

Protecting and Enhancing High Lane's Natural Environment



Cheshire
Wildlife Trust

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Introduction

Neighbourhood Planning has provided an important opportunity for communities to shape their local environment for future generations. Identifying and evaluating opportunities and constraints will mean that communities are in an informed position and therefore better able to protect their valuable natural assets.

In 2011, the government published their Biodiversity 2020 '*strategy for England's Wildlife and Ecosystem services*' which built on the recommendations of the earlier Natural Environment white paper. The mission of the Biodiversity 2020 strategy is to '*halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.*'

The National Planning Policy Framework (NPPF), first published in 2012 drew on these principles and protecting and enhancing 'our natural, built and historic environment' is one of the three core objectives in the revised NPPF 2018 (paragraph 8c). Local (non-strategic) policies specifically designed to address the overall loss of biodiversity are known as 'no net loss policies' or 'net gain policies'. The guidance for this is enshrined in the NPPF in paragraphs 118a, 174b and 175d with the latter two paragraphs referring to 'measurable' net gain (i.e. use of a biodiversity metric). At a local level, Stockport Local Plan is under development at the time of writing this report. Until the new Local Plan is adopted the current planning policies will apply.

On its website Stockport Council states that the Local Plan "... will address needs and opportunities in relation to housing, the economy, community facilities and infrastructure as well as providing a basis for safeguarding the environment, adapting to climate change and securing good design. The Stockport Local Plan will set out broad locations and specific allocations of land for different purposes; through designations showing areas where particular opportunities or considerations apply (such as protected habitats); and through criteria-based policies to be taken into account in development management decision making".

The UK Sustainable Development Strategy (updated July 2019) sets out four shared priority actions for taking sustainable development forward:

- Sustainable consumption and production
- Climate change and energy
- Natural resource protection and environmental enhancement
- Sustainable communities

At a local level, the Stockport Council are currently developing a new Local Plan and the Greater Manchester combined Authorities (which includes Stockport Borough Council) are currently developing a new Greater Manchester Spatial Framework. The proposed policy GM-G 10 of the draft Greater Manchester Spatial Framework stipulates that 'across the whole plan a net enhancement of biodiversity resources will be sought'.

The Greater Manchester Natural Capital Group (of which the Greater Manchester combined Authorities are a lead partner) delivers the Local Nature Partnership in the Greater Manchester area. The GMNCG's aims are to 'strengthen **local** action to protect and improve their area's **natural** environment'.

According to Biodiversity 2020, there are numerous ways to work towards achieving these aims, with landowners, conservation charities and individuals playing a part. However, the planning system has a central role in achieving the aims of Biodiversity 2020, particularly strategic planning, but also development control. At a local level, Neighbourhood Planning has the potential to be a key factor in determining whether the aims of Biodiversity 2020 are realised, by identifying local priorities for nature conservation and ensuring these are taken into consideration in the planning process.

In 2018, as part of its 25 Year Environment Plan, the government pledged to become the first generation to leave the natural environment in a better condition than that they inherited.

In the State of Nature Report 2016, the UK was ranked among the most nature-depleted countries in the world. The government's ambitious proposals for nature recovery and "clean growth" could be pivotal in the future of our environment.

Although this is a national framework, its success will also depend on local communities and partnerships working to protect and enhance their environment to contribute to its social, economic and environmental objectives.

Objectives of the study

The first stage to protecting and enhancing the natural environment is to identify the natural assets that exist within the neighbourhood. This report aims to identify the core, high ecological value sites for nature conservation in the High Lane Neighbourhood Planning Area, as well as sites deemed to be of medium ecological value. The high value sites are recommended for protection through the neighbourhood planning process and the medium value sites could be considered as biodiversity opportunity areas subject to further evaluation. Medium and high value sites should also act as an alert in the planning system triggering full evaluation should they be proposed for future development.

The report also aims to identify key local and regional ecological networks within the neighbourhood planning area and recommends that these are protected through the neighbourhood plan. Additionally, it identifies key features associated with the landscape character of the High Lane area so these can be referenced in planning policies.

Background – ecological networks

In 2010 Professor Sir John Lawton submitted a report to DEFRA entitled 'Making Space for Nature: A review of England's Wildlife Sites and Ecological Network'. The report identified that we need a step change in our approach to wildlife conservation from trying to hang on to what we have, to one of large-scale habitat restoration and recreation, underpinned by the re-establishment of ecological processes and ecosystem services, for the benefits of both people and wildlife. The report also identified that this vision will only be realised if we work at local scales in partnership with local people.

The natural environment is fundamental to our well-being, health and economy, and provides us with a range of ecosystem services such as food, water, materials, flood defences and carbon sequestration – and biodiversity underpins most, if not all, of them. The pressures on our land and water are likely to continue to increase and we need to learn how to manage these resources in ways which deliver multiple benefits, for example, achieving profitable and productive farming while also adopting practices which enhance carbon storage, improve flood water management and support wildlife.

England's wildlife habitats have become increasingly fragmented and isolated, leading to declines in the provision of some ecosystem services, and losses to species populations. Ecological networks or Nature Recovery Networks have become widely recognised as an effective way to conserve wildlife in environments that have become fragmented by human activities.

Ecological networks generally have five components (see Figure 1) which reflect both existing and potential ecological importance and function.

- *Core areas*

These are areas of high nature conservation value which form the heart of the network. They contain habitats that are rare or important because of the wildlife they support or the ecosystem services they provide. They generally have the highest concentrations of species or support rare species. They include protected wildlife sites and other semi-natural areas of high ecological quality.

- *Corridors and stepping stones*

These are spaces that improve the functional connectivity between core areas, enabling species to move between them to feed, disperse, migrate or reproduce. Connectivity need not just come from linear, continuous habitats; a number of small sites may act as 'stepping stones' across which certain species can move between core areas.

- *Restoration areas*

These are areas where measures are planned to restore or create new high value areas (which will ultimately become 'core areas') so that ecological functions and species populations can be restored. They are often situated so as to complement, connect or enhance existing core areas.

- *Buffer zones*

These are areas that closely surround core areas, restoration areas, 'stepping stones' and ecological corridors, and protect them from adverse impacts from the wider environment.

- *Sustainable use areas*

These are areas within the wider landscape focussed on the sustainable use of natural resources and appropriate economic activities, together with the maintenance of ecosystem services. Set up appropriately, they help to 'soften the matrix' outside the network and make it more permeable and less hostile to wildlife, including self-sustaining populations of species that are dependent upon, or at least tolerant of, certain forms of agriculture. There is overlap in the functions of buffer zones and sustainable use areas, but the latter are less clearly demarcated than buffers, with a greater variety of land uses.

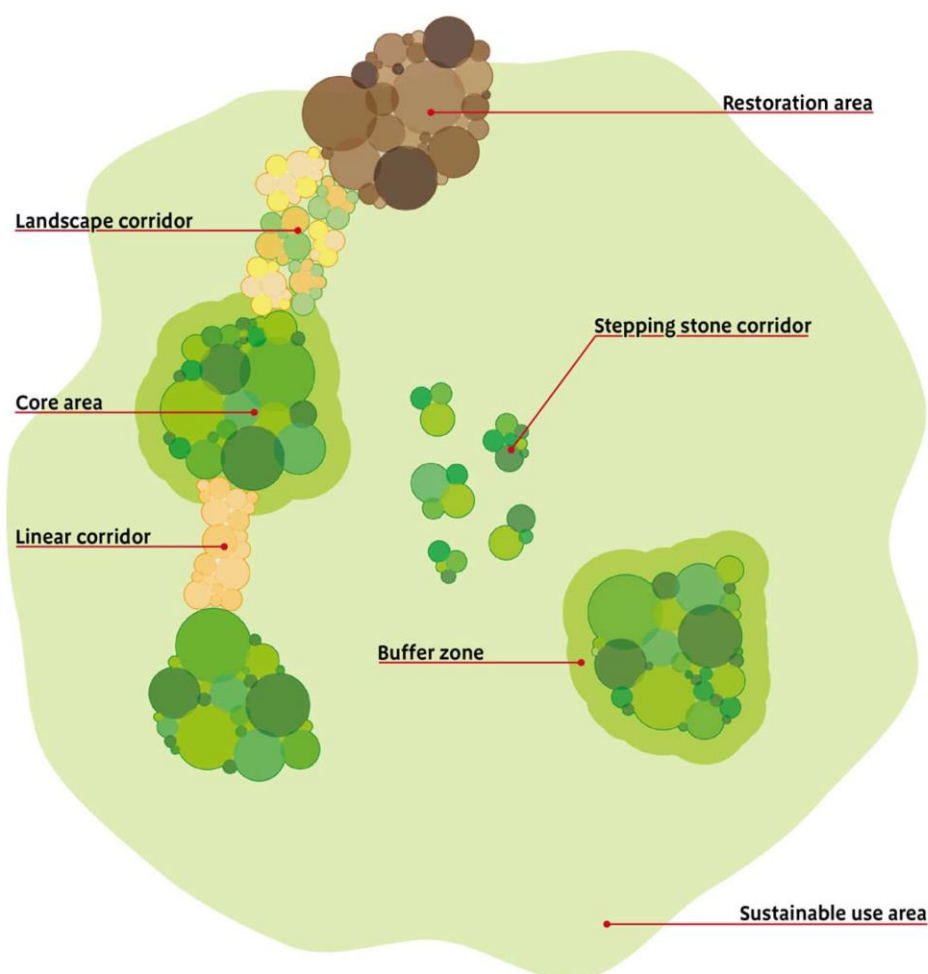


Figure 1. The components of ecological networks (Making Space for Nature report)

The principles of creating coherent ecological networks have since been embedded within many planning and policy documents. The Natural Environment White Paper ‘The Natural Choice’, which was published in 2011, reiterated a Government commitment to move from net biodiversity loss to net gain, by recognising the importance of supporting healthy, well-functioning ecosystems and establishing more coherent ecological networks.

The National Planning and Policy Framework revised in 2018, includes specific guidance on conserving, restoring and enhancing ecological networks including:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation;
- promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

- Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Landscape Character Area

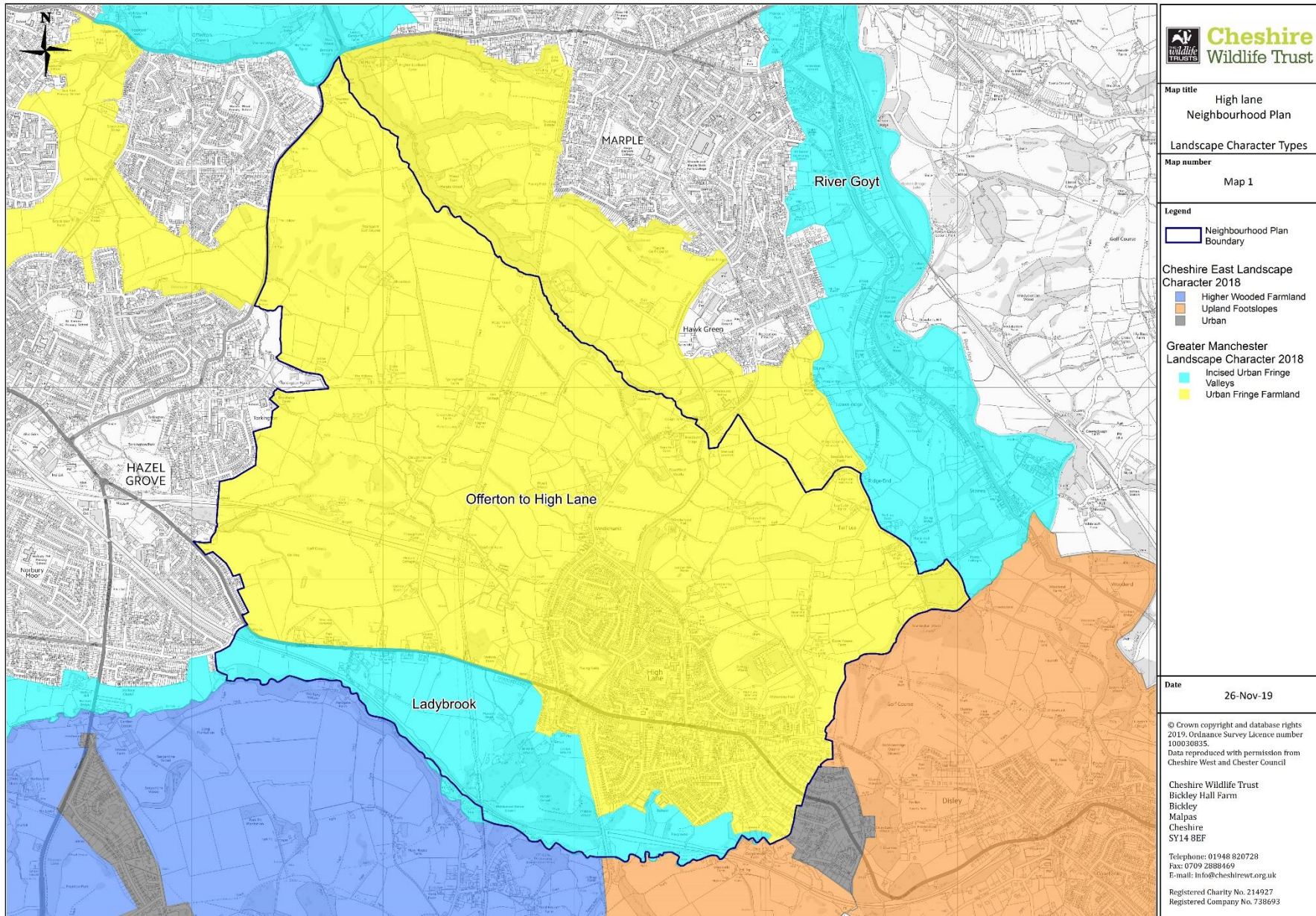
On a national level the High Lane of High Lane lies within National Character Area (NCA) 54 – Manchester Pennine Fringe. National Character Areas are areas with similar landscape characteristics which don't necessarily follow administrative boundaries. The character areas are determined by aspects such as geology, landform, soils, vegetation and land use. The assessment is intended to be used as a basis for planning and the creation of future landscape strategies as well as raising public awareness of landscape character and creating a sense of place.

The Manchester Pennine Fringe NCA occupies the transitional zone between the upland moors of the Dark Peak/Southern Pennines and the populated conurbations of Manchester. The character area arcs around the north and east of the city of Manchester running from Bolton in the north-west curving east and southwards towards Hazel Grove.

Local Landscape Character Areas

More locally Greater Manchester Combined Authorities have produced a Landscape Strategy which incorporates 10 Landscape Character Types (LCTs). Different aspects such as geology, landform, soils, vegetation and land use have been used to identify recognisable patterns that have categorised into different LCTs. This Landscape Strategy is intended to be used as a basis for planning and the creation of future landscape strategies as well as raising public awareness of landscape character and creating a sense of place.

Map 1: Landscape Character Typology



The Landscape Character Assessment for Greater Manchester (Map 1) identifies two recognisable landscape character areas within the High Lane Neighbourhood planning area, namely:

Urban Fringe Farmland
Incised Urban Fringe Valleys

Each LCT is subdivided into smaller Landscape Character Areas (LCAs); details of the relevant LCTs and LCAs are given below:

Urban Fringe Farmland LCT

General Description

This character area type is typified by undulating hills and valleys and is present within all the Greater Manchester Authorities apart from the Manchester District. With elevated farmland to the north and east, close to the Pennine and Dark Peak foothills and a more gently rolling landscape where it falls towards the floodplains of the rivers Mersey and Bollin.

The landform is dissected by narrow, often steep sided wooded cloughs, and drained by a network of streams and ponds throughout. Glacial till and fluvial deposits overlay the bedrock, creating the rolling landform.

Land use and field patterns

Land use is varied, with the more elevated land in the north and east typified by lower grade agricultural land used for dairy farming, horse grazing and sheep rearing. Field sizes tend to be smaller and pockets of dry heath, acid grassland and moorland fringe are also present.

Flatter, more fertile floodplain areas give rise to a mix of pasture and arable cultivation. Fields tend to be larger with subtle boundary features, with occasional small pasture fields to the east of Altrincham.

Field boundaries often comprise gappy, species-poor hedgerows with occasional clumps of hedgerow trees. Post and wire fencing replaces hedges in many locations, whilst occasional stone walls provide definition at higher elevations, but many are in a degraded condition.

Sports fields and lush manicured green golf courses are located close to the urban fringe. The open farmland contrasts strongly with adjoining recreational, residential and industrial urban areas, often forming a rural buffer to the Pennine and Dark Peak foothills.

Semi-natural habitats and woodland cover

The landscape is open with only sparse woodland cover, generally limited to isolated plantation woodland, hedgerows and the steep cloughs that bisect the rolling farmland. A small number of Ancient Woodlands provide important habitats and wildlife corridors. Other SBI-designated habitats include areas of dry heath, acid and of species rich grassland. Flashes also form locally important wetland habitats of industrial origin.

Established clumps of hawthorn and dog rose line some of the field boundaries and highways, with some incorporating mature broadleaved trees.

LCA 38: Offerton to High Lane

A landscape sensitivity study for each character area scores this character area having medium levels of sensitivity to residential developments and medium-high levels of sensitivity to commercial/industrial development.

Guidance and opportunities to consider within this Landscape Character Type, stated within the Greater Manchester Landscape Character and Sensitivity Assessment Report (2018) that are relevant to protecting and enhancing High Lane's Natural Environment include:

- Protect and where possible enhance semi-natural habitats and networks, including pockets of ancient and riparian woodland (e.g. Hopwood Woodlands LNR), patches of dry heath and acid grassland, remnant semi-natural grasslands, ponds and flashes.
- Strengthen and restore the dry stone wall and hedgerow network in association with any new development, reflecting local characteristics (choice of stone and building style; hedgerow species and management regimes). Encourage the restoration of traditional boundaries where fencing is present.
- Ensure any new development does not dilute the strong field patterns associated with the landscape.
- Design-in the introduction of SuDS to any new development, addressing any changes in hydrology (and subsequent knock-on effects such as increased diffuse pollution from agricultural run-off). This landscape is part of the wider catchment of a number of Greater Manchester's main river valleys.
- Encourage woodland creation schemes on areas of low grade agricultural land, including through the Northern Forest initiative. Woodland planting along motorways and staggered blocks of planting should be used to help screen views of traffic and reduce noise.

Incised Urban River Valleys

General Description

This character type typically comprises narrow, incised valleys cutting through rolling hills which include the Pennine and Dark Peak foothills. Upstream the rivers and tributaries are typically narrow and fast flowing, forming steep sided V-shape valleys and gorges. Further downstream the rivers widen and meander across flatter valley bottoms. Small tributary cloughs have formed by seasonal flows down the valley sides and are characterised by fast-moving streams, pools and falls.

Land use and field patterns

The steep valleys support lower quality, and in places poorly draining farmland with small to medium pastoral fields and horse paddocks on the valley sides and areas of wet grassland and scrub along the valley floor. Some arable fields are found on the drier, flatter ground on the valley floors.

Semi-regular fields are bound by (often gappy) hedgerows and post-and-wire fencing, whilst dry stone walls (some in a state of disrepair) delineate pastures on higher slopes. There are rare examples of medieval strip fields around settlements. A significant amount of the land with the valleys is used for recreation with amenity grassland associated with golf courses, frequent playing

fields and Country Parks. Other land uses include utility infrastructure with numerous reservoirs and water treatment works, flood alleviation schemes, industrial development, and large electricity substations.

Semi-natural habitats and woodland cover

Valleys are typically traced by riparian woodland with banks of dense broadleaved woodland (some ancient), distinctive moss-covered trees and a wildflower-rich understorey. Woodland and areas of parkland create important wildlife corridors between densely populated urban areas, with significant areas designated as Sites of Biological Importance (SBIs) and managed as Local Nature Reserves (LNRs).

SSSI-designated habitats found at Nob End and Ashclough in the Irwell Valley; the Lowside Brickworks and Hollinwood Branch Canal in the Medlock Valley; Ladcastle & Den Quarries and Huddersfield Narrow Canal within the Tame Valley.

Post-industrial and reclaimed land at various stages of regeneration, with locally valued mosaics of scrub, herbaceous vegetation and reedbeds. These include LNRs at Moses Gate Country Park, Clifton Country Park, Glodwick Lows¹ and Reddish Vale Country Park.

LCA 39: Ladybrook

A landscape sensitivity study for each character area scores this character area having medium-high levels of sensitivity to residential developments and high levels of sensitivity to commercial/industrial development.

Guidance and opportunities to consider within this Landscape Character Type, stated within the Greater Manchester Landscape Character and Sensitivity Assessment Report (2018) that are relevant to protecting and enhancing High Lane's Natural Environment include:

- Protect and where possible enhance semi-natural habitats and networks including riparian, broadleaved and ancient woodland, wet grasslands, meadows and regenerating habitats on former industrial land.
- Avoid siting development in locations that would lead to the loss or fragmentation of any locally or nationally designated wildlife site.
- Hedgerows should be preserved and enhanced where applicable the fill in gaps. New hedgerow planting should be encouraged where it has been removed and replaced by post and wire fencing.
- Avoid the felling of any significant areas of woodland to maintain the contained and secluded character of the valleys and to retain the existing screening of the urban edge.
- Explore opportunities to further develop post-industrial and reclaimed sites (such as at Lily Hill north of Whitefield) for habitat creation with possible links with The Northern Forest initiative.
- Design-in the introduction of SuDS to any new development, addressing any changes in hydrology (and subsequent knock-on effects such as increased diffuse pollution from agricultural run-off). This is of particular importance as the LCT covers many of Greater Manchester's main river valleys.
- Encourage woodland creation schemes on areas of low grade agricultural land, including through the Northern Forest initiative.

- Protect the pockets of seclusion and tranquillity associated with the tightly enclosed valleys and their woodlands, along with their strong sense of time depth and traditional rural qualities in an urban context.

Natural Area

Natural Areas as defined by English Nature (now Natural England) in 1996 are a series of biogeographical units reflecting ecological integrity land form, land-use and cultural influences. Their boundaries usually correspond to those of the Landscape Character Areas although they normally encompass multiple LCAs as they are generally larger.

High Lane, along with the vast majority of Merseyside and Greater Manchester and parts of Lancashire, lie within the Urban Mersey Basin. The Urban Mersey Basin is one of the most densely populated parts of the country. Central to this area are the Rivers Mersey and Irwell with an associated network of canals, rivers and valleys, around which the major cities and industries have developed. This Natural Area supports a varied assemblage of habitats and species, though many of the habitats have been modified and created by human activity and these include ponds, canals and subsidence 'flashes'. Dunham Park is the finest example in the North West region of ancient wood pasture, being especially important for deadwood beetles. The most distinctive ancient woodlands of the Urban Mersey Basin are those associated with narrow valleys - the 'cloughs'. Significant areas of lowland heathland remain on the Wirral. Of particular significance are the populations of great crested newts which occur in large numbers, reflecting the widespread network of ponds.

Habitat Network Mapping Project

Natural England has developed a Nature Networks Handbook which is an Integrated Framework for creating Ecological Networks for Wildlife & People. It aims to provide practical recommendations that support the delivery of Biodiversity 2020 Strategy, the Natural England Conservation Strategy (C21) & the Government 25 year environment plan. The National Habitat Network Mapping Project is a spatial tool developed as part of the Handbook. It provides a national overview of the distribution of habitat networks for 19 separate priority habitats (listed below):

- | | |
|---------------------------------------|---------------------------------|
| • Upland calcareous grassland | • Lowland fens |
| • Lowland calcareous grassland | • Lowland raised bog |
| • Reed-beds | • Blanket bog |
| • Lowland meadows | • Limestone pavements |
| • Upland hay meadows | • Coastal sand-dunes |
| • Purple moor-grass and rush pastures | • Coastal shingle |
| • Lowland dry acid grassland | • Maritime cliff & slope |
| • Lowland heathland | • Saltmarsh |
| • Upland heathland | • Semi-natural Ancient Woodland |
| • Upland flushes fens & swamps | |

The Key components of the National Habitat Network map are:-

Primary Habitat - existing patches of priority habitat for each habitat network e.g. lowland Heathland;

Associated Habitats – other habitat types that form a mosaic or an ecologically coherent grouping;

Habitat Created-Restored -habitat where restoration or creation of new habitat is underway

Restorable Habitat – habitats that are currently degraded but have the potential to be restored;

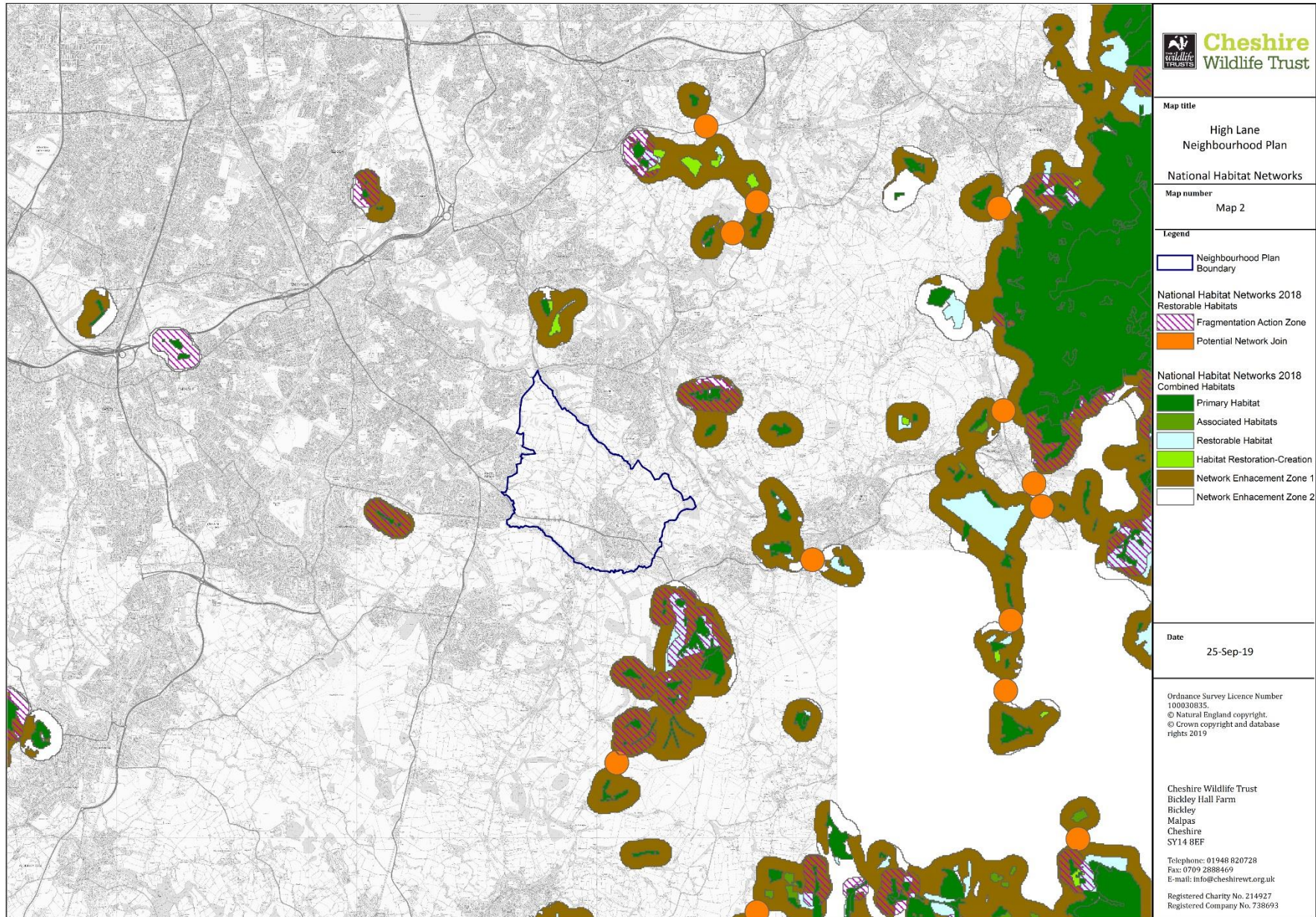
Network Enhancement Zones – These are areas that should be prioritised for actions to buffer priority habitat/habitat networks;

Fragmentation Action Zone - smaller fragmented areas of habitat that have the potential to be enlarged or joined with other habitat patches;

Potential Network Joins - potential locations for action to create network links

The maps are intended for use at both a national level and to feed into the development of ecological networks at a local level. They should be used in conjunction with other data sets and local knowledge to help improve the ecological resilience of habitats and habitat networks.

Map 2: National Habitat Network Combined Habitat Mapping (excludes woodland habitats) – Natural England 2018



National Habitat Network Mapping has highlighted a number of areas of Primary and Restorable Habitats to the north, east and south of High Lane's High Lane boundary. Lowland Fen, Blanket Bog and Grassland Moorland Primary Habitats and restorable Upland flushes, fens and swamp habitat within Lyme Park Local Wildlife Site to the south of High Lane. A potential join between Lyme Park and Primary Lowland heathland habitat on Bakestonedale Moor to the south is also mapped.

Primary Lowland meadow and restorable good quality semi-improved grassland to the east of High Lane (within Upper Waterside Farm LWS and immediately west of Knatholes Wood LWS) have also been identified. A potential join between these habitats and restorable habitat east of Knatholes wood has also been mapped.

Linnet Clough and Mellor Moor Meadows Sites of Biological Importance (SBIs), to the north east of High Lane, have been mapped as Primary Lowland fen and Lowland meadow habitats. Reddish Wood SBI has also been mapped as Priority Lowland fen habitat.

The Primary and Restorable habitats described above are buffered by Network Enhancement Zones, and Fragmentation Action Zones, where opportunities to enhance the habitat network should be prioritised. This could be through restoring degraded habitat or through expanding existing habitat.

Ecological Network for Stockport and Greater Manchester

The Local Authorities of Greater Manchester are working together to produce a joint plan to manage the supply of land for jobs and new homes across Greater Manchester. As part of the Greater Manchester Spatial Framework, a map of the GMSF Priority Green Infrastructure and Ecological Networks (May 2018) has been created.

The GMSF Priority Green Infrastructure and Ecological Networks identify broad habitat networks for the whole of the Greater Manchester,

The following broad habitats were identified as being the most important in a Greater Manchester context.

- Uplands
- Lowland Wetlands
- River Valleys and Canals
- Woodlands and Trees
- Major Parks and Greenspace

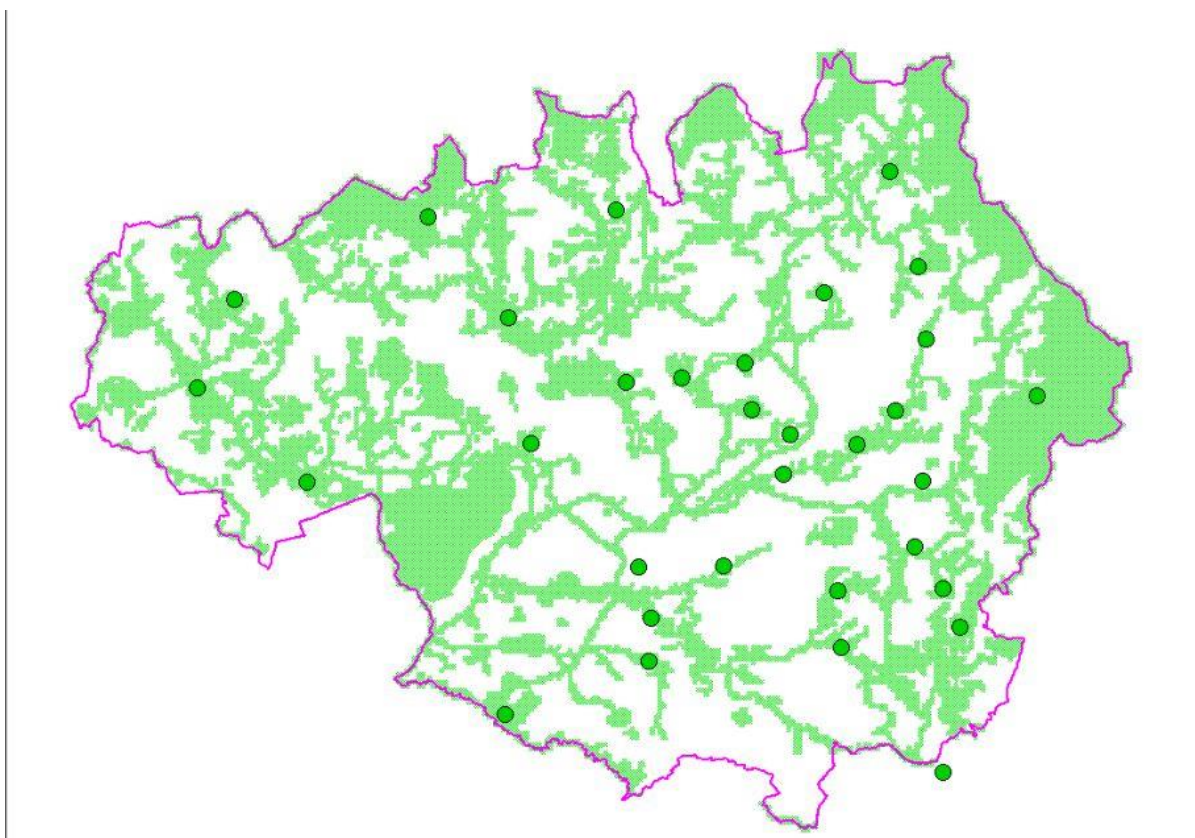


Figure 2. Draft Priority Green Infrastructure and Ecological Network Map for Greater Manchester Spatial Framework 2018

The wildlife corridors identified in this report (see Map 9) are more specific to ecological networks that are important for conserving and enhancing biodiversity at a local scale.

Methodology

Creating a habitat distinctiveness map

In line with current Defra methodologies to determine 'net gain' in biodiversity, habitat data from the sources listed below was attributed to one of three categories listed in the table:

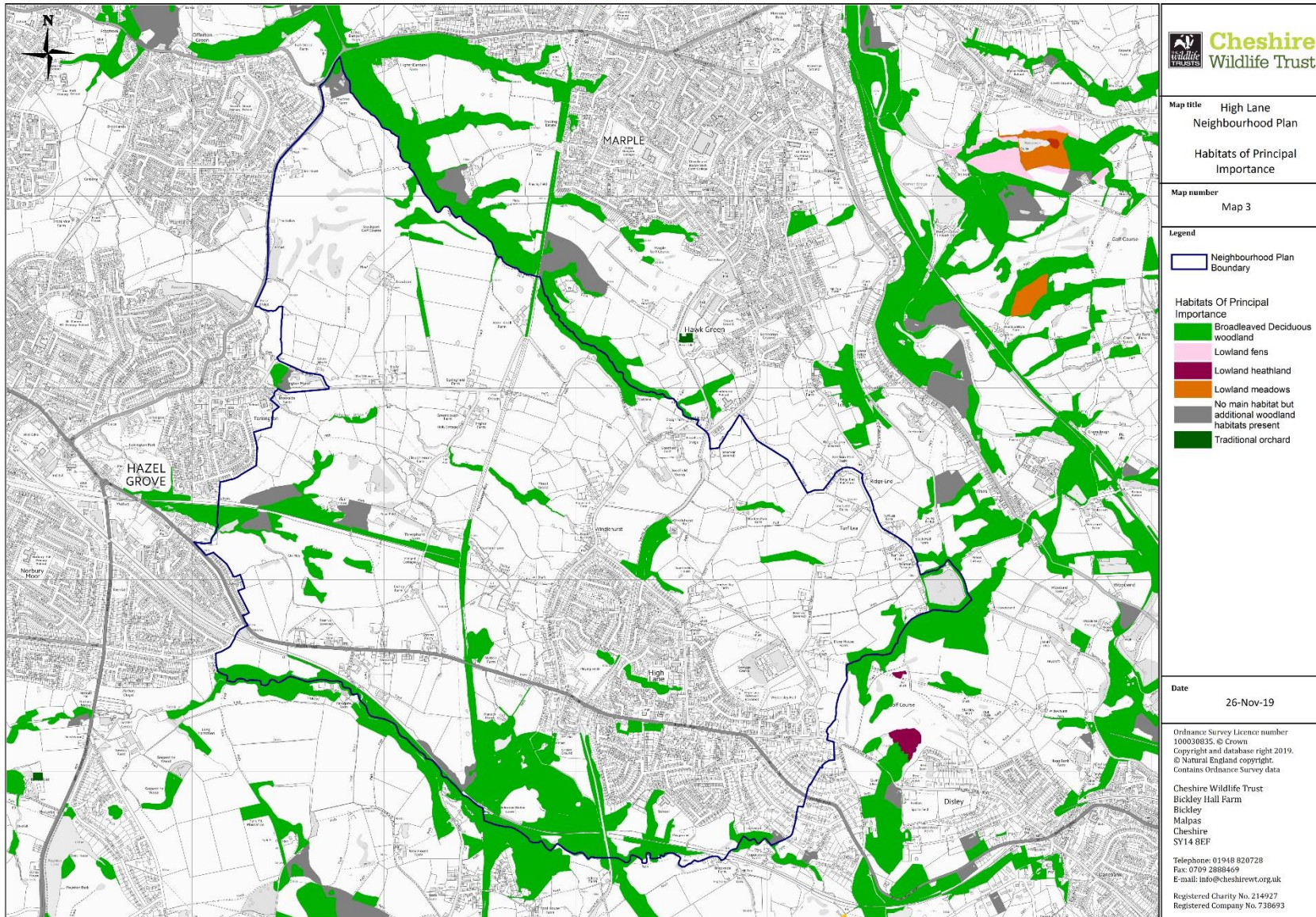
Habitat type band	Distinctiveness	Broad habitat type covered	Colour on map
High ecological value	High	Priority habitat as defined in section 41 of the NERC Act, Designated nature conservation sites (statutory and non-statutory)	Red
Medium ecological value	Medium	Semi-natural habitats and habitats with potential to be restored to Priority quality. Includes field ponds.	Orange
Low ecological value	Low	E.g. Intensive agricultural but may still form an important part of the ecological network in an area.	n/a

Habitat type bands (Defra March 2012)

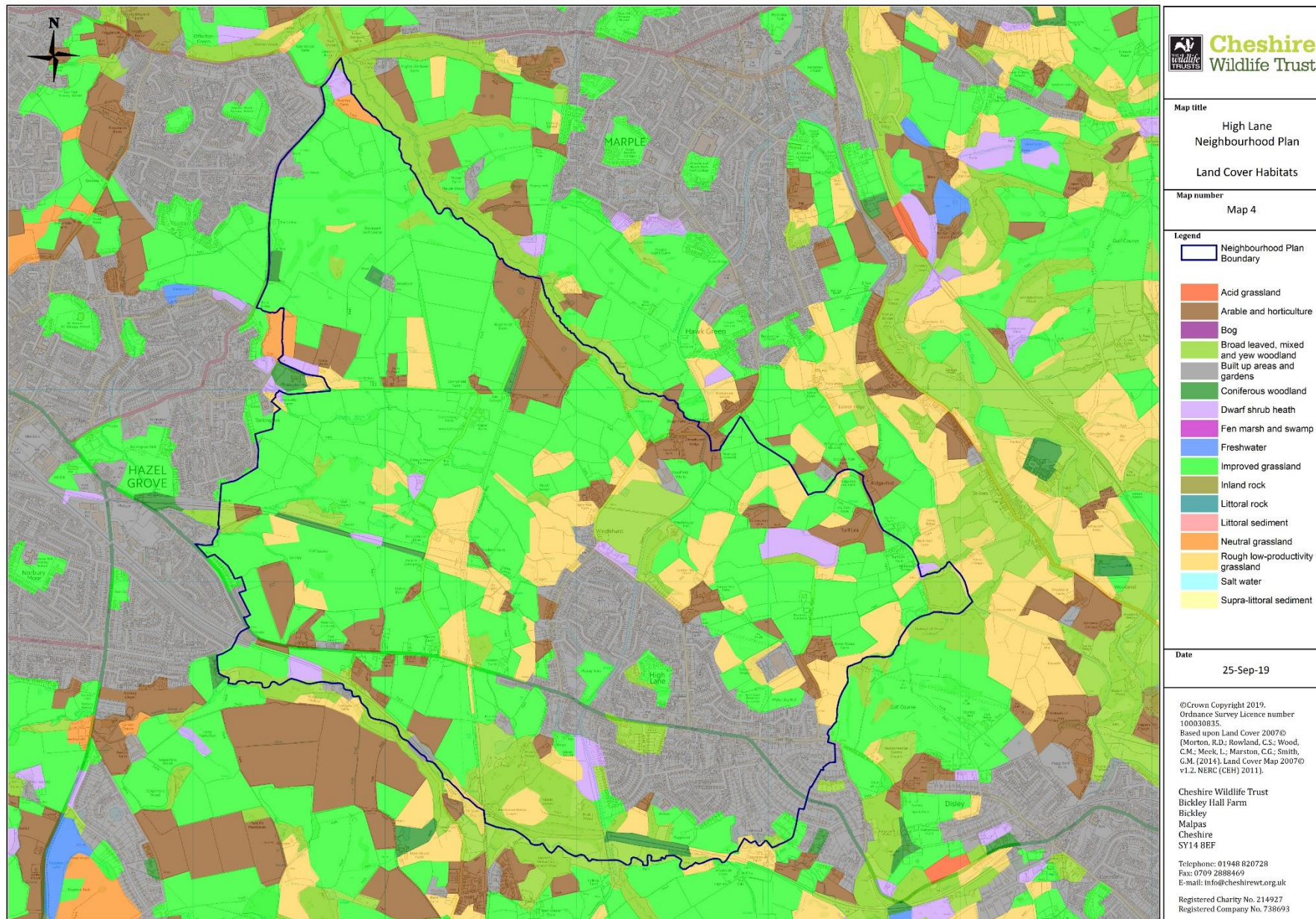
1. Several published data sets were used to produce the habitat distinctiveness maps:
 - Priority habitat Natural England 2016 – High/medium confidence coded as high distinctiveness, and low confidence coded as medium distinctiveness unless other data is available.
 - Landcover data, Centre for Ecology and Hydrology 2007. Priority habitats (principal importance) and semi-natural habitats coded as medium distinctiveness (data in Appendix 1)
 - Agricultural land classification, Natural England - grade 4 medium distinctiveness, grade 5 high distinctiveness (adjusted where other data is available).
 - Protected sites (International Sites, European Sites, Sites of Special Scientific Interest, Local Wildlife Sites/Sites of Biological Importance and Local Nature Reserves), Natural England, CWT/CE Local Authority, GMEU/Stockport Local Authority, – coded as high distinctiveness.
 - Ancient woodlands – Natural England 2015 – coded as high distinctiveness.
 - Meres and Mosses and other peat soils, Meres and Mosses Landscape Partnership scheme, 2016. Functional Ecological Units, river valley peat and destroyed (historical) peat coded as medium distinctiveness. (Supporting information in Appendix 2.)
2. Aerial photography (Microsoft Bing TM Imagery, Google Earth) was used to validate the results by eye.
3. The High Lane Neighbourhood Plan Area Land Character Assessment and Natural England's National Habitat Network categories were mapped and the results were used to inform the conclusions.
4. Information from recent planning applications in High Lane High Lane were researched and species records have been incorporated where appropriate. Ecological records were also obtained (where available) from, the NBN (National Biodiversity Network) Atlas and the Woodland Trust's Ancient Tree Hunt website.

Mapping

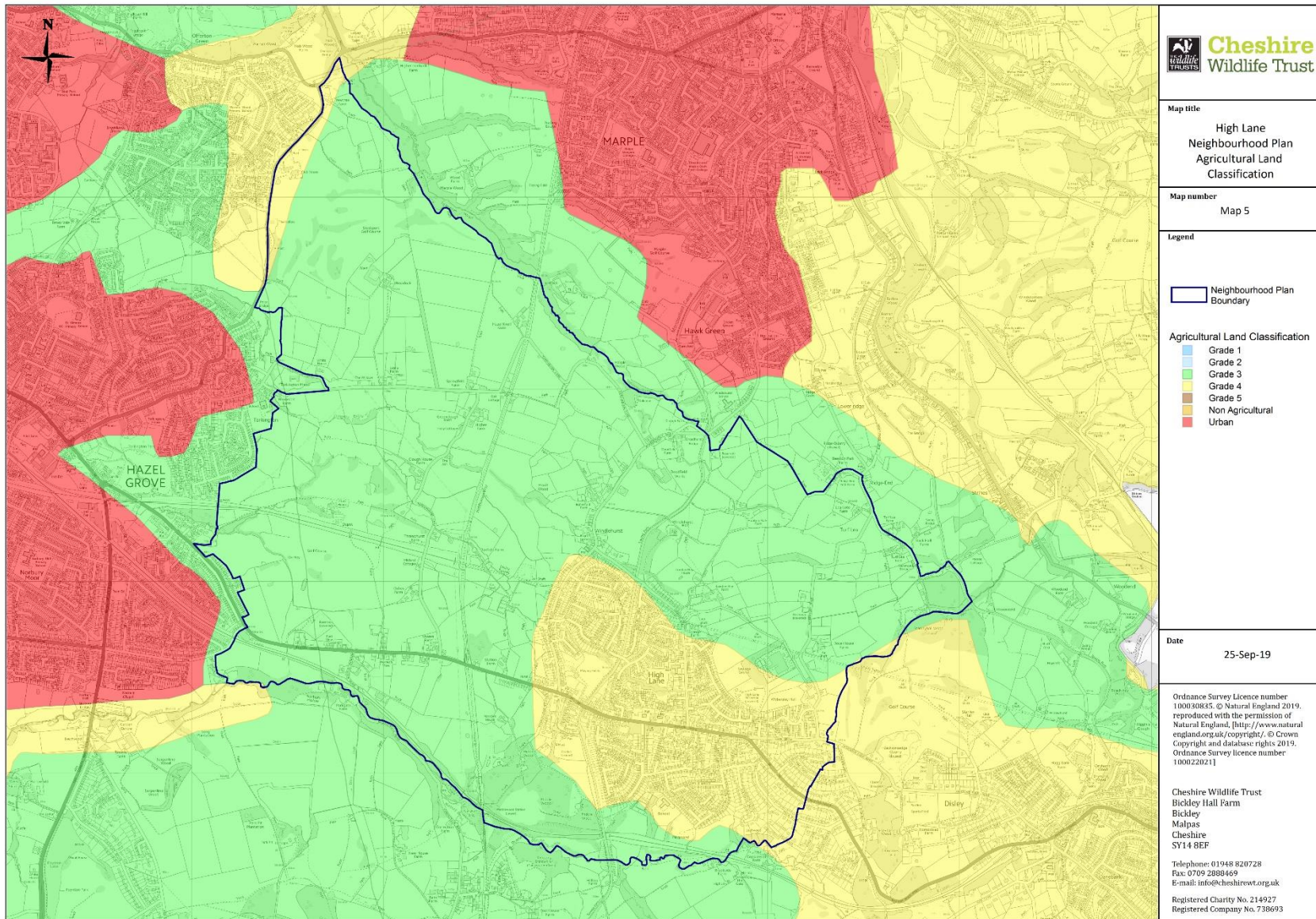
Map 3: Terrestrial habitats of Principal Importance – Natural England 2016



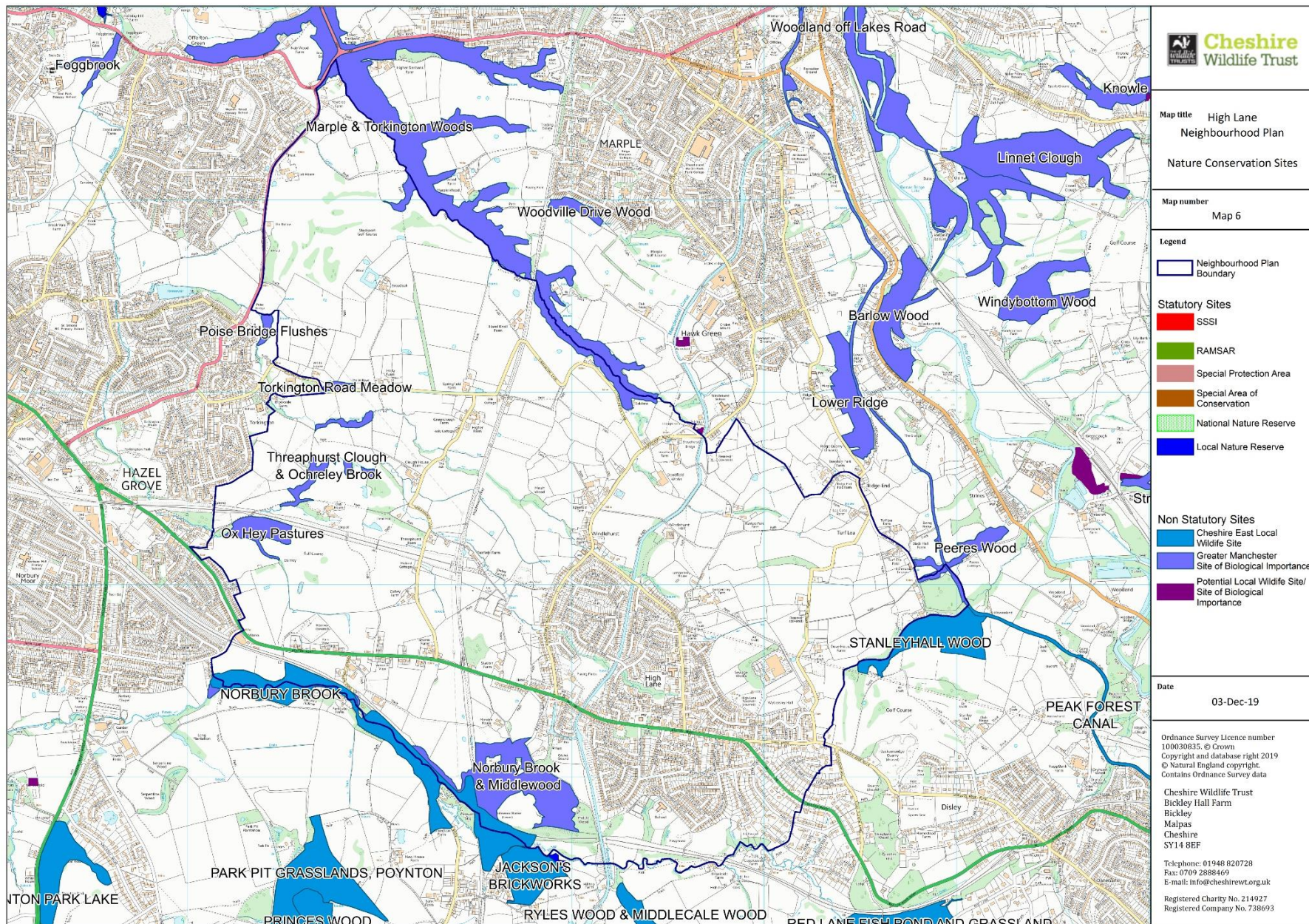
Map 4: Land Cover Map 2007 (LCM2007) parcel-based classification of satellite image data showing land cover for the entire United Kingdom derived from a computer classification of satellite scenes obtained mainly from the Landsat sensor



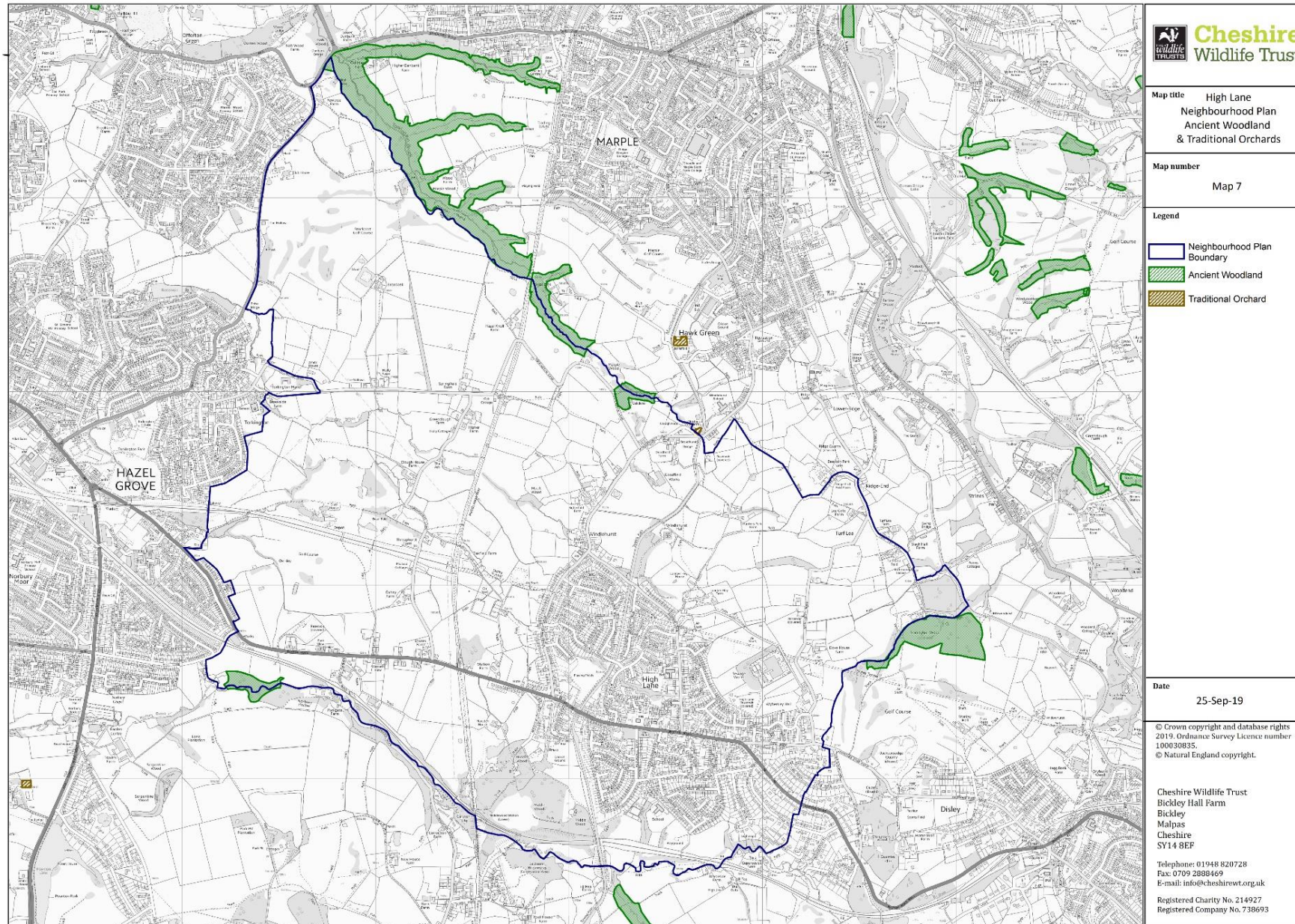
Map 5: Agricultural Land Grading – Natural England 2013



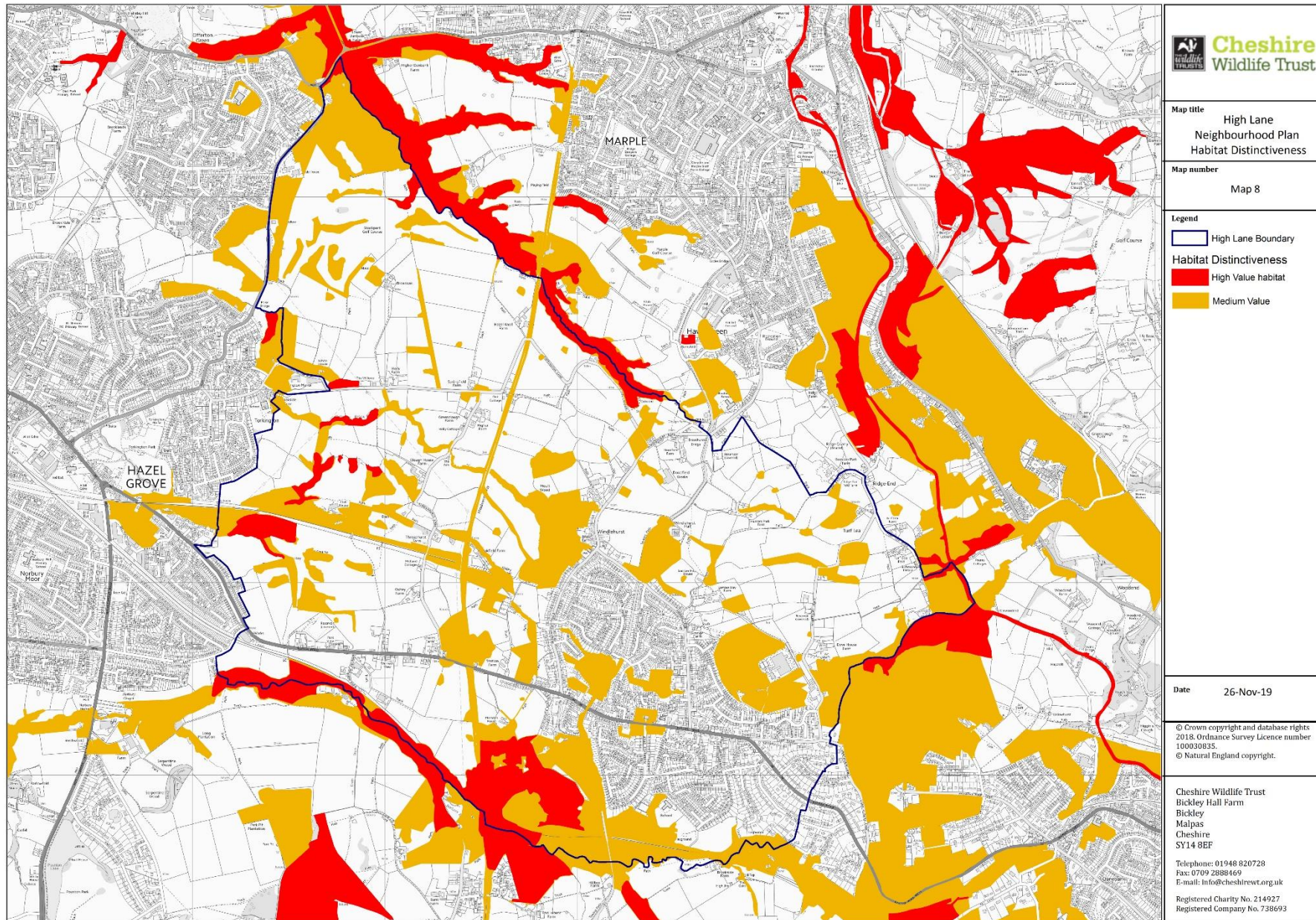
Map 6: Nature Conservation Sites, including designated Sites of Special Scientific Interest, Local Nature Reserves, European designated sites (SAC, SPA), Ramsar sites, Sites of Biological Importance/Local Wildlife Sites and non-designated Potential Local Wildlife Sites/Potential Sites of Biological Importance



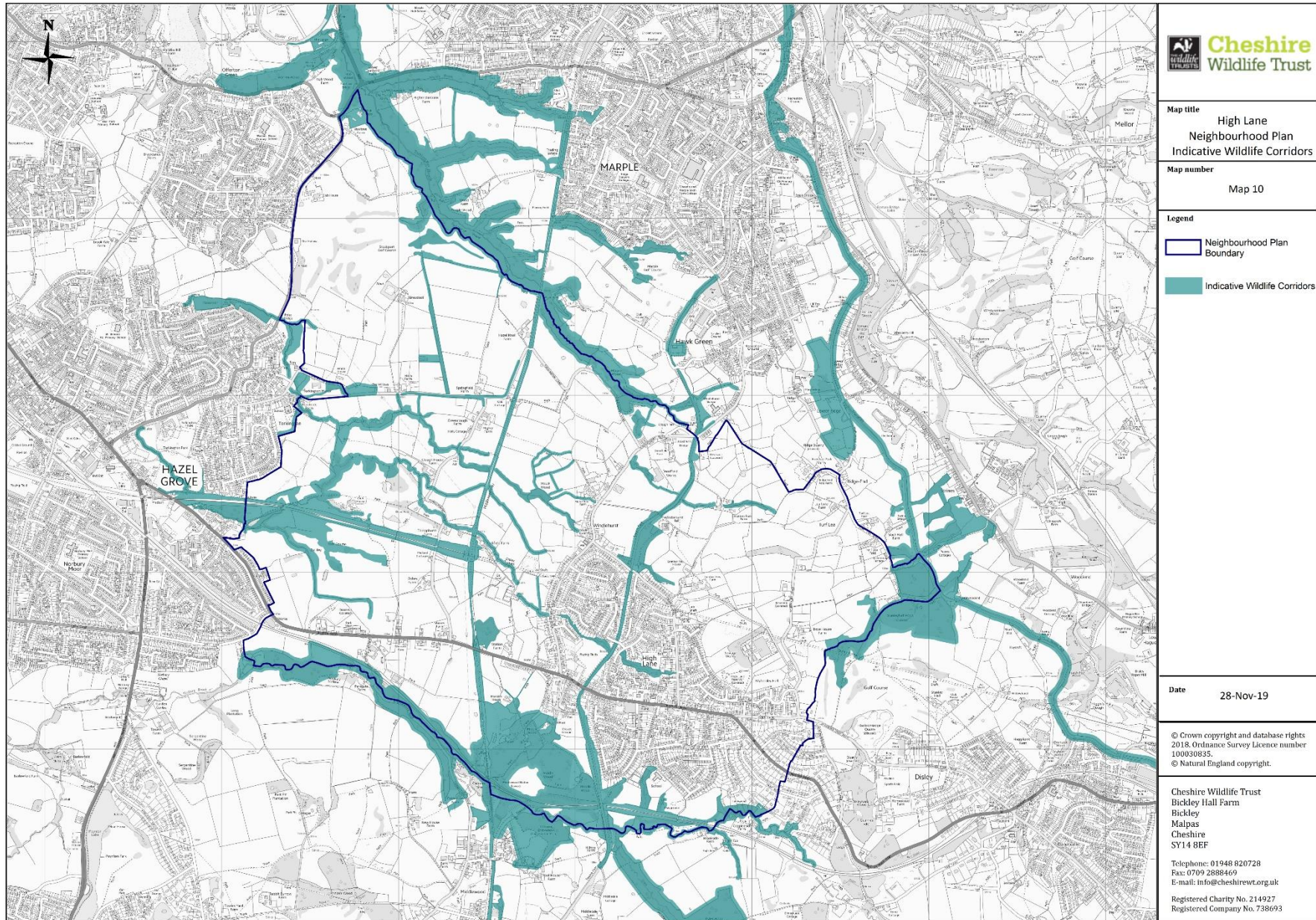
Map 7: Ancient woodland and traditional orchards – Natural England 2018



Map 8: Habitat Distinctiveness



Map 8: Indicative Wildlife Corridors for Biodiversity & Nature Conservation



Results and discussion

High distinctiveness habitat

1. Woodland

Many woodlands in the Greater Manchester and Cheshire area are fragmented and impoverished, however, in Stockport, the riparian woodlands along the River Goyt are an exception. Typically, these riparian woodlands support oak, sycamore, ash and birch, with alder and willows in the wetter areas.

In the High Lane area, part of these extensive woodlands stretch along the Torkington Brook, between Offerton Green and Windlehurst. Designated as Marple and Torkington Site of Biological Importance (SBI), these woods are a particularly important feature for biodiversity in this region. As well as being an SBI these woods are ancient (i.e. thought to be at least 400 years old) and are listed on the ancient woodland inventory (Map 7 Natural England 2018). Ancient woodlands are considered irreplaceable habitats due to time taken for them to acquire their diverse flora and fauna. There are several records for Bluebell throughout and several records within Marple and Torkington woodlands. Marple and Torkington Woods are also particularly notable for their lichens and bryophytes with numerous species recently recorded. Marple and Torkington woods are also likely to support a diverse ground flora despite a lack of records.

There are also two other woodlands that are ancient in origin and are included on the ancient woodland inventory. The first is Carr Wood which forms part of Norbury Brook Local Wildlife Site (LWS) and lies along the brook just south of the railway and the covered reservoir. The second is Stanleyhall Wood LWS, which lies between the eastern boundary of High Lane and the Macclesfield Canal near the Disley tunnel.

A third area of ancient woodland, known as Ryles and Middlecale Woods is located just outside the southern boundary of High Lane, along a drain that feeds into the Macclesfield canal.

There are also three woodland sites of regional importance; Threaphurst Clough and Ochreley Brook SBI, Norbury Brook and Middlewood SBI and Norbury Brook LWS. Although not ancient in origin, these secondary woodlands are still important wildlife habitats.

The presence of high quality woodland in High Lane means that this area is likely to be important for red listed¹ woodland birds including song thrush, mistle thrush and amber listed² birds such as the tawny owl, which have all been recorded in the area in recent years. Song thrush are also UK species of Principal Importance (S41 species)². The woodlands are also highly likely to support roosts of bat species which will forage for insect prey along the woodland edges, hedgerows and watercourses.

Damp riparian woodlands along watercourses provide perfect conditions for the spread of the invasive non-native Himalayan balsam (*Impatiens glandulifera*). This species is probably currently the

¹ Birds of Conservation Concern 2015

² Listed on section 41 of the NERC Act 2006 or UK Biodiversity Action Plan species

biggest threat to the integrity of these woodlands as its vigorous growth will outcompete native flora. This can have a devastating impact on the native flora and a knock on effect on groups of species such as birds, invertebrates and mammals. Himalayan balsam is an annual plant that dies back in the winter leaving bare soil which can then wash away in heavy rain causing soil erosion.

There are recent biological records for Himalayan Balsam along within Norbury Brook LWS. There are also records for Himalayan Balsam just outside the High Lane boundary, along Poise brook where it flows through Torkington Park and records from 2007 within Poise Bridge Flushes LWS.

2. Grasslands

The High Lane area supports only a few pockets of species-rich grassland, the fastest disappearing habitat in the UK. These are designated as SBIs, and include Ox Hey Pastures, Torkington Road Meadow and just outside the area boundary, Poise Bridge Flushes.

Areas of species-rich grassland will support populations of declining pollinators including moths, specialist grassland butterflies such as small skipper or common blue and solitary bees and hoverflies. Where species-rich grasslands are located close to waterbodies, dragonflies and damselflies are likely to be present as these feed on other invertebrates but require waterbodies to breed.

Medium distinctiveness habitat

Areas of medium distinctiveness habitat are shown on Map 8 (displayed as orange) and provide important wildlife habitats in their own right as well as acting as ecological stepping stones and corridors. Because the methodologies used to produce the maps are desk based rather than field survey based, there is a possibility that some of the medium distinctiveness areas have been undervalued and an ecological survey may indicate they should be mapped as 'high distinctiveness' Priority habitat (which would be displayed as red in Map 8). Conversely there may be areas which have been overvalued, particularly if recent management has led to the deterioration of the habitat; in which case these areas should be removed from the habitat distinctiveness map.

1. Woodlands

As well as the ancient woodlands discussed above, a relatively high proportion of well-connected woodlands are present within the High Lane area. These are located along the Middlewood and Disley Railway lines, the numerous brooks and streams and well as the Macclesfield Canal and the Middlewood Way. Deciduous woodlands considered likely to be habitats of principal importance by Natural England are marked on map 3.

The newly established areas, although not ancient in origin woodlands, are still likely to provide a valuable habitat for wildlife, particularly invertebrates and birds and given their connectivity provide important corridors through the landscape.

Bluebells are recorded within Middle Wood and the woodlands west of Ox Hey Pastures. Eight species of bat, Brandt's, Brown Long Eared, Daubenton's Natterer's, Noctule, Whiskered, Common Pipistrelle

and Soprano Pipistrelle have been recorded in 2010-15 foraging to the south of the town along the Macclesfield Canal and the adjacent grasslands and woodlands between the canal and the railway line. There are also older records of Leisler's bats from 2005 in this area. All bats are European Protected Species (EPS) and many are also UK species of Principal Importance (S41 species).

Consulting Cheshire's Tythe maps, the woodland along Ochreley Brook appears in 1840. A continuous corridor of woodland flanks the brook between moult wood and Threaphurst Lane. Two further blocks of woodland appear along Ochreley Brook between Threaphurst Lane and Torkington Hall. This suggests that these woodlands are potentially in origin and are not included on the ancient woodland inventory (map 7), due to their small size or a lack of survey information. Therefore, these areas of woodland have been mapped as having medium distinctiveness value.

2. *Grasslands*

The majority of the land within Map 4 is mapped as improved grassland interspersed with some arable and horticulture fields. A few scattered patches of low productivity rough grassland are mapped on less productive fields. These are mainly located around the urban fringe of High Lane and along the edge of Disley Golf course and along the margins of watercourses including the canals.

Semi-natural grasslands are invaluable for wildlife as they can support large populations of invertebrates and a variety of mammals, including brown hare which has been frequently recorded to the south of High Lane Cricket Club and in the south western extent of the neighbourhood planning area.

The red listed/S41 linnet, which has been recorded in the High Lane area, will feed on seeds present in weedy patches of semi-natural grassland. Over wintering birds such as the red listed fieldfare and redwing, (both recorded locally) will forage on areas of semi-natural grassland in the colder months.

Rough grasslands, can provide valuable terrestrial habitat for newts, including the nationally protected species great crested newt, provided they are in the vicinity of (up to 1km from) a breeding site and there are no intervening barriers (such as main roads or rivers).

3. *Field ponds*

Fields ponds contribute to the permeability of the landscape for wildlife and provide important habitats for aquatic invertebrates as well as breeding habitat for amphibians. Larger waterbodies are likely to be valuable for both breeding and overwintering birds as well as foraging bats. Where ponds are stocked with high numbers of fish the wildlife value is decreased. This is because introduced fish (such as bottom feeding non-native carp) can deplete the pond of invertebrate larvae and amphibian eggs/larvae as well as water plants. Despite this, even low value ponds can help increase landscape permeability for species such as birds and terrestrial invertebrates. Any ponds have been highlighted as habitat of medium distinctiveness in Map 8 and should always be retained where possible when land is developed.

Biological records identify numerous records for great crested newt within Hazel Grove Golf Course and there are also records within the grasslands south of High Lane Cricket Ground. Historical records

for common frog are present within Stockport Golf Course. The mosaic of ponds, rough grassland, clumps of trees and blocks of woodland provide within Golf courses offer ideal habitat for amphibians and will also support a good diversity of birds and insects.

4. *Scattered trees and Hedgerows*

Hedgerows have not been included within the habitat distinctiveness mapping as it is difficult to gauge the wildlife value of a hedge from aerial mapping. However, the smaller field parcels are bounded by a good network of hedgerows and there are also a number of field drainage ditches. Many of the hedgerows within the High Lane area also include trees (standards) which have been allowed to grow out of the hedgerows, creating a more varied habitat.

Scattered farmland trees together with the hedgerow network are fundamental to landscape permeability, particularly those with adjacent wide field margins or lying adjacent to semi-natural grassland. Hedgerows provide important corridors for foraging bats, small mammal populations and amphibians as well as many invertebrate species. They offer valuable nesting habitat for birds, including many declining birds like the red listed house sparrow, which is recorded throughout the High Lane area.

There are numerous recent records for Hedgehogs, on the NBN Atlas, that are located within High Lane Town, and in the fields on the urban fringe of Torkington and Hazel Grove. These mammals, a species of principal importance, make use of hedgerows, woodlands, meadows and suburban gardens.

5. *Dwarf shrub heath*

There are a few remnant pockets of dwarf shrub heath identified on Map 4 that are mapped as 'medium distinctiveness' habitat on Map 8. Lowland heath is recognised as an internationally important habitat because it is rapidly disappearing across much of Europe. It is now one of the rarest inland broad habitat types in Cheshire and is likely to be even less common in the Greater Manchester area. They have been mapped as medium distinctiveness due to lack of survey information or because they are likely to be remnants of former heathland that has now degraded.

Wildlife corridor network

Wildlife corridors are a key component of wider ecological networks as they provide connectivity between core areas of high wildlife value/distinctiveness enabling species to move between them to feed, disperse, migrate or reproduce. In conjunction with the results of the National Habitat Network Mapping (2018), and the Greater Manchester Spatial Framework (under development) this study has identified a number of wildlife corridors (shown in Map 9) with ecological connectivity within and beyond the Neighbourhood Planning area. The National Habitat Network map and Greater Manchester Spatial Framework provide a broad map of the networks across England and Greater Manchester respectively, the wildlife corridors identified in Map 9 are more specific to ecological networks that are important for conserving and enhancing biodiversity at a local scale. The GMSF network mapping and the wildlife corridors maps in Map 9 both identify "primary habitat" or "core areas" for biodiversity within the High Lane area along the Torkington Brook and Norbury Brook Corridors, and along the Macclesfield Canal.

Although the identified segments of corridor do not all join together, they do link areas of valuable habitat including woodlands, grasslands and freshwaters. The corridors that have been identified follow watercourses, (including canals), railway lines and hedgerows within the High Lane area. Connectivity is good through the areas identified as corridors. The corridors do however cross over roads where connectivity will not be maintained, but even here the maximum gap is less than 30 metres enabling some more mobile species to cross. Some of the hedgerows within the identified corridors may not be species rich or may run through intensively farmed land, which means there are likely to be high inputs of agrochemicals. Increasing hedgerow diversity and changing management, as well as creating a buffer strip of rough grassland along its edge would help bolster ecological connectivity in this area. Similarly, there are parts of the corridors that run along watercourses with intensively farmed agricultural land adjacent where buffers would be beneficial.

Protection of the wildlife corridor and other high and medium distinctiveness habitat

Map 9 incorporates an indicative boundary for the wildlife corridor network; however, this is likely to require refinement following detailed survey work. The corridor should be wide enough to protect the valuable habitats identified in Map 8 and for this reason we have incorporated a 15 metre buffer zone around any high distinctiveness habitat. The buffer is necessary to help protect vulnerable habitat from factors such as light pollution, ground water pollution, predation by domestic pets and invasive garden species if adjacent land is developed.

Any potential development proposals adjacent to a high distinctiveness habitat or a wildlife corridor should incorporate substantial mitigation and avoidance measures to lessen impacts on wildlife. For example, low spillage (bat sensitive) lighting should be used on the outside of buildings or in car-parks and along pathways and watercourses. Developers should be asked to install hedgehog-friendly fencing, purposely designed to allow the passage of hedgehogs from one area to another. Other measures could include the creation of south facing butterfly banks or bunds for other invertebrates and the incorporation of bee bricks and bat/bird boxes into the design of buildings, ideally made of highly durable material such as woodcrete. Surface drainage water from developed areas should always be directed away from sensitive areas due to the risk of pollution unless the source of the water is clean, such as rainwater collected from roofs. Sustainable Drainage Schemes (SuDS) are useful in providing additional wildlife habitat and preventing flooding, but they may still hold polluted water so should not drain directly into existing wildlife habitat unless the filtration system is extensive.

Not all sections of the wildlife corridor provide high quality habitat and measures to improve its ability to support the movement of species is desirable³. Enhancement of the corridor may be facilitated by opportunities arising through the planning process (e.g. Section 106 agreements, biodiversity offsetting/compensation) or through the aspirations of the local community or local landowners.

There are also opportunities through the Northern Forest Plan through planting of new woodland on former agricultural land to create links between sections highlighted as wildlife corridors. Planting trees on existing habitats of wildlife value should be avoided unless specialist ecological advice is sought first.

³ Refer to Recommendations section

In addition to the 'wildlife corridor network' this study has identified further areas of high or medium 'habitat distinctiveness' (Map 8) which, although outside the wildlife corridor network, may nevertheless provide important wildlife habitats acting as ecological stepping stones. These areas comprise semi-natural grassland, ponds and semi-natural woodlands.

The network of field boundary hedgerows and farm drainage ditches within the High Lane area provides habitat connectivity between high distinctiveness areas, which would otherwise be separated by extensive areas of land predominantly of low habitat distinctiveness with restricted potential for wildlife to disperse. Not all the hedgerows are identified as key components of the High Lane's ecological network, however collectively these hedgerows provide linear connectivity through the neighbourhood and beyond. In addition to their intrinsic ecological value a good hedgerow network also adds to the landscape character value.

Old meadows supporting species-rich neutral or semi-natural grassland are the fastest disappearing habitats in the UK. These grasslands are particularly important for pollinating insects and insectivorous birds and mammals. It is extremely important that the highlighted 'medium distinctiveness' areas should be thoroughly evaluated in the development control process. If they are found to support species-rich grassland they should be re-classified as 'high distinctiveness' (Priority/principal importance) habitat and there is a presumption that they should not be built on (as stipulated in the Local Plan and the NPPF). In order to achieve 'net gain' in biodiversity, compensation may be required should these areas be lost to development when avoidance and mitigation strategies have been applied in line with the guidance set out in the National Planning Policy Framework.

Conclusion

This study has highlighted that the important wildlife habitat is mainly associated with the high value woodlands along the Torkington Brook; the grassland and woodland SBIs in the west of the High Lane area and also the woodland corridor and associated LWSs and SBIs along the Norbury Brook. The Middlewood Way, tree lined railway lines and canals also provide an important network for wildlife through, with a particularly wildlife rich, with numerous biological records for birds, bats and mammals, south of Buxton Road between the Middlewood Way and the Macclesfield Canal. There appear to be few semi-natural grasslands, making the ones that are present even more important. By attributing habitat distinctiveness values to all land parcels in the Neighbourhood Plan area the study has provided important evidence that should be taken into consideration when planning decisions are made. However, we strongly recommend that further (phase 1) habitat survey work is undertaken at the appropriate time of year, in particular to verify that 'medium value' habitats have not been over or under-valued.

Most notably the study has highlighted a 'wildlife corridor network' which provides ecological connectivity between woodland, grassland and riparian habitats within and beyond the Neighbourhood Planning area. The wildlife corridor network is likely to support a wide range of species including numerous birds, mammals (including priority bat species), plants and invertebrates that are in decline both locally and nationally. These species depend on the semi-natural habitats highlighted in the report.

We recommend that the corridor network shown in Map 9 is identified in the Neighbourhood Plan and protected from development so that the guidance relating to ecological networks set out in the NPPF (paragraphs 170d, 171, 174a, 174b, and footnote 57) may be implemented at a local level. The wildlife corridor network includes a buffer zone of up to 15 metres in places to protect the notable habitats shown in Map 8. If new areas of high distinctiveness habitat are subsequently identified these should also be protected by a 15 metre non-developable buffer zone.

Any future development of sites which lie adjacent to high distinctiveness habitat or a wildlife corridor should be able to demonstrate substantial mitigation and avoidance measures to lessen any potential impacts on wildlife. This should include measures such as installing bat/otter sensitive lighting schemes, installing durable bat/bird boxes and hedgehog-friendly fencing and ensuring surface water is directed away from sensitive areas and into SUDS schemes.

To summarise, future development of High Lane should respect the natural environment. The most intact landscapes, in terms of biodiversity, landform and historical/cultural associations should be valued highly when planning decisions are made. Protection and enhancement of High Lane's natural assets is of crucial importance for nature conservation and ecosystem services but it is also important for the enjoyment of future generations.

Recommendations for improving and protecting habitat in order to create a coherent ecological network

Following adoption of the neighbourhood plan, CWT advises that the following recommendations should be actioned:

1. Create links between existing 'wildlife corridor network'

There is currently good connectivity between the high value woodland along the Torkington Brook and the high value woodland in the north of the High Lane. However, there is no connection between the two wildlife corridors in the south of the High Lane. It is recommended that the wildlife value of the hedgerows between the two corridors is enhanced to extend the corridors and join them together. To achieve this, hedgerows could be cut less frequently, perhaps on rotation, additional trees planted to increase diversity and some of the hedgerow trees not flailed and allowed to grow up as standards.

2. Improve the quality of the 'wildlife corridor network' and assess against Local Wildlife Site selection/Site of Biological Importance criteria

The areas highlighted as 'wildlife corridor network' in Map 9 incorporates all of the designated Sites of Biological Importance for Stockport and Local Wildlife Sites for Cheshire East, however it is highly likely that other land would meet also the criteria for Sites of Biological Importance and Local Wildlife Site selection. These areas (which may be identified as potential Local Wildlife Sites in map 6) should

be designated if the selection criteria⁴⁵ are met, as LWS/SBI designation is likely to provide a greater level of protection within the planning system.

The wildlife corridor network should be in 'favourable condition'⁶ to provide breeding, foraging and commuting habitat for the native species that live there and native species, which may subsequently colonise. Ideally these areas should be surveyed by a qualified ecologist to identify management priorities.

Management priorities:

- Field ponds which have become overgrown and choked with vegetation should be cleared out to allow light to penetrate, to provide areas of open water and allow a more diverse marginal flora to develop (tree/scrub cover should ideally be 10 - 15%). These measures will also benefit amphibians and invertebrates. Ideally no more than one third of the pond should be dredged in a single year so that existing biodiversity is retained and enhanced. Waste vegetation should be left at the side of the ditch for 24 hours before removal to allow any fauna to return to the water. Prior to any works ponds professional advice should be sought and ponds should be assessed to ensure existing wildlife is not impacted, such as great crested newts which use ponds for breeding and roosting bats which may use crevices in trees surrounding the ponds
- Watercourses in intensively farmed land should be buffered by semi-natural areas to provide riparian habitat and help prevent pollution runoff (1 metre from the top of the bank of a watercourse is the minimum requirement under cross compliance regulations, however 4-6 metres is recommended). This will help any otter populations as well as provide breeding and foraging areas for other species. It will also improve water quality.
- Hedgerows that are not already in good condition (particularly those that form part of the wildlife corridor) should be restored or re-instated using locally native species such as hawthorn, blackthorn, hazel and holly (plant 60-90cm high 'whips' which have a good rate of survival and use tree guards to protect from rabbits and stock fence where necessary). New sections of hedgerow should ideally incorporate a tree every 30m (on average) which are demarked so as not to be inadvertently flailed.
- Hedgerows in intensively farmed land should be buffered by semi-natural areas to provide wildlife habitat (2 metres from the centre of the hedge is the minimum requirement under cross compliance regulations, however 4-6 m is recommended).
- Cutting or grazing of all semi-natural grassland should be carried out to retain the wildlife value. This will prevent more competitive species from taking hold and the grasslands from eventually scrubbing over. Where cutting is used as a method of management it should be carried out after flowering plants have set seed. Where farmland birds such as skylark are

⁴ Greater Manchester Sites of Biological Importance Selection Guidelines 2016
https://www.gmwildlife.org.uk/resources/downloads/sbi_selection_guidelines.pdf

⁵ Local Wildlife Site criteria for the Cheshire region 2012
<https://www.cheshirewildlifetrust.org.uk/sites/default/files/files/Cheshire%20LWS%20criteria%20V40.pdf>

⁶ The definition of 'favourable condition' for various habitats is provided in the Farm Environment Plan (FEP) Manual (Natural England 2010). The definition of 'positive management' for Local Wildlife Sites is provided in Appendix 3

breeding cutting outside of the bird breeding season (March to November inclusive) will avoid destruction of nests. Under the Wildlife and Countryside Act 1981 it is an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Conversion of semi-natural grassland to arable land should be avoided.

- Schedule 9 invasive species should be prevented from colonising High Lane's natural habitats. Under the Wildlife and Countryside Act 1981 it is an offence to plant or otherwise cause these species to grow in the wild. Areas of Himalayan balsam is present within the High Lane should be managed to control its spread. This species colonises rapidly and will outcompete native woodland, grassland and wetland flora.
- It is likely that other Schedule 9 species such as variegated yellow archangel, montbretia and Spanish hybrid bluebells are present within the area, as they easily spread from domestic gardens. If present they should be eradicated. Of particular concern are non-native bluebells, which may spread into High Lane's bluebell woodlands after being planted as a garden ornamental. Householders should be made aware of the problems and steer clear of planting any Schedule 9 invasive species within their gardens especially where they adjoin open areas.

3. Protect, enhance and connect areas of high/medium value which lie outside the wildlife corridor

Opportunities should be explored to restore or create more wildlife friendly habitat especially where connectivity with other areas of valuable habitat can be achieved or where valuable sites can be buffered. Larger areas of better connected habitat support larger and healthier species populations and help prevent local extinctions.

Ways to enhance connections or to buffer sites could include the restoration of hedgerows, creation of low maintenance field margins and sowing locally sourced (local genetic stock) wildflower meadows⁷.

Woodland expansion is desirable to buffer High Lane's existing woodlands, where there are opportunities through the Northern Forest Initiative. New plantations that are isolated from existing woodland are of limited value due to slow colonisation by woodland species. It is vitally important that tree planting should only occur on species-poor, semi-natural habitats and ideally proximal to existing woodland. A full botanical survey should be carried out prior to any planting. Trees should be planted away from the edges of watercourses including ditches and ponds. Professional advice should always be sought when creating new habitat particularly when designing the layout, position and composition of new woodland and how to use local woodlands as a 'reference'. Well-designed new woodlands contain up to 40% open space (glades and rides) and up to 25% shrub species. For maximum benefit biodiversity rides should be east-west oriented (so that sunlight is maximised) and at least 30 metres wide to avoid over-shading when the canopy closes. It is recommended that trees and shrubs should be sourced from the Forestry Commission seed zone, from seed collected from local stands or from the local seed zone (collections should be made under the Voluntary Scheme for Certification of Native Trees and Shrubs, endorsed by the Forestry Commission).

⁷ Cheshire Wildlife Trust can provide advice and seeds for locally sourced wildflower meadow creation.

4. Protect existing hedgerow network

Hedgerows that meet certain criteria are protected by *The Hedgerow Regulations*, 1997. Under the regulations it is against the law to remove or destroy 'Important' hedgerows without permission from the Local Planning Authority. Removal of a hedgerow in contravention of *The Hedgerow Regulations* is a criminal offence. The criteria used to assess hedgerows relate to its value from an archaeological, historical, landscape or wildlife perspective. The regulations exclude hedgerows that have been in existence for less than 30 years, garden hedges and some hedgerows which are less than 20 metres in length. The aim of the regulations is to protect 'Important' hedgerows in the countryside by controlling their removal through a system of notification.

Any proposals that involve the removal of hedgerows or sections of hedgerows or their associated features (e.g. ditches, banks, standard trees) should be supported by an assessment to ascertain their status in relation to *The Hedgerow Regulations*. Should the Local Planning Authority grant permission for removal, compensatory hedgerows should be provided; however, it is good practice to compensate for the loss of all hedgerows whether the hedgerow regulations apply or not. Like-for-like replacement is considered the minimum level of compensation, but it is likely that good condition high value hedges will require a 3:1 replacement ratio.

Any new sections of hedgerow should be created following the guidance provided above (point 1). Filling of gappy hedgerows will ensure that hedgerows have greater connectivity, which will be of particular advantage to bats. Ideally hedgerows should be cut on rotation (outside the bird breeding season) every three years towards the end of winter. This leads to greater flowering and allows plants to fruit and/or set seed, providing a greater food resource for invertebrates, mammals and birds. Some butterfly and moth species overwinter as eggs on shoots and twigs and are therefore severely impacted by annual flailing.

5. Measures to protect species

Hedgehogs travel an average of 1 mile every night, but their movement through suburban landscapes is often impeded by impenetrable garden fences. Encouraging householders, particularly in High Lane where there are hedgehog records in the vicinity, to make holes in the bottom of their fences will increase permeability of the landscape and the amount of land available to this species of principal importance. This should be complemented by use of no or non-toxic slug pellets.

6. Ensure net gain policies are embedded in Neighbourhood Planning policies

Providing 'net gain' for biodiversity is embedded in the guidance in the NPPF (paragraphs 118a, 170d, 174b, 175d). In order to protect local natural assets, it is recommended that net gain policies form part of the Neighbourhood Plan.

7. Phase 1 habitat mapping

It is strongly recommended that High Lane's Neighbourhood Planning area is phase 1 habitat mapped. This will provide a high level of habitat detail and could be used to verify the results of the habitat distinctiveness mapping (Map 8). Phase 1 mapping may identify further areas of medium or high distinctiveness (Priority) habitat not identified by this assessment. Areas identified as having medium value habitat in this report should be targeted for survey as a priority. Phase 1 mapping should also be used to determine the exact position of the wildlife corridor network.

Appendices

Appendix 1

Habitats, LCM2007 classes⁸ and Broad Habitat subclasses for LCM2007 CEH

LCM2007 class	LCM2007 class number	Broad Habitat sub-class	Broad habitat sub-class code	Habitat Score
Broadleaved woodland	1	Deciduous	D	Medium
		Recent (<10yrs)	Dn	Medium
		Mixed	M	Medium
		Scrub	Sc	Medium
‘Coniferous Woodland’	2	Conifer	C	Low
		Larch	Cl	Low
		Recent (<10yrs)	Cn	Low
		Evergreen	E	Low/Medium
		Felled	Fd	Medium
‘Arable and Horticulture’	3	Arable bare	Aba	Low
		Arable Unknown	Aun	Low
		Unknown non-cereal	Aun	Low
		Orchard	O	Medium

⁸ No habitat scores higher than ‘medium distinctiveness’ due to the reliability of the data

		Arable barley	Aba	Low
		Arable wheat	Aw	Low
		Arable stubble	Ast	Low
Improved Grassland'	4	Improved grassland	Gi	Low
		Ley	Gl	Low
		Hay	Gh	Low
Rough Grassland	5	Rough / unmanaged grassland	Gr	Medium
'Neutral Grassland'	6	Neutral	Gn	Medium
'Calcareous Grassland'	7	Calcareous	Gc	Medium
Acid Grassland	8	Acid	Ga	Medium
		Bracken	Br	Medium
'Fen, Marsh and Swamp'	9	Fen / swamp	F	Medium
Heather	10	Heather & dwarf shrub	H	Medium
		Burnt heather	Hb	Medium
		Gorse	Hg	Medium
		Dry heath	Hd	Medium
Heather grassland	11	Heather grass	Hga	Medium

‘Bog’	12	Bog	Bo	Medium
		Blanket bog	Bb	Medium
		Bog (Grass dom.)	Bg	Medium
		Bog (Heather dom.)	Bh	Medium
‘Montane Habitats’	13	Montane habitats	Z	Medium
Inland Rock’	14	Inland rock	lb	Medium
		Despoiled land	Ud	Medium
Salt water	15	Water sea	Ws	Medium
		Water estuary	We	Medium
Freshwater	16	Water flooded	Wf	Medium
		Water lake	Wl	Medium
		Water River	Wr	Medium
‘Supra-littoral Rock’	17	Supra littoral rocks	Sr	Medium?
‘Supra-littoral Sediment’	18	Sand dune	Sd	Medium
		Sand dune with shrubs	Sds	Medium
		Shingle	Sh	Medium?
		Shingle vegetated	Shv	Medium
‘Littoral Rock’	19	Littoral rock	Lr	Medium

		Littoral rock / algae	Lra	Medium
Littoral sediment	20	Littoral mud	Lm	Medium
		Littoral mud / algae	Lma	Medium
		Littoral sand	Ls	Medium
Saltmarsh	21	Saltmarsh	Sm	Medium
		Saltmarsh grazing	Smg	Medium
Urban	22	Bare	Ba	Low
		Urban	U	Low
		Urban industrial	Ui	Low
Suburban	23	Urban suburban	Us	Low

Appendix 2

Meres & Mosses LPS / NIA: Methodology for Mapping Extant Meres & Mosses

The mapping of 'Functional Ecological Units' is primarily based on topography, with use being made of lidar data. Lidar is a remote sensing technique whereby an airborne survey using lasers generates detailed topographic data (known as a Digital Terrain Model (DTM)). With approximately 70% coverage of the Meres & Mosses landscape.

Mapping of the Functional Ecological Units (FEUs) started with the identification of extant sites: -

- 1) All designated sites, SSSIs and County (Local) Wildlife Sites, that are either a mere or a moss were included.
- 2) Beyond the designated sites, use was made of a detailed peat soils map for the area. From this dataset a distinction was made between likely moss peats and extensive areas of likely fen peat associated with some of the river valleys. The moss peat sites were then reviewed using aerial photography and divided into two categories: destroyed and de-graded. The former are sites under arable, intensive grassland or other land use, where any relict habitat, and potentially even the peat itself, have been lost – these were excluded. The de-graded sites are those supporting some form of relict habitat (e.g. extensive grassland, rush pasture or woodland) offering potential for restoration – these were taken forward as FEUs.
- 3) Finally, the 1: 10,000 scale OS base map was scanned for names alluding to meres and mosses. All waterbodies specifically called "Mere" were included in the mapping, but sites with names suggestive of meres (e.g. Black Lake) were ignored. A few sites were identified called "Moss" – however, because these were not shown on the peat soils map, these were excluded.

For each potential FEU the lidar data was manipulated to show land within a nominal 3 metres elevation of the lowest point on the site. The FEU was then defined as the obvious basin around the lowest point – i.e. the land where it should be possible to restore hydrological function and therefore a wetland habitat mosaic (generally a nominal 1.0 - 1.5 metres above the lowest point on the site). Where no lidar data was available, the likely boundary of the FEU was estimated from the peat soils data and aerial photography.

Appendix 3

In order for a Local Wildlife Site to be recorded as in positive management all four of the following should be met:

- The conservation features for which the site has been selected are clearly documented.
- There is documented evidence of a management plan/management scheme/advisory document which is sufficiently targeted to maintain or enhance the above features.
- The management requirements set out in the document are being met sufficiently in order to maintain the above features. This should be assessed at 5 year intervals (minimum) and recorded 'not known' if the interval is greater than 5 years.
- The Local Sites Partnership has verified the above evidence.