

**AIREBOROUGH
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AIREBOROUGH BIODIVERSITY OPPORTUNITIES

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Biodiversity Opportunities

This report is based on a 2016 Community Ecology Study led by Richard Wilson Ecology. This study was then enhanced with community workshops and analysis of ecology and landscape data from

- Leeds City Council - both ecology surveys and work on the Leeds North West County Park,
- Local ecology studies carried out by community groups eg Friends of Parkinson's Park, Friends of Engine Fields
- West Yorkshire Ecology
- Pennine Prospects who are regenerating the area designated as the South Pennines Regional Park, and which includes part of Aireborough
- ANDF Landscape Character and Value Report – Tom Lonsdale, Placecraft

1. AIMS

- To improve and regenerate Aireborough's natural heritage, extending the existing Leeds Habitat Network 2012/2014* (LHN) with links which will provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. (***The Leeds Habitat Network 2014 has removed links with existed in the 2012 version, although it has added others, so we will combine the two.**)
- To guide future development towards the opportunities for making a positive contribution to the LHN through habitat protection, enhancement and creation

2. SUMMARY - AIREBOROUGH'S ECOLOGICAL SITUATION

"Compared to many other areas of Leeds, Aireborough is very lucky with the varied ecology with which we can interact. Some areas are like jewels in the landscape where people can observe the wildlife, the best areas are those which people don't want to exploit anymore, some are victims of their own popularity (too many people and dog walkers who drive species away)"

Quote from ecologist (interviews 2016)

Aireborough occupies a highly distinctive area of approximately 25 km², in an approximate north-west –south-east axis on the edge of the conurbation of Leeds and Bradford. The north-western sector (including Menston and much of Guiseley) is located within the **South Pennine National Character Area** (NCA 2014) whilst the south-eastern sector (including south Guiseley and Yeadon) falls within the **Nottinghamshire, Derbyshire and Yorkshire Coalfield NCA** .

Much of Aireborough sits within the unique glacial hanging valley of the **Guiseley Gap**, between Airedale and Wharfedale. The dominant geology, which influences biodiversity, is Millstone Grit or Rough Rock Flags, layered with mudstone and overlain by glacial till. The Millstone Grit includes the East Carlton Grit and Guiseley Grit of the Upper Carboniferous (deposited between 317 million and 315 million years ago). Glacial till consists of limestone, boulder clay and gravels. The use of stone, clays and gravels gives rise to a range of habitats from quarries to the ubiquitous dry stone walls.

The Guiseley Gap has been shaped by hydro-geomorphology giving rise to a wide variety of habitats. Water, via a network of water-bodies and courses, above and below ground, natural and man-made, runs from the high gritstone hills, across the lower level and on down to both Airedale and Wharfedale. This has left deep ghylls, dikes and areas of alluvium where human activity has created a mosaic of grasslands, woodlands and wetlands. Thus, whilst neither the River Aire to the south or River Wharfe to the north penetrate the Guiseley Gap, the area straddles both their catchments and

thus has influence on the hydrology of both systems whilst acting as an important connecting corridor for nature, ecology, habitat and movement .

Where the Millstone Grit outcrops significantly influences the soil chemistry, the vegetation communities reflect this; with heath/ moorland and bogs on the uplands north-west of Hawksworth, and on areas of the Chevin flanks. Where glacial till has a greater influence, on the pastoral plateau of the Chevin slopes and lowlands, a more neutral (mesotrophic) vegetation community prevails; characterised by neutral grasslands and woodlands.

Aireborough is therefore, an important transitional landscape with a mosaic of habitats, providing important opportunities for both biodiversity and connections between NCAs and Dales. However, ecological connections are fractured and the mosaic of habitats arising from geology, geomorphology and human activity have been degraded by industry, development and poor management; much biodiversity has been lost, particularly in the latter 20th and 21st centuries. What remains is marginalised or isolated in small pockets; or along narrow corridors following the watercourses that penetrate the landscape.

This fracturing is reflected in the current designated landscapes; with two SSSIs (Yeadon Brickworks & Railway Cutting, and Hawksworth Moor) both located on the outer perimeter of Aireborough whilst the more important non-statutory sites such as the SEGI and LWS, predominantly semi-natural woodland, are on the steeper valley sides. Within Aireborough itself the smaller, isolated land parcels supporting remnant semi-natural vegetation of varying types, typically grass-dominated, are scattered to field edges or the embankments of watercourses; with the exception of some of the sites which are regularly managed for nature conservation. Thus the 'urban' biodiversity is generally isolated and more likely to support generalist species which can readily adapt to a wide range of environments and habitats; specialising in none.

Thus Aireborough offers substantial opportunities for nature recovery and improvements to ecosystem services.

Particular species that should thrive in Aireborough's environments include on the moorlands, hen harrier (*Circus cyaneus*), merlin (*Falco columbianus*), golden plover (*Pluvialis apricaria*) twite (*Carduelis flavirostris*) and, curlews. On lower ground, hay meadows, in the absence of over-grazing, should predominate the landscape, and on the edge of watercourses such as Mire Beck, periodically inundated grasslands should support a lowland wet grassland, as suggested by place names such as 'Ings' with lapwings , wading birds.

3. DETAILED BIODIVERSITY OF AIREBOROUGH

HABITAT	SUMMARY
Woodlands	Many examples of high quality natural and semi natural woodland such as those to be found at Lee Garth Plantation, Novia Plantation and Spring Wood. Some have been identified as ancient woodland, such as Diepker wood and Calfhole wood. Hawksworth Woods are an example of an ancient replanted wood. There are good examples of deciduous plantations such as that in the grounds of the High Royds development. Becks are well wooded on their banks, for example Nunroyd Beck and Mire beck.
Field Boundaries	As the area includes much farmland, dry stone walls and quick hedgerows are a common feature. Walls provide cover for reptiles, amphibians and invertebrates and are colonised many types of lichen and moss. Hedgerows afford transitional routes for wildlife and help to connect habitats, such as small stands of trees or ponds, which may otherwise be isolated. These hedgerows are particularly valuable for wildlife, providing cover for birds and small mammals, as well as containing trees and shrubs which bear berries and other fruit on which wildlife can feed.
Grassland	The historic land use of grasslands in Aireborough has been pastoral rather than arable, resulting in mainly agricultural semi improved grasslands suited to grazing. This has affected the ecology in the form of the remains of meadows and their drainage systems. Grassland on lower land tends to be poorly drained with a high water table but better drained land can be found on higher ground. Without grazing, grassland begins to become more natural with trees beginning to seed and grow such as Yeadon Banks where grazing horses are no longer present. Adjacent to Milners Road the presence of the cement works gives rise to more calcareous grassland with a relatively rich flora including <i>Euphrasia</i> sp. and <i>Dactylorhiza fuchsii</i> . Semi improved grassland in Nunroyd Park is now under a reduced mowing regime with a positive effect on the diversity, including the appearance of <i>Dactylorhiza x venusta</i> . A heron is a regular visitor to the pond and red deer are frequently sighted in the wilder areas. Parkinson's Park has a mosaic of habitats ranging from acid grasslands on the higher slopes to willow wetlands at the bottom of the slope. Both Nunroyd and Parkinson's now have community orchards.
Moorland	Moorland between Menston and Guiseley which leads towards Hawksworth village, locally known as "The Odda" is moorland grazed by sheep and due to its vegetation of gorse, heather, cotton grass and bilberry attracts grouse, curlew, lapwing and snipe not to mention many species of butterfly. This leads further on to Hawksworth Moor, identified as heathland. Moorland is also found on the slopes of the Chevin (Guiseley Moor).
Wetlands	Aireborough's largest body of water is the Reva Reservoir; however there are smaller bodies such as Yeadon Tarn, The Airport reservoirs, The Engine Fields (Old Dog Mill Ponds), New Dam (Jum Bridge), Nunroyd Park pond, and the holding pond at High Royds. All of these to a greater or lesser extent support water and wetland birds, amphibians and wetland

	<p>plant species.</p> <p>The area has no river but is served by streams and watercourses which drain mainly to the River Aire, but in the case of Mire beck to the Wharfe.</p> <p>Yeadon Tarn is rich in wildlife but is inhibited by its popularity with walkers and dog walkers who inevitably reduce the potential population diversity by their presence.</p> <p>The same can be said for any popular wildlife area visited regularly by the public.</p> <p>The Engine Fields and Old Dog Mill Ponds is a diverse species rich area, comprising ponds, stream, woodland, wetland and grassland areas and regularly visited by kingfisher, heron and grey wagtail. It is home to newts and frogs, and there have been sightings of Red Deer. The variety of habitats gives a rich and increasing diversity of wild flowers.</p> <p>Streams and becks which drain the area are usually narrow in channel and fairly fast flowing and attractive to aquatic water birds, kingfisher, heron, dipper and grey wagtail.</p> <p>Some are prone to seasonal over topping of their banks giving rise to permanent wet lowland areas, such as Mire beck as it flows through The Ings meadow in Guiseley which attracts nesting lapwing and over wintering curlew. White clawed crayfish have been sighted in the beck. Wetland areas also occur at the bottom of the slopes of Yeadon Banks towards Deipkeir Woods.</p>
Quarries	<p>Aireborough has one working stone quarry, a number of old quarries now filled in with land-fill, and several closed quarries that have reverted back to nature. These were not covered by the survey, but should be examined as a habitat in future work.</p>

4. AIREBOROUGH DESIGNATED SITE

SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI) lying within the Aireborough Neighbourhood Plan Area

1. Yeadon Brickworks and Railway Cutting
2. Part of Hawksworth Moor

SITES OF ECOLOGICAL or GEOLOGICAL INTEREST (SEGI) representing a countywide (West Yorkshire) level of importance, lying within the Aireborough Neighbourhood Plan Area

1. Otley Chevin (Regionally Important Geological Site RIGS)(7)
2. Hawksworth Spring Wood (11)
3. Rawdon Ponds (Rawdon Common Pond)

SITES OF ECOLOGICAL or GEOLOGICAL INTEREST (SEGI) lying just outside the Aireborough Neighbourhood Plan Area

1. Bramhope Tunnel Pond
2. Sims Pond and Marshland (Ling Bob Pond)

LEEDS NATURE AREAS – LNA lying within the Aireborough Neighbourhood Plan Area

1. Airport Reservoirs (4)
2. Deipkeir Wood (32)
3. Engine Fields (35)
4. Hawksworth Woods (Local Wildlife Site LWS19) (48)
5. New Dam, Jum Bridge (77)
6. Nunroyd Park (77)
7. Yeadon Tarn (109)

LEEDS NATURE AREAS lying just outside the Aireborough Neighbourhood Plan Area

1. Billing Hill
2. Cragg Wood
3. Larkfield Dam
1. Bramhope Tunnel Top
2. Hunger Hills
3. Moseley Beck
4. Swaine Wood (Local Wildlife Site LWS22)
5. Whetstone Plantation

NB Bradford MDC sites lying just outside the Aireborough Neighbourhood Plan Area are not included on this list currently.

5. BIODIVERSITY OPPORTUNITIES

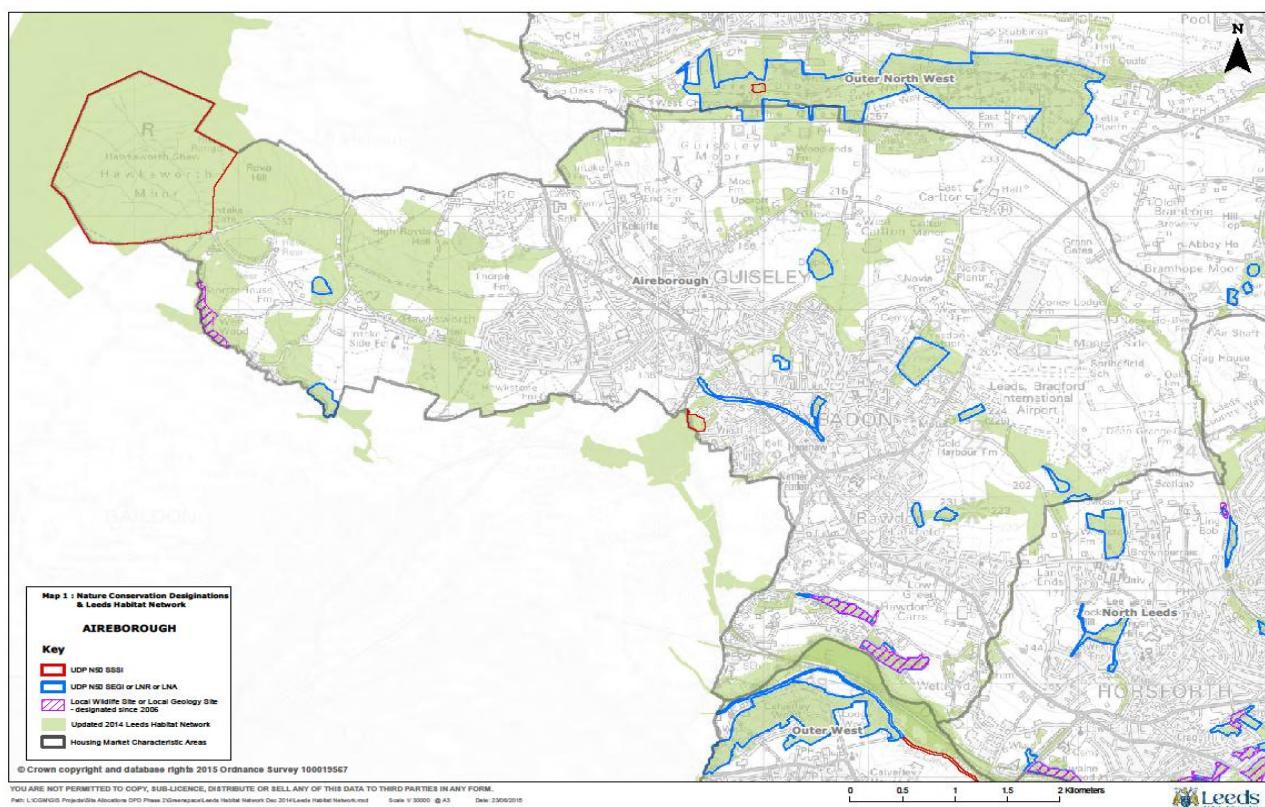
The Aireborough Ecology and Landscape teams have identified possible extensions to the Leeds Habitat Network 2012/2014 which link fragmented habitats and create corridors to facilitate

- species mobility and encourage healthy species populations,
- improving the natural capital and ecosystem services in Aireborough, through nature conservation stewardship.

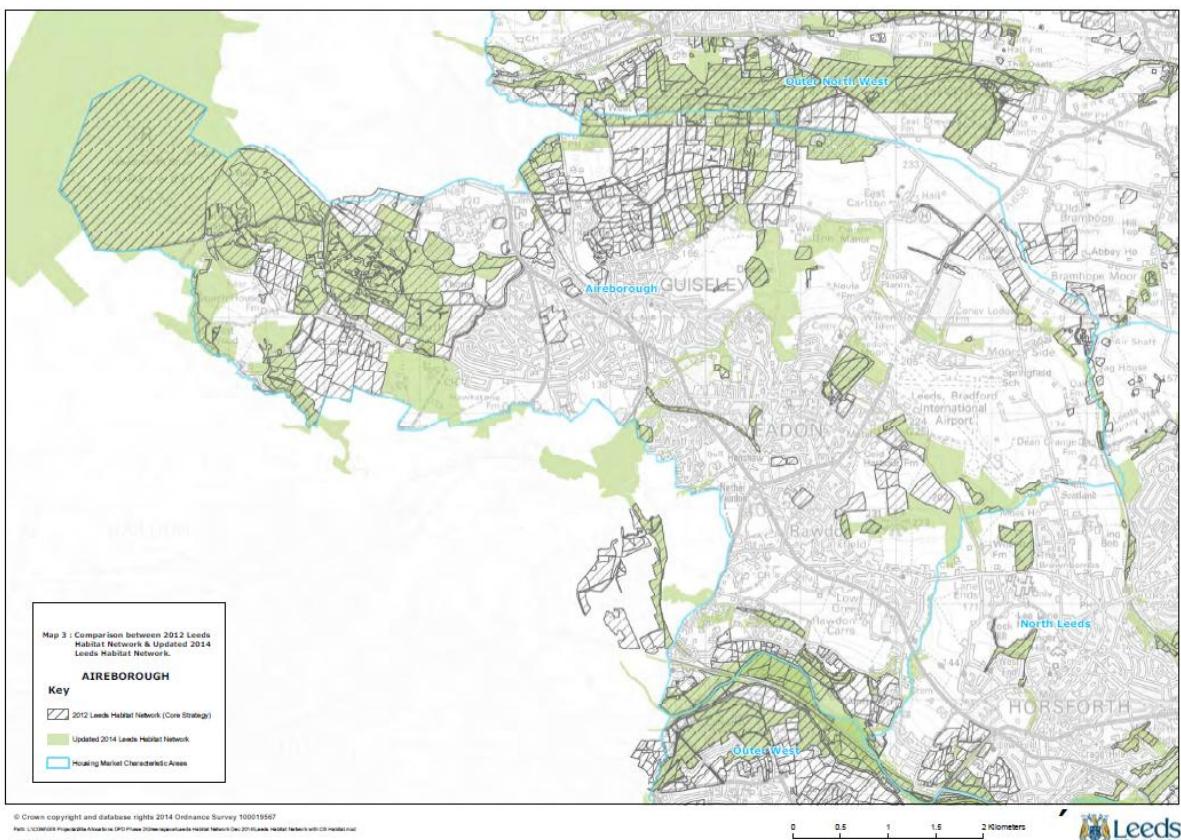
Interviews with ecologists and wildlife experts in July 2017 concluded that existing wildlife corridors should be preserved and extended, including becks and hedgerows.

Consultation in 2016 revealed that residents give a high intrinsic value to their greenspace, with signs across the area of growing interest in working on nature conservation and improving biodiversity for future generations to enjoy.

Map of 2014 Leeds Habitat Network



Map of 2012 Leeds Habitat Network

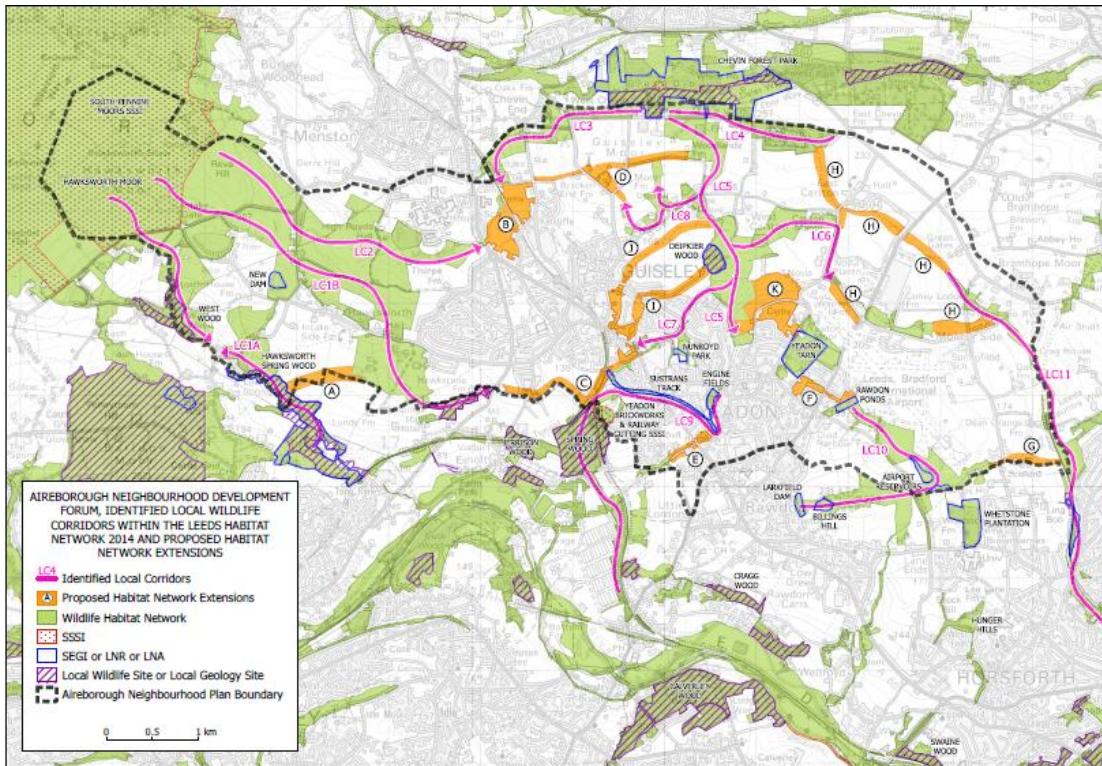


Local Wildlife Corridors Identified Within the Leeds Habitat Network Maps

Leeds Habitat Network (LHN) 2014 Main and Local Corridors		
Main Corridor	River Aire	Not in Aireborough
	River Wharfe	Not in Aireborough
Local Corridor LC 1a,1b	Rombalds Moor to the Aire via Hawksworth	Starts on Hawksworth Moor than follows Gill Beck through Old and West Wood, on to Hawksworth Gill and down to the Aire. Another branch crosses the Odda and Bradford Golf Course to Hawkstone Wood on the border with Bradford.
LC2	Rombalds Moor to the Wharfe via Guiseley Gap/Mire Beck	The Guiseley Gap connects Airedale and Wharfedale; it affords a key corridor for nature, ecology, habitat and movement. Mire Beck is the watercourse in the bottom of the western part of the Gap; this flows from Reva Hill, across Hawksworth Moor, down Matthew Dike and Upper High Royds and along a portion of the bottom of the glacial valley to Ellar

		Ghyll. The area where Mire Beck crosses the Guiseley Ings needs strengthening.
LC3	West Chevin Flank	Picking up LC2 near St Mary's School the LHN goes up to Chevin End and on across the area of Slack Dike to the Chevin Ridge.
LC 4	Along the Chevin Ridge	This lies on a corridor from Wharfedale to Bramhope.
LC 5	Chevin Slopes to Yeadon Tarn	Begins on the Chevin ridge, down the Chevin Slopes towards Calfhole Wood, Deipkier Wood and onward towards Yeadon Banks. There is a disconnect between Yeadon Banks and Yeadon Tarn.
LC6	Chevin Slopes to LBA via Carlton	Starts as with LC5, at Deipkier goes towards East Carlton, turns south through Novia Plantation, then somewhat disconnected from the small corridor north of Whitehouse Lane at LBA.
LC 7	Chevin Slopes via Calfhole Beck to Ghyllroyd	Runs from behind the Royalty Pub, down Calfhole, Shaw, and Nunroyd Becks to Ghyllroyd Clapper Bridge/Sustrans Track. Weak connection to Guiseley Beck and Spring Wood BNA.
LC 8	Upcroft to East Field Guiseley	Runs from Upcroft along the line of the old East Field above Carlton Lane. Seems detached and could link with the West Chevin Flank across Kelcliffe and the Chevin watershed.
LC 9	Engine Fields to Esholt along the Sustrans Track	Runs from Engine Fields along the Sustrans track, under the A65 through diverse habitats around Yeadon Brickworks and the railway cutting to the woods of Guiseley Beck Ghyll, and the Aire. There is potential for another branch down Yeadon Gill Beck through Nether Yeadon where there is a small disconnected part of the LHN.
LC 10	Tarn to Rawdon Billing via Plan Tree Hill	Yeadon Tarn is currently isolated. A tiny corridor exists along footpaths to Plane Tree Hill, through Horsforth Golf Club to Rawdon Billing.
LC 11	Carlton Moor to Ling Bob Horsforth and beyond. Via Moseley Beck.	Starts on a wooded footpath behind Green Gates Farm on Carlton Moor, follows the beck that runs under Dean Lane and joins with Moseley Beck and the Bramhope Tunnel via Scotland to Lin Bob and beyond to Horsforth. There is a disconnect between this and LC10 along Scotland Beck. Also with LC 6 along Carlton Beck.

ANDF Habitat extension map



Method

The Aireborough Ecology Survey (2016) took sites identified for ecological potential in as well as sites identified in the Aireborough Landscape Study 2016, and conducted field surveys over four months under the guidance of Richard Wilson Ecology. The project identified a number of corridor opportunities for the LHN that would improve the natural capital ecosystem services in Aireborough through nature conservation stewardship and linking fragmented habitats.

These LHA opportunities were then analysed by local ecologists and landscape experts who drew up a map showing the proposed habitat extensions to the habitat fragments. (See map above and list.).

Habitat Network Extension No	Description
HNA (A)	Joins LC1A to LC1B (a corridor that lies within the 2012 LHN map)
HNA (B)	Joins LC2 to LC3 (this corridor also lies within the 2012 LHN map) along Mire Beck
HNA (C)	Extends LC1B towards the Sustrans Track, LC7 and LC9
HNA (D)	A corridor along Guiseley Moor (a corridor that lies within the 2012 LHN map)
HNA (E)	Joins a disconnected fragment of Habitat Network through Nether Yeadon from LC9 and the Sustrans Track
HNA (F)	Joins the disconnected Yeadon Tarn with LC10
HNA (G)	Connects LC10 and the Airport Reservoirs through Scotland to LC11
HNA (H)	Joins the disconnected LC11 with LC6 along Moorside to Novia Plantation. Also LC11 to LC4 along Greengates to East Carlton and to LC4 across fields (parts of which were included in the 2012 LHN but not the 2014)
HNA (I)	Connects LC5 with LC1B through HNE(C) along paths.
HNA (J)	From LC5 along Wills Gill, merging with HNE(I), onwards to HNE(C) and LC1B&A, also Spring and Jerrison Woods
HNA (K)	Another connection from the disconnected Yeadon Tarn this time to LC5

6. ACKNOWLEDGEMENTS

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