

Protecting and Enhancing Utkinton and Cotebrook'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), published in 2012 drew on these principles and protecting and enhancing biodiversity and creating ecological networks are central to this framework. Indeed 'biodiversity' is mentioned 15 times in the NPPF with protection and improvement of the natural environment as core objectives of the planning system. Planning policies specifically designed to address the overall loss of biodiversity are known as 'no net loss policies' or 'net gain policies'. Net gain is enshrined in the NPPF in paragraphs 9 and 109 and policy ENV4 of the Local Plan. Cheshire West and Chester 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.

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 Utkinton and Cotebrook, 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. It also identifies key characteristics associated with the landscape character of the Utkinton and Cotebrook 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 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.

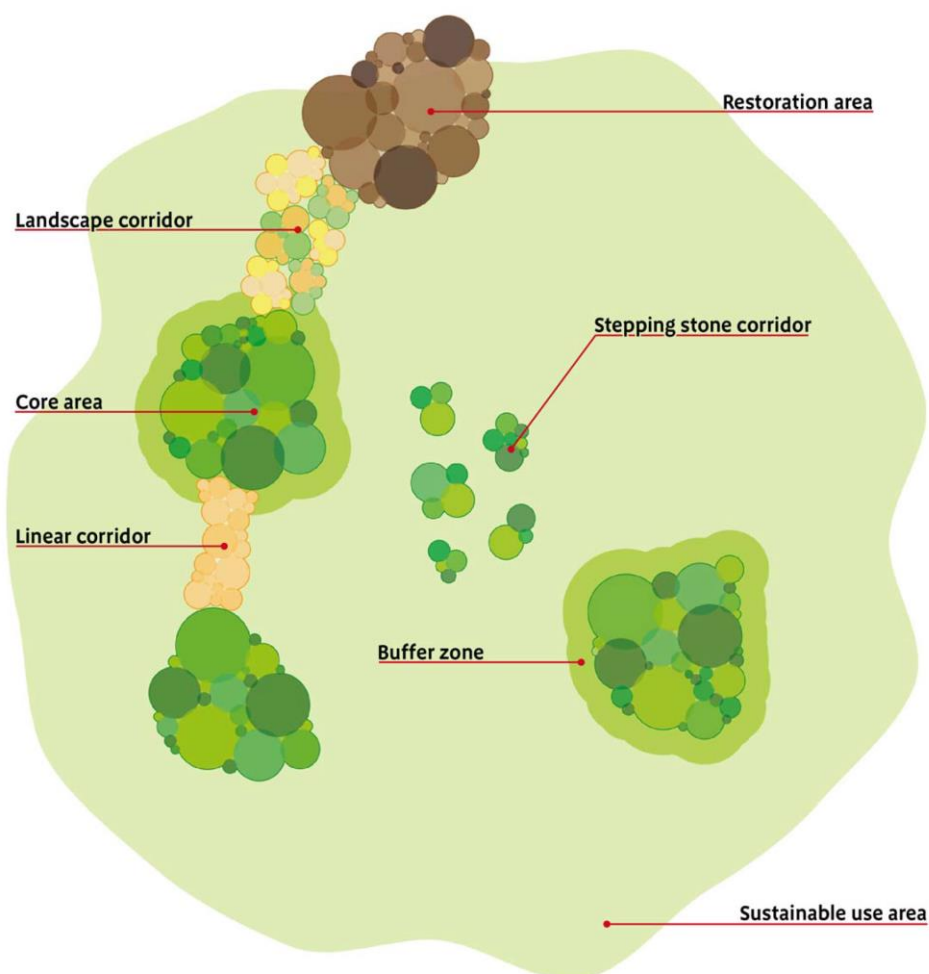


Figure 1. The components of ecological networks (Making Space for Nature report)

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.

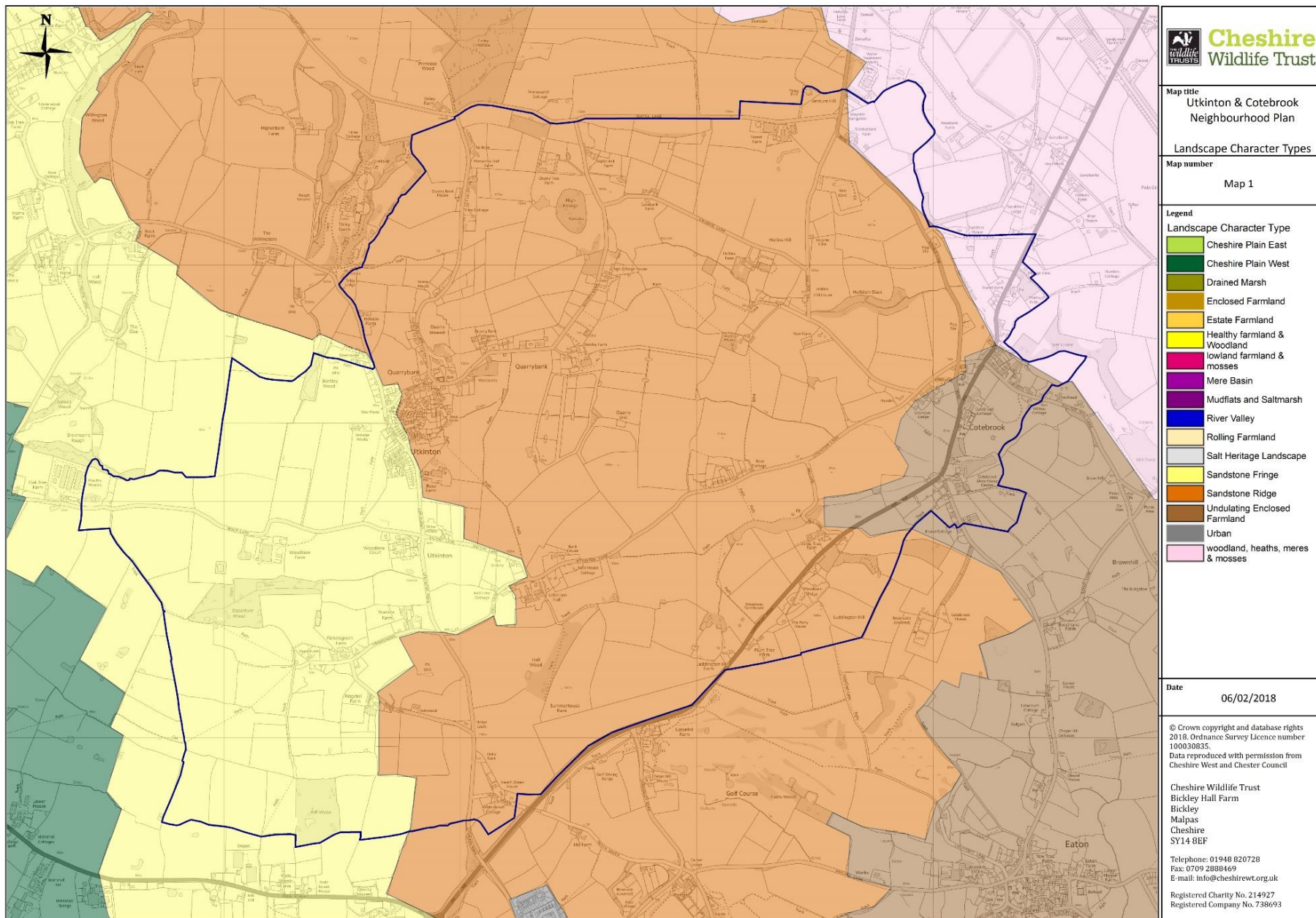
The National Planning and Policy Framework published in 2012 also includes the establishment and conservation of a coherent ecological network as a core principle including:

- The planning system should contribute to and enhance the natural and local environment by establishing coherent ecological networks that are more resilient to current and future pressures.
- Local planning authorities should set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure.
- To minimise impacts on biodiversity, planning policies should identify and map components of the local ecological networks including the hierarchy of sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation; and promote the preservation, restoration and re-creation of Priority habitats, ecological networks and the protection and recovery of priority species populations.

Landscape Character Assessment for the Cheshire region

On a national level Utkinton and Cotebrook lies within National Character Area (NCA) 62 – Cheshire Sandstone Ridge; a discontinuous ridge rising sharply from the gently rolling topography of the Shropshire, Cheshire and Staffordshire Plain NCA and extending to the Mersey Valley NCA. 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 landuse 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



The Landscape Character Assessment (Map 1) identifies four recognisable landscape character types (LCTs) within the Utkinton and Cotebrook neighbourhood planning area, namely: Sandstone ridge, Sandstone fringe, Woodland, heaths, meres & mosses and Undulating enclosed farmland. Each LCT is subdivided into smaller Landscape Character Areas (LCAs); details of the relevant LCTs and LCAs are given below:

Type 1 – Woodlands, Heaths, Meres & Mosses

Key characteristics

- Extensive blocks of woodland (mainly planted coniferous)
- Relict heath, and meres and mosses resulting from glacial deposits
- More recent water bodies created through mineral extraction
- Regular, straight hedgerow boundaries (in many places growing out and in poor condition) enclosing large fields (over 8ha)
- International importance for nature conservation with species such as nightjar, common lizard, cross leaved heath and round-leaved sundew

Delamere (LCA 1a)

A small area of Utkinton and Cotebrook parish to the north of Cotebrook and east of the B5152, Stable Lane lies within the Delamere Local Character Area. The character area has a gently undulating large scale landscape of woodland, farmland and heathland overlying sand and gravel glacio-fluvial drift material, deposited during the last glaciation. There is an organic mosaic of meres, mosses, swamp, fen, woodland and heathland forming part of the ancient Forest of Mara and Mondrem, interspersed with conifer plantations, quarries and large, straight sided fields.

The landscape is dynamic and shows the different stages of peatland/mossland development. Meres formed within kettle holes are associated with fen, mire, acidic grassland and bog habitats and form part of the Meres and Mosses Ramsar site. Peatland features include the nationally rare habitat of quaking bog or 'schwing moor'. Large areas of plantation woodland on former heath and peatland, dominated by conifers, are found at Delamere Forest. The sandy soils also support species rich acid grassland, oak-birch woodland and lowland heath.

Settlement density is low with farmsteads linked by turnpike roads and set within areas of relatively recent enclosure together with scattered linear development. The level of recreational use is high with golf courses, picnic sites and the Forest Park with visitor centre and open access areas. Part of the long- distance Sandstone Trail runs through the area.

Type 2- Sandstone Ridge

Key Characteristics

- A series of scarps and sandstone outcrops standing prominently above the surrounding Plain
- Underlying bedrock- Helsby sandstone and Tarporley siltstone with some glacial till.
- Concentration of prehistoric sites, woodland and heathland, sandstones quarries and exposures and sandstone buildings, walls and sunken lanes

- Varying degrees of enclosure within the landscape at contrasting scales, due to the undulating topography
- Wide variation in woodland cover. Solid blocks of woodland (including conifers) and high hedgerows combine to provide strong enclosure in many places
- In areas of reduced tree cover there is a more open landscape with dominant hedgerow patterns
- Similar to the Sandstone Fringe, but different visually and topographically
- Small scale and dispersed settlement.
- Sandstone Trail runs along the ridge, providing a popular recreational facility for walkers

Eddisbury Sandstone Ridge (LCA 2c)

The majority of Utkinton and Cotebrook lies within this local character area where outcrops of Triassic sandstone form a prominent undulating ridge. Steep sandstone cliffs and dry gorges support dense woodland, including ancient oak woodland. Permanent grassland and woodland are found on steeper slopes while cereal, potato and fruit farming is carried out on the lower slopes. Orchards are features in the Kelsall and Willington area. Quarries are also part of the landscape. Enclosure of the Royal Forest of Mara has resulted in a regular geometric fieldscape with borders of thick hedgerows, some on top of low sandstone walls.

Farms are dispersed and at low density. The 'Sandstone Trail' runs along part of the ridge. The area has been designated locally as an Area of Special County Value (ASCV), being recognised for its landscape and scenic quality and its historic, archaeological and ecological importance.

Type 3 – Sandstone Fringe

Key Characteristics

- Intermediate landscape between the Sandstone Ridge and the Cheshire Plain West
- A landscape of contrasts. Blocks of woodland combined with hedges create enclosure while other areas are elevated and open
- Gentle slopes ranging to steep scarps
- Wilmslow sandstone and Tarporley siltstone overlain by glacial till and deposits
- Brown sands and earth supporting arable land (principally potatoes) and grassland
- Fragments of acid grassland
- Lower woodland cover than Sandstone Ridge- some ancient woodlands, scattered small copses
- Fields mainly enclosed by hawthorn hedgerows, some sandstone walls
- Greater settlement density than Sandstone Ridge and Cheshire Plain West

Helsby to Tarporley Sandstone Fringe (LCA 3a)

The west of Utkinton and Cotebrook is part of the Helsby to Tarporley Sandstone Fringe Local Character Area. This is a gently undulating landscape with some steep gorse-clad outcrops and disused quarries. Some Helsby sandstone formations are designated as RIGS (Regionally Important Geological and geomorphological Sites) for their geological interest. The agricultural landscape is a mixture of arable farming, fruit farming and grassland; pastures dominate in the south. Small woodlands and fragments of acid grassland remain. Fields are typically irregular, small to medium in size and enclosed by hawthorn hedges or low sandstone walls. The clayey soils have low permeability and give rise to a number of water bodies, including ponds, brooks and streams. The field ponds (previous marl pits), brooks and streams are of importance for biodiversity as well as being landscape features in their own right

Woodland cover is low with scattered woodland blocks including Oxpasture Wood in Utkinton. Mature hedgerow trees are important landscape elements, contributing to the overall tree cover. Some of the sandstone boundary walls are derelict, particularly alongside roads, and some woodlands are not being actively managed. Some areas are designated as an Area of Special County Value (ASCV).

The settlement pattern is characterised by nucleated villages and scattered hamlets and farms, Although this area does not provide as many recreational opportunities as the adjacent Sandstone Ridge it contains a number of public footpaths, including the Longster Trail long distance recreational footpath and part of the Sandstone Trail as it descends off the ridge.

Type 5- Undulating Enclosed Farmland

Key Characteristics

- Undulating topography with farmland of small to medium enclosure
- Small woodlands, ponds and streams, nucleated rural villages and scattered farmsteads
- Land use is mainly pasture. In some areas arable farming predominates, especially upon better-drained ground.
- Away from main roads, railways and settlement the landscape is generally quiet and rural
- A range of monuments from Bronze Age barrows to post medieval canal locks
- Character type found across a large part of the Cheshire West and Chester borough; to the east between Northwich and the Sandstone Ridge and in the south of the borough
- Intact hedgerow system, complemented by numerous small farm woodlands or coverts upon locally prominent areas of high ground
- Mercia Mudstones, overlain by till and glacio-fluvial deposits
- Soils comprise slowly permeable clay stagnogleys ideally suited to grass and were a major factor in the development of the Cheshire dairy farming industry
- Small, irregular ancient field enclosures and larger late post medieval enclosures are bounded by hedgerows with an abundance of hedgerow trees
- The majority of fields are grass leys for pasture, although increasing areas are cultivated for silage or feed crops including cereals and maize

- Woodland levels are higher than those of the neighbouring Cheshire plain but still relatively low, concentrated mainly upon former estates and along smaller stream sides.
- Some nucleated villages, which have seen 20th century expansion. Elsewhere settlement a mix of small picturesque villages surrounded by a dispersed pattern of hamlets, farms and halls linked by a network of rural lanes, overlaid by main roads
- Associated with the early fields is a network of footpaths, some of which may be of some antiquity

Eaton, Marton & Over (LCA 5c) LCA 5c: Eaton, Marton & Over

A small area of Cotebrook, which includes the Shire Horse Centre lies within this Local Character Area. This is a transitional area of gently undulating farmland lying between the elevated areas of Delamere and the Eddisbury Sandstone Ridge to the west, and the flat lowland of the Cheshire plain to the south and west. There is a bedrock geology of Bollin Mudstones (part of the Mercia Mudstone Group) covered by a mantle of glacial drift deposit. Steep wooded cloughs incise the hills, containing small brooks that drain eastwards towards the River Weaver. The area has small scale fields bounded by hedgerows with hedgerow trees and drainage ditches. Although the hedgerow network is generally intact, there are some gaps in the network and some over-mature hedgerow trees.

The landuse is mostly pastoral. Unimproved meadows and species rich grassland are found along brooks and on lower lying areas. Several areas support wetland habitats. Poorly draining clay soils support dairying and some arable crops. Small farm woodlands, coverts and willow withy beds are important features of a landscape with generally relatively low woodland cover. Field ponds are a feature of the lower lying area with larger pools also found within the landscape.

There is a network of small rural lanes link scattered farms, cottages, hamlets and halls. 20th century linear residential development has taken place along roads. Recreational opportunities are provided by public rights of way including the Whitegate Way (disused mineral railway mainly for transporting salt), picnic sites, fishing lakes and golf courses

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.

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.

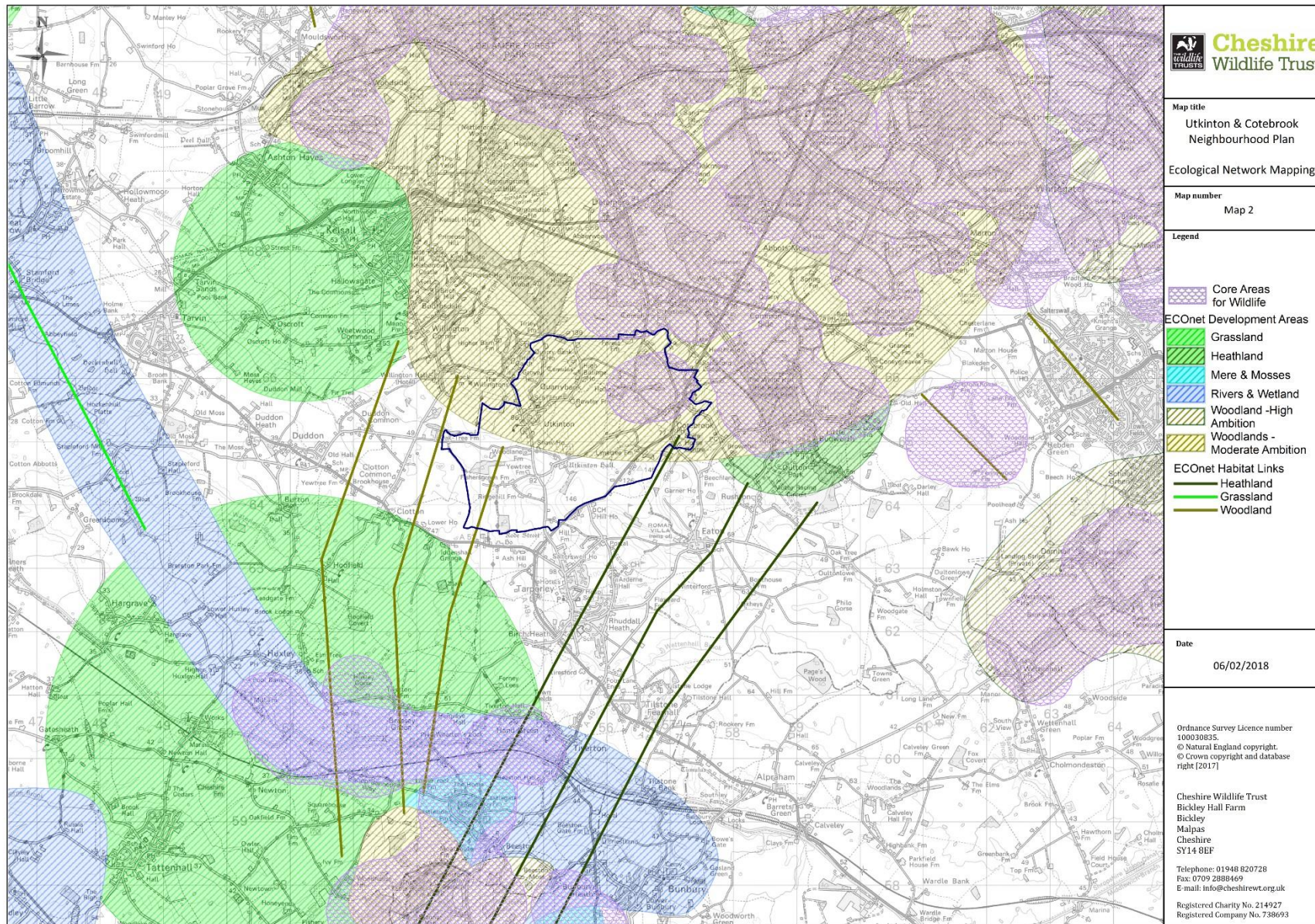
ECONet – Integrated vision of the Cheshire County Ecological Network

Between 1999 and 2003 the then Cheshire County Council were a partner within the Life ECONet Project. This was a project supported by the Life-Environment Programme of the European Commission to demonstrate in Cheshire and in Emilia-Romagna and Abruzzo (Italy) how ecological networks can help achieve more sustainable land use planning and management, as well as overcome the problems of habitat loss, fragmentation and species isolation.

The ECONet study is an integrated vision of a Cheshire County Ecological Network of ecological cohesion. The vision acts as a framework for nature conservation in the region by identifying areas of strategic importance for wildlife. It is intended as a guideline for making decisions in local and strategic planning in relation to biodiversity.

The 2003 study identified numerous core areas of key importance for wildlife. It also identified development areas, which were assessed as having the greatest potential to contribute to the viability of the core areas through habitat restoration and creation schemes. The aim of any future work related to the county ecological network should be to expand the core areas and to provide better habitat connectivity (wildlife corridors). The guidance provided by the ECONet project has been incorporated into the conclusions of this report created for the Utkinton and Cotebrook Neighbourhood Plan.

Map 2: Ecological Network Mapping (ECONet)



Ecological Network Mapping has highlighted an area in the north east of Utkinton and Cotebrook, which includes the Local Wildlife Site Holbitch Slack as being a core area for wildlife. Outside of the parish, to the north east, a huge area has been identified as being a core area for wildlife. This includes Oak Mere SSSI (Site of Special Scientific Interest), part of the Midland Meres & Mosses Phase 2 Ramsar site. Ramsar sites are internationally important wetlands. Many Local Wildlife Sites are also found within this core area with those closest to Utkinton and Cotebrook including Bowyers Waste, Sandy Mere, Fishpool Moss, Nunsmere, Thieves Moss and Pool, Marley Tile Works Lagoon, Hogshead Moss and Leech Mere.

Narrowly separated from the larger core area is a smaller core area, which lies to the east of Cotebrook. Little Budworth Common SSSI, designated for being one of the best surviving examples of lowland heathland in Cheshire, is found here. Core areas are identified by EConet as fundamental components of the county wide ecological network (shaded purple).

More than half of Utkinton and Cotebrook lies within an area identified by EConet as a development area within Cheshire for woodland. Increasing woodland cover within this area would according to EConet provide better connectivity between core areas.

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:

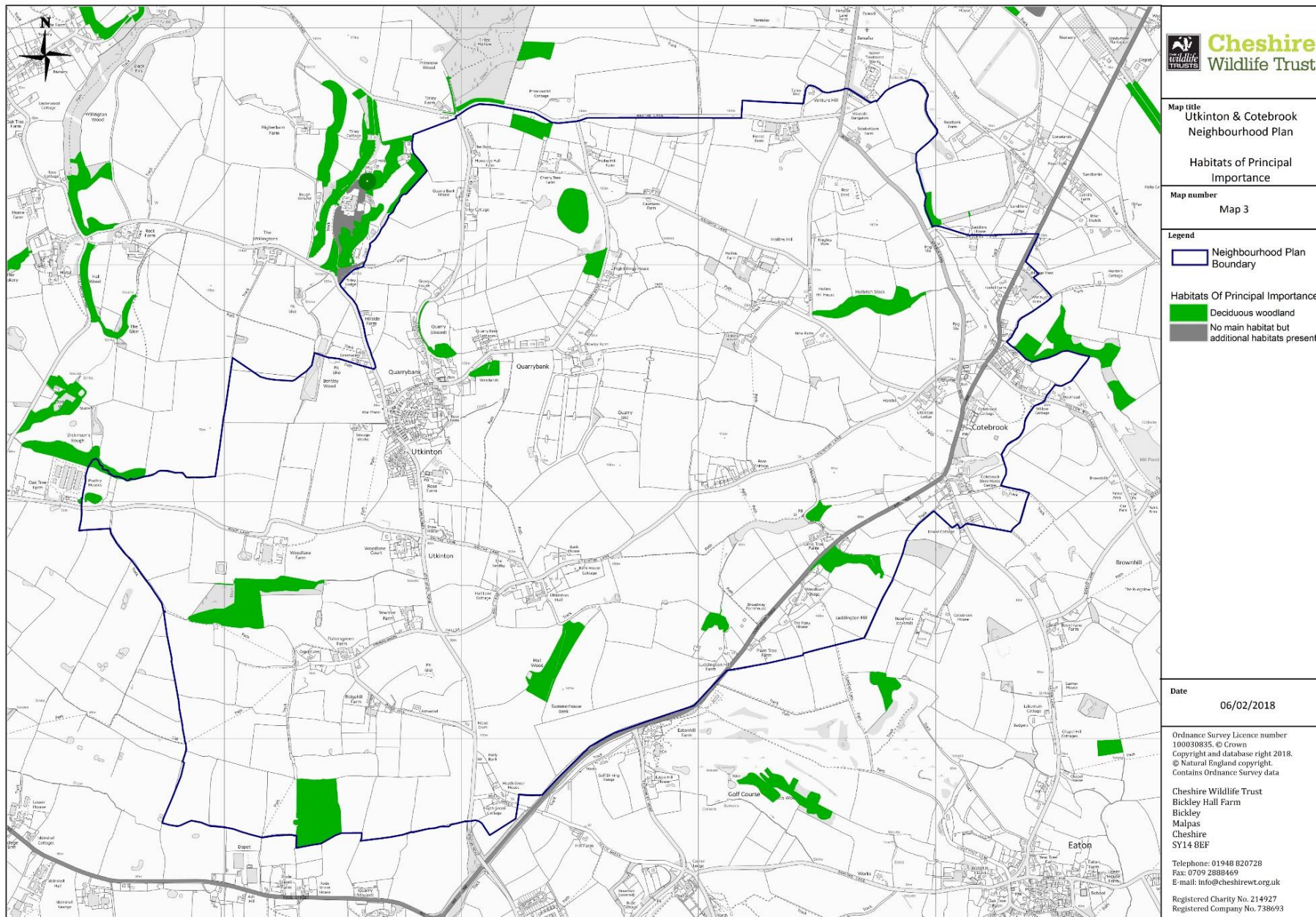
Habitat type band	Distinctiveness	Broad habitat type covered	Colour on map
High ecological value	High	Priority habitat as defined in section 41 of the NERC Act, Designated nature conservation sites (statutory and non-statutory)	Red
Medium ecological value	Medium	Semi-natural habitats and habitats with 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)

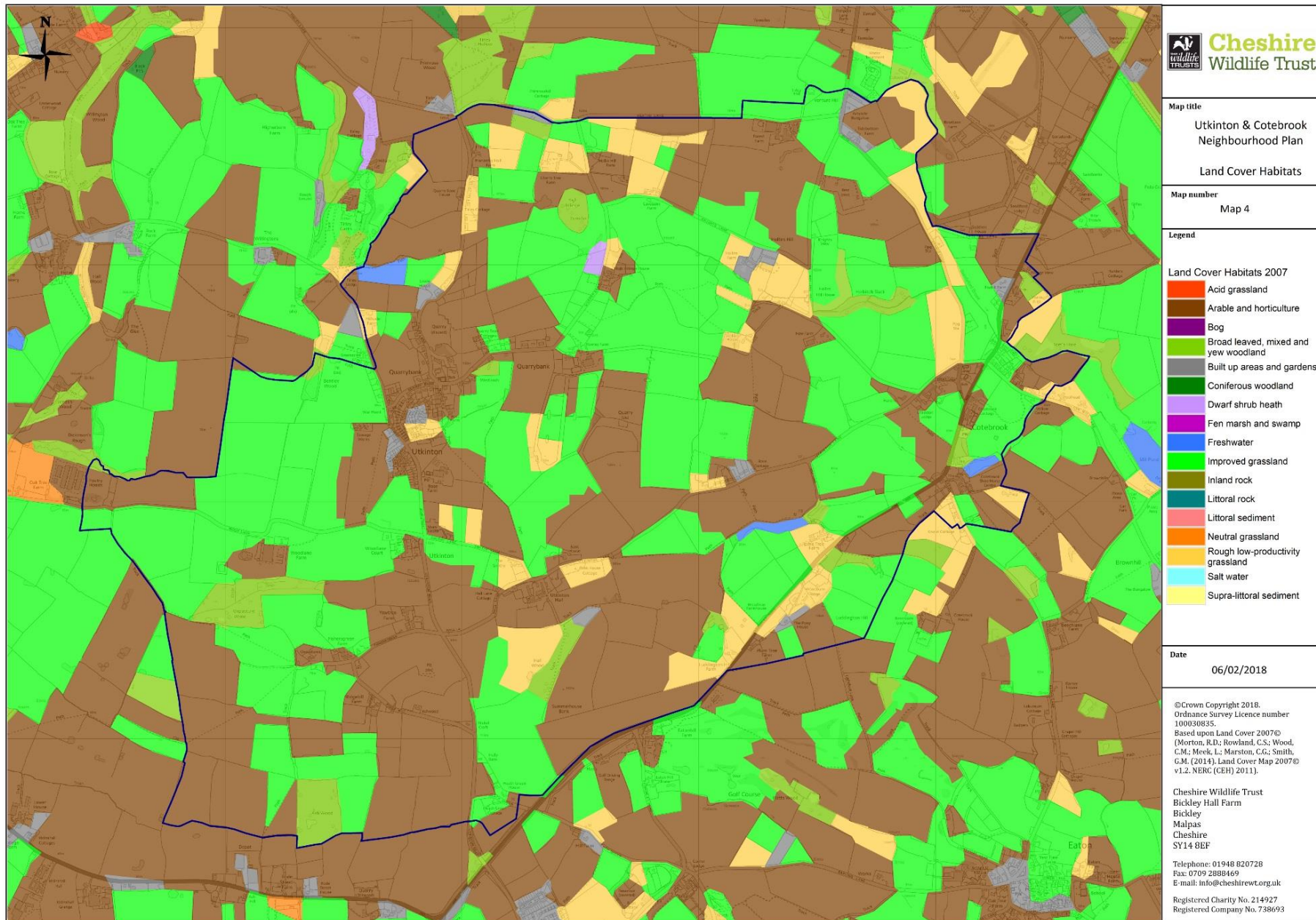
- Several published data sets were used to produce the habitat distinctiveness maps:
 - Priority habitat Natural England 2016 – High/medium confidence coded as high distinctiveness, and low confidence coded as medium distinctiveness unless other data is available.
 - Landcover data, Centre for Ecology 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/CW&C 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 Utkinton and Cotebrook Neighbourhood Plan area Land Character Assessment and EConet categories were mapped and the results were used to inform the conclusions.
 4. Information from recent planning applications in Utkinton and Cotebrook was researched and species records have been incorporated where appropriate. Ecological records were also obtained from the Cotebrook Shire Horse Centre website, the NBN (National Biodiversity Network) Atlas and the Woodland Trust's Ancient Tree Hunt website.

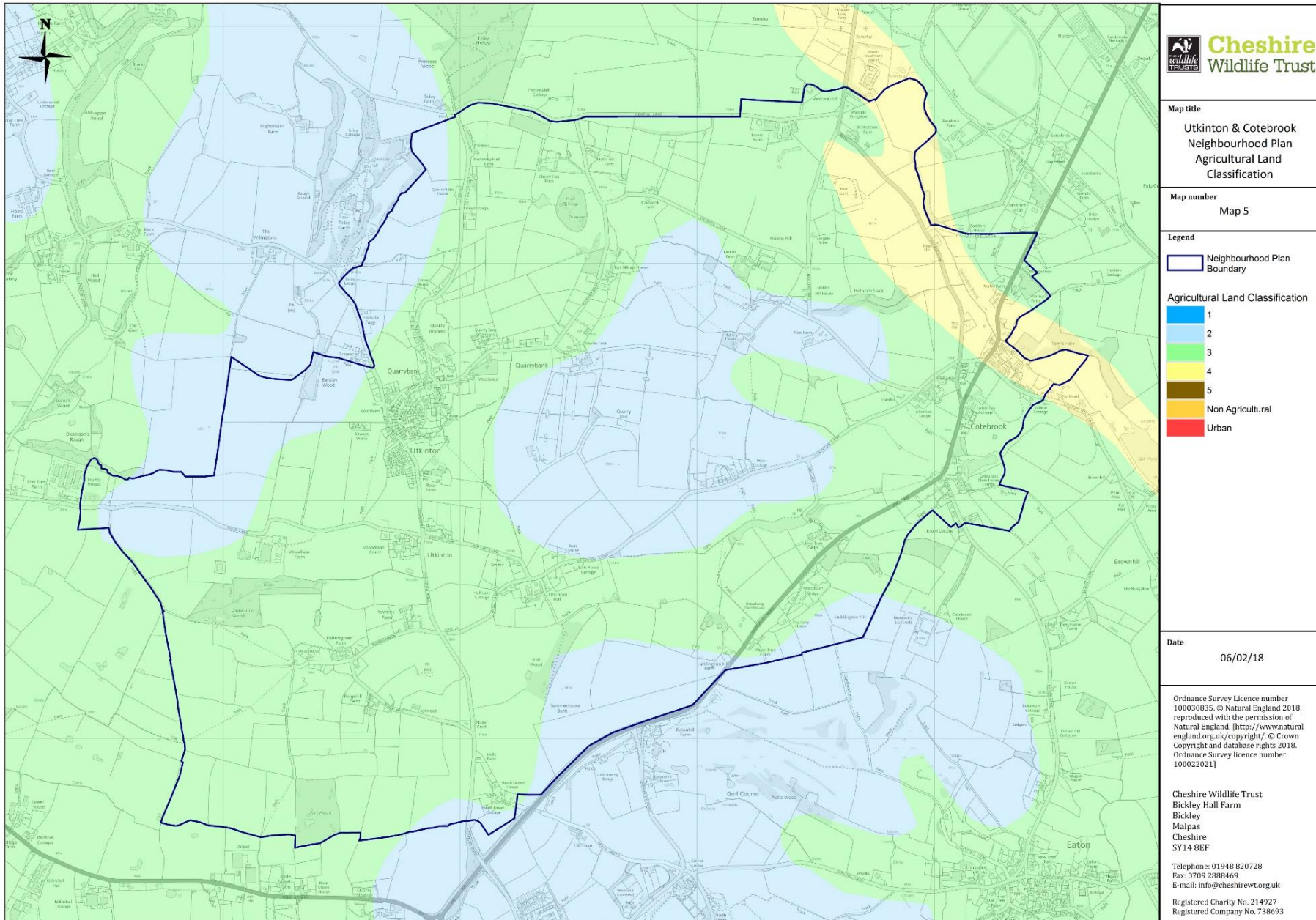
Mapping Map 3: Terrestrial habitats of Principal Importance – Natural England 2016



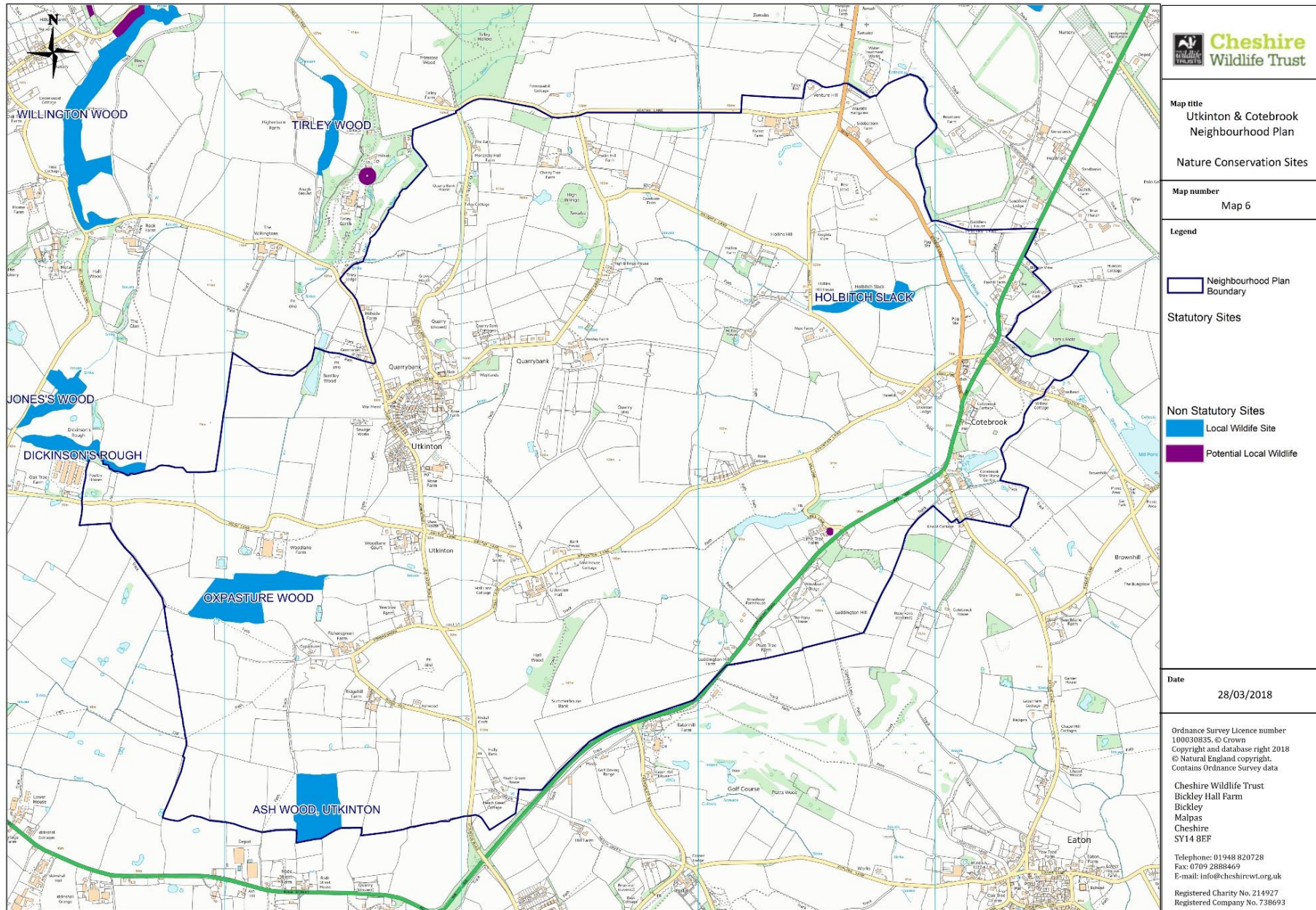
Map 4: Land Cover Map 2007 (LCM2007) parcel-based classification of satellite image data showing land cover for the entire United Kingdom derived from a computer classification of satellite scenes obtained mainly from the Landsat sensor



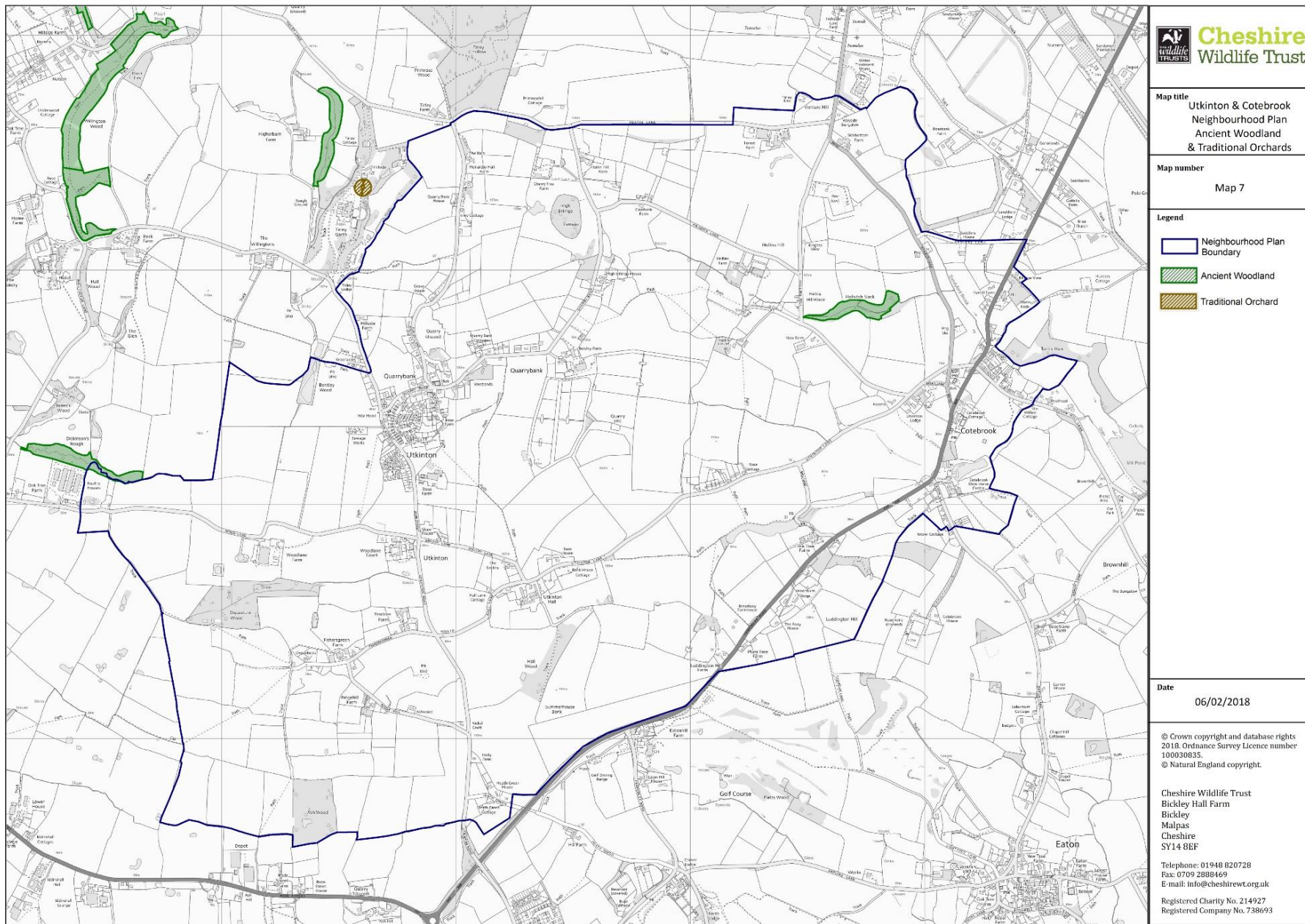
Map 5: Agricultural Land Grading – Natural England 2013



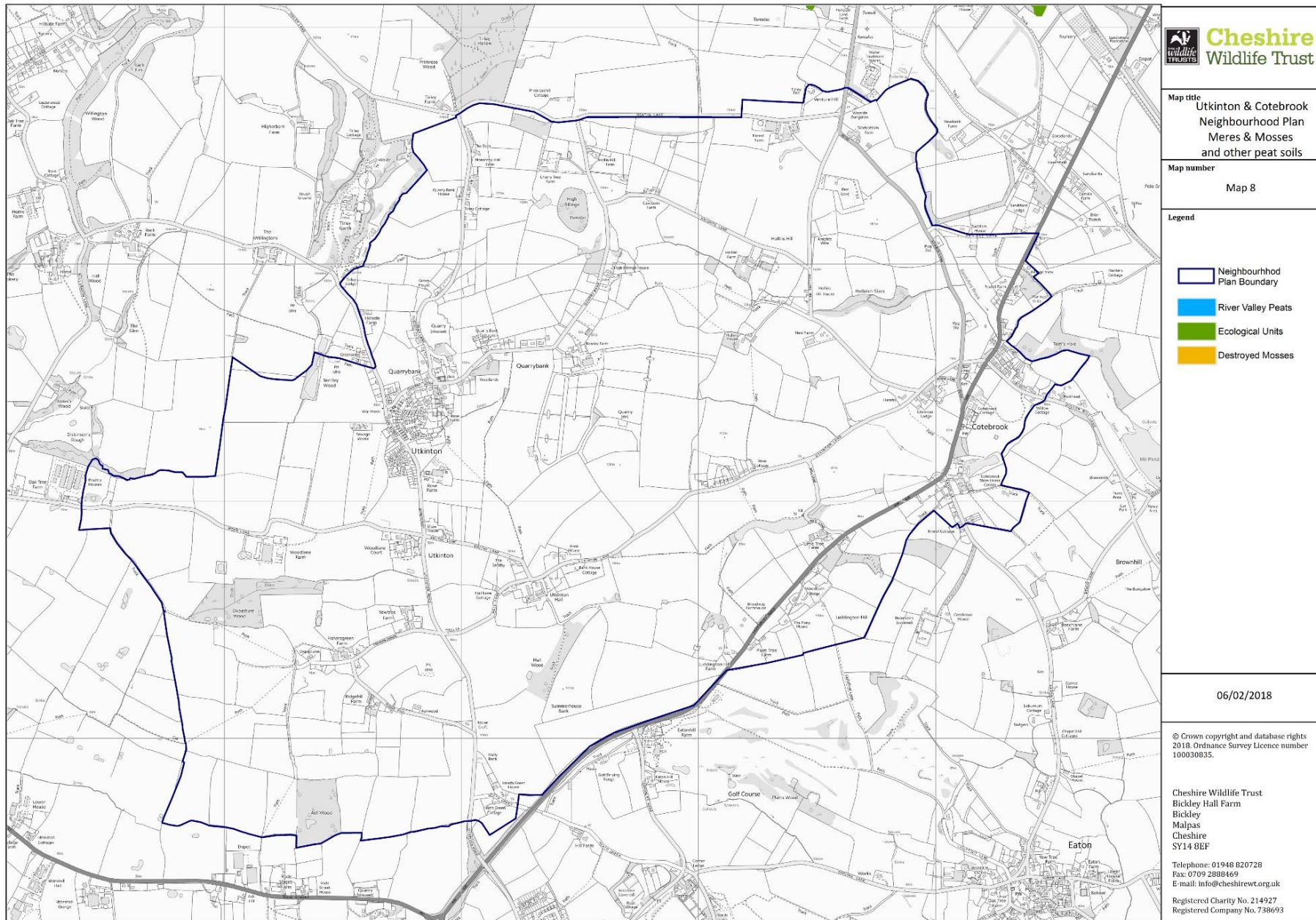
Map 6: Nature Conservation Sites, including designated Sites of Special Scientific Interest, Local Nature Reserves, European designated sites (SAC, SPA), Ramsar sites, Local Wildlife Sites and non-designated Potential Local Wildlife Sites



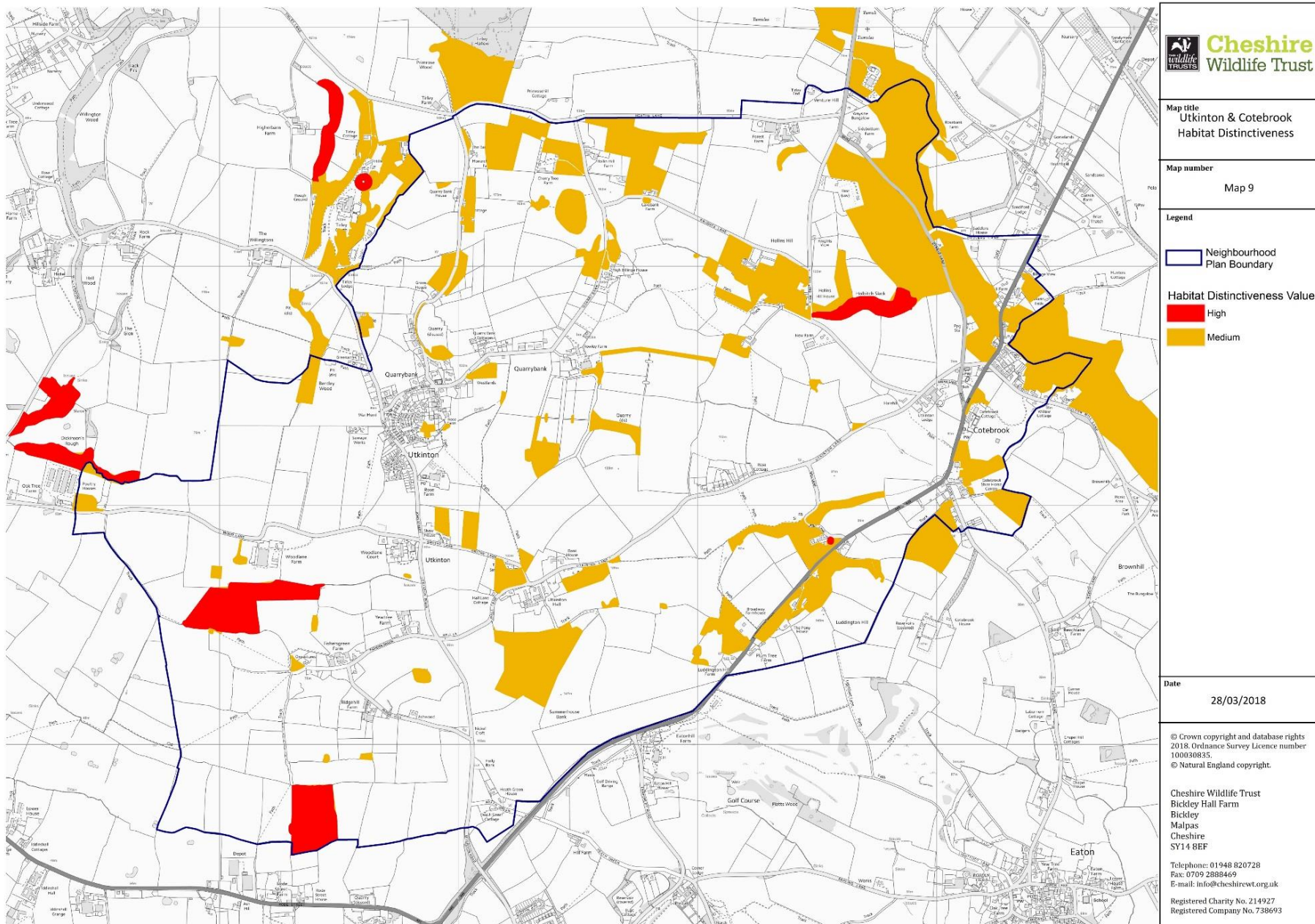
Map 7: Ancient woodland – Natural England 2015



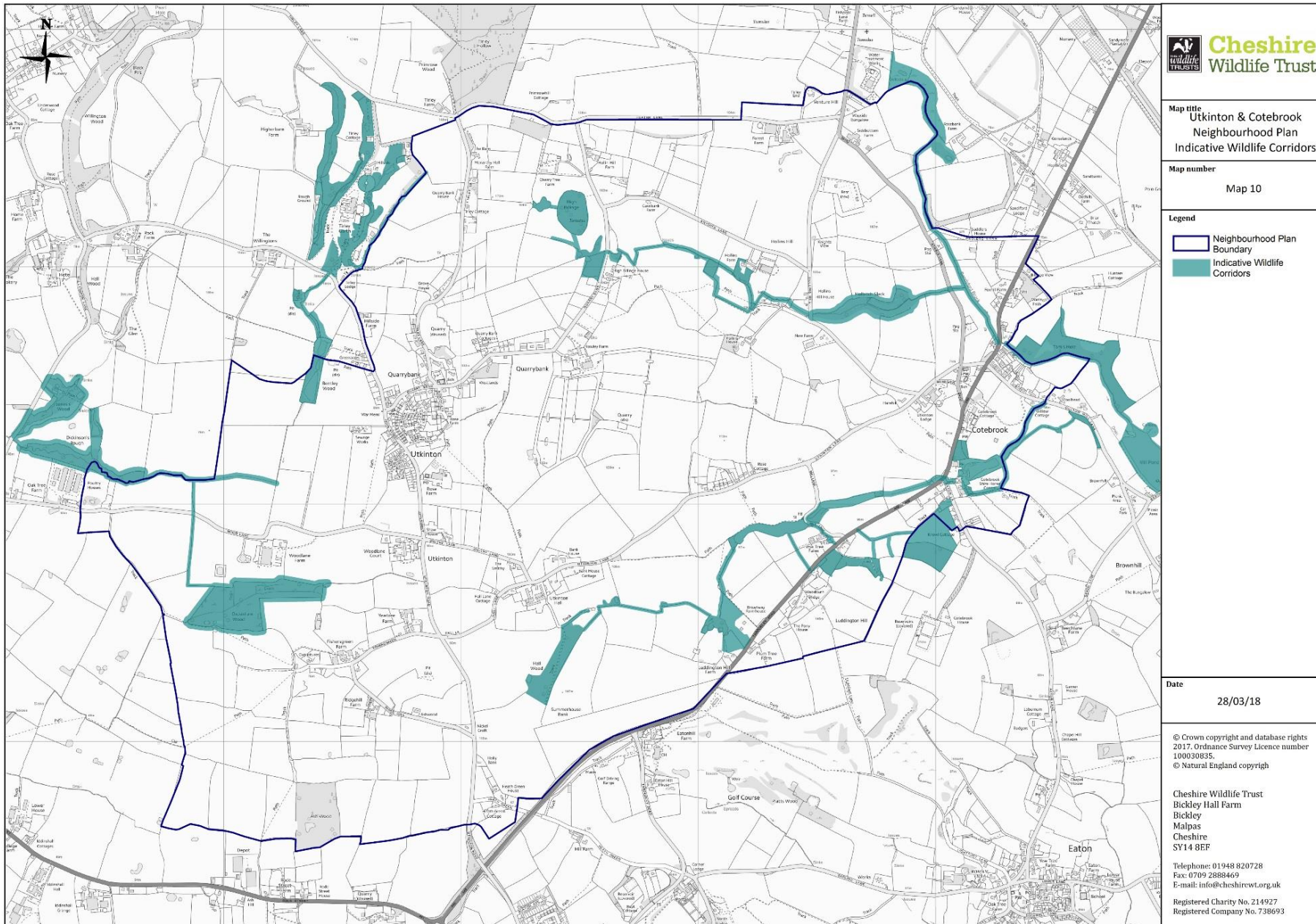
Map 8: Meres and Mosses and other peat soils, Meres and Mosses Landscape Partnership Scheme 2016



Map 9: Habitat Distinctiveness



Map 10: Indicative Wildlife Corridor Network



Results and discussion

High distinctiveness habitat

1. Woodland and Ancient Trees

Holbitch Slack in the north east and selected as a Local Wildlife Site is possibly the most important area of woodland in Utkinton and Cotebrook. This narrow gorge with waterfalls cascading over the bedrock is host to ancient woodland of predominantly oak and sycamore with rowan and birch. Holly, elder and hawthorn are found in the understorey. Bluebells are locally abundant and buzzards have been recorded in the woods. The woodland is included on the ancient woodland inventory and visible on tithe maps from the 1800s. Meylan's pouchwort (*Calypogeia integristipula*), a leafy liverwort that grows on sandstone rocks, gritstones and peaty banks is present. This species is nationally scarce.

Oxpasture Wood in the west of the parish is not present on the ancient woodland inventory, however the tithe maps from the 1800s show a woodland growing here. A lake, which was previously present is now occupied by poplar with iris and common reed, while the extent of the woodland has increased in the west. Ash, sycamore, Corsican and Scots pine make up the canopy. Large stumps are found within the woodland suggesting it was harvested and the current forest is regrowth. The ground flora includes dog's mercury and yellow archangel. Within Cheshire these are class 2 ancient woodland indicator species, species found in ancient woodlands but that may survive long periods after a wood has been felled and reinvade secondary woodland. Bluebell is dominant under an area of beech trees.

Ash Wood at the southern edge of the parish is a covert surrounded by predominantly arable fields. Two steep sided ponds are present. Oak, ash and beech comprise the canopy with hazel, rowan, hawthorn and holly in the understorey. Dog's mercury (class 2 ancient woodland indicator), wood sorrel, wood anemone and red campion occupy the ground flora. Bluebell is abundant over a third of the site. A wood was present here on the tithe maps, but recent aerial images show rows of trees within the woodland, evidence that much of the current woodland is a plantation. Ancient woodlands and most plantations on ancient woodland sites are considered irreplaceable habitats due to time taken for them to acquire their flora and fauna.

Dickinson's Rough ancient woodland LWS lies immediately adjacent to the parish, in the west. This woodland is in a gently sloping valley with a small stream meandering through. The woodland canopy has large-leaved lime, pedunculate oak, horse chestnut and crack-willow with a diverse understorey and a rich ground flora supporting species such as yellow archangel, enchanter's-nightshade, wood anemone, wood sorrel, opposite-leaved golden-saxifrage and wood dock. Of particular note is the occurrence of ramsons, a Cheshire ancient woodland indicator species.

Jones's Wood, another Local Wildlife Site (LWS) lies nearby Tirley Wood LWS, which is on the ancient woodland inventory lies to the west of the parish. It is an oak/birch woodland, which also supports small-leaved lime, an ancient woodland indicator species which is locally scarce.

Further west is Willington Wood, also an ancient woodland now dominated by planted larch but retaining some interesting ground flora such as lousewort, tor grass and woodruff (an ancient woodland indicator species).

The presence of high quality woodland means that this area may be important for priority red listed¹ woodland birds. There are not many biological records from within Utkinton and Cotebrook, which would be able to evidence this. A lack of records does not necessarily indicate a lack of species and is more likely to be due to a lack of recording effort in the area. Great spotted woodpecker has been observed near the village of Utkinton and in the woods at High Billinge.

Utkinton and Cotebrook's woodlands are highly likely to support roosts of UK priority bat species, which will forage for insect prey along the woodland edges, hedgerows and water bodies. All bats are European Protected Species (EPS) and many are also UK species of Principal Importance (S41 species). Roof spaces and crevices in buildings also provide places for bats to roost. Soprano pipistrelle and brown long eared bat were roosting in a building in the Hollin's Hill-Knight's Lane area where there are woodlands, hedges with mature trees and ponds. Common noctule and soprano pipistrelle have been observed foraging along trees and in open fields near Sadler's Lane in the north east of the parish.

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 expanses of bluebells are not as common as they were and in Cheshire they are considered a local priority plant species. The woods of Holbitch Slack, Ash Wood and Oxpasture Wood are host to viable populations of bluebells, making them significant at a county level. There are also recent bluebell records for Utkinton village.

2. *Veteran Trees*

A recording of an ancient lime tree, measuring 6m in girth was discovered on the Woodland Trust's Ancient Tree Hunt website. This very large ancient tree is located at Limetree Farm, just off Mill Lane in the east of the parish. It has decaying wood in the crown and a hollowing trunk and branches. Ancient trees may have a cultural or landscape value but they are also important for the species they support, particularly bryophytes, invertebrates, lichens and fungi. Their crevices can also support bat populations. It is possible that further veteran trees that are yet to be recorded are found within the parish.

3. *Traditional Orchards* (outside the parish)

An area of traditional orchard has been identified by Natural England (map 7) at Tirley Garth. Traditional orchards are uncommon within Cheshire and considered important habitats at a county level. Traditional orchards are areas of fruit or nut trees grown on traditional rootstock, planted at low density and managed in a low impact way. Similarly to veteran trees they can provide a valuable habitat for several species groups including lichens, bryophytes, invertebrates and birds.

¹ Birds of Conservation Concern 2017

4. *Mosslands* (outside the parish)

Despite being in close proximity to the mossland area located to the north east, peat soils and the habitats associated with them appear to be absent from Utkinton and Cotebrook (map 8). Many of the mosslands outside the parish are recognised as being of county importance through their selection as Local Wildlife Sites. Oak Mere SSSI, part of the Ramsar site is of national and international importance. Mosslands are accumulations of peat that developed from the rotting fen vegetation present in shallow lakes in depressions in the glacial sands after the last ice age. In some localities the accumulation of peat eventually led to the formation of dome shaped raised bogs that were fed only from rain water. Raised bogs are recognised as European Annex I habitats as well as UK habitats of Principal Importance (S41 habitats). These habitats are extremely rare across Europe as a whole and are particularly important for the suite of specialised species that they support.

Sandy Mere is one of the closer mosses to the parish and is a basin mire with encroaching woodland and areas of heathland. Species found here include hare's-tail cottongrass, white sedge, heather, cross-leaved heath, bog cranberry and bilberry. The non-native invasive species shallon (*Gaultheria shallon*) was recorded within this site.

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.

No species-rich grasslands of high distinctiveness were identified within the parish, although there may well be some high quality grasslands that have not been recognised as such. Species-rich grasslands support a range of life, particularly plant and invertebrate. They are the fastest disappearing habitat in the UK with many of Cheshire's once biodiverse grasslands having been converted to species poor perennial rye grass dominated pastures or arable land. Following this trend map 4 shows that there is much improved grassland and arable/horticultural land within Utkinton and Cotebrook.

Some of the 'medium distinctiveness' habitats identified in map 9 are thought to be semi-natural grasslands, particularly on less productive waterlogged areas and margins of watercourses. Semi-natural grasslands are valuable for wildlife as they can support populations of invertebrates and a variety of mammals. Many farmland birds on the BTO's Birds of Conservation Concern red and amber lists feed on insects that live in semi-natural grasslands. These grassland are also important feeding areas for overwintering birds; starlings (red listed) and swifts (amber listed) rely on these grasslands within the parish. Rough grasslands, as well as woodlands, 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 the route is barrier free. Smooth newts have been recorded in the pond off Northgate Street, Utkinton.

There are relatively few field ponds within Utkinton and Cotebrook compared with some other parts of Cheshire. Field ponds contribute to the permeability of the landscape for wildlife. Any ponds have been highlighted as habitat of medium distinctiveness in map 9 and should always be retained where possible when land is developed. Stocking ponds with high numbers of fish, such as Little Mill angling lake in Cotebrook, decreases the wildlife value, because introduced fish 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. The tributaries of Milton Brook and Darley Brook within Utkinton and Cotebrook also add to the permeability of the landscape, allowing species to disperse. The waterbodies within the parish are likely to provide a valuable foraging habitat for bats. The larger ponds/lakes are likely to be valuable for both breeding and overwintering birds.

A large pond surrounded by grassland and two smaller ponds that lie within recently planted woodland are found at Cotebrook's Shire Horse Centre. There are anecdotal observations of great crested newt (European protected species), toads, frogs and grass snake here, alongside water voles. Water voles are the fastest disappearing mammal in the UK. They are protected under the Wildlife and Countryside Act and are also a UK species of Principal Importance (S41 listed species). A 90% decline in water vole populations across England, Scotland and Wales has been attributed to the lack of suitable bankside (riparian) habitat together with the spread of the American mink. There are believed to be only three significant populations of water vole in the Cheshire region meaning that the future of the water vole in the county is under threat if measures are not taken to restore and expand their habitats. Given the possible presence of water vole here it is also possible that there are further individuals at nearby ponds or along the Darley Brook.

With recent declines in water vole populations in Cheshire, the area around the Shire Horse Centre could be important at the county level for water voles. Grass snakes are infrequent within Cheshire and any site, which supports a grass snake population should be considered as a Local Wildlife Site in the region. It is therefore possible that this area is of high distinctiveness. Further surveys around the Shire Horse Centre are recommended.

The non-native invasive signal crayfish has been recorded near Hollins House, south west of Holbitch Slack. It is not clear whether this record relates to the pond near the house or to the stream. This species was accidentally introduced to the UK as a result of it being farmed for food. It spreads crayfish plague to and outcompetes native white-clawed crayfish. Signal crayfish burrows of up to 2m deep can weaken riverbanks and cause them to erode. Populations of the native crayfish are in rapid decline and this species is now protected under the Wildlife and Countryside Act. In contrast signal crayfish are listed as an invasive species on Schedule 9 of the Wildlife and Countryside Act 1981.

Scattered farmland trees together with the hedgerow network are fundamental to landscape permeability and provide habitat for numerous species including declining farmland bird populations. Many small fields still remain in Utkinton and Cotebrook and most have a good network of hedgerows enclosing them. Dunnock (amber listed) and house sparrow (red listed), present within

the area, will make use of the hedgerows within the parish. House sparrow populations suffered a nationwide decline of 71% between 1977 and 2008². Many invertebrates and small mammals also inhabit hedgerows, particularly those with adjacent wide field margins or those which lie adjacent to semi-natural grassland. Small mammal populations are prey for birds such as locally recorded buzzard, which consequently do best in areas where the traditional farmland landscape is intact.

Hedgerows have not been included within the habitat distinctiveness mapping as it is difficult to gauge the wildlife value of a hedge remotely. Several mature trees (standards) have been allowed to grow out of the hedgerows within the parish, creating a more varied habitat. There are however areas with few or no standards growing within the hedgerows, particularly in the west of the parish surrounding the more intensively farmed fields.

Hedgehogs, a species of principal importance have been recorded in Utkinton village. These mammals make use of hedgerows, woodlands, meadows and suburban gardens.

Within Utkinton and Cotebrook there are woodlands 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. Deciduous woodlands considered likely to be habitats of principal importance by Natural England are marked on map 3.

Tithe maps from the 1800s show a woodland known as Bentley Wood, north west of Utkinton village. There are now large lakes within this woodland but it is possible that some of the former trees or at least remnants of an ancient woodland ground flora remain. Hall Wood, to the east of Utkinton road and north of the A49, may also have ancient origins since it is present on the tithe maps. Also present on the tithe maps is the woodland to the east of the A49 near Limetree Farm. Not all of this woodland is necessarily of ancient origin since some of it is growing on the site of a former quarry. Just to the north east of this and outside the parish boundary is another area of woodland. The maps show that the western portion was felled in the 1900s and is therefore regrowth, but the rest of the wood may have more ancient origins.

Tom's Hole Wood, just outside the parish and to the north east of Cotebrook appears on the tithe maps and as a habitat of principal importance. High Billinge Wood in the north west of the Neighbourhood Plan area and a smaller patch of woodland to its south also feature on the tithe maps and map 3. High Billinge lies on the site of a former burial ground and may be an old woodland. A further patch of woodland may have a number of conifers within it, but could be on the former site of ancient woodland. This woodland is marked on the land cover habitat map (map 4) as dwarf shrub and heath. Should heathland (a habitat of Principal Importance) be present here management is recommended to prevent it from scrubbing over and succeeding to woodland since heathland habitats are a rarity within Cheshire. The small area of woodland surrounding ponds to the east of the poultry farm in Utkinton may also have ancient origins, although not identified by Natural England as being a habitat of principal importance.

² RSPB website

The woodlands around Tirley Garth (outside parish, to north west), not including the Local Wildlife Site, may also have ancient origins as they feature on the tithe maps and are habitats of Principal Importance. These woodlands are all likely to provide a good habitat for a variety of wildlife.

There are woodlands that are more recently planted or have arisen through succession from grassland or areas of scrub. These woodlands are nevertheless still likely to provide a valuable habitat for wildlife, particularly invertebrates and birds. Some of the woodlands have established on old quarries or marl pits, with several of the woodlands identified by Natural England as being deciduous and habitats of Principal Importance. Pockets of younger woodland are found around the A49 near Luddinton Hill Farm and near the Shire Horse Centre, on the site of an old marl pit to the north of High Billinge, along Quarry Bank and Tirley Lanes in Utkinton village and outside the parish to the east of Stable Lane.

The invasive non-native species Japanese knotweed was observed via Google streetview images growing in a hedgerow along Tirley Lane in the north west of the parish, near Grove House. According to the Parish Council website there may also be Japanese knotweed on John Street. This species not only out competes the native flora and can cause river bank erosion, but can also cause significant damage to property. It is likely that further invasive species are present within the parish that have not been recorded. Invasive species require control to eradicate or prevent their further spread.

Although there are no records for the invasive non-native species Himalayan balsam for the parish, it is likely to be present since it is unfortunately almost ubiquitous along Cheshire's water courses/bodies and within damp woodlands. 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.

Of interest are records for polecat east of the A49 near Luddington Hill. These records are however from the 1990s so it is possible that the species is no longer in the area. polecats, which inhabit woodland, marshes, riverbanks and farmland are protected under Schedule 6 of the Wildlife and Countryside Act 1981 and are a UK species of Principal Importance. Otter, protected under Schedule 5 of the Act have been recorded within the 10km grid square that Utkinton and Cotebrook lies within. Their exact location is unknown, but since otters have huge territories it seems likely that they may use the parish's watercourses and water bodies.

Otter is classed as near threatened by the IUCN. Otter populations declined rapidly from the mid-1950s to the 1970s within the UK, believed to be in association with the introduction of cyclodiene pesticides. Widespread riparian habitat destruction also occurred prior to the decline in otter populations. A recovery of the UK population is now underway, although in some northern areas it is slower than expected. Otters within England are mainly confined to fresh water, both still waters and flowing rivers and streams. Although it is not considered essential for otters to have access to trees and shrubs in riparian habitats, they can provide areas to breed and increase cover and forage

for invertebrates, which in turn increases fish numbers- the otter's primary prey. Physical attributes of rivers will impact otters if they affect food availability and an otter's ability to move upstream where there is no suitable terrestrial alternative. An increasing number of otters have become road casualties³.

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 EConet analysis (2003), this study has identified a wildlife corridor network (shown in map 10) with ecological connectivity within and beyond the Utkinton and Cotebrook Neighbourhood Planning area.

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 hedgerows and watercourses within the parish. 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, such as the hedgerow that joins Oxpasture Wood to the woodland that runs in to Dickinson's Rough. Part of the hedgerow also runs 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 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.

A 15m buffer zone is also appropriate around Ash Wood Local Wildlife Site, which does not fall within any of the corridors and for any land lying outside the corridor network that, following an ecological appraisal, is subsequently found to be high distinctiveness Priority habitat⁴. 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/otter sensitive) lighting should be used on the outside of buildings or in

³ Chanin P (2003). *Ecology of the European Otter*. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough

⁴ Includes S41 Habitat of Principal Importance. This may currently be mapped as medium distinctiveness due to lack of information

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 desirable⁵. 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 high or medium 'habitat distinctiveness' (Map 9) 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 good network of field boundary hedgerows within Utkinton and Cotebrook 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 parish'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 marshy 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 no 'net loss' 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.

⁵ Refer to Recommendations section

Conclusion

This study has highlighted that the important wildlife habitat in Utkinton and Cotebrook is mainly associated with the woodlands, water bodies and hedgerows. There appear to be few semi-natural grasslands, making the ones that are present even more important. The area surrounding the parish has value in its heathlands, mosslands, traditional orchards and woodlands. 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, wetland, 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 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. Additionally Ash Wood Local Wildlife Site which lies outside the corridor network should be protected and a 15m buffer applied.

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 Utkinton and Cotebrook 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 Utkinton and Cotebrook'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'

At present there is no connection between the two wildlife corridors in the west of the parish. 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. Elsewhere in the parish corridors could also be linked together through increasing hedgerow quality. Linking Ash Wood Local Wildlife Site to the wildlife corridor network, particularly Oxpasture Wood would also have great benefit allowing species to move more easily through these woodlands and the wider landscape. Again, the main way to link these areas would be to improve the quality of the hedgerows. The more good quality links that are created between corridors and between Ash Wood and the corridors, the better. Creating or allowing more diverse agricultural field margins to develop in addition to improving the quality of hedgerows will further add to connectivity.

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

The areas highlighted as 'wildlife corridor network' in Map 10 incorporates two of the three designated Local Wildlife Sites, however it is highly likely that other land would meet also 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 criteria⁶ are met, 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'⁷ 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:

- It is extremely important that Schedule 9 invasive species are prevented from further colonising Utkinton and Cotebrook'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. The Japanese knotweed found in the north of the site should be removed. If Himalayan balsam is present within the parish, which seems likely, it should be managed to control its spread. This species colonises rapidly and will outcompete native woodland, grassland and wetland flora.

⁶ Local Wildlife Site criteria for the Cheshire region 2012

<https://www.cheshirewildlifetrust.org.uk/sites/default/files/files/Cheshire%20LWS%20criteria%20V40.pdf>

⁷ 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

- It is likely that other Schedule 9 species such as variegated yellow archangel, montbretia and Spanish hybrid bluebells are present within the parish as they easily spread from domestic gardens. If present they should be eradicated. Of particular concern are non-native bluebells, which may spread into the parish's bluebell woodlands after being planted as a garden ornamental. Householders should be made aware of the problems and not plant any Schedule 9 invasive species within their gardens.
- Where ponds have become overgrown and choked with vegetation this should be removed 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. Prior to any tree removal it should be ensured that there are no crevices that support bat populations. 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.
- Complete eradication of non-native signal crayfish from the environment is extremely difficult. However, populations can be reduced through trapping. Trappers must be confident in identification of both the native white clawed crayfish and the invasive species. If white clawed crayfish are found to be present trapping should stop immediately and the white clawed crayfish returned to the wild. A licence must be obtained from the Environment Agency prior to trapping crayfish.
- Restoration of marginal vegetation along Utkinton and Cotebrook's streams and ditches. Particularly in the east this should be targeted in order to create more suitable local habitat for water voles and other wildlife. It may involve scrub/tree clearance and measures such as ditch clearance or the fencing of river banks. Professional advice should always be sought⁸.
- 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 water vole or 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).
- All semi-natural grassland should be appropriately cut or grazed each year to maintain wildlife value and prevent succession to scrub.

⁸ Cheshire Wildlife Trust can provide advice on water vole habitat creation/restoration

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 meadows⁹.

Some afforestation of native woodland in the north of the parish is recommended. This area was identified by ECOnet as having potential to increase the viability of the core areas for wildlife. Planting woodland corridors between already existing woodland would create valuable habitat links for the dispersal of species. Stepping stones of scattered woodland between existing woodland would provide habitat within the landscape for the more mobile species to colonise. It is vitally important that tree planting should only occur on species-poor (low value) habitats and away from the edges of watercourses including ditches and ponds. Survey should be undertaken beforehand to establish which grassland species are present. The continued loss of a vast number of Cheshire's unimproved and good semi-improved grasslands has made these grasslands uncommon within the county and every effort should be made to protect those that remain.

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 or 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).

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.

⁹ Cheshire Wildlife Trust can provide advice and seeds for locally sourced wildflower meadow creation.

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 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.

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. There are hedgerows in the north east of Utkinton and Cotebrook with gaps that could be filled. 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 Utkinton village where there are hedgehog records, 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.

It is possible that there are other locations on sandstone within the parish aside from Holbitch Slack where the scarce liverwort *Calypogeia integristipula* may be found. If these areas support significant populations of the liverwort they should be selected as Local Wildlife Sites and protected.

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 9 and 109). 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 Utkinton and Cotebrook'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 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 classes¹⁰ 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

¹⁰ 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.