

Protecting and Enhancing Woodford's Natural Environment



Cheshire
Wildlife Trust

January 2018

Introduction

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

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

The National Planning Policy Framework (NPPF), published in 2012 drew on these principles and protecting and enhancing biodiversity and creating ecological networks are central to this framework. Indeed 'biodiversity' is mentioned 15 times in the NPPF with protection and improvement of the natural environment as core objectives of the planning system. Planning policies specifically designed to address the overall loss of biodiversity are known as 'no net loss policies'. Most Local Plans now have 'no net loss' policies or similarly worded policies in place.

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 Woodford, 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 Woodford 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.

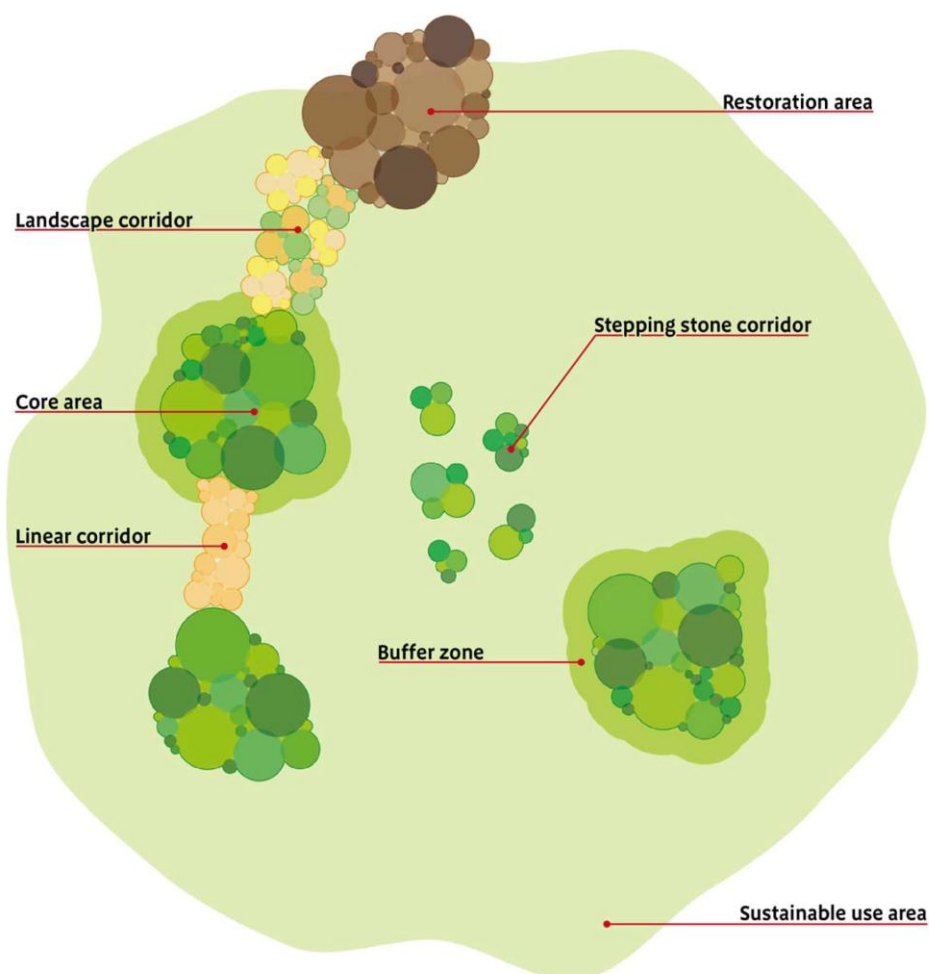


Figure 1. The components of ecological networks (Making Space for Nature report)

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.

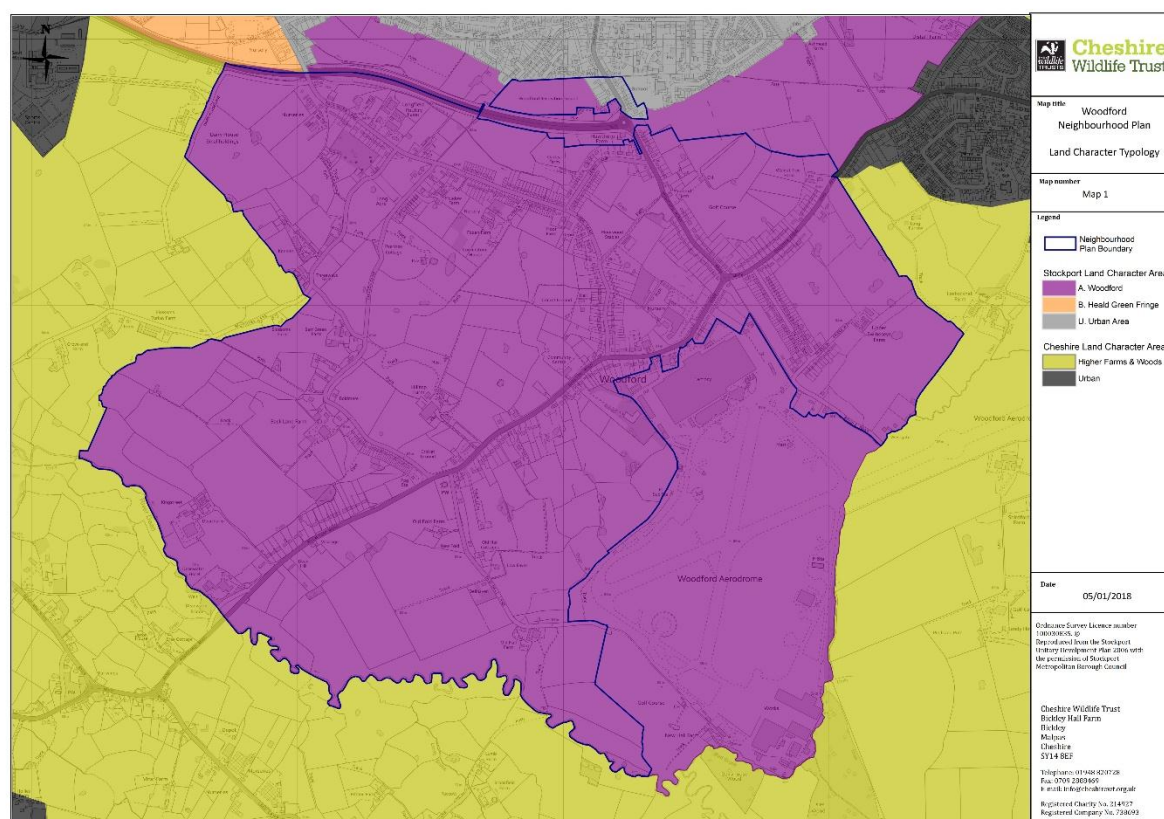
The National Planning and Policy Framework published in 2012 also includes the establishment and conservation of a coherent ecological network as a core principle including:

- 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 Woodford lies within National Character Area 61 – Shropshire, Cheshire and Staffordshire Plain; a pastoral area of rolling plain which is particularly important for dairy farming. Immediately to the north lies National Character area 55 – Manchester conurbation. Different aspects such as geology, landform, soils, vegetation and landuse have been used to identify character areas. The assessment is intended to be used as a basis for planning and the creation of future landscape strategies as well as raising public awareness of landscape character and creating a sense of place.

Map 1: Landscape Character Typology



The Landscape Character Assessment (Map 1) identifies one recognisable landscape character area (LCA) namely the Woodford LCA. The parish is bounded on three sides by the Cheshire East Higher Farms and Woods Landscape Character Type.

Woodford LCA

Located at the extreme south of the Stockport borough the Woodford LCA is a relatively flat area of mainly pastoral land that gently slopes down to the river Dean on its southern boundary. The fields are medium sized and regularly shaped predominantly dating from the post-medieval period. There are a significant number of remaining field ponds and the fields are bounded by hedgerows typically with hedgerow trees. The settlement of Woodford has developed along the major roads that cross the parish rather than as a compact nucleated village.

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.

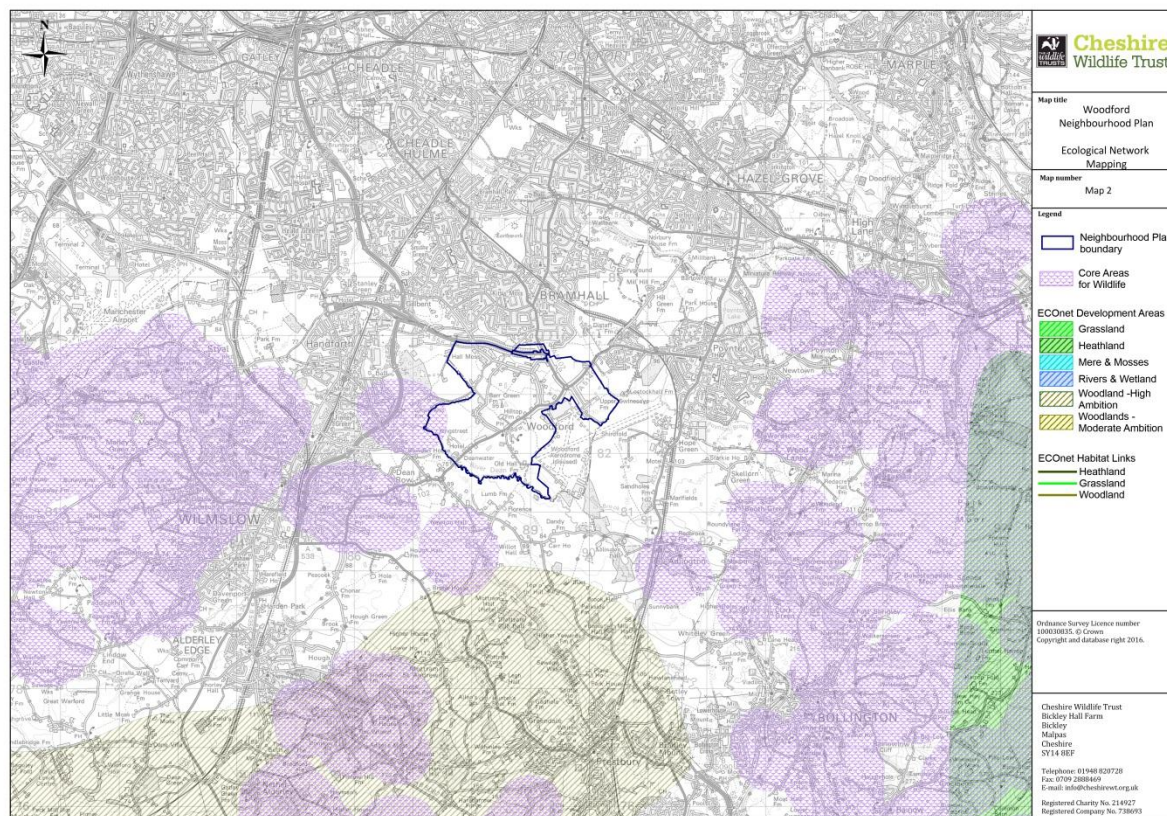
ECOnet – Integrated vision of the Cheshire County Ecological Network

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

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

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

Map 2: Ecological Network Mapping (ECONet)



To the west of Woodford is a core area for wildlife which encompasses the Hall Wood Handforth and River Dean Banks Local Wildlife Site. Core areas are identified by ECONet as fundamental components of the county wide ecological network (shaded purple).

Further core areas for wildlife have been identified to the south west of Woodford which are associated with the Bollin Valley.

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	Habitat of Principal Importance as defined in section 41 of the NERC Act. Nature conservation sites (designated statutory and non-statutory). Sites of crucial importance for priority species.	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)

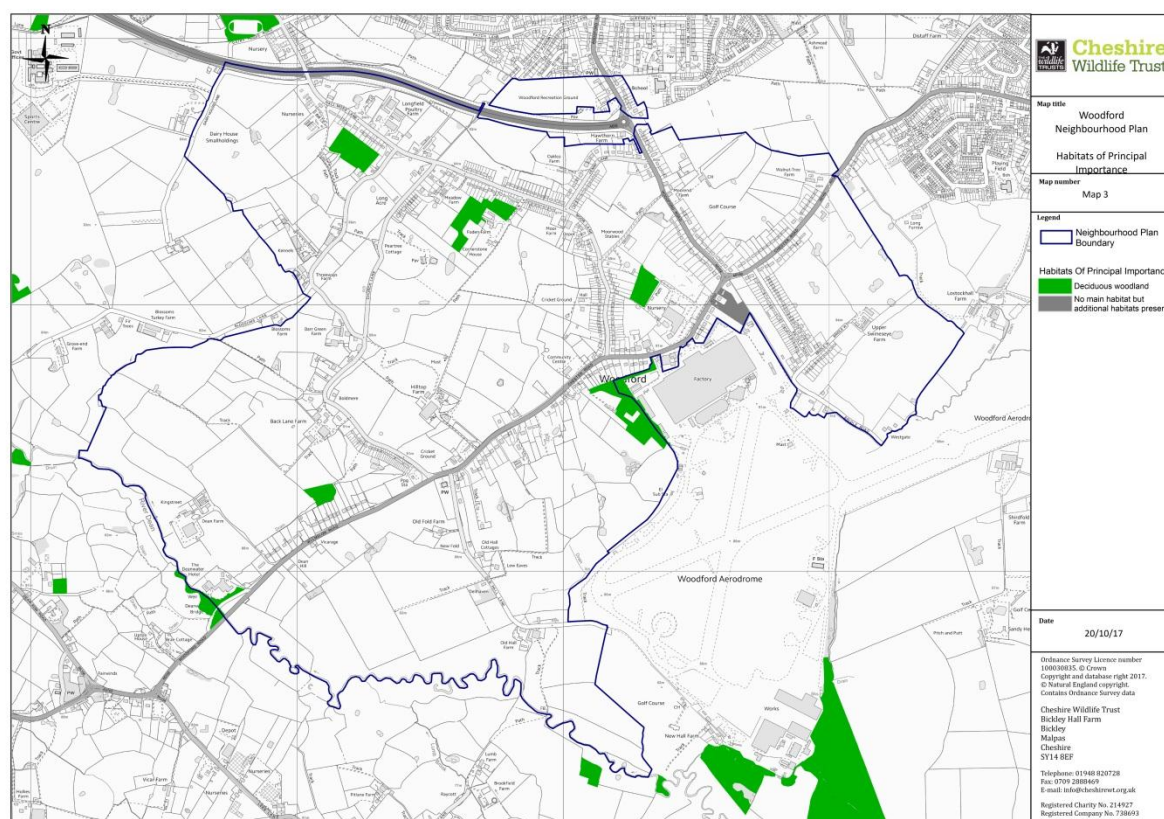
- Several published data sets were used to produce the habitat distinctiveness maps:
 - Priority habitat Natural England 2016 – High/medium confidence coded as high distinctiveness, and low confidence coded as medium distinctiveness unless other data is available.
 - Landcover data, Centre for Ecology 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) and Traditional Orchards (Natural England 2009) – coded as high distinctiveness unless other data is available.
 - 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.)
- The area reports and habitat mapping undertaken by the Woodford Neighbourhood Forum Management Committee were used to inform the habitat distinctiveness map. The

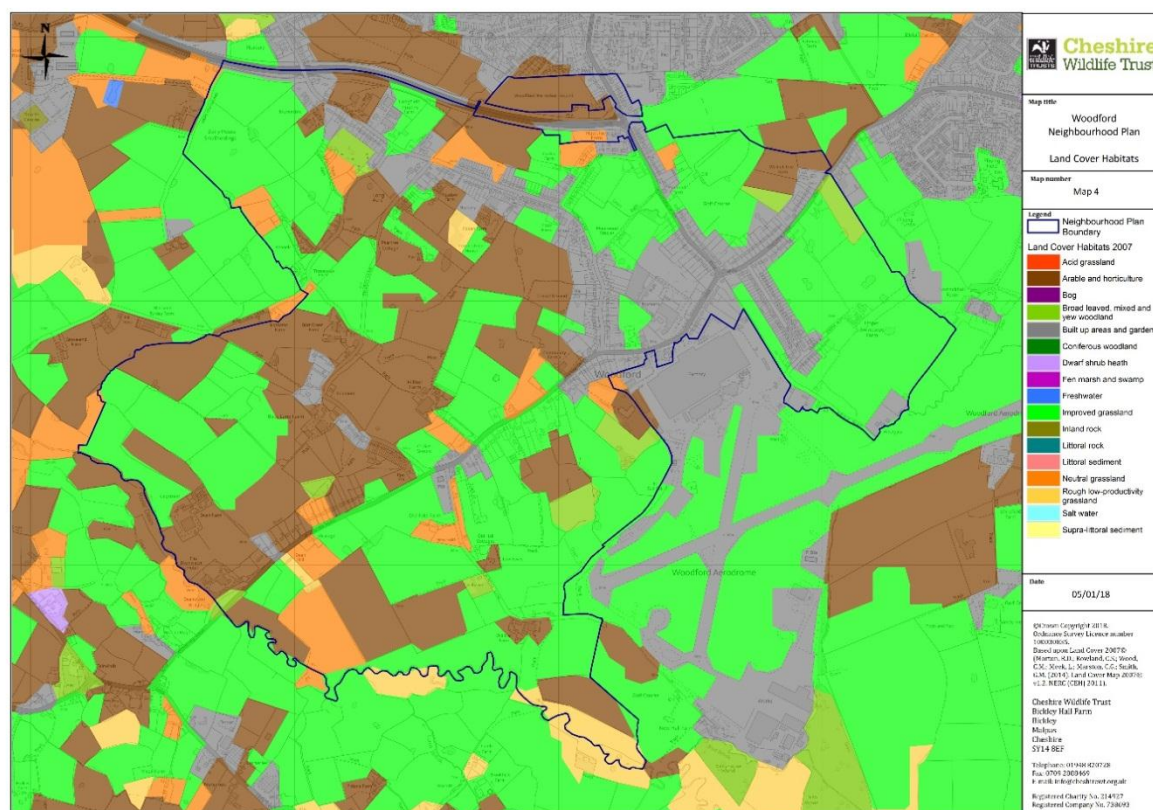
Management Committee also provided detailed information on locally recorded species which was incorporated into this report.

3. Aerial photography (Microsoft Bing™ Imagery) was used to validate the results by eye.
4. The Woodford Neighbourhood Plan area Land Character Assessment and EConet categories were mapped and the results were used to inform the conclusions.
5. Habitat and species data from sources including recent planning applications, Manchester Birding Forum and the National Biodiversity Network Gateway were researched and incorporated where appropriate.

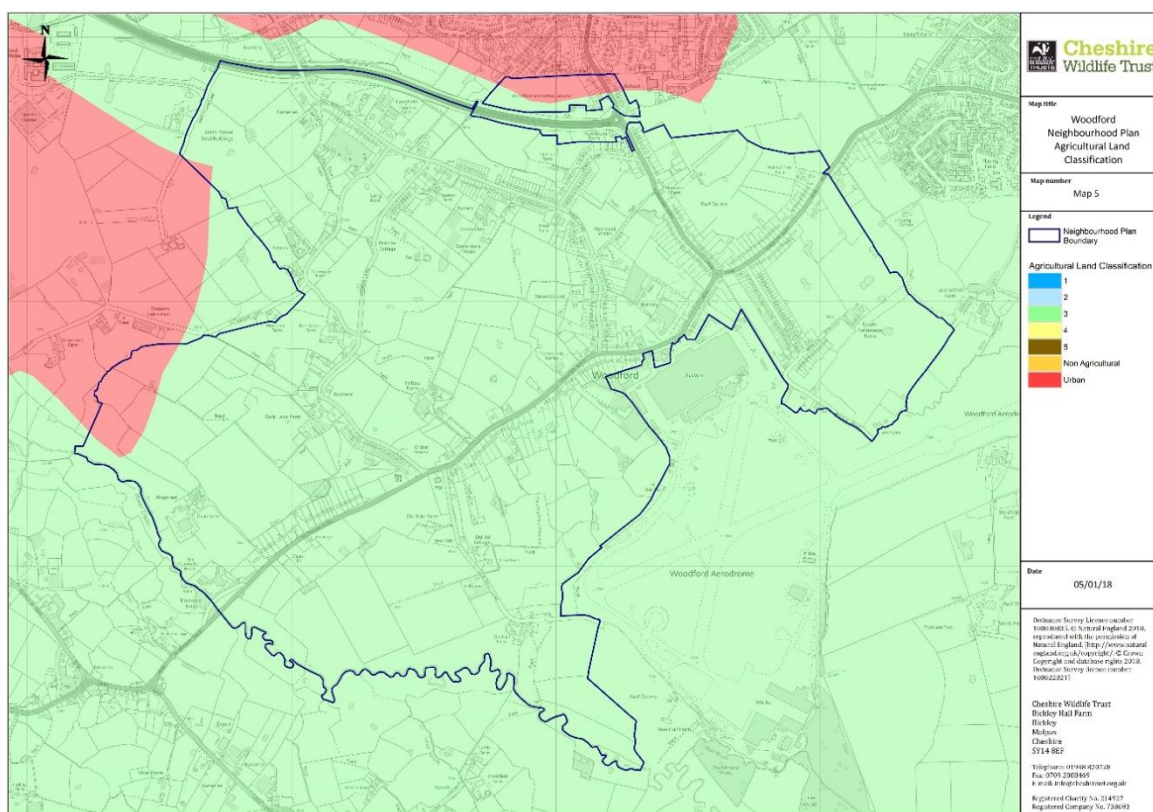
Mapping

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

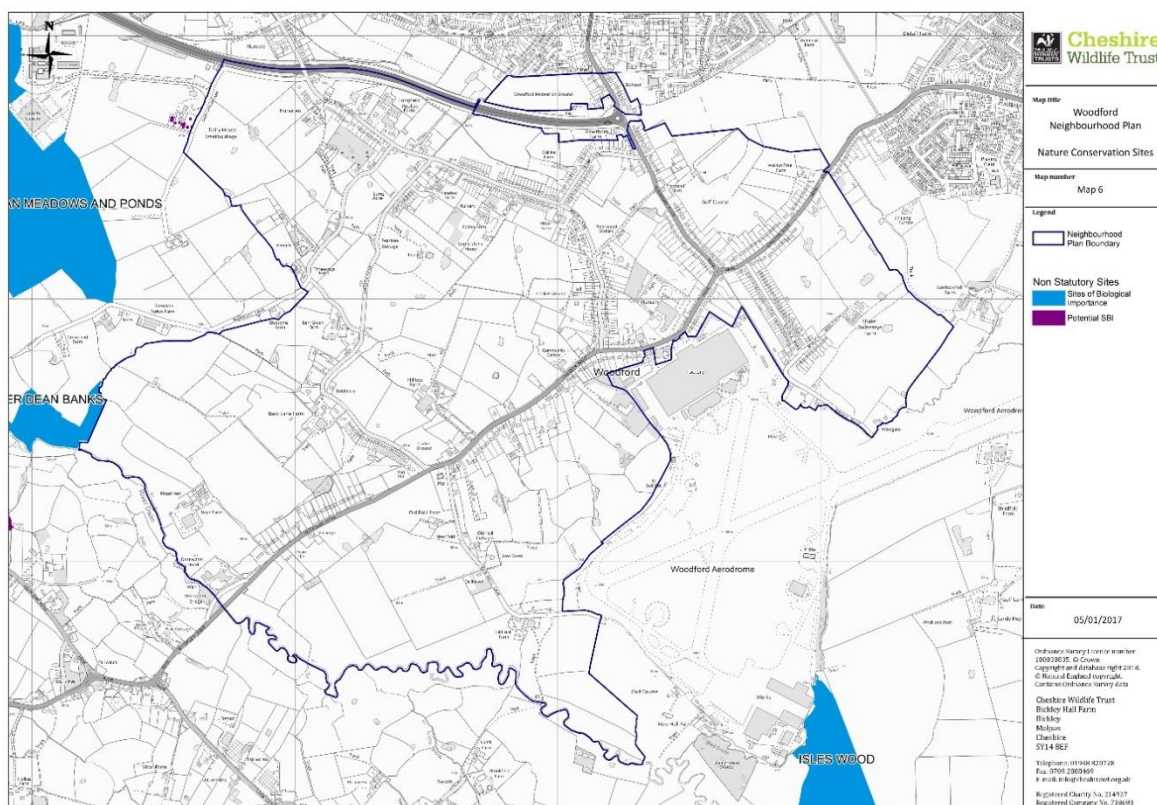




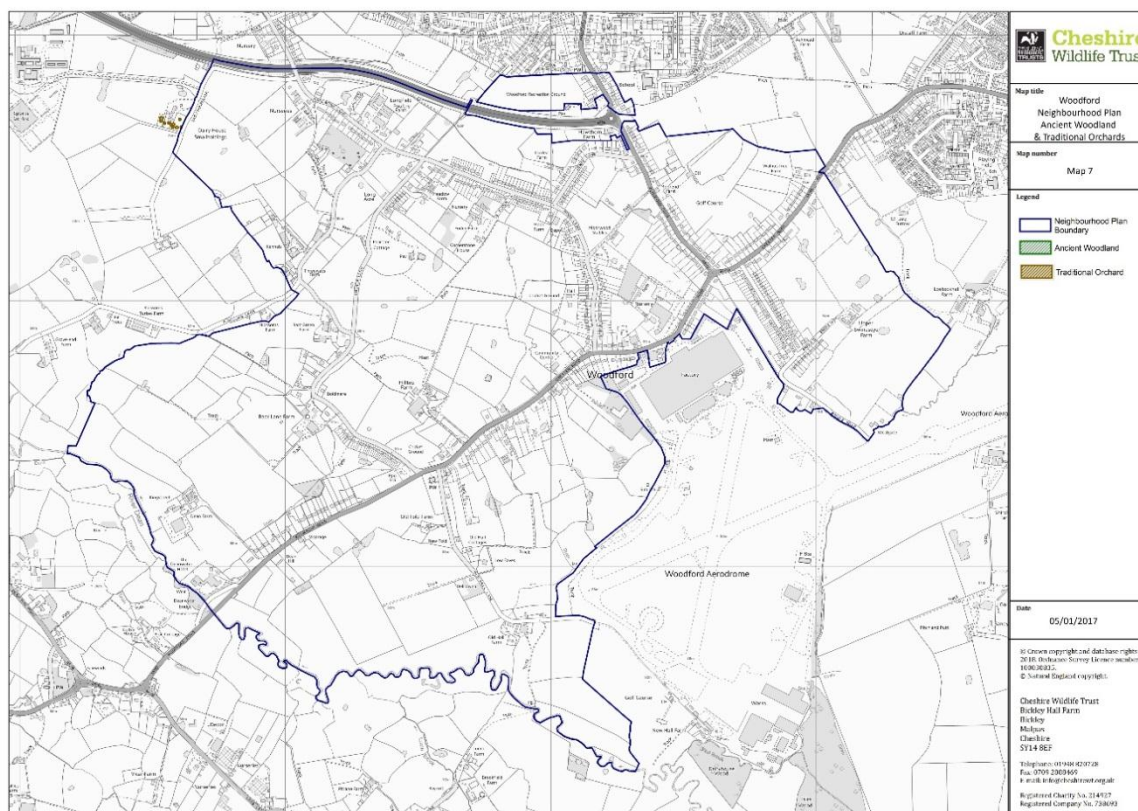
Map 5: Agricultural Land Grading – Natural England 2013



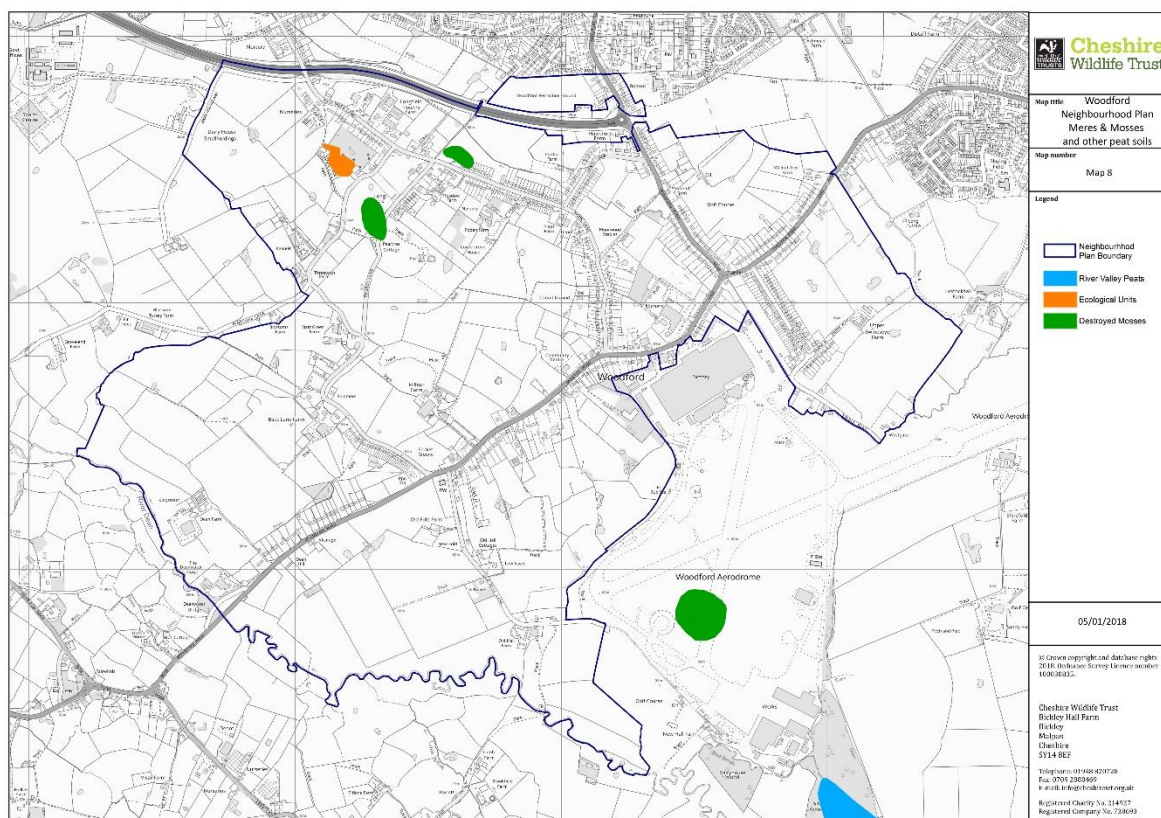
Map 6: Nature Conservation Sites, including designated Sites of Special Scientific Interest, Local Nature Reserves, European designated sites (SAC, SPA), Ramsar sites. Non-statutory sites including Local Wildlife Sites, Potential Local Wildlife Sites and Nature Improvement Areas



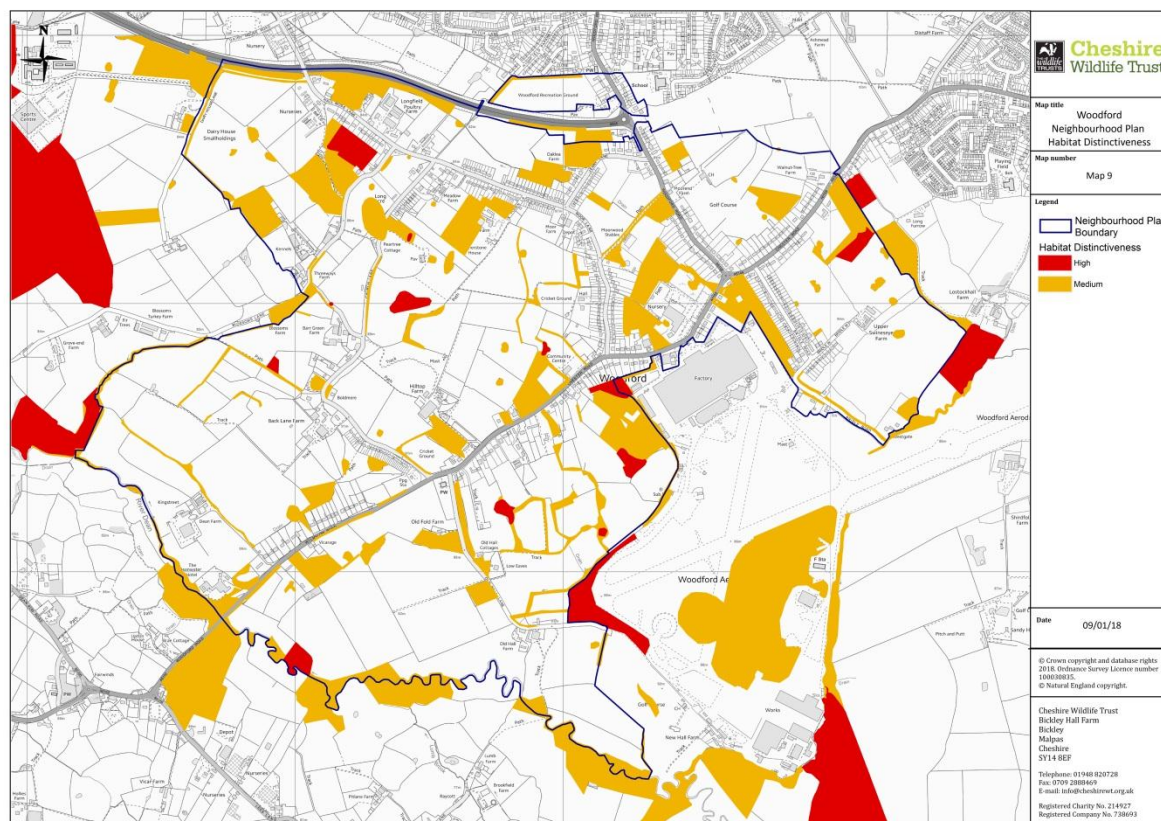
Map 7: Ancient woodland (2015) and Traditional Orchards (2009) – Natural England

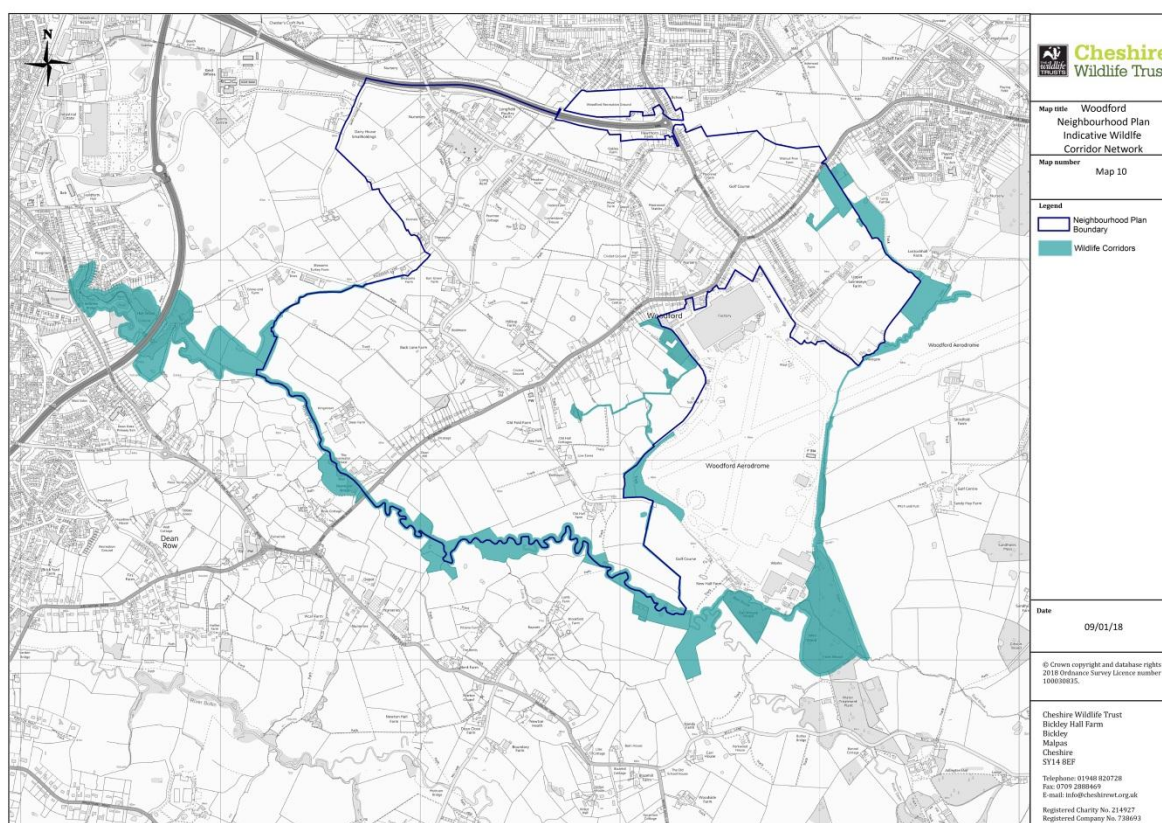


Map 8: Meres and Mosses and other peat soils, Meres and Mosses Landscape Partnership Scheme 2016



Map 9: Habitat Distinctiveness



Map 10: Indicative Wildlife Corridor Network

Results and discussion

The habitat distinctiveness map (map 9) combines all the available data into one map highlighting areas of high and medium distinctiveness as described in the methodology section above. The mapping has identified several parcels of land as ‘high distinctiveness’ habitat of Principal Importance¹ (priority habitat).

A large number of land parcels have been flagged up as areas of ‘medium distinctiveness’ habitat (displayed as orange on map 9). Medium distinctiveness habitat represents areas of semi-natural habitat which are usually wildlife rich but can also act as ecological stepping stones and wildlife 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’ habitat of Principal Importance (which would be displayed as red in map 9). Conversely there may be areas which have been overvalued, particularly if recent management has led to the deterioration of the habitat; in which case these areas should be removed from the habitat distinctiveness map.

¹ Habitats of Principal Importance are those listed in Section 41 of the NERC Act 2006

Woodland

Most of the areas of priority habitat are small pockets of lowland deciduous woodland with oak, ash and birch, often around ponds or clusters of ponds. There is an area of relatively young woodland to the west of the aerodrome and pockets of woodland along the river Dean and its tributary (south of Blossoms lane). A small area of wet woodland with species such as willow and oak lies in the north east corner of the parish under the route of the proposed relief road. A larger block of woodland south of Hall Moss Lane has willow, oak, ash, hawthorn and birch. There is a small conifer component in this woodland which could indicate it has been partly or wholly planted.

There are no areas of ancient woodland in Woodford and the majority of the wooded areas that appear on the Tithe map of 1836-51 have now disappeared; however there are a large number of hedgerow trees which may date from this period or earlier. One particular example is the ancient oak² on a verge at Barr Green. With a girth at chest height of over 510 cm this tree is not only important for its cultural and landscape value, but due to its great age it may also support a variety of invertebrates, lichens, bryophytes and fungi.

There are a small number of traditional orchards in the wider Woodford area and possibly additional ones within the neighbourhood planning area which have not been mapped. Traditional orchards are considered to be habitats of Principal Importance as they may contain highly localised cultivars of fruit trees and they also provide numerous microhabitats which can be hotspots for biodiversity. Windfall fruit is an important food source for priority BoCC³ red listed wintering birds such as fieldfare and redwing (both present in the Woodford area). 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.

Little owl, which is a woodland edge species, has been recorded close to the woodlands along the river Dean in the west of the parish. This woodland may also support roosting bats which will forage for insect prey along the woodland edges as well as along hedgerows and watercourses. Uncommon and declining brown long-eared bats, which usually roost in old buildings, have been recorded in the vicinity of aerodrome. Other bat species recorded in the area include soprano and common pipistrelle and noctules. All bats are European Protected Species (EPS) and many are also UK species of Principal Importance (S41 species).

Woodlands along watercourses provide perfect conditions for the spread of the invasive non-native Himalayan balsam (*Impatiens glandulifera*) which is present in abundance on the banks of the River Dean. This species is probably the biggest threat to the integrity of local woodlands and wetlands as its vigorous growth out-competes native flora. This can have a devastating impact on the native flora and a knock on effect on groups of species such as birds, invertebrates and mammals. Himalayan balsam, which is an annual plant that dies back in the winter, can also cause severe soil erosion issues when the native flora that binds the soil disappears. This is particularly damaging to the banks of waterbodies causing soil to wash into the watercourses which affects water quality.

² Identified by the Woodford Neighbourhood Forum Management Committee

³ British Trust for Ornithology Birds of Conservation Concern 2017

Ponds, watercourses and former mosslands

The northern section of the parish of Woodford is essentially part of a much wider ancient wetland landscape which still supports one of the highest densities of field ponds in the region as well as a number of relict mosslands (as indicated by the Meres and Mosses peatland map 8). Although many of the ponds and mosslands such as Hall Moss, have been drained or have succeeded to woodland there are still important wetland species in this area reflecting its past history. Possibly most notable are the birds associated with the seasonal flood south of Church Lane with species such as red listed herring gull, redwing and fieldfare and amber listed oystercatcher, shelduck, lesser black backed gulls, greylag geese and teal. Also notable are the dragonflies and damselflies associated with the more open ponds including the locally recorded Emperor dragonfly *Anax imperator*. The highest density of ponds is present in the Blossoms lane area of the parish, although the area to the west of the aerodrome also has a good number of ponds.

It is highly likely that a proportion of these ponds support great crested newts, as there are records from the north eastern area of the parish. Great crested newts are a species of Principal Importance (S41 listed species) and also European Protected Species (EPS). Ponds have been highlighted as habitat of medium distinctiveness in map 9 and should always be retained where possible when land is developed. Where ponds are stocked with high numbers of fish the wildlife value is decreased. This is because introduced fish (such as bottom feeding non-native carp) can deplete the pond of invertebrate larvae and amphibian eggs/larvae as well as water plants. Despite this, even low value ponds can help increase landscape permeability for species such as birds and terrestrial invertebrates.

The river Dean runs in a north westerly direction along the parish boundary. It is an actively meandering river with sand and gravel beds and at least two tributaries including Red Brook. The watercourses support valuable riparian woodland and willow and alder scrub; there are also notable areas of native bluebells a Local Biodiversity Action Plan species. The watercourses and their banks provide habitat for birds including heron, red listed grey wagtail and amber listed kingfisher.

Species-rich and semi-natural grasslands

The Woodford area supports very little species-rich grassland which, although once widespread, is now the fastest disappearing habitat in the UK. The most valuable remaining area sits just outside the neighbourhood planning boundary on the aerodrome and supports species including black knapweed, meadow vetchling, birdsfoot trefoil, selfheal and meadowsweet. There are other small pockets, for example on some of the road verges. The larger areas of species-rich grassland will support populations of declining pollinators including moths, specialist grassland butterflies such as small copper or common blue and solitary bees and hoverflies. Where species-rich grasslands are located close to water-bodies dragonflies and damselflies are likely to be present as these feed on other invertebrates but require water-bodies to breed. An example of an important dragonfly site is nearby Handforth Dean Ponds and Meadow Local Wildlife Site which has a number of ponds set within extensive areas of wildflower grassland.

Some of the 'medium distinctiveness' habitat identified in map 9 is likely to be semi-natural grassland, particularly on less productive waterlogged areas and margins of watercourses and water bodies. Although not necessarily floristically rich, semi-natural grasslands are important for wildlife as they can support populations of invertebrates and a variety of mammals. Several locally⁴ recorded BoCC red listed farmland birds such as curlew, skylark and lapwing will feed on insects that live in semi-natural grasslands. In order to survive lapwing chicks require insect-rich foraging sites within walking distance from the nest sites. Locally recorded over-wintering birds such as BoCC amber listed teal and red listed fieldfare will also feed on areas of semi-natural grassland.

Curlews, which bred on the aerodrome and possibly in the adjacent fields within the Woodford parish, are considered globally 'near threatened'⁵. A 20 year period (1988-2008) saw a drop of 55%⁶ of breeding curlew in the Cheshire region with the Woodford population becoming one of the few remaining lowland breeding populations in the Cheshire/South Manchester area. Recent development at the aerodrome is likely to be associated with the drop in curlew numbers in Woodford (affecting 1-4 territories).

Particularly notable in the Woodford area is the population of European Brown hares which was considered of 'county importance' in 2013 (19 peak count) and inhabited the extensive areas of grassland at the aerodrome and adjacent land. It is likely that recent development of land at the aerodrome has impacted the ability of this population to reproduce successfully as a marked decrease in numbers was reported in 2017.

Hedgerows and scattered trees

Scattered farmland/parkland trees such as the ancient Barr Green oak, together with the hedgerow network are fundamental to landscape permeability and provide habitat for numerous species including declining notable farmland bird populations. Locally recorded red and amber listed birds which are associated with the hedgerow network include house sparrow, mistle thrush, song thrush and bullfinch. Many invertebrates and small mammals also inhabit hedgerows, particularly those with adjacent wide field margins or those which lie adjacent to semi-natural grassland. Small mammal populations are prey for birds such as barn owl and amber listed kestrel which consequently do best in areas where the traditional farmland landscape is intact; both species have been recorded in the local area in recent years.

There are numerous high-value species-rich⁷ hedgerows in Woodford parish including those in the vicinity of the community centre and hedgerows in the Blossoms Lane area; but the most robust hedgerow network lies to the west of the old aerodrome and connects several ponds and small pockets of woodland. These high value hedgerows often incorporate mature trees such as oak, sycamore or ash. In contrast the hedgerow network in the south west corner of the parish is

⁴ Recorded in relatively high numbers in the Hall Farm lane area and on the adjacent former aerodrome

⁵ IUCN red list status

⁶ CAWOS 2008. Birds in Cheshire and Wirral: a breeding and wintering Atlas. Liverpool University Press.

⁷ High value hedgerows support at least 4 woody species (excluding honeysuckle and bramble) per 30m section. Such hedges are likely to be ancient and may date back to before the enclosures act and are usually associated with historic features such as green lanes, banks, ditches, walls or relic woodland boundaries.

relatively poor. This is due to the past enlargement of fields through hedgerow removal in order to help improve agricultural productivity.

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 mammals, invertebrates, birds and amphibians to move between them to feed, disperse, migrate or reproduce. In conjunction with the results of the EConet analysis (2003), this study has identified a wildlife corridor network (shown in map 10) with ecological connectivity within and beyond the Woodford Neighbourhood Planning area.

The corridor closely follows the riparian habitat along the River Dean and two of its tributaries including a section of Red Brook. It also runs along a hedgerow bordering the golf course at New Hall Farm and links up species-rich grassland on the aerodrome with hedgerows, woodland and ponds in the Old Hall Lane area, finally ending in the woodland next to the aerodrome, just south of Chester Road. Along its length it incorporates two Local Wildlife Sites, namely Isles Wood and Hall Wood Handforth/River Dean Banks. In the far east it eventually links up with Wigwam Wood Local Wildlife Site and Poynton Brook which are both components of the Poynton wildlife corridor.

Ecological connectivity in the eastern section is likely to change following development of the aerodrome site and the Poynton Relief Road and the corridor will need to be re-positioned. However the corridor currently has good ecological connectivity along most of its length apart from where a stream is culverted under the runway on the aerodrome and where the corridor passes through an area of arable farmland in the south of the parish. Here connectivity is poor and could be improved by the establishment of rough grassland buffer strips on the river banks to reduce chemical runoff into the Dean and to help marginal vegetation re-establish.

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

Map 10 incorporates an indicative boundary for the wildlife corridor network which will need refining once developments in the area are completed or if more botanical work is undertaken. The corridor should be wide enough to protect the valuable habitats identified in Map 9 and for this reason a 15 metre buffer zone has been incorporated around high distinctiveness habitats that sit within the corridor. The buffer is necessary to help protect vulnerable habitat from factors such as light pollution, ground water pollution, predation by domestic pets and invasive garden species if adjacent land is developed.

A 15m buffer zone is also appropriate for any land lying outside the corridor network that has been mapped as high distinctiveness or, following an ecological appraisal, is subsequently found to be high distinctiveness habitat of Principal Importance (priority habitat)⁸. Potential development proposals adjacent to a high distinctiveness habitat or the wildlife corridor should incorporate

⁸ This may currently be mapped as medium distinctiveness due to lack of information

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 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 desirable⁹. 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 and local landowners.

In addition to the 'wildlife corridor network' this study has identified further areas of medium 'habitat distinctiveness' (map 9) which, although sit outside the wildlife corridor network, nevertheless may provide important wildlife habitats acting as ecological stepping stones. These areas comprise hedgerows, ponds, semi-natural grassland and semi-natural woodlands.

The network of field boundary hedgerows provides habitat connectivity between wildlife rich areas which would otherwise be separated by extensive areas of land predominantly of low habitat distinctiveness with restricted potential for wildlife to disperse. Not all the hedgerows are identified as key components of the Woodford 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.

Meadows supporting species-rich neutral or marshy semi-natural grassland are the fastest disappearing habitats in the UK. These grasslands are particularly important for pollinating insects and insectivorous birds and mammals. One possible area of marshy grassland lies south of the woodland near Hall Moss Lane and is identified on the Meres and Mosses Peatland map 8 as a 'Functional Ecological Unit'. This land parcel should be fully surveyed as a priority. If it is found to support species-rich grassland it should be re-classified as 'high distinctiveness' (Priority/principal importance) habitat and there is a presumption that it should not be built on (as stipulated in the Local Plan and the NPPF).

In order to achieve no 'net loss' in biodiversity, compensation may be required should any medium or high distinctiveness areas (including native hedgerows) 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.

⁹ Refer to Recommendations section

Conclusion

This study has highlighted that the important wildlife habitat in Woodford is associated with the riparian habitats along River Dean and its tributaries and the mosaic of grasslands, woodlands, hedgerows and wetlands found across the parish. By attributing habitat distinctiveness values to all land parcels in the neighbourhood plan area the study has provided important evidence that should be taken into consideration when planning decisions are made. However it is recommended that further detailed botanical survey work is undertaken at the appropriate time of year, in particular to verify that 'medium value' habitats have not been over or under-valued.

Most notably the study has highlighted a 'wildlife corridor network' which provides ecological connectivity between woodland, wetland, grassland and riparian habitats within and beyond the neighbourhood planning area. The wildlife corridor network supports a wide range of species including birds, mammals, amphibians and invertebrates that are in decline both locally and nationally. Some of the most notable are the red listed/globally 'near threatened' curlew and red listed ground nesting skylark and lapwing populations. The most notable mammals are the European brown hare and the brown long-eared bat. Also notable are the dragonflies and damselflies and other BoCC red listed birds including the grey wagtail, herring gull, fieldfare and redwing. All of these species depend on the semi-natural habitats highlighted in the report and the most threatened species tend to be associated with the habitats that are disappearing fastest such as the semi-natural grasslands.

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

Any proposals for the development of sites which lie adjacent to high distinctiveness habitat or a wildlife corridor should 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 Woodford 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 Woodford'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 areas highlighted as 'wildlife corridor network' in map 10 incorporates two Local Wildlife Sites, however it is possible that other land would meet the criteria for Local Wildlife Site selection. These areas should be designated if the selection criteria are met, as LWS status 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:

- Watercourses in intensively farmed land should be buffered by semi-natural areas to provide riparian habitat and help prevent pollution runoff. This will provide breeding and foraging areas for many species and will also improve water quality.
- Control of Himalayan balsam. It is extremely important that this species is prevented from further colonisation the woodlands and wetlands. There are extensive areas of non-native Himalayan balsam present along the river Dean. 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.
- Control of non-native/garden species in woodland and other habitats. Species such as non-native daffodils, snowberry, orange balsam, Spanish/hybrid bluebells, monbretia, cotoneaster and variegated yellow archangel and can all be highly invasive and damage the ecological balance of woodlands. The latter three are all listed on schedule 9 of the Wildlife and Countryside Act 1981.
- 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.

¹⁰ The definition of 'favourable condition' for Local Wildlife Sites is provided in Appendix 3

- Any species-rich and marshy grassland should be cut or grazed each year to maintain its wildlife value.
- Pond restoration. Where ponds have become overgrown and choked with vegetation this should be removed to allow light to penetrate and provide areas of open water (tree/scrub cover should ideally be 10 - 15%). Ideally no more than one third of the pond should be restored 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.

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.

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

3. Protect existing hedgerow network

Hedgerows which meet certain criteria are protected by *The Hedgerow Regulations, 1997*. Under the regulations it is against the law to remove or destroy 'Important' hedgerows without permission from the Local Planning Authority. Removal of a hedgerow in contravention of *The Hedgerow Regulations* is a criminal offence. The criteria used to assess hedgerows relate to its value from an archaeological, historical, landscape or wildlife perspective. The regulations exclude hedgerows that have been in existence for less than 30 years, garden hedges and some hedgerows which are less

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

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).

Appendices

Appendix 1

Habitats, LCM2007 classes¹² 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

¹² 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.