

## Ecological Sub-area Statement of Biodiversity Priorities – Technical Appendix

<b>Sub-area name</b>	The Rowley Hills, Bumble Hole & Warren's Hall	<b>Sub-area ref.</b>	CL10
<b>Natural Character Area</b>	Cannock Chase and Cank Wood	<b>NCA ref.</b>	67
<b>Local Authority Area</b>	Sandwell and Dudley	<b>Area km<sup>2</sup></b>	2.38

### Ecological Sub-area Description

#### Overview

The Rowley Hills, Bumble Hole & Warren's Hall comprises the local landmark Rowley Hills and adjoining valley of the Mousesweet Brook. The ecological sub-area is located predominantly in the south-west of the borough of Sandwell, with a small part of the western area in Dudley. The urban settlements of Rowley Regis, Oakham, Tividale and Dixons Green entirely surround the area.

Historically predominantly within the parish of Rowley Regis, the ecological sub-area was formerly dominated by small and irregular agricultural fields, the hedgerows and (unusually in the Black Country) occasional drystone walls of which survive across much of the area. From the 19<sup>th</sup> century and well into the 20<sup>th</sup> century, however, large-scale quarrying of roadstone and mining of coal took place, significantly altering large parts of the landscape. Most of the extraction sites have since been infilled and landscaped, and now comprise semi-natural vegetation managed as public open space or golf course. Turners Hill quarry remains unrestored.

#### Land Use

The present-day land use of The Rowley Hills, Bumble Hole & Warren's Hall is dominated by public open space or de facto accessible green space on former farmland or post-industrial sites (restored quarries and collieries). These include the formal Bury Hill Park in the east of the ecological sub-area, but are predominantly informal open spaces dominated by semi-natural habitats. These include Bumble Hole and Warren's Hall Farm Local Nature Reserves in the west, and Portway Hill Open Space, Darby's Hill and Massey's Bank on the Rowley Hills.

In the approximate centre of the ecological sub-area is the only remaining unrestored quarried site at Turner's Hill. This is being actively landfilled. To the north of here is Dudley Golf Course, and further north there are a number of horse-grazed pastures. Other land use includes playing fields and school grounds in the west.

#### Topography

The Rowley Hills comprise the highest landform in the Black Country, with the highest point at an elevation of 270 metres being Turner's Hill in the approximate centre of the ecological sub-area. Other high points at an elevation of 260 metres are at Darby's Hill, Massey's Bank and Dudley Golf Course. From these high points the landscape falls away steeply east and west to 160 metres, before continuing at a shallower slope westwards across Bumble Hole and Warren's Hall to the valley of the Mousesweet Brook, which lies at an elevation of 130 metres.

#### Geology

The bedrock of the eastern section of the ecological sub-area is igneous Rowley Regis Microgabbro (Dolerite) Lopolith (commonly referred to as Rowley Rag) formed between 315.2 and 309.5 million years ago during the Carboniferous period. The western section of the ecological sub-area is Etruria Formation mudstone, sandstone and conglomerate formed between 319 and 308 million years ago during the Carboniferous period, with small areas of Etruria Formation sandstone formed between 319 and 308 million years ago during the Carboniferous period.

Superficial deposits of Mid Pleistocene Diamicton Till formed between 860 and 116 thousand years ago during the Quaternary period overlay much of the eastern section, with some areas of sand and clay head formed between 2.588 million years ago and the present during the Quaternary period in the western section.

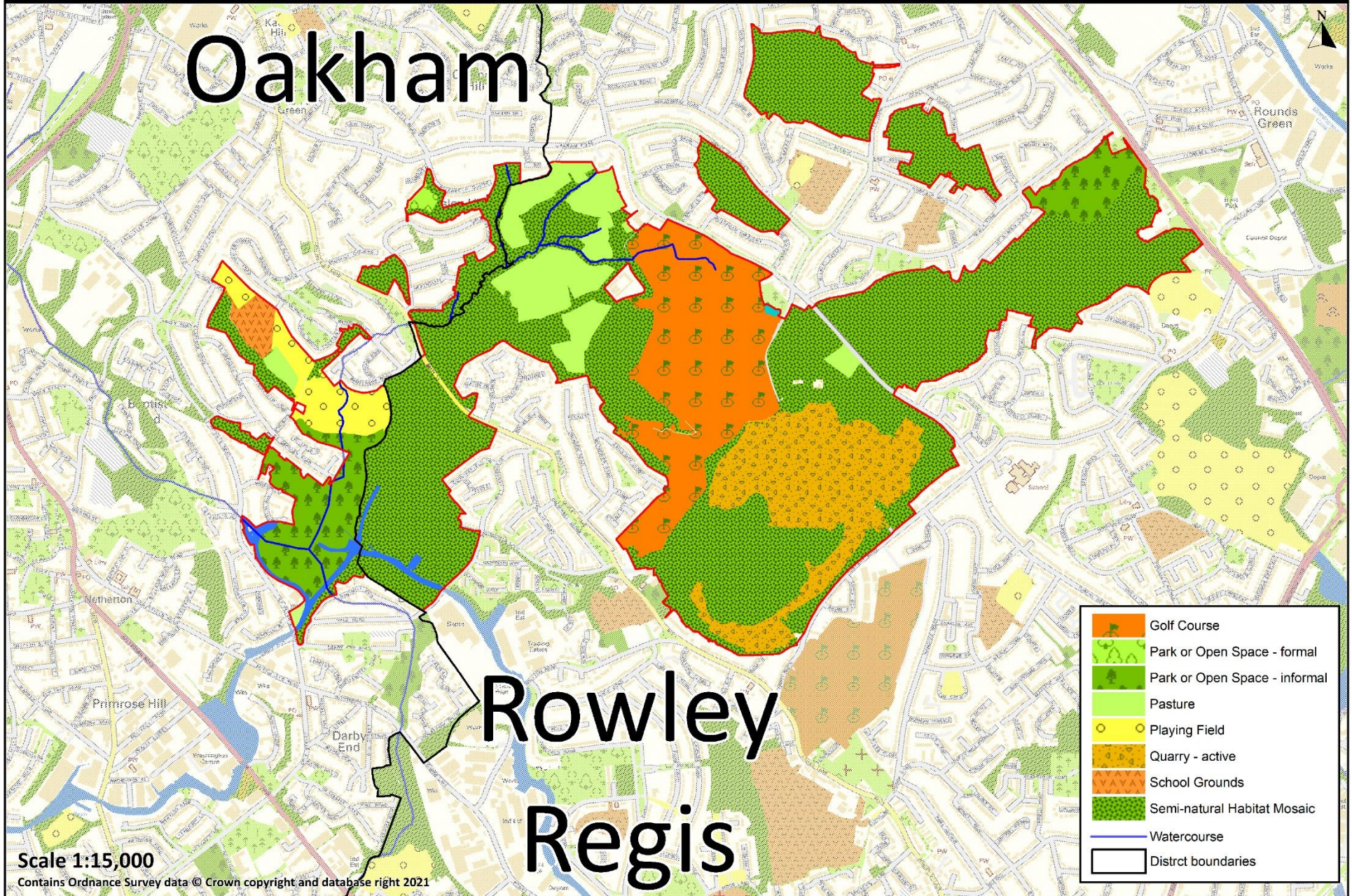
#### Geopark Sites

- The Rowley Hills (GR SO 965 893)
- Blue Rock Quarry (GR SO 976 891)
- Bumble hole and Warrens Hall (GR SO 9529 8812)

**Soils**

The soils in the western section of the ecological sub-area are slightly acid, loamy and clayey soils with slightly impeded drainage and low to moderate fertility. In the eastern section the soils are freely draining, acid loamy soils over rock with low fertility.

CL10 The Rowley Hills, Bumble Hole & Warren's Hall – Land Use



## Historic Landscape Character Areas

Reference	SD06	Name	Rowley Regis & Blackheath
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The ecological sub-area is predominantly within Historic Landscape Character Area SD06 Rowley Regis & Blackheath. This character area is located in the south-west of the Borough on a sandstone, mudstone and conglomerate geology. The modern character of the area is defined by 20<sup>th</sup> century housing, with large units of open and recreational space. The older residential housing in the area is located in the south with more recent construction further north. The recreational land is also located in the north of the Character Area and includes a 20th century park and nature reserve and an interwar period golf course in the east with playing fields (situated on former colliery land) and an area of substantial grassland and woodland flank in the west. The area also includes some 20th century industrial sites in the southern part of the Character Area.

Prior to the industrial revolution the character of the area was mostly agricultural, but the presence of coal and 'Rowley rag', a volcanic dolerite stone useful in producing road surfaces, ensured that it rapidly became an area of industrial activity.

Rowley Regis, is the oldest settlement in the area formed from a collection of scattered settlements. Quarrying of dolerite took place from at least the 17th century, but it increased in the early 19th century when the use of Rowley Rag for metalling roads came into its own. From then on, the number of quarries in the area rose dramatically and this contributed to the rapid change in the landscape.

Reference	DY01	Name	Netherton
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The western edge of the ecological sub-area is within DY01 Netherton Historic Landscape Character Area. This Character Area lies to the east of the Borough, situated on a sandstone, mudstone and conglomerate geology, and in general over the coal measures. The modern character of the area is defined by residential development associated with the modern town of Dudley, although the area also incorporates recreation and wooded areas together with industrial areas which straddle the canal. On the high ground in the north, the housing is in many cases a legacy of the southern expansion of Dudley and, in the north-west in particular mid-to-late Victorian terraces and villas survive. Much of the remainder of the north comprises large areas of inter-war semi-detached housing survive from the 20th century suburbanisation of Dudley.

Reference	SD09	Name	Tividale
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The northern part of the ecological sub-area is within Landscape Character Area SD09 Tividale. This Character Area is situated in the western part of the Borough on a mixed geology of dolerite in the south and mudstone and conglomerate in the north. The character of the area is dominated by mid- 20th century housing. The oldest surviving houses in the area are in small areas of Victorian and Edwardian terraces, including those which front the A4033. Inter-war developments of semi-detached homes overlook or front the wide, dual carriageway of the New Birmingham Road which was opened in 1927. However, the most common housing type in the area is the small semi-detached house built in the years following the Second World War.

The slope of the land and its distance from canals and railways meant that the area was not a good location for manufacturing industry. Instead, its development before the 1930s largely took place as a result of its mineral wealth. In the 19th and 20<sup>th</sup> centuries the area was severely scarred by stone quarries, marl pits and coal mines. In common with the geology of the Character Area to the immediate south, the area lies over an area of 'Rowley Rag', as noted above a stone which is very hard and particularly suited to road building. Quarrying began in the area on a commercial basis in the early part of the 19th century, but the number of quarries quickly grew. The extraction of Rowley Rag in the area continued until the second half of the 20th century. The mining of coal was a more short-lived activity in the Tividale area because extracting coal in Tividale was a more difficult proposition owing to the depth of the seams. All but one of the collieries in the Character Area had gone by 1920.

**Historic Environment Area Designations [1]**

<b>Reference</b>	AHHLV 45	<b>Name</b>	Bury Hill Park
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The AHHLV contains Bury Hill Park and has been subject to extensive quarrying over the last 200 years. The area is iconic and distinctive, viewable for many miles due to its height. The AHHLV contains the remains of Samson Quarry, Blue Rock Quarry, Lycross Colliery and a quarry to the east of Turners Hill. The whole area is covered with disused pits and spoil heaps and has the potential to contain disused industrial structures. Prehistoric stone tools have been discovered in a number of the quarries highlighting the potential of the area to contain prehistoric remains.

The AHHLV has a varied geology and contains the largest dolerite intrusion in the West Midlands, which represents a solidified magma chamber. The Samson and Blue Rock Quarries contain exposed weathered Dolerite Microgabbro of the Late Carboniferous Westphalian C age. The rock faces within these quarries contain examples of columnar jointing (a contraction feature formed as part of the magma cooling process and highlighted by weathering), nodular exfoliation and weak mineralisation.

<b>Reference</b>	AHHLV 46	<b>Name</b>	Warren Hill Nature Reserve
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The AHHLV covers a well preserved coal mining landscape and an important industrial canal junction. The AHHLV derives archaeological interest from the remains of the factories boat yards, coal mines, blast furnaces, iron works, timber yards and brick kilns which once dominated the landscape. The AHHLV contains the scheduled monument and Grade II listed Cobb's Engine House (Windmill End Pumping House) (NHLE 1005899) which was built in 1831 and contained a steam pump used originally to pump water from Windmill End Colliery and later to the mines in the area.

The Netherton Canal Tunnel runs adjacent to the AHHLV and was the last canal tunnel to be built during the great age of canal building between 1750-1860. The footbridge crossing the Netherton Tunnel Branch at Windmill End (NHLE 1216054) is a Grade II listed building as is the South Portal of the Netherton Tunnel (NHLE 1342648).

In addition to the industrial remains the AHHLV contains earthwork remains of medieval or early post-medieval ridge and furrow, which are visible on Environment Agency LiDAR, and an ancient hedgerow. These earthworks provide evidence of previous land use, and past land management prior to the industrialisation of the area.

The site of a possible moated manor site is recorded within the AHHLV. Archaeological remains associated with this structure could also provide insight into rural settlement and land use prior to the industrialisation of the area.

<b>Reference</b>	AHHTV 50	<b>Name</b>	Dudley No. 2 Canal, Netherton and Netherton Chain Proving House
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The AHHTV contains the Lloyds' Proving House at Netherton which is the last surviving example of a number of proving houses set up by Lloyds of London to guarantee the quality of anchor chains manufactured for shipping that they insured. The development of using iron or steel chain, as opposed to rope or steel cables, to anchor ships formed a part of the arms race in construction of ever larger and more technologically complex warships in the late 19th and early 20th century. It was also influential to the development of the great commercial cargo ships and cruise ships, such as the Titanic, whose chain and anchor were tested here. The proving house is an important part of the landscape of chain-making that is part of the cultural heritage of the settlement of Netherton, Cradley Heath and Lye. The building had already been constructed by 1884 and included special features such as a glazed roof to provide light for careful inspection of chain for stress cracks, very high load tensioning machinery and long inspection trenches. The canal arms wrap around the building reflecting the use of canal boats to deliver chain to the site from the manufactories in the district. The building remains much as it was constructed in the early 20th century, with the addition of a mid-20th century office building and has an iconic wharf frontage to the canal side. The redbrick 'factory' walls also add to the integrity of the site's historic character.

<b>Reference</b>	APA 134	<b>Name</b>	Dudley No. 2 Canal
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The APA contains the line of the Dudley No. 2 Canal, which ran from Parkhead to Netherton Tunnel. The canal was built in 1798 and was used mostly for commercial traffic until 1917. The canal was abandoned in 1953 except for a stretch used by the Coombeswood Tube Works.

Waterbody Catchments			
<b>River Basin District</b>	Severn	<b>Management Catchment</b>	Severn Middle Worcestershire
<b>Waterbody Catchment</b>	<b>Overall Classification</b>	<b>Ecological</b>	<b>Chemical</b>
Stour (Worcs) source to conf Smestow Bk	Poor (2019)	Poor (2019)	Fail (2019)
<b>River Basin District</b>		<b>Management Catchment</b>	
<b>Waterbody Catchment</b>	<b>Overall Classification</b>	<b>Ecological</b>	<b>Chemical</b>
Tame (Oldbury Arm) - source to conf R Tame (Wton Arm)	Moderate (2019)	Moderate (2019)	Fail (2019)

Key Habitats [2]			
<b>Broad Habitat Type</b>	Neutral Grassland	<b>Priority Habitat</b>	Lowland Meadows
A small remnant species-rich meadow has been recorded in the north of the ecological sub-area within Warren's Hall SLINC. This is thought to represent a surviving part of a habitat-type that may have formerly been widespread on dolerite across the Rowley Hills.			
<b>Broad Habitat Type</b>	Neutral Grassland	<b>Priority Habitat</b>	
Large areas of neutral grassland are present across the ecological sub-area. Variably species-rich spontaneous grasslands have colonised nutrient poor and free-draining soils on capped landfilled quarries at sites including Portway Hill Open Space and Darby's Hill. At Warren's Hall Farm LNR in the west former agricultural fields support areas of grassland, some of which is grazed. There are also substantial areas of grassland at Dudley Golf Course on a restored colliery site which is mostly regularly mown.			
<b>Broad Habitat Type</b>	Broadleaved, Mixed and Yew Woodland	<b>Priority Habitat</b>	
Secondary woodland has colonised former extraction sites including a former clay quarry in the east of the ecological sub-area adjacent to Bury Hill Park, Rough Hill Quarry to the west of Dudley Golf Course, and around the perimeter of Turner's Hill Quarry. Parts of former fields in the north of the ecological sub-area adjoining the headwaters of the Mousesweet Brook have also been colonised by secondary woodland, apparently following discontinuation of agricultural use. There are planted blocks of trees at sites including Massey's Bank, Portway Hill Open Space, Darby's Hill and Bumble Hole LNR.			
<b>Broad Habitat Type</b>	Boundary & Linear Features	<b>Priority Habitat</b>	Hedgerows
There are remnant hedgerows throughout those parts of the ecological sub-area not subject to historic extractive industries, with a concentration at Warren's Hall Farm. The condition of these is not known, however, aerial photography suggests some are intact whereas others are defunct.			
<b>Broad Habitat Type</b>	Rivers and Streams	<b>Priority Habitat</b>	Rivers
The Mousesweet Brook rises as a number of small watercourses on the western slopes of the Rowley Hills, flowing westwards to the Dudley Road at which point it enters a culvert from which it doesn't emerge until it reaches Core Landscape 11 Stour Valley. The non-culverted section of the brook and its tributaries are mostly unmodified and follow a sinuous course.			
<b>Broad Habitat Type</b>	Standing Open Water and Canals	<b>Priority Habitat</b>	Eutrophic Standing Waters
Within Bumble Hole and Warren's Hall Farm LNRs in the west of the ecological sub-area is a section of the Dudley Canal. This includes the remaining sections of the Bumble Hole and Boshboil branches (a now-severed former loop of the Dudley Canal), as well as an above ground section of the Netherton Tunnel Branch (the tunnel lies under the Rowley Hills, emerging to the east of the ecological sub-area near to Tipton). The air vents of the Netherton Tunnel area a feature of the ecological sub-area landscape and are know colloquially as 'pepper pots' due to their shape.			

<b>Broad Habitat Type</b>	Standing Open Water and Canals	<b>Priority Habitat</b>	Ponds
A number of ponds associated with the former extractive industries are located in the west of the ecological sub-area at Bumble Hole and Warren's Hall Farm LNRs. In the west of the area within Portway Hill Open Space is a large pond at the site of an old clay pit which is currently used for angling.			

<b>Key Species [3]</b>	
<b>Bird indicators</b>	
<b>Farmland</b>	Common Reed Bunting, Eurasian Skylark, Goldfinch, Greenfinch, Kestrel, Lapwing, Linnet, Starling, Stock Dove, Whitethroat, Woodpigeon.
<b>Woodland</b>	Blackbird, Chiffchaff, Coal Tit, Common Chaffinch, Dunnock, Eurasian Blackcap, Eurasian Blue Tit, Eurasian Bullfinch, Eurasian Nuthatch, Eurasian Wren, European Green Woodpecker, Garden Warbler, Goldcrest, Great Spotted Woodpecker, Great Tit, Jay, Lesser Whitethroat, Long-tailed Tit, Robin, Siskin, Song Thrush, Sparrowhawk, Spotted Flycatcher, Tawny Owl, Treecreeper, Willow Tit, Willow Warbler.
<b>Water &amp; Wetland</b>	Common Merganser, Common Reed Bunting, Common Sandpiper, Eurasian Coot, Great Crested Grebe, Grey Heron, Grey Wagtail, Kingfisher, Lapwing, Little Grebe, Mallard, Moorhen, Mute Swan, Reed Warbler, Tufted Duck.
<b>Other</b>	Black-headed Gull, Buzzard, Carrion Crow, Collared Dove, Common House Martin, Cuckoo, Eurasian Magpie, House Sparrow, Meadow Pipit, Mistle Thrush, Northern Raven, Peregrine, Pied Wagtail, Red Kite, Swallow, Swift.
<b>Amphibians &amp; Reptiles</b>	
<b>Amphibians</b>	Common Frog, Common Toad, Smooth Newt.
<b>Reptiles</b>	Adder
<b>Mammals</b>	
<b>Bats</b>	Common Pipistrelle, Daubenton's Bat, Noctule Bat, Soprano Pipistrelle.
<b>Other</b>	Eurasian Badger, European Otter.
<b>Fish</b>	
<b>Bony Fish</b>	none
<b>Jawless Fish</b>	none
<b>Invertebrates</b>	
<b>Assemblage type</b>	
<b>Flora (axiophytes)</b>	
<b>Woodland</b>	<i>Allium ursinum, Angelica sylvestris, Caltha palustris, Deschampsia flexuosa, Equisetum sylvaticum, Equisetum telmateia, Filipendula ulmaria, Fragaria vesca, Galium odoratum, Hordelymus europaeus, Hypericum pulchrum, Lysimachia vulgaris, Melica uniflora, Mercurialis perennis, Milium effusum, Quercus petraea, Stellaria holostea, Torilis japonica, Veronica montana.</i>
<b>Grassland</b>	<i>Achillea ptarmica, Agrostis canina, Aira caryophyllea, Caltha palustris, Campanula rotundifolia, Centaurium erythraea, Daucus carota subsp. carota, Deschampsia flexuosa, Equisetum sylvaticum, Filipendula ulmaria, Fragaria vesca, Hypericum pulchrum, Lathyrus nissolia, Leontodon hispidus, Linum catharticum, Lotus pedunculatus, Nardus stricta, Odontites vernus, Odontites vernus subsp. serotinus, Ononis repens, Phleum bertolonii, Picris hieracioides, Pimpinella saxifraga, Plantago media, Potentilla erecta, Potentilla sterilis, Rhinanthus minor, Stachys officinalis, Stellaria holostea, Succisa pratensis, Trifolium medium.</i>
<b>Heathland</b>	<i>Agrostis canina, Aira praecox, Calluna vulgaris, Campanula rotundifolia, Deschampsia flexuosa, Nardus stricta, Potentilla erecta, Vaccinium myrtillus.</i>
<b>Mires</b>	<i>Achillea ptarmica, Agrostis canina, Angelica sylvestris, Calamagrostis epigejos, Caltha palustris, Equisetum fluviatile, Equisetum palustre, Filipendula ulmaria, Glyceria declinata, Hypericum tetrapterum, Lotus pedunculatus, Lysimachia vulgaris, Pulicaria dysenterica, Ranunculus flammula, Sparganium emersum, Succisa pratensis, Veronica beccabunga.</i>
<b>Open Water</b>	<i>Equisetum fluviatile, Potamogeton lucens.</i>

<b>Post-industrial (water-stressed)</b>	<i>Aira caryophylla, Aira praecox, Anthyllis vulneraria, Arenaria serpyllifolia, Arenaria serpyllifolia, Catapodium rigidum, Centaurea scabiosa, Centaurium erythraea, Daucus carota subsp. carota, Deschampsia flexuosa, Erophila verna, Fragaria vesca, Inula conyzae, Jacobaea erucifolia, Linum catharticum, Ophrys apifera, Picris hieracioides, Pilosella praealta, Poa angustifolia, Poa compressa, Reseda lutea, Senecio viscosus, Silene vulgaris, Trifolium arvense, Trifolium medium, Trifolium striatum, Vicia tetrasperma</i>
<b>Cultivation</b>	<i>Chenopodium polyspermum, Vicia tetrasperma.</i>

### Ecological Connectivity

#### Local Habitat Network

The Rowley Hills, Bumble Hole & Warren's Hall links directly to Core Landscape 11 Stour Valley via the narrow corridor of the Mousesweet Brook in the south-west of the ecological sub-area. There are further links to the wider ecological network via the Stour Corridor Priority Network Restoration Zone.

#### National Habitat Network

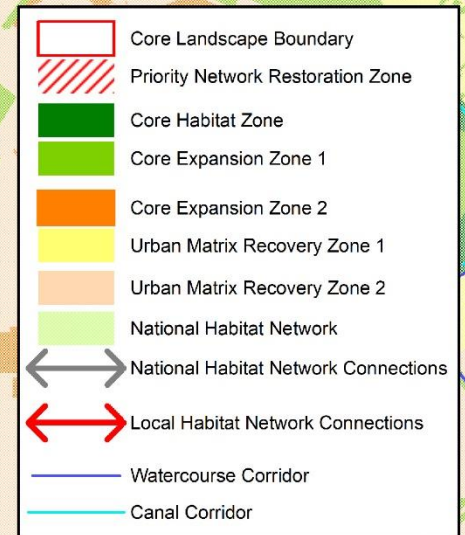
The Rowley Hills, Bumble Hole & Warren's Hall is entirely surrounded by the urban Black Country and therefore does not link directly to the National Habitat Network.



CL10 - The Rowley Hills, Bumble Hole & Warren's Hall - Components & Connectivity

Oakham

Rowley  
Regis



Scale 1:15,000

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## Ecological Sub-area Opportunities

Focus Habitats		
Habitat	Action	Measure
Canals	Identify and reduce artificial inputs	Improved chemical status
Hedgerows	Improve management of existing	Habitat in good condition
	Restore through gapping up	Habitat in good condition
	Reinstate lost field-boundary hedgerows	New habitat
	Establish hedgerow trees	Habitat structure improved
Ponds	Restore existing	Habitat in good condition
	Create new	New habitat at existing and new sites
Rivers	Restore hydromorphology (naturalise modified channels)	Improved ecological status
	Reduce artificial inputs	Improved chemical status
Lowland meadows	Enhance existing neutral grasslands	Increased floral diversity
	Create new species-rich neutral grasslands	Increased floral diversity and habitat structure improved
Broadleaved, Mixed and Yew Woodland	Coppice	Habitat structure improved
	Create woodland edge	Habitat structure improved
	Diversify woody component	Habitat structure improved
	Diversify field-layer component of plantations	Increased floral diversity

Target Species	
Species/Species Group	Measure
Adder	Confirmed recent records
Bats	Increased abundance of confirmed species
Breeding farmland birds (specialists)	Increased species and abundance
Breeding water & wetland birds (specialists)	Increased species and abundance
Breeding woodland birds (specialists)	Increased species and abundance
European Otter	Increased signs, confirmed breeding population
Grassland axiophytes	Recent records and increased abundance
Heathland axiophytes	Recent records and increased abundance
Mires axiophytes	Recent records and increased abundance
Open Water axiophytes	Recent records and increased abundance
Woodland axiophytes	Recent records and increased abundance

Geodiversity		
Site	Action	Measure
Blue Rock Quarry	Maintain exposure free of scrub	Continued access to exposures

<b>Connectivity Opportunities</b>	
<b>Local Habitat Network</b>	
<b>Connection</b>	<b>Action</b>
Within Core Landscape CL10	Assess feasibility of deculverting sections of the Mousesweet Brook.
	Species-rich neutral grassland enhancement and creation at sites including areas of public open space, golf courses, school grounds and sports fields.
	Plantation woodland enhancement.
	Creation of new ponds.
	Field boundary hedgerow restoration and creation.
	Planting of standard trees in parks, green spaces and school grounds.
With Core Landscape CL11	Identify and reduce artificial inputs to Mousesweet Brook.
	Species-rich neutral grassland enhancement and creation on undeveloped land including parks, green spaces, school grounds and substantial road verges.
	Planting of street trees along urban roads.
	Planting of standard trees in parks, green spaces and school grounds.
<b>National Habitat Network</b>	
<b>Connection</b>	<b>Action</b>
n/a	

Information and Data Sources		
	Source	Date
Landuse	Ecological Evaluation of Birmingham and Black Country GIS data set, EcoRecord.	2021
Topography	OS Terrain 50 GIS data set, Ordnance Survey.	2017
Geology	British Geological Society 1:625,000 bedrock & superficial GIS web map services from BGS website: <a href="http://mapapps.bgs.ac.uk/geologyofbritain/home.html">http://mapapps.bgs.ac.uk/geologyofbritain/home.html</a>	2021
	Black Country UNESCO Global Geopark sites names and location information <a href="https://blackcountrygeopark.dudley.gov.uk/bcg/">https://blackcountrygeopark.dudley.gov.uk/bcg/</a>	2021
Soils	Soilscapes, Cranfield Soil & Agricultural Institute website: <a href="http://www.landis.org.uk/soilscapes/">http://www.landis.org.uk/soilscapes/</a>	2021
Species and Habitats	EcoRecord species and habitat databases.	2021
Ecological Connectivity	EcoRecord, The Wildlife Trust for Birmingham and the Black Country (2021) <i>Draft Black Country Local Nature Recovery Opportunity Map</i>	2021
	EcoRecord et al. (2021) <i>Midlands Heathland Heartland Lowland Heathland Nature Recovery Opportunity Mapping</i> .	2021
Historic Landscape Character Areas	Wolverhampton City Council (2010) <i>Black Country Historic Landscape Characterisation</i> [data-set]. York: Archaeology Data Service [distributor] <a href="https://doi.org/10.5284/1000030">https://doi.org/10.5284/1000030</a>	2010
Historic Environment Area Designations	Black Country Historic Landscape Characterisation Study, Oxford Archaeology.	2019

#### [1] HISTORIC ENVIRONMENT AREA DESIGNATIONS

The Black Country Historic Landscape Characterisation Study has divided the Historic Environment Area Designations into four categories:

**Archaeological Priority Areas (APA):** sites with a high potential for archaeological remains of regional or national significance that have not been considered for designation as scheduled monuments, or where there is insufficient data available about the state or preservation of any remains to justify a designation. APAs are likely to have high archaeological and historic interest.

**Areas of High Historic Townscape Value (AHHTV):** areas where built heritage makes a significant contribution to local character and distinctiveness. The significance of AHHTVs is likely to be derived primarily from their architectural and historic interests. However, these areas may also have artistic and archaeological interests. Areas of High Historic Townscape Value are not limited to towns or cities, they also include villages, hamlets and areas of industry where the built heritage is considered to make a positive contribution to the historic environment of an area.

**Designed Landscapes of High Historic Value (DLHHV):** landscape areas that make an important contribution to local historic character but do not meet the criteria for inclusion on the national Register for Parks and Gardens. The significance of these areas is likely to arise from their historic, artistic and architectural interests, although such areas may also contain remains of archaeological interest.

**Areas of High Historic Landscape Value (AHHLV):** these recognise the quality of the wider landscape and their relative values. The significance of these areas arises from the natural and historic features contained within them (e.g. woodland, watercourses, hedgerows, and archaeological features). The significance of these areas is likely to be derived from their archaeological and historic interests.

#### [2] KEY HABITATS follows the UK Biodiversity Action Plan (BAP) Broad & Priority Habitat definitions

This is a UK-habitat classification prepared by the UK Biodiversity Group that classifies all terrestrial and freshwater habitats in the UK into 37 broad habitat types. UK BAP Priority Habitats are a range of semi-natural habitat types that were identified as being the most threatened and requiring conservation action. The original Priority Habitat list was created between 1995 and 1999 and revised in 2007. The list of Priority Habitats has been used to help draw up statutory lists of habitats of principal importance for the conservation of biodiversity in England, Scotland, Wales and Northern Ireland. The suite of habitats of principal importance for the conservation of biodiversity (formerly Priority Habitats) nest into the defined Broad Habitat Types.

#### [3] KEY SPECIES

**Bird Indicators:** Species listed under UK Biodiversity Indicator C5, Birds of the wider countryside and at sea (JNCC). The indicator shows changes in the breeding population sizes of common native birds of farmland and woodland and of freshwater and marine habitats in the UK.

**Amphibians & Reptiles:** All amphibian and reptile species native to the UK are included.

**Mammals:** Those protected by UK or EU law, included on the current list of Principal Importance in England under Section 41 of the NERC Act (2006 or amended), and those included on the latest B&BC LBAP list of Priority Habitats/Species.

**Fish:** Those protected by UK or EU law, included on the current list of Principal Importance in England under Section 41 of the NERC Act (2006 or amended), and those included on the latest B&BC LBAP list of Priority Habitats/Species.

**Invertebrates:** Pantheon Assemblage Types Analysis.

**Flora (axiophytes):** Those included on the Birmingham & the Black Country list of axiophytes (administered by EcoRecord) by four locally defined habitat types.