Protecting and Enhancing Sandbach's Natural Environment

Cheshire Wildlife Trust

March 2015

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 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.

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 in the neighbourhood. This report aims to identify the core, high ecological value (high distinctiveness) sites for nature conservation in Sandbach as well as sites deemed to be of medium value (semi-natural habitat). 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 Sandbach 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, under-pinned 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 increasing 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 response 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.

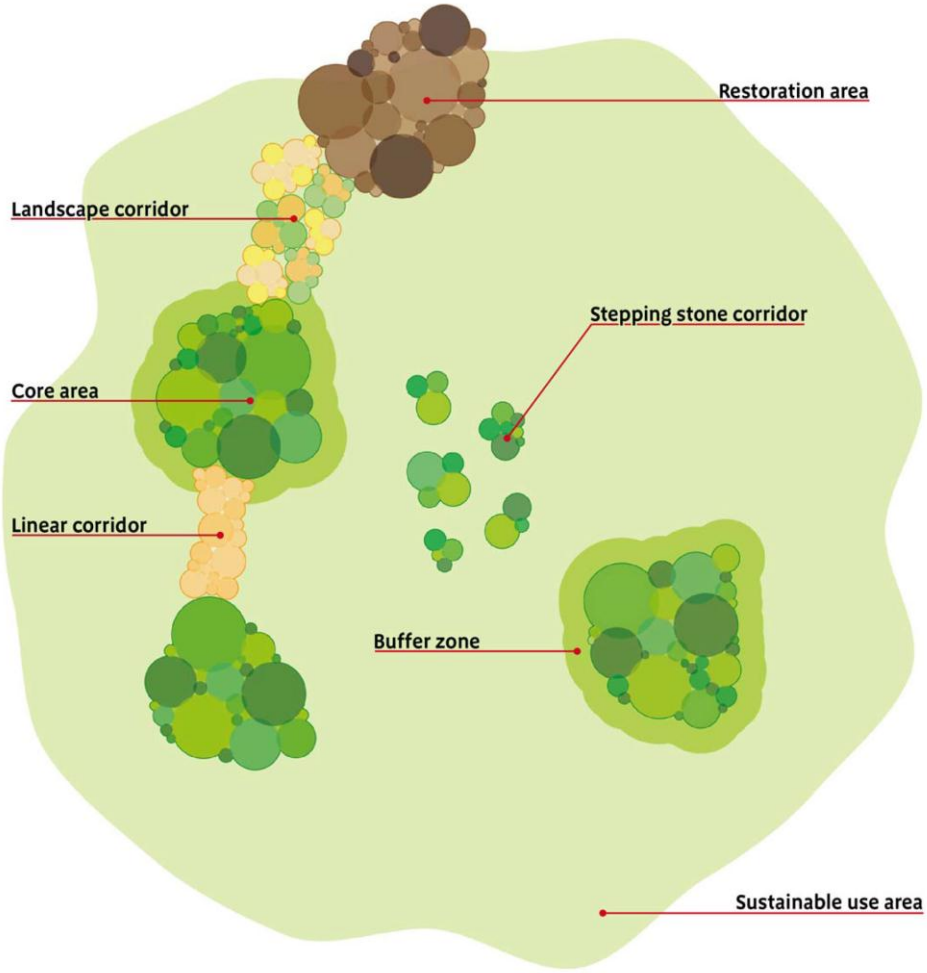


Figure 1. The components of ecological networks (Making Space for Nature report)

The principles of creating a coherent ecological network 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 Sandbach lies within National Character area 61 Shropshire Cheshire and Staffordshire Plain, a pastoral area of rolling plain which is particularly important for dairy farming. More locally the Cheshire Landscape Character Assessment of 2008 identifies recognisable patterns in the landscape and classifies the Cheshire Landscape into 20 broad Landscape Character Types (LCTs). Different aspects such as geology, landform, soils, vegetation and landuse have been used to identify character areas. The assessment is intended to be used as a basis for planning and the creation of future landscape strategies as well as raising public awareness of landscape character and creating a sense of place.

The Landscape Character Assessment identifies three recognisable character types (LCTs) within the Sandbach Neighbourhood planning area. These are further refined and subdivided into Landscape Character Areas (LCAs):

Type 7 - East Lowland Plain (sub type ELP5 Wimboldsley Character Area),
Type 10 - Lower Farms and Woods (sub type LFW2 Brereton Heath Character Area, sub type LFW7: Barthomley Character Area),
Type 16 - Higher Farms and Woods (sub type HFW2: Little Moreton Hall Character Area).

Immediately to the west of Sandbach lies **Type 11 - Salt Flashes**

Type 7 – East Lowland Plain

Key Characteristics:

- Flat and almost flat topography
- Small to medium sized fields up to 8ha used for pasture and arable farming.
- Mainly hawthorn hedgerows and hedgerow trees, some mixed species hedgerows
- Dispersed hamlets and Farms with predominantly low density and some nucleation
- Intensive farming and large farm businesses
- Large number of small water bodies

- Scattered species rich grasslands
- Riparian ancient woodlands and field sized coverts
- Medieval moated sites

ELP5: Wimboldsley Character Area (LCA)

Sandbach town, Elworth and Ettiley Heath sits within this character area subtype. It is described as predominantly a flat large scale landscape with relatively few hedgerow trees or dominant hedgerows and a paucity of species rich grasslands. The low woodland cover creates an open landscape with long views.

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 an undulating area, parts of which have undergone an intensification of agriculture resulting in the removal of hedges and the enlargement of fields. The character is also influenced by urban settlements, the canal and particularly the road system. Malkin's Bank is notable as an area once hosting several salt works in the eighteenth and nineteenth centuries, although there is little evidence remaining as the buildings have been cleared.

Type 10 Lower Farms and Woods LCT

An area to the north east of Sandbach (north of Sandbach Heath) and an area south of Wheelock sit within this LCT. The key characteristics of this area are:

- Low lying gently rolling topography
- Hedgerow boundaries and standard trees in a mix of medieval and post medieval reorganised fields(irregular, semi-regular and regular up to 8 ha) but with a loss of boundaries leading to the formation of large fields and a large proportion of fences adding to this impression
- 'Horsiculture' – fenced horse paddocks
- High density of woodland
- Medium settlement density – mix of dispersed farms and nucleated hamlets and villages
- Mosses and some meres resulting from glacial deposits
- Large number of water bodies

LFW2 Brereton Heath Character Area (LCA)

This area is a gently undulating, almost flat, agricultural landscape with a high proportion of woodland, some of which is of plantation origin. Sand extraction is associated with this area, including the working sand pit at Arclid. Most notable is the one glacial mere at Taxmere (designated a Local Wildlife Site) with unimproved grassland on the southern and western edges and wet grassland on the north and east sides of the mere. It is surrounded by lush marginal vegetation and wet woodland, mostly alder and hazel with several species of sedge. There are numerous ponds in this area.

LFW7: Barthomley Character Area (LCA)

This is a gently undulating area with a small regular-irregular field pattern reflecting the re-use and adaptation of the medieval and post medieval field system in the modern period. The loss of boundaries and the re-introduction of fences are more recent events. The character area is heavily influenced by the growth of Crewe as an important railway town and the landscape has changed in recent years with the growth of villages.

Type 11 Salt Flashes LCT

Key characteristics:

- Flashes – large water bodies created by brine pumping and rock salt mining
- Surviving features associated with the salt industry, brine cisterns, lime beds and derelict land where industrial structures have been cleared.
- Extremely flat, low lying topography
- Calcareous habitats and a diversity of associated species
- Open expansive views of the surrounding landscape

SF1: Sandbach Flashes (LCT)

The flashes were formed by brine wells and bore holes dating from the middle of the 20th century. The small scale water bodies are important features in the surrounding agricultural landscape. The Sandbach flashes are of importance for breeding and migrating birds including teal, wigeon, lapwing, snipe and curlew. The more saline flashes support flora associated with brackish coastal waters and several have important invertebrate assemblages. Wet woodland and reedbeds surround several of the flashes.

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. 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 should be to expand the core areas and to create habitat connectivity (wildlife corridors) in order to create an ecological network in Cheshire. The guidance provided by the Econet project has been incorporated into the conclusions of this report created for the Sandbach Neighbourhood Plan.

Methodology

Creating a habitat distinctiveness map

In line with current Defra methodologies to determine 'no net loss' 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	High	Priority habitat as defined in section 41 of the NERC Act	Red
Medium	Medium	Semi-natural	Orange
Low	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)

1. Econet Cheshire County Ecological Network 2003 assessment was used to inform the conclusions (map 1).

2. The Sandbach NP area Land Character Assessment categories 2008 were mapped and the results were used to inform the conclusions (map 2).

3. Four published data sets were used to produce the habitat distinctiveness maps.
   - Priority habitat Natural England 2013 – coded as high distinctiveness (map 3)
   - Landcover data Centre for Ecology and Hydrology 2007 (map 4). This is a parcel-based classification of satellite image data showing land cover for the entire United Kingdom

derived from a computer classification of satellite scenes obtained mainly from the Landsat sensor. Priority habitats coded as high distinctiveness, semi-natural habitats coded as medium distinctiveness (data in appendix 1).

- Designated sites (SSSI, LWS, LNR), Natural England, CWT/CE Local Authority 2014 – coded as high distinctiveness (map 5).
- Agricultural land classification Natural England 2010 – grades 1, 2, 3 coded as low distinctiveness, grade 4 coded as medium distinctiveness, grade 5 coded as high distinctiveness.

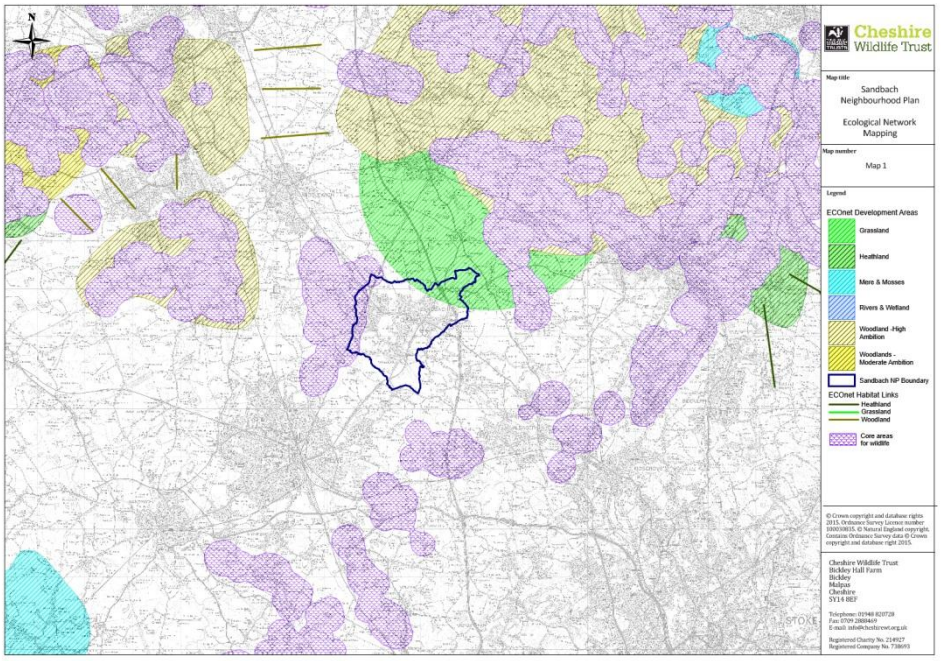
4. Phase 1 habitat data from previous planning applications was used in the analysis (applications: 10/4973c, 12/009c, 12/1650c, 12/3948c, 13/2389c, 13/2731d, 13/3887c).

5. Aerial photography (Microsoft Bing ™ Imagery) was used to validate the results by eye.

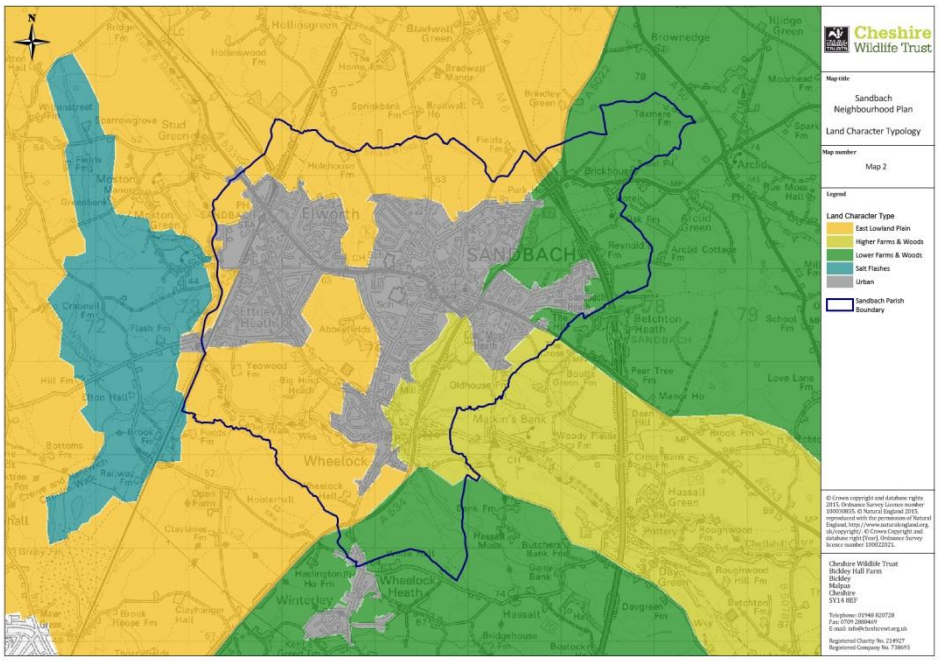
6. The final habitat distinctiveness map was verified by local CWT Local Wildlife Site surveyors living in the Sandbach area (map 6).

Mapping

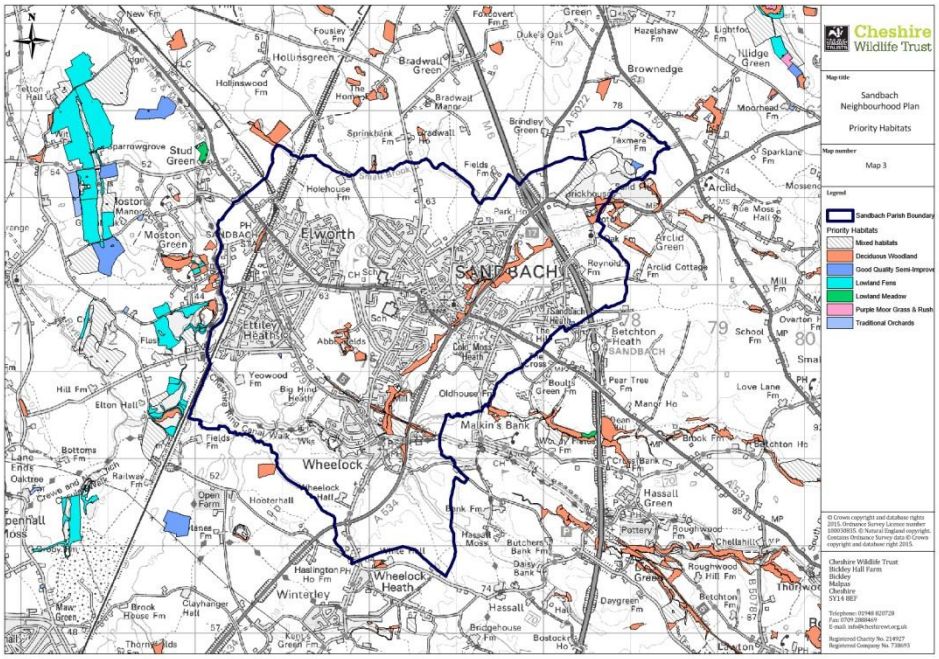
Econet



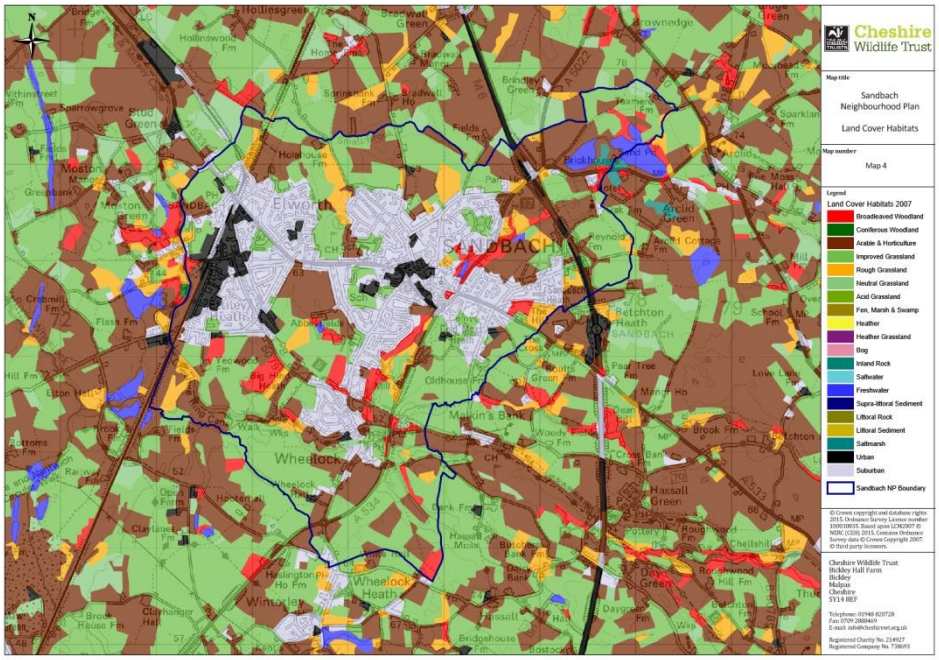
Land Character Assessment



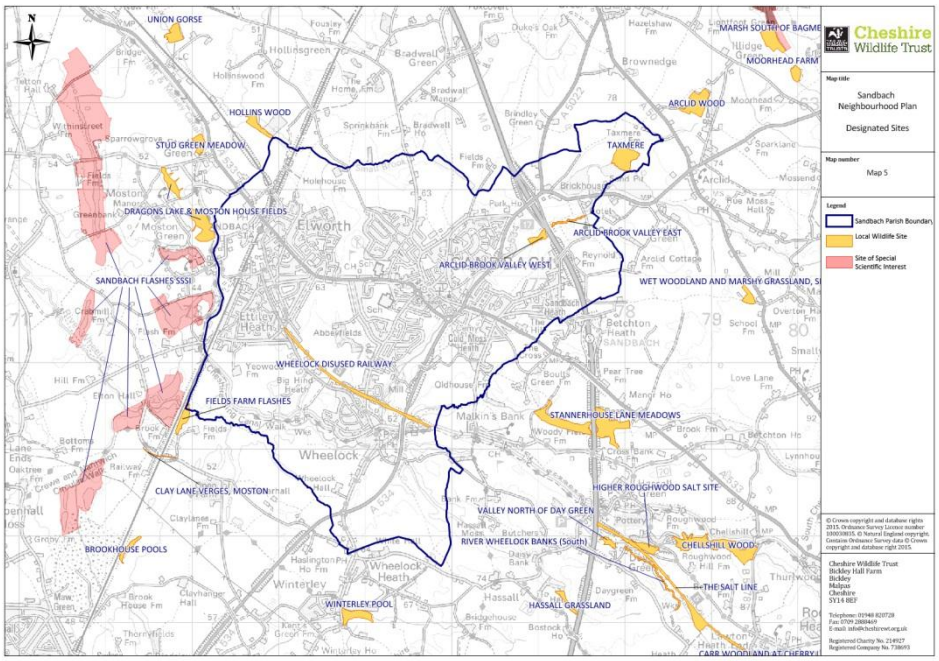
Priority habitat – Natural England



Land Cover Map



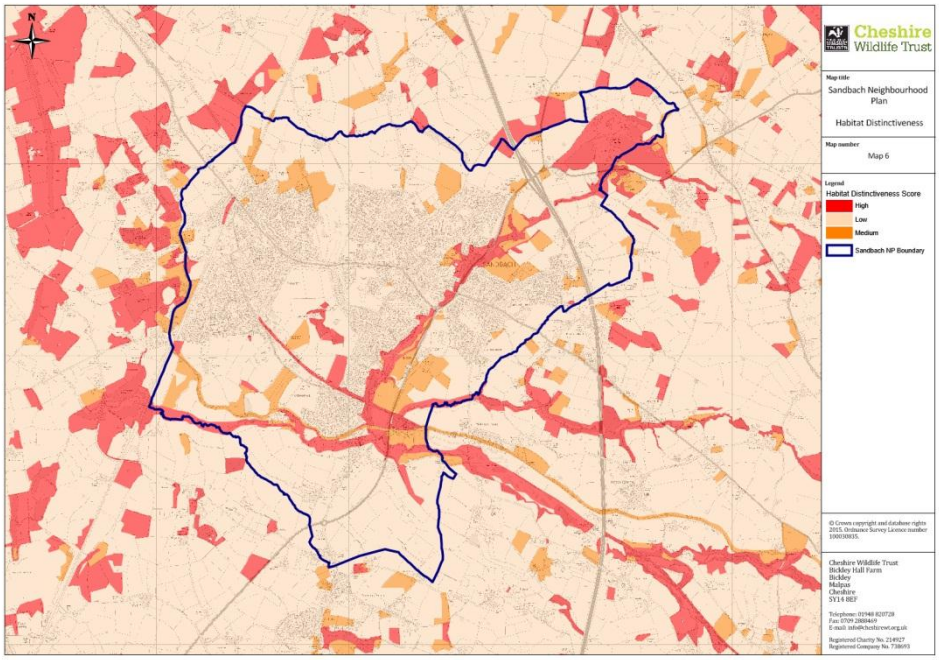
Designated sites (Sites of Special Scientific Interest, Local Wildlife Sites, Local Nature Reserves)



Agricultural land grading

All land was classified as grade 3 which is considered low distinctiveness and therefore not represented on a map.

Habitat distinctiveness map



Results

This study has identified 9 major areas of high value (distinctiveness) habitat in the Sandbach NP area. These are shown on map 9 and include four areas designated as Local Wildlife Sites: Arclid Valley Brook West LWS, Arclid Valley Brook East LWS, Taxmere LWS, Wheelock disused railway LWS. The remaining five high value (high distinctiveness) sites include the M6 to Wheelock stream Valley between Sandbach and Sandbach Heath, the river Wheelock valley, Malkin's Bank brook corridor, Abbeyfields woodlands, land adjacent to Taxmere. One area, the Malkins Bank to Middlewich road canal corridor was identified as supporting medium value (distinctiveness) habitat but the nature and location of this canal corridor meant that it is likely to act as a wildlife corridor and therefore would warrant identification as such in the neighbourhood plan.

Discussion

The results of this study can be used as a guide for future decisions regarding planning policy and development control. Areas of high environmental value should be protected in the planning system if they are not already explicitly covered by policies in the local plan. Furthermore high distinctiveness areas highlight where effort should be concentrated to enhance the natural

environment, whether through opportunities arising through the planning process (e.g. S106 agreements, biodiversity offsetting) or through the aspirations of the local community.

The map also identifies areas which, although may not be considered 'high environmental value', are crucial for the long term viability of the core areas by providing habitat connectivity. It is these 'Wildlife Corridors' which are likely to be most vulnerable to disappearing through development, but are crucial to the movement of species in and out of the core areas. Wildlife corridors are a key component of local ecological networks and habitat enhancement in these areas is likely to achieve significant improvements in the long term viability of the core high value areas.

The study has also identified areas of medium habitat distinctiveness which, although mainly sit outside the local ecological networks, nevertheless may provide important wildlife habitats acting as ecological stepping stones. It is these areas that should be thoroughly evaluated in the development control process. In order to achieve no net loss of 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 local plan.

This report has identified the areas of high and medium habitat distinctiveness in the Sandbach NP area which sit within the Econet core areas and potential habitat development areas. We advise that the following areas should be the highest priority for habitat enhancement work as they are part of the County Ecological Network:

1. Taxmere and its environs (lies within Econet Grassland Development Area)
2. Land adjacent to the Salt flashes (lies within Econet Sandbach Flashes core area for wildlife)

Conclusion

By bringing together all the available information relating to land use and habitats in the Sandbach NP area this study has identified the areas of high and medium 'habitat distinctiveness' as described in the Defra Biodiversity Offsetting metric. By attributing habitat distinctiveness values to different land parcels the results of this study should act as a guide when planning decisions are made. 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.

The areas identified as high distinctiveness are recommended for identification in the NP policies as areas which should be protected from development. We also recommend that these areas are buffered from adjacent developments by a non-developable zone. This may be in the region of 15 metres in order to fully protect high value habitats. Furthermore we advise that measures to mitigate possible ecological impacts are included in any development adjacent to buffer zones and high/medium value areas. An example of this may be that bat sensitive lighting is recommended for use on the outside of buildings or in carparks/pathways.

It should be recognised that there are two areas in the Sandbach NP that form part of the County Ecological Network (Taxmere and its environs and the land adjacent to the Salt flashes) and therefore protection and enhancement of these areas is of the utmost importance.

To summarise, future development of the town should respect the Landscape Character Types attributed to the Sandbach area. The most intact landscapes, in terms of biodiversity, landform and historic/cultural associations should be valued highly when planning decisions are made. Protection and enhancement of Sandbach's natural assets is of crucial importance to nature conservation 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 high/medium value wildlife sites within Sandbach NP area. In particular Taxmere and its environs and the land adjacent to the Salt flashes**

These include:

- The M6 to Wheelock Stream Valley between Sandbach and Sandbach Heath
- The River Wheelock Valley
- Malkin's Bank Brook corridor
- Abbeyfields woodlands
- Land adjacent to Taxmere
- Malkin's Bank to Middlewich Road canal corridor past Ettiley Heath and Elworth (including fields adjacent to the Flashes)
- Taxmere Local Wildlife Site
- Arclid Brook Valley West Local Wildlife Site
- Arclid Brook Valley East Local Wildlife Site
- Wheelock disused railway Local Wildlife Site

Local Wildlife Sites and areas of high environmental value should be in favourable condition[1] so the wildlife present can thrive in the long term. Each site will need to be surveyed by an ecologist (where no recent survey exists) and management recommendations should be implemented where this is possible. If the site is not already designated as a LWS it should be assessed against the LWS criteria.

2. **Enhance connections between sites or create new wildlife habitat to buffer existing sites.**

Opportunities should be explored to restore or create more wildlife friendly habitat especially where connectivity with other areas of high or medium value habitat can be achieved or where sites can be

[1] Refer to appendix 2 for definition of favourable condition.

buffered. Larger areas of better connected habitat support larger and healthier species populations and help prevent local extinctions.

Ways to enhance connections or buffer sites may include restoring hedgerows, creating low maintenance field margins and sowing locally sourced wildflower meadows. Professional advice should always be sought when creating new habitat. Through liaising with local landowners and the Local Wildlife Sites Partnership designated site boundaries could be extended if this can be shown to protect existing sites.

3. Phase 1 habitat mapping

It is strongly recommended that the Sandbach Neighbourhood Planning area is phase 1 habitat mapped. This will provide a greater level of detail than the habitat distinctiveness mapping and may identify further areas of medium or high value (priority) habitat. Areas identified as having medium value habitat in this report should be targeted as a priority.

Appendices

Appendix 1

Habitats, LCM2007 classes 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	High
		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	High/medium
		Arable barley	Aba	Low

		Arable wheat	Aw	Low
		Arable stubble	Ast	Low
Improved Grassland'	4	Improved grassland	Gi	Low
		Ley	Gl	Low
		Hay	Gh	Low
Rough Grassland	5	Rough / unmanaged grassland	Gr	Medium/High
'Neutral Grassland'	6	Neutral	Gn	High
'Calcareous Grassland'	7	Calcareous	Gc	High
Acid Grassland	8	Acid	Ga	High
		Bracken	Br	Medium
'Fen, Marsh and Swamp'	9	Fen / swamp	F	High
Heather	10	Heather & dwarf shrub	H	High
		Burnt heather	Hb	High
		Gorse	Hg	High
		Dry heath	Hd	High
Heather grassland	11	Heather grass	Hga	High
'Bog'	12	Bog	Bo	High

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

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

Appendix 2

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.