

Protecting and Enhancing Odd Rode's Natural Environment



Cheshire
Wildlife Trust

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Introduction

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

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

The National Planning Policy Framework (NPPF), first published in 2012 drew on these principles and protecting and enhancing 'our natural, built and historic environment' is one of the three core objectives in the revised NPPF 2018 (paragraph 8c). Local (non-strategic) policies specifically designed to address the overall loss of biodiversity are known as 'no net loss policies' or 'net gain policies'. The guidance for this is enshrined in the NPPF in paragraphs 118a, 174b and 175d with the latter two paragraphs referring to 'measurable' net gain (i.e. use of a biodiversity metric). Cheshire East Council now have policies for net gain in their Site Allocations and Development Policies document and they are a signatory to the Cheshire Region Local Nature Partnership (CrLNP) '**Net Gains for Nature**' policy (January 2016) which sets out the guidance and principles of biodiversity accounting and compensation.

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

Objectives of the study

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

The report also aims to identify key local and regional ecological networks within the neighbourhood planning area and recommends that these are protected through the neighbourhood plan. It also identifies key characteristics associated with the landscape character of the Odd Rode area so these can be referenced in planning policies.

Background – ecological networks

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

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

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

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

- *Core areas*

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

- *Corridors and stepping stones*

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

- *Restoration areas*

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

- *Buffer zones*

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

- *Sustainable use areas*

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

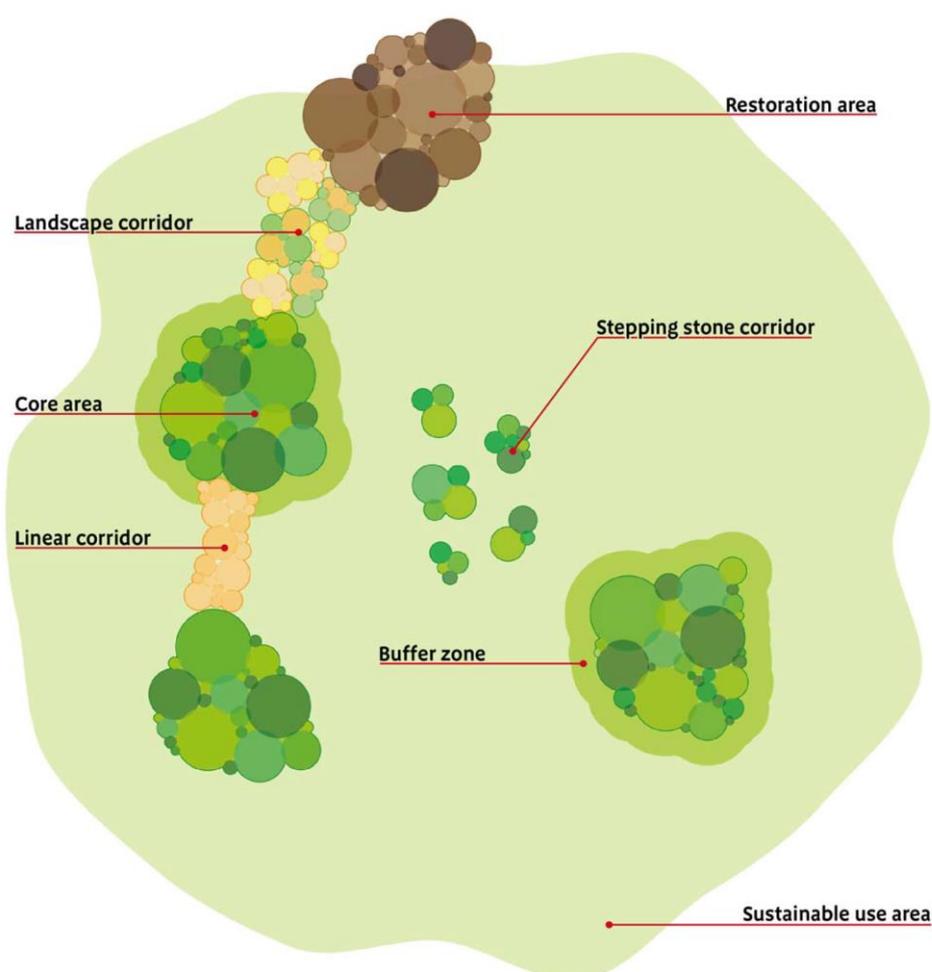


Figure 1. The components of ecological networks (Making Space for Nature report)

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

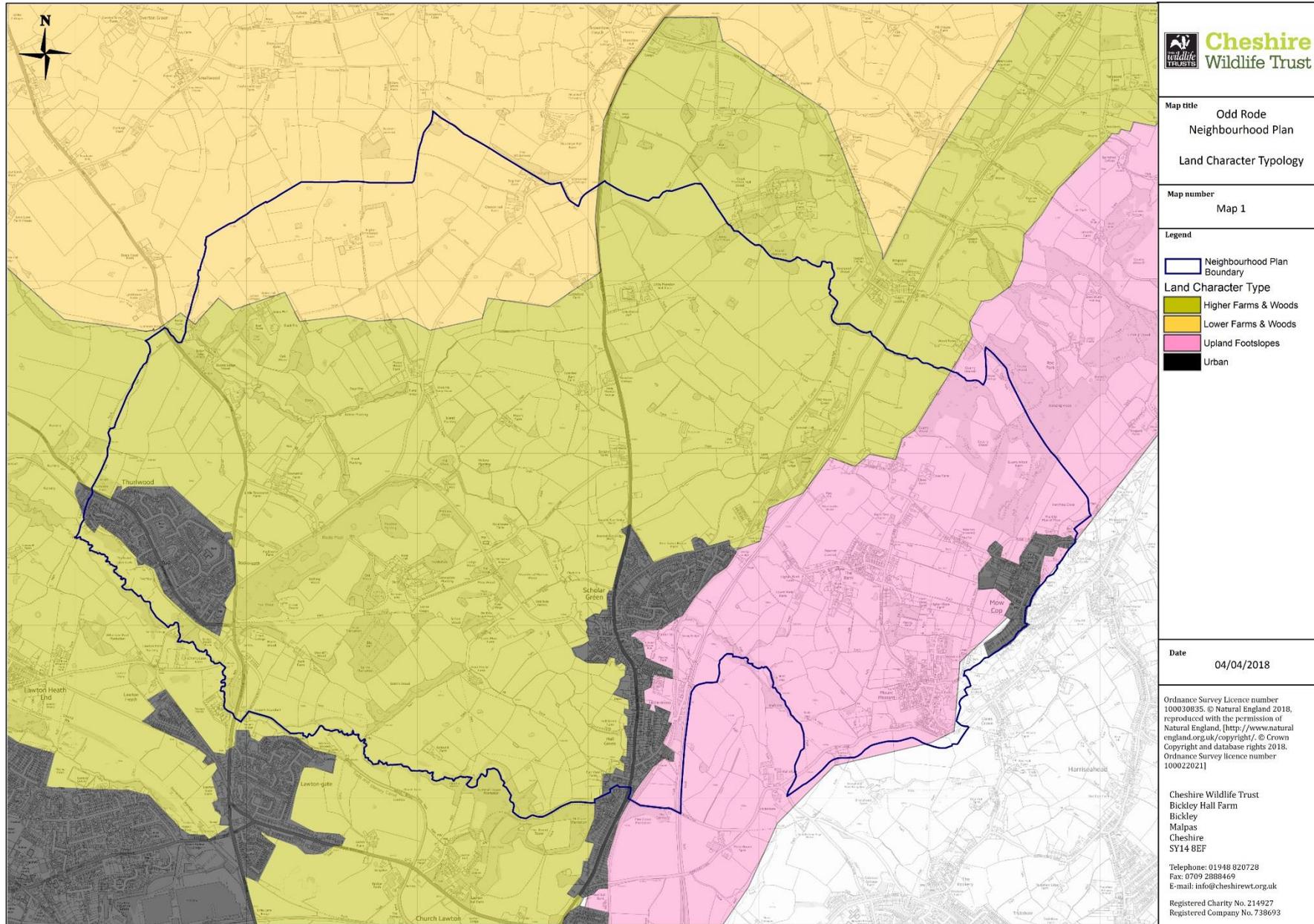
The National Planning and Policy Framework published in 2012 also includes the establishment and conservation of a coherent ecological network as a core principle including:

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

Landscape Character Assessment for the Cheshire region

On a national level Odd Rode lies within National Character Area 61 – Shropshire, Cheshire and Staffordshire Plain; a largely pastoral area of rolling plain which is important for food production. Especially important is dairy farming which is well suited to the damp lush pastures that are found on the glacial till clay soils. It lies in proximity to National Character Area 64- Potteries and Churnet Valley; an area of strong contrasts between industrial and pastoral landscapes. More locally the Cheshire Landscape Character Assessment of 2008 identifies recognisable patterns in the landscape and classifies the Cheshire Landscape into 20 broad Landscape Character Types (LCTs). Different aspects such as geology, landform, soils, vegetation and land-use have been used to identify character areas. The assessment is intended to be used as a basis for planning and the creation of future landscape strategies as well as raising public awareness of landscape character and creating a sense of place.

Map 1: Landscape Character Typology



Aside from urban areas the Landscape Character Assessment (Map 1) has identified three recognisable landscape character types (LCTs) within the Odd Rode Neighbourhood planning area, namely: Higher Farms & Woods, Lower Farms and Woods and Upland Footslopes. Each LCT is subdivided into smaller Landscape Character Areas (LCAs); details of the relevant LCTs and LCAs are given below:

Type 10- Lower Farms and Woods

Key characteristics

- Low lying gently rolling topography
- Hedgerow boundaries and standard trees in a mix of medieval, reorganised fields (irregular, semi-regular, and regular up to 8ha). Many larger open fields where traditional hedging has either been removed or replaced with fencing.
- Horsiculture – fenced horse paddocks
- High density of woodland – blocks and coverts and riparian
- Medium settlement density – mix of dispersed farms and nucleated hamlets/villages
- Mosses and some meres resulting from glacial deposits
- Large number of water bodies

Subtype LFW2 Brereton Heath Character Area (LCA)

A small part of the Odd Rode neighbourhood planning area lies within the Brereton Heath Character Area, which extends northwards to Holmes Chapel. It is a gently undulating, almost flat, agricultural landscape with a number of woodlands, some of plantation origin and others dense birch woodlands that have arisen on former mosses or heathland. Sand extraction is associated with this area, including the working sand pit at Arclid. There are numerous ponds in this area, many a result of sand extraction.

Type 16 - Higher Farms and Woods

Key characteristics

- Gentle rolling and moderate undulating topography
- A mix of medieval and post medieval reorganised fields (irregular, semi-regular and regular up to 8 ha)
- Hedgerow boundaries and hedgerow trees
- High density of woodland (blocks, coverts and riparian)
- Predominantly low density dispersed settlement
- Ponds
- Small mossland areas

HFW2 Little Moreton Hall Character Area (LCA)

This is a gently undulating area, parts of which have undergone an intensification of agriculture resulting in the removal of hedges and the enlargement of fields. In these areas the remaining hedgerows are sparse in hedgerow trees and tend to be closely trimmed. The remaining small fields date from the medieval period and a larger number of medium sized fields date from the post-medieval period when the ownership of land was reorganised. There are a number of large estates within this character area including Little Moreton Hall. Woodland cover increases surrounding the halls with parkland and large waterbodies also present.

This character area is heavily influenced by urban settlements and road network. The land rises upwards towards the east within Odd Rode, where the *Upland Footslopes* begin.

Type 18 - Upland Footslopes

Key Characteristics

- Upland inclines and undulations, steep slopes c100-370m AOD
- Wooded steep sided stream and river valleys – large proportion which is ancient woodland
- Small surviving patches of heathland
- Dense network of streams and tributaries
- Dispersed settlement – farms and houses
- Stone built houses, structures and boundary walls
- Gritstone exposures in quarries
- Medieval field patterns with hedgerow boundaries surviving on lower slopes
- Areas of semi-improved and unimproved neutral and acid grassland
- Extensive views dependent upon the location
- High rainfall – reservoirs, open and covered
- Follies and distinctive landmarks

UFS1 Mow Cop Character Area – including Roe Park Woods, Cheshire Close and the Cloud

This gritstone ridge runs from Kidsgrove northwards to the Cloud near Congleton and marks the boundary between Cheshire and Staffordshire. It is an upland landscape of steep slopes incised with equally steep, often wooded valleys. Fields are medium to large, often dating to the post medieval period when tracts of moorland were enclosed. This is a rural area with narrow twisting lanes and a few scattered hamlets.

Scattered rocky gritstone outcrops can be found on the ridge at Mow Cop, Rainow Hill and Congleton Edge. Hawthorn boundary hedges are found more frequently on the lower slopes.

The shallow soils and steep slopes make this area difficult to cultivate, consequently there are extensive areas of semi-improved grassland with smaller areas of heathers, bilberry and gorse. There are also a few sizable blocks of woodland, the largest lying below Mow Cop.

Limeworks and coal pits area features of the area's industrial past, with air shafts and disused pits near Limekiln wood and a covered reservoir at Toll Gate Farm close to the Staffordshire boundary. A branch of the Trent and Mersey canal passes through this area as do two long distance footpaths.

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, landuse and cultural influences. Their boundaries usually correspond to those of the Landscape Character Areas although they normally encompass multiple LCAs as they are generally larger.

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

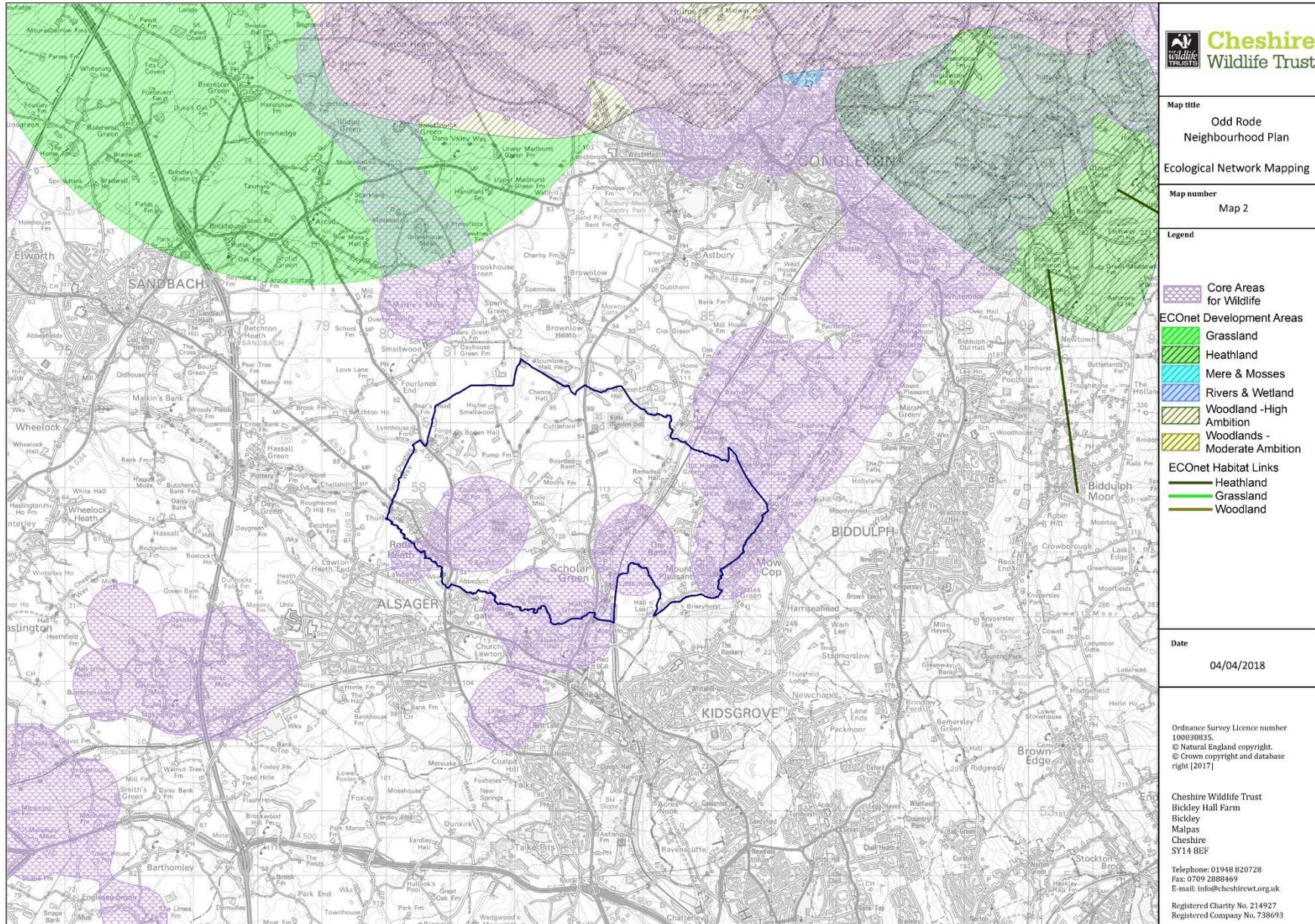
ECONet – Integrated vision of the Cheshire County Ecological Network

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

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

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

Map 2: Ecological Network Mapping (ECONet)



Core areas are identified by EConet as fundamental components of the county wide ecological network (shaded purple). Within Odd Rode core areas for wildlife are identified in the south and east of the neighbourhood planning area. In the east the core area for wildlife incorporates the moorland ridge along the Staffordshire-Cheshire border including Mow Cop Heaths and Mount Pleasant Village Hall Local Wildlife Sites with a mix of heathland, acid grassland, neutral grassland, woodland and marsh. This continues northwards through the ancient woodland Site of Special Scientific Interest (SSSI) Roe Park Woods before linking up with larger core areas around Congleton. Another core area for wildlife is identified around Scholar Green with the woodland and grasslands of Hall O'Lee Clough included. The woodlands of Lawton Woods, Lawton Woods East, Lawton Hall Lake and Bratt's Wood Local Wildlife Sites are included within the core area that lies further to the south west, while Rode Pool and Meadow off Cherry Lane are found within the most westerly core area of the neighbourhood planning area.

Methodology

Creating a habitat distinctiveness map

In line with current Defra methodologies to determine 'no net loss' in biodiversity, habitat data from the sources listed below was attributed to one of three categories listed in the table:

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

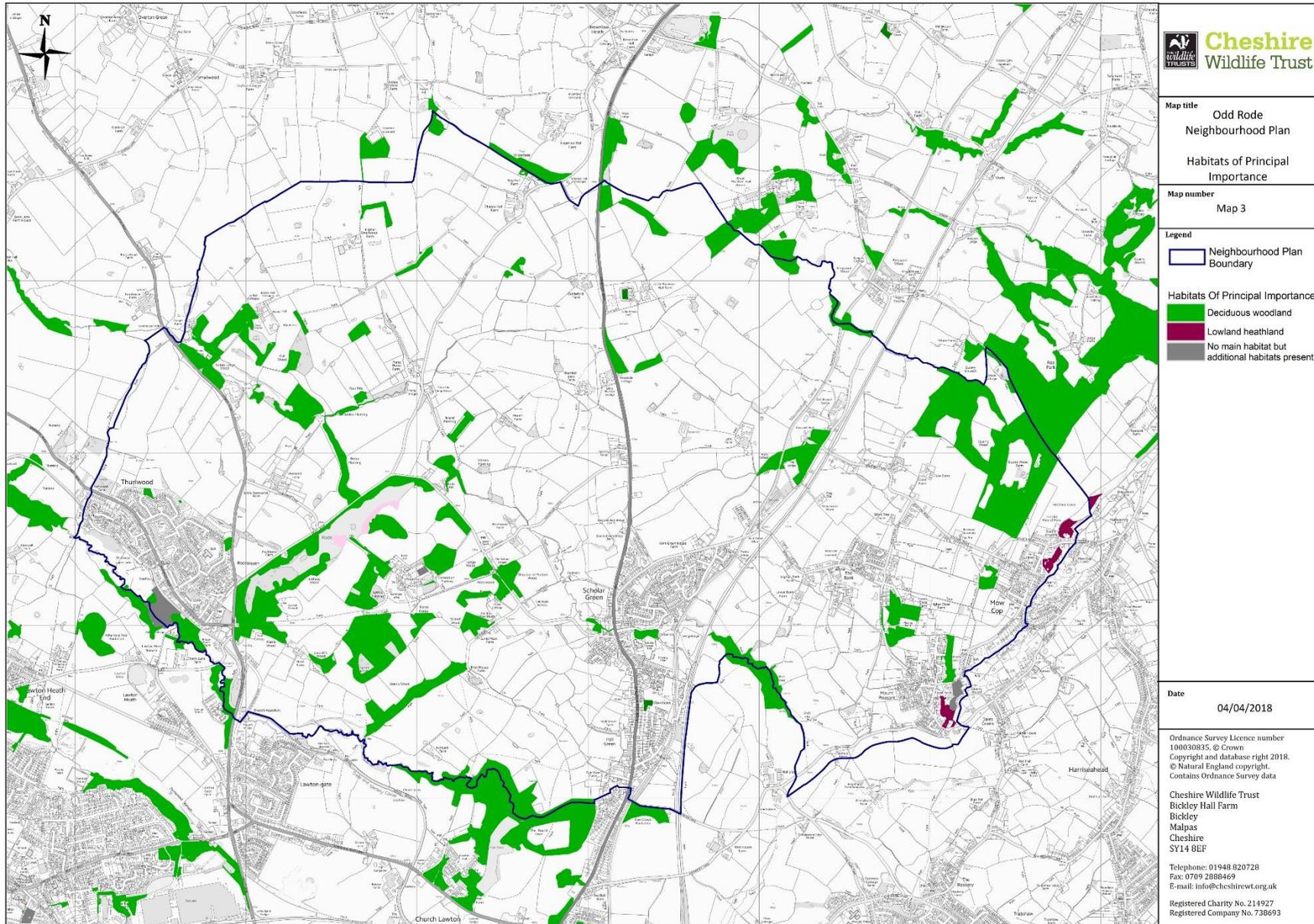
Habitat type bands (Defra March 2012)

- Several published data sets were used to produce the habitat distinctiveness maps:
 - Priority habitat Natural England 2016 – High/medium confidence coded as high distinctiveness, and low confidence coded as medium distinctiveness unless other data is available.
 - Landcover data, Centre for Ecology and Hydrology 2007. Priority habitats (principal importance) and semi-natural habitats coded as medium distinctiveness (data in Appendix 1)
 - Agricultural land classification, Natural England - grade 4 medium distinctiveness, grade 5 high distinctiveness (adjusted where other data is available).

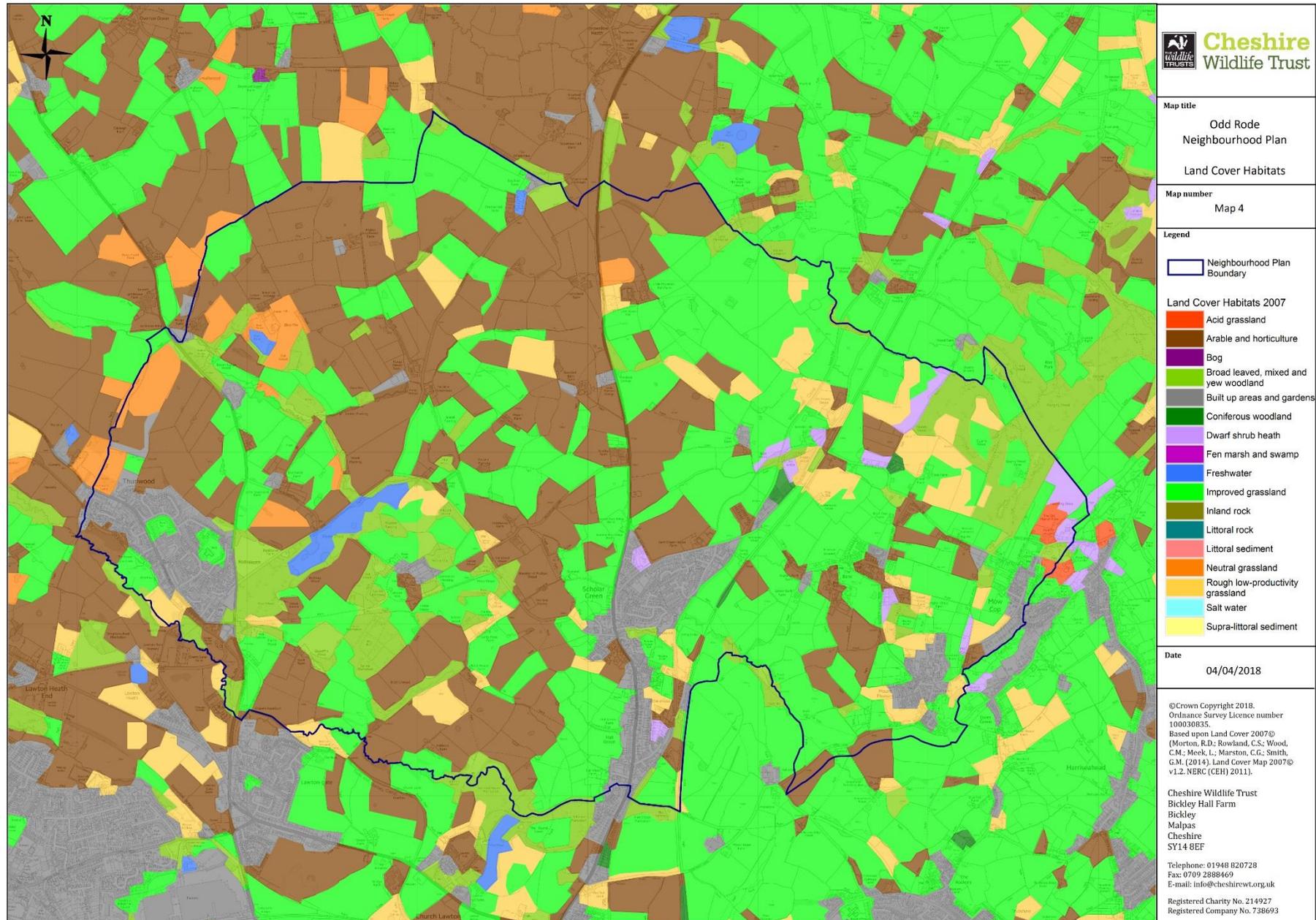
- Protected sites (International Sites, European Sites, Sites of Special Scientific Interest, Local Wildlife Sites and Local Nature Reserves), Natural England, CWT/CEC Local Authority – coded as high distinctiveness.
 - Ancient woodlands – Natural England 2015 – coded as high distinctiveness.
 - Meres and Mosses and other peat soils, Meres and Mosses Landscape Partnership scheme, 2016. Functional Ecological Units, river valley peat and destroyed (historical) peat coded as medium distinctiveness. (Supporting information in Appendix 2.)
2. Aerial photography (Microsoft Bing™ Imagery, GoogleMaps) was used to validate the results by eye.
 3. The Odd Rode Neighbourhood Plan area Land Character Assessment and EONet categories were mapped and the results were used to inform the conclusions.
 4. Information from recent planning applications in Odd Rode was researched and incorporated where appropriate.

Mapping:

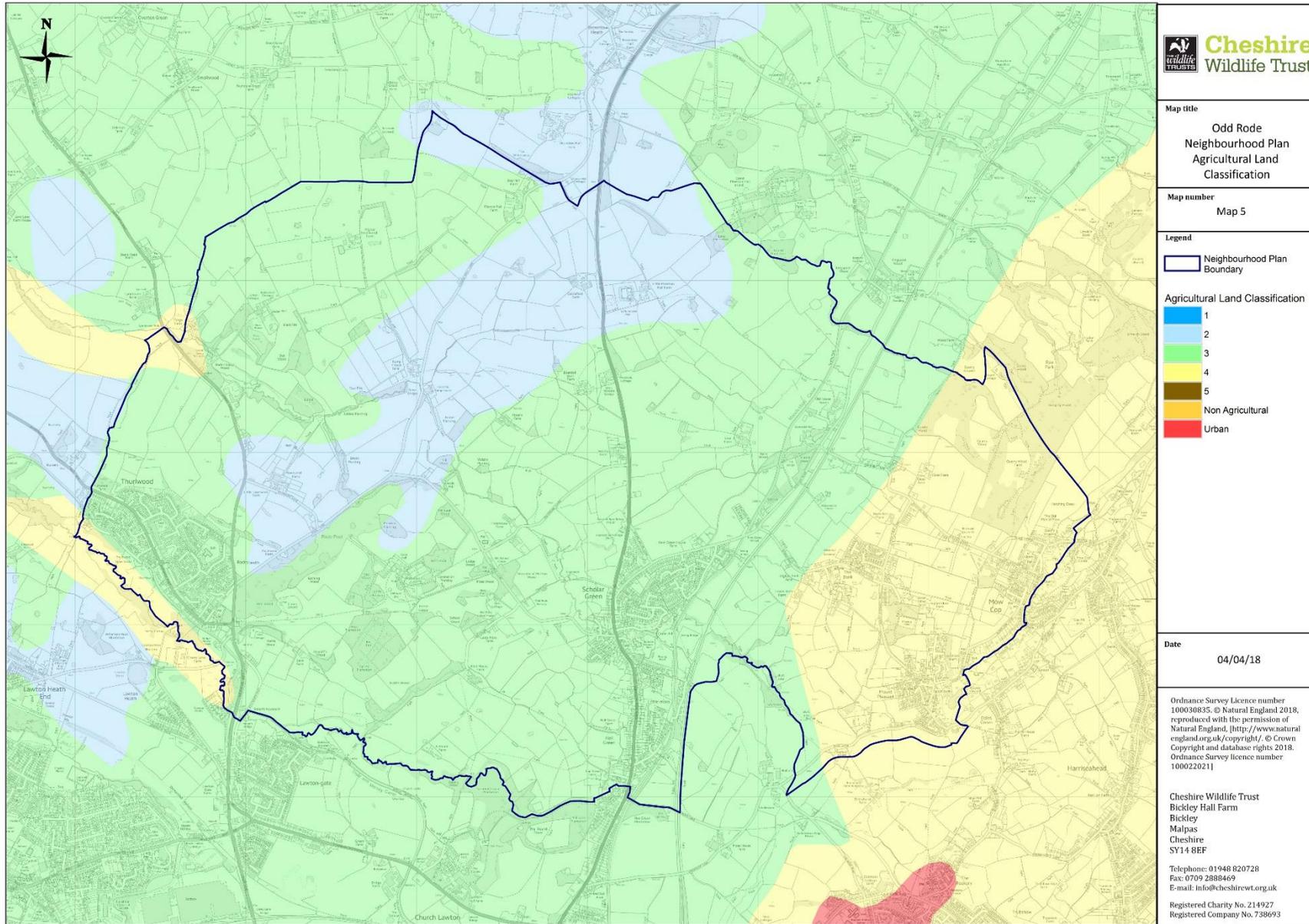
Map 3: Terrestrial habitats of Principal Importance – Natural England 2016



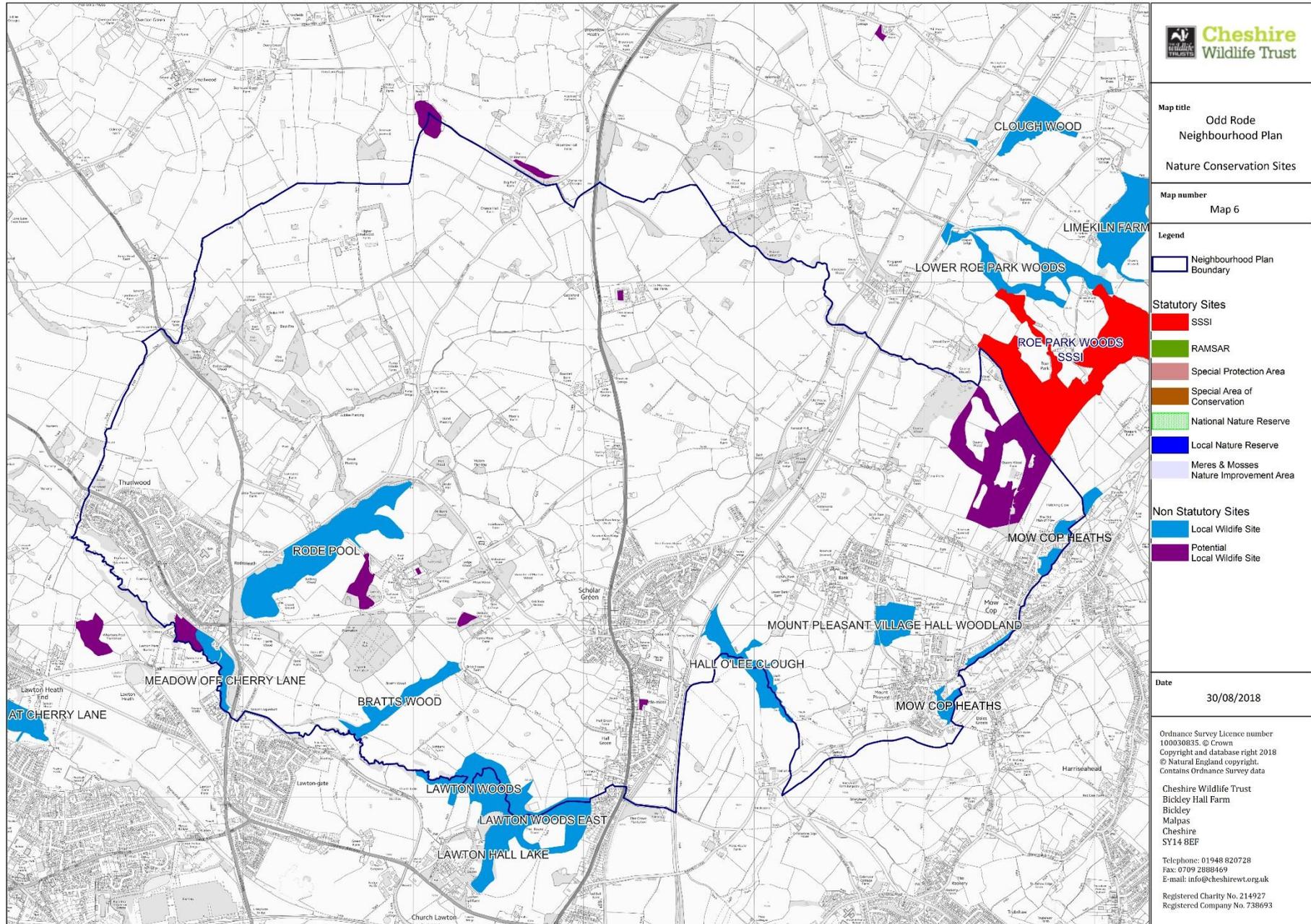
Map 4: Land Cover Map 2007 (LCM2007) parcel-based classification of satellite image data showing land cover for the entire UK derived from a computer classification of satellite scenes obtained mainly from the Landsat Sensor



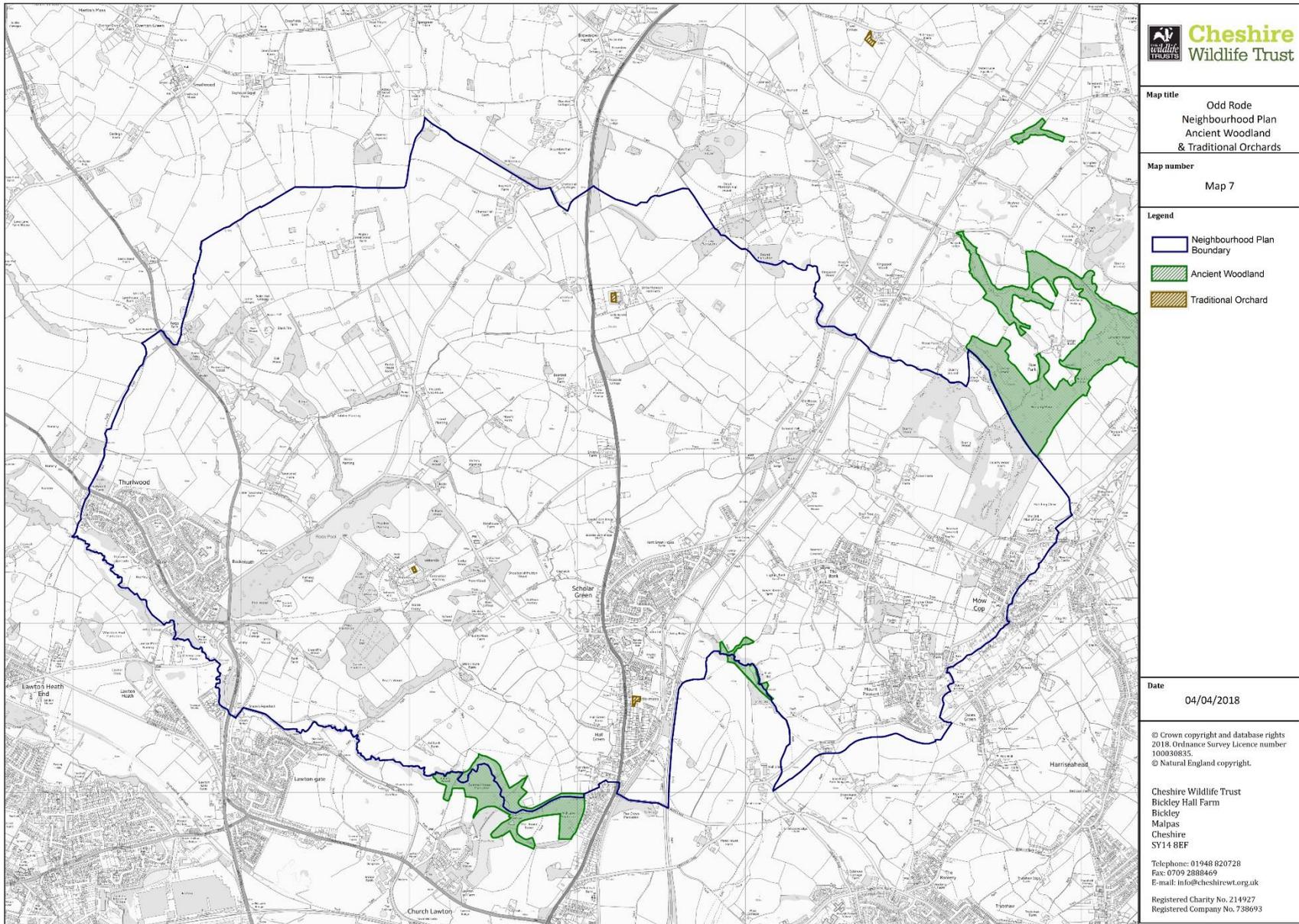
Map 5: Agricultural Land Grading – Natural England 2013



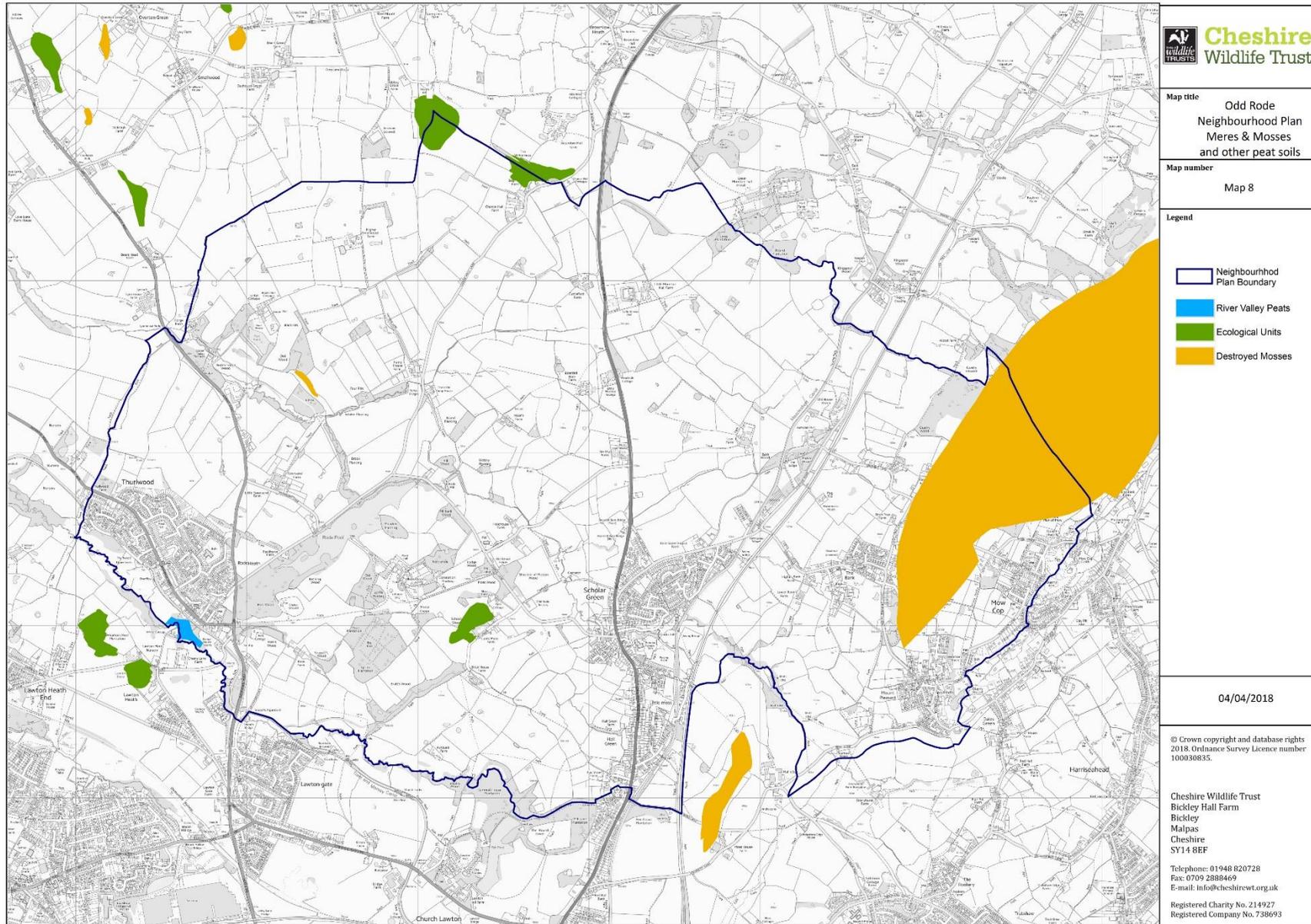
Map 6: Nature Conservation Sites, including designated Sites of Special Scientific Interest, Local Nature Reserves, European designated sites (SAC, SPA), Ramsar sites, Local Wildlife Sites and non-designated Potential Local Wildlife Sites



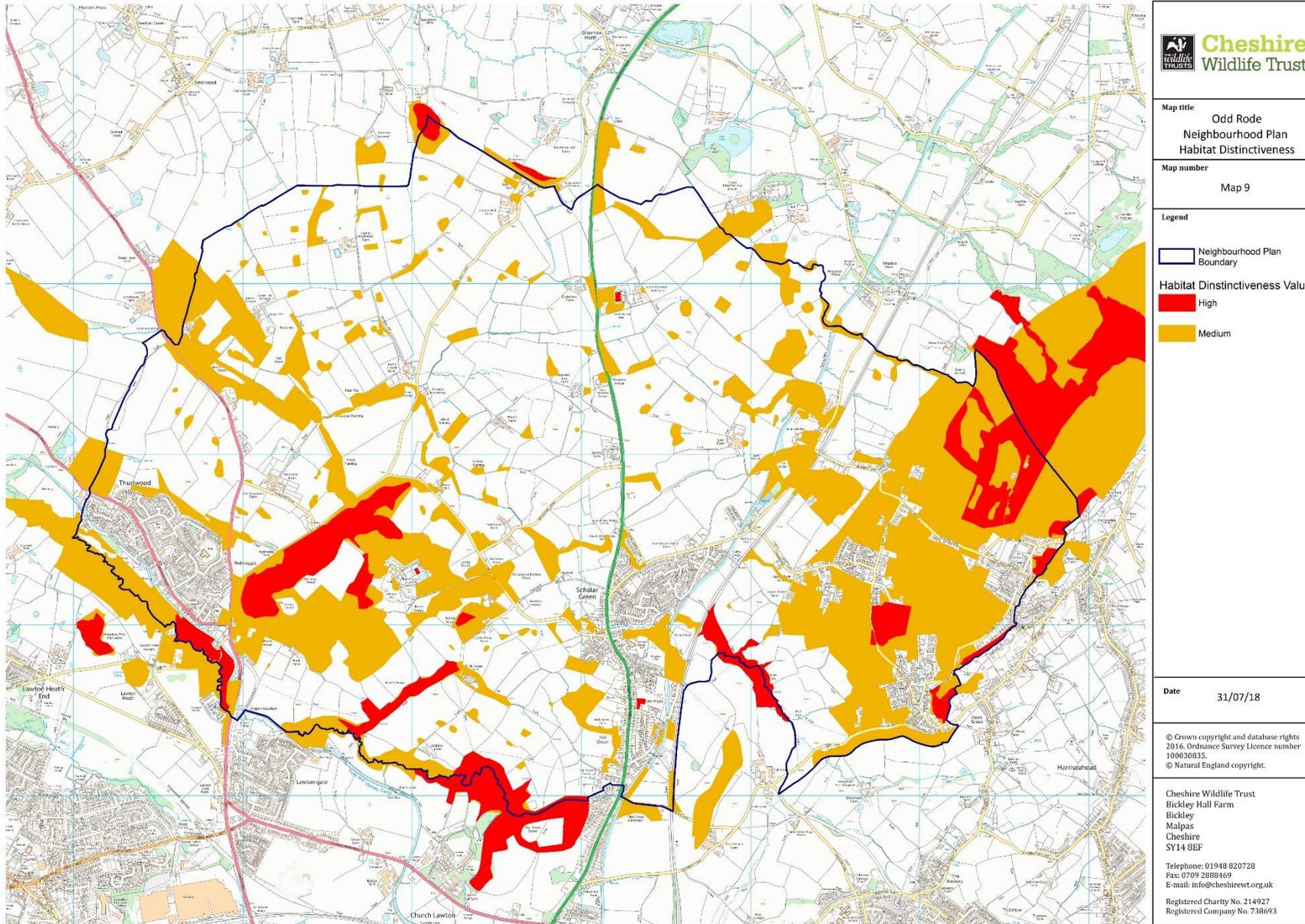
Map 7: Ancient woodland – Natural England 2015



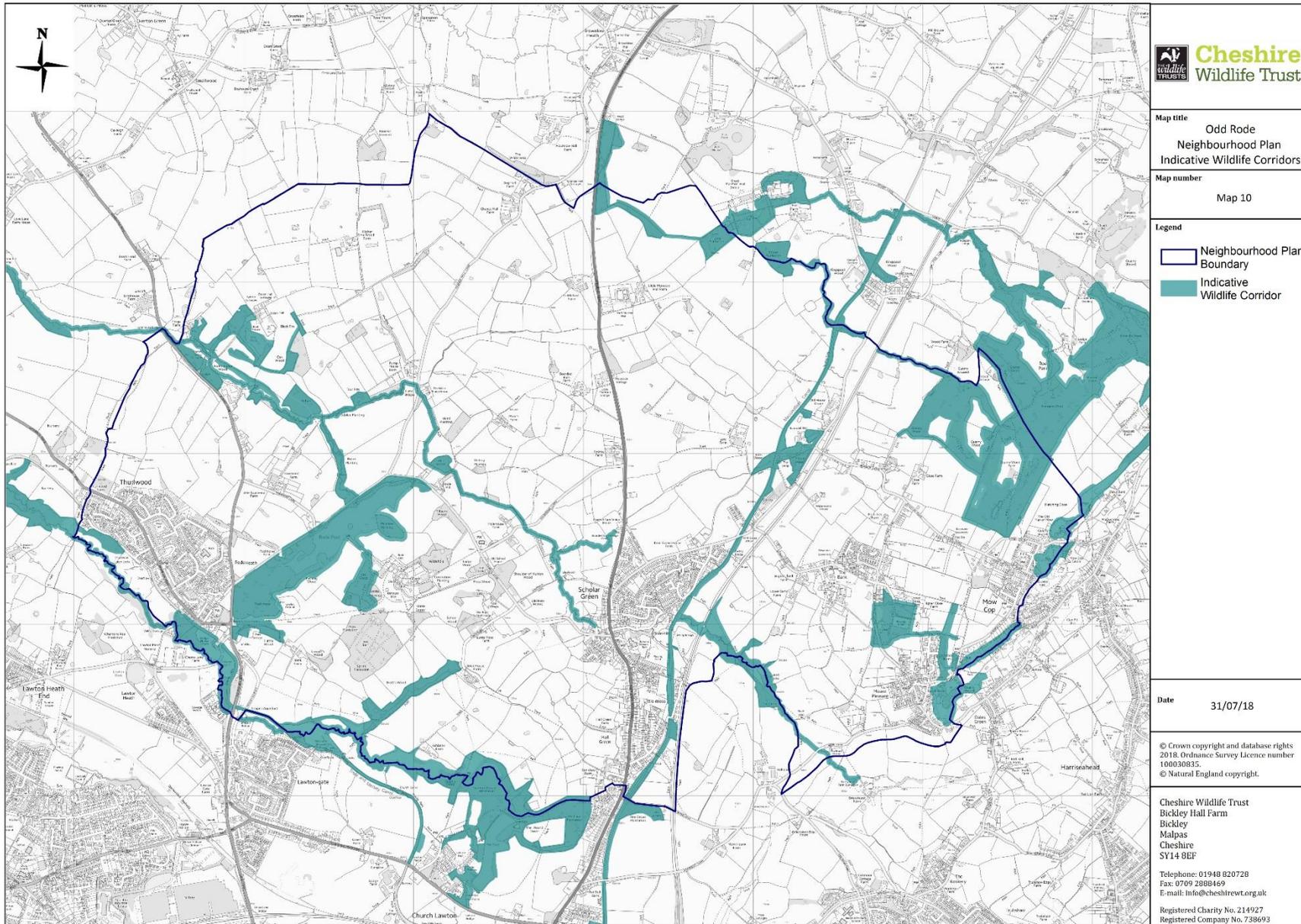
Map 8: Meres and Mosses and other peat soils, Meres and Mosses Landscape Partnership Scheme 2016



Map 9: Habitat Distinctiveness



Map 10: Indicative Wildlife Corridor Network



Results and discussion

High distinctiveness habitat

1. Woodland

Running either side of the Kidsgrove stream within both Odd Rode and Church Lawton lie the broadleaved woodlands of Lawton Woods and Lawton Woods East. Native tree species such as oak and birch are found alongside several non-native tree species. Sycamore and beech are dominant in much of the woodland. Despite the presence of non-native trees the ground flora in parts is indicative of ancient woodland suggesting that the current plantation woodland has been planted on the site of previously ancient woodland. Class 2 ancient woodland indicator species within Cheshire (species often found in ancient woodlands that also re-invade secondary woodland) are present. These include wood speedwell, dog's mercury, yellow archangel and dog's mercury. Extensive carpets of bluebells are found within Lawton Woods and Lawton Woods East.

Bratt's Wood is located further west along the Kidsgrove Stream, connected to Lawton Woods via a corridor of trees. Ramsons and dog's mercury (ancient woodland indicator species) grow alongside frequent bluebells. Ancient woodland species such as ramsons and dog's mercury grow within Bratt's Wood, alongside dominant bluebells. Wood anemone, lesser celandine, wood sorrel, moschatel are also present within the woodland. Common valerian, now considered near threatened in the UK by the IUCN (International Union for the Conservation of Nature) also grows here. It would seem that this woodland has ancient origins despite not appearing on the ancient woodland inventory.

Wet woodland surrounds Rode Pool with frequent alder and willow, but also non-native species such as conifers, sweet chestnut and frequent rhododendron. The presence of conifers is likely to have made the area a valuable site for overwintering siskin with a flock of more than 80 recorded in the 2016 Rode Pool Bird Report. Lesser spotted woodpecker (red listed), tawny owl (amber listed), stock dove (amber listed), song thrush (red listed), mistle thrush (red listed), buzzard and treecreeper are resident in the area with sparrowhawk regularly seen hunting. Kestrel and hobby have also been seen around Rode Pool and cuckoo (red listed) heard calling. Woodcock (red listed) has been seen in the winter, while spotted flycatcher (red listed) has been spotted a few times. Redwing, fieldfare, lapwing and starling (all red listed) visit the area in winter. Of county significance is an established colony of herons in the trees surrounding Rode Pool, with 52 nests recorded¹

To the south west of Rode Pool lies Meadow Off Cherry Lane with an area of wet woodland with frequent flushes. The mature canopy is comprised of alder, sycamore and occasional oak with willow and elder in the understorey. Lesser celandine, ivy, bluebell, the ancient woodland indicator ramsons and the class 2 ancient woodland indicator yellow archangel are present.

A woodland to the west of Meadow Off Cherry Lane has been identified by Natural England as being deciduous woodland and a habitat of principal importance. While the woodland itself is likely to be of high wildlife value it is also of value since it lies on peat soils. Peat soils contain the highest amount of stored carbon compared to other soil types and are therefore particularly important in

¹ Rode Pool Bird Report 2017. South East Cheshire Ornithological Society (SECOS)

providing ecosystem services. Removal of the peat or exposure to air, for example if the area is developed for housing or ploughed for agriculture, will result in oxidation of the carbon deposits and its subsequent release into the atmosphere.

Hall O'Lee Clough, located towards the east of Odd Rode and also lying partially within Church Lawton, has broadleaf woodland within it. The woodland appears on Natural England's ancient woodland inventory and is present on Cheshire's tithe maps from the 1870s. Oak and alder are dominant, but sycamore is common to the south. Hawthorn, hazel, holly and elder occupy the understory. The open canopy in parts of the woodland allows some grassland species to grow as well as a more typical woodland flora including red campion, bluebell and wood sorrel.

The semi-natural woodland at Mount Pleasant Village Hall is dominated by oak and ash with other species including with rowan, hawthorn, alder, elder, goat willow, downy birch and ash. Locally rare black poplar is also present. Species such as herb Robert, wood avens, red campion, hard fern, broad buckler fern and male fern grow amongst the ground flora.

Quarry and Hatching Close woods in the north east of the neighbourhood planning area have been identified as a potential Local Wildlife Site. This woodland lies adjacent to Roe Park Woods Site of Special Scientific Interest (SSSI). Natural England has identified this as deciduous woodland, a habitat of principal importance. It has been highlighted as a potential Local Wildlife Site due to the presence of underlying peat soils. It is conceivable that some of the interesting flora found to the north of the parish boundary continues within this woodland. The woodland was present on Cheshire's tithe maps from the 1870s and is therefore likely to be ancient in origin.

The SSSI, Roe Park Woods lies directly adjacent to the parish of Odd Rode within Moreton-cum-Alcumlow. Roe Park Woods incorporates Hanging, Limekiln and Grotto Woods. Dominated by oak, birch and rowan the woodlands on mainly acidic peat soils form Cheshire's most extensive area of semi-natural ancient woodland. A dense understorey is formed by holly, which becomes the dominant canopy species in parts. In damper areas alder and alder buckthorn are present. Drier, more open ground is dominated by wavy-hair grass, bilberry and heather, while damper areas are dominated by bramble and tufted hair grass.

Roe Park Woods SSSI was recorded as being in favourable condition during the last survey by Natural England in 2006, however sycamore has established in parts of the woodland and evidence of enrichment as a result of runoff from adjacent agricultural land is present in the south east of the site. To the north west the woodland continues within Morton-cum-Alcumlow as Lower Rode Park Woods LWS. Ground flora species within this ancient woodland include wood sorrel, moschatel, bluebell, wood anemone and lesser celandine.

Located to the west of Chance Hall Lane are two deciduous woodlands that lie on peat soils and have therefore also be identified as potential Local Wildlife Sites. The Wilderness, which lies just outside the parish boundary is likely to be mature woodland and is present on Cheshire's tithe maps from the 1870s. These two woodlands also feature on Map 8 as Ecological Units identified by the Meres & Mosses Landscape Partnership Scheme. A small parcel of woodland, School Wood at Lunt's Moss also lies on peat soils and has been mapped as a potential Local Wildlife Site.

Many of Cheshire's woodlands have been lost, with the percentage of woodland covering the county now considered to be around 5%. As a result expanses of bluebells are not as common as they were and consequently are now considered a local priority species in Cheshire. The woods of Lawton Woods, Lawton Woods East, Hall O'Lee Clough, Meadow off Cherry Lane and Bratt's Wood are host to thousands of bluebells, making them significant at a county level. Recent bluebell records were obtained for the Little moss area of Scholar Green and along Congleton Road North. Where extensive areas of native bluebells are present areas should be designated as Local Wildlife Sites. Old Wood at Rode Hall would likely meet the Local Wildlife Site criteria for its bluebells since there are organised bluebell walks through the woodland in the spring. Its name as well as presence on Cheshire's tithe maps also suggests the woodland is of ancient origin.

The presence of high quality woodland means that Odd Rode may be important for woodland birds including priority red and amber listed species such as spotted flycatcher. There are however not many woodland bird records recorded in the NBN (National Biodiversity Network) Atlas. This does not necessarily equate to a lack of species within the parish but is more likely to be due to a lack of recorder effort.

Tawny owl (amber listed) and Little owl have been recorded within the parish. These species are likely to be associated with the woodland edge. Barn owl is known to roost at Boarded Barn Farm, to the west of Congleton Road North. Barn owl is more likely to be associated with open farmland and rough grassland. Other woodland bird species known to be present within the parish, some mentioned previously within the report include bullfinch (amber listed), woodcock (red listed), lesser spotted woodpecker (red listed), treecreeper and sparrowhawk.

The semi-natural woodlands of Odd Rode are likely to support roosts, particularly within tree cavities, of UK priority bat species, which will forage for insect prey along the woodland edges, hedgerows and watercourses. Rode Pool, the Fish Pond at Boden Hall, several of the farm ponds, the Trent and Mersey Canal, Macclesfield Canal and other watercourses are likely to provide particularly valuable feeding areas. Recent bat surveys have found common pipistrelle, soprano pipistrelle and natterer's bats at Boarded Barn Farm along Congleton Road North. These bats that were recorded as roosting within farm buildings² and are likely to be utilising the nearby waterbodies as foraging grounds. All bats are European Protected Species (EPS) and several are also UK species of Principal Importance (S41 species).

Himalayan balsam (*Impatiens glandulifera*), is present in abundance along watercourses and encroaching into adjacent habitats within the Local Wildlife Sites of Lawton Woods, Lawton Woods East, Lawton Hall Lake, Meadow off Cherry Lane and Hall O'Lee Clough. Damp woodlands or marshy grasslands along watercourses provide perfect conditions for the spread of the invasive non-native. This species was added to Schedule 9 of the Wildlife and Countryside Act in 2010 and is a big threat to the integrity of woodlands and wetlands as its vigorous growth outcompetes native flora. This can have a devastating impact on the native flora and a knock on effect on groups of species such as birds, invertebrates and mammals. As an annual plant Himalayan balsam dies back in winter. Where it has outcompeted the native flora there is an absence of vegetation binding the soil, which can

² Boarded Barn Farm Ecological Assessment, Kingdom Ecology 2016

cause severe soil erosion issues. This is particularly damaging to the banks of waterbodies causing soil to wash into the water and thus affecting the water quality.

There are records for the non-native invasive species Japanese knotweed at Rode Pool, Mt Pleasant Village Hall Woodland and near the Macclesfield Canal where it is at its closest to Congleton Road North. This Schedule 9 species not only out competes the native flora and can cause river bank erosion, but can also cause significant damage to property. Schedule 9 species montbretia was also found around Rode Pool alongside the non-native, occasionally invasive species gunnera. It is illegal to plant or otherwise cause to grow in the wild any plant listed in Schedule 9. It is likely that further invasive species are present within the parish that have not been recorded. Invasive species require control to eradicate or prevent their further spread.

2. Traditional Orchards

Small areas have been mapped as having high distinctiveness within the grounds of Rode Hall, to the east of Congleton Road North and at little Moreton Hall. These areas have been identified by Natural England as being traditional orchards. A traditional orchard is an area of fruit or nut trees on traditional rootstock, planted at low density and managed in a low impact way. Fruit trees provide numerous microhabitats which can be hotspots for biodiversity. Windfall fruit is an important food source for wintering birds such as fieldfare and redwing. The presence of dead wood is particularly important as it may support rare species of saproxylic invertebrates, fungi, bryophytes and lichens. The flowering trees provide an important source of pollen and nectar for numerous species of declining pollinators including bees, hoverflies and moths. It is not clear from aerial images whether all of these orchards still remain. Since orchards are considered to be priority habitats they are valuable at a county level and are therefore potential Local Wildlife Sites.

3. Lowland Heathland and Acid Grassland

On top of the gritstone ridge in the east of the neighbourhood plan area is a series of five heath and acid grassland areas selected as Mow Cop Heaths LWS. The extent of the heathland is considered to have been much larger in the past, but has been lost due to agricultural intensification and development.

The proportion of heathland to acid grassland varies between sites. Common heather, bilberry and western gorse grow in heathland areas with bell heather rare. Grass species include wavy hair grass, sheep's fescue and purple moor-grass. Mow Cop folly is the largest area and extends over county boundary into Staffordshire. The two areas furthest south are continual but appear split due to continuing over the border.

Dry lowland heaths are internationally important EU Annex 1 habitats. Many of Cheshire's lowland heaths have been lost and there is now considered to be less than 60ha of this habitat left within the county.

4. *Species-rich grasslands*

Within Odd Rode there appear to be no large areas of species-rich grassland, one of the fastest disappearing habitats in the UK. As a result of a combination of agricultural intensification and neglect Cheshire has lost 99% of its species rich grasslands in comparison to a national average loss of 97%.

A small area of good quality semi-improved grassland lies north of the Kidsgrove Stream within Lawton Woods Local Wildlife Site. Species such as trailing tormentil, abundant black knapweed, greater bird's-foot trefoil, common sorrel, meadow buttercup and ribwort plantain area present. Unfortunately, the meadow appears undergrazed with many oak saplings and coarse grasses appearing. Bluebells are present towards the top of the meadow while it merges to bramble scrub to the south.

A meadow of good quality semi-improved grassland with species such as common bird's-foot trefoil, common knapweed, devil's-bit scabious (considered near threatened within the UK) and violet is found within the parish at Hall O'Lee Clough. Nearby Mount Pleasant Village Hall is host to a good quality semi-improved grassland of moderate species richness. One of the areas of grassland may have been sown. The grasslands support species such as common knapweed, red clover, meadow buttercup, ribwort plantain, selfheal, meadow vetchling, common sorrel and common spotted orchid.

Meadow off Cherry Lane LWS in Rode Heath supports restorable grassland- good quality semi-improved grassland of moderate species richness, having lost some of its former quality. Grassland species include red clover, selfheal, common sorrel and abundant meadow buttercup. The field to the east of Cherry Lane has been encroached by tall ruderal species and wet woodland scrub, suggestive of undergrazing.

Any areas of species-rich grassland will support populations of declining pollinators including moths, specialist grassland butterflies such as small skipper or common blue and solitary bees and hoverflies. There are records for peacock, red admiral, painted lady, skipper, comma, common blue, speckled wood, small copper, holly blue, gatekeeper, meadow brown, small tortoiseshell and green veined white butterflies in the Mow Cop area. Some of these species are likely to be utilising the grasslands at Mount Pleasant Village Hall and Mow Cop Heaths. Where species-rich grasslands are located close to waterbodies dragonflies and damselflies are likely to be present as these feed on other invertebrates but require waterbodies to breed.

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

5. *Waterbodies and Marshy Areas*

In addition to being selected as a Local Wildlife Site for its deciduous woodland, Rode Pool is an important waterbody for birds, has a diverse marginal vegetation and is flanked in parts by

reedbeds. Marginal species include marsh woundwort, common bistort, water forget-me-not, reedmace, angelica, yellow iris, brooklime, gypsywort and locally scarce water avens.

Bird species breeding or likely to be breeding at or near Rode Pool include mallard (amber listed), tufted duck, reed warbler, sand martin, swallow, house martin (amber listed), grey wagtail (red listed) and kingfisher (amber listed). Mute swan (amber listed) and greylag goose (amber listed) have attempted breeding at the lake, with greylag found in number during the winter months. Non-native Canada goose and mandarin duck also breed at Rode Pool.

Rode Pool is a valuable overwintering site for birds such as wigeon (amber listed), high numbers (peak of 71 individuals) of common teal, black-headed gull (500 recorded during a cold spell). Other birds recorded in the winter include snipe (amber listed), herring gull (red listed), shoveler (amber listed) and water rail.

Otter, a protected species within the UK was spotted during 2017 at Rode Pool³. This species, which is classed as near threatened by the IUCN is likely to be using nearby watercourses such as the Kidsgrove Stream, Trent & Mersey Canal and Macclesfield Canal. Otter populations declined rapidly from the mid-1950s to the 1970s within the UK, believed to be in association with the introduction of cyclodiene pesticides. Widespread riparian habitat destruction also occurred prior to the decline in otter populations. A recovery of the UK population is now underway, although in some northern areas it is slower than expected. Otters within England are mainly confined to freshwater, both still waters and flowing rivers and streams. Although it is not considered essential for otters to have access to trees and shrubs in riparian habitats, they can provide areas to breed and increase cover and forage for invertebrates, which in turn increases fish numbers- the otter's primary prey. Physical attributes of rivers will impact otters if they affect food availability and an otter's ability to move upstream where there is no suitable terrestrial alternative. An increasing number of otters have become road casualties⁴. Otters have huge territories and are therefore likely to be widely utilising the waterbodies of the Odd Rode area and its neighbouring parishes.

Lawton Hall Lake, which lies outside of the parish, within Church Lawton, is another large waterbody and is likely to be an important overwintering area for birds. Mute swan (amber listed) has been recorded as a breeder at the lake and several pairs of kingfisher (amber listed) have been observed in the vicinity.

Marginal and marshy grassland species are found along the rivers that flow through some of Odd Rode's other Local Wildlife Sites. Ragged robin (near threatened in the UK) alongside sedges and sharp-flowered rush, have been recorded within the wet flushes of Meadow off Cherry Lane LWS. A small remnant of wetland vegetation with marsh marigold, reedmace and meadowsweet is located on the lower slopes. A wet flush is also present at Mount Pleasant Village Hall LWS with yellow iris, cuckoo flower, brooklime, meadowsweet, soft rush, compact rush and sedges present. Extensive areas of marsh marigold are found at Bratt's Wood and along the river at Lawton Woods. Outside the parish at Row Park Woods SSSI flushes fed by acidic springs support *Sphagnum* and *Polytrichum*

³ Rode Pool Bird Report 2017. South East Cheshire Ornithological Society (SECOS)

⁴ Chanin P (2003). *Ecology of the European Otter*. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough

mosses, while opposite-leaved golden saxifrage, wild angelica, common valerian and marsh hawk's-beard (uncommon within Cheshire) are found downslope in the more base-rich flushes. Marshy sites can be particularly valuable for invertebrates and some bird species.

The freely meandering nature of the river through Lawton Woods is important at a county level since the courses of many rivers within Cheshire have been diverted/alterd. There are sandy areas of deposition and banks that are being eroded by the river's force. Sand or gravel beds provide a habitat suitable for invertebrates such as solitary bees. Grey wagtail (red listed) has been recorded within Lawton Woods and is likely to be breeding in the area.

Medium distinctiveness habitat

Areas of medium distinctiveness habitat are shown on map 9 (displayed as orange) and provide important wildlife habitats in their own right as well as acting as ecological stepping stones and corridors. Because the methodologies used to produce the maps are desk based rather than field survey based, there is a possibility that some of the medium distinctiveness areas have been undervalued and an ecological survey may indicate they should be mapped as 'high distinctiveness' priority habitat (which would be displayed as red in map 9). Conversely, there may be areas which have been overvalued, particularly if recent management has led to the deterioration of the habitat; in which case these areas should be removed from the habitat distinctiveness map.

Some of the 'medium distinctiveness' habitats identified in map 9 are thought to be semi-natural grassland, particularly on less productive waterlogged areas and margins of watercourses. In the east of the neighbourhood planning area around Mow Cop there are many fields that have been identified as semi-natural grasslands with some of these lying on peat soils. Semi-natural grasslands are invaluable for wildlife as they can support populations of invertebrates and a variety of mammals.

Hare, a priority species under the UK Biodiversity Action Plan will inhabit semi-natural grasslands that lie within a patchwork of agricultural fields, which provide both areas suitable for grazing and for use as a refuge. Semi-natural grasslands will provide areas for hares to graze within while arable fields lay empty of crops. Rough grasslands will provide shelter that intensively grazed fields cannot provide. Hare has been recorded on arable land in the Hall Green area. This is a pre-2006 record, however hare has also been recorded more recently to the north of the parish at Brownlow Heath. It therefore seems likely that hare is still present within the parish.

The invertebrate populations within semi-natural grasslands provide a foraging resource for many breeding or overwintering red or amber listed farmland birds, several of which have been recorded locally including starling, song thrush, mistle thrush, house sparrow, skylark, starling, fieldfare, lapwing and house martin. Some species such as lapwing and skylark will successfully breed within grasslands provided the grass is cut or land ploughed later in the breeding season if at all. Their breeding success is dependent on the presence of semi-natural grassland.

Semi-natural rough grasslands, as well as woodlands, can provide valuable terrestrial habitat for amphibians, including the European Protected Species great crested newt, provided they are in the

vicinity of (up to 1km from) a breeding site and the route is barrier free. The NBN Atlas revealed no recent great crested newt records within Odd Rode, however given the prevalence of this species within Cheshire and many ponds in the area, it seems likely that great crested newts would be present within the parish.

There is a high density of field ponds within Odd Rode, as there is through much of Cheshire. Field ponds contribute to the permeability of the landscape for wildlife. Ponds have been highlighted as habitat of medium distinctiveness in map 9 and should always be retained where possible when land is developed. Stocking ponds with high numbers of fish decreases the wildlife value, because introduced fish (such as bottom feeding non-native carp) can deplete the pond of invertebrate larvae and amphibian eggs/larvae as well as water plants. For example the Fish Pond at Boden Hall, which is the second largest pond/lake in the parish, may have limited invertebrate populations if still stocked with fish. Despite this, even low value ponds can help increase landscape permeability for species such as birds and terrestrial invertebrates. As previously mentioned the waterbodies within Odd Rode are likely to provide a valuable foraging habitat for bats. Their value to birds is as both breeding and overwintering grounds.

Kingfisher has been recorded at a pond to the north west of Boarded Barn Farm on Congleton Road North and will likely also be utilising the streams in this area. A diverse flora with marginal and aquatic species such as branched bur-reed, water plantain, broad-leaved pondweed, watercress and hemp agrimony is found around a field to the south of the farm. Nesting swallows and roosting bats at the farm⁵ will feed on the invertebrates that arise from the field ponds.

Sections of the Trent and Mersey Canal, Macclesfield Canal, River Wheelock and tributaries of the River Wheelock are highlighted as being of medium distinctiveness. The Trent and Mersey Canal and Macclesfield Canal are host, in several locations, to the nationally scarce and UK Biodiversity Action Plan (BAP) species Freiberg's screw-moss *Tortula freibergii*. The stronghold for this species in the UK is in the area around Manchester with scattered records in Hastings and an area of the North Yorkshire coast. Although the whole lengths of the canals are not marked as having medium distinctiveness this species could be found anywhere along these watercourses. Any maintenance or development works along the canal should take this moss into consideration. A current threat to this species is the replacement of sandstone blocks along the canal with concrete. Removal of bridges and the resultant change in microclimate also poses a threat.

Rivers and particularly the habitats surrounding them can provide valuable corridors that enable movement of wildlife. In the south of the parish a riparian woodland corridor runs westwards along the river from Lawton Woods. The tributary of the River Wheelock running north-west from Scholar Green is also flanked over much of its length by a corridor of trees and in several places larger areas of woodland. Where rivers are left to meander freely exposed banks and areas of gravel are often created. These provide a valuable habitat for invertebrates such as solitary bees.

Yellow wagtail and grey wagtail, both red listed, have been recorded within Odd Rode. These species breed in the vicinity of fast flowing rivers and streams, the yellow wagtail in tussocks and the grey

⁵ Boarded Barn Farm Ecological Assessment, Kingdom Ecology 2016

wagtail in crevices. These species are dependent on watercourses but also the medium to high distinctiveness habitats that surround them.

There is a pre-2006 water vole record within 1km of Scholar Green. This is likely to be a record along the Macclesfield Canal, but may also be from one of the smaller watercourses that are tributaries to the Kidsgrove Stream. Water vole was also recorded in the 1980s along the Macclesfield Canal, just outside, to the north, of the parish. The water vole is a species of principal importance and populations have declined rapidly across the UK, including Cheshire, in recent years. Since these are old records water voles may no longer be present within the parish. However, it may be worth surveying to see if a population still remains. Should they be found every attempt should be made to manage habitat suitably to allow the population to persist and grow.

The hedgerow network together with scattered farmland/parkland trees is fundamental to landscape permeability and provides habitat for numerous species from invertebrates to small mammals and birds. Hedgerows with a combination of tall mature trees and shorter hedge provide a varied habitat supporting a more diverse range of species. Species such as dunnock (amber listed), bullfinch (red listed) and tree sparrow (red listed), all recorded within Odd Rode, will inhabit the hedgerows. Many invertebrates and small mammals inhabit hedgerows, particularly those with adjacent wide field margins or those, which lie adjacent to semi-natural grassland or other natural habitats. Within Odd Rode birds of prey such as kestrel (amber listed), barn owl, sparrowhawk and buzzard feed upon small mammal or farmland/woodland birds, consequently doing best in areas where the traditional farmland landscape is intact. There are several kestrel records across the parish from Mount Pleasant to Thurlwood. A barn owl roost is present at Boarded Barn Farm in the north of the parish with barn owl also having been observed within Church Lawton around Lawton Heath. Buzzards that rely on both the presence of small mammals and birds have been recorded around Little-moss and breed at Rode Pool. Sparrowhawk is regularly observed at Rode Pool and has also been recorded at Little-moss.

Hedgehogs, a species of principal importance have been recorded around Scholar Green, Rode Heath and Thurlwood. These mammals make use of hedgerows, woodlands, meadows and suburban gardens. Being an edge species intact hedgerows are a crucial habitat for hedgehogs and these features enable them to move through the landscape. With male hedgehogs averaging distances of 2km per night and females 1km, habitat fragmentation through barriers such as garden fences can be a problem for hedgehogs in more urban areas. Poisoning through slug pellets, but also the removal of prey through the use of pellets may be of concern⁶.

The habitat distinctiveness mapping has not included hedgerows, because it is difficult to gauge the wildlife value of a hedge remotely. However, aerial images reveal that standard trees have been allowed to grow out of the hedgerows throughout the parish, adding to their habitat value.

The parkland landscapes around Rode Hall and to a lesser extent at Boden Hall are likely to be of value to farmland birds warranting their inclusion as a medium distinctiveness habitat. Should these

⁶ Britain's Hedgehogs: research and the conservation effort in the face of serious decline in British Wildlife V28, No.2, December 2016.

parklands be pre-19th century with occasional veteran or ancient trees they would meet the Local Wildlife Site criteria and be of high distinctiveness.

Within Odd Rode there are woodlands that may be ancient in origin but are too small to appear on the ancient woodland inventory (map 7), which has a minimum size threshold of 2 hectares. These possible ancient woodlands will have been mapped as medium distinctiveness due to lack of survey information.

Several of the areas of woodland around Boden Hall in the west of the parish including Brook Planting, Oak Wood, Boden Lodge Wood and Bidnall Wood are present on the tithe maps from the late 1800s. The woodlands around Rode Hall- Sherriff's Wood, The Spring/Sprink Plantation, Prize Plantation and Horse Coppy are also present on the tithe maps. Natural England has identified all of these woodlands as being deciduous woodlands (map 3). They are likely to be mature or ancient in origin and be important areas for conservation. Several other woodlands appear both as a Habitat of Principal Importance (map 3) and on the tithe maps from the 1870s. These include Bath and Middle Woods at Ramsdell Hall, two woodlands south of Little Moreton Hall, Island Planting and Mill Wood to the north east of Rode Pool and a small parcel of woodland north of Higher Smallwood Farm. Even where plantation woodland has been planted on the former site of ancient woodland some of the ancient woodland ground flora is still likely to be present.

More recently planted woodlands can still provide a valuable habitat for wildlife, particularly invertebrates and birds. All deciduous woodlands appearing on Natural England's Habitats of Principal Importance inventory will have been included as a high distinctiveness habitat.

Wildlife corridor network

Wildlife corridors are a key component of wider ecological networks as they provide connectivity between core areas of high wildlife value/distinctiveness enabling species to move between them to feed, disperse, migrate or reproduce. In conjunction with the results of the EConet analysis (2003), this study has identified a wildlife corridor network (shown in map 10) with ecological connectivity within the Odd Rode Neighbourhood Planning area. The corridor that this report has identified lies mainly within the core areas for wildlife identified by EConet.

The corridor closely follows the watercourses and some of the hedgerows and incorporates the area's most valuable woodlands, lakes, grasslands, heathlands and woodlands on peat soils. It links with the nationally designated Roe Park Woods SSSI within Moreton cum Alcumlow and connects together the sites selected as being of county importance (Local Wildlife Sites). The network includes several of the potential Local Wildlife Sites and some of the areas identified as having habitat of medium distinctiveness.

A key corridor runs along the south of the parish, connecting the woodland and meadow Local Wildlife Sites along the Kidsgrove Stream. This corridor continues westwards connecting into other parishes. Another corridor runs eastwards from the A50 at the parish's western boundary, following the river and incorporates some of the woodlands around Boden Hall and Rode Hall, as well as the Local Wildlife Site Rode Pool.

The Macclesfield Canal has been identified as a corridor running north to south within the parish. Although it may not be diverse along its whole length it does allow for the movement of wildlife and links to woodlands and grasslands such as Hall O'Lee Clough, which lie close to its route.

In the east the acid grasslands/heathlands of Mow Cop are separated by the village itself, but those in the south link to Mount Pleasant Village Hall. An important corridor links the woodlands within Odd Rode to Roe Park Woods and beyond.

There is good ecological connectivity along most of the length of the corridors, with the maximum gap in the corridor being less than 30m in length, enabling more mobile species to cross. The corridors are however discontinuous with the A34- Congleton Road North and Scholar Green, railway and A50- Knutsford Road creating barriers to the movement of wildlife from east to west across the parish. Although difficult to create a continuous corridor across transport infrastructure or in urban areas, there is much scope for increasing the number of connections between corridors or for increasing the quality of those connections in other parts of the neighbourhood planning area. The hedgerow network will already provide links between corridors, however increasing the quality of hedgerows will improve the value of those links.

The rivers and the Macclesfield Canal not only provide important corridors within the parish of Odd Rode, but continue to do so through the wider landscape. The work carried out on to inform the Church Lawton neighbourhood plan identified corridors which link up with those identified in this study. This illustrates how wildlife corridors within a parish can feed into a wider wildlife corridor network to provide provision for wildlife at a landscape scale.

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

Map 10 incorporates an indicative boundary for the wildlife corridor network, however this is likely to require refinement following detailed survey work. The corridor should be wide enough to protect the valuable habitats identified in Map 9 and for this reason we have incorporated a 15 metre buffer zone around any high distinctiveness habitat. The buffer is necessary to help protect vulnerable habitat from factors such as light pollution, ground water pollution, predation or disturbance caused by domestic pets and spread of invasive garden species if adjacent land is developed. Those areas identified as being of high distinctiveness but lying outside the corridor network should be protected by a 15m buffer. A 15m buffer zone is also appropriate for any land that is found to be high distinctiveness Priority Habitat following any ecological appraisal⁷.

Any potential development proposals adjacent to a high distinctiveness habitat or a wildlife corridor should incorporate substantial mitigation and avoidance measures to lessen impacts on wildlife. . For example low spillage (bat/otter sensitive) lighting should be used on the outside of buildings or in car-parks and along pathways and watercourses. Developers should be asked to install hedgehog-friendly fencing, purposely designed to allow the passage of hedgehogs from one area to another. Other measures could include the incorporation of bee bricks and bat/bird boxes into the design of buildings, ideally made of highly durable material such as woodcrete. Surface drainage water from

⁷ Includes S41 Habitat of Principal Importance. This may currently be mapped as medium distinctiveness due to lack of information

developed areas should always be directed away from sensitive areas due to the risk of pollution unless the source of the water is clean, such as rainwater collected from roofs. Sustainable Drainage Schemes (SuDS) are useful in providing additional wildlife habitat and preventing flooding, but they may still hold polluted water so should not drain directly into existing wildlife habitat unless the filtration system is extensive.

Not all sections of the wildlife corridor provide high quality habitat and measures to improve its ability to support the movement of species is desirable⁸. Enhancement of the corridor may be facilitated by opportunities arising through the planning process (e.g. Section 106 agreements, biodiversity offsetting/compensation) or through the aspirations of the local community or local landowners.

The areas of high or medium 'habitat distinctiveness' that lie outside the 'wildlife corridor network' still provide or may provide important wildlife habitats acting as ecological stepping stones. These areas comprise of many field ponds with associated marginal vegetation or woodlands, semi-natural grassland, ancient woodlands, semi-natural woodlands and traditional orchards.

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

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

Conclusion

The important wildlife habitat in Odd Rode is mainly associated with the woodlands, riparian habitat and emergent vegetation along tributaries of the River Wheelock and the canals, heathland and acid grassland in the east, waterbodies, a few species rich grasslands and semi-natural grasslands. By attributing habitat distinctiveness values to all land parcels in the Neighbourhood Plan area the

⁸ Refer to Recommendations section

study has provided important evidence that should be taken into consideration when planning decisions are made. However, we strongly recommend that further (phase 1) habitat survey work is undertaken at the appropriate time of year, in particular to verify that 'medium value' habitats have not been over or under-valued. Grassland surveys in particular should be avoided during the winter and spring as they are unlikely to give a complete picture of a grassland's botanical diversity and often undervalue a site. Surveys carried out by ecological consultancies on grasslands of medium distinctiveness in relation to planning applications should be carried out during the growing season in order that species rich grassland indicator species can be identified.

Most notably the study has highlighted a 'wildlife corridor network', which provides ecological connectivity between habitats of high and medium distinctiveness within and beyond the parish of Odd Rode.

The wildlife corridor network supports a wide range of species including numerous birds, mammals, plants and invertebrates that are in decline both locally and nationally. Notable, red and amber listed birds associated with the less intensively farmed landscape include starling, song thrush, mistle thrush, house sparrow, skylark, starling, fieldfare, lapwing and house martin. Associated with the woodlands are notable species such as lesser spotted woodpecker, tawny owl and bullfinch. Also notable are the spotted flycatcher, which relies on good numbers of insects and wooded habitats and grey wagtail, which nests along running water. The network, in particular Rode Pool, is also of value to notable water birds species. The assemblage of bat species that utilises the network of rivers, hedgerows and woodlands within Rode Pool is known to include common pipistrelle, soprano pipistrelle and natterer's bat. The neighbourhood planning area supports otter and possibly supports water vole, a species of principal importance. Hedgehog, a species of principal importance is also present within the corridor network. All of these species depend on the semi-natural habitats highlighted in the report.

We recommend that the corridor network shown in map 10 is identified in the Neighbourhood Plan and protected from development so that the guidance relating to ecological networks set out in the NPPF (paragraphs 170d, 171, 174a, 174b, and footnote 57) may be implemented at a local level. The wildlife corridor network includes a buffer zone of up to 15 metres in places to protect the notable habitats shown in map 9. If new areas of high distinctiveness habitat are subsequently identified these should also be protected by a 15 metre non-developable buffer zone.

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

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

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

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

1. Improve the quality of the ‘wildlife corridor network’ and assess against Local Wildlife Site selection criteria

The area highlighted as a ‘wildlife corridor network’ in Map 10 incorporates Odd Rode’s Local Wildlife Sites and those adjacent to the parish. It is however highly likely that other land would also meet the criteria for Local Wildlife Site selection. These areas (some of which are identified as potential Local Wildlife Sites in map 6) should be designated if the selection criteria are met⁹, as LWS designation is likely to provide a greater level of protection within the planning system.

The wildlife corridor network should be in ‘favourable condition’¹⁰ to provide breeding, foraging and commuting habitat for the native species that live there and native species, which may subsequently colonise. Ideally these areas should be surveyed by a qualified ecologist to identify management priorities.

Management work may include:

- Control of Himalayan balsam. It is extremely important that this species is prevented from further colonisation of the woodlands and wetlands within Odd Rode. There are extensive areas of this non-native species within the neighbourhood planning area’s Local Wildlife Sites and it is highly likely to be present elsewhere in the parish, particularly downstream of the Local Wildlife Sites where it has already been recorded since watercourses carry the seed and allow it to establish within new areas.
This species is highly invasive out-competing native flora and causing soil erosion due to the lack of binding vegetation in winter (particularly on river banks). Himalayan balsam is listed on Schedule 9 of the Wildlife and Countryside Act 1981 which means it is an offence to plant or otherwise cause to grow in the wild. CWT can provide further advice on the control of this and other non-native species.
- Treatment and/or removal of other non-native plant species within Odd Rode including the Schedule 9 invasive species Japanese knotweed, montbretia and gunnera is strongly recommended. Other schedule 9 and invasive species are likely to be present in the parish

⁹ Local Wildlife Site criteria for the Cheshire region 2012

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

¹⁰ The definition of ‘favourable condition’ for various habitats is provided in the Farm Environment Plan (FEP) Manual (Natural England 2010). The definition of ‘positive management’ for Local Wildlife Sites is provided in Appendix 3.

and where they are found should also be controlled. Residents should be discouraged from planting invasive species such as montbretia, yellow archangel and cotoneaster in their gardens.

- It is likely that Spanish bluebells are present within the neighbourhood planning area. Given that the woodlands support extensive populations of the locally scarce native bluebell this is of concern. Non-native bluebells may be spreading and hybridising with the native bluebell. Householders should be made aware of the problems and not plant these species within their gardens. Non-native bluebells should be eradicated, particularly where they are found in close proximity to English bluebells.
- Where ponds have become overgrown and choked with vegetation this should be removed to allow light to penetrate, to provide areas of open water and allow a more diverse marginal flora to develop (tree/scrub cover should ideally be 10 - 15%). These measures will also benefit amphibians and invertebrates. Prior to any tree removal it should be ensured that there are no crevices that support bat populations. Tree felling should only occur outside the bird nesting season March-August (inclusive). 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.
- Watercourses in intensively farmed land should be buffered by semi-natural areas to provide riparian habitat and help prevent pollution runoff (1 metre from the top of the bank of a watercourse is the minimum requirement under cross compliance regulations, however 4-6 metres is recommended). This should improve water quality, which will be of benefit to otter as well as water vole, aquatic invertebrates and fish.
- Hedgerows that form part of the wildlife corridor should be restored using locally native species such as hawthorn, blackthorn, hazel and holly (plant 60-90cm high 'whips' which have a good rate of survival and use tree guards to protect from rabbits and stock fence where necessary). New sections of hedgerow should ideally incorporate a tree every 30m (on average) which are demarked so as not to be inadvertently flailed.
- Cutting or grazing of all semi-natural grassland should be carried out to retain the wildlife value. This will prevent more competitive species from taking hold and the grasslands from eventually scrubbing over. Where cutting is used as a method of management it should be carried out after flowering plants have set seed. Where farmland birds such as skylark are breeding cutting outside of the bird breeding season (March to August inclusive) will avoid destruction of nests. Under the Wildlife and Countryside Act 1981 it is an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Conversion of semi-natural grassland to arable land should be avoided.
- Areas of woodland on peat soils should be managed in the long term either as wet woodland habitats or where the woodland is coniferous plantation restored back to

mossland/heathland. Mossland can be recreated through felling and management of the water levels where woodland grows on peat soils. Professional advice would need to be sought about how to undertake this work and as to whether mossland or heathland creation is more appropriate.

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

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

Ways to enhance connections or to buffer sites could include the restoration of hedgerows, creation of low maintenance field margins and sowing locally sourced (local genetic stock) wildflower meadows¹¹.

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

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

Joining up the small woodland fragments around Rode Hall or Boden Hall would result in better connectivity.

3. Protect existing hedgerow network

Hedgerows which meet certain criteria are protected by *The Hedgerow Regulations, 1997*. Under the regulations it is against the law to remove or destroy 'Important' hedgerows without permission from the Local Planning Authority. Removal of a hedgerow in contravention of *The Hedgerow*

¹¹ Cheshire Wildlife Trust can provide advice and seeds for locally sourced wildflower meadow creation.

Regulations is a criminal offence. The criteria used to assess hedgerows relate to its value from an archaeological, historical, landscape or wildlife perspective. The regulations exclude hedgerows that have been in existence for less than 30 years, garden hedges and some hedgerows which are less than 20 metres in length. The aim of the regulations is to protect 'Important' hedgerows in the countryside by controlling their removal through a system of notification.

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

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

Hedgerows in intensively farmed land should be buffered by semi-natural areas to provide wildlife habitat (2 metres from the centre of the hedge is the minimum requirement under cross compliance regulations, however 4-6 m is recommended).

Reconnecting hedgerows where they have been removed in the past would have great connectivity benefit. Hedgerow and boundary grants are available from Natural England, as well as grants within the current stewardship schemes for hedgerow creation and improvement.

4. Species Specific Recommendations

The quality of watercourses, ponds, lakes and/or their adjacent habitats are particularly important for water vole and otter populations. It appears that one of the best ways to preserve otter is to ensure that watercourses are unpolluted through catchment sensitive farming and to allow rivers to flow naturally.

If action is not taken it seems likely that water vole will become extinct at the county level. It is recommended that surveys are carried out to establish whether water voles are still present within the parish. If the species is found to be present every effort should be taken to maintain and also to increase water vole populations within Odd Rode. Where water vole populations are present development should be prohibited, the possibility of predation by domestic pets reduced and the land managed appropriately. Livestock can reduce the amount of marginal vegetation available to water voles, therefore where livestock are present banks should be fenced. Cutting of non-woody vegetation should be undertaken in the autumn on a 3-5 year rotation. More information can be

found in publications such as the Water Vole Conservation Handbook or Gloucestershire Wildlife Trust's 'Managing land for water voles'.

It is not clear as to whether non-native mink is present within Odd Rode. There are records for the species in Kidsgrove from the 1990s and earlier. This species preys upon water vole and other native species. Should mink be found to be present it should be controlled. Professional advice should always be sought when controlling mink¹².

With hedgehogs travelling long distances every night, their movement can be impeded in suburban landscapes by impenetrable garden fences. Encouraging householders throughout the neighbourhood planning area, but particularly around Scholar Green, Rode Heath and Thurlwood where there are records for this species, to make holes in the bottom of their fences will increase permeability of the landscape and the amount of land available to this species. This should be complemented by use of no or non-toxic slug pellets and the filling of gappy hedgerows mentioned above.

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

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

6. Phase 1 Habitat Mapping

It is strongly recommended that the parish of Odd Rode is phase 1 habitat mapped. This will provide a high level of habitat detail and could be used to verify the results of the habitat distinctiveness mapping (map 9). Phase 1 mapping may identify further areas of medium or high distinctiveness (Priority) habitat not identified by this assessment. Areas identified as having medium value habitat in this report should be targeted for survey as a priority. Phase 1 mapping should also be used to determine the exact position of the wildlife corridor network.

¹² Cheshire Wildlife Trust can provide advice on mink control.

Appendices

Appendix 1

Habitats, LCM2007 classes¹³ and Broad Habitat subclasses for LCM2007 CEH

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

¹³ No habitat scores higher than 'medium distinctiveness' due to the reliability of the data

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

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

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

*Appendix 2***Meres & Mosses LPS / NIA:****Methodology for Mapping Extant Meres & Mosses**

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

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

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

Beyond the designated sites, use was made of a detailed peat soils map for the area. From this dataset a distinction was made between likely moss peats and extensive areas of likely fen peat associated with some of the river valleys. The moss peat sites were then reviewed using aerial photography and divided into two categories: destroyed and de-graded. The former are sites under arable, intensive grassland or other land use, where any relict habitat, and potentially even the peat itself, have been lost – these were excluded. The de-graded sites are those supporting some form of relict habitat (e.g. extensive grassland, rush pasture or woodland) offering potential for restoration – these were taken forward as FEUs.

Finally the 1:10,000 scale OS base map was scanned for names alluding to meres and mosses. All waterbodies specifically called "Mere" were included in the mapping, but sites with names suggestive of meres (e.g. Black Lake) were ignored. A few sites were identified called "Moss" – however, because these were not shown on the peat soils map, these were excluded.

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

Appendix 3

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

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