Protecting and Enhancing Ollerton with Marthall's Natural Environment

Cheshire Wildlife Trust

March 2019

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, 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, policy SE3 Biodiversity and Geodiversity of the Cheshire East Local Plan stipulates that 'Development should not result in any net loss of natural assets, and should seek to provide net gains'. Cheshire East are also a signatory to the Cheshire Region Local Nature Partnership (CrLNP) **'Net Gains for Nature'** policy (January 2016) which sets out the guidance and principles of biodiversity accounting and compensation.

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 Ollerton with Marthall Neighbourhood Planning Area, as well as sites deemed to be of medium ecological value. High value sites are recommended for protection through the neighbourhood planning process and 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 Ollerton & Marthall 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 that deliver multiple benefits, for example, achieving profitable and productive farming while also adopting practices which enhance carbon storage, improve floodwater 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 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 habitats (which will ultimately become 'core areas') so that ecological functions and species populations can be restored. They are often situated to complement, connect or enhance existing core areas.

- *Buffer zones*

Bufferzones 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.

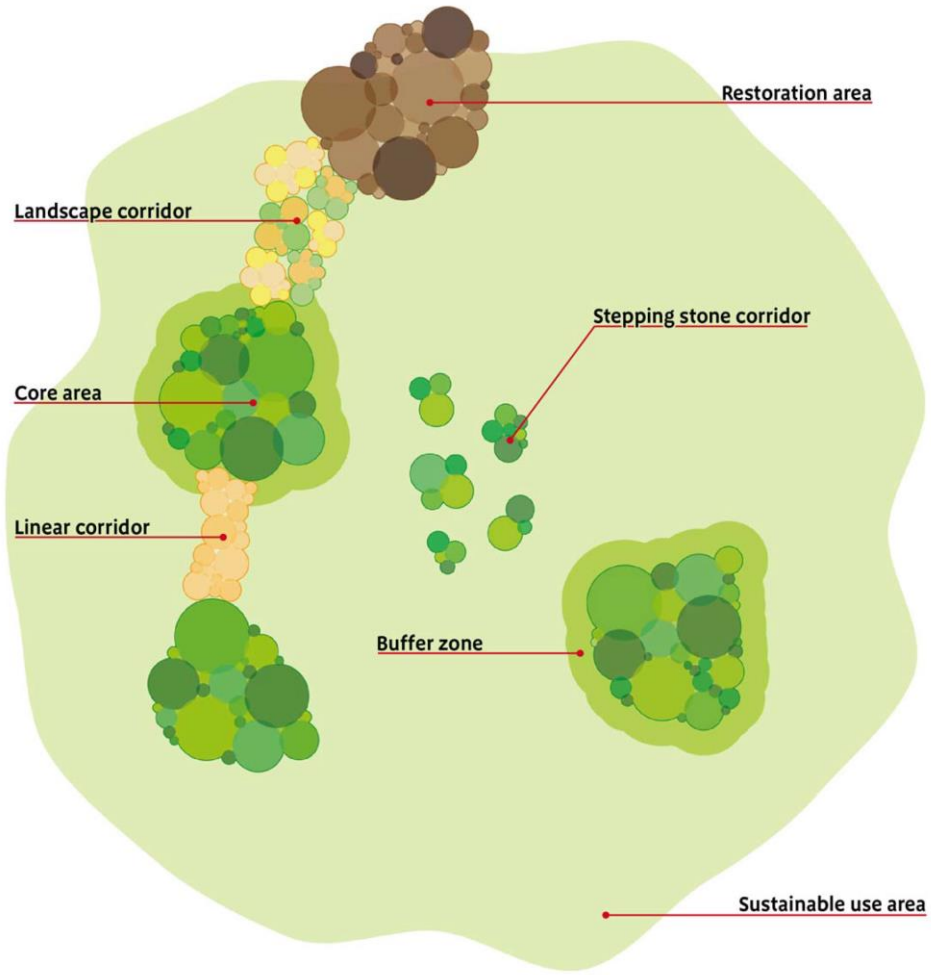


Figure 1. The components of ecological networks (Making Space for Nature report)

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 which was updated in 2018 and revised again in February 2019 also includes the establishment and conservation of a coherent ecological network as a core principle including:

- Identifying, mapping and safeguarding 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;
- Promoting 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.

Natural Area

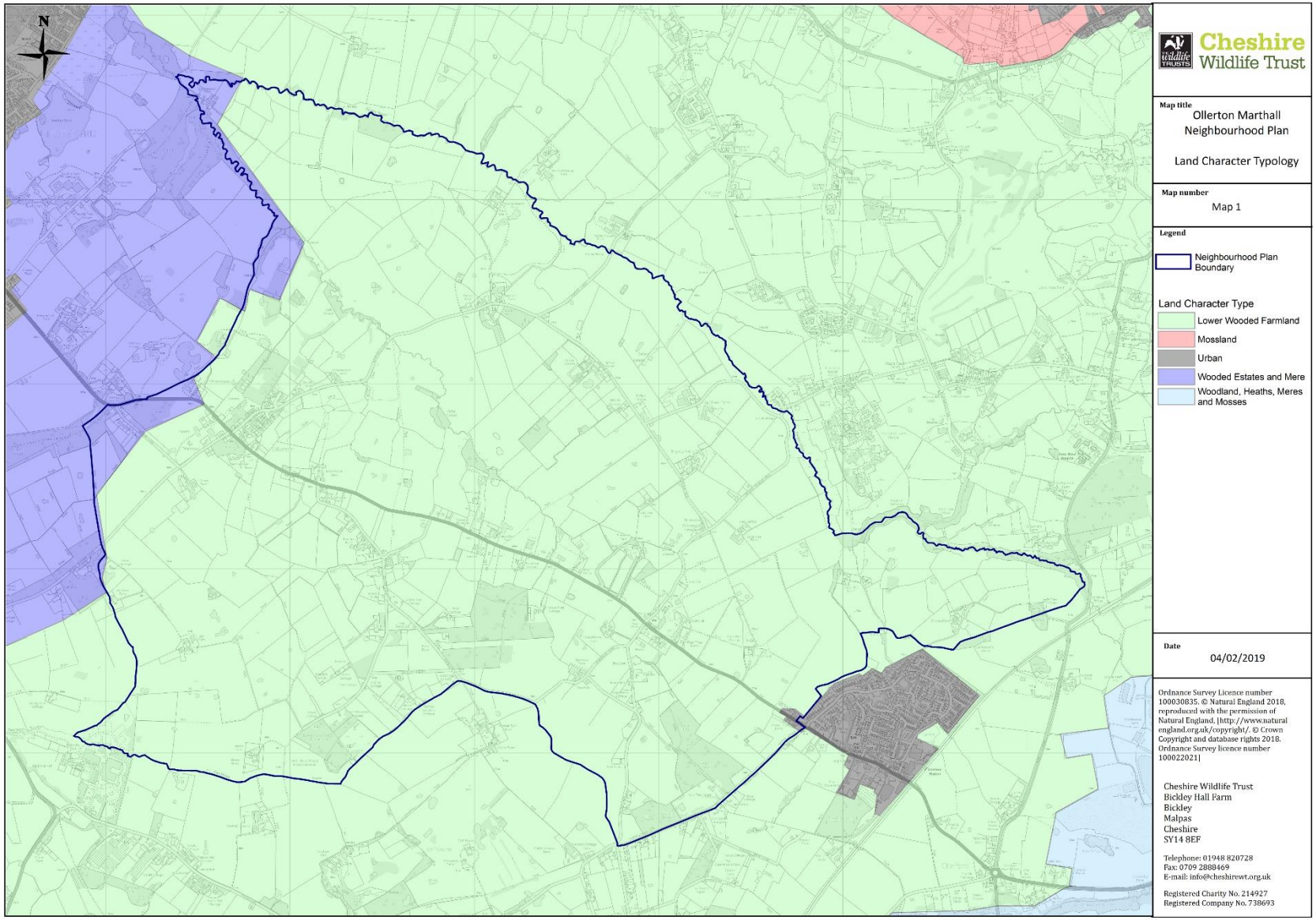
Natural Areas as defined by English Nature (now Natural England) in 1996 are a series of biogeographical units reflecting ecological integrity land form, land-use and cultural influences. Their boundaries usually correspond to those of the Landscape Character Areas although they normally encompass multiple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

Most of Cheshire, the northern half of Shropshire and part of northwest Staffordshire sit within the *Meres and Mosses Natural Area*. This is an expansive area of gently rolling agricultural plain, which at the end of the last ice age was largely underwater. Although the vast area of water eventually drained away, it left behind a wetland landscape of meres, mosses, meandering rivers and ponds. This landscape is recognised as being of international importance for its wetland wildlife.

Landscape Character Assessment for the Cheshire region

On a national level Ollerton & Marthall lies within National Character Area 61 – Shropshire, Cheshire and Staffordshire Plain; a largely pastoral area of rolling plain which is important for food production. Especially important is dairy farming, which is well suited to the damp lush pastures that are found on the glacial till clay soils. More locally, the Cheshire Landscape Character Assessment of 2008 identifies recognisable patterns in the landscape and classifies the Cheshire Landscape into 20 broad Landscape Character Types (LCTs). Different aspects such as geology, landform, soils, vegetation and land use have been used to identify character areas. 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.

Map 1: Landscape Character Typology (Cheshire East Local Authority 2018)



Aside from urban areas, the Landscape Character Assessment (Map 1) has identified two recognisable landscape character types (LCTs) within the Ollerton with Marthall Neighbourhood planning area, namely: Lower Wooded Farmland as well as Wooded Estates and Meres. Each LCT is subdivided into smaller Landscape Character Areas (LCAs); details of the relevant LCTs and LCAs are given below:

LCT 7 – Lower Wooded Farmland

Covering a large area of Cheshire East, this character type is divided into seven character areas extending from High Leigh and Arley in the north, east to Poynton and Congleton and as far south as Audlem. This very gently rolling landscape type has many similarities with the Cheshire East Plain, but it has a greater concentration of woodland and a slightly higher settlement density with more nucleated hamlets and villages. Land use is a mix of arable and pasture, while settlement largely retains its dispersed pattern. Intensive reorganisation during the post-medieval period saw the dilution of some medieval field patterns. Whilst very rural, the landscape has been impacted in places by the presence of major transport routes and nearby large urban areas.

Key characteristics

Topography, geology and drainage

• Low lying, gently rolling topography with occasional steep slopes often associated with watercourses.

• Underlying bedrock comprised of halite (rock salt) and mudstone geology. Pockets of peat are located throughout the landscape and have been historically exploited for fuel.

• Large number of water bodies with mosses and meres resulting from glacial activity as well as frequent in-field marl ponds.

Woodland cover

• A relatively high density of coniferous, mixed and deciduous woodland found in blocks, coverts and along streams and rivers.

• Mature trees (often oak, beech and sycamore) within fields and within hedgerows also contribute to the wooded character of the landscape.

Land use and field patterns

• A mix of arable and pasture land, divided into medium-scale fields of medieval and post-medieval origin.

• Fields are primarily divided by hedgerows with frequent mature trees. The formation of larger fields due to the removal of boundary hedges is seen in some areas. Post and wire or wooden fencing has replaced some hedgerows.

Semi-natural habitats

• A number of wetland habitats including nationally important sites such as Bagmere SSSI and Brookhouse Moss SSSI are present.

• Other semi-natural habitats scattered amongst the farmland include unimproved grasslands and remnant heath, which has seen major losses in the past.

Archaeology and cultural heritage

• Prehistoric remains including Bronze Age barrows and tumuli are scattered throughout the landscape, with some designated as Scheduled Monuments.

• Historic estate landscapes are occasional features and include a number of Registered Parks and Gardens.

Settlement, road pattern and rights of way

• Medium settlement density with a mix of dispersed farms and nucleated hamlets/villages, including a number of Conservation Areas. Some settlements have grown due to their proximity to large urban areas. Typically, built vernacular is of red brick or white render.

• Roads are a mix of major arterial routes including the A50/A500 and winding narrow lanes. The M6 motorway also crosses through a number of the areas within this type.

• An intact network of rights of way provides access to the countryside. A number of promoted routes cross the landscape, including the North Cheshire Way, Dane Valley Way, South Cheshire Way and Crewe and Nantwich Circular Walk. Views and perceptual qualities

• Generally very rural but sometimes influenced by the presence of adjacent urban areas. Major infrastructure including the M6 motorway and Manchester Airport has a visual impact and introduces traffic noise.

• Perceptual qualities are varied throughout the character type, often depending on the presence of woodland/trees, which provide a strong sense of enclosure and limit views.

• Where woodland cover allows, there are views to prominent features including the wooded ridgeline of Alderley Edge and the uplands of the Pennines.

LCA 7d: Marthall Character Area

This low undulating (c 40-90m AOD) character area extends from Lower Peover, northwest as far as Alderley Edge. The southern boundary is provided by the valley of the River Dane. This is a medium scale landscape of mixed arable and pastoral farmland, which shares many of the characteristics of the West Lowland Plain. There are localised areas of more undulating ground but the land is generally flat. In the north, many fields have been enlarged and there is evidence of hedgerow removal with increased reliance upon post and wire fences. This has produced a more open, larger scale landscape with more extensive views, although even here many views are curtailed in the middle distance by solid blocks of woodland. The estate woodlands associated with Toft Hall and Peover Hall have a strong visual presence and feature in many views. In the north of the character area, the landscape is

strongly influenced by the close proximity of urban Knutsford, Wilmslow and Alderley Edge. A number of major highways, including the A50 and A537, traverse the area with the associated intrusion of heavy traffic, but many tranquil rural locations remain in the inter-land between these strategic routes. The area is drained by a number of small rivers including Peover Eye, Marthall Brook and Pedley Brook and these are often associated with linear woodlands or lines of mature trees, forming conspicuous features in the landscape. In the northern part of the character area, the high ground of Alderley Edge with its wooded slopes forms an important visual feature on the horizon. In the south, the Jodrell Bank radio telescope provides a local landmark as it is visible over a wide expanse. Settlement has a medium density comprising clusters of dispersed settlement e.g. the Warford Hall and Blackden Heath areas; linear settlement that has developed along roadways e.g. Stocks Lane, Over Peover; small nucleations at Swan Green and Twemlow Green and larger nucleated villages that have undergone modern expansion such as Chelford and Goostrey. The railway connecting Alderley Edge and Holmes Chapel runs across the area. There is a substantial concentration of small-medium (up to 8ha) medieval fields with semi-regular pattern in the Lower Peover/Peover Hall area. Much of the remaining area comprises regular small-medium post medieval enclosure with some medieval and large modern fields (over 8ha). Boundaries are a mix of patchy hawthorn hedges with standard trees and fences. Horsiculture also has made an impact on this area e.g. stables and modern fenced horse paddocks. Red brick buildings, some with white wash are typical and there are a number of half timbered, brick nogged cottages

This Character Area has a number of place names that indicate former heath and mossland. Today small areas of peat occur at the Lower Moss Wood Nature Reserve and Gleads Moss. The latter is a SSSI for its fen and alder carr. A small area of bog remains on the western edge of the site and a narrow fringe of acidic marshy grassland is included along the northern edge of the woodland, most of which is wet and dominated by alder, birch and willow. The rich ground flora contains many fen species including sedges and meadowsweet, soft rush and bogbean. The bog vegetation is dominated by bog mosses (Sphagnum species) A range of woodland types occur across the character area from riparian ancient woodland, birch colonised mossland, to planted blocks of broad leaves and conifers, for example at Lower Withington. Several woodlands are SBIs such as at Sossmoss Wood. Stockin Moss and Lower Moss Wood. Woodlands include birch, oak and sycamore with planted conifers. The understorey is rowan with holly and buckthorn while the ground flora is locally dominated by buckler fern with areas of bracken. Diversity in these woodlands is provided by open heathy areas, ponds and remnant bogs. Peover Eye river valley with steep-sided banks, permanent pasture and woodland with ancient woodland indicators, has a diversity of species rich habitats. The underlying geology supports a mosaic of grassland types – acid, neutral with 210 species rich flushes. The valley is designated as an SBI, as are sections of Marthall and Pedley Brooks, where the latters banks are predominantly wooded with alder and neutral semi-improved and unimproved grassland. Human activity can be traced back four thousand years with a Bronze Age barrow cemetery at Jodrell Bank, although this has been badly damaged by excavation and ploughing. Two further possible barrows are located near Twemlow Hall, which is a Grade II, formerly moated late 17th century mansion house of red brick. Peover Hall has a Grade II park and garden listed on the English Heritage Register. The Hall itself is a Grade II* 16th century manor house, with a moat to the south west that indicates the location of an earlier medieval house.

LCT 5 – Wooded Estates and Meres

This type is defined by a concentration of historic estates and their associated features, including parkland and formal gardens, a high density of woodland, mosses, and meres, which are often utilised as ornamental lakes. The topography of the type ranges from flat ground, through broad undulations to occasional steeper slopes. Fields are varied in size and shape and are generally of medieval or post-medieval origin. Settlement is mainly dispersed with a limited number of small nucleated villages and hamlets including Rostherne and Marbury.

Key characteristics

Topography, geology and drainage

• Varied landform, ranging from flat to undulating land around Tatton Park and Tabley House with some areas of steeper, more complex landforms including Alderley Edge and Comber Mere.

• Underlying geology of banded siltstone, Bollin Mudstone and Northwich Halite overlain by glacial till, river alluvium and sandy soils. Occasional pockets of peat have been exploited in the past as a source of fuel.

• Frequent meres, mosses and ponds formed as a result of glaciation, which are a focal point of the landscape. Some meres are adapted for ornamental purposes as part of the estate landscapes.

Woodland cover

• Compared to the adjoining farmland, the estates contain high densities of broadleaved and mixed woodland, some of which is ancient woodland. Veteran and specimen trees are a characteristic feature of the estates.

Land use and field patterns

• The farmed landscape comprises a mixture of small-medium scale irregular, semi-regular and regular fields of medieval and post-medieval origin. Fields are mostly delineated by hedgerows although walls and railings within the estates are common boundary types.

• Other land uses include golf courses, caravan parks and the deer park within Tatton Park.

Semi-natural habitats

• Nationally important semi-natural habitats, which include the meres, woodland and grassland habitats. The wetland habitats are particularly important for overwintering wildfowl and are often nationally designated, including Rostherne Mere National Nature Reserve. Archaeology and cultural heritage

• The landscape has a strong sense of time-depth, with large, grand historic houses and associated buildings including gatehouses, estate farms and lodges. Ornamental landscape features such as parkland and lakes are prominent features. Many are listed as Registered Parks and Gardens.

• Archaeological remains indicate activity in some areas of this type dating back to the Neolithic period (c4000BC). Settlement, road pattern and rights of way

• Settlement is dispersed and comprised of small hamlets and scattered farms. Several of the settlements are designated as Conservation Areas. Buildings are constructed in a vernacular of black and white timber frame, red sandstone and red brick.

• Mostly, the road network is comprised of minor lanes, which are often lined by avenues of mature trees. There also are a number of major routes, which cross through this landscape type, including the M6 motorway.

• Popular landscape for recreational activity for both local people and visitors. Attractions include the historic houses, gardens and golf courses. The presence of public footpaths varies, as some of the estates are publicly inaccessible. Promoted routes including North Cheshire Way and South Cheshire Way cross this type. Views and perceptual qualities

• Views are often restricted by woodland, which creates an intimate, naturalistic landscape. Picturesque designed vistas are associated with the estates.

• Generally this is a highly naturalistic, tranquil landscape, although levels of tranquillity may be eroded by the presence of nearby major infrastructure, including Manchester Airport.

• Occasionally, where woodland cover allows, there are longer views to prominent features including the Sandstone Ridge and Pennine Hills.

LCA 5e: Tabley Character Area

The features of the estates associated with Tabley House, Toft Hall and Booths Hall define this character area. The largest of these is Tabley House, which is of the Palladian style, built in the late 18th century to replace the Old Hall, which was erected c.1380 AD on an island in Nether Tabley Mere. The Old Hall has subsequently collapsed and is now a ruin, the chapel that stood alongside it has been relocated next to the present hall. It is screened from view by mixed belts of broadleaves and coniferous trees that delineate the estate boundaries, part of which is ancient woodland. It was formerly a medieval deer park. This is a medium scale landscape possessing many features of the surrounding areas. The land is generally slightly undulating but there are several flatter patches. The area is mainly pastoral farmland where the hedgerow system is relatively intact with numerous hedgerow trees and these can screen and filter many views across the landscape. However, there a number of locations where agriculture appears much more intensive. Here larger and flatter arable fields and low trimmed hedges combine to create a larger scale landscape with panoramic views. Such open locations enjoy distant views east towards the Pennine Hills, whilst in all other directions the low horizon beyond the immediate field system appears full of trees. Urban Knutsford bounds the area to the north and its close proximity has an important localised influence on the landscape where residential development is visible across flat farmland with low hedges. Patches of higher woodland density are characteristic of this landscape type, and this occurs near the three estates. These locations are characterised by parkland landscapes and extensive tracts of woodland of varying type. The local dominance of massed mature trees reduces the scale of the landscape quite significantly, screening or framing many views and contributing to a landscape that feels much more insular. From most directions, the general location of Tabley Hall appears as a solid block of woodland, with no indication of the classic parkland setting surrounding the main buildings. Two

highly prominent gatehouse lodges, on the A5033 and the A556, feature as landmarks along these busy highways and provide the only clue to the motorist of the nature of the landscape behind the perimeter woodland screen. The parkland surrounding the hall is representative of the classic "landscaped" country estate. The Hall with its ornamental planting is approached along a number of sweeping tree-lined drives, past ornamental water bodies, veteran specimen trees and strategically located woodland blocks. In the middle of the character area near Toft Hall a number of large woodland blocks assume greater prominence due to the contrast with the surrounding flat and open fields, many defined by ditches. Woodland comprise a mix of broadleaved and coniferous trees, some of which were associated with the former landscaped grounds of Toft Hall, and survive in a much reduced form e.g. Windmill Wood, originally an approach to the hall. Settlement comprises a low density scatter of dispersed farms and halls. Fields in this area are predominantly small – medium (up to 8ha) in size and regular in shape, and are typical of post medieval reorganisation. To the east of Tabley is an area of surviving medieval enclosure with irregular shaped fields. Boundaries associated with this type are hedgerows with standard trees. There are a number of individual farms located throughout the area. A number of incongruous elements within the landscape adversely affects this area. The M6 forms a very intrusive element as it crosses the area along a north-south axis. Its visual influence is particularly extensive in the centre of the character area where traffic is highly visible as it passes through flat and open fields. Further south an electrified rail line crosses over the motorway and the overhead gantries are widely visible. The railway in turn is crossed by an overhead powerline, providing another disruptive element within the surrounding open field system. Other major roads include the A50 and A537.

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)

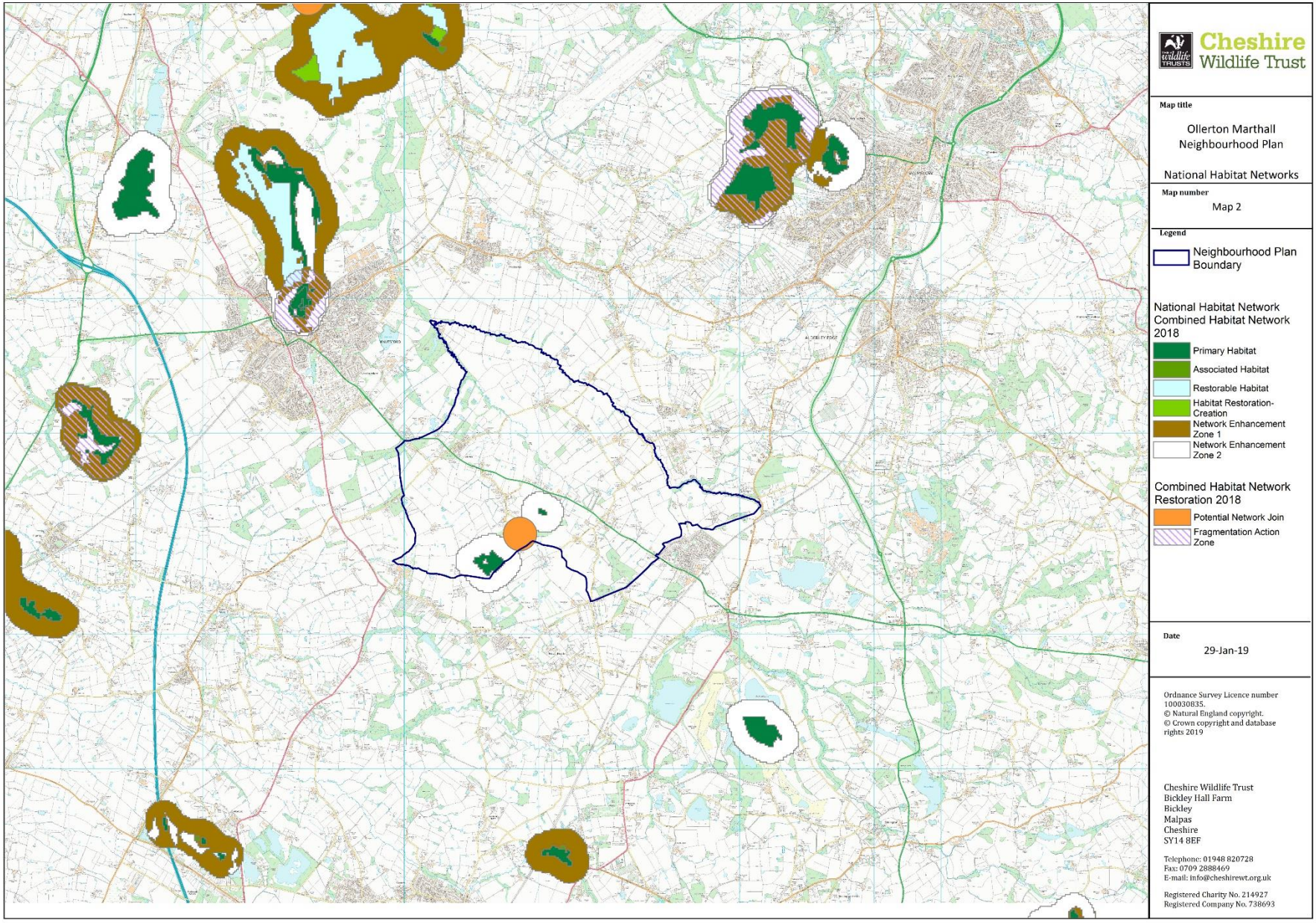
- Upland calcareous grassland
- Lowland calcareous grassland
- Reed-beds
- Lowland meadows
- Upland hay meadows
- Purple moor-grass and rush pastures
- Lowland dry acid grassland
- Lowland heathland
- Upland heathland
- Upland flushes fens & swamps
- Lowland fens
- Lowland raised bog
- Blanket bog
-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

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



Ecological Network for Cheshire East

The Cheshire East Council Local Plan Site Allocations and Development Polices Document will contain detailed policies to protect and enhance the natural environment, including a map of the ecological network within the borough. As stated within the ecological network report:

"The ecological network for the borough is not intended to restrict development or growth but rather provide a tool to inform and guide development and support a 'net gain' in biodiversity.

Cheshire East Local Plan Strategy 2010-2030 (adopted 27 July 2017) Policy SE 3 Biodiversity and Geodiversity provides for the protection and enhancement of areas of high biodiversity and geodiversity value, and recognises the need to increase the total area of valuable habitat in the borough and linking up areas, creating stepping stones and wildlife corridors.

Development should be expected to protect, conserve, restore and enhance the components of the ecological network for the borough. The existing designated sites (statutory and non-statutory) and priority habitats are essential components of the network and need to be protected and conserved."

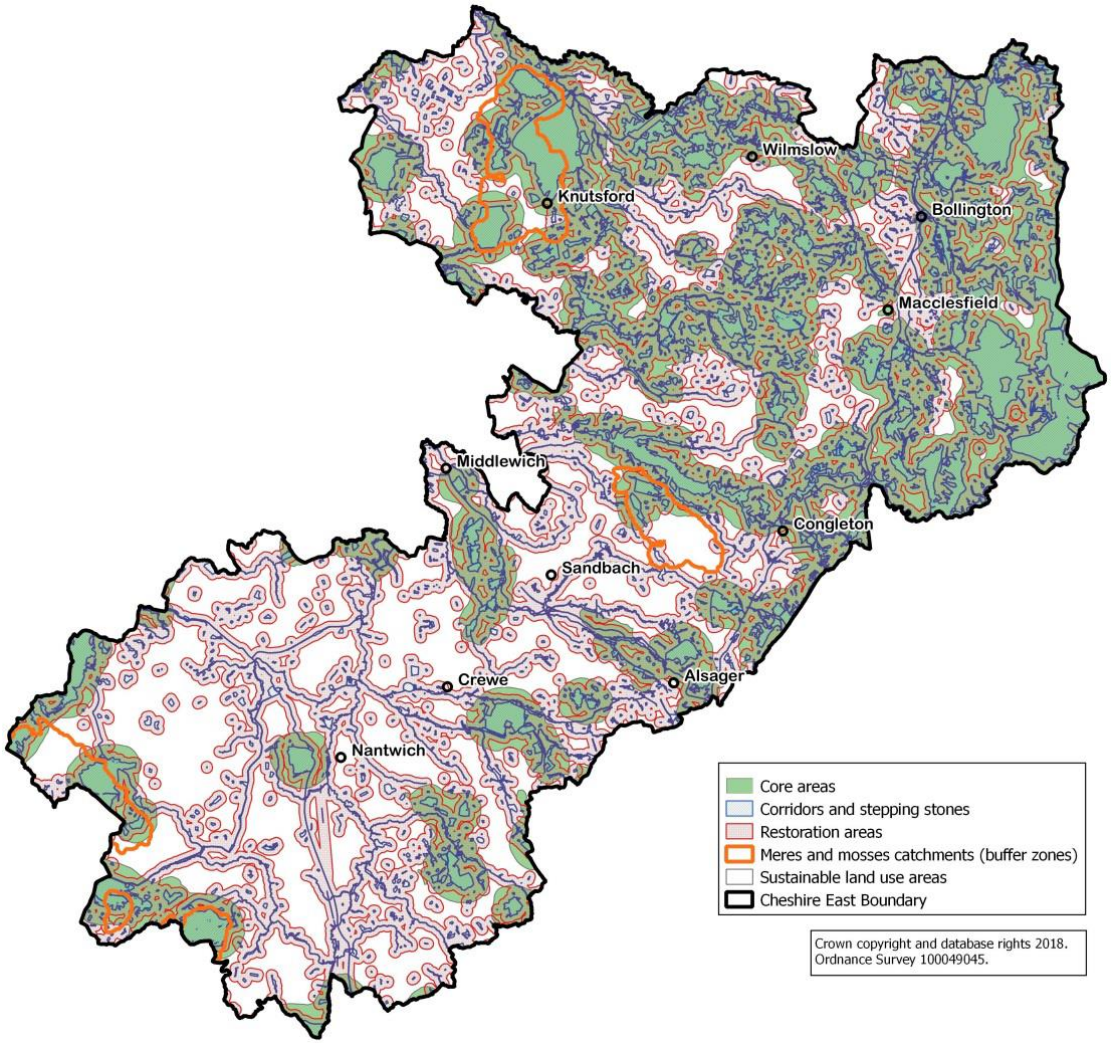


Figure 2. Ecological Network for Cheshire East map

Outside the planning system the ecological network is intended to inform land management and investment decisions and priorities such as agri-environment schemes, river catchment partnership plans and NGO (non-government organisation) landscape scale initiatives.

The Cheshire East Ecological Network identifies broad networks for the whole borough, whereas the wildlife corridors identified in this report (see map 10) 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 'no net loss' 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 and Local Nature Reserves), Natural England, CWT/CEC Local Authority – coded as high distinctiveness.
   - Ancient woodlands – Natural England 2018 – 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.)

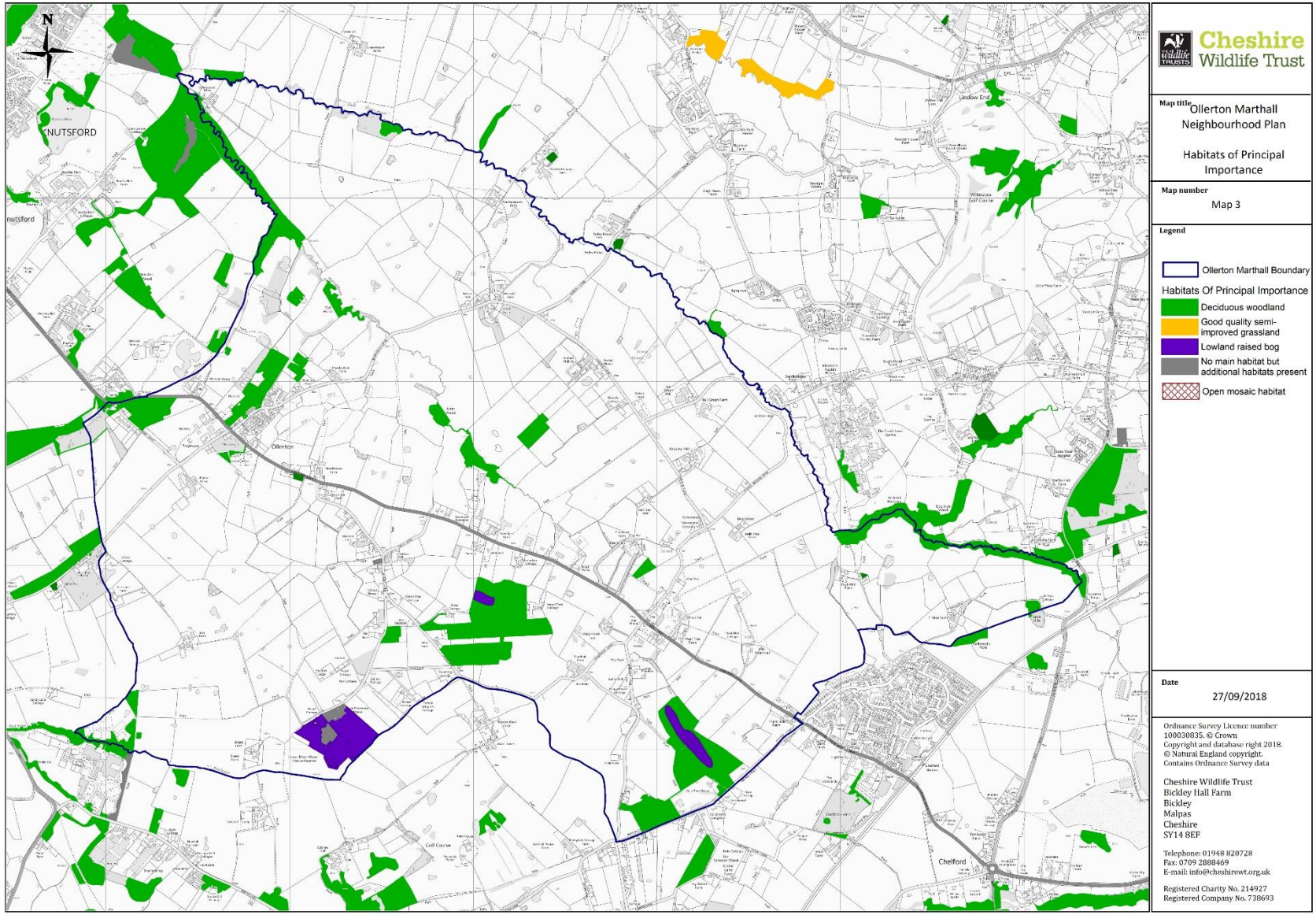
2. Aerial photography (Microsoft Bing ™ Imagery, Google Maps) was used to validate the results by eye.

3. The Ollerton with Marthall 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.

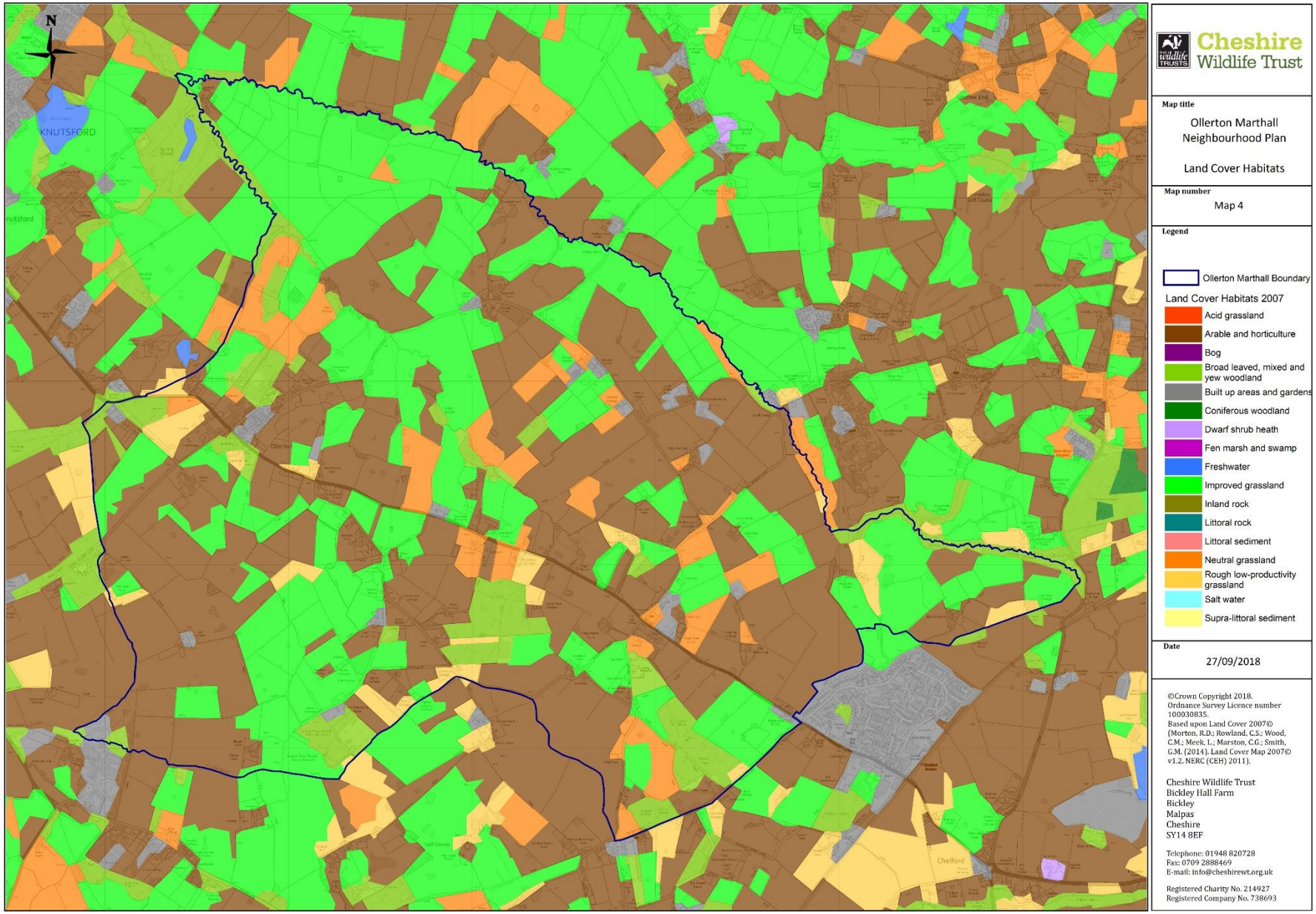
4. Information from recent planning applications in Ollerton with Marthall was researched and incorporated where appropriate.

Mapping:

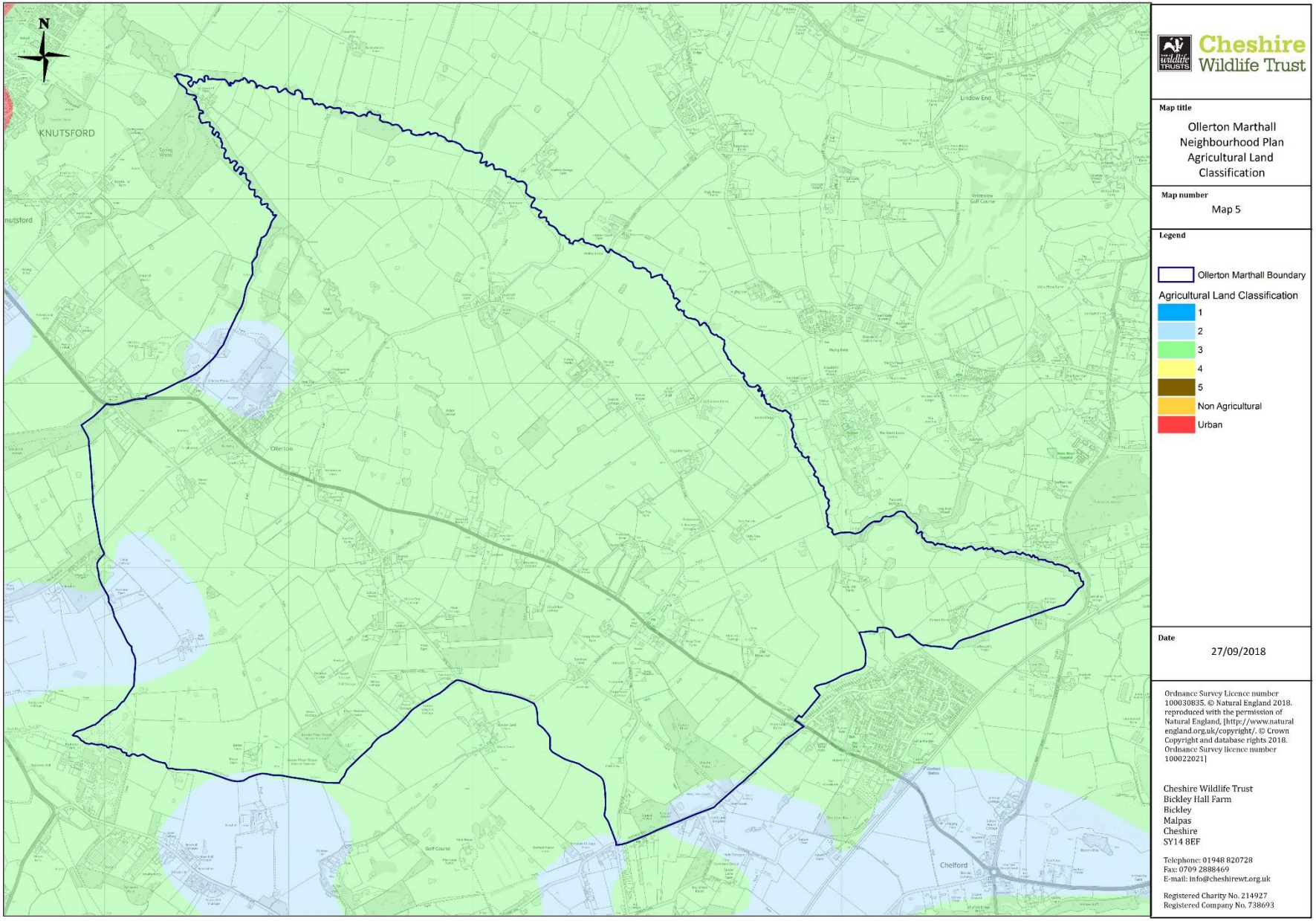
Map 3: Terrestrial habitats of Principal Importance – Natural England 2016



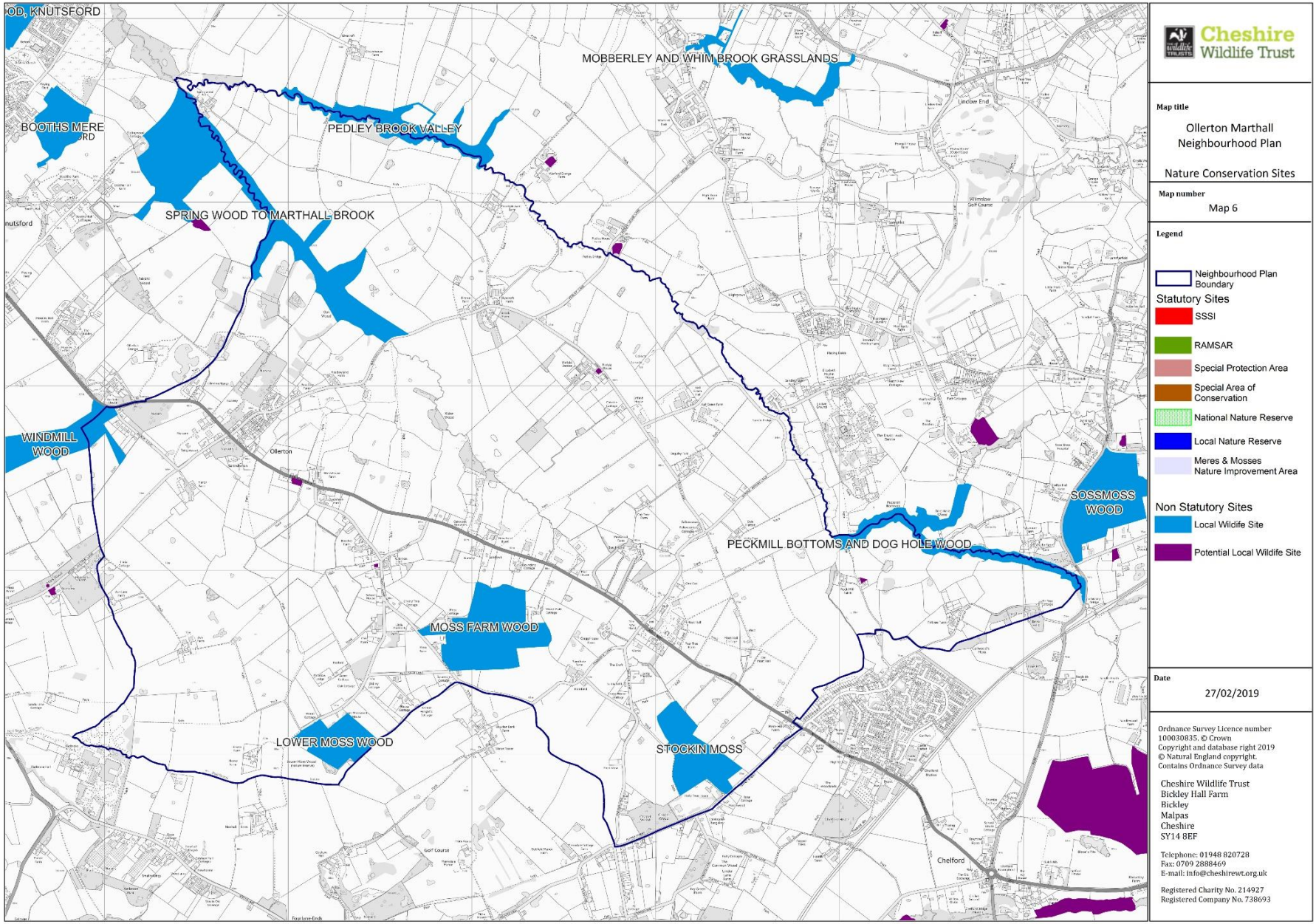
Map 4: Land Cover Map 2007 (LCM2007) parcel-based classification of satellite image data showing land cover for the entire UK derived from a computer classification of satellite scenes obtained mainly from the Landsat Sensor



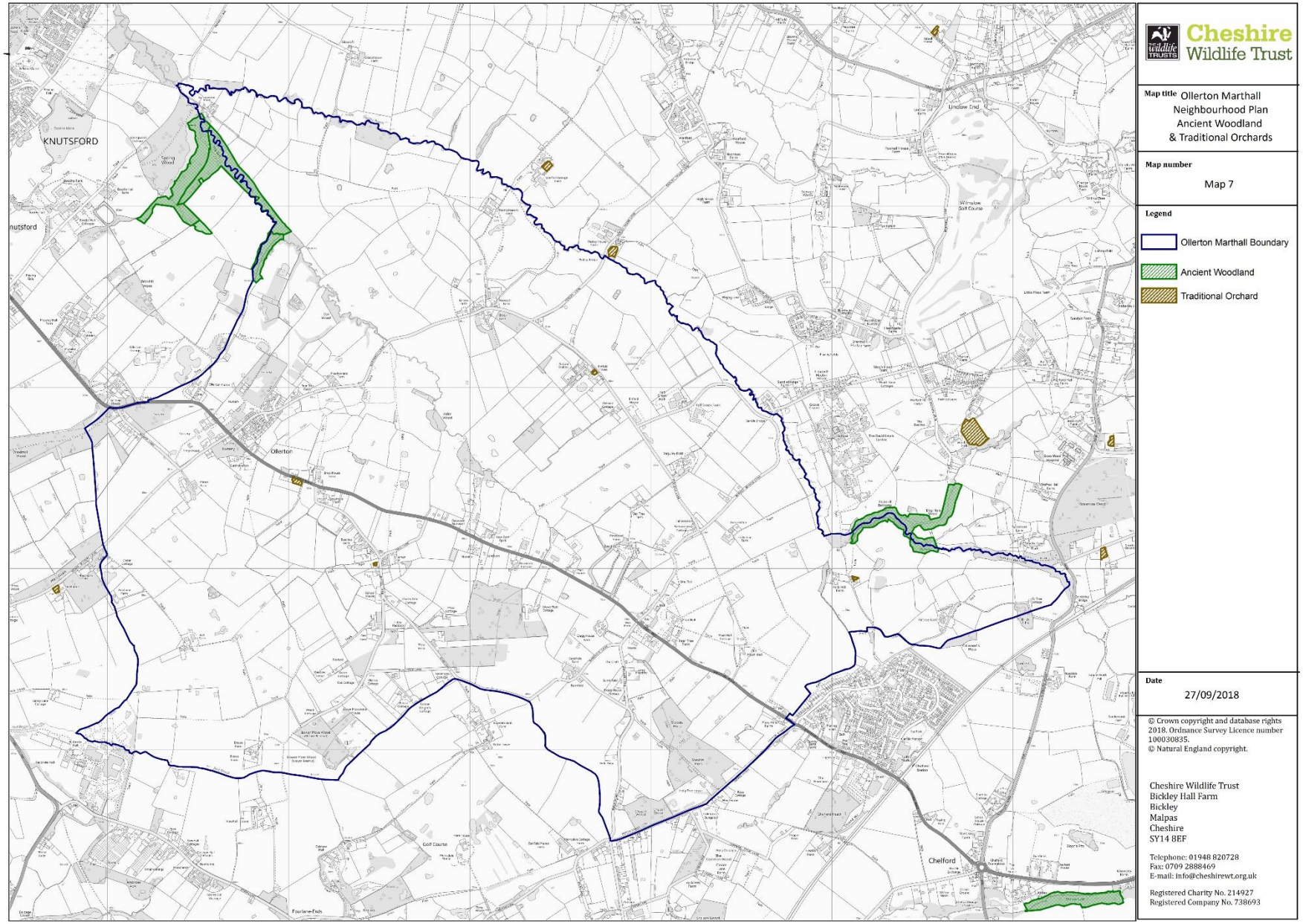
Map 5: Agricultural Land Grading – Natural England 2013



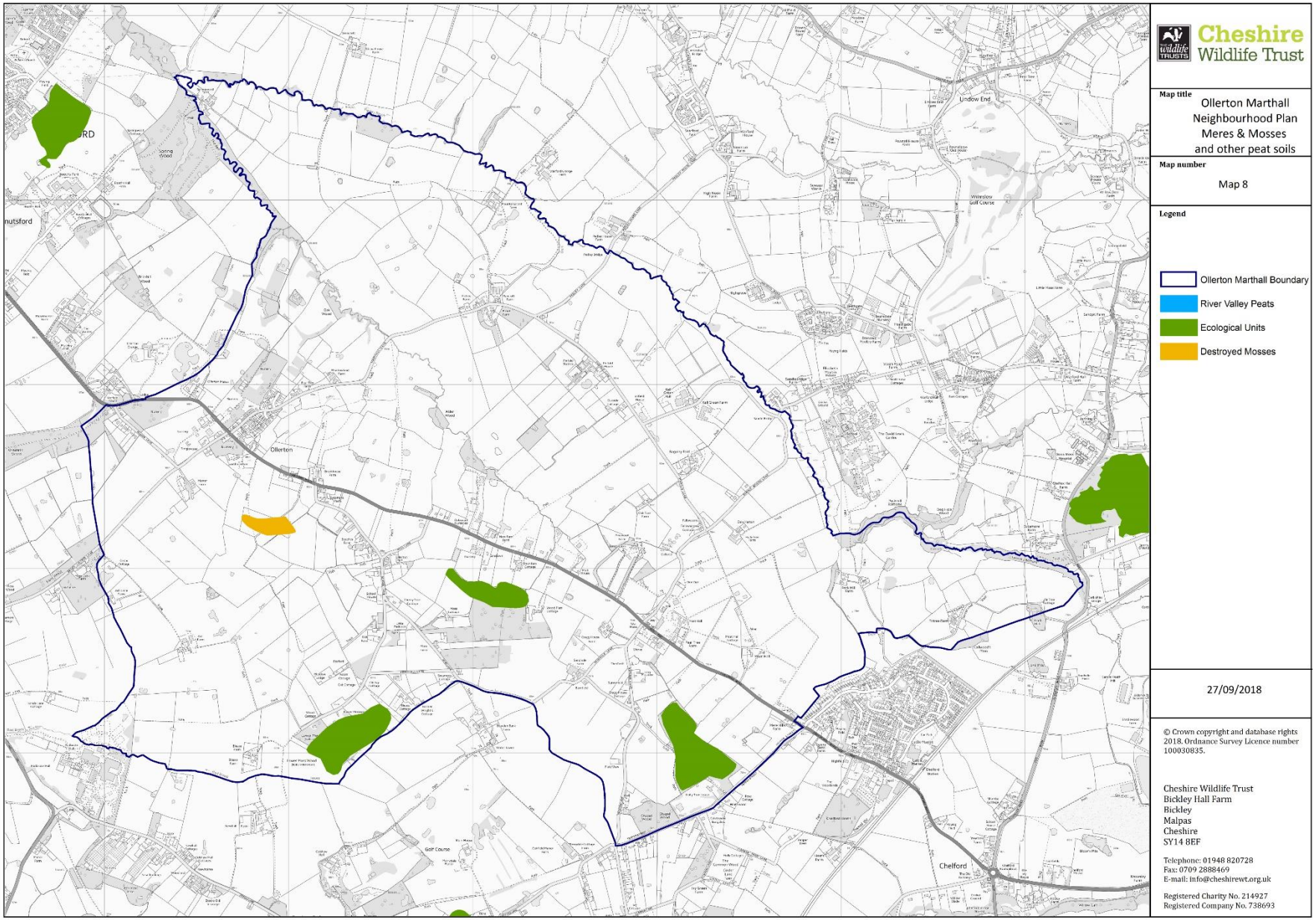
Map 6: Nature Conservation Sites, including designated Sites of Special Scientific Interest, Local Nature Reserves, European designated sites (SAC, SPA), Ramsar sites, Local Wildlife Sites and non-designated Potential Local Wildlife Sites



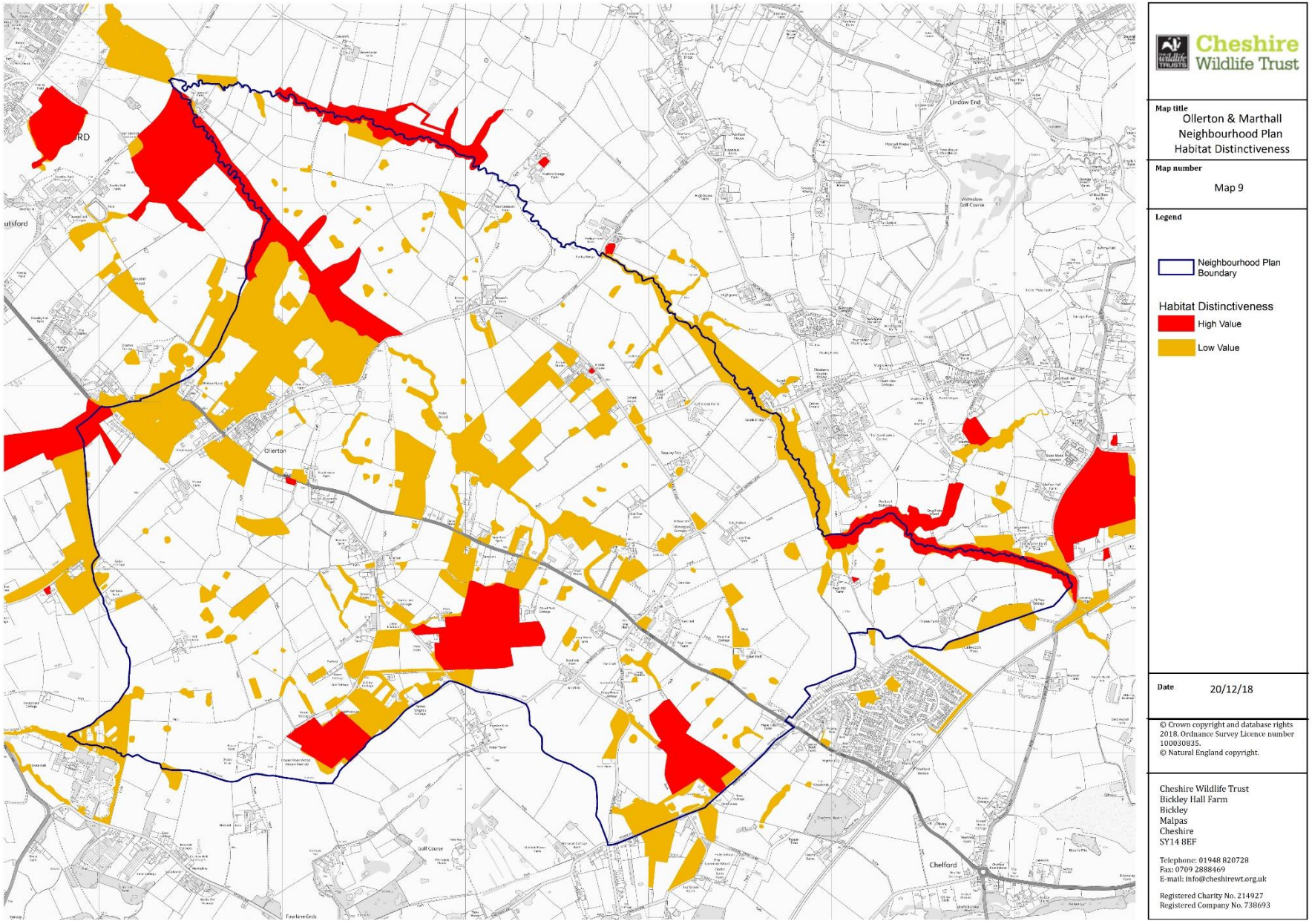
Map 7: Ancient woodland & Traditional Orchards – Natural England 2018



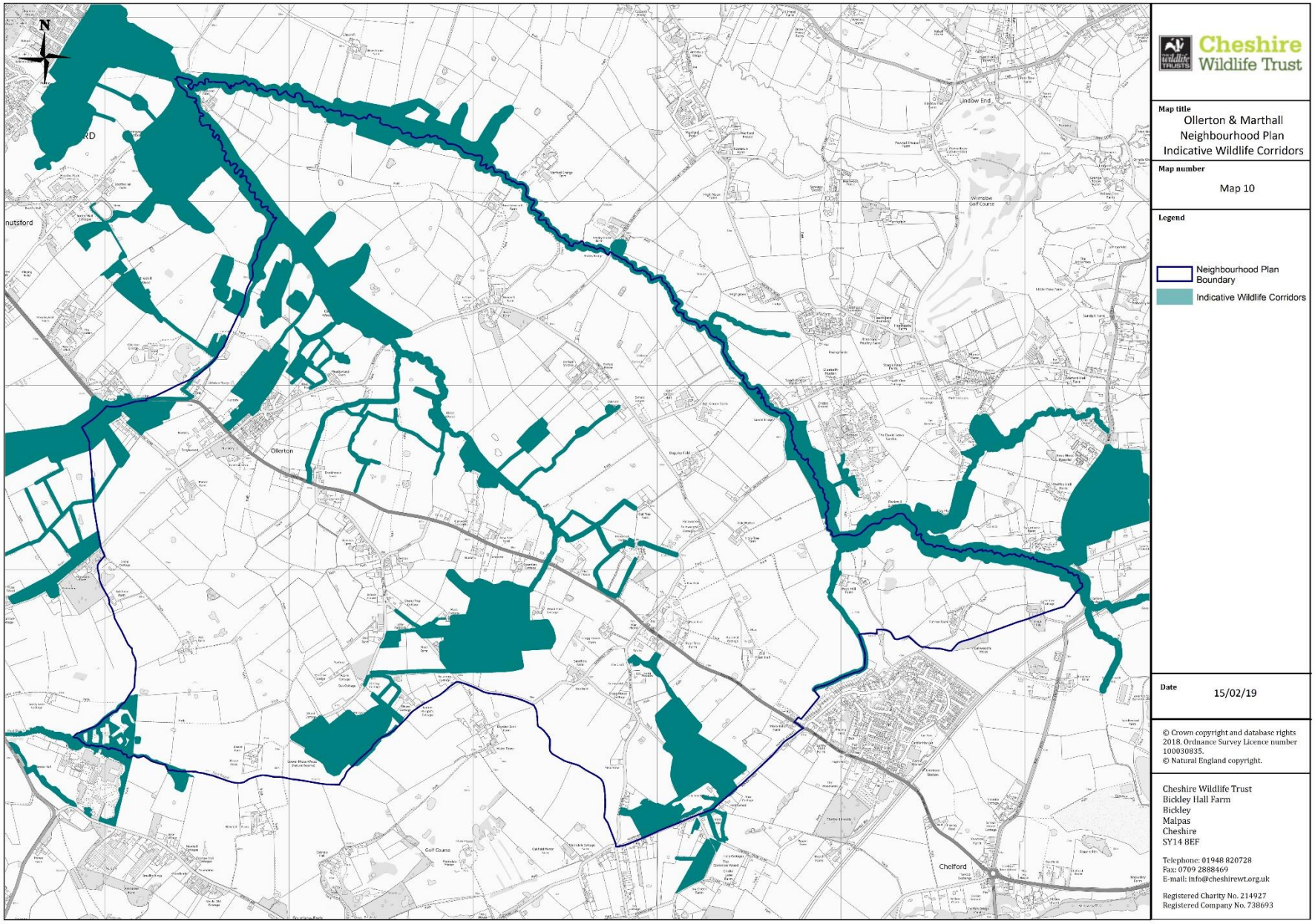
Map 8: Meres, Mosses, and other peat soils, Meres and Mosses Landscape Partnership Scheme 2016



Map 9: Habitat Distinctiveness



Map 10: Indicative Wildlife Corridor Network



Results and discussion

High distinctiveness habitat

1. Woodland

There is limited woodland cover in the Ollerton and Marthall neighbourhood planning area. Many of Cheshire's woodlands have been lost, with the percentage of woodland covering the county now considered to be around 5%, as a result the areas of woodland are highly valuable, and these long established habitats are not easily replaced. A large proportion of the woodlands within Ollerton and Marthall are within Local Wildlife Sites and are of county importance and have been mapped as High Value Habitat on Map 6.

Seven blocks of woodland within the Ollerton and Marthall area are of county importance and have non-statutory designations as Local Wildlife Sites. Two of these woodland blocks, Spring Wood and The Belt along Marthall Brook and Dog Hole Wood, which flanks Pedley Brook, appear on the ancient woodland inventory. Both woodland blocks are also present on tithe maps of Cheshire from the 1800s. Three of these woodlands lie on peat soils (Lower Moss Wood, Moss Farm Wood Stockin Moss). Peat soils contain the highest amount of stored carbon compared to other soil types and are therefore particularly important in providing ecosystem services. Woodlands also have the ability to sequester carbon, making these sites vitally important as carbon sinks as well as providing valuable habitat for wildlife.

An eighth woodland Local Wildlife Site, Sossmoss Wood sites just outside the boundary to the east of Ollerton and Marthall.

<u>Pedley Brook Valley LWS</u>
Pedley Brook Valley comprises woods, grasslands and wetland vegetation on both sides of the Pedley Brook, as well as woodlands along tributaries that join the brook and species-rich hedgerows in the north. A mosaic of wet and broadleaved woodland occurs throughout the length of the site, with wetter alder dominated woodland closer to the brook. Oak and ash forms the canopy of the drier broadleaved woodland. Birch and hazel are also present. Woodland flora includes wood sedge, a class 1 ancient woodland indicator species. Also present are wood speedwell (a class 2 ancient woodland indicator), violet and red campion. Non-native invasive Himalayan balsam is scattered throughout the site. This species' vigorous growth outcompetes native flora and 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 listed as invasive within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to plant or otherwise cause to grow in the wild any plant listed in Schedule 9.

<u>Springwood to Marthall Brook LWS</u>
Last surveyed in 2000 Spring Wood is a large ancient woodland on the western bank of Marthall Brook, with a fishing lake in the centre. There is a well established canopy of oak, ash and birch and a varied shrub layer comprising hawthorn, holly and elder. The ground flora includes several ancient woodland

indicator species. A strip of wood flanking the north west of Marthall Brook marked as The Belt on OS maps appears to have been previously felled. It appears on old Tithe maps but now comprises regenerating birch. A third block of woodland, marked as Oak Wood on early editions of the OS map, has abundant wood anemone within the ground flora and is largely free of non native species such as sycamore.

Windmill Wood

Windmill Wood comprises a mixture of mature broadleaved plantation, mature coniferous plantation and semi-natural broadleaved woodland thought to have developed on previously felled areas. Birch trees dominate with frequent pedunculate oak and occasional holly and rowan. Fallen deadwood and associated fungi are abundant. Two woodland ponds are present, although one has been colonised by willow and alder carr and the second has been surrounded by dense rhododendron. Rhododendron is locally dense and covers approximately a quarter of Windmill Wood. The site is dissected by footpaths and appears to be well used, offering natural greenspace to the local community. Rhododendron is listed as invasive within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to plant or otherwise cause to grow in the wild any plant listed in Schedule 9.

Lower Moss Wood LWS

Lower Moss Wood is an oak dominated woodland on peat soils. Even without considering the quality of the woodland, a woodland that sits on peat soils is of county importance. These soils contain the highest amount of stored carbon compared to other soil types and are therefore particularly important in providing ecosystem services. Also present within Lower Moss Wood are ponds that host a variety of dragonfly species and an area of sphagnum bog with white sedge. The woodland, through its use as an educational nature reserve, provides accessible natural greenspace.

Moss Farm Wood LWS

Moss farm wood is predominantly birch woodland over degraded peatland, with low levels of coniferous and broadleaved plantings throughout and scattered oak in the far east of the wood. There is also a wet hollow with goat willow and alder.

The majority of mossland species have been lost from the site; however, there is one area of remnant moss carpeted in sphagnum mosses. The steep-sided ditches have carpets of bryophytes, and water starwort is present in one of the main ditches.

There are extensive stands of rhododendron in the west of the woodland and rhododendron becomes less frequent away from the road. A wet ditch running northwards through the woodland marks the boundary between the conifer plantation and areas colonised by birch.

Stockin Moss LWS

Stokin Moss LWS is predominantly birch woodland over degraded peatland. It has low levels of coniferous and broadleaved plantings. The site is dissected by a bridleway, which runs through the centre, and a public footpath runs along its western boundary. The canopy is dominated by birch, with an abundance of oak and varying levels of sycamore throughout. Rhododendron was recorded but appeared not to be extensive. A strong understorey is comprised of rowan, holly and hazel. Regeneration of natives is very strong. Young beech, sweet chestnut and rowan have been planted

along the bridleway. Broad buckler fern and bracken dominate much of the ground layer. Some small areas of bare ground are present. A laurel hedge has been planted along the bridleway, and here, red campion, creeping buttercup and enchanter's nightshade were recorded. The woodland is fenced off from the bridleway, and disturbance is presumed to be minimal. A wet ditch seems to have no flow and is connected to a small pond to the west of the track.

Peckmill bottoms and Dog Hole Wood LWS

This site consists of Broadleaved Woodland along the banks of Pedley Brook and a tributary stream. Both Clough Woodlands with dry banks and marshy alder/willow occur. There is a wide variety of mature tree species and plantings of introduced species both long established and recent). The ground flora includes indicators of ancient woodland and is diverse. It includes moschatel, wood anemone, lady fern, marsh marigold, opposite leaved golden saxifrage, enchanter's nightshade, and bluebell.

Sossmoss Wood LWS

A former wet heathland that was drained and planted with conifers in 1934 as a commercial timber crop. No longer managed for its timber, it comprises areas of established Scot's pine and larch, with occasional natives to feature in the canopy, (birch, rowan and holly) and a limited understorey of very occasional rowan, holly and young birch. Ground flora is also poor and is limited to extensive stands of bracken and broad buckler fern. An area of felled conifers has been replanted with beech, ash, cherry and oak and has no ground flora. The only true area of semi-natural broadleaved woodland within the site is found to the north-west. This area appears to have been a felled plantation and naturally re-colonised by birch, rowan and occasional oak. Again, ground flora is very limited. Bluebell, nettle and red campion are found in isolated patches along the road side (along with Japanese knotweed). The most southern compartment appears to be part of Sossmoss House gardens and comprises Sycamore, yew and rhododendron are dominant with frequent planted exotics and mown pathways. Rhododendron is widespread throughout the woodland and Japanese knotweed is present. Both these species outcompete native flora and can have a devastating impact to biodiversity. Both species are listed as invasive within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to plant or otherwise cause to grow in the wild any plant listed in Schedule 9.

The areas of high quality woodlands described above offer important core sites for wildlife and are linked to habitats in the wider landscape through Pedley Brook and Marthall brooks as well as the network of hedgerows with trees present in the Ollerton Marthall area. These woodlands are also likely to be high in biodiversity, offering potential habitat for rare and vulnerable species such as priority red listed[1] woodland birds and UK priority bat species.

Boothsmere LWS

Boothsmere is an ornamental fishing lake with two wooded islands and strips of woodland that surround the lake on three sides. The Woodland is mature, dominated by oak, with crack willow nearer the water's edge. Other canopy species include beech, yew, common lime and sweet chestnut, which are likely to have originated from planting. Invasive species rhododendron is locally abundant. Understorey species include hazel, field maple, holly, elder and hawthorn. Some large

[1] Birds of Conservation Concern 2017

trees are present, including a multi-stemmed lime, and there is a significant amount of fallen and standing deadwood. Depressions or seasonal ponds at the woodland edge, associated with the former boathouse at the south and the disused jetty at the north, are currently dry but support some wetland species including yellow iris. The Woodland Trust Ancient Tree Inventory reveals that there is a veteran Downy Birch, with a girth of 2.58m, within the woodland on the southwest corner of the lake.

Consulting the NBN Gateway reveals a number of records for bats in the south east of the parish, with three different species identified. That of Common pipistrelle, Soprano pipistrelle, and Notable. Despite no records for bats within the woodlands, this is more likely due to a lack of recent recording effort than absence of these species. Ollerton and Marthall's woodlands are likely to support roosts of bat species, particularly the longer established woodlands such as those listed on the Ancient Woodland inventory or appearing on old tithe maps. Bat species will forage for insect prey along the woodland edges, hedgerows and water bodies. All bats are European Protected Species (EPS) and many are UK species of Principal Importance (S41 species). Roof spaces and crevices in buildings also provide places for bats to roost.

2. Traditional Orchards

Traditional orchards are a quintessential component of the historic English landscape. Orchards are becoming increasingly rare due to neglect, intensification of agriculture and pressure from land development. However, these habitats provide excellent conditions for biodiversity to thrive and can support rare species. Four small traditional orchards were identified on the Natural England Inventory for Ollerton and Marthall (Map 7). One near Peckmill Farm, one off School Lane near Ollerton Hall, one off Chelford Road near Brookhouse Farm and one near Pinfold Stables. There is also a relatively large orchard on the inventory, just outside the boundary along the brook at Pedley Bridge.

The traditional orchards described above are possible candidates for meeting the local wildlife criteria and are shown as potential Local Wildlife Sites on Map 6.

3. Species-rich grasslands

Species-rich grassland is the fastest disappearing habitat in the UK. Any 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.

There are no high value/species rich grasslands identified on Natural England's Priority Habitats Inventory within Ollerton and Marthall (Map 3). However, Springwood to Marthall Brook Local Wildlife Site, when surveyed in 2000, included a grassy gully along the banks of the brook, comprising unimproved species rich grassy banks, supporting abundant butterfly species. Two meadows were also present along the northern bank of the brook, a semi-improved grassland with ridge and furrow features as well as a smaller meadow enclosed by species rich hedgerows and with a greater diversity

of plants in the sward, including burnt saxifrage and adder's tongue. Recent surveys would be required to confirm whether these species rich grasslands are still present.

There may be species rich grasslands that have not been identified and are amongst the areas mapped as medium distinctiveness.

4. Waterbodies

There are no waterbodies of high value identified within the Ollerton and Marthall Neighbourhood Planning Area.

Boothsmere LWS, which is of county importance, lies just North West of the Boundary. Boothsmere is an artificial fishing lake with two wooded islands, in the grounds of Booths Hall. The lake is used for angling. A strip of deciduous broadleaved woodland, which abuts improved grazing pasture, and supports scattered scrub and trees, surrounds the banks of the lake on three side . The eastern bank of the lake has stone edges, however, muddy shallows support marginal wetland flora. Elsewhere, the banks are natural, except for fishing pegs, constructed at intervals. The lake margins supports a range of wetland plants including, gypsywort, bittersweet, marsh cinquefoil, water mint, wild angelica and nationally scarce species, cowbane present around the edges of the lake, and stands of lesser reedmace and yellow iris along the banks.

5. Lowland Raised Bog

A raised bog is formed when a lake or pond slowly fills with plant debris, forming a deep peat layer covered by mosses and other bog specialists. Lowland raised bogs provide a unique home for a variety of plants, animals and insects. Additionally, raised bogs can also help to alleviate flooding and contain the highest amount of stored carbon compared to other soil types, providing an important ecosystem service. There has been a dramatic decline in the area of lowland raised bog habitat in the past 100 years, both in Cheshire and nationally.

Map 3 shows three areas of lowland raised peat bog priority habitat, south of Chelford Road (A537) in the Ollerton and Marthall area. These lie within Lower Moss Wood, Moss Farm Wood and Stockin Moss Local Wildlife Sites. These areas of raised bog are largely degraded and are now wooded over, although some remnant patches of sphagnum and associated mossland species remain in wetter, open areas.

These habitats are still valuable for biodiversity and removal of the peat or exposure to air, for example if the area is developed for housing or ploughed for agriculture, will result in oxidation of the carbon deposits and its subsequent release into the atmosphere.

Medium distinctiveness habitat

Areas of medium distinctiveness habitat are shown on map 9 (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 9). 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. Woodland

There are woodlands in Ollerton and Marthall that may be ancient in origin but are too small to appear on the ancient woodland inventory (map 7), which has a minimum size threshold of 2 hectares. These possible ancient woodlands will have been mapped as medium distinctiveness due to lack of survey information. There are two woodlands along Marthall Brook, Alder Wood and a second woodland downstream, that are identified by Natural England as habitats of principal importance and also appear on the old tithe maps. Chapel wood, located just south of Stockin Moss LWS also appears on Natural England's Inventory of habitats of principal importance and old tithe maps. This suggests these woodlands may be ancient in origin.

There are also scattered woodland blocks that are more recently planted or have arisen through succession from grassland and areas of scrub. This includes the woodlands immediately northwest of Ollerton village, a few pockets of woodland just south of Spring Wood in the North West of Ollerton and small block of woodland between Pinfold Stables and Marthall Brook. These woodlands are still likely to provide a valuable habitat for wildlife, particularly invertebrates and birds.

These areas of semi-natural woodlands are generally located along the brooks or around ponds or lakes and are often interspersed with patches of rough semi-natural grassland. This creates a natural corridor and helps to buffer adjacent blocks of high value habitat.

There are records for non-native species Himalayan balsam within Pedley Brook Valley LWS. Himalayan Balsam is almost ubiquitous along Cheshire's water courses/bodies and within damp woodlands and is likely to have spread along Pedley Brook and other damp woodland sites within the vicinity of Pedley Brook. This species is probably the biggest threat to the integrity of woodlands and wetlands in Cheshire as its vigorous growth outcompetes 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, which is an annual plant that dies back in the winter, can also cause severe soil erosion issues when the native flora that binds the soil disappears.

2 Grasslands

Few areas of high value (high distinctiveness) grasslands have been identified within Ollerton and Marthall. Surviving areas of sympathetically managed semi-natural grassland, that have not been overly 'improved' for agriculture through fertiliser and reseeding are scarce. They are also often small and isolated from each other. Therefore, semi-natural lowland grasslands are a priority for nature conservation. This is reflected in the Agricultural Land Classification Map (Map 5) which shows Ollerton and Marthall's has largely been classified as having grade 3 land with a few pockets of grade

2, which are highly improved for agriculture and of less valuable to wildlife than grade 4 or 5 agricultural land.

Areas of neutral and semi-natural rough grasslands from map 4 have been mapped as medium value on map 9. These grasslands are invaluable for wildlife as they can support populations of invertebrates and a variety of mammals. They can also offer overwintering and breeding habitats for birds such as curlew a species of conservation concern that has been recorded within Ollerton, as well as providing terrestrial habitat for amphibians and reptiles.

3 Field Ponds and water bodies

There are numerous scattered field ponds within Ollerton and Marthall. Fields ponds contribute to the permeability of the landscape for wildlife. There are also a cluster of larger ponds and lakes around Ollerton Grange and Ollerton Manor to the North West of Ollerton.

Field ponds and other waterbodies have been highlighted as habitats of medium distinctiveness in map 9 and should always be retained where possible when land is developed.

Stocking ponds with high numbers of fish decreases the wildlife value, 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.

There is a record for great crested newt in a field pond just north of Chelford Road (A537) between Ollerton and Marthall villages. It is highly likely that field ponds within Ollerton and Marthall could support breeding newt populations. The network of hedgerows with mature trees, as aforementioned in the land character area, provide important corridors linking many of the field ponds, particularly the fields north of Ollerton. These are likely to provide important foraging habitats for bats.

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. This study has identified a wildlife corridor network (shown in map 10) with ecological connectivity within and beyond the Ollerton and Marthall Neighbourhood Planning area.

The key areas for wildlife are concentrated along two watercourses and around the blocks of high value woodland in the south of the Ollerton and Marthall Area. The corridors incorporate the seven High Value Woodland Local Wildlife Sites within the Ollerton and Marthall area as well as Sossmoss Wood LWS, which lies just outside the boundary. Three of these woodlands lie on peat soils or have remnant areas of raised bog, which is an internationally important habitat.

These sites have good ecological connectivity with the surrounding Landscape via Pedley and Marthall Brook, which include blocks of high value ancient woodland as well as woodlands and grasslands of medium ecological value.

The network of hedgerows with mature trees that link many of the field ponds are also and important feature of the wildlife corridors, particularly the hedgerows that bound smaller field parcels either side of Marthall Brook.

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

Map 10 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 9 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. Should any additional land currently outside the corridor network be found to be high distinctiveness Priority habitat it should also be protected by 15m buffer zone.[2] 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.

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 or watercourses feeding into wildlife habitat unless the filtration system is extensive.

[2] Includes S41 Habitat of Principal Importance. This may currently be mapped as medium distinctiveness due to lack of information

Low spillage (bat/otter 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 incorporation of bee bricks and bat/bird boxes into the design of buildings, ideally made of highly durable material such as woodcrete.

Not all sections of the wildlife corridor provide high quality habitat and measures to improve its ability to support the movement of species is desirable[3]. 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.

In addition to the 'wildlife corridor network' this study has identified further areas of medium 'habitat distinctiveness' (Map 9) which, although sit outside the wildlife corridor network, nevertheless may provide important wildlife habitats acting as ecological stepping stones. These areas are largely comprised of blocks of semi-natural woodland, field ponds and some areas of semi natural grassland.

The network of field boundary hedgerows is vital in providing connectivity between high and medium distinctiveness areas, which would otherwise be separated by areas of arable and pasture land predominantly of low habitat distinctiveness with restricted potential for wildlife to disperse. Not all the hedgerows are identified as key components of the Ollerton and Marthall 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 marshy semi-natural grassland are the fastest disappearing habitats in the UK, being of particular importance for pollinating insects and insectivorous birds and mammals. No high distinctiveness meadows were identified within Ollerton and Marthall through this study. 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 no 'net loss' or '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 and the Local Plan.

Conclusion

The important wildlife habitat in Ollerton and Marthall is mainly associated with the woodlands and peatland along Marthall and Pedley Brook and the woodlands with remnant areas of raised bog in the south of the area. Peat soils and raised bog habitats act as *important* stores of carbon and provide a

[3] Refer to Recommendations section

vital ecosystem service. Disturbing these soils for, example for development should be avoided as it will release the carbon stored.

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. Grassland surveys in particular should be avoided during the winter and spring as they are unlikely to give a complete picture of a grassland's botanical diversity and often undervalue a site.

Most notably the study has highlighted a 'wildlife corridor network', which provides ecological connectivity between woodland, grassland, wetland and riparian habitats within and beyond the Neighbourhood Planning area. The wildlife corridor network is likely to support a wide range of species some of which that are in decline both locally and nationally.

These include but are not restricted to the following red listed bird species: curlew, yellowhammer, tree sparrow and woodcock, as well as the amber listed house martin, tawny owl and bullfinch, all of which have been recorded within the Ollerton and Marthall area. Also, mammals such as the European protected, pipistrelle, noctule and myotis bat species. Amphibians including the European protected great crested newt and common frog and common toad are also likely to be supported along with a host of invertebrates, which tend to be under-recorded.

Notable plant species include ancient woodland indicator plants like moschatel, wood anemone, lady's fern, opposite leaved golden saxifrage, enchanter's nightshade and bluebell.

We recommend that the corridor network shown in map 10 is identified in the Neighbourhood Plan and protected from development so that the guidance relating to ecological networks set out in the NPPF (paragraphs 114 and 117) 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 9. If new areas of high distinctiveness habitat are subsequently identified these should also be protected by a 15 metre non-developable buffer zone.

Should any sites that lie adjacent to high distinctiveness habitat or a wildlife corridor be developed substantial mitigation and avoidance measures must be put in place to lessen any potential impacts on wildlife. This should include measures such as installing bat 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. Development of sites with bluebell should be avoided since it is a local priority species. If development is carried out on sites with bluebells the plants should be translocated to a suitable location.

To summarise, future development of Ollerton and Marthall area 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 Ollerton and Marthall'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. **Improve the quality of the 'wildlife corridor network' and assess against Local Wildlife Site selection criteria**

The area highlighted as a 'wildlife corridor network' in Map 10 incorporates Local Wildlife Sites both within Ollerton and Marthall as well as those adjacent to the parish. It is however highly likely that other land would also meet the criteria for Local Wildlife Site selection. These areas (some of which are identified as potential Local Wildlife Sites in map 6) should be designated if the selection criteria are met[4], as LWS designation is likely to provide a greater level of protection within the planning system.

The wildlife corridor network should be in 'favourable condition'[5] 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 work may include:

- Control of Non-Native and Invasive species:
  Rhododendron, Himalayan Balsam and Japanese Knotweed are present in the woodlands along Pedley Brook and could potentially be present in other areas of the parish. It is extremely important these species are prevented from further colonising woodlands and watercourses in Ollerton and Marrthall with a particular emphasis where these species are identified on or proximal to a development site which can cause disturbance of the ground and increased risk of spread of these plants.

- Control of non-native/garden species in woodland. Garden species such as non-native daffodils, Spanish/hybrid bluebells, monbretia, cotoneaster and variegated yellow archangel and can all be highly invasive and damage the ecological balance of woodlands. The latter three are all listed on schedule 9 of the Wildlife and Countryside Act. Providing information to

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

[5] 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.

homeowners that back onto woodlands and watercourses that highlights the importance of disposing of garden waste appropriately would be desirable.

- 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 breeding cutting outside of the bird breeding season (March to August 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.

- 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 provide breeding and foraging areas for a range of species, as well as improve water quality.

- Hedgerows (particularly those that form part of the wildlife corridor) should be restored or reinstated 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.

2. **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 meadows[6].

Reducing shrub and tree cover around the edges of field ponds and other ponds would allow the aquatic and marginal pond flora to develop and improve the pond as a habitat for amphibians and invertebrates.

Woodland expansion is desirable to buffer Ollerton and Marthall's existing woodlands, but may be of limited value if new plantations are isolated from existing woodland due to slow colonisation by woodland species. It is vitally important that tree planting should only occur on species-poor, semi-natural habitats. 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).

3. **Protect existing hedgerow network**

Hedgerows which 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

[6] Cheshire Wildlife Trust can provide advice and seeds for locally sourced wildflower meadow creation.

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 the minimum level of compensation that could be asked for, but it is likely that good condition high value hedges will require a 3:1 replacement ratio.

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).

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 larger 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. Hedgerow and boundary grants are available to farmers from Natural England to support improvement of hedgerows.

4. **Ensure net gain policies are embedded in Neighbourhood Planning policies**

Providing 'net gain' for biodiversity is embedded in the guidance in the NPPF 2018 (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. This is particularly important if Local Plan policies do not refer specifically to net gain.

5. Habitat mapping

The creation of Ollerton and Marthall's habitat distinctiveness map is only based in part on the ground surveys and ecological records. Although it gives a good indication of the quality of habitats within Ollerton and Marthall it is strongly recommended that the parish is phase 1 habitat mapped. This would provide a high level of habitat detail and could be used to verify the results of the habitat distinctiveness mapping (map 9). 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 classes[7] 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

[7] 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	Ib	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:-

All designated sites, SSSIs and County (Local) Wildlife Sites, that are either a mere or a moss were included.

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.

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.