

# Protecting and Enhancing Christleton and Littleton's Natural Environment



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## **Acknowledgements**

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## Introduction

The primary aim of our national and local strategic biodiversity policy is to bring nature back into recovery and leave it in a better state than we inherited it in. The focus is protection and enhancement at the landscape scale as well as the development of healthy ecological networks; this will be achieved through strategic habitat creation, for which developers, landowners, conservation charities, and individuals will all be encouraged to play their part. The planning system plays a central role in this as well, particularly regarding biodiversity strategies and the delivery of biodiversity net gain, but also through development control. The success of national plans will depend on the contributions of local communities toward achieving social, economic and environmental objectives and working to protect and enhance their local environment. Local level planning will be a key factor in determining whether the aims of national strategies are realised by identifying local priorities for nature conservation that should be considered during the planning process.

Neighbourhood Planning provides an important opportunity for communities to participate in the planning system and shape their local environment for future generations. Identifying and evaluating local environmental opportunities and constraints at a neighbourhood level grants communities an informed position and enables them to better protect their valuable natural assets.

### **Biodiversity Policy and Legislation Overview**

#### The State of Nature Partnership (SoNP)

In 2013 the State of Nature Partnership published its first 'State of Nature Report' with the key aim of 'diagnosing the causes of wildlife decline'. In successive updates, the UK was ranked amongst the most nature-depleted countries in the world, and many of the observed SoN measures suggested that the decline of nature has continued in the last decade; 1 in 6 species are now threatened with extinction.

#### The 25 Year Environment Plan (25YEP)

In 2018, as part of the DEFRA 25 Year Environment Plan, the government pledged to improve the environment within a generation, leaving it in a better condition than they inherited it in. A key goal of the plan is to achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife through the creation of a Nature Recovery Network. The newest revision, the Environment Improvement Plan 2023, details how DEFRA will collaborate with landowners, communities and businesses to deliver their goals for improving the environment, halting the decline in our biodiversity, and allowing wildlife to thrive. These goals are set to be achieved through a number of mechanisms including the planning system (via the National Planning Policy Framework) and through the Environment Act (2021).

#### The National Planning Policy Framework (NPPF)

The NPPF, first published in 2012 and most recently updated in 2024, draws on the principles set out above. 'To protect and enhance our natural, built and historic environment' is one of the three core objectives in the revised NPPF (2024, para. 8c). In recent revisions of the NPPF there has been a shift in policies from 'no net loss' to a 'measurable net-gain in biodiversity', referring to the use of a Biodiversity Net Gain (BNG) metric to measure mandatory biodiversity gains. Alongside BNG is the

establishment of ecological networks at the local level, underpinned by the protection and enhancement of local biodiversity assets. Non-strategic local policies and strategic policy guidance related to ecological networks and BNG are enshrined in the NPPF (2024, para. 187-195).

### The Environment Act (2021)

The Environment Act sets out a new environmental governance framework as the UK leaves the European Union's environmental policy and legislative structures. The Act mandates new systems for target-setting, planning, monitoring and reporting with the aim of improving our natural environment. As supported by the NPPF, the Environment Act includes:

- The establishment of Biodiversity Net Gain (BNG), and
- The introduction of the Local Nature Recovery Strategies (LNRS).

### Biodiversity Net Gain (BNG)

BNG is a new legislation aimed at providing funding and opportunities for nature recovery in England through the planning system. It requires developers to provide a 10% biodiversity net-gain - either onsite, offsite, or through statutory credits - as a condition of planning permission for new development. It is applicable to all developments under the Town and Country Planning Act 1990 and to Nationally Significant Infrastructure Projects (from November 2025 - pending).

### Local Nature Recovery Strategy (LNRS)

Each LNRS is a county-level strategy for nature recovery that consists of a statement of biodiversity principles as well as a map of nature recovery opportunity areas. For the area that it covers, the strategy will:

- map the most valuable existing habitat for nature
- map specific proposals for creating or improving habitat for nature and wider environmental goals
- agree priorities for nature's recovery.

### Local policy

At a local level, policy around biodiversity and ecological networks is enshrined in the Cheshire West and Chester (CWaC) local plan.

- Policy ENV 4 (Local Plan Part One) – Biodiversity and Geodiversity seeks to safeguard and enhance biodiversity and geodiversity through the identification and protection of sites and/or features of local importance.
- Policy DM 44 (Local Plan Part Two) – Protecting and Enhancing the Environment seeks to strengthen the protection of ecological networks across the borough while requiring development to deliver an overall net-gain for biodiversity.

To supplement these policies, CWaC Council have also produced a Biodiversity Net Gain and Ecological Networks guidance note (March 2024) which provides guidance on how to achieve Biodiversity Net Gain from new development in Cheshire West and Chester.

## 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 a need for a different approach to wildlife conservation involving a shift of efforts away from habitat retention and toward habitat creation and restoration. The key would be to work at local scales in partnership with local people to reestablish ecological processes and ecosystem services for the benefit of both wildlife and people.

The natural environment is fundamental to well-being, health, and the economy, and provides us with a range of ecosystem services such as food, water, raw materials, flood defences, air quality and carbon sequestration. Biodiversity underpins most, if not all, of these ecosystem services. Anthropogenic pressures on the environment are likely to continue to increase, requiring us to manage these important natural resources in ways that deliver multiple benefits. This includes increasing agriculture's ability to store carbon, improving floodwater management and supporting biodiversity.

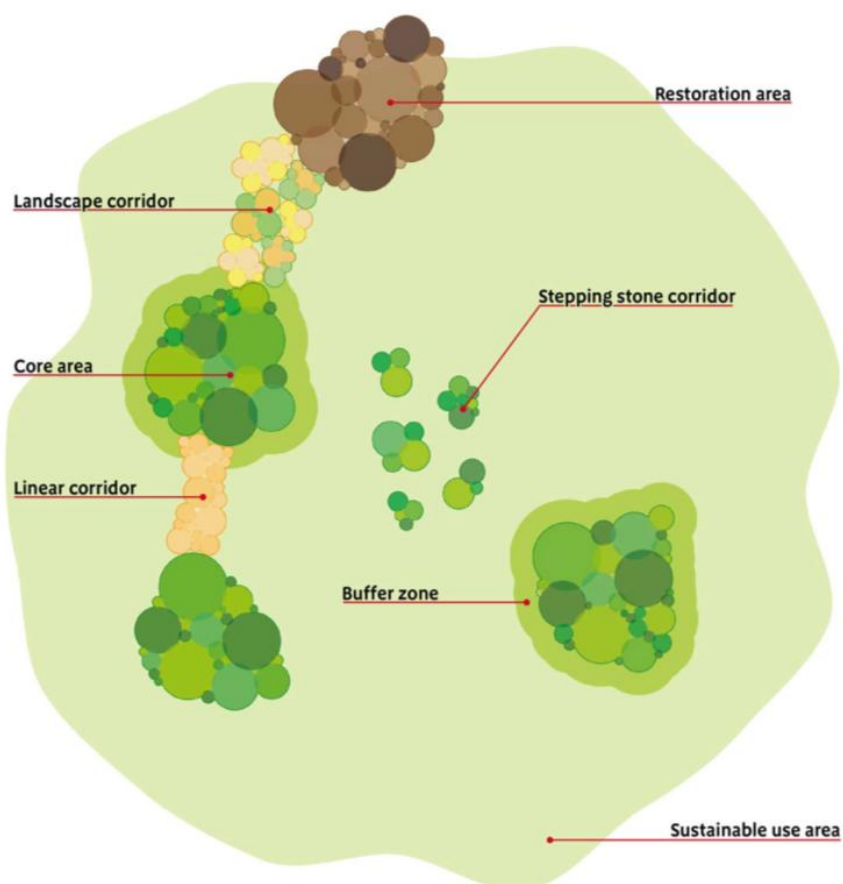


Figure 1. The components of ecological networks (Making Space for Nature report)

The provision of these ecosystem services and biodiversity has been declining significantly due to England's wildlife and semi-natural habitats having become increasingly fragmented and isolated. Ecological networks (Figure 1) and 'Nature Recovery Networks' are now widely recognised as an effective way to conserve wildlife in environments that have been fragmented by human activities and bring nature back into recovery.

Ecological networks generally have five components (**Error! Reference source not found.**) which reflect both the existing and potential future ecological importance and function:

- **Core areas** – These are areas of high nature conservation value that form the heart of an ecological 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 assemblages. 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 does not just come from linear, continuous habitats; several small sites may act as 'stepping stones' across which certain mobile species can move between core areas.
- **Restoration areas** – These are areas where measures are planned to restore or create new high value areas (with the goal of becoming 'core areas') so that ecological function is restored and the associated species populations can return. They are often situated so as to complement, connect or enhance existing core areas.
- **Buffer zones** – These are areas closely surrounding core areas, restoration areas, and ecological corridors and stepping stones that 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 alongside 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, supporting self-sustaining populations of species that are dependent upon, or at least tolerant of, certain forms of agriculture. The functions of buffer zones and sustainable use areas overlap, but the latter are less clearly demarcated than buffers and have a greater variety of land uses.

### Ecological Networks in national policy

As discussed, the principles of establishing coherent ecological networks are now embedded within many planning and policy documents. The NPPF (2024), includes specific guidance on conserving, restoring and enhancing ecological networks including:

- Paragraph 187 - Planning policies and decisions should contribute to and enhance the natural and local environment by:
  - a) Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)
  - b) Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland
  - c) Maintaining the character of the undeveloped coast, while improving public access to it where appropriate

- d) Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs
  - e) Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans
  - f) Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
- Paragraph 188 - Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.
  - Paragraph 192 - To protect and enhance biodiversity and geodiversity, plans should:
    - a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
    - b) Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

### **Ecological Network for Cheshire West and Chester 2016**

As part of the CWaC updated Local Plan (Part Two), which contains detailed policies to protect and enhance the natural environment, a map of the ecological network within the borough has been produced (Figure 2). The ecological network is associated with Local Plan (Part Two) Policy DM 44 and incorporates existing protected sites and priority habitats; it also identifies areas to restore and buffer the network. The Council aims for the ecological network to contribute to strengthening the borough's wider green infrastructure network, improving natural capital and maximising gains to the natural environment as a whole. It is not intended to restrict development or growth but instead should be used as a tool to guide development and inform the strategic delivery of biodiversity net gain.

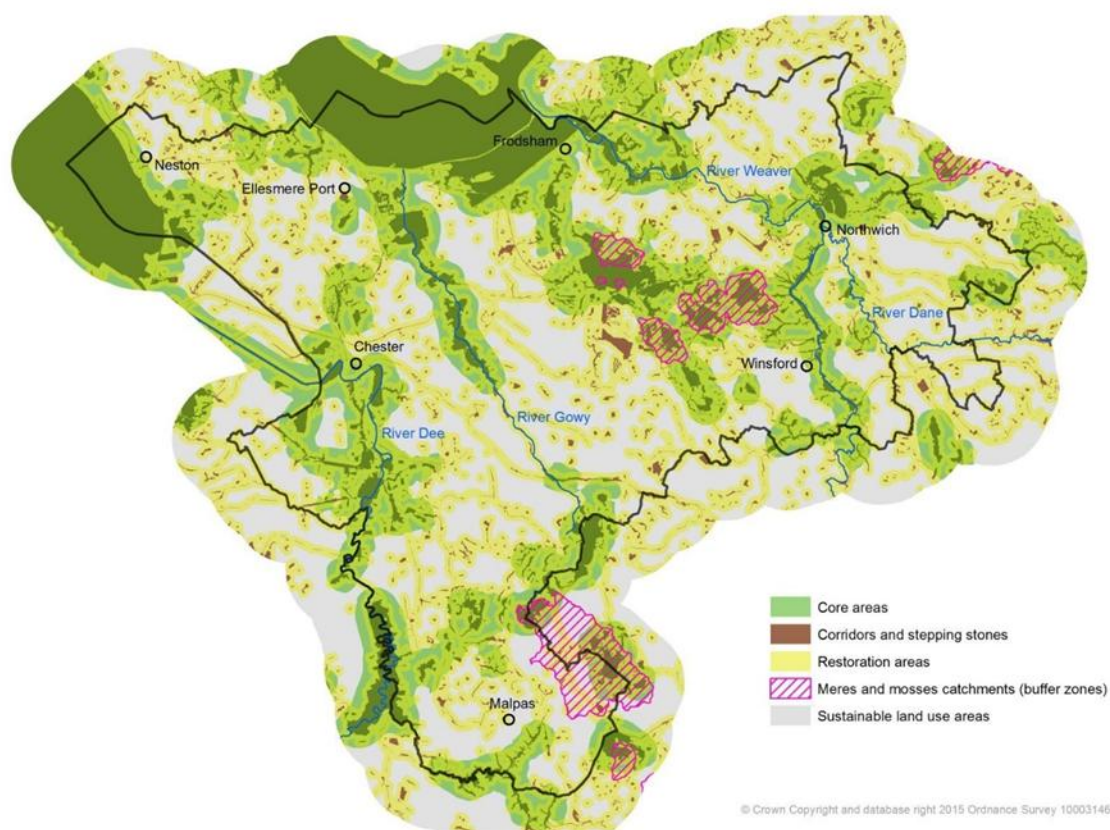


Figure 2. Ecological Network for Cheshire West and Chester 2016

The Local Plan (Part One) safeguards and enhances biodiversity and geodiversity through the identification and protection of sites and/or features of international, national and local importance. These sites and priority habitats are essential components of the network and need to be protected and conserved. The purpose of the Local Plan (Part Two) Policy DM 44 is to ensure that development that makes a positive contribution towards the borough's ecological network will be supported. As stated in the CWaC Council Biodiversity Net Gain and Ecological Networks guidance note (2022), the primary role of the network is to identify areas of the borough in which habitat loss (such as that resulting from development) will likely cause the most negative impact, and where habitat management/creation will have the most positive impact. It will therefore be used as a tool to give greater focus on promoting habitat creation/management within the optimal places where it has most ecological benefits; both of which will allow for more resilient borough wide biodiversity net gain.

Outside the planning system the ecological network is intended to inform land management, investment decisions and priorities such as agri-environment schemes, river catchment partnership plans and NGO (non-government organisation) landscape scale initiatives. The CWaC Ecological Network identifies a broad network for the whole borough, whereas the wildlife corridors identified in this report (Map 9) are more specific to ecological networks that are important for conserving and enhancing biodiversity at a local scale.

### **Objectives of the Study**

In order to protect and enhance the natural environment, it is important to first identify the natural assets that exist within a neighbourhood. This report aims to identify the core high and medium ecological value sites for nature conservation within the Christleton and Littleton Neighbourhood Planning (NP) area. 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 and assessment, should they be proposed for future development. The report also aims to identify the main local and regional ecological networks within the NP area and recommends these are safeguarded within the neighbourhood plan. Additionally, it identifies key features associated with the landscape character of the Christleton and Littleton area so they can be referenced in neighbourhood planning policies.

## Christleton and Littleton in the wider landscape

### Natural Area

Christleton and Littleton, along with most of Cheshire, the northern half of Shropshire and part of northwest Staffordshire, sit within the Meres and Mosses Natural Area<sup>1</sup>. This is an expansive area of gently rolling agricultural plain which was largely underwater at the end of the last ice age. 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

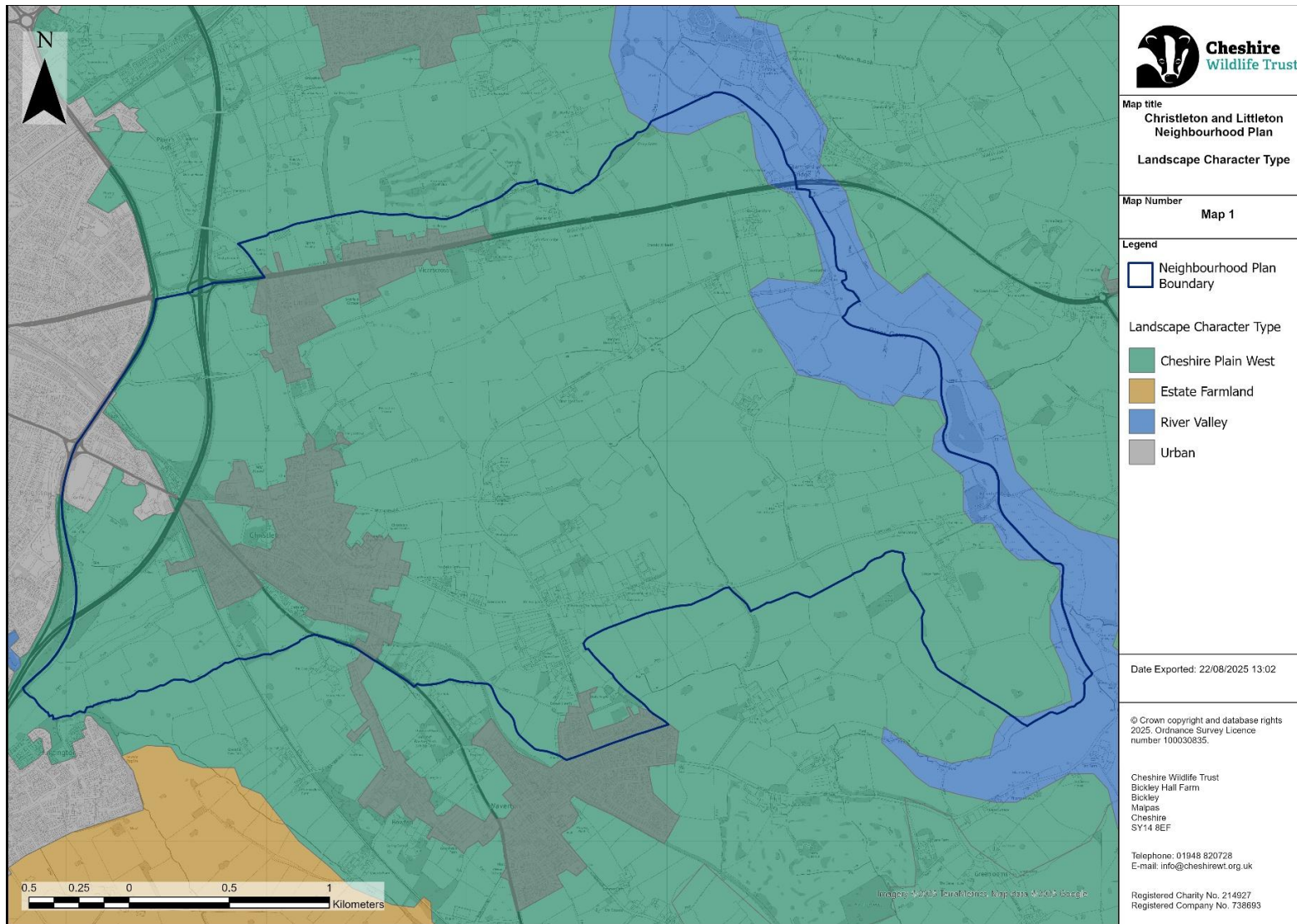
At a national level Christleton and Littleton lie within National Character Area (NCA) 61 – Shropshire, Cheshire and Staffordshire Plain; a largely pastoral area of rolling plain which is important for food production. Especially important is dairy farming which is well suited to the damp lush pastures that are found on the glacial till clay soils. More locally, CWaC Council produced a Landscape Strategy in 2016 which incorporates 16 Landscape Character Types (LCTs). Different aspects such as geology, landform, soils, vegetation and land use have been used to identify recognisable patterns that have categorised into different LCTs. This Landscape Strategy is intended to be used as a basis for planning and the creation of future landscape strategies as well as raising public awareness of landscape character and creating a sense of place.

The Landscape Character Assessment for CWaC (Map 1) identifies 2 recognisable landscape character types (LCT) within the Christleton and Littleton Neighbourhood Planning area. The majority of Christleton and Littleton falls within the 'Cheshire Plain West' LCT and is interspersed with urban areas, and the eastern edge along the River Gowy falls within the 'River Valley' LCT. Each LCT is subdivided into smaller Landscape Character Areas (LCAs), the details of which are given below the map.

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<sup>1</sup> Natural Areas as defined by English Nature (now Natural England) in 1996 are a series of biogeographical units reflecting ecological integrity, landform, 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.

Map 1 – Cheshire West and Chester Landscape Character Typology 2018



## **LCT 9: Cheshire Plain West**

### **General Description**

This character type dominates a large portion of borough. It extends from Stanlow and Helsby in the north to Threapwood in the south and it is bounded by the City of Chester to the west and the Sandstone Ridge to the east. It is defined by its flat or very gentle topography enclosed by hedgerows and standard trees in small-medium enclosures. Views from more open ground can feature a succession of hedgerows receding into the distance, and these coalesce visually to create a false impression of woodland cover. In reality, the woodland cover is very low, being restricted to small copses, game coverts and groups of trees associated with ponds and lines of drainage.

### **LCA 9d: Saughall to Waverton Plain**

The overall character of the area is of a transitional landscape from rural pasture to suburbanised, busy urban fringe. Infrastructure and industry are heavy around Chester and its radiating routes and becomes a prominent landscape feature in and around Ellesmere Port. Across the area, significant villages of a suburban character punctuate the plain where historic character has been diluted by housing and employment developments. Elsewhere, settlement is scattered across the plain as freestanding farmsteads and some ribbon development, with historic medieval field patterns still found across the area. An extensive network of small field ponds which are generally inconspicuous in the landscape of improved grassland for dairy farming and fodder crops. Woodland cover is low, though some networks of trees and hedgerows remain, with hedgerow oaks retaining their importance as a feature of the landscape.

### **Key Factors for Landscape Change**

In the past, landscape change has been characterised by urban expansion, large scale development, and agricultural intensification. A suburbanisation of the countryside has spurred the intrusion of major transport infrastructure increased traffic, which has led to a decline in settlement identity. A shift from pasture grazing to increasing areas being cultivated for arable cropping, silage or feed crops has been accompanied by the enlargement of fields, loss of hedgerows, the deterioration of field ponds and small farm woodlands, and a significant loss in unimproved grasslands.

Future pressures on the landscape include continued urban expansion on an increasingly larger scale, further transport infrastructure improvements, and continued deterioration in field boundary maintenance and management. Climate change is also likely to lead to changing agricultural practices and impacts on field ponds and water ecology.

### **Landscape Management Guidance**

Maintaining and improving a species-rich and well-connected hedgerow network as well as small woodlands, coverts, field ponds and brooks can help reduce the degradation of the landscape character in addition to helping wildlife. It will also be important to ensure that development is delivered sensitively and in ways which off-sets visual and ecological harm and delivers landscape and habitat enhancements.

## National and Regional Ecological Network

### Habitat Network Mapping

Natural England's 'Nature Networks Handbook' is an integrated framework for creating ecological networks for wildlife and people; 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 the following 19 separate priority habitats:

- 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

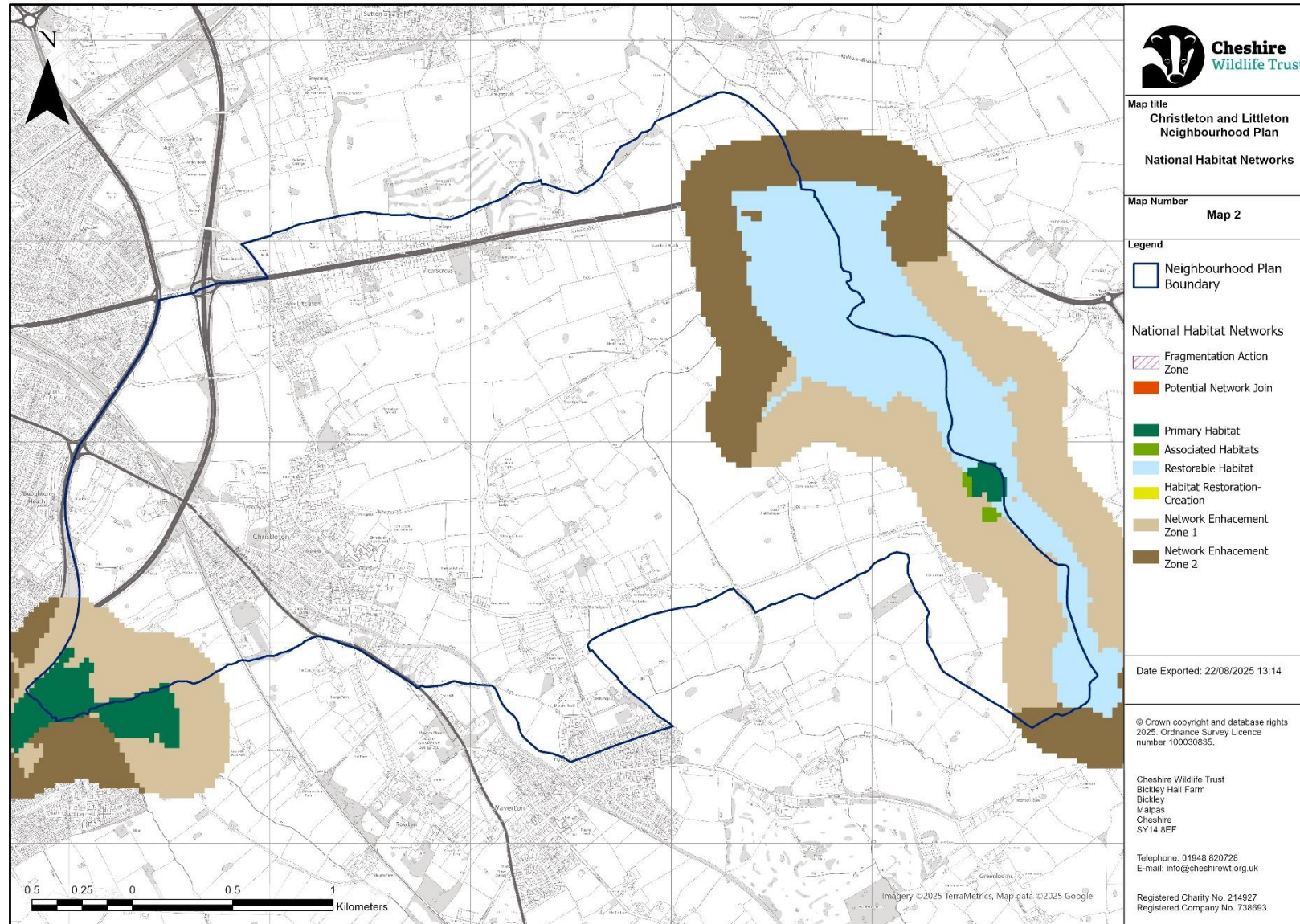
The Key components of the National Habitat Network map are:

- **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, and;
- **Potential Network Joins** - Potential locations for action to create network links.

The maps are intended for use at 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. The National Habitat Network in the vicinity of Christleton & Littleton is shown in Map 2.

In September 2025 Natural England are due to roll out Local Nature Recovery Strategies which, once completed, should inform a national Nature Recovery Network. Until then, the 'Nature Networks Handbook' is the preferred methodology at scales above the local level.

Map 2 – National Habitat Network



## Protecting & Enhancing Christleton & Littleton's Natural Environment

National Habitat Network Mapping has highlighted two distinct areas in the eastern and southwestern edges of the parish. Along the eastern boundary, a small area of primary and associated habitat at Hockenhull Platts Nature Reserve is nestled within a more extensive area of restorable habitat that is concentrated along the Gowy River and its floodplain. In the southwestern corner is another area of primary habitat around Caldry Brook and its meadows. Both areas of primary and restorable habitat are buffered by Network Enhancement Zones 1 and 2, where opportunities to enhance the habitat network should be prioritised; this could be through the restoration of degraded habitat or through the expansion of existing habitat.

## Local Habitat Distinctiveness and Wildlife Corridor Network

### Methodology

'Habitat distinctiveness' is the principal component of biodiversity quality used by DEFRA to determine biodiversity net-gain. Habitat distinctiveness is based on an assessment of the distinguishing features of a habitat or linear feature, including the consideration of species richness, rarity (at local, regional, national and international scales), and the degree to which a habitat supports species rarely found in other habitats. The distinctiveness band of each habitat is preassigned by DEFRA and the bands are based upon the UK habitat classification system. A combination of simple rules and expert judgement have been used to assign each habitat type to the appropriate distinctiveness band.

Habitat data from the sources listed below was attributed to one of the four distinctiveness categories listed in Table 1 below:

*Table 1. Habitat type bands (Defra July 2019)*

Habitat Distinctiveness (ecological value)	Broad Habitat Type	Colour on Map
Very High or high	<ul style="list-style-type: none"> <li>Designated nature conservation sites (statutory and non-statutory);</li> <li>Endangered or Critical European red List habitats;</li> <li>Priority habitat (with the exception of arable field margins) as defined in Section 41 of the NERC (Natural Environment Council) Act, and;</li> <li>'Rare' habitats in the UK with a high proportion unprotected by designation.</li> </ul>	Red
Medium	<ul style="list-style-type: none"> <li>Arable field margin priority habitat;</li> <li>Non-priority habitats with significant wildlife benefit;</li> <li>Semi-natural habitats and habitats with the potential to be restored to priority quality, and;</li> <li>Field ponds.</li> </ul>	Orange
Low	Agricultural and Urban land use of lower biodiversity value but may still form an important part of local ecological network	n/a
Very Low	Urban land use with artificial structures which are un-vegetated, sealed/unsealed surface or built linear features of very low biodiversity value.	n/a

Data sources used to inform the habitat distinctiveness maps included:

1. Several licensed and open data sets:
  - a. Priority Habitat Inventory (PHI) – Natural England 2019 (last updated 20 October 2020) – High and medium confidence habitats (as defined on the PHI by NE) were classified as high distinctiveness. Low confidence habitats were classified as medium distinctiveness unless other supporting data was available.
  - b. Land Cover Map (LCM2019) – Centre for Ecology and Hydrology 2019. Priority habitats (principal importance) and semi-natural habitats classified as medium distinctiveness (data included in Appendix 2).
  - c. Agricultural Land Classification (ALC) – Natural England 2017 (last updated 19 February 2019) – Grade 4 classified as medium distinctiveness, Grade 5 classified as high distinctiveness (adjusted where other supporting data was available).
  - d. Designated Sites of Nature Conservation (including International Sites, Sites of Special Scientific Interest, Local Wildlife Sites/Sites of Biological Importance and Local Nature Reserves) – Natural England and CWT/CWaC Local Authority. All were classified as high distinctiveness.
  - e. Ancient woodlands – Natural England 2019 (last updated 20 November 2022) – classified as high distinctiveness<sup>2</sup>.
  - f. Meres and mosses and other peat soils – Meres and Mosses Landscape Partnership scheme 2016 – Functional Ecological Units, river valley peat and destroyed (historical) peat classified as medium distinctiveness<sup>3</sup>.
  - g. Cheshire Tithe Maps Online – Using maps from Cheshire Archives looking for woodlands that could be potential Ancient Woodlands due to presence over an extended period of time but have not been formally identified. Classed as medium distinctiveness.
2. Open-source aerial imagery (Microsoft Bing™ Imagery and Google Earth) was used to validate and review the habitats by eye.
3. The Christleton & Littleton 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 Christleton & Littleton were researched and species records have been incorporated where appropriate. Ecological records were also obtained (where available) from, the National Biodiversity Network (NBN) Atlas and the Woodland Trust's Ancient Tree Inventory (accessed 07/2025).

## Maps

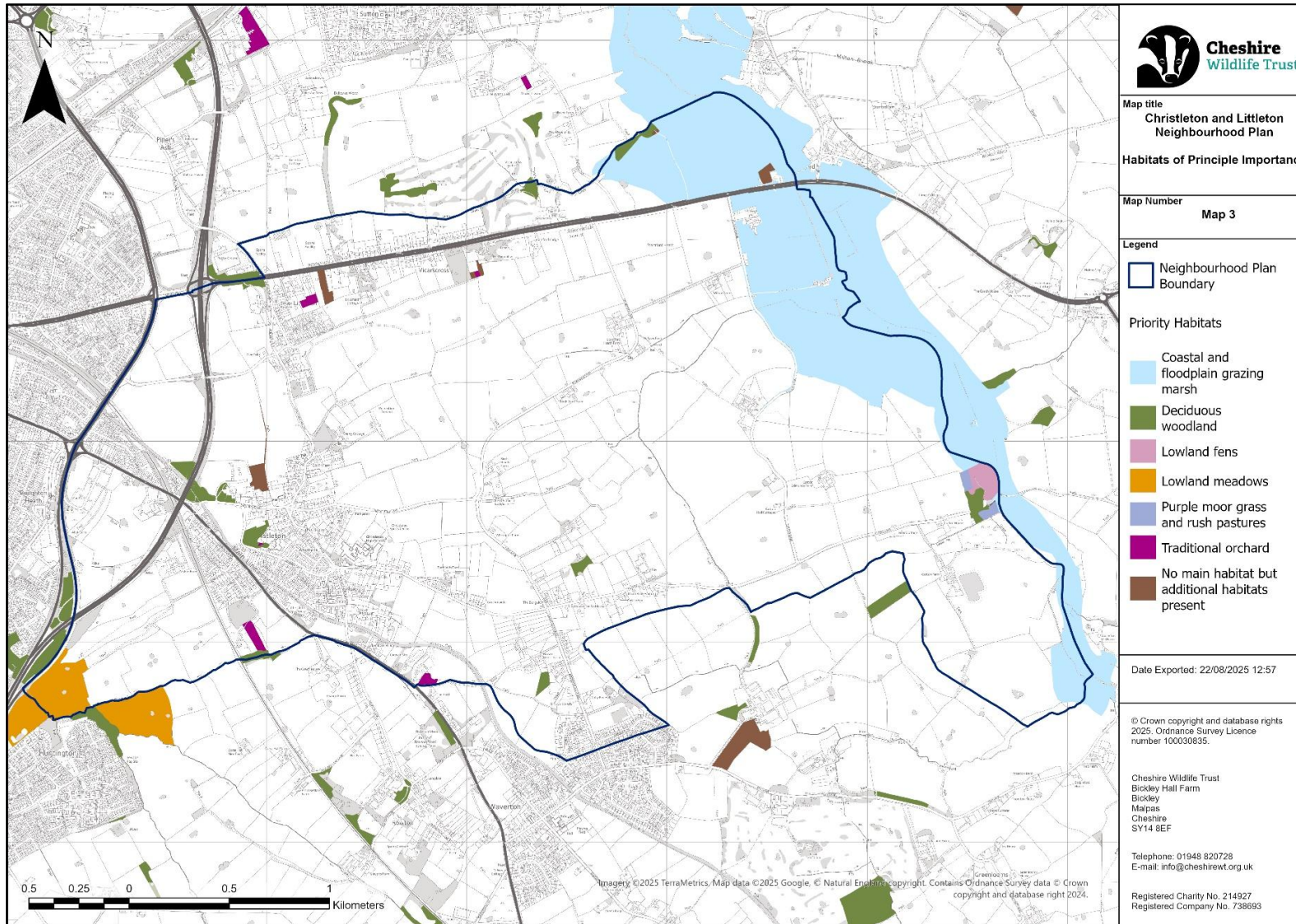
The suite of maps produced during the local ecological network mapping exercise are included below.

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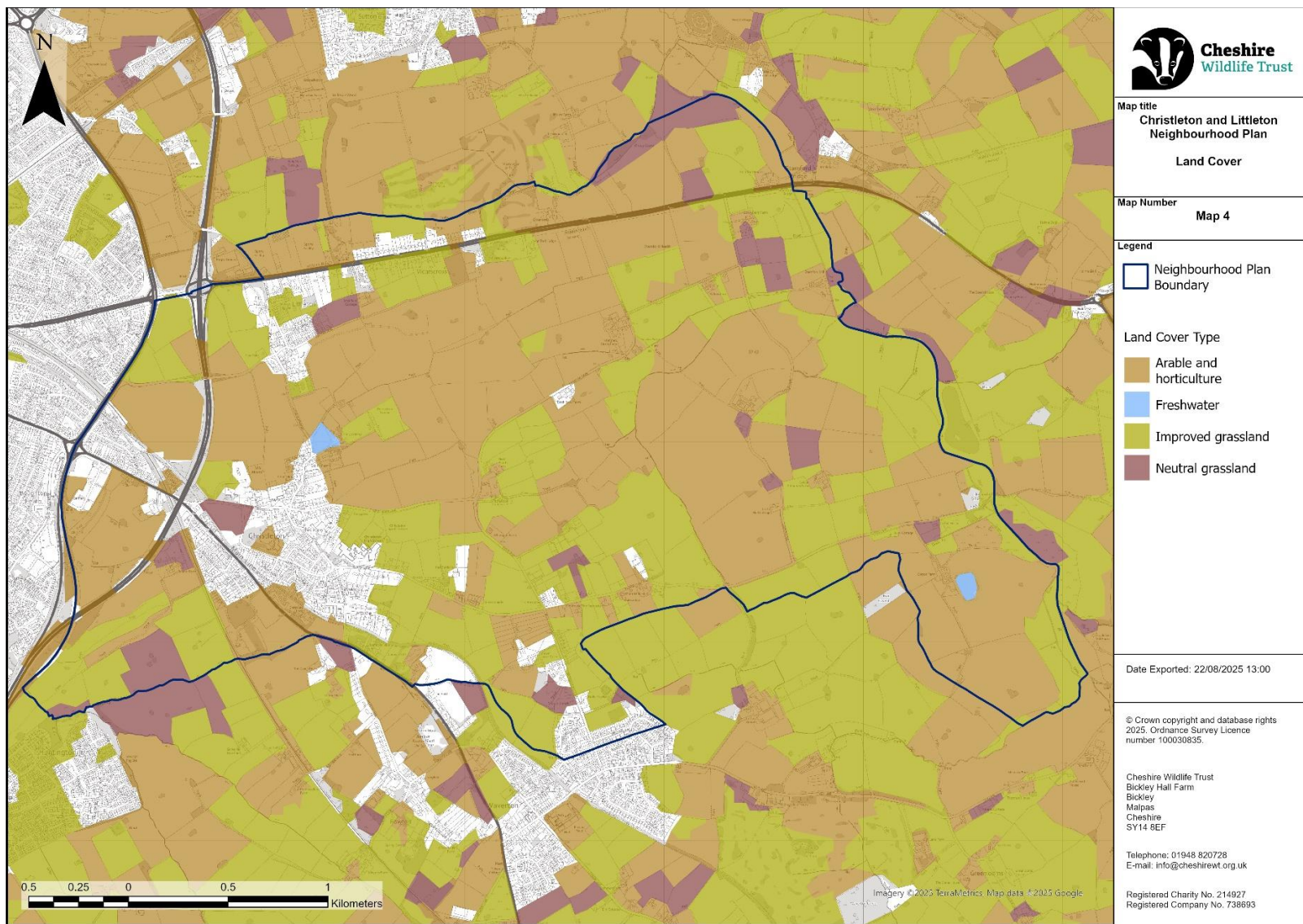
<sup>2</sup> No ancient woodland was found within the parish boundary

<sup>3</sup> No peat or mossland was found within the parish boundary

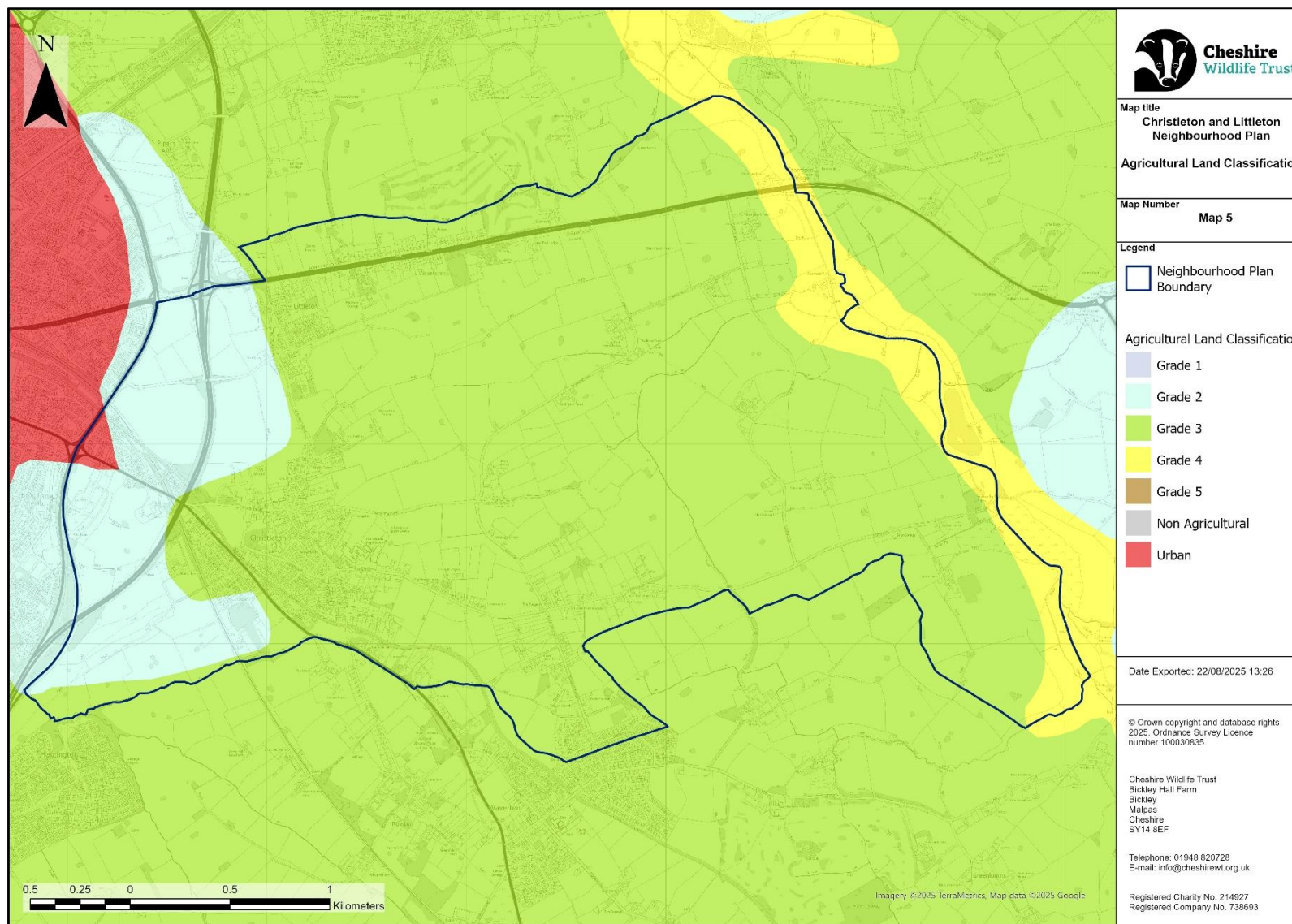
Map 3 – Terrestrial Habitats of Principal Importance



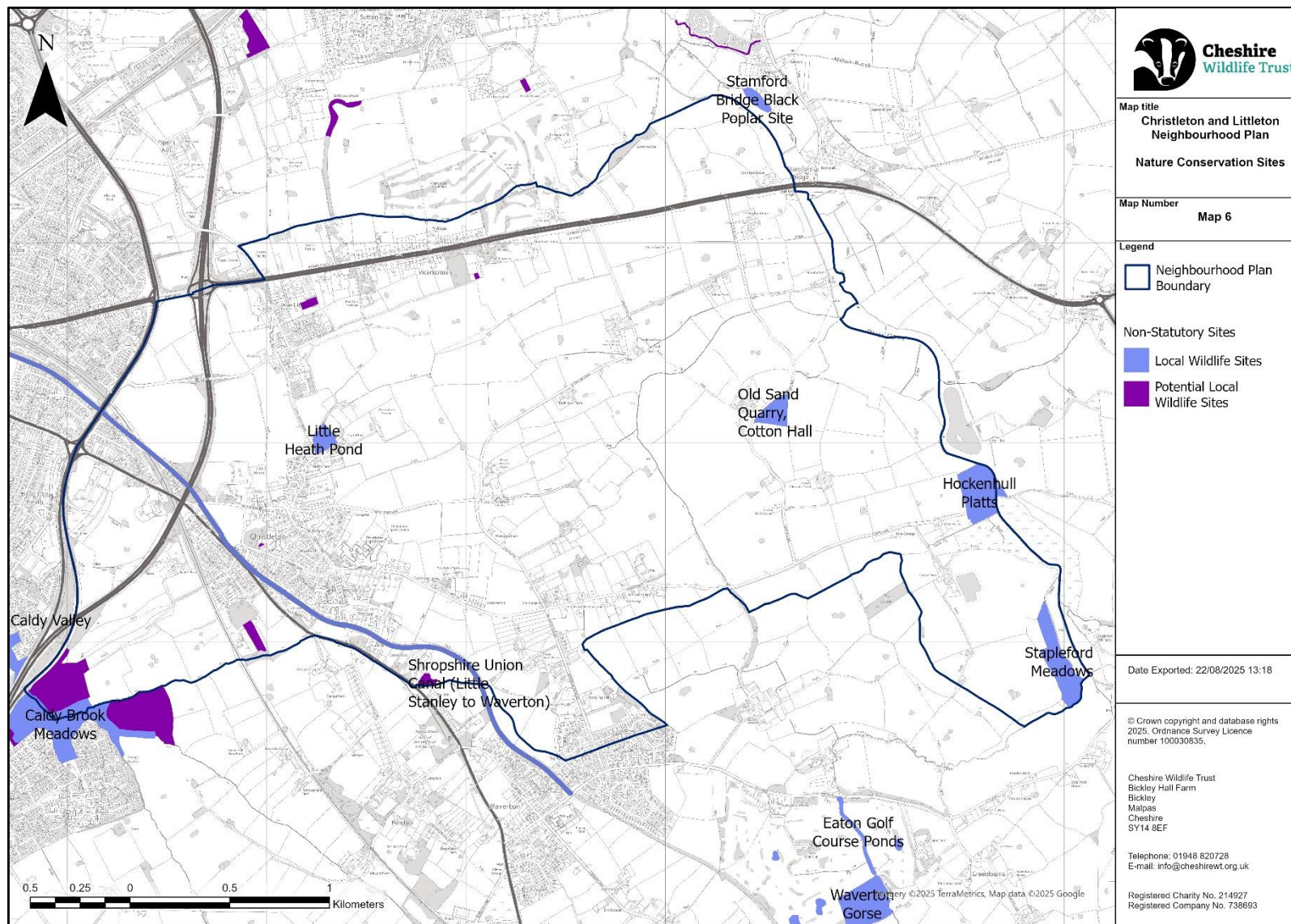
Map 4 – Land Cover (2019)



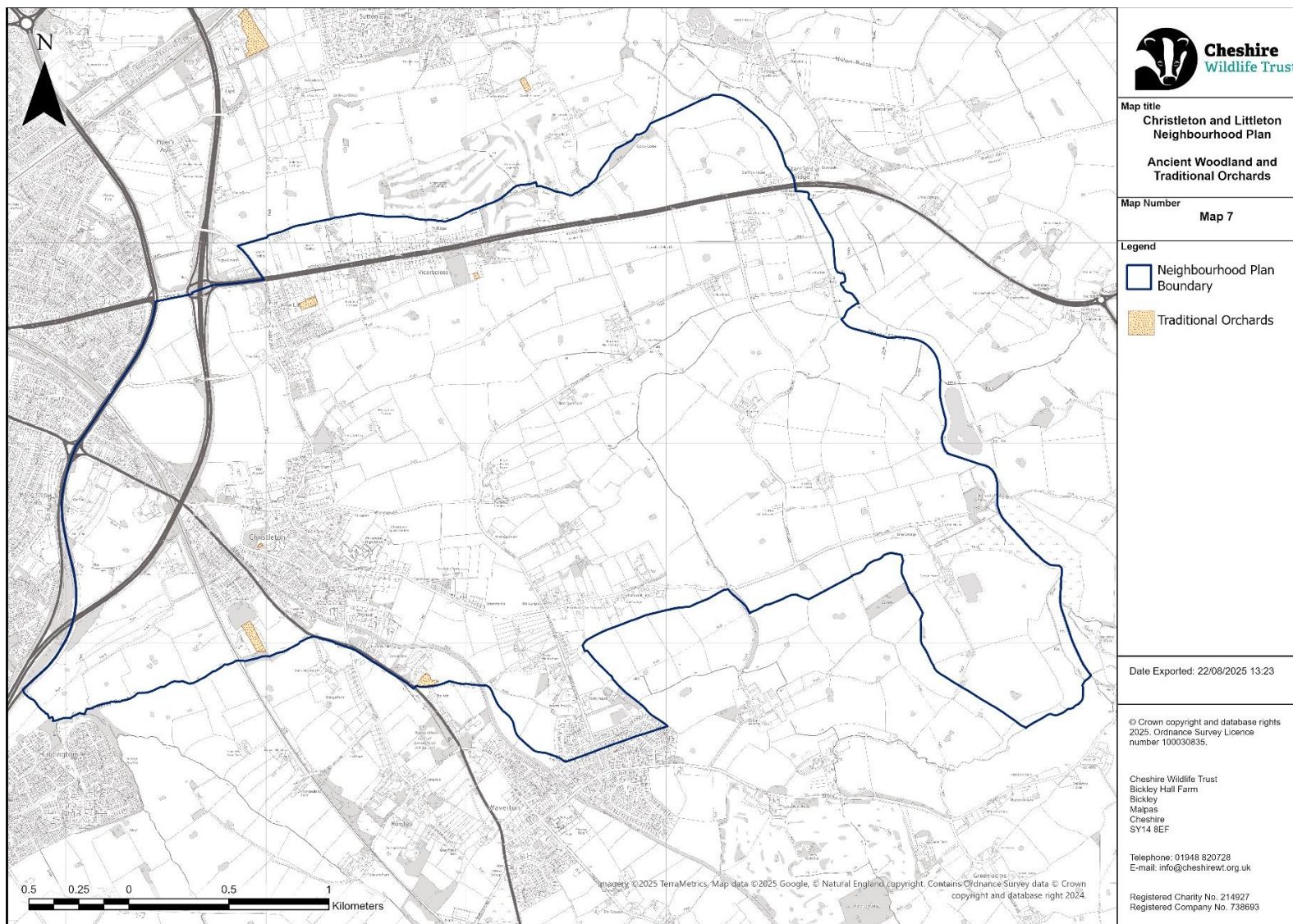
Map 5 – Agricultural Land Classification



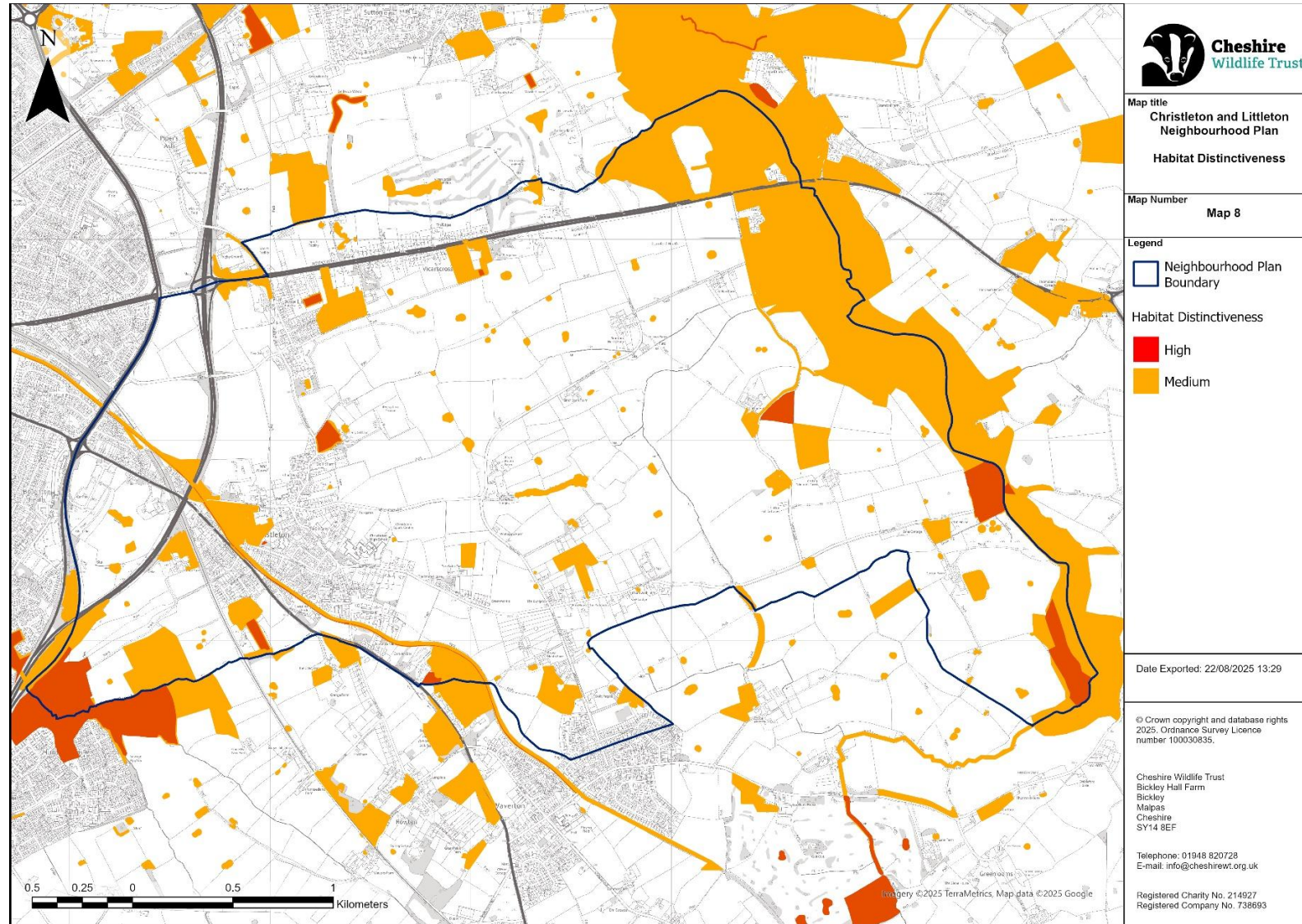
Map 6 – Designated Sites of Nature Conservation



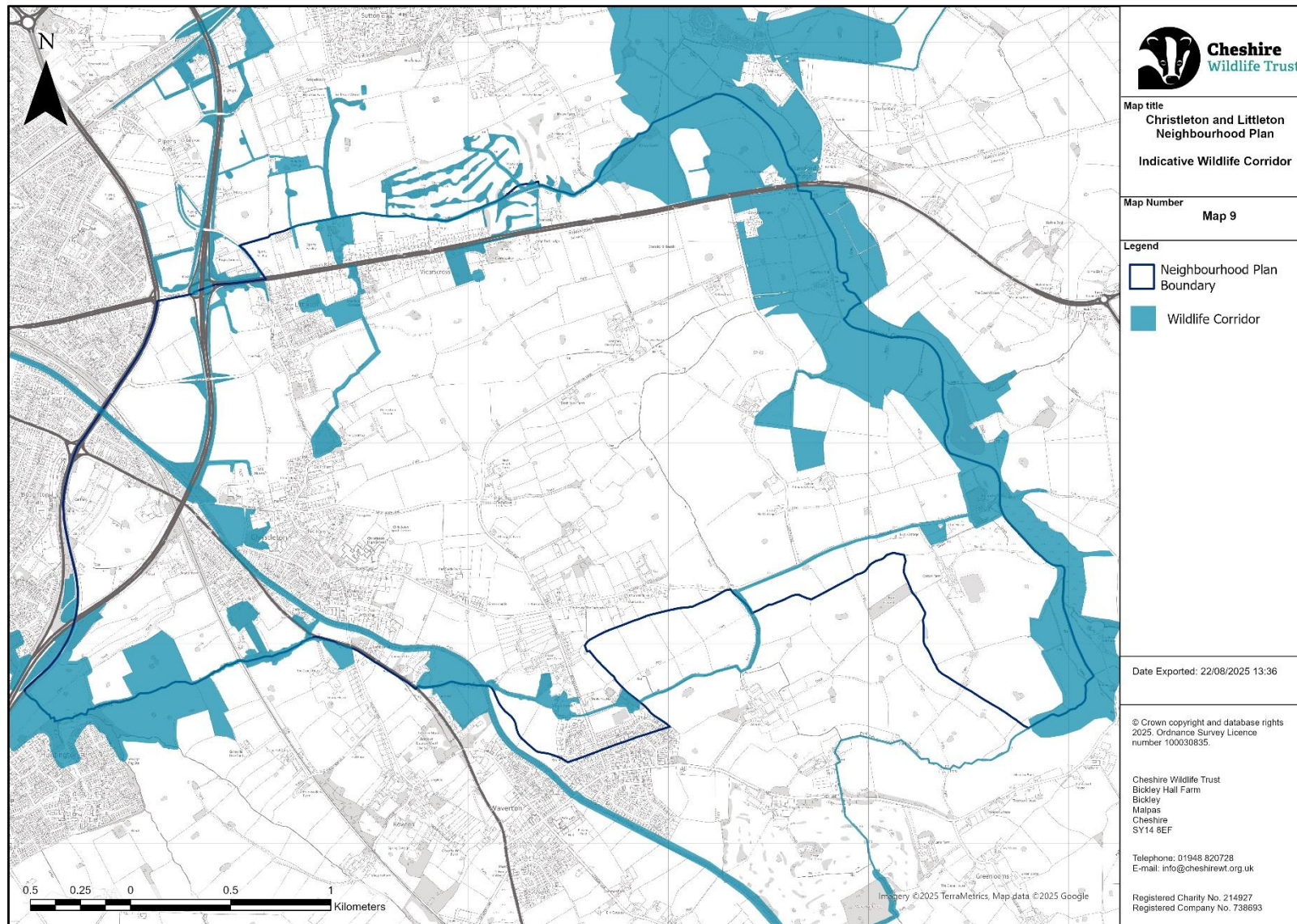
Map 7 – Ancient Woodland and Traditional Orchards



Map 8 – Habitat Distinctiveness



Map 9 – Indicative Wildlife Corridors



## Results & Discussion

### High Distinctiveness Habitats

Areas of high distinctiveness habitat are shown on Map 8 – Habitat Distinctiveness (mapped in red). These are natural or semi-natural habitats which are of significant or critical importance to wildlife due to their high biodiversity and ecological value. They should be a priority for conservation and appropriately managed in order to maintain or enhance their ecological features. Habitats of high distinctiveness within the Christleton and Littleton Neighbourhood Planning (NP) area are discussed in detail below.

### Wetlands

The main area of wetland is the floodplain grazing marsh around the Gowy River in the east of the parish. In particular, Hockenhull Platts Nature Reserve hosts a diverse fauna due to its varied habitats such as ponds, wet woodland, scrapes, wet grassland, and reedbed. Many bird species have recently been recorded locally, including the BoCC red listed curlew, fieldfare and lapwing, and amber listed reed bunting, redwing and dunno<sup>4</sup>. This site is also particularly important for the invertebrate and amphibian populations it supports; there are records of great crested newts (GCN), a legally protected and S41 species. Little Heath Pond, locally known as 'The Pit', is also an important site in the parish, with marginal vegetation, trees, and open standing water providing habitat for waterfowl and warblers, as well as invertebrates. It is well managed by parish volunteers.

### Grassland

Species-rich grasslands are the fastest disappearing semi-natural habitat in the UK. Similar to other counties, the vast majority of the grassland found on farms in Cheshire is now species poor "improved" grassland which has been modified by extensive fertiliser use and reseeded, resulting in very low biodiversity levels. In contrast, areas of species-rich grassland will support populations of declining pollinators including moths, specialist grassland butterflies and solitary bees and hoverflies. Lowland meadow forms the largest part of the priority grassland habitat recognised by Natural England in and around the Christleton and Littleton NP area (Map 3), which mainly occur at Stapleford and Caldý Brook. Caldý Brook Meadows hosts a damp neutral meadow community and an area of periodically inundated grassland in the north of the site, both of which consist of highly important plant communities<sup>5</sup>. These LWS provides important habitat for numerous grassland and farmland bird species which have been recently recorded in the area, including the BoCC red listed fieldfare, starling, swift and yellowhammer, and amber listed redwing<sup>6</sup>.

### Woodland

Many woodlands in Cheshire are isolated, fragmented and impoverished, which makes the woodlands that are present particularly important features for biodiversity in the region. Mature woodland habitats are particularly important as they benefit many species of wildlife including badgers, birds and bats. There are a few pockets of deciduous woodland in the Christleton and

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<sup>4</sup> NBN Atlas data

<sup>5</sup> Last surveyed: 2010

<sup>6</sup> NBN Atlas data

Littleton NP area, though they are sparse, small and fragmented; they are mainly concentrated in the west of the parish around the A-roads. A few notable areas of high distinctiveness woodland include a small area of wet woodland at the Hockenhull Platts Nature Reserve, and the Stamford Bridge Black Poplar site, which hosts 4 black poplars, one of Britain's rarest trees.

High quality woodlands such as these support many species of wildlife; for instance, they provide significant habitat for important assemblages of woodland birds, including a number of BoCC red listed species which have been recently recorded in the area (e.g. fieldfare, lesser redpoll, linnet, mistle thrush)<sup>7</sup>. Additionally, the deadwood habitat likely to be present at these woodlands support numerous fungi, lichen, and insect species, and it provides vital foraging and roosting/nesting habitat for bats and birds. There are also a few notable and veteran trees in Christleton<sup>8</sup> including oaks, willows, a sweet chestnut, and a common walnut.

### **Traditional Orchard**

Traditional orchards are a quintessential component of the historic English landscape. Orchards are becoming increasingly rare due to neglect, the intensification of agriculture and increasing pressure from development. These habitats provide excellent conditions for biodiversity to thrive and can support assemblages of rare species. A few traditional orchards were identified on the edges of the Christleton and Littleton NP area on Map 7, and all these sites have been identified as pLWS. Orchards also provide important habitat for bird assemblages including bullfinches and the BoCC red listed greenfinch and fieldfare which have been recently recorded in the area<sup>9</sup>.

### **Medium Distinctiveness Habitats**

#### **Woodland**

Many of the woodlands within the Christleton and Littleton NP area have been classified as high distinctiveness habitats, as discussed above, because they occur within a LWS. There are also a few small pockets of scrub and woodland present throughout the parish that act as stepping stones to better habitat on the periphery. These pockets of woodland will be less disturbed and/or less intensively managed than the surrounding amenity grassland and arable fields, and therefore they provide potential habitat for small mammals and some BoCC red-listed bird species such as hawfinch, lesser spotted woodpecker, and cuckoo.

#### **Grassland**

The areas of neutral and low-productivity grassland which are not designated (Map 6), have been classified as medium distinctiveness habitat on Map 8. These areas of grassland have been identified using the land cover information on Map 4 (i.e. neutral grassland) and Map 5 (i.e. Agricultural Land Classification, Grade 4) and subsequently refined using Google Satellite imagery. It is therefore advisable for a survey to be undertaken to ascertain the condition of these grassland habitats, which is beyond the scope of this report; it is possible that some areas could be species-rich and/or have locally or nationally rare species present, which could make them high distinctiveness habitats.

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<sup>7</sup> NBN Atlas data

<sup>8</sup> Woodland Trust's Ancient Tree Inventory

<sup>9</sup> NBN Atlas data

There are a few small and fragmented patches of neutral grassland in Christleton and Littleton (Map 4). Good quality and rough grasslands provide essential foraging habitat for highly threatened bird species and are crucial for their conservation, including the BoCC red listed curlew, lapwing and house martin which have been recently recorded in the area<sup>10</sup>.

### **Field Ponds, Drains, Scrapes and Watercourses**

Fields ponds, drains, scrapes and watercourses contribute to the permeability of the landscape for wildlife. They are essential for the survival of aquatic invertebrates and riparian mammals and provide breeding habitat for amphibians including protected species such as the great crested newt. Larger waterbodies are likely to be valuable for both breeding and overwintering birds as well as foraging bats. Where ponds are stocked with high numbers of fish, the wildlife value is decreased. This is because introduced fish (such as bottom feeding non-native carp) can deplete the pond of invertebrate larvae, amphibian eggs/larvae and water plants.

The key ponds, drains, scrapes and watercourses within the Christleton and Littleton NP area have been highlighted as habitats of medium distinctiveness in Map 8 and should always be retained and buffered where possible when land is developed. There are a few brooks which flow through the Christleton and Littleton NP area, and the Gowy river floodplain lies at eastern boundary of the parish. The Shropshire Union Canal also provides wetland habitat as a linear corridor through the parish. Those watercourses such as the Gowy River which have sources and tributaries outside the parish help to create links to the wider landscape. These continuous and connecting watercourses provide habitats for aquatic invertebrates and foraging birds such as kingfisher, grey wagtail and yellow wagtail.

### **Hedgerows and Scattered Trees**

Hedgerows are rarely included in the habitat distinctiveness mapping as it is difficult to gauge the wildlife value of a hedge from aerial mapping. However, many of the field parcels within Christleton and Littleton are bounded by a network of hedgerows and drainage ditches. Many of the hedgerows also include trees (standards) that have been allowed to grow out, resulting in a more structurally diverse habitat. Similar to field ponds, scattered farmland trees together with the hedgerow network are fundamental to landscape permeability; particularly those adjacent to wide field margins or those lying adjacent to semi-natural grassland. Hedgerows are important connecting corridors for foraging bats, small mammals, amphibians and many invertebrate species including pollinators, as well as providing valuable nesting and foraging habitat for many woodland and farmland bird species.

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 or wetland habitats they should be re-classified as 'high distinctiveness' priority habitat or habitat of principal importance. These habitats should not be built on (as stipulated in the Local Plan and the NPPF). In order to achieve a 'net gain' for biodiversity, significant compensation that is difficult to achieve will likely be required (and difficult to achieve) if these areas are lost to development, assuming avoidance and mitigation strategies have been applied in line with the guidance set out in the National Planning Policy Framework.

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<sup>10</sup> NBN Atlas data

## **Wildlife Corridor Network**

Wildlife corridors are a key component of wider ecological networks as they provide connectivity between core areas of high wildlife value and habitats of high distinctiveness and enable species to move between them to feed, disperse, migrate and reproduce. The results of the National Habitat Network Mapping project (2018) and Ecological Network for CWaC (2016) provide a broad map of the networks across England and Cheshire West respectively. The Wildlife Corridor Network identified in this report (Map 9) supplement these, while also being more specific to ecological networks that are important for conserving and enhancing biodiversity at a local scale.

The majority of the wildlife corridor in Littleton and Christleton extends along the edges of the parish, concentrated primarily in the southwest along Caldry Brook valley and to the east along the Gowry River; as discussed previously, these two areas comprise the majority of the priority habitat in the parish. However, there are linear habitats such as hedges, brooks, and the canal that link up the larger areas. The corridor map also highlights the absence of east-west connectivity within the parish. While there are patches semi-natural and newly created habitat present in the parish, such as the Legion's Meadow and 'the Pit' pond, a top priority would be to improve habitats within the central part of the parish, currently limited to narrow stretches of woodland and the hedgerow network.

Some of the mapped corridors do cross over roads where direct connectivity will not be maintained, however in these instances the maximum gap is less than 30 metres meaning more mobile species should not be affected. Some of the hedgerows within identified corridors may not be species rich as they run through intensively farmed land. High inputs of agrochemicals associated with intensively managed land could potentially be negatively affecting the species composition, particularly at ground level. Increasing hedgerow diversity and implementing wildlife friendly management regimes, as well as creating rough grassland buffers would help improve the hedgerow network and provide connectivity within the parish, which is currently lacking.

### **Additional connectivity**

The network of field boundary hedgerows and agricultural drainage ditches within the Christleton and Littleton Neighbourhood Planning area provide linear connectivity between high and medium distinctiveness habitats. These habitats would otherwise be separated by extensive areas of land of predominantly low habitat distinctiveness, restricting the ability of wildlife to disperse. In addition to their intrinsic ecological value, a good hedgerow network also adds to the landscape character value.

This study has also identified other areas of high or medium habitat distinctiveness (Map 8) that lie outside the Wildlife Corridor network but form essential ecological stepping stones. These areas primarily comprise ponds and fields of neutral grassland and facilitate the movement of more mobile species throughout the wider landscape by providing important habitats.

### **Protecting the Ecological Network**

The indicative boundary of the Christleton and Littleton wildlife corridor network is shown in Map 9. However, this is likely to require refinement should detailed survey work be undertaken. A 15-metre-wide buffer has been incorporated around any high distinctiveness habitat in order to ensure the corridors are substantial enough to protect the valuable habitats identified in Map 8. This buffer is necessary to protect vulnerable habitats from the effects of encroachment by external pressures such

as increased anthropogenic disturbance, light pollution, ground water/aquatic pollution, domestic pet predation and the spread of invasive non-native plant species or garden cultivars.

Any potential development proposals in the Neighbourhood Planning area **must avoid high distinctiveness habitats, core wildlife areas and the wildlife corridor network**. Any development adjacent or in close proximity to these areas must incorporate substantial mitigation to minimise the residual effects on wildlife while also seeking to enhance the overall condition of habitats in order to achieve a measurable net-gain for biodiversity. This can be achieved by:

- Prioritising a scheme design that retains and enhances important semi-natural habitats and key features for biodiversity, while also improving the permeability and function of the site for wildlife by creating new resources within and new connections to the wider landscape.
- Embedding out of bounds areas and dark corridors along watercourses, woodland edges and hedgerows into the environmental design of the scheme.
- Ensuring all external lighting is directional, low spillage and wildlife friendly.
- Ensuring the scheme drainage strategy directs run-off away from sensitive environmental assets and does not promote pollution propagation pathways. This is particularly important for habitats that are dependent on hydrology such as running or standing water, peatlands, and floodplain grazing marshes.
- Incorporating Sustainable Drainage Schemes (SuDS) which can provide additional wildlife habitat, provide measurable net-gains for biodiversity and prevent flooding. However, SuDs may hold polluted water so should not drain directly into running or standing water unless an extensive filtration or settlement system is in place.
- Ensuring only UK and Northern Ireland sourced and grown nursery stock of native plant and tree species be used in the landscaping of developments.
- Incorporating species specific mitigation measures where appropriate such as:
  - Hedgehog-friendly fencing, purposely designed to allow the passage of hedgehogs from one area to another;
  - South facing banks or bunds for reptiles, butterflies and other invertebrates, and;
  - Bee bricks and bat or bird boxes, ideally made of durable material such as woodcrete.

### Enhancing the Ecological Network

Not all sections of the Christleton and Littleton wildlife corridor provide high quality habitat, and measures to improve its ability to support the movement of species is a priority (see Recommendations section). Enhancement of the corridor may be facilitated by opportunities arising through the planning process (e.g. BNG or other ecological compensation via Section 106 Agreements or Planning Conditions), through government incentives (such as agri-environment schemes) or through the aspirations of the local community working with local businesses and landowners.

There are opportunities to enhance the wildlife corridor, such as those set out in the UK Government England Trees Action Plan<sup>11</sup>. **However, it is vitally important that tree planting should only occur on species-poor habitats away from existing (non-woodland) priority or semi-natural habitats, watercourses or aquatic habitats such as ditches and ponds and any other habitats of value to specific wildlife. Specialist ecological advice should always be sought before any tree planting is undertaken to ensure no unintended negative effects to biodiversity arise as a result.**

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<sup>11</sup> <https://www.gov.uk/government/publications/england-trees-action-plan-2021-to-2024>

## Recommendations for Creating a Coherent Ecological Network

Following adoption of the Christleton and Littleton Neighbourhood Plan, CWT advises that the following recommendations should be actioned in order to protect and enhance habitats which contribute to the creation of a coherent ecological network:

### 1. Create and expand links between the existing wildlife corridor network

There is currently some connectivity between nature conservation sites on the edges of the Neighbourhood Planning area. It is recommended that the wildlife value of existing hedgerows, agricultural drainage ditches and field ponds are enhanced to extend and join these existing corridors to other identified areas of medium and high distinctiveness habitats within the parish. To achieve this, hedgerows could be managed less intensively including through less frequent cutting, cutting on rotation, additional trees planted or managed as standards in order to increase species and structural diversity. Drainage channels that regularly contain standing or flowing water can be specifically managed for wildlife. Semi-natural woodlands can be left to expand and regenerate naturally, increasing coverage and connectivity across the neighbourhood while also providing biodiversity benefits arising as a result of the diverse structure of natural tree growth.

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

The areas within the wildlife corridor network shown on Map 9 incorporate, where possible, all of the locally designated Local Wildlife Sites for CWaC. However, it is highly likely that other land within the network will also meet the criteria for LWS selection. These areas (including those identified as pLWS on Map 6) **should be designated if the selection criteria<sup>12</sup> are met**, as LWS designation will provide a greater level of protection within the planning system. The wildlife corridor network should also ideally be in 'favourable condition'<sup>13</sup> in order to provide optimal breeding, foraging and commuting opportunities for the native species that currently utilise the network, and those that may subsequently colonise it. These areas should be surveyed by a qualified ecologist to identify specific management priorities; however, some general priorities are included below:

- Drainage ditches and watercourses within intensively farmed land should be buffered by semi-natural areas to provide riparian habitat and reduce 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 are recommended). This will benefit any populations of otter using the watercourses, as well as provide breeding, foraging and commuting areas for other species. It will also improve water quality and bank stability while decreasing siltation resulting in a reduction in the need to dredge.
- 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 (using 60-90cm high 'whips' which have a good rate of survival and tree guards or stock fencing). New sections of hedgerow should incorporate a

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<sup>12</sup> Giles, R. (2012) Local Wildlife Site Selection Criteria for the Cheshire region. Covering the districts of Cheshire West and Chester, Cheshire East, Wirral Halton and Warrington. Updated February 2014. Cheshire Wildlife Trust. [<https://www.cheshirewildlifetrust.org.uk/wildlife/our-work-wildlife/our-work-wildlife/local-wildlife-sites>]

<sup>13</sup> 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 4.

tree every 30m (on average) which can be demarked so as not to be inadvertently felled. Non-native invasive plant species should be removed by a specialist contractor and a bespoke management plan put in place to ensure they do not return.

- Hedgerows in intensively farmed land should be buffered by semi-natural areas to provide additional wildlife friendly habitat (2 metres from the centre of the hedge is the minimum requirement under cross compliance regulations, however 4 - 6 m is recommended) and improve the diversity of ground flora species.
- Cutting or grazing of all semi-natural grassland should be carried out to retain the wildlife value. This will enable more herb growth within the sward, prevent more competitive species from taking hold and prevent 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 nesting season (March to September inclusive) will avoid the destruction or abandonment 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.
- Field ponds which have become overgrown and choked with vegetation should be cleared out to allow light to penetrate, to provide areas of open water and allow a more diverse marginal flora to develop (with the remaining tree/scrub cover around 10 - 15%). These measures will also benefit amphibians, invertebrates and mammals. 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. **Professional advice should be sought and ponds should be assessed prior to any work to ensure existing wildlife is not impacted, including great crested newts which use ponds for breeding and may also be present in rank vegetation or under brash piles around the banks, or roosting bats which may be roosting in trees surrounding ponds.**
- Invasive non-native species (INNS) (listed on Schedule 9 of the WACA) should be prevented from colonising Christleton and Littleton's semi-natural habitats. Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to plant or otherwise cause these species to grow in the wild. NBN Atlas returned confirmed records of invasive non-native plant species (INNPS) Himalayan Balsam in Christleton and Littleton, which spreads particularly effectively along watercourses. Himalayan Balsam colonises rapidly and will outcompete native woodland, grassland and wetland flora. Any existing or future stands of INNPS should be managed by a specialist contractor to control their spread.
- It is also likely that other Schedule 9 INNS such as variegated yellow archangel, montbretia and Spanish hybrid bluebells are present in the area, as they easily spread from domestic gardens. If present they should be eradicated by, or under the supervision of, a specialist contractor. New and existing householders should be educated of the problems with the encroachment of INNPS or non-native garden cultivars into semi-natural habitats and avoid inadvertently planting any invasive species in their gardens, especially where they adjoin open areas, semi-natural habitats, or watercourses.

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

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

Ways to enhance connections or to buffer sites could include: the restoration of hedgerows, allowing semi-natural woodland to expand through natural regeneration, creation of wetland scrapes or ponds, creation of low maintenance field margins and sowing **locally sourced (local genetic stock)** wildflower meadows<sup>14</sup>. These should be focused on connecting the corridor laterally (east to west connection) to close the gaps between high value habitats and break up large areas of low distinctiveness.

Woodland expansion is desirable to buffer Christleton & Littleton's existing patches of woodlands. New plantations that are isolated from existing woodland are of limited value due to slow colonisation by woodland species, whereas planting woodland corridors between existing woodlands (or letting woodlands expand and merge naturally) creates valuable habitat links for the dispersal of species. The creation, expansion or enhancement of woodland stepping stones between existing core woodland areas also enhances links across the landscape for more mobile species. **It is vitally important that tree planting should only occur on species-poor habitats; this should occur away from existing (non-woodland) priority habitats and the edges of watercourses including ditches and ponds.** A detailed botanical survey should always be carried out prior to any woodland planting taking place.

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 (in the form of glades and rides) and up to 25% shrub species. For maximum benefit biodiversity rides should be east-west oriented (to maximise sunlight penetration) 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).

### 4. Protect the 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, and the removal of a hedgerow in contravention of The Hedgerow Regulations is a criminal offence. The criteria used to assess hedgerows relate to their 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, sections of hedgerows or their associated features (e.g. ditches, banks and standard trees) should be supported by an assessment to ascertain

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<sup>14</sup> Cheshire Wildlife Trust can provide advice and seeds for locally sourced wildflower meadow creation.

their status in relation to The Hedgerow Regulations. Should the Local Planning Authority grant permission for removal, compensatory hedgerows will be required to be provided; however, it is good practice to compensate for the loss of all hedgerows whether the hedgerow regulations apply or not. Like-for-like replacement is considered the minimum level of compensation, but it is likely that high value hedges in good condition will require a 3:1 replacement ratio.

Any new sections of hedgerow should be created following the guidance provided above. In-filling of gappy hedgerows will ensure greater connectivity, which will be of particular advantage to bats and small mammals. Ideally hedgerows should be cut on rotation (outside the nesting bird season) every three years towards the end of winter. This leads to increased 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 other species

In addition to the general habitat management priorities above that will benefit a wide range of species throughout the Neighbourhood Planning area, ensuring new developments provide wildlife friendly measures is imperative. Bat and bird boxes, particularly for declining species such as swifts, can help recover more urban and suburban populations. Making permeable fencing a standard and encouraging householders to make holes in the bottom of their fences will increase the permeability of the more urbanised areas in Christleton & Littleton for amphibians and small mammals. A key example is hedgehogs; they can travel an average of 1 mile every night if their movement through suburban landscapes is not impeded by impenetrable garden fences. Increasing the permeability of suburban landscapes in this way will also provide benefits for other species such as newts, toads and frogs. Wildlife permeable fencing should be complemented by educating and advocating for the use of non-toxic slug pellets by residents.

#### 6. Ensure the requirement to secure a measurable biodiversity net gain is embedded in Neighbourhood Planning policies

Providing a measurable net gain for biodiversity is embedded in NPPF (paragraphs 33, 187d, 192b and 193d) and required under policies ENV 4 and DM 44 of the CWaC Local Plan. Any new green infrastructure arising as a result of biodiversity net-gain should take consideration of the recommendations set out in this report and how it can contribute to the wider ecological network.

#### 7. Habitat mapping

It is strongly recommended that Christleton & Littleton's Neighbourhood Planning area is mapped in detail using either the Phase 1 Habitat or the UK Habitat Classification System methodologies. This will provide an accurate, detailed picture of the habitats within the Neighbourhood Planning area and could be used to verify the results of the habitat distinctiveness mapping (Map 8) undertaken in this study. Detailed survey may identify additional habitats of principal importance or priority, high or medium distinctiveness habitat that have not been identified in this assessment. Areas identified as having medium value habitat in this report should be targeted for survey as a priority, in order to verify the findings and ensure they are not under or over-valued. Ground level survey can also inform the exact position of the wildlife corridor network with greater accuracy than this study.

## Conclusion

This study has highlighted that the important wildlife habitat in Christleton and Littleton is predominantly associated with the coastal and floodplain grazing marsh in the Gowry floodplain in the east of the parish. The Caldry Brook Meadows area is also an important area of lowland meadows in the southwest, and the Shropshire Union Canal provides a good linear corridor.

By attributing habitat distinctiveness values to all land parcels in the Neighbourhood Planning area, the study has provided important evidence that should be taken into consideration when planning decisions are made. However, it is **strongly recommended** that further habitat survey work (phase 1/UK Habitat Classification) is undertaken at the appropriate time of year, in order to supplement this study and to verify that 'medium value' habitats have not been over or under-valued.

Most importantly the study has highlighted a Wildlife Corridor Network which provides ecological connectivity between the meadow and floodplain grazing marsh habitats around the Christleton and Littleton Neighbourhood Planning area. The Wildlife Corridor Network is likely to support a wide range of species including birds, amphibians (including protected and priority newt species), mammals (including protected and priority bat species), plants and invertebrates that are in decline both locally and nationally.

We also **strongly recommend** that the Wildlife Corridor Network (Map 9) is incorporated into the Christleton and Littleton Neighbourhood Plan and protected from development, to ensure the guidance relating to ecological networks set out in NPPF (paragraphs 187d, 188, 192a, 192b) is implemented at the local level in the parish. The Wildlife Corridor Network includes a buffer zone of up to 15 metres in place to protect the notable habitats shown in Map 8. If new habitats of high distinctiveness are subsequently identified in the Neighbourhood Planning area, or habitats of medium distinctiveness are shown to be undervalued, these areas should also be protected by a 15-metre buffer zone to protect from development. Following adoption of the Christleton and Littleton Neighbourhood Plan, CWT advises that a number of recommendations should be actioned in order to protect and enhance habitats that contribute to the creation of a coherent ecological network.

Any future development of sites which lie adjacent to a high distinctiveness habitat or a wildlife corridor will need to demonstrate substantial mitigation and avoidance measures to lessen any potential impacts on wildlife (in line with NPPF Para 193a; the mitigation hierarchy), and seek to enhance these features where reasonable to do so (in line with NPPF Para 159, 192; the provision of BNG and LNRS). This can be achieved by prioritising a scheme design that retains and enhances the site's important semi-natural habitats and key features for biodiversity. The scheme should also improve the permeability and function of the site for wildlife by creating new resources within and new connections to the wider landscape. This should then be supplemented with bespoke mitigation where appropriate and with additional protective measures such as sensitive lighting designs, the provision of dark corridors and appropriate drainage strategies.

Protection and enhancement of Christleton and Littleton's natural assets are of the utmost importance for nature conservation, ecosystem services and for the enjoyment of future generations. Therefore, future development in Christleton and Littleton should respect and prioritise the natural environment with the most intact landscapes, in terms of biodiversity, landform and historical/cultural associations valued highly when planning decisions are made.

## Appendices

### Appendix 1 – Natural England Ecological Network Model Interpretation

Woodland and Wetland Habitat Network Categories for Natural England’s Ecological Network Tool GIS layers 2020:

Category	Description	Recommended Action
Core SSSI Habitat	SSSIs are among the most protected sites in Great Britain, and Natural England has statutory obligations to act for the benefit of SSSIs and encourage owner/occupiers to manage the land to favourable condition.	SSSIs can be noted for a range of biological or geological features. Regardless of the nature of the SSSI, management should always aim to <b>achieve favourable condition for the features for which the site is notified</b> . Therefore, should woodland or wetland network zone overlap with the boundaries of a SSSI, the action suggested by the model (see below) should only be carried out if it is consistent with the management of the notified features.
Primary Habitat	Wetland habitat from the priority habitat inventory (lowland raised bog, lowland fen and reedbeds), ponds and lakes (OS MasterMap). National Forest Inventory broadleaved or mixed-mainly broadleaved woodland.	The restoration and enhancement of primary habitat should be considered to <b>improve habitat quality</b> where necessary (e.g. scrub management on lowland bogs, encouragement of diverse age structure in woodlands) or <b>increase extent</b> if possible.
Priority Wetland Creation Zone	Land where wetland network connectivity is most restricted due to fragmentation and the land is suitable for wetland creation such as mosslands or reedbeds.	Priority Wetland Creation Zones are a high priority for wetland habitat creation, as it represents a major pathway of the network through a highly fragmented landscape. This may <b>involve increasing the extent of existing habitat patches or creating new habitat within the vicinity</b> appropriate for the species being considered. Rigorous ground-truthing and consideration of other priority habitats or conservation objectives in the area will be vital before creating new wetlands.
Wetland Creation Zone	Land where wetland network connectivity is most restricted due to fragmentation and is less suitable for wetland creation.	To bolster the wetland network in these areas, <b>alternative wetland creation</b> should be considered e.g. SuDS or lined ponds.
Wetland Buffer Zone 1	Land within the network which connects existing primary wetland habitats and is naturally suitable for wetland creation. Wetland Buffer Zones are a high priority for	The restoration and creation of wetland habitats e.g. rewetting of modified bogs, in these areas should be considered. However, conditions on the ground will determine the most appropriate action within these areas; this could be <b>restoration to improve habitat quality</b> , or <b>creation to increase the extent of existing</b>

	restoration or creation, as they represent connecting areas within the network which could join existing primary habitat.	<b>habitat patches or provide stepping stones between them.</b> Where other associated habitats of conservation importance overlap with Wetland Buffer Zones, such as species-rich grasslands or wet woodlands, <b>restoration and improvement of these habitats</b> should be considered, to <b>improve the resilience of primary wetland habitats</b> by providing buffer zones and diverse habitat mosaics. Rigorous ground-truthing and consideration of other priority habitats or conservation objectives in the area will be vital before creating new wetlands.
Wetland Buffer Zone 2	Land within the network which connects existing primary wetland habitats, but which is less suitable for natural wetland habitat creation.	<b>Non-natural wetland restoration measures</b> e.g. SuDS, lined ponds, should be considered in these areas. <b>Management and bolstering of important associated habitats</b> , as with Wetland Buffer Zone 1, should also be considered here.
Wetland Network Expansion Zone	Land outside of the current wetland network where land is suitable for wetland creation, which could help to link up the existing habitat across the landscape.	Habitat creation in the Wetland Network Expansion Zone has the potential to <b>aid the joining up of existing habitats patches</b> within the network, however these areas are less of a priority in terms of improving the overall connectivity of the network as a whole. These areas may become 'Wetland Buffer Zone 1' in future iterations of the model if projects on the ground result in additional primary habitat. Rigorous ground-truthing and consideration of other priority habitats or conservation objectives in the area will be vital before creating new wetlands.
Priority Woodland Creation Zone	Land where woodland network connectivity is most restricted due to fragmentation and the land is potentially suitable for wet woodland creation.	Woodland Creation Zones are a high priority for woodland habitat creation, as it represents a major pathway of the network through a highly fragmented landscape. This may involve <b>increasing the extent of existing habitat patches</b> or creating new habitat within the vicinity appropriate for the species being considered. In Priority Woodland Creation Zones, the land may also be suitable for wetter habitats, and encouragement of wet woodland may be considered here. Rigorous ground-truthing and consideration of other priority habitats or conservation objectives in the area will be vital before creating new woodlands.
Woodland Creation Zone	Land where the network connectivity is most restricted due to fragmentation and is less suitable for wet woodland creation.	To bolster the woodland network in these areas, woodland creation measures are of high priority here. This may include the <b>planting of new woodlands</b> , with careful consideration of appropriate species mix, or <b>encouragement of natural regeneration</b> where possible. Rigorous ground-truthing and consideration

		of other priority habitats or conservation objectives in the area will be vital before creating new woodlands.
Woodland Buffer Zone 1	Land within the network which connects existing primary woodland habitats and is potentially suitable for wet woodland creation.	Woodland Buffer Zones are a high priority for restoration or creation, as they represent <b>connecting areas within the network which could join existing primary habitat</b> . Conditions on the ground will determine the most appropriate action within these areas; <b>restoration to improve habitat quality</b> , or <b>creation to increase the extent of existing habitat patches or provide stepping stones between them</b> . Given the potential suitability for wetter habitats here, <b>rewetting and management for wet woodland may be considered</b> here. Rigorous ground-truthing and consideration of other priority habitats or conservation objectives in the area will be vital before creating new woodlands.
Woodland Buffer Zone 2	Land within the network which connects existing primary wetland habitats, but which is less suitable for natural wetland habitat creation.	The <b>restoration and creation of woodland habitats</b> e.g. tree planting or encouragement of natural regeneration should be considered in these areas. Where <b>other associated habitats</b> of conservation importance, such as species-rich grasslands or heathlands, overlap with Woodland Buffer Zones, <b>restoration and improvement of these habitats</b> should be considered, to improve the resilience of primary woodland habitats by providing buffer zones and diverse habitat mosaics. Rigorous ground-truthing and consideration of other priority habitats or conservation objectives in the area will be vital before creating new woodlands.
Woodland Network Expansion Zone	Land outside of the current woodland network where species flow is likely to be relatively high due to better landscape permeability.	Habitat creation in the Woodland Network Expansion Zone has the potential to aid the <b>joining up of existing habitats patches</b> within the network, however these areas are less of a priority in terms of improving the overall connectivity of the network as a whole. These areas may become ‘Woodland Buffer Zone’ in future iterations of the model if projects on the ground result in additional primary habitat. Rigorous ground-truthing and consideration of other priority habitats or conservation objectives in the area will be vital before creating new woodlands.

**Appendix 2 - Habitats, LCM2007 Classes and Broad Habitat Sub-classes for LCM2007 (CEH)**

LCM2007 class	LCM2007 class number	Broad Habitat sub-class	Broad habitat sub-class code	Habitat Score
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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
		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

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		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

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		Saltmarsh grazing	Smg	Medium
Urban	22	Bare	Ba	Low
		Urban	U	Low
		Urban industrial	Ui	Low
Suburban	23	Urban suburban	Us	Low

#### **Appendix 4 – Local Wildlife Site Definition of Positive Management**

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

1. The conservation features for which the site has been selected are clearly documented.
2. There is documented evidence of a management plan/management scheme/advisory document which is sufficiently targeted to maintain or enhance the above features.
3. 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.
4. The Local Sites Partnership has verified the above evidence.