

Protecting and Enhancing Malpas' Natural Environment



Cheshire
Wildlife Trust

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Acknowledgements

Protecting and Enhancing Malpas' Natural Environment was produced by Laura Saker-George, Ross Harding, Andrea Powell, Rachel Giles, Amelia Airey, Heather Tewnion, and Fiona Wood.

For more information contact:

Cheshire Wildlife Trust,
Bickley Hall Farm,
Bickley,
Malpas,
SY14 8EF
01948 820728
info@cheshirewt.org.uk

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Introduction

Neighbourhood Planning provides an important opportunity for communities to 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 Overview

In 2011 the government published Biodiversity 2020, a 'strategy for England's Wildlife and Ecosystem services', which built on the recommendations of a previous government 'Natural Environment' white paper. The mission of the Biodiversity 2020 strategy was 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.' While the Biodiversity 2020 strategy has now been superseded its aims and outcomes built a foundation for, and have been adopted into, more recent and forthcoming environmental policy. Achieving the outcomes set out in Biodiversity 2020 remains an important undertaking if the national decline of natural assets is to be halted and reversed.

In 2013 the State of Nature Partnership (SoNP), consisting of 25 conservation organisations, published its first 'State of Nature Report' with the key aim of 'diagnosing the causes of wildlife decline'. When the first update was published in 2016 the UK was ranked amongst the most nature-depleted countries in the world. By 2019, the SoNP had grown to include over 70 partners drawn from conservation NGOs, research institutes, and the UK and national governments. Unfortunately however, many of the observed SoN measures suggested the decline of nature has continued in the most recent decade. The fourth SoN report was published in 2023 and it detailed how nature is still sadly declining across the UK, with almost 1 in 6 species now threatened with extinction.

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; a national network of wildlife-rich places. The government aims to achieve the goals of the 25 Year Environment Plan through a number of mechanisms including the planning system (via the NPPF) and through the Environment Act. The Environment Improvement Plan 2023 has now also been released, which is the first revision of DEFRA's 25 Year Environment Plan. This review builds on the 25YEP vision with a new plan detailing how DEFRA will collaborate with landowners, communities and businesses to deliver their goals for improving the environment; and they have set out interim targets to measure progress along the way. The targets for some of the original 25YEP goals have been expanded and more specific details have been added to increase the potential of the 25YEP. Their central goal remains the same, to halt the decline in our biodiversity and allow wildlife to thrive; the next review is scheduled for 2028.

The National Planning Policy Framework (NPPF), first published in 2012 and subsequently updated in 2018, 2019 and most recently in 2021, draws on the principles set out above. 'Protecting and enhancing our natural, built and historic environment' is one of the three core objectives in the revised NPPF 2021 (paragraph 8c). In the recent revisions of the NPPF there has been a shift from 'no net loss policies', to policies that mandate a 'measurable net-gain in biodiversity', i.e. referring to the use of a

Biodiversity Net Gain (BNG) metric to measure biodiversity gains. Accompanying this shift toward providing a biodiversity net-gain is growing support for establishing coherent ecological networks at the local level, in order to strategically underpin the protection and enhancement of local biodiversity assets. Non-strategic local policies and strategic policy guidance related to ecological networks and biodiversity net-gain is enshrined in the NPPF (2021) paragraphs 120a, 174d, 179a and 179b.

The Environment Act (2021) 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 with the shift toward biodiversity net-gain and ecological networks supported in the NPPF, the Environment Act includes:

- The establishment of a mandatory requirement for developers to provide a 10% biodiversity net-gain as a condition of planning permission for new development applicable to all development under the Town and Country Planning Act 1990 and Nationally Significant Infrastructure Projects, and;
- The introduction of a new national system of spatial strategies for nature known as Local Nature Recovery Strategies (LNRS). Each strategy will, for the area that it covers; map the most valuable existing habitat for nature; map specific proposals for creating or improving habitat for nature and wider environmental goals, and; agree priorities for nature's recovery. It is anticipated this local network will then inform a national Nature Recovery Network (NRN).

At a local level, biodiversity and ecological networks are enshrined in the Cheshire West and Chester (CWaC) Local Plan (Part One) Strategic Policies (adopted January 2015) and Part Two Land Allocations and Detailed Policies (adopted July 2019). Policy ENV 4 – Biodiversity and Geodiversity (Local Plan Part One) seeks to safeguard and enhance biodiversity and geodiversity through the identification and protection of sites and/or features of local importance. Policy DM 44 – Protecting and Enhancing the Environment (Local Plan Part Two) seeks to strengthen the protection of ecological networks across the borough while requiring development to deliver an overall net-gain for biodiversity. To supplement their net gain and ecological network policies, CWaC Council have also produced a Biodiversity Net Gain and Ecological Networks guidance note (June 2022). This guidance note provides information on the approach to BNG within the borough, demonstrating the various ways development can achieve this, contributing positively to biodiversity and ecological networks in a way that is measurable in accordance with the adopted development plan.

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 in which we inherited it. The primary focus is protection and enhancement at the landscape scale; developing coherent ecological networks by delivering strategic habitat creation incentivised through BNG, with developers, landowners, conservation charities and individuals playing a part. The planning system has a central role in this, particularly in regard to spatial biodiversity strategies and the delivery of net-gain, but also through development control. At a local level Neighbourhood Planning will be a key factor in determining whether the aims of national strategies such as DEFRA's 25YEP are realised, by identifying local priorities for nature conservation that should be considered during the planning process. Although this is a national plan its success will depend on the contributions of local communities toward achieving social, economic and environmental objectives and working to protect and enhance their local environment.

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 change in our approach to wildlife conservation; shifting 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 identified that this vision will only be realised by working at local scales in partnership with local 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 and therefore we need to learn how to manage these important natural resources in ways that deliver multiple benefits, for example; achieving profitable and productive farming while also adopting practices which enhance carbon storage, improve floodwater management and support biodiversity.

England's wildlife and semi-natural habitats have become increasingly fragmented and isolated, leading to significant declines in the provision of certain ecosystem services and biodiversity. 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.

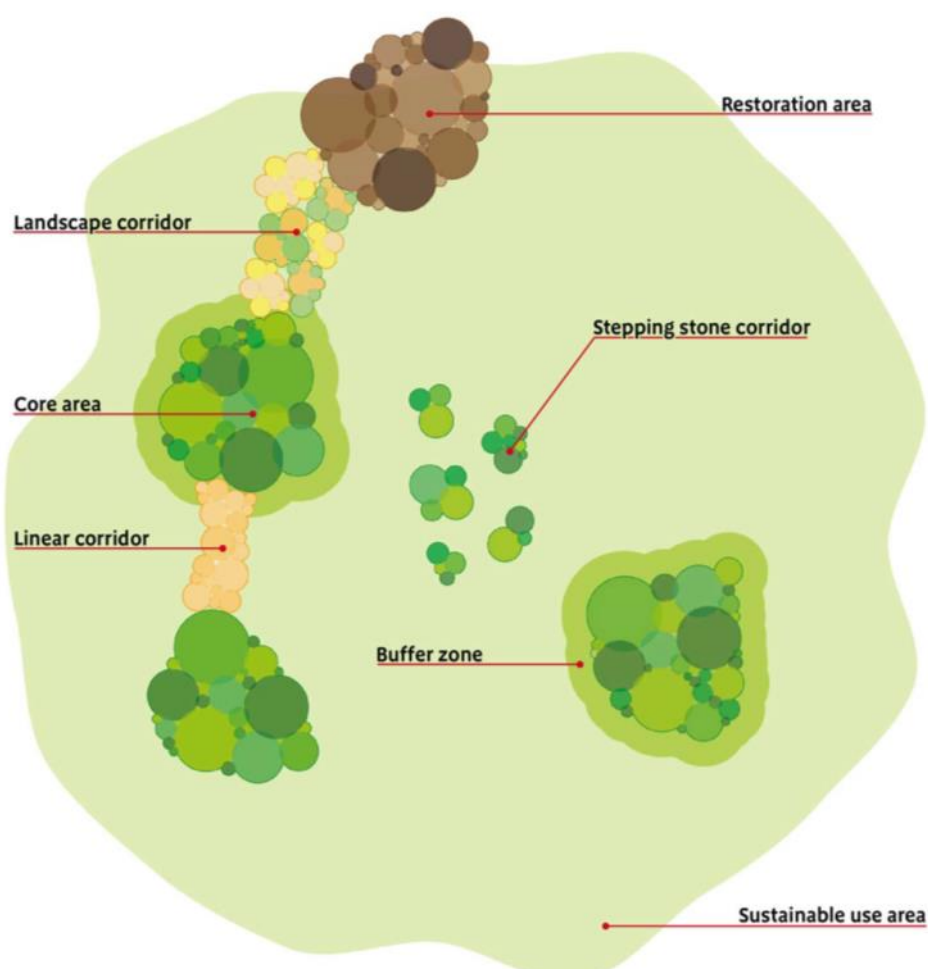


Figure 1. The components of ecological networks (Making Space for Nature report)

Ecological networks generally have five components (Figure 1) 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 need not just come from linear, continuous habitats; a number of 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 ultimate 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.

As discussed, the principles of establishing coherent ecological networks are now embedded within many planning and policy documents. The NPPF (2021), includes specific guidance on conserving, restoring and enhancing ecological networks including:

- Paragraph 174 - 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;

- 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; and
- f) Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
- Paragraph 175 - 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 179 - 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.

Objectives of the Study

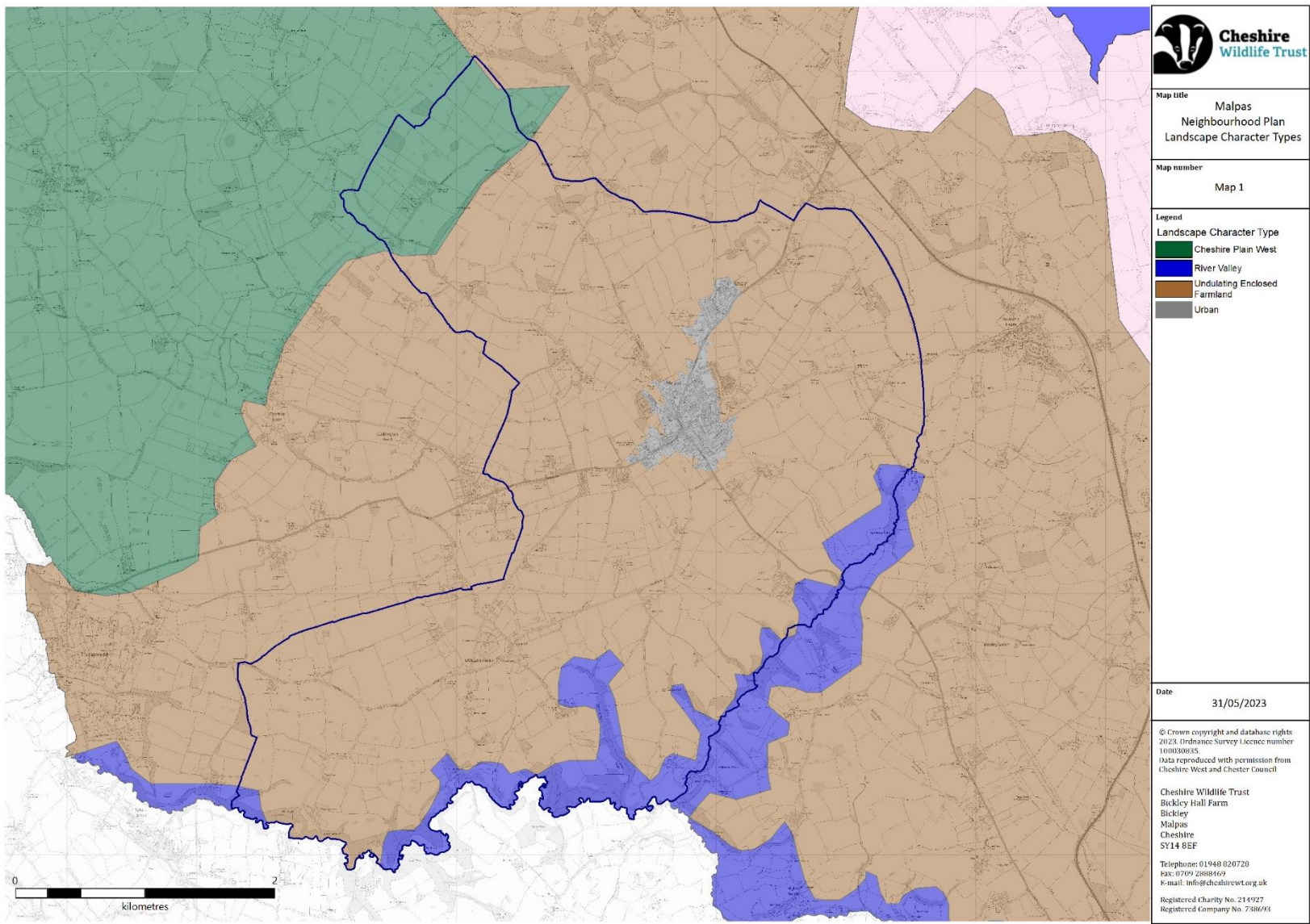
In order to protect and enhance the natural environment it is important to first identify the natural assets that exist within a neighbourhood. This report aims to identify the core, high and medium ecological value sites for nature conservation within the Malpas Neighbourhood Planning area. High value 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 Neighbourhood Planning area and recommends these are safeguarded within the neighbourhood plan. Additionally, it identifies key features associated with the landscape character of the Malpas area so they can be referenced in neighbourhood planning policies.

Malpas' Landscape Character Assessment

At a national level Malpas lies 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 Cheshire West and Chester 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 Cheshire West and Chester (CWaC) (Map 1) identifies three recognisable landscape character types (LCT) within the Malpas Neighbourhood Planning area. The majority of Malpas falls within the 'Undulating Enclosed Farmland' LCT, with a small portion of the planning area falling within the 'Cheshire Plain West' and 'River Valleys' LCTs. Each LCT is subdivided into smaller Landscape Character Areas (LCAs), the details of which are given below.

Map 1 – Cheshire West and Chester Landscape Character Typology 2018



LCT 5: Undulating Enclosed Farmland

General Description

This character type is defined by undulating topography and the associated small to medium scale enclosure into which it is divided. Key characteristics are the generally cohesive and un-fragmented historic landscape in the south of the borough, small woodlands, ponds and streams, nucleated rural villages and scattered farmsteads. The majority of fields are grass leys for pasture, with some arable farming occurring in more well-drained areas.

Away from main roads, railways and settlement the landscape is generally quiet and rural. The prevailing views extend to adjacent character areas, either out over the low-lying plain or up towards the Sandstone Ridge. Some nucleated villages, such as Acton Bridge, have seen greater expansion reflecting their location close to larger places of work and the communications network. Elsewhere settlement comprises a mix of small picturesque villages such as Malpas, surrounded by a dispersed pattern of hamlets, farms and halls linked by a network of rural lanes.

Woodland levels are higher than those of the neighbouring plain but still relatively low, mainly concentrated on former estates and along smaller streams like the Wych Valley where there are fragments of ancient woodland. Frequently they are associated with unimproved or semi-improved grassland habitats which have escaped modern farming practices. Small farm copses and coverts are mainly broadleaved and there are mixed woodlands on sandier soils.

This historic landscape is considered to contain some of the best preserved late medieval field systems and ridge and furrow in Cheshire. The Malpas area contains a regionally significant late medieval landscape which preserves elements of the earlier medieval open fields. There is also a range of monuments from Bronze Age barrows to post medieval canal locks in this character area.

LCA 5g: Malpas

The Malpas LCA lies in the south of CWaC borough, between Clutton to the north and the Wych Valley to the south. The character area boundaries are generally defined by geology and topography, with the A534 forming the northern boundary. The historic settlement of Malpas is mentioned in the Domesday Book suggesting it was one of the more important settlements in Cheshire.

This area is home to steep wooded valleys, with a rich mosaic of broadleaved semi-natural woodland including coppice with a diverse ground flora, unimproved grassland, that incise the hills and contain small brooks. There are examples of surviving common land indicated by the place names e.g. Bradley Green, Overton Heath, Cuddington Heath. Field ponds are a feature of the lower lying areas, indicating the extraction of marl (calcareous deposits) from the boulder clay for past agricultural improvement.

Key Factors for Landscape Change

Past Change

- Limited boundary management, with evidence of gappy hedges and walls and fencing ('Cheshire Railings') being neglected and in need of repair;
- Agricultural intensification with enlargement of fields and loss of hedgerow boundaries (oak trees left 'in-field') with loss of historic field pattern;

- Under management and deterioration of some farm woodlands;
- A shift from pasture grazing with increasing areas being cultivated for arable cropping, silage or fodder crops including cereals and maize;
- Significant change has occurred on the former Carden Park estate (but topography, dense woodland and boundary walls have limited its impact on the landscape);
- Loss of historic parkland to recreational use (such as golf courses) or farmland;
- Loss of heathland to recreational use or farmland or invasion by scrub and bracken;
- Loss of unimproved grassland to farmland;
- Loss of ridge and furrow resulting from increase in arable land use replacing pasture;
- Limited management of field ponds has resulted in some silting up and drying out due to natural processes of vegetation succession and overshadowing from trees.

Potential Future Change and Key Issues Affecting LCA 5g: Malpas

- Farm diversification including introduction of riding schools, stables and paddocks;
- Pressure for (large scale) residential/employment development, in particular at Malpas and No Mans Heath;
- Further loss of ridge and furrow which is a key historic landscape characteristic of the area;
- Pressure for conversion of farm buildings for other uses including residential, business and industrial use, with erection of modern portal sheds to replace the lost space;
- Pressure for Solar PV farms;
- Pressure for built development associated with the main A41 that passes through the landscape, for example at road junctions at No Mans Heath and Hampton Heath;
- Pressure for more golf courses.

Landscape Guidance

The overall management strategy for this landscape should be to conserve the regionally significant historic landscape comprising late medieval field systems and ridge and furrow, restore the historic field pattern of hawthorn hedgerows and hedgerow oak trees, and enhance the grassland and woodland network.

- Maintain an intact hedgerow network through management of hedges and ensuring a young stock of hedgerow trees.
- Avoid over-intensive flail mowing or ploughing too close to hedgerow boundaries – protect saplings and encourage trees to grow up at intervals along the hedgerow.
- Consider opportunities to replace hedgerows where they have been lost.
- Manage existing woodlands to ensure a diverse canopy structure and rich ground flora.
- Consider opportunities to plant simple pockets of trees and small blocks of woodland in field corners, on land of low ecological value and ensuring no detriment to historic assets, to ensure the continuation of these characteristic features.
- Conserve the small to medium scale pattern of fields, particularly earlier field systems which provide historic continuity in the landscape.
- Maintain the pastoral character of the landscape and reduce soil erosion by minimising exposure of bare soil (for example as a result of increased crop growing).

- Increase the biodiversity of intensively managed grassland and arable land – create and link buffer strips along linear features such as hedgerows to create a continuous network of wildlife corridors.
- Encourage sympathetic integration of horse paddocks through maintenance of hedgerow field boundaries, rather than sub-division of fields and erection of high visibility fencing - ensure the land use does not break up traditional field patterns.
- Encourage sympathetic integration of golf courses through maintenance of hedgerow field boundaries and existing woodland rather than planting of alien ornamental species - ensure the land use does not break up traditional field patterns.
- Conserve the areas of unimproved grassland that is of nature conservation value and consider opportunities to extend / recreate this habitat.
- Encourage the retention and management of field ponds and brooks that are of wildlife importance as well as contributing to the diversity of the landscape.
- Conserve and manage large scale earthworks, such as ridge and furrow, promoting sensitive agricultural practices in their vicinity (i.e. grazing not ploughing).
- Planting within Carden should retain the diversity and distinctive mix of tree species: Scots pine, birch and oak on the higher sandstone cliff; hawthorn, oak and lime in the lower parkland; and appropriate wetland species around Carden brook and the field ponds. Avoid planting in areas of ecological value.
- Conserve and manage earthworks, such as the remnants of Castle Hill Motte at Malpas, and the Round Barrow at Carden, promoting sensitive agricultural practices in their vicinity (i.e. grazing not ploughing).
- Seek to replace coniferous woodlands with broadleaved woodlands.
- Conserve the sense of peace and quiet away from the main roads, and conserve the rural character of the lanes. Avoid features that 'suburbanise' the landscape such as kerbs and large scale signage.
- Conserve views from high vantage points, including prominent views from within Carden, across the plain to the Clwydian hills to the west, and to St. Oswald's Church in Malpas. Consider opening up more views from new vantage points. Consider key views when planning locations for new woodland.

LCT 9: Cheshire Plain West

General Description

This character type dominates a large portion of Cheshire West and Chester, and it also covers the majority of the Malpas' Neighbourhood Planning area. The character area extends from Stanlow and Helsby in the north to Threapwood at the south-westerly tip of the borough. It bounds the northern and eastern fringes of the City of Chester and is framed by the Sandstone Fringe to the east.

This landscape type is defined by its flat or very gentle topography enclosed by hedgerows and standard trees in small-medium enclosures that follow an irregular and semi-regular field pattern. It is differentiated from the Cheshire Plain East by the physical barrier of the Sandstone Ridge. However, in many respects there are shared characteristics and features between the Cheshire Plain East and Cheshire Plain West landscape character types.

Views from more open ground can feature a succession of hedgerows receding into the distance, and these coalesce visually into a single mass of tree crowns creating 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. Scattered examples of species-rich grassland survive throughout the area, with particularly important examples in the south between Shocklach, Tilston and Threapwood. The field patterns comprise a mix of ancient enclosure and post medieval improvement. Settlement is predominantly dispersed and has a low density, with a small number of nucleated villages occurring in the area (e.g. Tattenhall).

Industrial heritage is evident in the Plain as the Shropshire Union Canal and the former London and North Western Railways both utilised the flat landscape. The canal stretches from Ellesmere Port through Chester and Barbridge and eventually to Wolverhampton. It was constructed as a number of waterways that were brought together as the Shropshire Union in the mid-19th century. Buildings include timber-framed and brick-built structures as well as a small number constructed from sandstone (mainly high status – e.g. churches).

LCA 9c: Tattenhall to Shocklach Landscape Character Area

The Tattenhall to Shocklach Plain character area encompasses a swathe of thinly populated deeply rural countryside; it extends as far south as Threapwood and has a long western boundary running alongside the River Dee SSSI valley. Beeston lies at the north-eastern limit of the area, and the boundary is indented by the Carden Park estate and hotel to the south and east. This area has an absence of significant transport infrastructure and industrial development which helps retain a deeply rural and tranquil character.

This historic landscape is regionally significant with extremely well preserved late medieval field systems and extensive ridge and furrow (the greatest concentration in CWaC is located in the Shocklach area); abundant hedgerows and hedgerow trees create a characteristic patchwork with preserved elements of the earlier medieval open fields and common land. Wide areas of improved grassland are present, largely utilised for dairy farming and fodder crops, and there is an extensive network of small field ponds.

Small settlements punctuate the plain where historic form has often been retained, scattered across the plain are small, nucleated villages, hamlets and freestanding farmsteads. There are a number of medieval monuments in this character area including Shocklach castle motte and moated enclosure. There are distant views over the Dee valley into Wales from the western fringe of the area.

Key Factors for Landscape Change

Past Change

- Some agricultural intensification with enlargement of fields and loss of hedgerow boundaries (oak trees left 'in-field') with loss of historic field pattern;
- Under management and deterioration of some small farm woodlands;
- A shift from pasture grazing with increasing areas being cultivated for arable cropping, silage or feed crops including cereals and maize;
- Loss of unimproved grassland;
- Loss of ridge and furrow;

- Limited management of field ponds has resulted in some silting up and drying out due to
- natural processes of vegetation succession and overshadowing from trees;
- Transport infrastructure improvements and increase in traffic;
- Tattenhall and Farndon have seen recent residential development;
- Dilution of built character and form in settlements;
- Change of use of traditional farm buildings to residential use with loss of character and unsympathetic detailing.

Potential Future Change and Key Issues Affecting LCA 9c: Tattenhall to Shocklach Plain

- Continued deterioration in field boundary maintenance and management;
- Farm diversification, potentially including introduction of riding schools, stables and paddocks;
- Erosion of built environment character through incremental development –pressure for
- expansion of existing settlement, ribbon development and in-fill, particularly Tattenhall and Farndon;
- Pressure for conversion of farm buildings for other uses including residential, business and industrial use, with erection of modern portal sheds to replace the lost space;
- Decline in the vernacular building character;
- Climate change leading to changing agricultural practice and impacts upon field ponds and water ecology.

Landscape Guidance

The overall management strategy for this landscape should be to conserve the regionally significant historic landscape comprising late medieval field systems and ridge and furrow, restore the historic field pattern of hawthorn hedgerows and hedgerow oak trees, and enhance the grassland and woodland network.

- Maintain an intact hedgerow network through management of hedges and ensuring a young stock of hedgerow trees.
- Avoid over-intensive flail mowing or ploughing too close to hedgerow boundaries – protect saplings and encourage trees to grow up at intervals along the hedgerows.
- Consider opportunities to replace hedgerows where they have been lost utilising appropriate species of hawthorn and oak standards.
- Manage existing small woodlands and coverts to ensure a diverse canopy structure and rich ground flora.
- Consider opportunities to plant simple, small pockets of trees and small blocks of woodland in field corners to ensure the continuation of these declining characteristic features.
- Conserve the small to medium scale pattern of fields, particularly early field systems which provide historic continuity in the landscape, particularly around settlements.
- Maintain the pastoral character of the landscape and reduce soil erosion by minimising exposure of bare soil (for example as a result of increased crop growing).
- Increase the biodiversity of intensively managed grassland and arable land – create and link buffer strips along linear features such as hedgerows to create a continuous network of wildlife corridors.

- Encourage sympathetic integration of horse paddocks through maintenance of hedgerow field boundaries, rather than sub-division of fields and erection of high visibility fencing - ensure the land use does not break up traditional field patterns.
- Conserve the remnant unimproved grassland that is of nature conservation value and consider opportunities to extend / recreate this habitat.
- Encourage the retention and management of field ponds and brooks that are of wildlife importance as well as contributing to the diversity of the landscape.
- Conserve the remaining areas of ridge and furrow by restricting use of fields to pasture.
- Conserve the sense of peace and quiet away from the main roads, and conserve the rural character of the lanes. Avoid features that 'suburbanise' the landscape such as kerbs and large-scale signage.

LCT 15: River Valleys

General Description

CWaC borough is partly bounded by the Mersey estuary to the north and the River Dee to the west, both of which largely drain areas outside the district. The River Dane and the River Gowy also flow northwards and are important for draining large parts of the district. There are many smaller incised rivers and streams across the district as well, such as Wych Brook.

In most cases a steep slope, predominantly wooded, marks the transition between the Cheshire Plain and a narrow valley floor and meandering watercourse. Views are generally restricted within the valley due to the physical enclosure provided by the deep incision of the riverbed, the steep topography and the dense vegetation. A number of substantial properties, often of architectural and historic interest, have been established upon the valley shoulders or upper slopes to exploit the scenic value of the rivers. These provide attractive and imposing landmarks, and are often surrounded by mature amenity planting which complement the buildings.

LCA 15g: Wych Valley

The Wych Valley is a steep sided and tightly defined rural valley which forms part of the southern borough boundary between Threapwood and Grindley Brook. The LCA takes on an irregular 'inverted T' shape with the Grindley and Bradley Brooks forming the Wych Brook where they meet at the hamlet of Lower Wych. The main crossings are located at Higher and Lower Wych and Sarn Bridge.

The Wych Brook is a fast-flowing, shallow watercourse within steep, partly wooded valley sides. This is an intimate, small-scale landscape with deep rural character and resultant tranquillity. The landscape contains a mosaic of woodland, scrub, high hedges and small fields. There is a mix of woodland types, including semi-natural ancient oak woodland, with important nationally and locally designated woodland ecosystems.

The settlements are limited to small hamlets at Higher and Lower Wych, and several scattered farmsteads. There is a long history of small-scale settlement from Saxon times based upon salt extraction, with later corn mills utilising the brooks' flow e.g. Dymocks Mill. (Old) Castle Hill is the site of a Norman motte earthwork and timber castle Scheduled Monument dating from the 11th/12th century.

Key Factors for Landscape Change

Past Change

- Under-management and/or inappropriate management of some of the woodland;
- Sporadic built development within the valley sides and valley shoulder has left some prominent, sky-lining buildings;
- Conversion of mills to residential property has resulted in some vernacular and character loss;
- Limited management has caused decline in hedgerow boundaries in the past.

Potential Future Change and Key Issues Affecting LCA 4a: Frodsham, Helsby and Lordship Marshes

- Decline of important ancient and semi-natural woodland and grassland habitats through under / inappropriate management;
- Climate change could lead to change in ecological community mix;
- Increased incidence of significant rainfall events may have implications for valley floor flooding and riparian erosion.

Landscape Guidance

The overall management strategy for this landscape should be to conserve and enhance the valley woodlands, unimproved grassland and wetland habitats, and to restore field boundaries.

- Support the management of all existing woodlands and pay special regard to the ancient woodland sites and special mosaic communities.
- Promote traditional woodland management techniques of the valuable valley side woodland to ensure a diverse (indigenous) species and age structure.
- Support plans to extend woodland cover by planting in woodland blocks, particularly where tree loss has occurred. Where possible, new woodlands should be established adjacent to ancient woodland, or to connect separate wooded blocks, avoiding areas of existing ecological value and ensuring no detriment to historic assets.
- While wet woodland may be appropriate alongside the river on the valley floor care should be taken to also conserve the mix with pastoral and broken open character of the valley floor.
- Encourage seasonal grazing to maintain the pastoral character of the floodplain.
- Conserve and extend characteristic habitats such as unimproved grassland, traditionally managed meadows and riverside trees which contribute to the natural character of the valley.
- Support recreational use of the landscape, particularly passive recreation, and ensure that any visitor facilities are integrated into their landscape context.
- Seek to improve boundary management e.g. of hedgerow boundaries.
- Minimise the impact of built development on the valley sides using native planting of locally appropriate species to create a landscape buffer where appropriate.
- Use ASCV designation to protect the area of the LCA from inappropriate development.
- Monitor water levels and manage water abstraction to prevent drying out of wetland habitats.
- Seek to increase opportunities for views into the valley.
- Planting near watercourses should consist of native species.
- Control spread of invasive species, e.g. Japanese knotweed, Himalayan balsam and giant hogweed.

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.

Malpas, along with 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.

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. It aims to provide practical recommendations that support the delivery of the Biodiversity 2020 Strategy, the Natural England Conservation Strategy (C21) & the DEFRA 25YEP. 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

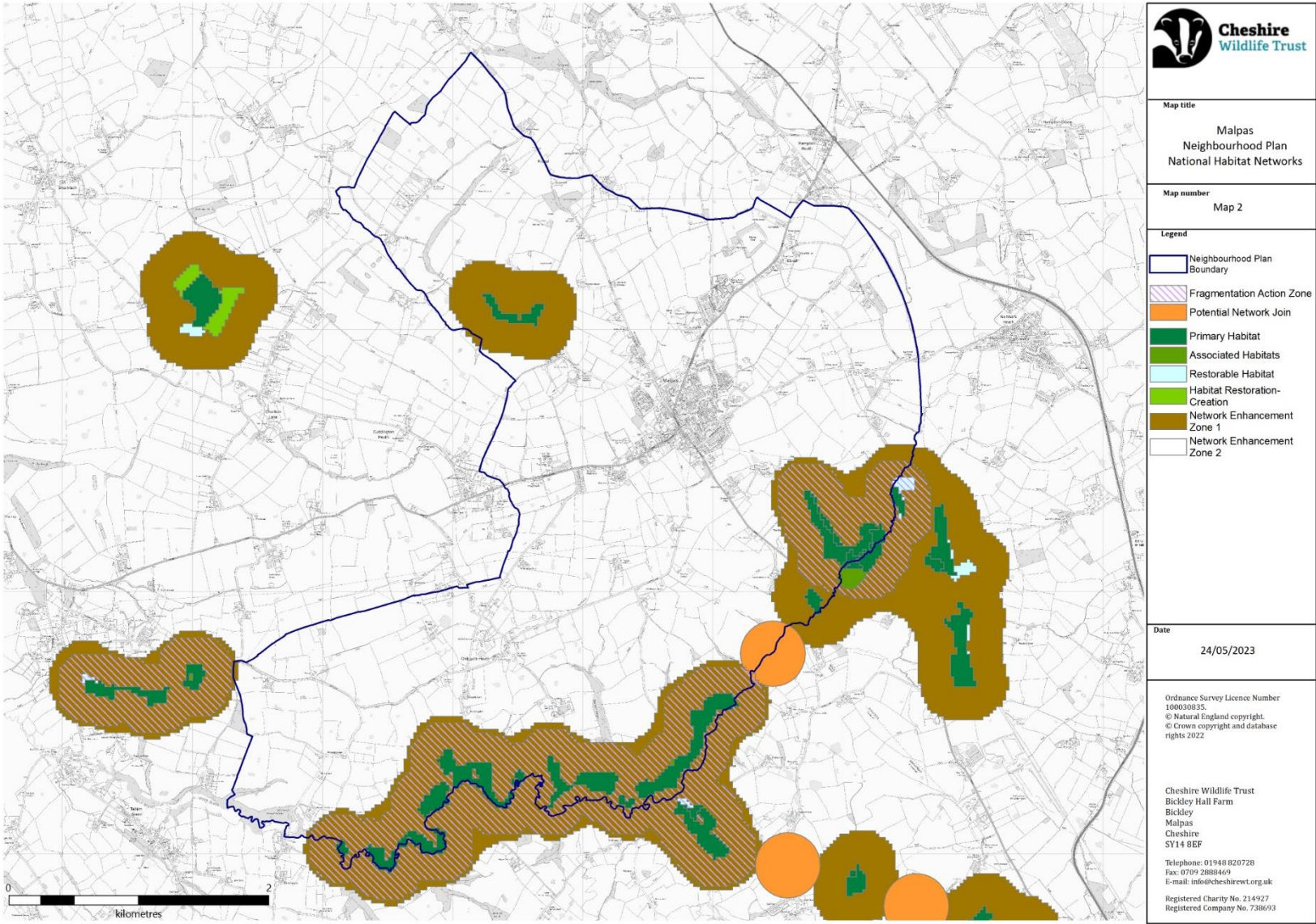
The Key components of the National Habitat Network map are:

- **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 Malpas is shown in Map 2.

In 2023 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



National Habitat Networks mapping has identified multiple significant networks in and around the Malpas Neighbourhood Planning area. There is an area of purple moor grass pasture primary habitat located around Overton Common in the north of the parish. The remaining networks are dominated by lowland meadow primary habitat, with a particular concentration at the southern boundary of the NP area along the Wych Brook. There are further pockets of lowland meadow, and some lowland fen, primary and restorable habitats at the eastern boundary of the parish. These Primary and Restorable habitats are buffered by Network Enhancement Zones and Fragmentation Action Zones, 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.

Ecological Network for Cheshire West and Chester 2016

As part of the Cheshire West and Chester 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).

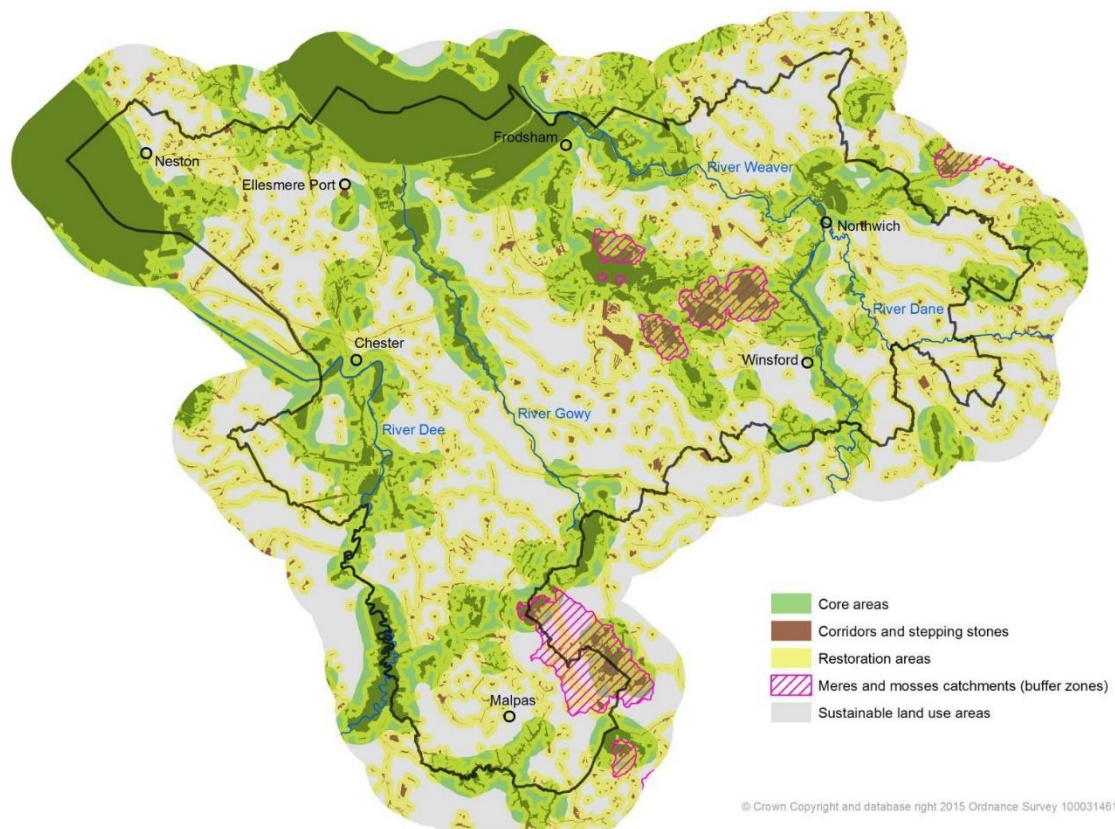


Figure 2. Ecological Network for Cheshire West and Chester 2016

The ecological network is associated with Local Plan (Part Two) Policy DM 44 and incorporates existing protected sites and priority habitats and identifies areas to restore and buffer the network. The Council aims for the ecological network to contribute towards strengthening the borough's wider green infrastructure network, natural capital and maximise 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 BNG.

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 Cheshire West and Chester Council Biodiversity Net Gain and Ecological Networks guidance note (June 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 Cheshire West and Chester Ecological Network identifies a broad network for the whole borough, whereas the wildlife corridors identified in this report (Map 10) are more specific to ecological networks that are important for conserving and enhancing biodiversity at a local scale.

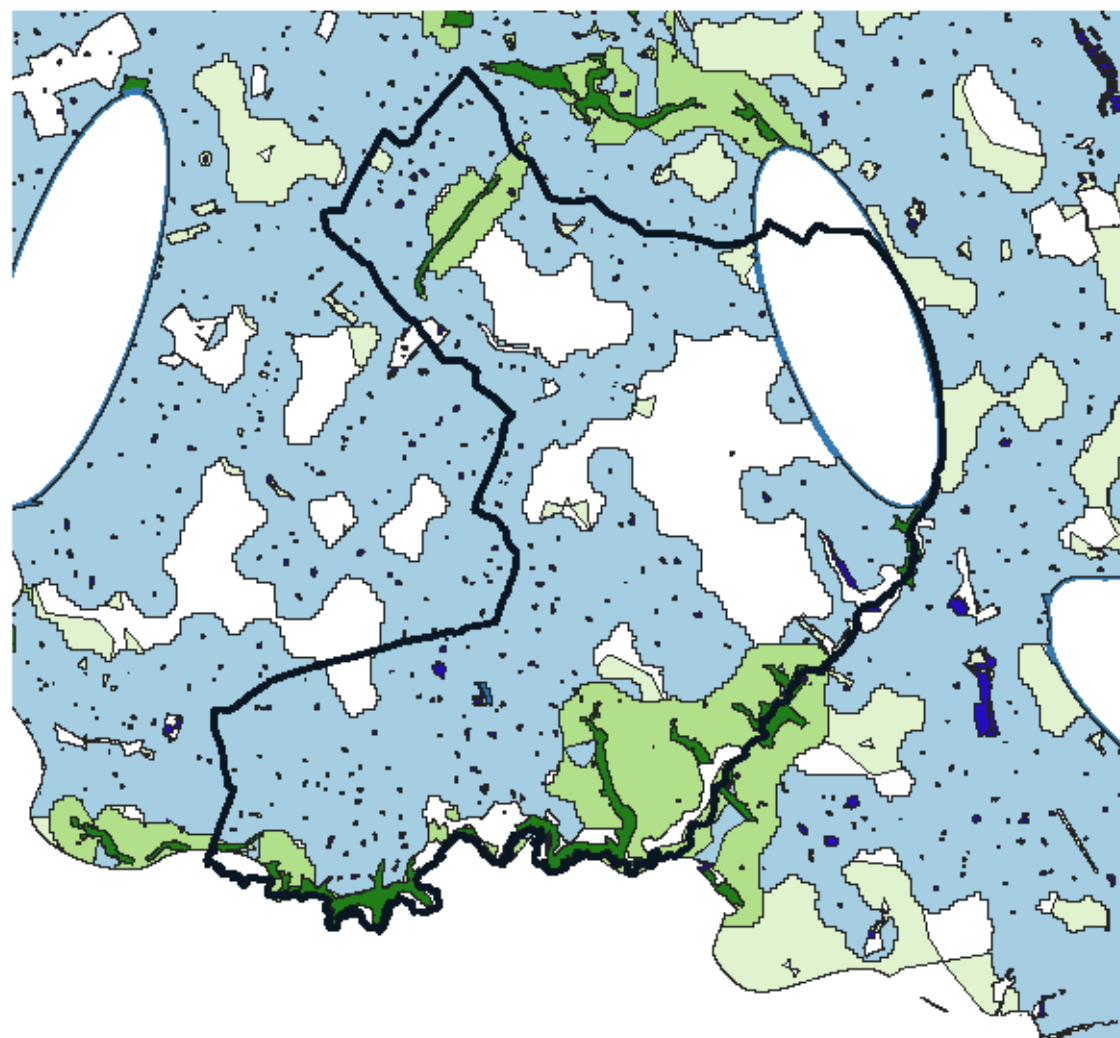
Natural Course Ecological Network Tool 2020

Natural Course, an EU funded LIFE Integrated Project, is a collaboration of public, private and third sector organisations working together to help to deliver improvements to rivers and the water environment across North West England. The project seeks to better understand and overcome some of the biggest barriers preventing the achievement of 'good ecological status' under the EU Water Framework Directive in the North West River Basin District.

As part of Natural Course, Natural England has created an ecological network tool that models wetland and woodland habitat networks across Cheshire and South Lancashire. The tool highlights priorities for biodiversity and nature-based solutions for Natural Course objectives in order to protect and enhance water quality across the North West. The tool also provides a robust evidence base for Local Nature Recovery Strategies, mandated in the Environment Act (2021) and rolled out in 2023.

The primary wetland and woodland habitats and their associated action zones (i.e. where opportunities exist to create, buffer or expand these habitats) within the Malpas Neighbourhood Planning area, as modelled by the Natural Course Ecological Network Tool, are shown in Figure 3. Supporting information on the Wetland and Woodland Habitat Categories for the Network Tool can be found in Appendix 1.

Natural Course Ecological Network for Cheshire and South Lancashire 2020



Legend

- Malpas Boundary
- Natural Course Ecological Network
 - Primary Wetland Habitat
 - Primary Woodland Habitat
 - Priority Wetland Creation Zone
 - Priority Woodland Creation Zone
 - Wetland Buffer Zone 1
 - Wetland Buffer Zone 2
 - Wetland Creation Zone
 - Wetland Network Expansion Zone
 - Woodland Buffer Zone 1
 - Woodland Buffer Zone 2
 - Woodland Creation Zone
 - Woodland Network Expansion Zone

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Figure 3. Natural Course Wetland and Woodland Habitat Network

Local Habitat Distinctiveness and Wildlife Corridor Network

Methodology

The local ecological network mapping relates directly to habitat distinctiveness; the central 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. While DEFRA uses five bands of distinctiveness (very high, high, medium, low and very low), for the purposes of this exercise the very high and high distinctiveness bands have been merged to leave only four bands.

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 Type Band	Habitat Distinctiveness	Broad Habitat Type	Colour on Map
Very high or high ecological value	Very High or high	• Designated nature conservation sites (statutory and non-statutory); • Endangered or Critical European red List habitats; • Priority habitat (with the exception of arable field margins) as defined in Section 41 of the NERC Act, and; • 'Rare' habitats in the UK with a high proportion unprotected by designation.	Red
Medium ecological value	Medium	• Arable field margin priority habitat; • Non-priority habitats with significant wildlife benefit; • Semi-natural habitats and habitats with the potential to be restored to priority quality, and; • Field ponds.	Orange
Low ecological value	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 ecological value	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

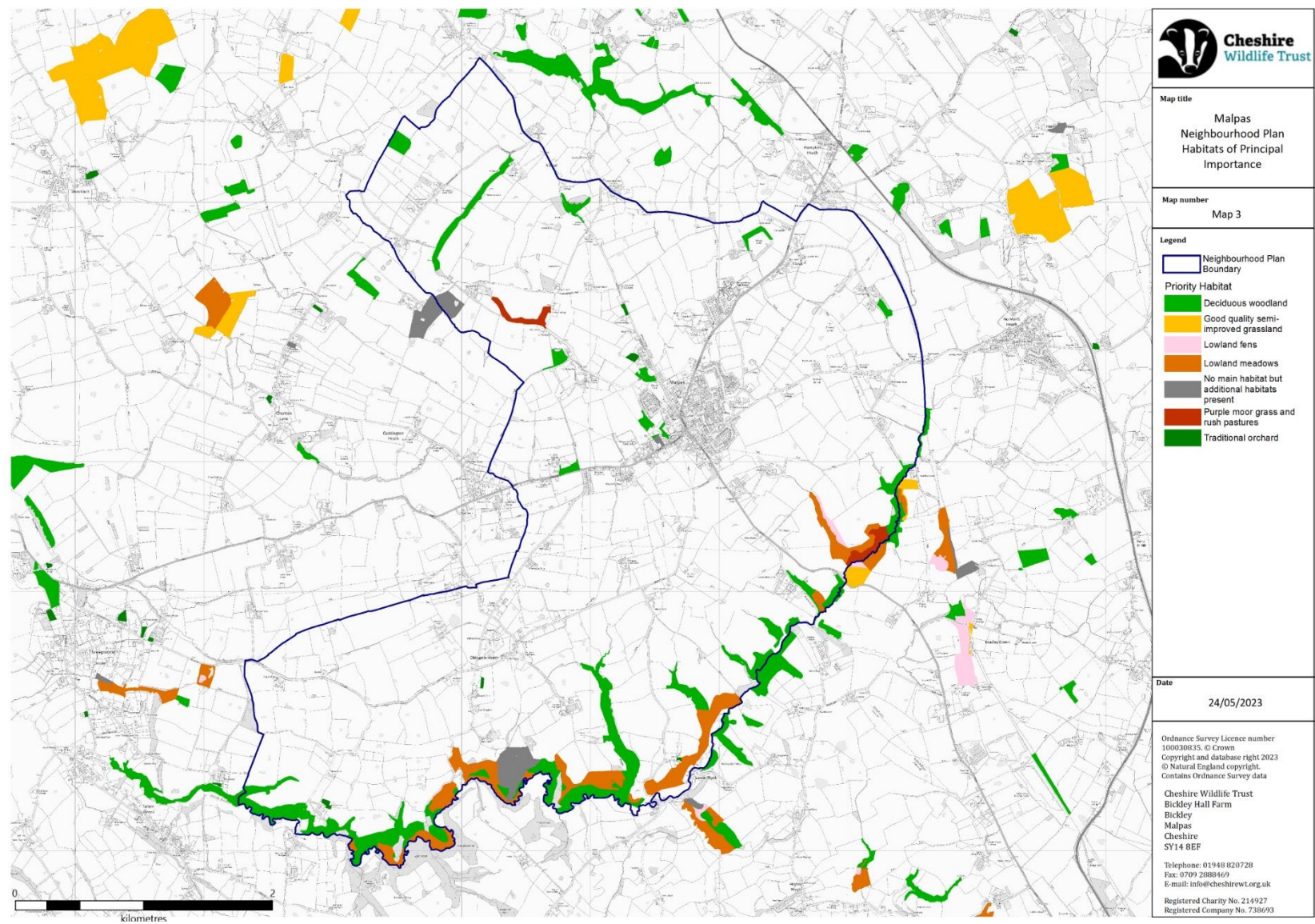
Data sources used to produce the habitat distinctiveness maps included:

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 were classified as high distinctiveness.
 - e. Ancient woodlands – Natural England 2019 (last updated 20 November 2022) – classified as high distinctiveness.
 - 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 (supporting information included in Appendix 3).
 - g. Cheshire Tithe Maps Online – Using maps from Cheshire Archives looking for woodlands that could be potential Ancient Woodlands due to presence over a long period of time but haven't 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 Malpas 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 Malpas 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.

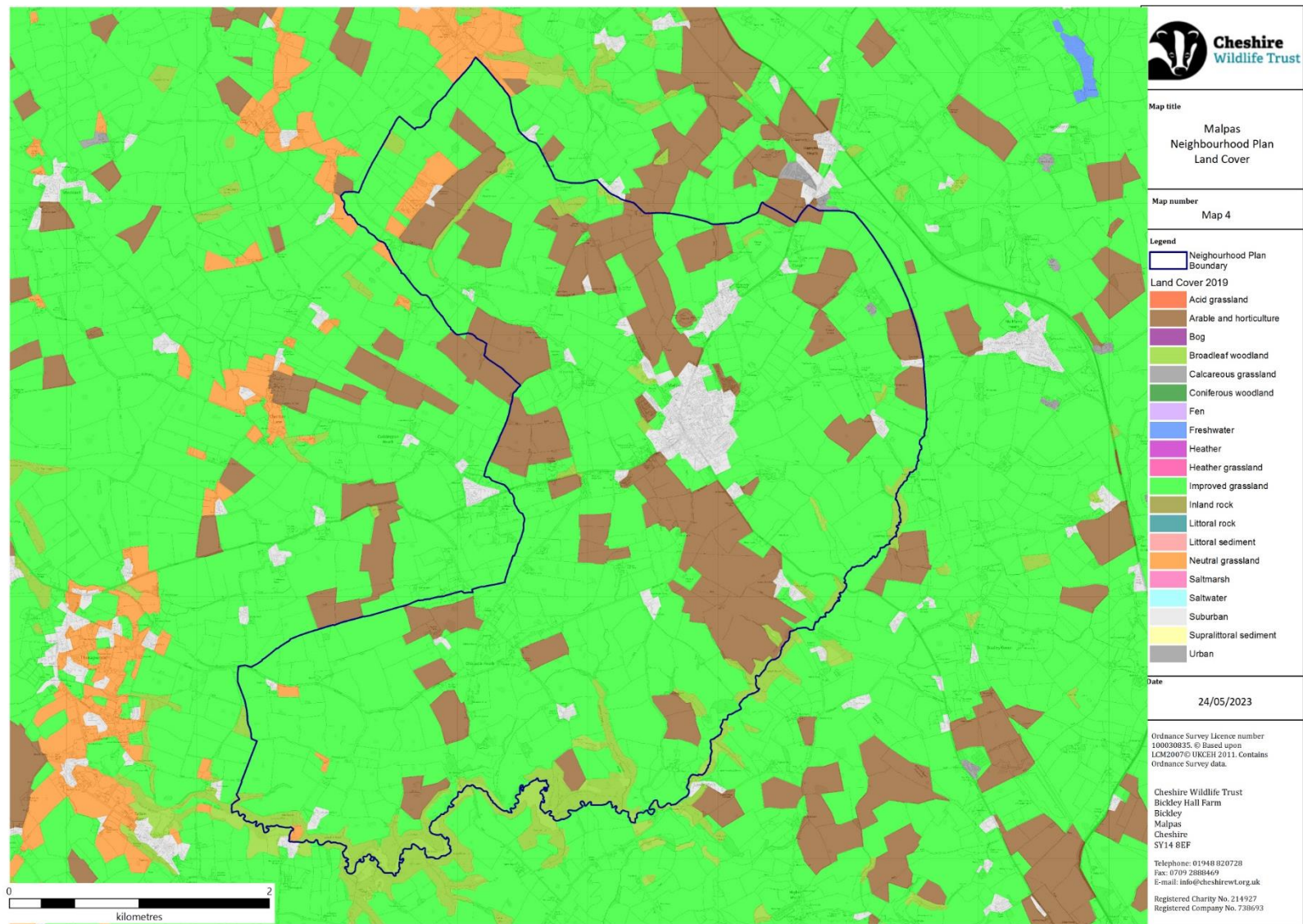
Maps

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

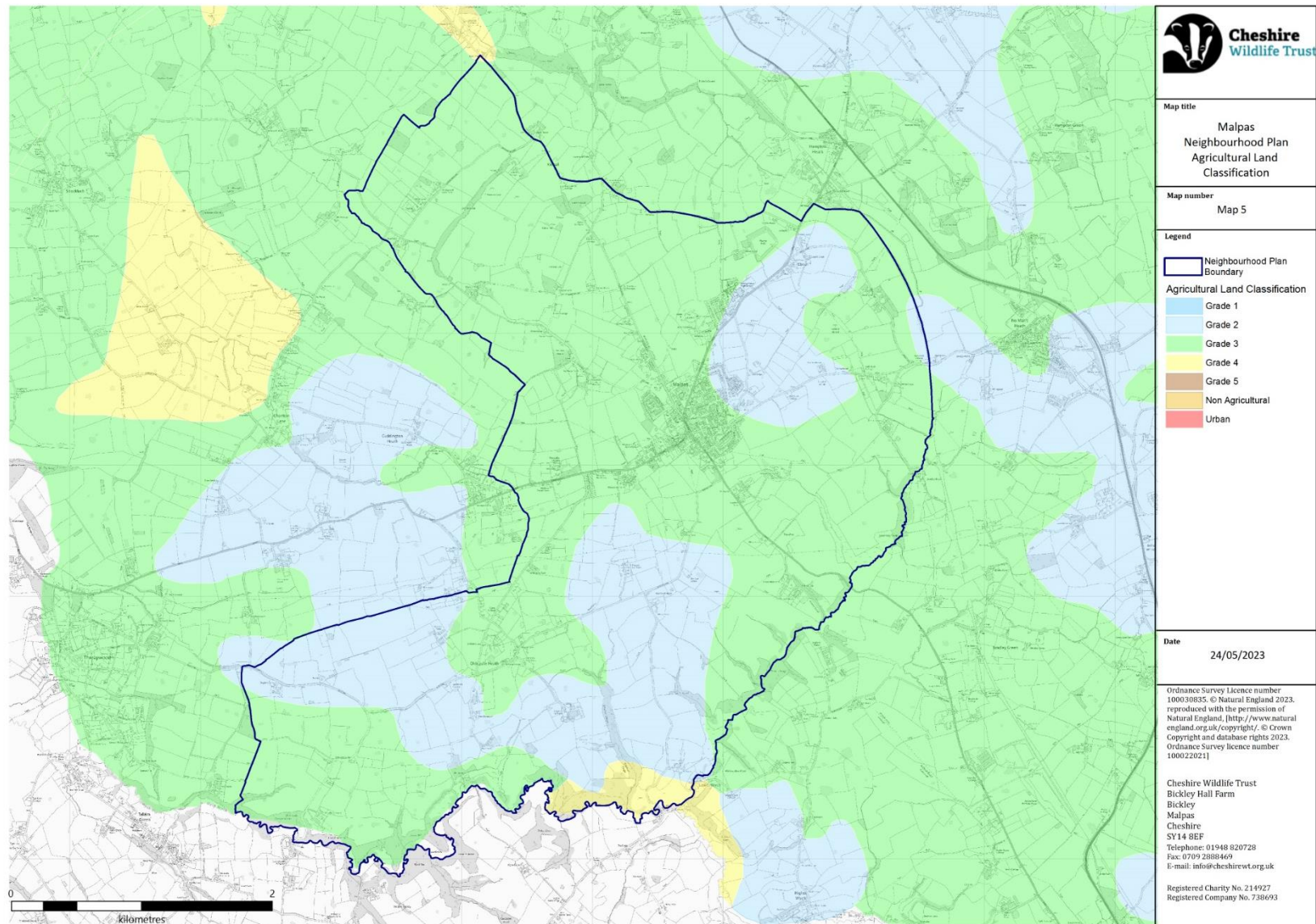
Map 3 – Terrestrial Habitats of Principal Importance



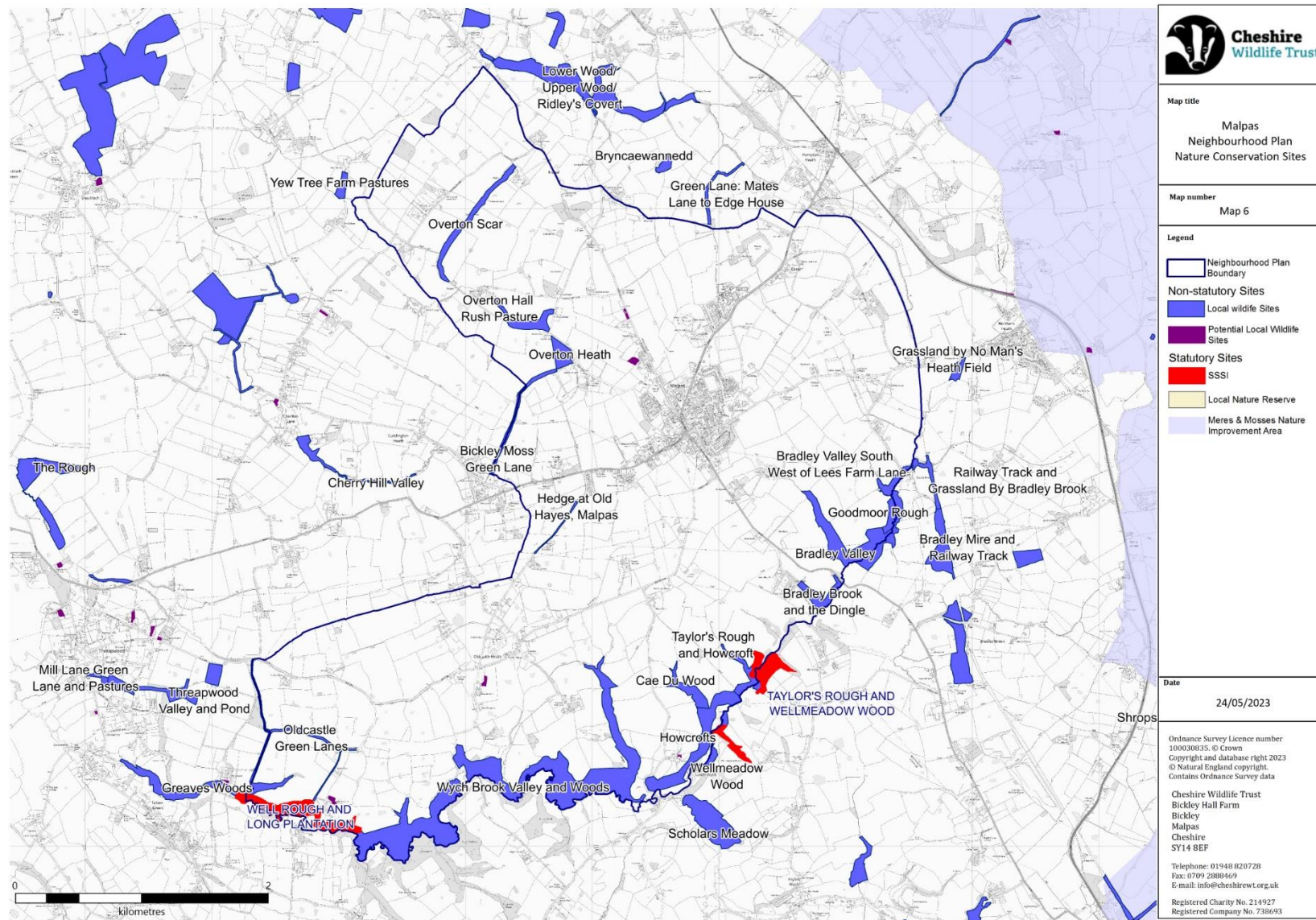
Map 4 – Land Cover (2007)



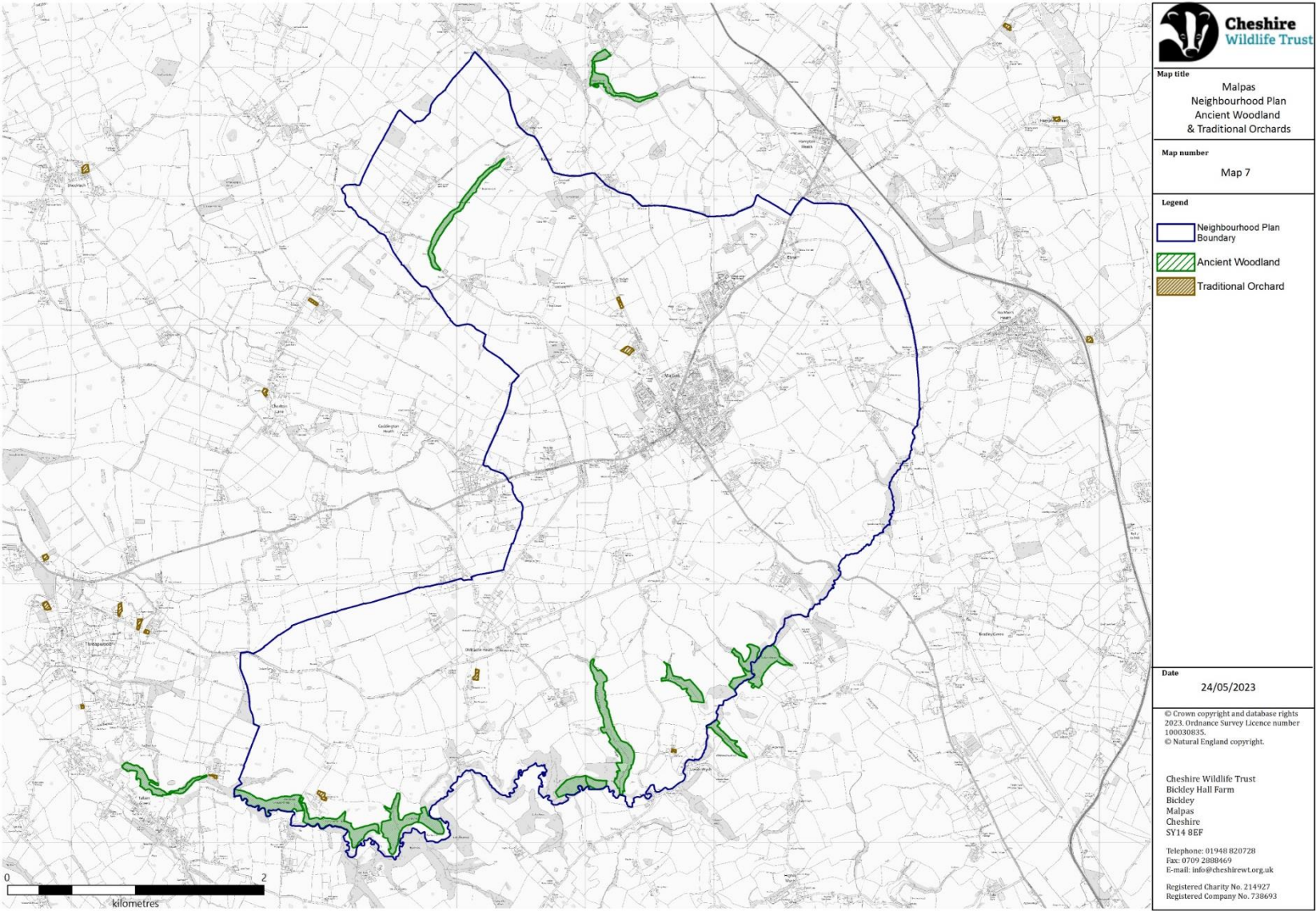
Map 5 – Agricultural Land Classification



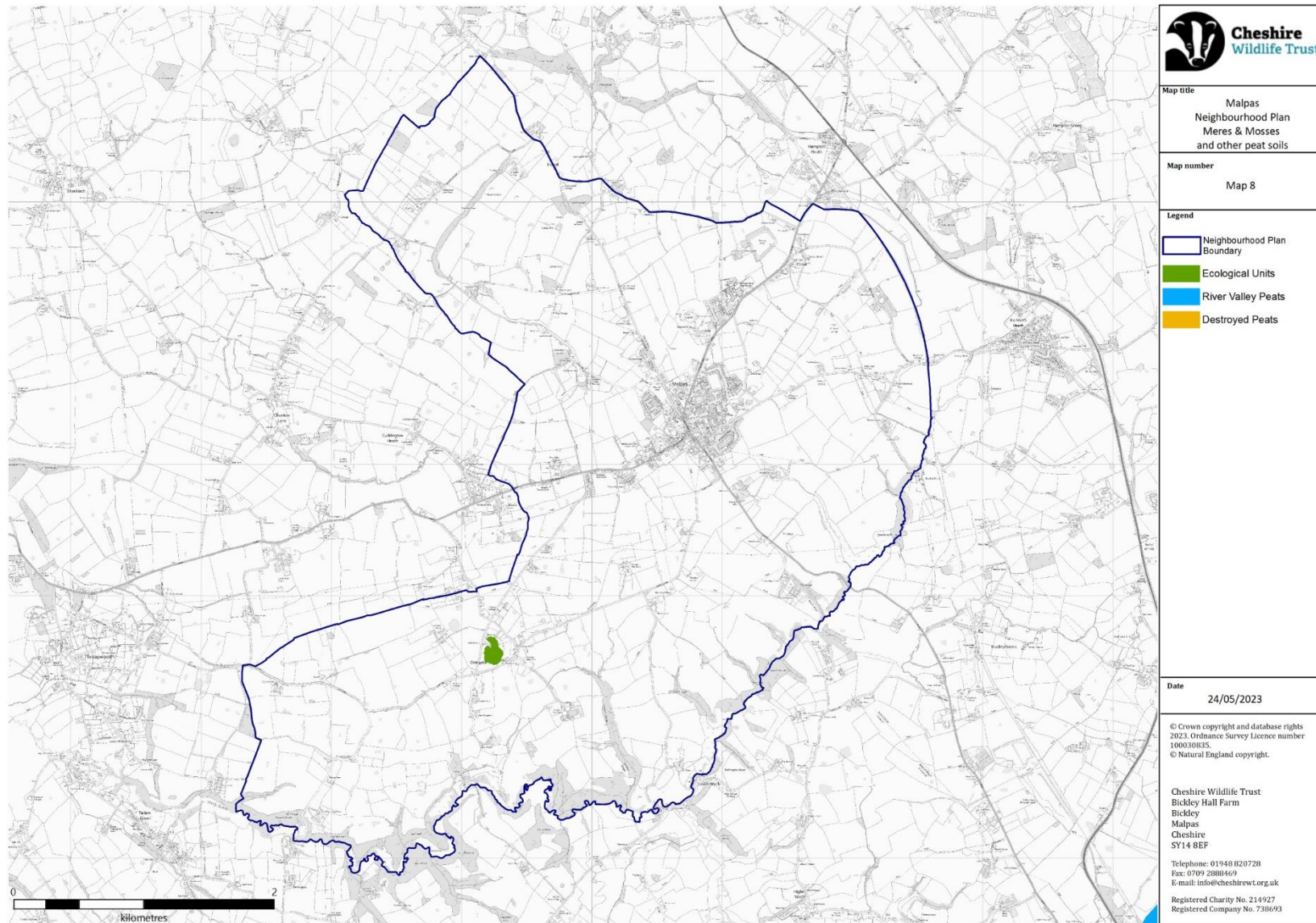
Map 6 – Designated Sites of Nature Conservation



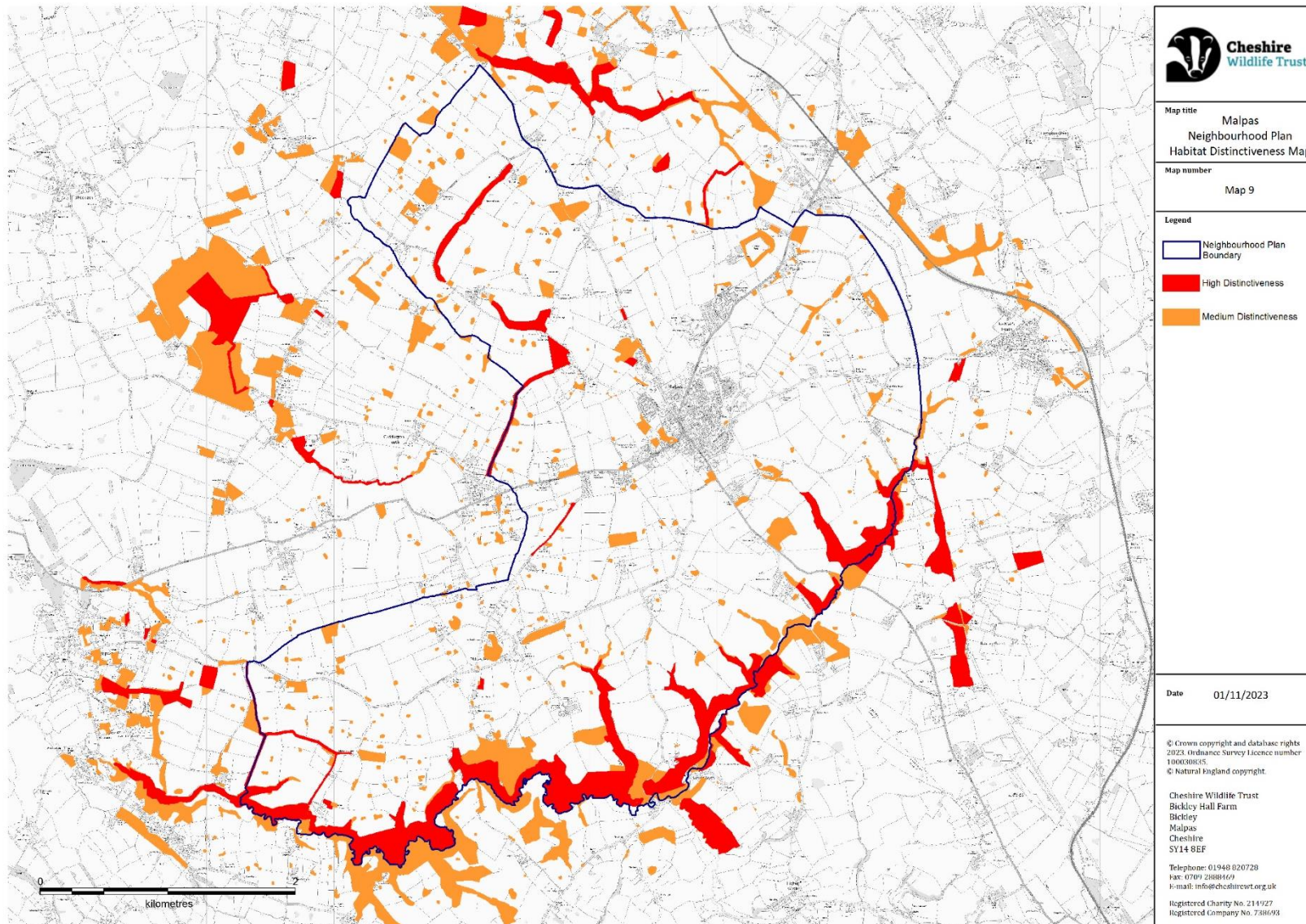
Map 7 – Ancient Woodland and Traditional Orchards



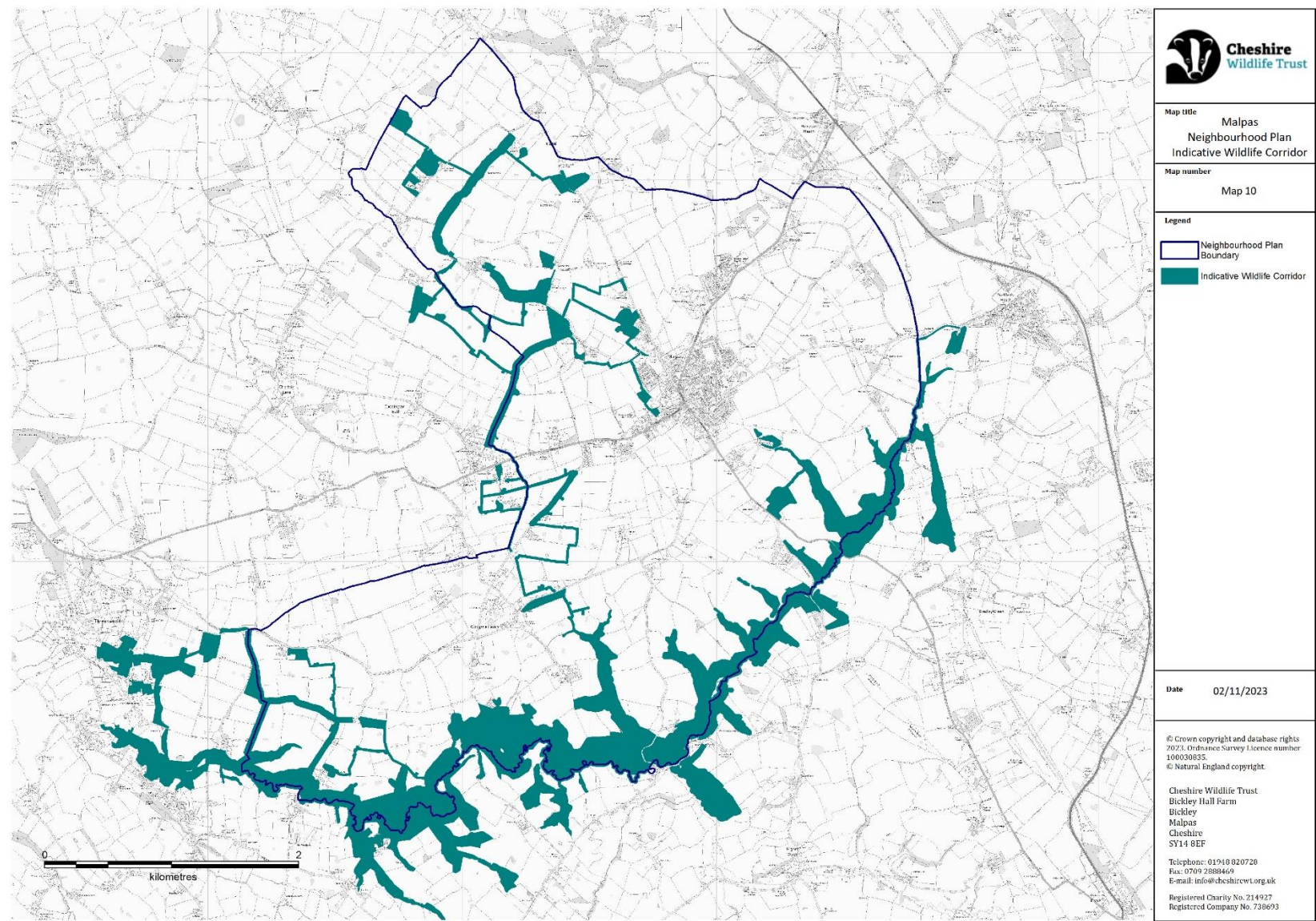
Map 8 – Meres, Mosses and Other Peat Soils



Map 9 – Habitat Distinctiveness



Map 10 – Indicative Wildlife Corridors



Results & Discussion

High Distinctiveness Habitats

Areas of high distinctiveness habitat are shown on Map 9 – 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 Malpas Neighbourhood Planning (NP) area are discussed in detail below.

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. This vital habitat represents the majority of the Habitats of Principal Importance (PHI) recognised by Natural England within the Malpas NP area, as shown on Map 3, largely concentrated along the southern parish boundary. Most of these woodland habitats are also listed on the Ancient Woodland Inventory (AWI, Map 7) and are visible on the Cheshire Tithe maps c.1838-40. Ancient woodlands are exceptionally important for wildlife, and they defined as irreplaceable habitats in the NPPF due to the time taken for them to acquire their diverse flora and fauna.

Cheshire is a poorly wooded county and many of the woodlands of greatest wildlife value have survived in steep valleys or ‘cloughs’. The underlying soils of these clough woodlands differ between the upper (acidic) and lower (base-rich) slopes. These changes in soil and drainage lead to striking differences in the species composition of the canopy and ground flora, often over surprisingly short distances, and this greater diversity adds considerably to the wildlife value of these woodlands¹. There are two Sites of Special Scientific Interest (SSSIs) within the Malpas NP area, which were designated for their rare and important woodland habitats, at Taylor’s Rough and Wellmeadow Wood SSSI, and Well Rough and Long Plantation SSSI (Map 6).

Taylor’s Rough and Wellmeadow Wood SSSI lies along a tributary of the Wych Brook and is home to many important woodland types, with particularly fine examples of pedunculate oak, ash and hazel woodland present. Oak is dominant throughout most of Taylor’s Rough, alongside alder, downy birch and wych elm, and the shrub layer is dominated by hazel with hawthorn, elder and dogwood also present. Whereas Wellmeadow Wood contains more wild cherry and there are several large field maple, along with some holly, hazel and hawthorn in the shrub layer. The ground flora at Taylor’s Rough and Wellmeadow Wood SSSI is rich and varied with lords-and-ladies, sanicle, wall lettuce, ramsons, and hard shield-fern, which has a restricted distribution in Cheshire; as well as several ancient woodland indicators including yellow archangel, wood melick and wood anemone.

Well Rough and Long Plantation SSSI is one of the few woods in the Wych Brook valley which has remained unmodified by conifer planting. Most of this woodland lies on steep slopes on the north banks of Wych Brook and it is home to the best example of a wet ash and field maple wood in the county. Pedunculate oak is dominant at this SSSI, with field maple, ash and small-leaved lime also present. Most of the ground flora is typical of base-rich soils and it includes several species which are

¹ Information derived from Natural England citations for Taylor’s Rough and Wellmeadow Wood SSSI, and Well Rough and Long Plantation SSSI.

uncommon in Cheshire, such as early-purple orchid, herb-Paris and nettle-leaved bellflower; the latter species is at the northern limit of its range and is not known from any other site in the county.

Both SSSI's also contain important wet woodland habitats. Taylor's Rough and Wellmeadow Wood SSSI is home to wet and flushed areas dominated by alder, and has an associated ground flora of meadowsweet, opposite-leaved golden-saxifrage and marsh-marigold. Well Rough and Long Plantation SSSI also has extensive wet areas dominated by alder, with pendulous sedge dominating the ground flora alongside other wetland species (e.g. yellow iris, reed canary grass, tussock sedge).

In addition to these SSSIs, there are four Local Wildlife Sites (LWS) which also contain ancient woodland habitat (i.e. thought to be at least 400 years old) listed in the AWI, located along the southern boundary of the NP area (Map 6 and 7). These high distinctiveness woodland sites are detailed below:

- Taylor's Rough and Howcroft LWS woodland lies on the steep slopes of three stream valleys; to the south is an area of conifer plantation with broad buckler fern and bluebell in the ground flora; to the north is an area of semi-natural broadleaved woodland with sycamore and ash, as well as abundant dog's mercury and enchanter's-nightshade.
- Cae Du Wood LWS is also a stream valley woodland, which is surrounded by arable land; the canopy is dominated by pedunculate oak, ash and alder, with hazel, hawthorn and elder in the understorey. The ground flora is diverse and contains many ancient woodland indicator species such as opposite-leaved golden-saxifrage, wood sorrel, dog's mercury and bluebell.
- Wych Brook Valley and Woods LWS is a large linear complex of habitats along the northern slopes of the Wych Brook, including Castle Hill Wood and Stockton Dingle ancient woodlands with abundant coppiced hazel and diverse ground flora (e.g. bluebell, yellow archangel).
- Greaves Woods LWS is also located along the Wych Brook and is immediately adjacent to Well Rough and Long Plantation SSSI. The woodland canopy includes alder, wild cherry, pedunculate oak and ash, and there is a rich ground flora containing ancient woodland indicators such as wood anemone, ramsons and wood melick.

High quality woodlands such as these support important assemblages of woodland birds, such as the Birds of Conservation Concern (BoCC) red listed house sparrow and house martin, and amber listed wren, sparrowhawk, and kestrel, which have been recently recorded nearby². These woodlands are also likely to support several species of bat which roost in trees, forage for insect prey and commute along the network of woodland edges, hedgerows and watercourses; including common and soprano pipistrelles and brown long-eared bats which have been recently recorded in the area³.

These woodlands are also highly important for the other mammals they support including badger, brown hare, several species of shrew and mouse, as well as the highly threatened priority species hedgehog and Hazel dormouse. Unfortunately, there are also numerous records of the highly invasive non-native plant species (INNPS) Himalayan balsam, which is particularly prolific along watercourses⁴.

² NBN Atlas data

³ Data from planning applications (15/03975 and 19/03841)

⁴ NBN Atlas data

Outside of the Wych Brook Valley, there are two further LWS with ancient woodland habitat listed on the AWI (Map 7) at Overton Scar LWS and Lower Wood/Upper Wood/Ridley's Covert LWS. The former site is located in the northern part of the NP area, and the latter lies outside of the north-west parish boundary (Map 6). Overton Scar LWS is a long, narrow woodland containing a variety of interesting species, most notable is wall pennywort which grows on sandstone outcrops within the woodland. The canopy is dominated by mature sycamore, and there is a diverse ground flora including several ancient woodland indicator species (i.e. bluebell, moschatel, wood anemone, dog's mercury, yellow archangel, common polypody). A number of woodland bird species have recently been recorded around Kidnal, which lies between these two important woodland sites, including the BoCC red listed greenfinch and mistle thrush⁵.

There are five more LWS located in and around the Malpas NP area which contain high distinctiveness priority woodland habitats (Map 3) at: Bradley Valley South West of Lees Farm Lane LWS, Bradley Brook and The Dingle LWS, Wellmeadow Wood LWS, Bryncaewannedd LWS, and Cherry Hill Valley LWS. The first three sites are located along a tributary of the Wych Brook, and the latter two are situated just outside the parish boundary to the west and east, respectively (Map 6).

The two LWS located along Bradley Brook valley are home to semi-natural broadleaved woodland priority habitats dominated by ash, alder and oak. Additionally, there is wild cherry and crab apple present at Bradley Brook and The Dingle LWS. The understorey layers at both sites are dominated by hazel, elder, holly and scrub species (e.g. hawthorn and blackthorn), and bluebells are present in the ground floras. Bradley Valley South West of Lees Farm Lane LWS has a more diverse ground flora which includes many ancient woodland indicator species, for instance yellow archangel, opposite-leaved golden-saxifrage and yellow pimpernel; there is also much standing and fallen dead wood at this wildlife site which provides habitat for other taxa such as bryophytes, invertebrates and fungi.

Wellmeadow Wood LWS comprises two small compartments of broadleaved priority woodland habitat in the south of the parish, separated by Taylor's Rough and Wellmeadow Wood SSSI (Map 6). These woodlands are dominated by ash, beech, oak and sycamore, with bluebell and dog's mercury present in the ground flora. Interestingly, each of the five LWS mentioned here contain several ancient woodland indicator species and almost all (excluding Bradley Brook and The Dingle LWS) contain some woodland which is visible on the Cheshire Tithe maps, as follows: Bradley Valley South West of Lees Farm Lane LWS on Tithe map c.1840; Wellmeadow Wood LWS c.1838; Bryncaewannedd LWS c.1839; Cherry Hill Valley LWS c.1840. Therefore, although these sites are not listed on the AWI, the available information suggests that these woodlands could be ancient in origin.

It is also interesting to note that Bradley Valley LWS and Goodmoor Rough LWS, which are located in a narrow stream valley which feeds into the Wych Brook, were once home to woodland habitats visible on the Cheshire Tithe maps c. 1840. These sites have largely been cleared at some point in the past leaving grassy and marshy banks, but there was once a woodland stretching across part of Bradley Valley LWS and along the entirety of Goodmoor Rough LWS.

⁵ NBN Atlas data

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 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 meadows form the largest part of the priority grassland habitat recognised by Natural England in and around the Malpas NP area (Map 3), and each of these grasslands also occur within LWS located along the eastern and southern parish boundaries (Map 6). There is also some good quality semi-improved grassland habitat located just outside the southern boundary (Map 3).

There are nine LWS located in and around the southern parts of Malpas which are home to significant areas of high distinctiveness grassland habitat, including extensive areas of lowland meadow priority habitat. The main features of these LWS have been summarised in the table below (Table 2), starting with Grassland by No Man's Heath Field LWS in the east, moving along the Wych Brook valley, to Mill Lane Green Lane and Pastures LWS in the west (Map 6).

Table 2. Local Wildlife Sites with high distinctiveness grassland habitats in the southern parts of Malpas Neighbourhood Planning area.

LWS name	Site description	Key grassland plant species
Grassland by No Man's Heath Field	Shallow stream valley surrounded by arable land and pasture. The grassland varies from good neutral semi-improved to neutral unimproved. There are also areas of tall ruderal and scrub habitat present (including hawthorn, elder, blackthorn, holly, hazel and gorse).	Common sorrel, germander speedwell, ribwort plantain, greater bird's-foot-trefoil, common knapweed, meadow vetchling, devil's-bit scabious, red fescue and spiny retharrow (locally scarce species).
Bradley Valley and Goodmoor Rough	Narrow stream valley which has largely been cleared in the past leaving grassy and marshy banks. The west bank is marshy grassland, whereas the east bank is a drier, more acidic example of a grassland which is quite diverse.	Common knapweed, meadow vetchling, meadowsweet, bitter vetch, ribwort plantain and meadow buttercup.
Bradley Mire and Railway Track	A length of disused railway line and an adjacent extensive area of marshy grassland containing a pond. The disused railway line has become good quality semi-improved grassland.	Yarrow, red clover, ribwort plantain, common bird's-foot-trefoil and common knapweed. Also sheep's-bit, harebell and pignut in places.
Howcrofts	A grassland site in the Lower Wych Valley, with four botanically diverse fields. The southern fields are semi-improved at the top and bottom; the steep slope between has been terraced by cattle grazing and small vertical banks have developed which are species rich. The northern fields are less disturbed and support diverse unimproved grassland flora.	Common spotted orchid, agrimony, wild carrot, musk mallow, spiny rest harrow, primrose, cowslip, parsley piert and devil's-bit scabious.

Scholars Meadow	A diverse site in the Lower Wych Valley with many habitats including woodland, scrub, unimproved and semi-improved neutral grassland and fen. The site is botanically rich with over 170 species recorded.	Betony, common spotted orchid, bird's-foot-trefoil and devil's-bit scabious.
Wych Brook Valley and Woods	Good quality, unimproved grassland on boulder clay, with a little acidic vegetation on the sandy soil on the upper slopes.	Tormentil, common bent, crested dog's-tail, devil's-bit scabious, betony and agrimony.
Greaves Woods	Small area of semi-improved neutral grassland present within a largely wooded site.	Cut-leaved crane's-bill, musk mallow and lesser trefoil.
Mill Lane Green Lane and Pastures	A green lane and an adjoining section of stream valley woodland. The pastures adjacent to the stream contain semi-improved grassland indicators.	Yarrow, ribwort plantain, meadow vetchling and greater bird's-foot-trefoil.

Although they do not contain any priority habitats, there are two further LWS which are home to highly important grasslands, which are located around the northern part of Malpas NP area (Map 6). Overton Heath LWS is home to an unfenced common land which is not grazed and is gradually becoming wooded as oak and hawthorn species encroach the grassland habitat. Unfortunately, there are only small patches of acidic grassland still present at this site, with many areas dominated by bracken, but some characteristic species remain such as tormentil and heath bedstraw. Yew Tree Farm Pastures LWS lies just outside the northern parish boundary, south-east of Horton Green, and comprises two adjacent fields surrounded by hedgerows; although the grassland is relatively species-poor with rye-grass dominating the sward, some species indicative of semi-improved conditions are still present (e.g. meadow buttercup, yarrow).

The important grassland sites detailed here provide vital habitat for numerous grassland and farmland bird species which have been recently recorded in the Malpas area, such as BoCC red listed starling and swift. Additionally, these sites are highly valuable for the invertebrates they support, for instance there were twelve species of butterfly recorded at Scholars Meadow LWS when it was last surveyed in 2010. Ant hills are also common at Scholars Meadow, and at Howcrofts LWS, which provide a crucial food source for many bird species including the BoCC amber listed wren.

Wetlands

There are two types of wetland priority habitat present in and around the Malpas NP area: purple moor grass and rush pasture, and lowland fen (Map 3). The majority of the lowland fen habitat is located outside of the southern boundary, at Scholars Meadow LWS and Bradley Mire and Railway Track LWS (Map 6); the fen habitat at the former site is home to many sedge species, and the latter is dominated by other characteristic species including tufted hair-grass, compact rush, skullcap and branched bur-reed. There is also some lowland fen habitat within Bradley valley LWS.

Purple moor grass and rush pastures occur on poorly drained, usually acidic soils, in lowland areas of high rainfall, and are highly threatened by agricultural modification and land reclamation. Some of this important habitat is located within Bradley Valley LWS (Table 2; Map 3), as well as at Overton Hall and Rush Pastures LWS in the north of the NP area. Overton Hall and Rush Pastures LWS is home to a confluence of several streams which has led to the development of the small rush pasture; other important habitats and species are also present at this site, such as species-rich acidic flora, ancient hedgerow, and common spotted orchids.

In addition to these priority habitats, there are many important wetland habitats within nature conservation sites located along the southern boundary of the NP area, including streams, wet woodland, swamp, and marshy grassland. At Wych Brook Valley and Woods LWS, for example, there are species-rich flushes and small patches of marshy grassland which support a variety of wetland species including yellow iris, meadowsweet, wild angelica, water-mint, common reed and bottle sedge; of particular note at this site are brown sedge and marsh valerian, both locally scarce species.

Similarly, Greaves Wood LWS contains numerous wet areas with associated wetland flora including greater tussock sedge, great pendulous sedge, wood sedge, reed canary grass, and yellow iris. The stream which runs through Grassland by No Man's Heath Field LWS also supports a number of wetland species, with wild angelica, sharp-flowered rush, yellow iris, brooklime and water mint present. There are highly important wet woodland habitats at Taylor's Rough and Wellmeadow Wood SSSI, Well Rough and Long Plantation SSSI, and at Cae Du Wood LWS. Lastly, there are two sites which contain notable wet grassland habitats, at Bradley Brook and The Dingle LWS and Threapwood Valley and Pond LWS; with the latter site being particularly important for amphibian populations.

Hedgerows and Green Lanes

There is a particularly high concentration of LWS comprised of green lanes and/or species-rich hedgerows in and around Malpas (Map 6). These sites provide important natural corridors allowing wildlife to navigate the local area, resulting in a well-connected and permeable landscape benefiting many species. There are three 'green lane' LWS in the area: Oldcastle Green Lanes LWS, Bickley Moss Green Lane LWS, and Green Lane: Mates Lane to Edge House LWS. The first site is located in the south-west corner of the parish, the second runs along the western parish boundary, and the third lies just outside the north-eastern boundary. Each of these LWS are home to wooded green lanes with many native hedgerow species (e.g. blackthorn, holly, hazel, wild plum, field maple) and mature oaks present, which support many butterflies and other invertebrates.

Additionally, there are native roses and climbers such as honeysuckle and black bryony present at Green Lane: Mates Lane to Edge House LWS, as well as an interesting ground flora including bluebell, dog's mercury and greater stitchwort. There are a number of woodland species associated with the hedges at Bickley Moss Green Lane LWS, such as lords-and-ladies, wood avens and of particular note, scaly male fern (a locally scarce species); the lane is home to a number of grassland species including common knapweed, ribwort plantain and meadow buttercup. Similarly, Hedge at Old Hayes, Malpas LWS contains species-rich hedges and roadside verges running either side of a narrow county road with many interesting species present (e.g. field maple, dogwood, field-rose, honeysuckle, yarrow, broad buckler fern, bush vetch).

There are two more LWS which provide similar natural wildlife corridors, located just outside the Malpas NP area, at Mill Lane Green Lane and Pastures LWS and Railway Track and Grassland by Bradley Brook LWS. The former site is near Threapwood and includes a green lane with species rich hedges containing wych elm, wild plum and field maple, and a diverse ground flora including soft shield fern (locally scarce species) and wood sedge (ancient woodland indicator). Whereas the latter site comprises a length of dismantled railway line which has developed into a mosaic of habitats including woodland, scrub and wetland running alongside the brook, with many interesting species present including goat willow, elder, wild cherry, fool's-water-cress, wild angelica and greater bird's-foot-trefoil.

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. Five traditional orchards were identified within the Malpas NP area on Map 7, with another seven located around Threapwood, and all these sites have been identified as potential LWS (pLWS); pLWS are sites that are highly likely to be selected as LWS but have not yet been formally surveyed against the selection criteria. Orchards also provide important habitat for bird assemblages including the BoCC red listed greenfinch⁶ and spotted flycatcher⁷ which have been recently recorded in the area.

Medium Distinctiveness Habitats

Woodland

The majority of Malpas' woodlands have been classed as high distinctiveness habitat and were discussed in the previous section. The remaining woodlands have been classified as medium distinctiveness habitat and were identified using Natural's England PHI (Map 3), Land Cover data (Map 4) and/or aerial imagery. These woodlands mainly consist of small pockets scattered throughout the NP area, such as those located on the outskirts of Malpas village and in field corners; as well as some larger blocks extending out from the high distinctiveness woodlands located alongside the Wych Brook Valley and its tributaries (Map 4 and 9). Additionally, there are some priority habitat woodlands located in the north of the parish near Overton Scar LWS (Map 3); including Gam's Wood which is visible on the Cheshire tithe map c.1839 suggesting it could potentially be ancient in origin. Similarly, there are some veteran and notable trees present in and around the NP area, for example there are veteran oaks near the settlements of Malpas and Cuddington Heath, and in Wellmeadow Wood⁸.

Grassland

Species-rich grasslands are the fastest disappearing semi-natural habitat in the UK and losses across Cheshire are above the national average. Those areas of neutral and low-productivity grassland which are not designated (Map 6), have been classified as medium distinctiveness habitat on Map 9. These areas of grassland have been identified using Land Cover information (i.e. neutral grassland, Map 4) and Agricultural Land Classification (i.e. Grade 4 only⁹, Map 5), and subsequently refined using aerial imagery. Additionally, information gathered by CWT on a concurrent project in the Malpas area identified some further pockets of good quality grassland habitat on farmland¹⁰. It is advisable for surveys to be undertaken to ascertain the condition of these grassland habitats, which is unfortunately 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. Where species-rich grasslands are located close to waterbodies, dragonflies and damselflies are likely to be present as these feed on other invertebrates but also require waterbodies to breed; for instance,

⁶ NBN Atlas data

⁷ Data from planning applications (16/04716)

⁸ Data from Ancient Tree Inventory, Woodland Trust, date accessed: 01.10.23.

⁹ Only Agricultural Land Classification Grades 4 and 5 are considered for distinctiveness mapping, because they are defined as poor quality agricultural land; this implies a low intensity form of land management and/or agriculture which is likely to be beneficial to local wildlife.

¹⁰ Cheshire Wildlife Trust's Nature Based Farm Advisor

brown hawkers and broad-bodied chaser dragonflies have been recently recorded on farmland in the Malpas NP area which contain good grassland and pond habitats¹¹.

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, riparian mammals and provide breeding habitat for amphibians including protected species such as the great crested newt which have been recently recorded at multiple locations in the area¹². 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, 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 Malpas NP area have been highlighted as habitats of medium distinctiveness in Map 9, and should always be retained and buffered where possible when land is developed.

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 Malpas are bounded by a significant 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 provide important corridors for foraging bats, small mammals, amphibians and many invertebrate species including pollinators. They also offer valuable nesting and foraging habitat for birds, including many declining species such as the BoCC amber listed wren which has been recently recorded in Malpas. Many farmland species have also been recorded in the NP area, such as BoCC red listed linnet and amber listed redwing¹³, many of which likely use the network of hedgerows to forage and for shelter.

¹¹ NBN Atlas data

¹² Data from NBN Atlas and various planning applications.

¹³ Data from Malpas local residents.

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; enabling species to move between them to feed, disperse, migrate and reproduce. In conjunction with the results of the National Habitat Network Mapping (2018) and the Ecological Network for Cheshire West and Chester (CWaC) this study has identified a number of indicative wildlife corridors (Map 10) with ecological connectivity throughout and beyond the NP area. The National Habitat Network map and Ecological Network for CWaC provide a broad map of the networks across England and the CWaC borough respectively. The wildlife corridors identified in Map 10 supplement these, while also being more specific to ecological networks that are important for conserving and enhancing biodiversity at a local scale. The CWaC Ecological Network mapping and the wildlife corridor (Map 10) maps both identify primary habitat or core areas for biodiversity within the Malpas NP area, discussed in detail below.

The identified corridors link areas of valuable habitat with good connectivity, including ancient woodland, species-rich grassland and historic green lanes. The wildlife corridors for Malpas include two SSSI's and twenty-two LWS which are located within and in close proximity to the NP area. The Wych Brook and its tributaries, as well as the many green lanes, hedgerows and field ponds in the area generally provide excellent connectivity for wildlife. There are, however, parts of the parish with limited potential for nature which are disconnected from the wildlife corridor network; namely those areas dominated by intensive agricultural land containing few suitable wildlife habitats, except for scattered field ponds and species-poor hedgerows. Additionally, the wildlife corridor network does not extend to the east of Malpas, and south of Ebnal, due to a lack of high and medium distinctiveness habitat and the presence of sizable infrastructure barriers (e.g. roads, settlement).

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 ecological connectivity of the hedgerow network.

Protection of the Wildlife Corridor and other High and Medium Distinctiveness Habitat

The indicative boundary of the Malpas wildlife corridor network is shown in Map 10. 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 9. 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 highly durable material such as woodcrete.

Not all sections of the Malpas 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. Biodiversity Net Gain or other ecological compensation via Section 106 Agreements or Planning Conditions), through government incentives (such as Environmental Land Management Schemes aka ELMS) or through the aspirations of the local community working with local businesses and landowners.

There are also opportunities to enhance the wildlife corridor, such as those set out in the UK Government England Trees Action Plan¹⁴. **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.**

In addition to the wildlife corridor network, this study has identified other areas of high or medium habitat distinctiveness (Map 9) which, although outside the network, likely provide important wildlife habitats and facilitate the movement of more mobile species throughout the wider landscape by

¹⁴ <https://www.gov.uk/government/publications/england-trees-action-plan-2021-to-2024>

forming essential ecological stepping stones. These areas primarily comprise ponds and semi-natural woodlands.

The network of field boundary hedgerows and agricultural drainage ditches within the Malpas Neighbourhood Planning area provide connectivity between high and medium distinctiveness habitats. These areas would otherwise be separated by extensive areas of land predominantly of low habitat distinctiveness; potentially restricting the ability of wildlife to disperse throughout the area. Not all the hedgerows are identified as key components of Malpas' ecological network, however, collectively these hedgerows provide linear connectivity throughout 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, marshy or semi-natural grassland and wetlands are some of the fastest disappearing habitats in the UK. These habitats are particularly important for a variety of invertebrates including pollinating insects and other species such as breeding and wintering birds, mammals, amphibians and some species of reptiles. 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.

Recommendations for Creating a Coherent Ecological Network

Following adoption of the Malpas 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 across 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. To achieve this, hedgerows could be managed less intensively including less frequent cutting or cutting on rotation with 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 under Countryside Stewardship, Biodiversity Net Gain and potentially under the forthcoming ELMS. 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 10 incorporate all of the locally designated Local Wildlife Sites for Cheshire West and Chester, 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 criteria¹⁵ 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'¹⁶ 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 is 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 tree every 30m (on average) which can be demarked so as not to be inadvertently felled. Non-native invasive plant

¹⁵ 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>]

¹⁶ 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.

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 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. **Prior to any work professional advice should be sought and ponds should be assessed 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 bats which may be roosting in trees surrounding ponds.**
- Invasive non-native species (listed on Schedule 9 of the WACA) should be prevented from colonising Malpas' 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, with common examples such as Himalayan Balsam (present along Wych Brook) and Japanese Knotweed spreading particularly effectively along watercourses. These species colonise rapidly and will outcompete native woodland, grassland and wetland flora and 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 INNPS 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 meadows¹⁷.

Woodland expansion is desirable to buffer Malpas' existing 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 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 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

¹⁷ Cheshire Wildlife Trust can provide advice and seeds for locally sourced wildflower meadow creation.

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 permeable fencing as standard and encouraging householders to make holes in the bottom of their fences will increase the permeability of the more urbanised areas in Malpas. A key example is hedgehogs that could travel an average of 1 mile every night were their movement through suburban landscapes 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 8, 32, 174d, 179b and 180d) and required under policies ENV 4 and DM 44 of the CWaC Local Plan. In order to protect local natural assets, it is essential that strong biodiversity net gain policies form part of the Neighbourhood 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 Malpas' 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 9) 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 Malpas is predominantly associated with the woodland and grassland sites located along the Wych Brook Valley, and its tributaries, as well as the several wildlife sites in the north of the parish. 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 (phase 1/UK Habitat Classification) habitat survey work 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 in their importance.

Most importantly the study has highlighted a wildlife corridor network which provides ecological connectivity between woodland, grassland and wetland habitats using the watercourses and hedgerow networks throughout the Malpas 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. These species depend on the existence and connectivity of semi-natural habitats highlighted in this report.

We recommend that the wildlife corridor network (Map 10) is incorporated into the Malpas Neighbourhood Plan and protected from development, to ensure the guidance relating to ecological networks set out in NPPF (paragraphs 174d, 175, 171, 179a, 179b) is implemented at the local level in Malpas. 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 habitats of high distinctiveness are subsequently identified in the Neighbourhood Planning Area, or identified 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 Malpas Neighbourhood Plan, CWT advises that a number of recommendations should be actioned in order to protect and enhance habitats which 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 180a; the avoidance, mitigation and compensation hierarchy), and seek to enhance these features where reasonable to do so (in line with NPPF Para 179b; the provision of measurable biodiversity net gains). This can be achieved by prioritising a scheme design that retains and enhances the sites 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. 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 Malpas' natural assets is of the utmost importance for nature conservation, ecosystem services and for the enjoyment of future generations. Therefore, future development in Malpas 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 achieve favourable condition for the features for which the site is notified. 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 improve habitat quality where necessary (e.g. scrub management on lowland bogs, encouragement of diverse age structure in woodlands) or increase extent 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 involve increasing the extent of existing habitat patches, or creating new habitat within the vicinity 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, alternative wetland creation 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; restoration to improve habitat quality, creation to increase the extent of existing habitat patches, or to

	restoration or creation, as they represent connecting areas within the network which could join existing primary habitat.	provide stepping stones between habitat patches. Where other associated habitats of conservation importance overlap with Wetland Buffer Zones, such as species-rich grasslands or wet woodlands, restoration and improvement of these habitats should be considered, to improve the resilience of primary wetland 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 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.	Non-natural wetland restoration measures e.g. SuDS, lined ponds, should be considered in these areas. Management and bolstering of important associated habitats, 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 aid the joining up of existing habitats patches 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 increasing the extent of existing habitat patches, 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 planting of new woodlands, with careful consideration of appropriate species mix, or encouragement of natural regeneration 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 connecting areas within the network which could join existing primary habitat. Conditions on the ground will determine the most appropriate action within these areas; restoration to improve habitat quality, creation to increase the extent of existing habitat patches, or to provide stepping stones between habitat patches. Given the potential suitability for wetter habitats here, rewetting and management for 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 Buffer Zone 2	Land within the network which connects existing primary wetland habitats but which is less suitable for natural wetland habitat creation.	The restoration and creation of woodland habitats e.g. tree planting or encouragement of natural regeneration should be considered in these areas. Where other associated habitats of conservation importance overlap with Woodland Buffer Zones, such as species-rich grasslands or heathlands, restoration and improvement of these habitats 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 joining up of existing habitats patches 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
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

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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

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		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 3 – 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 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.