earth Observation Work for UK Biodiversity – Phase 2", by Environment Systems Ltd, with further work by NBIS. Contains Ordnance Survey data ©Crown copyright and database right 2019.
Final Report Map 9	Overall species richness scores within Norwich	<b>Species Records</b>	<b>NBIS</b>	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.

<b>Map Number</b>	<b>Map Name</b>	<b>Datasets</b>	<b>Source</b>	<b>Acknowledgements</b>
Final Report Map 10	Priority species richness	<b>Species Records</b>	<b>NBIS</b>	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Final Report Map 11	Red list species richness	<b>Species Records</b>	<b>NBIS</b>	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Final Report Map 12	Protected species richness	<b>Species Records</b>	<b>NBIS</b>	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.

Map Number	Map Name	Datasets	Source	Acknowledgements
Final Report Map 13	Natural Assets by type and designation, in and around Norwich City	<b>CWS, RNR, SSSI, CGS/cCGS, RNR, AWI, ATI, SAC, TPO, OS Mastermap Greenspace, Norwich City Openspace</b>	<b>NBIS, Natural England, Norwich City Council, Woodland Trust, Ordnance Survey (Licenced), Norwich City Council</b>	Contains © Crown Copyright and Database rights 2023 Ordnance Survey 100019340. Contains public sector information licensed under the Open Government Licence v3.0. ATI data reproduced with the permission of the Woodland Trust. Contains information created by Norfolk Geodiversity Partnership. Reuse only by permission via the Partnership or NBIS. Contains information created by Norfolk County Council (NCC), Norfolk Biodiversity Information Service (NBIS), Norfolk Wildlife Trust (NWT) and expert volunteer botanists on behalf of the Local Sites Partnership. Reuse only by permission from the Partnership via NCC or NBIS.
Final Report Map 14	County level Biodiversity Character Areas (BCAs)	OS 1st Edition map for Historic Extent of Heathland and Parkland, 1:50 000 scale British Geological Survey DiGMapGB data, Cranfield University NATMAP Soilscape soil	Ordnance Survey Mastermap, British Geological Survey, Cranfield University (NSRI) and for the Controller of HMSO, Ordnance Survey data reproduced with the permission of the National Library of Scotland, Natural England	Contains data from © Crown Copyright and Database rights 2023 Ordnance Survey 100019340. Contains data from British Geological Survey © UKRI [2011]. All Rights Reserve. Contains data from Soil data © Cranfield University (NSRI) and for the Controller of HMSO (2009). Contains data from © Ordnance Survey copyright 2023, reproduced with the permission of the National Library of Scotland. Contains data from © Environment Agency copyright and/or database right 2023. All rights reserved.

Map Number	Map Name	Datasets	Source	Acknowledgements
Final Report Map 15	Local level Biodiversity Character Areas (BCAs)	LiDAR data used in Norfolk Vegetation Model, OS 1st Edition map, 1:50 000 scale British Geological Survey DiGMapGB data, Cranfield University NATMAP Soilscales soil	Environmental Agency, Ordnance Survey Mastermap, British Geological Survey, Cranfield University (NSRI) and for the Controller of HMSO, National Library of Scotland. Ordnance Survey data reproduced with the permission of the National Library of Scotland, Natural England	Contains data from © Crown Copyright and Database rights 2023 Ordnance Survey 100019340. Contains data from British Geological Survey © UKRI [2011]. All Rights Reserve. Contains data from Soil data © Cranfield University (NSRI) and for the Controller of HMSO (2009). Contains data from © Ordnance Survey copyright 2023, reproduced with the permission of the National Library of Scotland. Contains data from © Environment Agency copyright and/or database right 2023. All rights reserved.

Map Number	Map Name	Datasets	Source	Acknowledgements
Final Report Map 16	Biodiversity Hotspot Scores within Norwich City	<b>Species Records</b> , Norfolk Living Map, <b>CWS</b> , SSSI, LNR, NNR, SAC, SPA, Ramsar	<b>NBIS</b> , Environment Systems Ltd. Natural England	Contains public sector information licensed under the Open Government Licence v3.0. Contains data from Living Map data created using satellite and aerial imagery and ancillary datasets from 2011-2012 and 2018-2019. Developed from pilot stage analyses from the project "Making Earth Observation Work for UK Biodiversity – Phase 2", by Environment Systems Ltd, with further work by NBIS. Contains Ordnance Survey data ©Crown copyright and database right 2019. Contains information created by Norfolk Wildlife Trust (NWT) and Norfolk Biodiversity Information Service (NBIS) on behalf of the Local Sites Partnership. Reuse only by permission from the Partnership via NBIS. Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Final Report Map 17	Axiophyte species richness in Norwich City	<b>Species Records</b>	<b>NBIS</b>	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS

Map Number	Map Name	Datasets	Source	Acknowledgements
				Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Final Report Map 18	Mappable 'Better' Opportunities listed for Norwich City	National Forest Inventory, <b>TPO</b> , Invasive Non-native Species Records	Forestry Commission, <b>Norwich City Council</b> , NBIS	Contains, or is based on, information supplied by the Forestry Commission. © Crown copyright and database right 2023 Ordnance Survey [100021242]. Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Final Report Map 19	Mappable 'Bigger' Opportunities listed for Norwich City	National Forest Inventory	Forestry Commission	Contains, or is based on, information supplied by the Forestry Commission. © Crown copyright and database right 2023 Ordnance Survey [100021242]
Final Report Map 20	Mappable 'More' Opportunities listed for Norwich City	Ghost Ponds, OS Mastermap Waterbodies, GCN Strategic Opportunity Areas	Ordnance Survey (Licenced), Ordnance Survey data reproduced with the permission of the National Library of Scotland, Natural England	Contains © Crown Copyright and Database rights 2023 Ordnance Survey 100019340. Contains © Ordnance Survey copyright 2023 reproduced with the permission of the National Library of Scotland. Contains public sector information licensed under the Open Government Licence v3.0.



Map Number	Map Name	Datasets	Source	Acknowledgements
Final Report Map 21	Mappable 'Connected' Opportunities listed for Norwich City	B-Lines, OS Mastermap Natural Verges, <b>NCC Nature Network Value</b>	Buglife, Ordnance Survey (Licenced), <b>Norfolk County Council</b>	B-line data created by NBIS for Buglife © Crown copyright and database right 2023. © Rural Payments Agency. Contains © Crown Copyright and Database rights 2023 Ordnance Survey 100019340. Contains public sector information licensed under the Open Government Licence v3
Final Report Map 22	'Socio-economic tool for spatial resource deployment of conservation action'	IMD Deciles 2019, Biodiversity Hotspot Hexagons (Map 16)	Office for National Statistics	Contains public sector information licensed under the Open Government Licence v3. Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Survey and Monitoring Framework Map 1	Location of the Norwich City study area within Greater Norwich Area	OS Boundary Line	Ordnance Survey	Contains © Ordnance Survey copyright 2023
Survey and Monitoring Framework Map 2	Indicative Recorder Effort	<b>Species Records</b>	<b>NBIS</b>	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.

Map Number	Map Name	Datasets	Source	Acknowledgements
Survey and Monitoring Framework Map 3	Indicative recorder effort for statutory designated sites	<b>Species Records</b> , SSSI, RAMSAR, SAC, SPA, LNR	<b>NBIS</b> , Natural England	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited. Contains public sector information licensed under the Open Government Licence v3
Survey and Monitoring Framework Map 4	Indicative recorder effort for non-statutory designated sites	<b>Species Records</b> , CWS	<b>NBIS</b>	Contains information created by Norfolk Wildlife Trust (NWT) and Norfolk Biodiversity Information Service (NBIS) on behalf of the Local Sites Partnership. Reuse only by permission from the Partnership via NBIS. Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Survey and Monitoring Framework Map 5	Indicative recorder effort for priority habitats	<b>Species Records</b> , Priority Habitat Inventory	<b>NBIS</b> , Natural England	Contains public sector information licensed under the Open Government Licence v3. Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS

Map Number	Map Name	Datasets	Source	Acknowledgements
				Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Survey and Monitoring Framework Map 6	Axiophyte record resolution	<b>Species Records</b>	<b>NBIS</b>	Biological records provided by Norfolk Biodiversity Information Service (NBIS), acting on behalf of the contributing biological recorders, whom whose rights are recognised. The specific database acknowledgements listed in Norwich BBS Appendix BBS2, NBIS datasets in the study area tab, should also be cited.
Appendix BBS4_Natural Assets Map 1	Habitats in Norwich from the Living England Habitat Map	Living England	Natural England	Contains public sector information licensed under the Open Government Licence v3.0.
Appendix BBS4_Natural Assets Map 2	Habitats in Norwich from the Norfolk Living Map	Norfolk Living Map	Environment Systems Ltd.	Living Map data created using satellite and aerial imagery and ancillary datasets from 2011-2012 and 2018-2019. Developed from pilot stage analyses from the project "Making Earth Observation Work for UK Biodiversity – Phase 2", by Environment Systems Ltd, with further work by NBIS. Contains Ordnance Survey data ©Crown copyright and database right 2019.