Preliminary Ecological Report
Parish Neighbourhood Plan
For

Brinklow Parish Council

Habitat Biodiversity Audit Partnership for Warwickshire, Coventry and Solihull
Warwickshire Wildlife Trust
Ecological Services Warwickshire County Council

FEBRUARY 2018

Contents

Introduction

Wildlife and biodiversity are valuable as part of the natural environment, and in terms of contributing to people's quality of life and wellbeing. The Government has committed itself to halt and reverse the overall decline in biodiversity. Neighbourhood plans offer significant opportunities to understand the biodiversity assets you have and how they can be protected and enhanced.

Identifying biodiversity assets of your neighbourhood includes:

- Important habitats for example all woodlands, ponds, hedgerows and meadows;
- Designated nature areas, both statutory and non-statutory;
- Distribution of plants and animals
- Wildlife corridors between habitats to allow animals and plants to disperse

In addition to identifying biodiversity assets your local neighbourhood plan can be used to;

- Show where opportunities are for enhancing biodiversity by introducing different management of public spaces, planting trees or restoring hedgerows for example;
- Identifying where the threats to wildlife are, and how can they be avoided or mitigated;
- Plan to achieve a long-term biodiversity net gain for your parish

The Habitat Biodiversity Audit for Warwickshire Coventry and Solihull

Warwickshire, Coventry and Solihull are very well provided with wildlife information from Warwickshire Wildlife Trust's Habitat Biodiversity Audit and Warwickshire County Council Biological Records Centre.

The Habitat Biodiversity Audit (HBA) Partnership for Warwickshire, Coventry and Solihull has been surveying and maintaining a continuous record of the wildlife habitats for the Warwickshire sub-region since 1995. Today the HBA partnership is the longest running habitat survey programme of its kind in the country. Its success is due to the ongoing support and funding from all the local planning authorities across the sub-region, together with support and advice from the Environment Agency and Natural England.

In addition to the Phase 1 surveys the HBA incorporates the Local Wildlife Sites Project (LWSP) which designates Local Wildlife Sites (formerly Sites of Importance for Nature Conservation – SINCs) across the sub-region. Local Wildlife Sites are recognised within the planning system as of county importance for protecting wildlife and are incorporated into all local district and county green infrastructure plans. Today there are more than 560 local wildlife sites in Warwickshire, Coventry and Solihull, covering more than 5,000 hectares.

The Warwickshire sub-region Phase 1 Habitat Survey

The phase 1 habitat survey is a standardised system for classifying and mapping wildlife habitats in all parts of Great Britain.

The Warwickshire Phase 1 habitat survey programme has been running unbroken for 21 years and is updated annually with the aim to update the Warwickshire sub-region within a five-year time span. The survey is managed by a GIS/Phase 1 officer with support from volunteers and ecological trainees.

Warwickshire was one of the first pilot areas for trailing the national biodiversity offsetting scheme which has now been formally adopted into the planning policy of all local authorities. Warwickshire was able to offer the offsetting scheme because of the consistent comprehensive coverage of g the Phase 1 habitat dataset. The main addition from the offsetting scheme is the habitat distinctiveness score

In addition to the biodiversity offsetting scoring the Phase 1 habitat data has also been used for modelling habitat connectivity for woodlands and hedgerows, grasslands and wetlands and most recently for pond clusters.

For a detailed description of the Phase 1 habitat survey methodology please refer to the JNCC Handbook for Phase 1 habitat Survey (JNCC, 2010) and the HBA Phase 1 Survey Guidance Notes (Habitat Biodiversity Audit, 2012). The distinctiveness scoring methodology (Defra, 2012) is available on DEFRA's website at:

http://www.defra.gov.uk/environment/biodiversity/uk/offsetting/

The biodiversity offsetting definitions and criteria for Warwickshire amended 10/05/2013 are available from Ecological Services Warwickshire County Council.

Warwickshire Biological Records Centre Species Records

Species information is based on existing records within the Warwickshire Biological Record Centre (WBRC). For this report EU and UK protected species, UK Biodiversity Action Plan, local Biodiversity Action Plan species and rare and endangered species have been noted where records are held digitally. These records have been used with local knowledge to provide spatial interpretation for each site.

This interpretation is based on data and information available at the time of preparing this report. Please note that lack of records may well indicate that no survey work has yet been undertaken and does not indicate that species are necessarily absent. Protected species may be using the site and surrounding area and appropriate survey work may be required to establish their presence and to inform mitigation measures to ensure that they are not impacted by any proposed works.

Natural Environment Designations

Statutory Sites confer some form of statutory protection providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features.

Sites of Special Scientific Interest (SSSI)

A Site of Special Scientific Interest (SSSI) is a conservation designation denoting a protected area in the United Kingdom. SSSI's are legally protected under the Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CROW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006.This legislation gives Natural England powers to ensure better protection and management of SSSIs and safeguard their existence into the future.

Local Nature Reserves

A Local Nature Reserve (LNR) is a statutory designation made under section 21 of the National parks and Access to the Countryside Act 1949 and amended by Schedule 11 of the Natural Environment and Rural Communities Act 2006. All district and county councils have powers to acquire, declare and manage LNRs. Parish and town councils can also declare LNRs but they must have the powers to do so delegated to them by the principal local authority. To qualify for LNR status, a site must be of importance for wildlife, geology, education or public enjoyment. Some are also nationally important Sites of Special Scientific Interest.

LNRs must be controlled by the local authority through ownership, lease or agreement with the owner. The main aim must be to care for the natural features which make the site special.

Ancient Woodlands

Ancient woodland is defined as woodland that has been in continuous existence since at least 1600 AD (Spencer and Kirby 1992). An inventory of ancient woodland was first initiated in 1981 by the Nature Conservancy Council (predecessor to Natural England), but only included woodlands greater than two hectares.

They include:

- Ancient semi-natural woodlands (ASNW) consisting mostly of native trees and shrubs, usually arising through natural regeneration
- Plantations on ancient woodland sites (PAWS) where the former tree cover has been felled and replaced by planted trees, usually with native species
- Ancient wood-pasture and historic parkland, many of which have not been included in the Ancient Woodland Inventory because their low tree density did not register on historical maps

Ancient Woodlands unless they are designated a SSSIs come under the National Planning Policy Framework (NPPF) (Communities and Local Government, 2012) guidance section 118 – state: "When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity" and to do this "planning permission should be refused for development resulting in loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees, unless the need for, and benefits of the development in that location clearly outweigh the loss (Woodland Trust, 2017)).

Due to historic significance under section 12 of the NPPF, LPAs may also consider veteran trees, and woodland pasture and parkland as heritage assets.

Hedgerows

The Hedgerow Regulations 1997 (Defra, 1997) protect important countryside hedges from removal, without the permission of the local planning authority. If a hedgerow is at least 30 years old and qualifies under any one of the criteria, then it is an important hedgerow as set out in the regulations. The criteria relate to a hedgerows importance with respect to its archaeology and history; wildlife and landscape.

The Hedgerows Regulations states that the hedgerow does not have to contain trees, but any trees in it form part of the hedgerow. Where a former hedgerow has not been actively managed and has grown into a line of trees it is not covered by the regulations. However, lines of trees may be protected under existing licensing procedures for felling or by Tree Preservation Orders (TPOs).

The Warwickshire Biodiversity Action Plan (BAP) for hedgerows is defined as having more than 80% native woody species, including at least five woody species that are either native somewhere in the UK or which are archaeophytes. If this is the case then the hedgerow is defined as being species-rich.

Designated non-statutory sites - Local Wildlife Sites

Non-statutory sites, covering local nature conservation importance, are more difficult to classify as they have no legislative basis or standardised definition.

LWS are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined.

Local Sites are a network of defined areas that are selected and designated locally for their wildlife or geological importance. Together they form a network of our most valuable urban and rural areas for the natural environment. Local Sites are complimentary to statutory sites such as Sites of Special Scientific Interest (SSSI), and are afforded protection through the planning system, helping them to fulfil a crucial role in protecting our natural environment.

The few sites which have statutory designations because of their international or national interest represent the top of the hierarchy of protection. These sites are selected according to standardised criteria and procedures. Second tier, non-statutory sites, covering local nature conservation importance, are more difficult to classify as they have no legislative basis or standardised definition. The Warwickshire, Coventry and Solihull Local Wildlife Sites Project created in 2000 set out to formerly identify Sites of Importance for Nature Conservation (SINCs), now known as Local Wildlife Sites (LWS). The formal process for identifying, surveying and designating Local Wildlife Sites is set out in The Green Book: Guidance for the Selection of Local Wildlife Sites in Warwickshire, Coventry and Solihull (HBA, 2015 rev.)

Identifying Local Wildlife Sites

Local Wildlife Sites help buffer and connect natural areas, providing ecological networks and increasing resilience of biodiversity to pressure of land use and climate change. They contribute to the quality of life and the health and well-being of communities and provide important open space in urban areas.

The Making Space for Nature report *(Lawton*, 2010) *states* that Local Wildlife Sites are highly vulnerable to damage and loss, and recommended improving their protection and management, underlining that Local Sites are “important to future ecological networks, because they not only provide wildlife refuges in their own right, but can act as stepping stones and corridors to link and protect nationally and internationally designated sites”.

The Government response to Making Space for Nature, published alongside the Natural Environment White Paper, (Defra, 2011), encouraged Local Site Partnerships to continue to implement Defra’s Local Sites guidance and play an increased role in identifying, protecting and managing Local Sites. The subsequent England Biodiversity Strategy 2020 (Defra, 2011) restated that Government will encourage local authorities to take a more active and positive role in the management of Local Sites, including through reporting data on such sites in the Government’s new Single Data List.
The HBAs Local Wildlife Sites Project identifies potential local wildlife sites and re-visits designated local wildlife sites wherever possible to ensure their continuation as viable

wildlife areas, and makes recommendations and advice on the selection and management of these sites.

National Planning Policy (NPPF)

The Government's National Planning Policy Framework (NPPF) (Communities and Local Government, 2012)) states that the distinction should continue to be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance. It advocates the protection of local sites recognising their importance and the contribution that they make to wider ecological networks.

The NPPF says that to minimise impacts on biodiversity and geodiversity, planning policy should:

- "Plan for biodiversity at a landscape-scale across local planning policies;
- Identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them, and areas identified by local Partnerships for habitat restoration and creation;
- Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan;
- Where Nature Improvement Areas (NIAs) are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas."

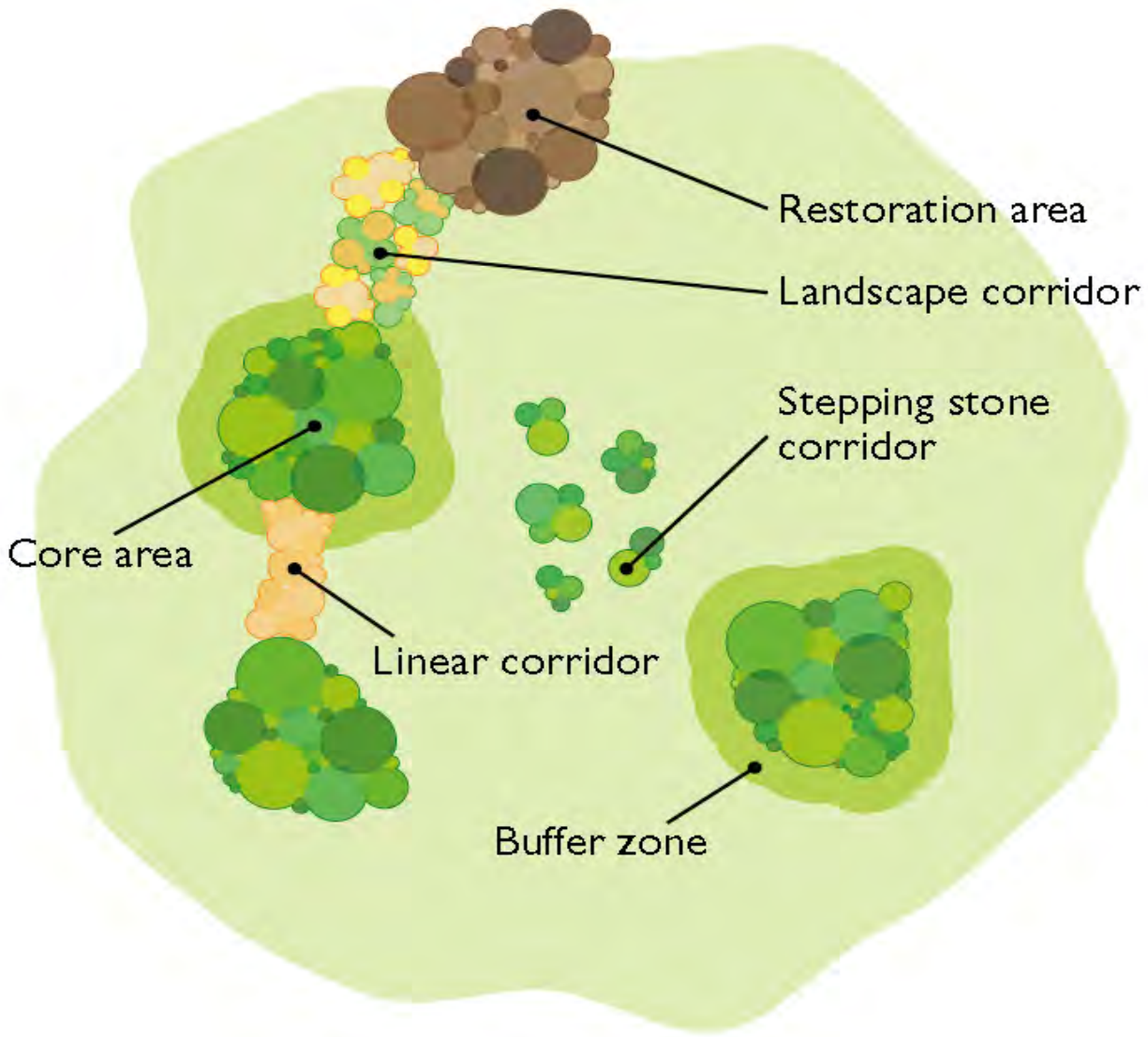

Figure 1Wildlfe zones - bigger, better and connected - Lawton 2012

Brinklow Parish

Brinklow Parish is within the landscape area known as Dunsmore, which includes the wedge-shaped region of low ridges and valleys lying between Leamington Spa, Coventry and Rugby. The core of the region comprises an area of former heath associated with the low glacial plateau running from Cubbington to Hillmorton.

Dunsmore is an intensively farmed region and the extent of semi-natural habitats is rather limited. Despite this there remains a number of important habitats, most notably are the ancient woodland complexes, and the flood meadows and associated wetland habitats along the two main river corridors of the Avon and the Leam.

The Warwickshire Landscape Guidelines identifies Brinklow as the only settlement of size within the Dunsmore parklands. The parklands are described as an enclosed estate landscape with a well wooded character defined by woodland edges, parkland and belts of trees. Large blocks of woodland and smaller coverts are a key component of the farmed landscape. Wooded streamlines and scattered hedgerow trees, typically oak, but also lime, reinforce this impression creating a sequence of linked wooded spaces. (Warwickshire County Council, 1993)

Ancient Woodland

The glacial plateau in the western part of the Dunsmore region incorporating the parish of Brinklow supports the largest concentration of ancient woodland in Warwickshire. Brinklow has three ancient woodlands all designated local wildlife sites along its boundaries; New Close and Birchley Wood, High Wood and All Oaks Wood.

Wetlands and meadows

Historically, frequent flooding prevented arable farming on river floodplains, so much of the land was used for pasture or meadow land. Today there are very few remaining flood plain meadows. Along the riversides and canals are remnants of flood pasture, rough pasture, scrub and pollarded willows, all important for wildlife.

In Brinklow there are semi-improved grassland meadows at Manor Farm, however some similar meadows at Highwood Farm have deteriorated to become species poor grasslands. Other areas of important species rich grassland have been recently recorded at Brinklow Castle.

The Constraints Map

The constraints map for the parish is derived from the Phase 1 habitat mapping and shows where development should be avoided and ecological enhancement encouraged.

The important habitats are identified and buffered to create an overall green (terrestrial habitats) and blue (riparian and aquatic habitats) map which clearly demarcates the limits of development, they include:

- 30 metre buffer around all semi-natural woodland and broad-leaved plantation woodland
- 8 metre buffer either side of adjacent river courses
- 8 metre buffers around all wetland features including; emergent vegetation, lakes and ponds
- 5 metre buffer either side of intact hedgerows
- All areas of medium to high distinctiveness grassland with values 4, 5 and 6

These are the recommended minimum standard buffers as determined by Warwickshire County Council Ecological Services. Other LPAs have agreed 50 metre and 100 metre buffers for ancient woodlands For veteran trees the precautionary approach is set out in BS5837:2012 that there should be a minimum of 15 times the diameter of the tree trunk or 5 metres beyond the canopy, whichever is greater

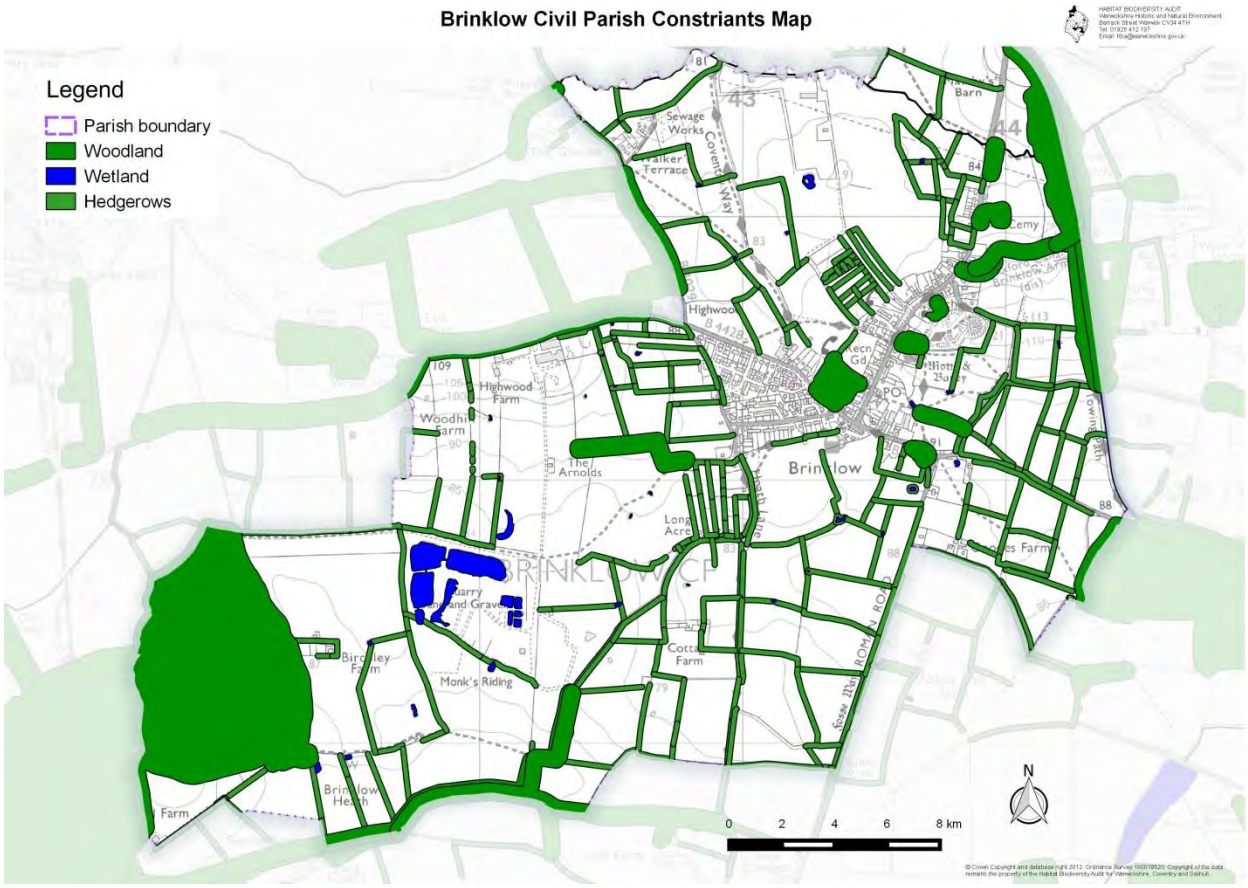

Figure 2 Constraints Map

Brinklow Parish Local Wildlife Sites

There are no statutory wildlife sites in the parish of Brinklow, but there are six local wildlife sites either within the parish or along the parish boundary. One site, Brinklow Castle is also a scheduled national monument, and is protected under the Ancient Monuments and Archaeological Areas Act 1979. The three designated woodland sites are all recorded in the Natural England Ancient Wood Inventory (AWI).

Brinklow Castle LWS

Brinklow Castle was first surveyed as a local wildlife site in August 2017 (Bowley, 2018) and was designated in February 2018.The site is an exceptionally well-preserved Motte-and-Bailey castle (scheduled as an Ancient Monument since 1925) containing areas of species-rich semi-improved grassland on the banks and marsh in the ditches, as well as scrub mosaics. It is likely that the site has been under permanent pasture for 800 years.

There is a good diversity of habitats present within the castle site, with semi-improved neutral to moderately calcareous grassland being the most important. The best areas are found on the steeper slopes as on the motte and on the banks within the bailey. The ditches hold areas of marsh and some semi-permanent pools, while scrub and secondary woodland is present on the outer bank of the bailey. A hedge with mature trees forms the north boundary of the motte and continues around to enclose a small meadow at the eastern end of the site

Despite its relatively small size the site includes a wide range of habitats and sub-habitats, ranging from semi-improved neutral grassland, through tall herb and Bramble brakes, to hedges and both open and closed scrub mosaics and mature semi-natural deciduous woodland. There are also areas of marsh occupying the ditch bottoms, dry ditches, steep slopes and localised areas of open water. Together these habitats support a wide range of vascular plants, with 150 species recorded during the survey. The grasslands occupying the thinner soils of the steep banks are particularly rich in species, particularly those characteristic of the MG5 pasture communities, such as Agrimony, Common Knapweed, Lady's Bedstraw, Meadow Barley, Meadow Vetchling, Common Birds-foot-trefoil, Lesser Burnet-saxifrage, Creeping Cinquefoil, Red Clover and Yellow Oat-grass. The scrub areas attract a good range of birds.

Brinklow Disused Canal Pool LWS

Brinklow Disused Canal Pool was first surveyed for local wildlife site status in 2017 and designated in 2018 (Bowley, 2018). The site consists of two moderately species-rich water bodies situated within an area of cattle pastures, which are remnants of one of the original meanders of the Oxford Canal, cut off in the early part of the nineteenth century.

The western end of the site is located just 150m to the east of Broad Street, Brinklow and extends eastwards to Rugby Road. It is surrounded by medium sized cattle pastures, enclosed by a variety of often well-timbered hedgerows. The farm stockyard is situated immediately south of the site, with the northern entrance to the farm dividing the main pool from the much smaller pool to the west. The nearest LWS to the site is Brinklow Castle situated about 300m to the north across the fields, where there is another linear water feature in the southern moat. The present course of the Oxford Canal pLWS is a major wildlife corridor located 500m to the east beyond Rugby Road.

There is quite a high diversity of plants for the small size of the site, with 101 species of vascular plants recorded. Most of these are typical of either waterside habitats, such as Reed Sweet-grass, Common Marsh-bedstraw, Yellow Iris, Gipsywort, Water Mint, Common Watercress and Common Skullcap; or of well-established hedgerows, such as False Brome, Herb Robert and two species of violet. The site also includes Glyceria swamp, lily pads, wet sallow scrub, areas of cattle-poached mud and rough grassy marginal ground.

New Close and Birchley Woods LWS

New Close and Birchley Woods LWS (Bowley & Shuttleworth, 2009) consist of two large contiguous ancient semi-natural woodlands situated within the parishes of Binley and Brinklow, The LWS also includes a small woodland appendix and the site of some medieval fish ponds on the north side of New Close Wood in the parish of Combe Fields.

The woods were formerly part of the Coombe Abbey estate, with Birchley Wood likely to be very ancient and possibly pre-conquest wood pasture in origin – it was certainly mentioned as woodland in documents by about 1400.

The two woodlands are both ancient semi-natural sites with a high level of biodiversity. At least ten plant ancient woodland indicator species are present (Wood Anemone, Pendulous and Remote Sedges, Hazel, Woodruff, Yellow Archangel, Hairy Wood-rush, Wood Millet, Wood-sorrel and Small-leaved Lime) and others are thought to be present. There is a very wide variety of sub habitats present including streams, rides, ponds, wet grassland, scrub and both wet and dry woodland, with much decaying wood throughout the woodlands. The populations of birds, invertebrates and fungi are thought likely to be important at a county level.

Ancient semi-natural deciduous woodland is a nationally important habitat and one which has declined steadily in Warwickshire since the last world war. Several species of plant such as Hairy Wood-rush and Heath-grass are threatened at a county level and are now considered to be scarce. Marsh Tit is on the Red List of the national Birds of Conservation Concern.

High Wood LWS

High Wood LWS (Bowley J. , 2009) consists of a narrow belt of semi-natural deciduous woodland framing two large square arable fields, set in open agricultural land in the south-eastern corner of the parish of Combe Fields adjacent to the western outskirts of Brinklow village. It is bounded by large arable fields on the north and west sides, and by the B4027 and B4029 on the south and east sides beyond which are a patchwork of smaller grass fields.

The site is an ancient semi-natural woodland with a very diverse list of vascular plants, of which at least eight (Wood Anemone, Hazel, Woodruff, Yellow Archangel, Hairy Wood-rush, Crab Apple, Wood Millet and Wood-sorrel) are characteristic of ancient woodland within Warwickshire. Despite the destruction of most of the wood, there is still a reasonable range of sub-habitats, including wet areas, steep dry banks, water-filled ditches, decaying timber, small areas of tall herb in the clearings and along the Coventry Road, and areas of dense shrub layer. The wood holds a reasonable population of woodland birds and mammals, and probably supports a good variety of invertebrates, mosses and fungi.

Manor Farm Meadows SINC

Manor Farm Meadows SINC (Cole, 2004) comprises three semi-improved neutral grasslands located to the north of the village of Brinklow. Smite Brook flows along the northern boundary of the site. Two of fields are treated as hay meadows with a cut taken about mid-July, but with the exception of some occasional grazing from sheep that escape from an adjacent field, are not aftermath grazed. The third field is a small horse grazed pasture over prominent ridge and furrow. This field lacks the diversity seen in the other fields but is included within the SINC boundary due to rarity of this type of grassland, and because of its link with the richer semi-improved grassland fields.

The site is diverse in habitat with areas of species rich semi-improved dry grassland, wet grassland, boundary hedgerows and ditches, and a small pond surrounded by swamp vegetation. The grassland areas are herb rich and contain several species indicative of unimproved or species rich semi-improved grassland including Black Knapweed, Yellow Rattle, Great Burnet, Meadowsweet, Field Wood-rush, and Greater Bird’s-foot-trefoil.

In terms of rarity, species rich neutral grassland is rare in the County and is a nationally important habitat. The high nature conservation value of the site depends on continued traditional management

To the south of Manor Farm Meadows are two small fields identified as potential local wildlife sites called Brinklow Meadows.

The River Avon LWS

There are a number of tributaries of the River Avon that run through the parish and these form part of the River Avon LWS.

Highwood Farm Meadows - rejected

The site consists of three small rectangular grass fields situated on Highwood Farm on the western side of Brinklow parish, just to the south of the B4027 Brinklow-Coventry Road. The smallest field lies adjacent to this road about 300m west of Brinklow, while the other two are situated about 900m to the south-west of the village. The surrounding land consists' mainly of medium-large regular shaped enclosure fields and are generally now under arable crops. The site is close to several important ancient woodlands, including High Wood LWS on the north side of the B4027 and Birchley/New Close Woods LWS 1km to the south-west. (Bowley J. J., 2009)

All three fields are much neglected and no longer grazed, and this has led to a steep decline in biodiversity. The northern-most field by the road is used as a storage yard.

Oxford Canal Potential Local Wildlife Site

The Oxford Canal on the eastern edge of the parish, includes the Brinklow arm of the canal, is an important wildlife habitat and corridor. There are no plans at present to survey the canal.

Figure 3 Local Wildlife Sites map

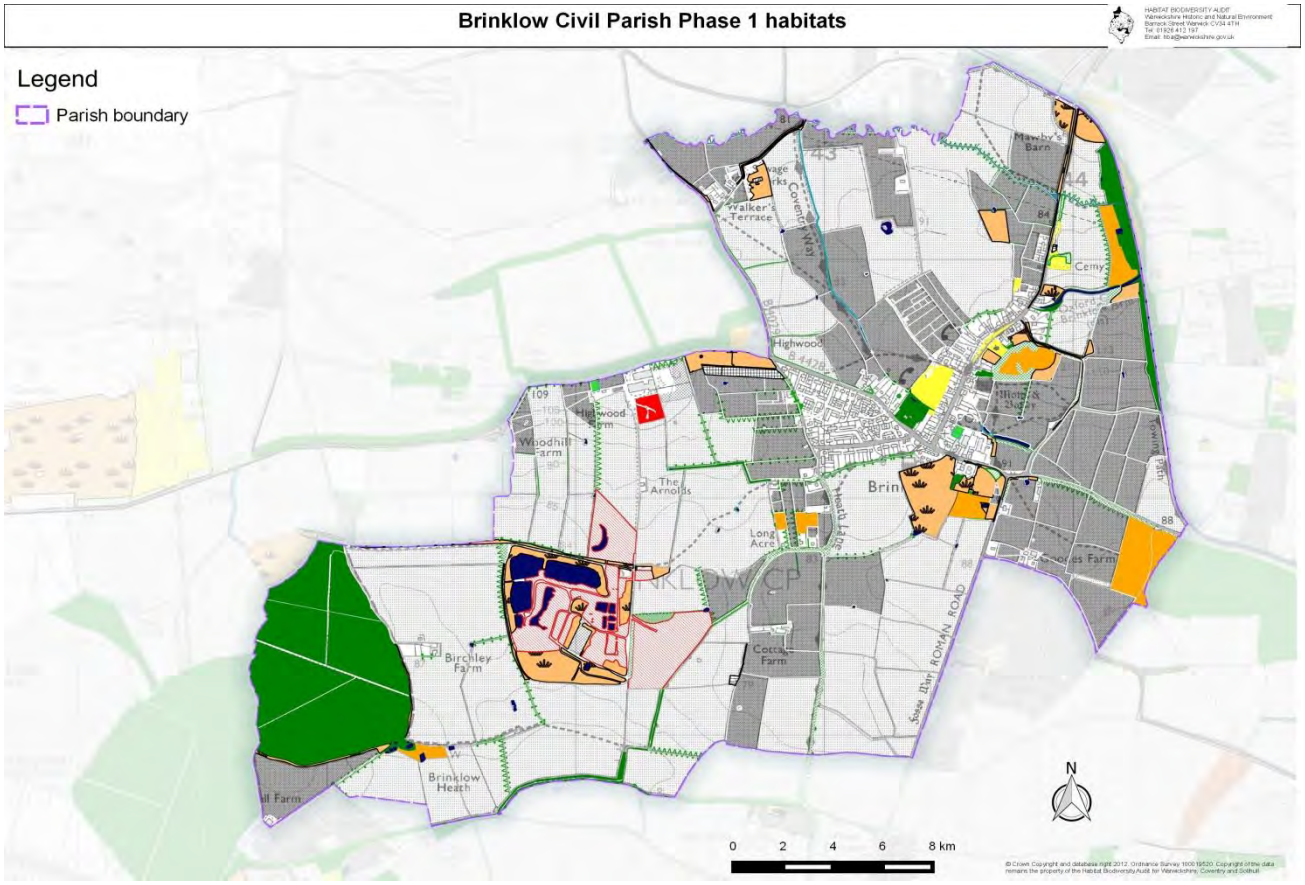

Figure 4 Phase 1 habitats map

Identifying important habitats – Phase 1 habitats

The Phase 1 habitat survey for Brinklow Parish has been updated within the past 5 years and the total area recorded was 1,863 hectares.

A breakdown of the main habitats shows that agriculture accounts for the majority of the landuse with 1,220 hectares of arable land (65% total survey area) and 276 hectares (15%) of improved grasslands. The total area of woodland and scrub covers 210 hectares with semi-natural woodlands accounting for 183 hectares (87% of all woodland and scrub). There is realtively little plantation woodland in the parish with only 3 hecatres of broad-leaved plantation and about 5 hectares of coniferous and mixed woodland plantation. Dense and open scrub accounts for about 16 hectares and is mainly scattered across the parish.

The area of non improved grasslands including; B22 semi-improved, B5 marsh/marshy B6 species poor, and J12 amenity grassland, is 108 hectares (6% of total survey area). With 17 hectares of priority grassland (B22 neutral and B5 marshy grassland) only found in small areas.

Wetlands including G1 standing water, G2 running water, B5/F22 Marshy areas together cover about 19 hectares. 65% of wetland area is made up of standing water,

which include the Oxford Canal and the open pools around the gravel pits. The active gravel area itself covers 15 hectares.

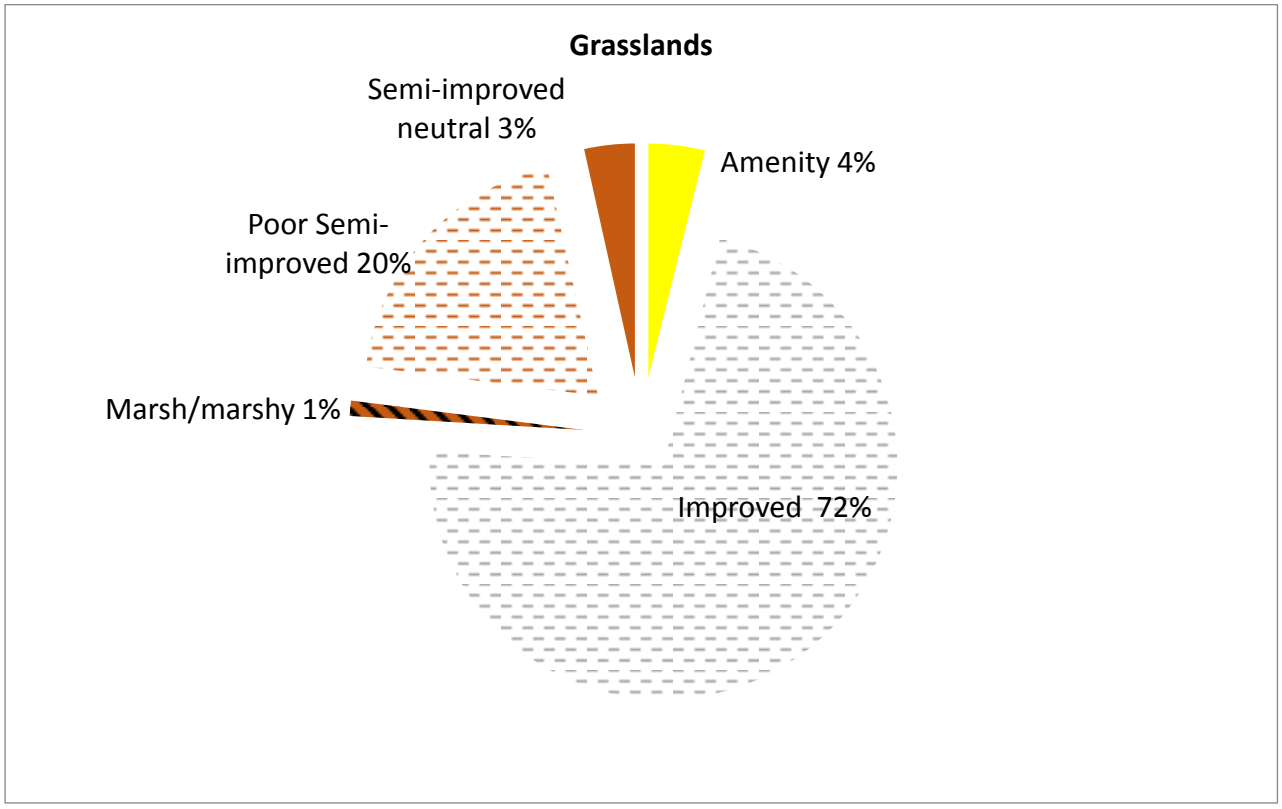

Figure 5 Grassland coverage

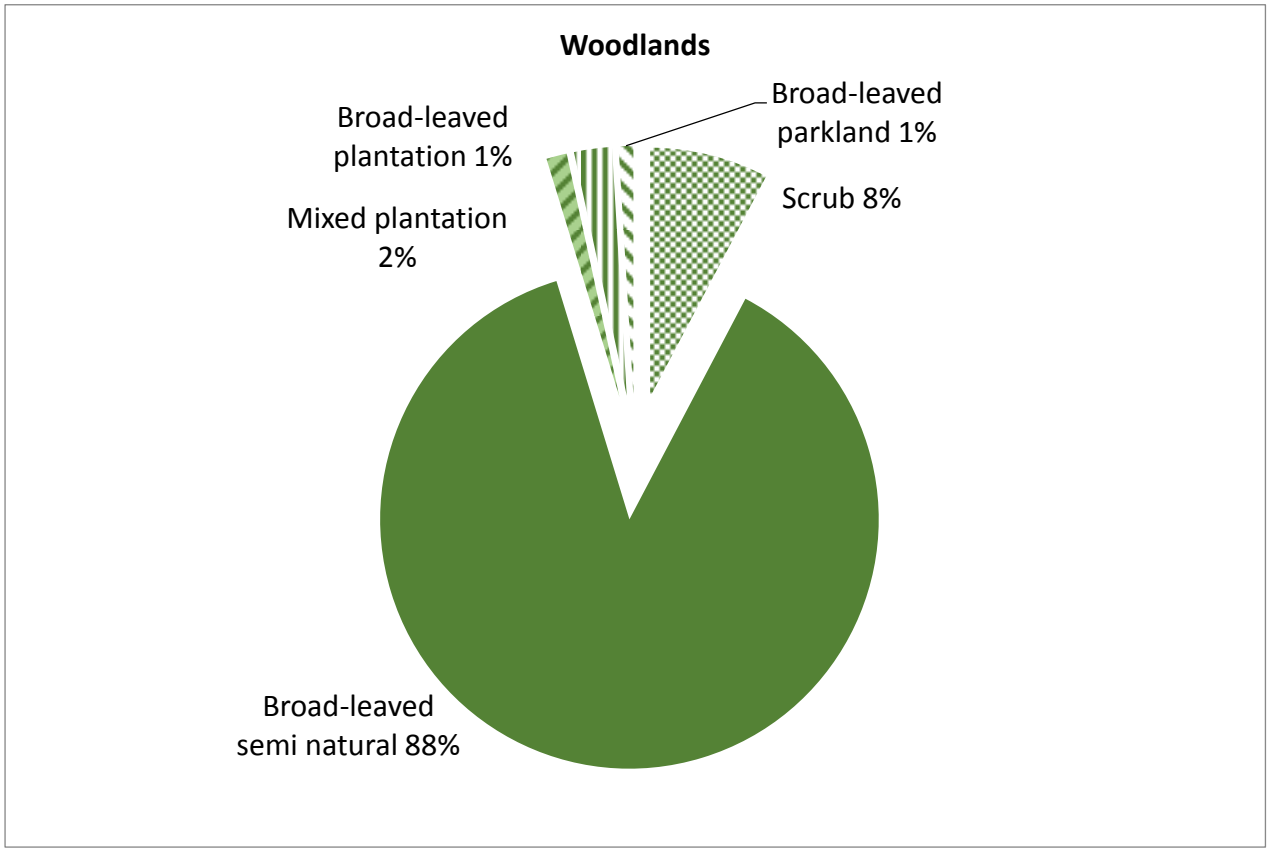

Figure 6 Woodland coverage

Phase 1 Habitat Distinctiveness

The habitat distinctiveness categories and their associated scores have been taken from the Biodiversity Offsetting Pilot in the UK National Ecosystem Assessment (UK NEA, 2011). The Phase 1 habitat classification does not determine between those land uses that are best for biodiversity and those that are not. The distinctiveness is designed to assign scores to those land-uses that are the most bio-diverse and those that are not.

The habitat distinctiveness categories can also be interpreted as areas of habitat importance or sensitivity to development, and are a useful way of simplifying the 57 Phase 1 map categories. Each Phase 1 habitat type has been given a distinctiveness score as below:

6 – High distinctiveness

5 – Medium / High distinctiveness

4 – Medium distinctiveness

3 – Low / Medium distinctiveness

2 – Low distinctiveness.

1 - None

High distinctiveness scores equate to areas of highest biodiversity, including all unimproved habitats. High distinctiveness will incorporate statutory sites, Local Wildlife Sites and the Biodiversity Action Plan (BAP) habitats and species. The high distinctiveness category for linear habitats includes species-rich hedgerows.

Moderate distinctiveness scores are a mid-way assessment for areas that are either a transition from high to low or vice versa; or are of indeterminate biodiversity. Examples include semi-improved neutral grassland, scrub and tall ruderal[1] which are transitional and temporary habitats. Linear sites with moderate scores include intact hedgerows.
Low distinctiveness scores are areas of low biodiversity interest. These areas cover the majority of the sub-region, including for example agricultural farmland, amenity grassland and coniferous plantation woodland. Low linear scores are associated with defunct hedgerows, fences and dry ditches.

Ancient Woodland and SSSIs and considered as irreplaceable habitats and although are given a score of 6 for the purpose of mapping they are to be avoided. By definition,

[1] *Ruderal from the latin for rubble or rubbish refers to cleared areas that have become colonised by pioneer plant species, typical tall perennial or biennial plant species e.g. Rosebay Willowherb , Common nettle, Japanese Knotweed*

they are not replaceable. Local Wildlife Sites are also scored highly for their habitats but afford less protection under planning law.

Phase 1 Habitat Connectivity

The NPPF recognises the need for, and the implementation of landscape habitat connectivity. However, the NPPF does not specify how this should be done. The HBA together with WCC Ecological Services and York University developed a set of Phase 1 habitat connectivity maps in 2012 which continued until recently. In 2017 HBA began working with open source connectivity model*ing* software called *Conefor Sesinoide* (Santiago & Torne, 2009) Some of the mapped results are shown below in Figure 6.

The main habitat groups identified for the connectivity mapping include:

- Woodlands; including semi-natural, broad-leaved plantation and scrub land
- Priority grasslands; namely all grasslands that have not been agriculturally improved
- Standing water and habitats associated with marshy conditions; ponds and marsh
- Intact hedgerows and trees

The connectivity mapping shows where there are opportunities for improving connections between similar types of habitats. Conversely the mapping can be used to assess the possible impact of development on existing habitats and where these can be offset or avoided altogether.

Figure 7 is an example of the connectivity mapping for semi natural woodlands, scrub and broad leaved plantation, together with intact hedges and linear trees. The distance has been set to 100 metres. The resulting map shows the poor connectivity between woodland and surrounding hedgerows. The best connected corridor is along the Smite Brook where it connects to the Oxford Canal. The longer the corridor the more connections are made. Isolated blocks of woodland with few hedgerows close kava the lowest probability of connecting. Clearly there are opportunities for hedgerow restoration and creation, particularly between woodland patches.

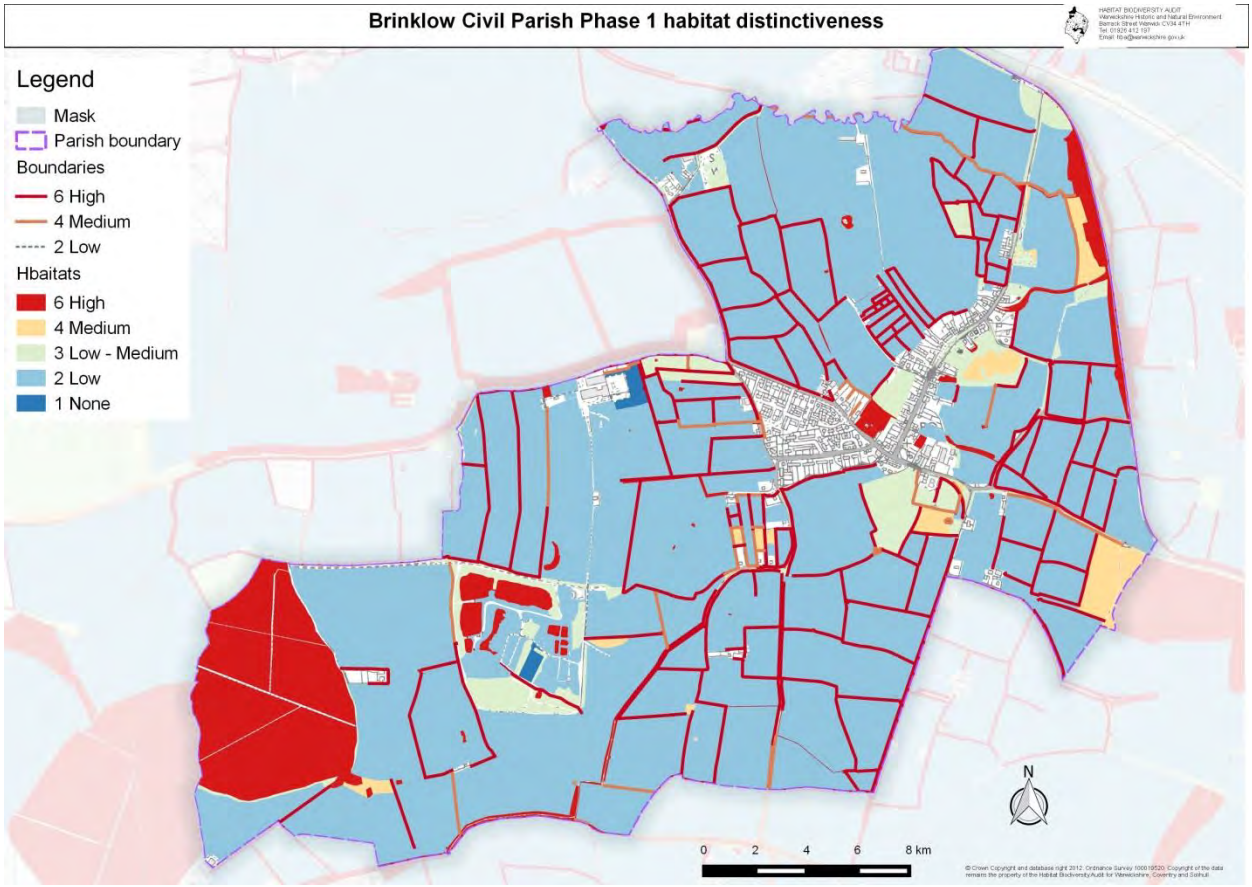

Figure 7 habitat distinctiveness map

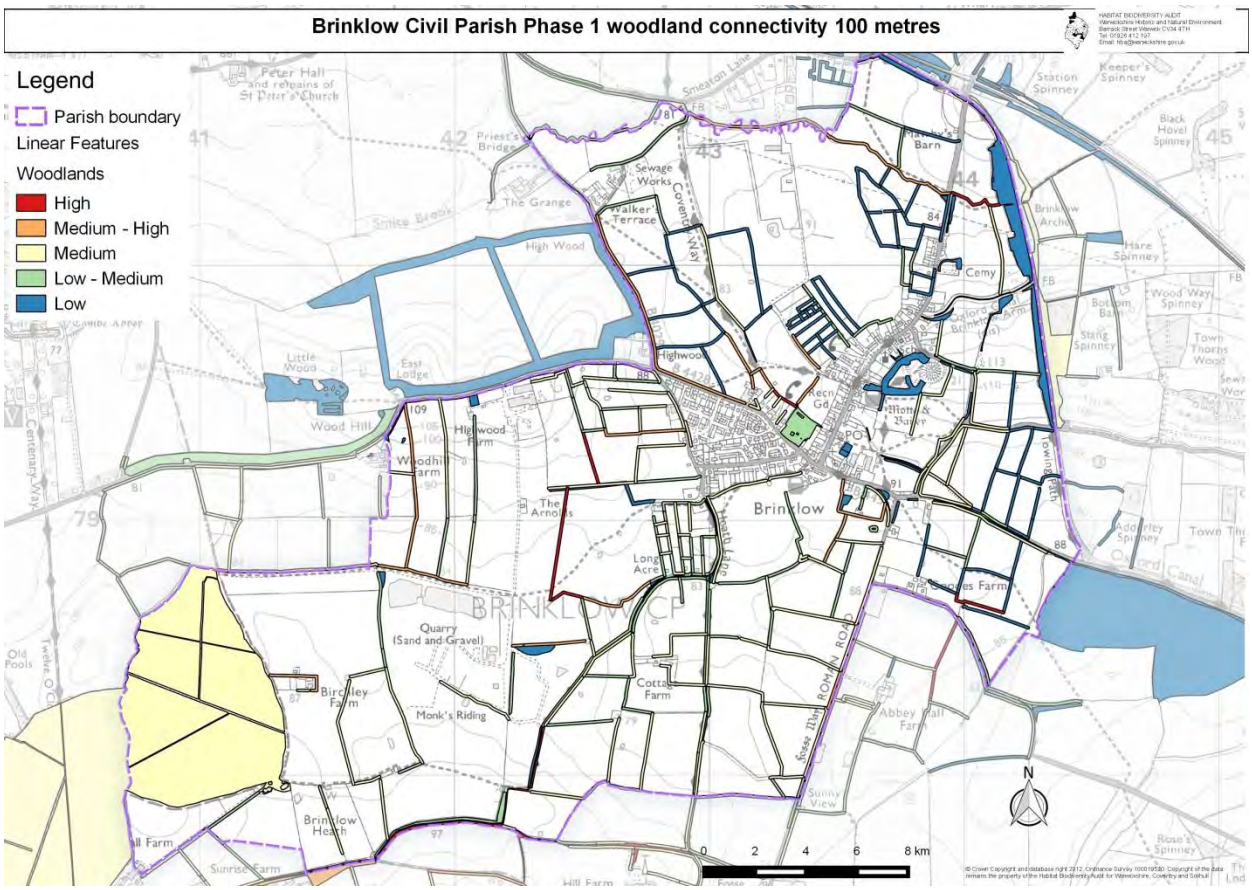

Figure 8 Woodland & hedgerow connectivity map

Protected species

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Protected Species in Warwickshire (Warwickshire Wildlife Trust, 2012)

European Protected Species (EPS) are protected under the Conservation (Natural Habitats &c.) Regulations 1994 found in Warwickshire include:

- All species of bat
- Great crested newt
- Otter
- Dormouse
- White-clawed crayfish
- Other species that are protected under the Wildlife and Countryside Act 1981 (as mended) and the Protection of Badgers Act 1982 relevant to Warwickshire include:
- Water Vole
- Barn owl
- Grass snake
- Slow worm
- Common lizard
- Badger

Warwickshire, Coventry and Solihull Local Biodiversity Action Plan (LBAP)

The Warwickshire, Coventry and Solihull Local Biodiversity Action Plan (LBAP) provide a local response to the UK Government's National Action Plans for threatened habitats and species. The LBAP contributes to national targets wherever these are relevant to the Warwickshire sub-region but also sets local targets. The LBAP action plans for all local habitats can be found on the Warwickshire Wildlife Trust site:

http://www.warwickshirewildlifetrust.org.uk/LBAP

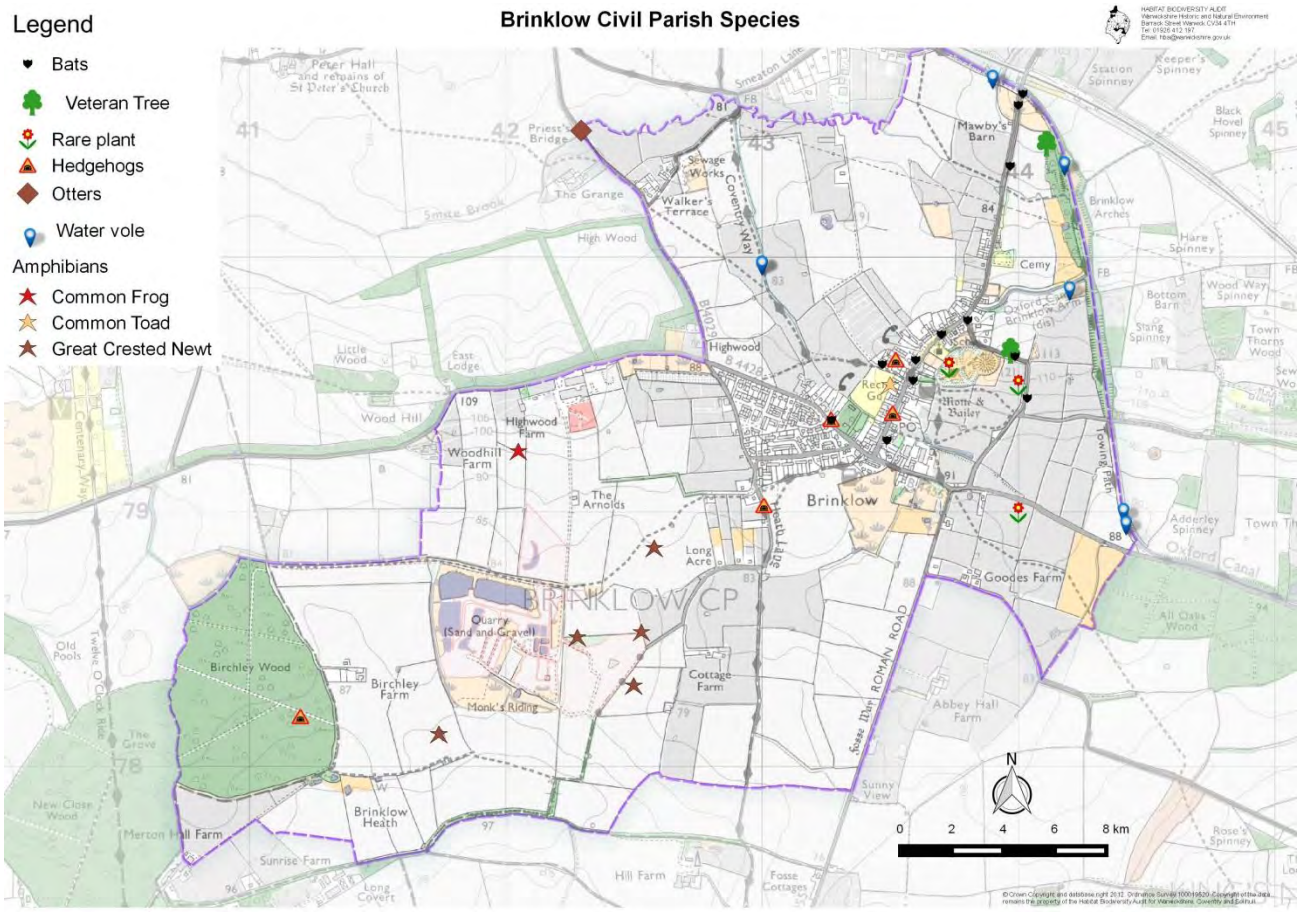

Figure 9 Species map

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Appendices

Phase 1 habitat categories

Phase I Habitat Survey
Polygon Features

- A111 (Broad-leaved semi-natural woodland)
- A112 (Broad-leaved plantation)
- A121 (Coniferous semi-natural woodland)
- A122 (Coniferous plantation)
- A131 (Mixed semi-natural woodland)
- A132 (Mixed plantation)
- A21 (Dense/continuous scrub)
- A22 (Scattered scrub)
- A31 (Broad-leaved parkland/scattered trees)
- A32 (Coniferous parkland/scattered trees)
- A4 (Recently felled woodland)
- A5 (Orchard)
- B11 (Unimproved acidic grassland)
- B12 (Semi-improved acidic grassland)
- B21 (Unimproved neutral grassland)
- B22 (Semi-improved neutral grassland)
- B31 (Unimproved calcareous grassland)
- B32 (Semi-improved calcareous grassland)
- B4 (Improved grassland)
- B5 (Marsh/marshy grassland)
- B6 (Poor semi-improved grassland)
- C11 (Continuous bracken)
- C31 (Tall ruderal)
- C32 (Non-ruderal)
- D5 (Dry heath/acid grassland mosaic)
- E11 (Sphagnum Bog)
- E21 (Acid/neutral flush)
- E31 (Valley mire)
- E32 (Basin mire)
- F1 (Swamp)
- F22 (Inundation vegetation)
- G1 (Standing water)
- G2 (Running water)
- I21 (Quarry)
- I22 (Spoil)
- I23 (Mine)
- I24 (Refuse tip)
- J11 (Arable)
- J112 (Allotments)
- J113 (Set-aside)
- J12 (Amenity grassland)
- J13 (Ephemeral/short perennial)
- J14 (Introduced shrub)
- J4 (Bare ground)

Species Rich Hedgerows – contain five or more native woody species within a 30-metre section

alder (Alnus glutinosa)
apple, crab (Malus sylvestris)
ash (Fraxinus excelsior)
aspen (Populus tremula)
beech (Fagus sylvatica)
birch, downy (Betula pubescens)
birch, silver (Betula pendula)
black-poplar (Populus nigra subspecies betulifolia)
blackthorn (Prunus spinosa)
broom (Cytisus scoparius)
buckthorn (Rhamnus cathartica)
buckthorn, alder (Frangula alnus)
cherry, wild (Prunus avium)
dogwood (Cornus sanguinea)
elder (Sambucus nigra)
elm (Ulmus species)
gooseberry (Ribes uva-crispa)
gorse (Ulex europaeus)
gorse, western (Ulex gallii)
guelder rose (Viburnum opulus)
hawthorn (Crataegus monogyna)
hawthorn, midland (Crataegus laevigata)
hazel (Corylus avellana)
holly (Ilex aquifolium)
hornbeam (Carpinus betulus)
lime, large-leaved (Tilia platyphyllos)
lime, small-leaved (Tilia cordata)
maple, field (Acer campestre)
oak, pedunculate (Quercus robur)
oak, sessile (Quercus petraea)
osier (Salix viminalis)
pear, wild (Pyrus pyraster)
poplar, grey (Populus x canescens)
poplar, white (Populus alba)
privet, wild (Ligustrum vulgare)
rose (Rosa species)
rowan (Sorbus aucuparia)
service-tree, wild (Sorbus torminalis)
spindle (Euonymus europaeus)
walnut (Juglans regia)
wayfaring-tree (Viburnum lantana)
whitebeam (Sorbus species)
willow (Salix species)
yew (Taxus baccata)

Linear Features

- A21 (Linear Scrub)
- A3 (Linear Trees)
- G1 (Standing Water)
- G2 (Running Water)
- I1 (Inland Cliff)
- J21 (Intact Hedge)
- J211 (Native Species Rich Intact Hedge)
- J22 (Defunct Hedge)
- J23 (Hedge with Trees)
- J231 (Native Species Rich Hedge with Trees)
- J24 (Fence)
- J25 (Wall)
- J26 (Dry Ditch)
- J27 (Bounday Removed)
- J28 (Earth Bank)