

Thurston Biodiversity Audit

September 2024

<i>Project no.</i>	<i>Report:</i>	<i>Date:</i>
081/24	Final	6th September 2024
<i>Prepared by:</i>	<i>Checked and approved by:</i>	<i>Date:</i>
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DISCLAIMER

This report has been compiled in accordance with BS 42020:2013 Biodiversity – Code of practice for planning and development, as has the survey work to which it relates.

The information, data, advice and opinions which have been prepared and provided are true and have been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional *bona fide* opinions.

This survey was carried out and an assessment made of the site at a particular time. Every effort has been made to date to provide an accurate assessment of the current situation, but no liability can be assumed for omissions or changes after the survey has taken place.

It is our policy to submit biological records to Suffolk Biodiversity Information Service (SBIS), for the purposes of increasing knowledge of the distribution of species within Suffolk. If you wish to discuss this, please contact us within three months of submission of this report.

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EXECUTIVE SUMMARY

Wilder Ecology, a part of SWT Trading Ltd, the consultancy of Suffolk Wildlife Trust, was instructed by Thurston parish council to undertake a Biodiversity Audit in order to satisfy the requirements of the biodiversity policy which was adopted by the parish council. Wilder Ecology was commissioned to undertake an audit of the habitats, local green space and ecological networks of the parish. This report also provides advice on possible actions in support of biodiversity within the parish, in particular providing recommendations regarding the management of its local green spaces.

Thurston parish contains one County Wildlife Site, Black Bourn Valley. Six Priority Habitats have been identified within the parish including hedgerows, ponds, mixed deciduous woodland, wood pasture and parkland, ponds and rivers and streams. A wide variety of protected and Priority Species have also been recorded within the parish.

12 local green spaces were surveyed as part of the biodiversity audit. A range of habitats beneficial to wildlife are present across these local green spaces, including grassland, hedgerows and trees. Management advice has been provided in order to improve these areas for biodiversity.

Several protected and Priority species have been recorded in association with the residential area of Thurston, including bat species, several bird species and hedgehog. There are a large number of species records for Black Bourn Valley CWS including otter, water vole and great crested newt.

Ecological networks within the parish have been mapped. The main ecological networks within the parish are associated with the hedgerow network which border lanes, byways and footpaths. Rivers, streams and the railway line also contribute to the ecological network.

1.INTRODUCTION

1.1 Brief and terms of reference

SWT Trading Ltd: Wilder Ecology, the consultancy of Suffolk Wildlife Trust, was instructed by Thurston parish council to undertake a Biodiversity Audit in order to satisfy the requirements of the biodiversity policy which was adopted by the parish council in December 2023.¹

This report will provide Thurston parish council with a biodiversity audit of the council landholdings as well as an evaluation of the specific habitats and associated ecological networks within the entire parish. This report will also provide advice on possible actions in support of biodiversity within the parish, in particular providing recommendations regarding the management of its local green spaces.

1.2 Parish location and statistics

Thurston is a village and civil parish located 4 miles to the east Bury St. Edmunds within Mid Suffolk District. It covers roughly 861 hectares and its central point grid reference is close to TL 930654. The parish also shares boundaries with the Suffolk civil parishes of Pakenham, Norton, Tostock, Beyton, Rushbrooke with Rougham and Great Barton.

Data from the 2021 UK census indicates that Thurston village has a population of around 3,333 inhabitants², but the population is expected to rise to 6,000 due to the significant number of granted planning permissions in recent years.³ Outside of the settlement boundary the land is farmed, with both arable and a small amount of grazing land present along the river valleys. There is a County Wildlife Site to the east of the parish and several woodlands to the north of the parish the majority of which were planted in the late-1800s.

2. PLANNING AND DEVELOPMENT CONTEXT

An outline of elements of the current planning system and associated strategic documents will help to place this present evaluation in context:

2.1 Localism Act (2011)

The Department of Communities and Local Government promoted the Localism Act (2011). The subsequent Neighbourhood Planning (General) Regulations (2012) provide the statutory framework for Neighbourhood Development Plans. These allow communities to establish the general planning policies for the development and use of land in a neighbourhood. 'Neighbourhood Plans allow local people to get the right type of development for their community, but the plans must still meet the needs of the wider area'.

2.2 National Planning Policy Framework

The National Planning Policy Framework (NPPF) is statutory guidance published by the Department for Levelling Up, Housing and Communities (September 2023), which provides national planning policy.⁴

Of particular relevance to this project is Paragraph 180, 181 and 185 under Section 15 'Conserving and Enhancing the Natural Environment', which states:

¹ <https://thurstonparishcouncil.uk/assets/Uploads/Thurston-BioDiversity-Policy-2023.pdf>

² <https://thurston.parish.uk/>

³ <https://www.midsuffolk.gov.uk/documents/d/mid-suffolk/thurston-np-adopted-oct19>

⁴ <https://www.gov.uk/guidance/national-planning-policy-framework/15-conserving-and-enhancing-the-natural-environment>

180. Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits of from natural capital and ecosystem services - including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

181. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

185. To protect and enhance biodiversity and geodiversity, plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

2.3 The Babergh and Mid Suffolk Joint Local Plan

The Babergh and Mid Suffolk Joint Local Plan Part 1 was adopted by both Babergh and Mid Suffolk District Councils in November 2023.⁵ This replaces the existing Babergh Local Plan (2006) and the Mid Suffolk Local Plan (1998) and Mid Suffolk District Core Strategy (2008).

Relevant policies within these documents included:

- Strategic Policy SP09 – Enhancement and Management of the Environment
- Local Policy LP16 – Biodiversity and Geodiversity
- Local Policy LP17 – Landscape

⁵ [babergh-and-mid-suffolk-joint-local-plan-part-1-nov-2023 \(midsuffolk.gov.uk\)](https://midsuffolk.gov.uk/babergh-and-mid-suffolk-joint-local-plan-part-1-nov-2023)

2.4 Local Biodiversity Policy

Thurston parish council adopted a biodiversity policy in December 2023 which sets out the aims and objectives of the parish in regard to biodiversity, as well as actions that the parish will take in order to achieve these aims and objectives. The policy states that 'The object of this policy is to work towards enhancing and protecting the biodiversity of the parish of Thurston.'

Relevant actions within the policy include:

- The council will carry out a biodiversity audit of its landholdings.
- The council will consider the conservation and promotion of local biodiversity with regard to the management of its open spaces. This will include adopting beneficial practices with regarding to cutting and removal of vegetation, application of chemicals and timing of maintenance work.

2.5 Biodiversity Net Gain

Net gain in planning terms describes an approach to development that leaves the natural environment in a measurably better state than it was before. Mandatory as of February 2024, the Environment Act 2021 sets out an approach to biodiversity net gain which includes:

- Minimum target of 10% net gain required for planning applications
- Habitat secured for a minimum of 30 years
- The mitigation hierarchy of avoidance, mitigation and compensation still applies
- Irreplaceable habitat cannot be offset to achieve no net loss or net gain
- Net gain must be measurable using the statutory biodiversity metric designed by Natural England⁶

2.6 Competence

The field survey was undertaken by Ellen Shailes BSc Hons, ACIEEM. Ellen joined the consultancy in August 2021 as an ecologist having previously worked within the reserve management team. She has extensive knowledge of habitat creation and management as well as being experienced in a range of field surveys including botanical surveys as well as breeding bird and water vole. She is experienced in landscape evaluation and habitat assessment using UK Habitat Classification and Phase 1 and is also competent in GIS mapping. Ellen also holds a CSCS card (Construction Skills Certification Scheme – UK).

3.METHODOLOGY

3.1 Field survey

An ecological survey and audit of the parish was undertaken on 19th June 2024 by Ellen Shailes. The objective of the field survey was to investigate local green spaces and ecological networks, as well as habitat types and notable plant and animal species. Digital images were taken to illustrate these features. Using public highways, bridleways and footpaths it was possible to view and comment upon all local green spaces and habitat types present within the parish, as well as comment upon ecological networks throughout the parish.

3.2 Desktop survey

A variety of existing source material was consulted including:

- Suffolk Biodiversity Information Service website and databases

⁶ <https://www.gov.uk/guidance/biodiversity-net-gain>

- The MAGIC website (provides geographic information about the natural environment from a range of government sources)
- Suffolk Hedgerow Survey – County Report
- Suffolk Pond Survey (1999)

4. EVALUATION OF BIODIVERSITY ASSETS

4.1 Statutorily designated sites for biodiversity

The quality of the natural environment in Suffolk is reflected by the extent of its land area with statutory protection for its wildlife. 8% of the county has national designation as Sites of Special Scientific Interest (SSSI), reflecting the importance of habitats and species found here. Many of these areas are also of European or international importance, with designations as Special Areas for Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites.

There are no sites of European or international importance or Sites of Special Scientific Interest within Thurston parish.

4.2 County Wildlife Sites

4.2.1 Rationale behind this non-statutory designation

County Wildlife Sites (CWSs) are areas known to be of county or regional importance for wildlife. They have a key role in the conservation of Suffolk's biodiversity and are important links in Suffolk's 'Living Landscape'. CWS designation is non-statutory but is recognition of a site's high value for biodiversity. Suffolk currently has over 950 County Wildlife Sites representing approximately 3% of the county's land area.⁷

CWSs have been identified throughout Suffolk and range from small meadows, green lanes, dykes and hedges through to much larger areas of ancient woodlands, heathland, greens, commons and marsh. Outside of areas with statutory protection (such as SSSIs, Local and National Nature Reserves), CWSs are therefore the most important areas for wildlife in Suffolk and can support both locally and nationally threatened wildlife species and habitats.

Many CWSs support UK Priority Habitats and Species. They complement the statutory protected areas and nature reserves by helping to buffer and maintain habitat links between these sites.

It is important to note that the designation of a site as a CWS does not confer any new rights of access either to the general public or conservation organisations.

Suffolk Wildlife Trust, Suffolk County Council, Suffolk Biodiversity Information Service and Natural England manage the Suffolk County Wildlife Site system in partnership. This CWS system involves:

- Maintaining an up-to-date database of CWSs in Suffolk. Partners and local authorities have copies of the database.
- Designating new CWSs, extending existing CWSs and modifying information held on existing sites when changes occur. New sites and site extensions are notified in accordance with selection criteria.

⁷ <https://www.suffolkbis.org.uk/protected-sites>

- Supplying information on wildlife interest of CWSs to landowners and other organisations whose work may affect CWSs. The importance of CWSs is recognised by local authorities in Suffolk and they have all developed policies that give CWSs some protection in line with national planning policy. If a CWS is likely to be affected by development the views of the CWS partners is normally sought as part of the consultation process.

CWSs are implicitly recognised by the NPPF as having a fundamental role to play in meeting overall national biodiversity targets. In the NPPF 2023 they are described as ‘Locally Designated Sites’. CWS are not protected by legislation, but their importance is recognised by local authorities when considering planning applications. Under current planning policy there is a presumption against granting permission for development that would have an adverse impact on a CWS.

The high wildlife value of many CWSs has developed through land management practices that have allowed wildlife to thrive, for example traditional and historical management such as rotational coppicing of woodland, hay cutting or grazing of grasslands. Ensuring the continuation of such appropriate management is vital to maintain the wildlife value of a site. Establishing and maintaining good working relationships with landowners and managers is therefore essential.

4.2.2 County Wildlife Sites in Thurston

There is one County Wildlife Site associated with Thurston parish.

Black Bourn Valley – Mid Suffolk 208: TL 945651

120.62ha: River valley with habitat mosaic including coastal floodplain and grazing marsh. Priority Habitat and arable reversion (rewilding).



Photo 1. Black Bourn Valley County Wildlife Site (CWS) looking northeast across grazing marsh.

Black Bourn Valley is a Suffolk Wildlife Trust nature reserve along the Black Bourn River which supports a wide range of species including great crested newt, farmland bird species, rare wetland plants and wintering wildfowl.⁸ A large proportion of the site is arable reversion of the former Grove Farm, which is developing into a scrub and grassland mosaic, several ponds have also been restored and created throughout the site. Other Priority Habitats on site include floodplain grazing marsh, hedgerows, and mixed deciduous woodland.

4.3 Biodiversity Action Plans and Priority Habitats

The UK Biodiversity Action Plan (UK BAP, 1994) was the UK Government response to the 1992 International Convention on Biological Diversity. The UK BAP listed a range of habitats, plus a number of birds and species from other taxa of conservation interest. National targets and priorities were set in order to address the particular needs of those species. The list was amended in August 2007 to include additional species and habitats to reflect concerns over continuing declines. Much of the work previously carried out under the UK BAP is now focused through from country level down to local level through the creation of local biodiversity strategies. However, the UK BAP lists of Priority Species and Habitats remain important and valuable reference sources.

In addition, Section 40 of the 2006 Natural Environment and Rural Communities Act states that 'Every public body must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. UK Priority Habitats and Species, listed within Section 41 of the Act, are normally taken as a good benchmark for demonstrating biodiversity duty.

The Suffolk Biodiversity Action Plan comprises a list of Priority Species and Habitats in Suffolk and details of these can be found on the Suffolk Biodiversity Information Service website.

The following section deals with the Priority Habitats that are present in Thurston parish. In most cases the habitat descriptions include Priority Species and other notable species as supporting evidence. For the majority of species, they are only referenced if they were noted during the field survey or are recent records (post 2000) held by Suffolk Biodiversity Information Service.

4.4 Suffolk Priority Habitats in Thurston

Of the 21 Suffolk Priority Habitats, six are known to be present in Thurston parish:

- Hedgerows
- Mixed Deciduous Woodland
- Ponds
- Coastal and Floodplain Grazing Marsh
- Wood Pasture and Parkland
- Rivers and Streams

The Priority Habitats are described in more detail below to highlight the significance of these ecological assets within the parish. The format is in three parts:

1. General descriptions of the habitats as they relate to Suffolk

⁸ <https://www.suffolkwildlifetrust.org/blackbournvalley>

2. These are followed by descriptions of the Priority Habitat as found in Thurston during the field survey, noting any associated UK and Suffolk Priority species
3. Finally, reference is made from the Suffolk BAPs (or other sources) to those development activities that are most likely to affect the Priority Habitat as it exists in Thurston.

4.4.1 Hedgerows

Hedgerow Priority Habitat in the context of Suffolk

Hedgerows are boundary lines of trees and/or shrubs, sometimes associated with banks, ditches and grass verges. Those considered ancient or species-rich or both are an important reservoir of biodiversity in the farmed landscape as well as being of cultural, historical and landscape importance. Hedges act as wildlife corridors, linking habitats of high biodiversity value such as woodland and wetland, thus enabling bats, other small mammals and invertebrates to move around under cover from predators.

Ancient hedgerows, which support a greater diversity of plants and animals than subsequent hedges, may be defined as those that were in existence before the Enclosure Acts, passed between 1720 and 1840.

Species-rich hedgerows contain five or more native woody species on average in a 30-metre length. Those which contain fewer woody species, but a rich basal flora may also be considered as important. The Hedgerow Regulations 1997 define 'important' hedgerows as those with seven woody species, or six woody species in a 30m length, plus other defined features.

Key Priority Species in Suffolk which use hedges and associated grassy verges include: brown hare, grey partridge, song thrush, linnet, turtle dove, corn bunting, tree sparrow, bullfinch and various species of bats. Hibernating reptiles, amphibians and invertebrates such as white-letter hairstreak butterfly on elm hedges also all make use of this Priority Habitat.

Hedgerow Priority Habitat in Thurston parish

There are hedgerows spread across the entire parish, with more species-rich hedgerows concentrated to the north, east and south of the parish, associated with old field boundaries, small lanes and the Black Bourn Valley nature reserve. Some hedgerows which are associated with old tracks, lanes and field boundaries could be ancient, as they are species-rich and some have veteran and ancient trees associated with them. Species recorded within hedgerows across the parish include hawthorn, hazel, elm, dogwood, cherry and crab apple, with English oak and ash as a common standard tree.

Hedgerows in Thurston are important for a number of Priority Species. Several bird species have been recorded in the parish that are typical of this habitat including yellowhammer, linnet, grey partridge, and bullfinch. Bat species also use hedgerows for commuting, foraging and roosting in mature trees, and western barbastelle have been recorded locally. Hedgerows also provide a key role in the ecological networks across the parish, creating links for wildlife between larger patches of habitat.

Thurston was one of the many parishes covered by the Suffolk Hedgerow Survey, 1998-2012.⁹ The 2012 report on this project shows that out of the 296 hedges surveyed for woody species: 79 contained 4 species or fewer
70 contained 5, 6 or 7 species
147 contained 8 species or more
Therefore at least 70% of the sampled hedgerow resource within the parish can be deemed species-rich.



Photo 2. Hedgerow along field boundary within Black Bourn Valley CWS.

Activities and developments most likely to affect Hedgerow Priority Habitat in Thurston parish

- Removal to facilitate development, subsequent fragmentation of the hedgerow network arising from development;
- Under-management and neglect of hedges leads to a reduction of their biodiversity value due to changes in their structure (and occasionally leads to their complete disappearance);
- Over-management from too frequent flailing can lead to a change in structure and if carried out in successive years, loss of hedgerow fruit in autumn, as flowering and fruiting normally takes place on second year growth;
- Mature hedges with a minimum grass strip separating them from arable land may suffer damage to tree and shrub roots through ploughing;
- Fertilizer and other agro-chemical drift may degrade plant and invertebrate populations, especially where a crop extends to the hedge base.

4.4.2 Mixed Deciduous Woodland

Mixed Deciduous Woodland Priority Habitat in the context of Suffolk

This Priority Habitat includes all broadleaved stands and mixed broadleaved and coniferous stands which have more than 80% of their cover made up of broadleaved species. It also includes patches of scrub of above 0.25 hectares forming a continuous canopy, areas of

⁹ Suffolk Hedgerow Survey 1998-2012, Guy Ackers, Suffolk Coastal District Council Greenprint Forum, 2012

recently felled woodland and other successional types, along with the other integral features of woodland such as glades and rides.

These woodlands may be ancient (where cover existed before c 1600) or recent (where cover has been created since c 1600). Both these age designations may have semi-natural cover or plantation cover, depending on past management. Management can vary from coppice or coppice with standards to wood-pasture, high forest or minimum intervention. The latter, when found in ancient semi-natural woodland, contains some of the most important wildlife assemblages of any habitat.

Mixed Deciduous Woodland Priority Habitat Thurston parish

There are no known ancient woodlands within Thurston parish which are listed on the ancient woodland inventory, however there are a number of woodland blocks which are identified as Priority Habitat Mixed Deciduous Woodland on Natural England's Priority Habitat Inventory on MAGIC.¹⁰ There is a concentration of woodlands to the north of the parish including Skeleton Plantation, Coronation Belt and Grove Belt.



Photo 3. Veteran oak on boundary of Skeleton Plantation to the north of the parish.

Skeleton Plantation has a veteran oak along its western boundary and the 1883 Ordnance Survey map of Thurston shows the southern part of the Skeleton Plantation in existence at this time. The 1883 Ordnance Survey map shows that most of the woodland within Thurston was planted post 1883.¹¹ Skeleton Plantation and Coronation Belt consist of a mix of deciduous and conifer species including oak, ash, Scots pine, field maple, hazel and holly. There are several smaller areas of similar aged woodland scattered across the south and east of the parish, some of which are identified as Priority Habitat Mixed Deciduous Woodland on Natural England's Priority Habitat Inventory on MAGIC.

¹⁰ <https://magic.defra.gov.uk/>

¹¹ <https://www.oldmapsonline.org/en>

Activities and developments most likely to affect the Mixed Deciduous Woodland Priority Habitat in Thurston parish

- Increasing recreational pressure within woodlands next to the urban fringe;
- Further fragmentation of existing woodland areas;
- Intensification of management between woodland fragments reduces the ecological value of edge habitats and the connectivity between woodland blocks in the landscape;
- Overgrazing and over-browsing by expanding deer populations changes woodland structure through reduced regeneration;
- Lack of canopy management leading to over-shading and decrease in quality of ground flora.

4.4.3 Ponds

General description of this Priority Habitat in the context of Suffolk

For the purposes of classifying this Priority Habitat, ponds are defined as permanent or seasonal standing water bodies up to 2 hectares in extent which meet one or more of the following criteria:

- Habitats of international importance
- Species of high conservation importance, for example ponds supporting Priority Species
- Ponds of high ecological quality, as determined by standard survey techniques

Ponds Priority Habitat in Thurston parish

Information provided by Suffolk Biodiversity Information Service and from aerial photographs indicate that there are approximately 57 ponds throughout the parish, with a higher density in the east of the parish where there has been significant new pond creation at Black Bourn Valley CWS. This may be an underestimate as this does not include all ponds within individual gardens.

This represents a density of approximately 6.6 ponds/km² indicating that Thurston contains a lower pond density than the average for the Mid Suffolk District (9.6 ponds/km²), however Thurston has a higher density of ponds than the average for the entire Suffolk County (5.9 ponds/km²).¹²

As access was limited it was only possible to access a few of these ponds during the field survey, but reference to the most recent Ordnance Survey maps and Google Satellite suggests that the majority still exist. Some ponds have been lost within the agricultural landscape, however these losses have largely been replaced by the number of ponds created at Black Bourn Valley CWS and a few that have been created within recent housing development.

The ponds visited during the survey included several of those at Black Bourn Valley CWS, the recently created SUDs lagoon to the northeast of the Thurston Park development and the pond within the wildlife garden in the new green open space area. The pond within the wildlife garden was dry during the field survey and Google Satellite demonstrates that this pond has been dry in previous years.

¹² Sibbett, N. (1999) The Distribution and Abundance of Ponds in Suffolk. No. 333 English Nature Reports. English Nature, Peterborough.



Photo 4. Recently created pond within the Black Bourn Valley CWS to the east of the parish.

Activities and developments that could affect the Ponds Priority Habitat in Thurston parish

Ponds are dynamic systems, being both lost and created over time. However, loss or degradation of ponds - even if they are at low densities within a landscape network - may lead to a reduced diversity of wildlife as ponds become more isolated from one another, compromising species that may rely on a network of ponds for their survival. Examples of how such changes may occur include:

- Complete infilling due to loss of economic value or new development;
- Loss of terrestrial buffer zones in areas of intensive land use;
- Diffuse or point source pollution from nutrients or other chemicals;
- Inadvertent or deliberate introduction of non-native species such as New Zealand pygmyweed, least duckweed or ornamental fish;
- Neglect and/or lack of management resulting in heavy shading and drying out.

It should be noted that some apparently neglected ponds and many ephemeral ponds are of great interest for biodiversity and that a pond survey based on a standard procedure can do much to inform management decisions.

4.4.4 Coastal and Floodplain Grazing Marsh

General description of this Priority Habitat in the context of Suffolk

This type of grassland is found on low-lying alluvium along the floodplains of rivers and adjacent to the Suffolk coast. It is characterised by a water table at or above ground level for some part of the year.

Grazing marsh is defined as periodically inundated pasture or meadow, with ditches to maintain the water levels. Almost all areas are grazed and some are cut for hay or silage. Sites may contain seasonal ponds with emergent swamp communities, but not extensive areas of tall fen species like reeds. However, grazing marsh may merge with fen and reed swamp communities. The mosaic of habitats within these sites provides diverse conditions, which support a wide range of plants, invertebrates, birds and animals.

These areas of flat, grazed land can be especially important for breeding, roosting and feeding waders and wildfowl. Large losses of this habitat have occurred throughout the UK in the last century. Important components of the grazing marsh ecosystem are the ditches that often form the field boundaries. These can support a variety of marginal and aquatic plant species, including water soldier, arrowhead, water-violet and frogbit. These ditches also support a variety of animals including water vole and invertebrates such as the Norfolk hawk dragonfly.

Coastal and Floodplain Grazing Marsh Priority Habitat in Thurston parish

This habitat type is represented by the low-lying grassland within the valley of the River Black Bourn within the Black Bourn Valley CWS which is managed by Suffolk Wildlife Trust. This area of grazing marsh extends into the neighbouring parish where new scrapes have been created to attract waders and wildfowl, such as teal and snipe. This area is managed by cattle grazing and the grassland supports wetland plants including southern marsh-orchid and ragged-robin. Several protected species have been recorded within this habitat including water vole, otter and great crested newt.

Activities and developments most likely to affect Coastal and Floodplain Grazing Marsh Priority Habitat in Thurston parish

- Impacts of drought and ground water abstraction;

4.4.5 Wood Pasture and Parkland

General description of this Priority Habitat in the context of Suffolk

Lowland wood pastures and parkland are the products of historical land management systems and represent a vegetation structure rather than being a particular plant community. Typically, this structure is one of large open-grown or high forest trees (often pollarded) at various densities, in a matrix of grazed grassland, heathland and/or woodland floras. It can include non-native species introduced as part of a designed landscaping scheme.

Historic landscapes can provide a wealth of habitats and niches for wildlife, especially fungi, invertebrates, bats and woodland birds.

Wood pasture and parkland Priority Habitat in Thurston parish

There are two areas of Wood Pasture and Parkland Priority Habitat listed on Natural England's Priority Habitat Inventory on MAGIC. There is an area in the north of the parish associated with Nether Hall Estate and an area to the south of the parish associated with Thurston House. The parkland which is associated with Thurston House was not accessible during the field survey, however the parkland associated with Nether Hall Estate is accessible via a public footpath.

This area of historic parkland has likely existed since the building of Nether Hall, which was built c.1600.¹³ The site fits the Priority Habitat description for wood pasture and parkland in part due to the presence of several ancient oaks which may be older than Nether Hall itself. The historic parkland consists of an open area of neutral grassland which is cattle grazed with scattered trees, the trees being the most significant feature of the site. Several ancient oaks are present with features such as large rot cavities and decaying branches. Several standing dead oaks are present on site. These features provide a range of microhabitats which support

¹³ <https://historicengland.org.uk/listing/the-list/>

species such as bats, breeding birds, specialist invertebrates, lichen and fungi. Other tree species are present including non-native and ornamental trees such as red oak and copper beech, which is a common feature of historic parkland. Several young trees have been planted and are being protected from cattle with tree guards, an important part of historic parkland management is the need to replant as ancient trees die. Nuthatch and great spotted woodpecker were heard during the field survey and likely breed on site.



Photo 5. Ancient oak within historic parkland at Nether Hall Estate.

Activities and developments most likely to affect Wood Pasture and Parkland in Thurston

- Reduction in structural and age diversity of woody species, including lack of replanting to replace lost mature/veteran trees or damage to young trees by cattle;
- Cessation of grazing by cattle or sheep leading to changes to grassland habitat;
- Unsympathetic management of the grassland through the use of fertilisers or herbicides, leading to changes in grassland flora and fungi assemblage;
- Unsympathetic tree surgery including removal of fallen deadwood or standing deadwood (unless essential for safety reasons);

4.4.6 Rivers and Streams

General description of this Priority Habitat in the context of Suffolk

During a 2007 national review of BAP Habitats and species by Joint Nature Conservation Committee (JNCC) it was considered appropriate to create a new BAP specifically for rivers. The criteria for a Rivers BAP were published by JNCC in July 2010 and include:

- Headwater reaches;
- Presence of specific vegetation communities;
- Chalk rivers;
- Active shingle rivers;
- Sites of Special Scientific Interest designated for riverine features or species;
- Presence of Priority BAP Species or other indicator species.

Rivers and Streams Priority Habitat in Thurston parish

The River Black Bourn runs along the eastern boundary of the parish and forms part of the Black Bourn Valley CWS. The second and sixth criteria above apply to the River Black Bourn, as the Black Bourn Valley CWS is designated in part for its aquatic plant communities, some of which are associated with the river. Species records for Thurston also show the presence of otter and water vole recorded along the river corridor. Various bat species are also recorded in the parish and will most likely feed along the river channel, particularly the species which tend to be associated with river valleys such as soprano pipistrelle.



Photo 6. Pakenham Fen stream where it is crossed by a public footpath to the east of Thurston village.

A smaller tributary of the Black Bourn, which is known as Pakenham Fen stream, also runs through Thurston parish. The stream runs through agricultural land to the east of Thurston village and joins the Black Bourn north of Pakenham at Mickle Mere CWS. This stream is identified with high certainty as a chalk stream on Natural England's Priority Habitat Inventory on MAGIC and is therefore considered a Priority Habitat. During the time of the field survey the stretch of the stream which runs through Thurston was dry, even after a very wet winter and spring. Part of the channel has been straightened due to its use for land drainage within the agricultural landscape. The Environment Agencies River Basin Management Plan also highlights high levels of phosphates which are identified as being caused by sewage discharge. The River Basin Management Plan identifies Pakenham Fen stream as having moderate ecological status, however this is an assessment of the stream along its entire length and includes the section which runs through Pakenham Fen, part of which is a Site of Special

Scientific Interest.¹⁴ During the field survey the stretch of the Pakenham Fen stream which runs through Thurston parish was assessed as being in poor condition for wildlife.

Activities and developments that could affect the Rivers and Streams Priority Habitat in Thurston parish

Inappropriate management of and adverse events within the river channel would include:

- Extensive dredging or channel re-alignment;
- Passage of major infrastructure schemes without mitigation of effects;
- Extensive removal of bankside trees;
- Severe point source pollution events.

4.5 Local Green Spaces in Thurston

Local Green Spaces within Thurston are areas which have been designated within the Neighbourhood Plan as being of particular importance to the local community. This affords them protection from development other than in very special circumstances. Three of the open spaces included in this section have not been designated as Local Green Space in the Thurston Neighbourhood Development Plan, however they have been included here as they are considered important areas of open space by the parish council, these include St Peter's Church and Churchyard, the Children's Play Area on Heath Road and Thurston Park Public Open Space. Thurston Park Public Open Space was not created at the time of the adoption of the Thurston Neighbourhood Development Plan.

The following section reviews the biodiversity value of the local green spaces within Thurston and provides management recommendations which are beneficial to biodiversity.

4.5.1 The New Green Open Space Area and Wildlife Garden

The New Green Open Space is an open area within the main settlement of Thurston which was created in the 1980s/90s as part of a housing development. The site contains a range of facilities for local people including a play area, sports pitches, picnic benches and a wildlife area to the east. The majority of the area is modified grassland which is species-poor with less than 6 species per m² due to it being regularly mown in order to allow for recreational activities. Common species are present within the grassland including common chickweed, dove's-foot cranesbill, yarrow and rough meadow-grass. There are scattered trees across the site with species including sycamore, lime, horse chestnut, rowan and silver birch. Trees across the site are of a similar age and provide limited breeding and roosting opportunities for bird and bat species, such as holes and cracks.

¹⁴ <https://environment.data.gov.uk/catchment-planning/v/c3-plan/WaterBody/GB105033043300>



Photo 7. New Green Open Space Area view across an area of modified grassland with scattered trees.

The wildlife garden provides improved opportunities for wildlife with an area of neutral grassland with several wildflower species present, as well as a mixed native hedgerow, trees and a bug hotel. The grassland within this area is more species-rich than the rest of the grassland on site, with two positive indicator species present including oxeye daisy which was frequent across the site and ragged robin which was present. Other species present include common sorrel, hedge bedstraw, wild carrot, crested dog's-tail and sweet vernal grass. There are scattered trees throughout the grassland including lime and cherry.

Ragged robin suggests that part of the site is seasonally wet and information provided by Suffolk Biodiversity Information Service and from recent Ordnance Survey Maps suggests that there is a pond within the wildlife area. This was not apparent however during the field survey as the pond was completely dry and there was no evidence of aquatic vegetation other than the one or two ragged robin plants. Google Satellite imagery also demonstrates that this pond has been dry in previous years. This evidence suggests that this pond rarely holds water which is likely due to the soil type here being freely draining sandy Breckland soils.¹⁵

A mixed native hedgerow surrounds the site which provides excellent opportunities for breeding birds as it has a dense structure with limited gaps and has been allowed to grow wide and tall. Species within the hedgerow include alder, cherry, hawthorn, hazel and dogwood. Several fruit and nut bearing species are present within the hedgerow which provide food for a range of species. Several bird species were seen utilising the hedgerows on site during the field survey including long-tailed tits, blackbirds and greenfinch. Greenfinch are included in the Birds of Conservation Concern 5 (BoCC⁵) Red listed due to recent population declines.¹⁶

¹⁵ <https://www.landis.org.uk/soilscapes/>

¹⁶ <https://www.bto.org/sites/default/files/publications/bocc-5-a5-4pp-single-pages.pdf>



Photo 8. Wildlife garden with a range of wildflower species, hedgerows and trees.

Management recommendations to benefit biodiversity

Whilst the majority of the grassland within the New Green Open Space is mown regularly to allow for recreational activities, there is scope to relax the mowing regime in some areas in order to improve conditions for biodiversity. Areas of grassland which are not used as regularly could be left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. These areas should then be cut and cleared in late-July/August, ensuring to remove all the grass cuttings, as if left on they will increase nutrients which favours less desirable species such as nettle. This management regime will instead promote the spread of more desirable wildflower species and increase the diversity of species over time which will benefit pollinators.

This mowing regime should be undertaken in defined areas, such as a 10 – 20 metres strip through the middle of the site where there is a line of trees that crosses the New Green Open Space Area from east to west. Paths should continue to be cut through these areas and signs should be erected, similar to elsewhere in the parish, to explain the reasons for the change in management. Other areas where this mowing regime could be considered include along the boundaries of the site, where a 2 - 5 metre strip of grassland could be left uncut between April and late-July/August, such as along the fence line to the south of the site or along the hedgerow which surrounds the bowls pitch. This will create more varied grassland across the site which will benefit biodiversity within the parish.

The use of pesticides and fertilisers should be avoided on the New Green Open Space Area to benefit biodiversity.

The majority of trees across the New Green Open Space Area provide limited breeding opportunities for bird species, due to their age and lack of features such as holes and cracks. Bird boxes could be erected in trees across the site for common species such as blue tit, great tit and robin. These should be erected high enough so that they cannot be accessed by members of the public and on the north facing side of the trunk to protect them from extreme temperatures. Bat boxes could also be erected. These should be situated at least 4m high, away from artificial lights and be facing a range of aspects.

Within the wildlife garden the grassland should be managed as outlined above, being left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. The hedgerows within the wildlife area are currently in good condition, however they will require management in the future in order to retain their dense structure. Hedgerow management is best carried out in the autumn/winter to avoid disturbance to nesting birds. Hedgerows should never be managed during the bird nesting season (March – August). This advice is the same for any tree works undertaken across the site. If the hedgerow starts to become gappy at the base then it can be rotationally coppiced in short sections. Coppice the hedgerow by cutting it to just above ground level at an angle to allow water to run off. Multiple new shoots will then regrow, which will create a dense hedgerow in a few years after coppicing. This should be done gradually, coppicing only a short section every year to reduce disturbance to wildlife.

In order for the pond on site to retain water it will require lining, either with an artificial liner or with clay. Ponds lined with artificial liners can still provide good habitat for wildlife, especially if they are planted with native pond plants. Suitable species include native water lily species, water-crowfoot, water mint, brooklime and water violet.

4.5.2 The Recreation Field, Church Road

The Recreation Field is an open area of grassland which is used as a football and cricket pitch and has a play area in the northeast corner. The majority of the area is modified grassland which is species-poor due to it being regularly mown in order to allow for recreational activities. Common species present include daisy, yarrow and annual meadow-grass. There is a footpath and a line of trees along the northern and western boundaries of the site with species including oak, horse chestnut and sycamore, as well as a line of oak trees which borders Church Road. There are several veteran oaks along Church Road which have features for wildlife such as rot holes and deadwood.



Photo 9. View across modified grassland on Recreation Field.

Management recommendations to benefit biodiversity

Whilst there is limited potential to improve the management of this area for biodiversity, as the majority of the grassland is mown regularly to maintain the football and cricket pitch, again here there is some scope to relax the mowing regime in order to improve conditions for biodiversity. A thin strip of grassland, 1 – 5 metres wide, around the perimeter of the recreation field could be left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. This will benefit biodiversity by creating habitat for insects such as grasshoppers and pollinators, as well as improving opportunities for species such as hedgehog to move about the site and forage.

The use of pesticides and fertilisers should be avoided on the Recreation Field to benefit biodiversity.

The majority of the trees which surround the Recreation Field along the footpath provide limited breeding opportunities for bird species, due to their lack of features such as holes and cracks. Bird boxes could be erected in trees across the site for common species such as blue tit, great tit and robin. These should be erected high enough so that they cannot be accessed by members of the public and on the north facing side of the trunk to protect them from extreme temperatures.

4.5.3 Genesta Drive Open Space

Genesta Drive Open Space is an open area of grassland with scattered trees and small areas of dense scrub. The grassland is mown regularly and is species-poor, with common herb species present including oxeye daisy, creeping buttercup, yarrow and germander speedwell. Oxeye daisy is a positive indicator species and was occasional on the site.



Photo 10. Dense scrub suitable for breeding birds on Genesta Drive Open Space.

There are scattered trees across the site, with species including sycamore, cherry, oak, larch and a non-native acacia species. There are several large mature trees covered in ivy which provide good nesting opportunities for birds as well as roosting opportunities for common bat

species. The scrub is a mix of native and non-native species including laurel, bramble, rowan, sycamore and silver birch. The scrub has a dense structure which makes it good habitat for common bird species. Blue tits and blackbirds were seen utilising the scrub on site during the field survey and their behaviour suggests they were nesting on site. Scrub also provides suitable foraging and hibernating habitat for hedgehog.

Management recommendations to benefit biodiversity

The condition of the grassland and its value for biodiversity could be improved by a change in management. This would be particularly valuable on this site as some positive indicator species are still present within the grassland which will spread easily throughout the site if different management is introduced. In these areas the grassland would benefit from being left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. These areas should then be cut and cleared in late-July/August, ensuring to remove all the grass cuttings, as if left on they can smother delicate plants and increase nutrients which favours less desirable species such as nettle. This management regime will instead promote the spread of more desirable wildflower species which will also benefit pollinators and other invertebrate species. In order to help alleviate any concerns from local residents, grass paths should continue to be cut through the grassland to maintain access and create an area which provides habitat for wildlife whilst also looking well maintained. Signs should be erected, similar to elsewhere in the parish, to explain the reasons for the change in management.

The dense scrub in this area of open space provides excellent habitat for wildlife, and if possible, should be allowed to spread out further into the grassland to extend this beneficial habitat. The edges of the scrub which don't face the road should be left uncut to allow them to spread outwards and the grassland along these edges should also be left uncut to allow this to happen. If maintenance work is required on any of the trees and scrub on site any material left should be used to create wood piles which will provide habitat for insect species as well as small mammals and hedgehogs.

4.5.4 Heather Close Open Space

The Heather Close Open Space consists of two areas of grassland with scattered trees and scrub along Heather Close. The southern section of the Heather Close Open Space is an area of species-poor grassland with scattered trees and a small area of scrub to the north of the site. The grassland is regularly mown, with common species present such as ribwort plantain, daisy and dove's-foot cranesbill. Tree species include sycamore and horse chestnut. There is a small area of scrub to the north of the site which contains a mix of native and non-native species including snowberry, elder and hazel. This area of scrub provides suitable habitat for nesting birds.

The northern section of the Heather Close Open Space is a great example within the parish of how local green space can be managed for people and wildlife. Defined areas of grassland have been left uncut to benefit wildlife, whilst other areas have been mown more regular so they can be used by local people as well as ensuring the site looks well maintained. Signs have also been erected to explain the reasons for the change in management to local people. This difference in mowing regime is evident in the species which are present within the grassland. Pyramidal orchids occur occasionally throughout the grassland as well as other wildflower species such as lesser stitchwort, yarrow and sheep's sorrel. There is also a greater diversity of grass species with timothy, common bent and Yorkshire fog present. If positive

conservation management is continued the species diversity of the grassland will increase over time.

There is also a wide variety of native tree and scrub species present on site. Tree species include oak, ash, horse chestnut, lime, cherry and silver birch. Smaller tree species and scrub include holly, rowan, broom and red currant. The range of native tree species present will provide habitat for a wide diversity of insect species, as well as nesting opportunities for birds. Chaffinch were heard during the field survey and are likely to breed on site. The mosaic of semi-natural habitats will also provide foraging and commuting opportunities for bats.



Photo 11. Grassland, trees and scrub managed for wildlife on the northern section of the Heather Close Open Space.

Management recommendations to benefit biodiversity

Both the southern and northern sections of the Heather Close Open Space should be managed in order to maintain some open areas of grassland and paths which are mown regularly so that these areas can be used by local people. Areas of grassland which are being managed for wildlife, such as those within the northern section, should be left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. These areas should then be cut and cleared in late-July/August, ensuring to remove all the grass cuttings, as if left on they can smother delicate plants and increase nutrients which favours less desirable species such as nettle. This management regime will instead continue to promote the spread of more desirable wildflower species, such as orchids and lesser stitchwort. The signs which have been used in this area should be used elsewhere in the parish where a change in grassland management is introduced in order to benefit biodiversity.

The northern section of the Heather Close Open Space provides excellent wildlife habitat within the urban setting of Thurston and could become one of the flagship biodiversity areas within the parish and be used as an example of how local green space managed for wildlife can benefit local people as well. There are several positive biodiversity actions which could be

undertaken at Heather Close Open Space which would help to involve the local community, these include:¹⁷

- Putting up bird boxes – bird boxes should be located high enough so that they cannot be accessed by people and on the north facing side of the trunk.
- Creating a bug hotel - similar to the one which has been created within the wildlife garden at the New Green Open Space Area using recycled materials such as old wooden pallets, bricks, tiles, pots and pipes.
- Creating wood piles - using material left from tree safety works, which will provide habitat for insect species as well as small mammals and hedgehogs.
- Creating a wildlife pond - there is a lack of water provision for wildlife throughout Thurston village. Ponds should be located so that they are open on their southern aspect to ensure they receive plenty of sunlight. Ponds will need to be lined in order to retain water due to the soil type locally.
- Tree planting – whilst there is good provision of trees on site, the addition of a few small tree species which provide fruit will benefit wildlife as well as engage local people. Apple, pear or plum trees could be planted, as well as other small fruit and nut bearing trees which are beneficial for wildlife such as rowan, hazel, whitebeam and elder. Trees should be planted in late autumn/winter and saplings should be supported by a stake and protected using tree guards. Mulching around the base will also help trees to establish.

Picnic benches could be added to the areas of grassland which are mown regularly in order to make this a place that local people feel welcome and are able to enjoy wildlife on their doorstep.

4.5.5 Furze Close Open Space

Furze Close Open Space is a privately owned area of grassland with scattered trees throughout and scrub. Scattered trees are largely Scots pine, which is the only native UK pine species. Other tree species include oak, cherry and silver birch, with an understory of some smaller scrub species such as gorse, laurel and holly. There are several ivy-covered trees which are beneficial for wildlife. The grassland is species poor with common species present including red dead-nettle, herb Robert and dove's-foot crane's-bill. Bulbs have been planted throughout which create a spring display.

Management recommendations to benefit biodiversity

Considering the scattered trees across this area the most beneficial action for wildlife would be to increase the cover of scrub species to provide nesting habitat for birds, creating more of an understorey within this area similar to woodland. The majority of trees on site currently provide limited nesting opportunities for bird species, due to their age and lack of features such as holes and cracks. Scrub species could be planted in the centre of the Furze Close Open Space to create an understorey which will benefit birds as well as hedgehogs and other species. Species should be considered which are already present on site such as holly and gorse, as well as other fruit and nut bearing species such as hawthorn, blackthorn and hazel. Another option is to relax the mowing regime in the centre of this area to allow species such as gorse and holly to spread naturally. Wood piles could also be created within the centre of this area, using material left from tree safety works, which will provide habitat for insect species as well as small mammals and hedgehogs.

¹⁷ <https://www.suffolkwildlifetrust.org/actions>



Photo 12. Grassland and scattered trees and scrub within Furze Close Open Space.

More native spring bulbs and woodland flowers could be planted around the edge of Furze Close Open Space to benefit pollinators as well as local people. Suitable native species include snowdrops, crocus, winter aconite, English bluebell and primrose. Avoid species such as grape hyacinth which can spread vigorously and take over if not contained.

4.5.6 Hambros Open Space

The Hambros Open Space is a secluded area of grassland with scattered trees which is used by local residents and being managed positively for wildlife. The grassland has been allowed to grow long, with grass paths cut through the rough grassland to allow access. The grassland is not particularly species-rich, however there is more diversity than in other areas of grassland throughout the parish. Some species more typical of woodland are present due to the higher density of trees, species include stinking iris and ground ivy. There are some large stands of nettle which benefit common butterfly species such as red admiral. Other species present within the grassland include yarrow, ribwort plantain, rough meadow-grass and timothy.

Several fruit trees are present including apple and plum trees. Other tree species present include sycamore, silver birch and lime.

To the west of this area, along The Hambros, there are several areas of grassland with scattered tree which are being managed less positively for wildlife. The grassland in this area is species poor with less than 6 species per m² which provides limited opportunities for biodiversity. Red fescue is the dominant grass species, with perennial rye and wall barley frequent across the grassland. Common herb species include ribwort plantain and creeping buttercup. There are a couple of trees present with species including white beam and rowan.



Photo 13. Hambros Open Space with several tree species and grassland.

Management recommendations to benefit biodiversity

The grassland within the Hambros Open Space should continue to be managed in order to maintain some open areas of grassland and paths which are mown regularly as well as areas of grassland which are being managed for wildlife. These areas should be left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. These areas should then be cut and cleared in late-July/August, ensuring to remove all the grass cuttings. This management regime will promote the spread of wildflower species.

The majority of trees on site provide limited breeding opportunities for bird species, due to their age and lack of features. Bird boxes could be erected for common species such as blue tit, great tit and robin. These should be high enough so that they cannot be accessed by members of the public and on the north facing side of the trunk.

The areas of grassland along The Hambros provides limited opportunities for biodiversity. This area of the parish is also very open with limited tree cover. The planting of scattered trees across this area should be considered to benefit wildlife and local people. Tree planting in urban areas provides many benefits for people additional to the benefits for biodiversity, including providing shade and cooling, and reducing air pollution. Native tree species to consider planting include rowan, crab apple, cherry, whitebeam, silver birch and hazel. These species provide food for wildlife as well as seasonal interest for local people, with spring blossom, berries, nuts and autumn colour. Trees should be planted in late autumn/winter at least 5 metres apart. Saplings should be supported by a stake and protected from browsing by muntjac using tree guards. Mulching around the base will also help trees to establish. Trees may require watering during their first few summers, particularly during drought.

Here the grassland should be managed as outlined above, with a mix of open areas and paths mown regularly and areas managed for wildlife being left uncut between April and late-July/August. The signs which have been used on the northern sections of the Heather Close Open Space should be used where a change in grassland management is introduced.



Photo 14. Species poor grassland and scattered trees along The Hambros.

4.5.7 Maltings Garth Open Space

The Maltings Garth Open Space is another great example within the parish of how local green space can be managed for people and wildlife. The grassland here is the most species-rich within Thurston village with several positive indicator species occurring frequently, including oxeye daisy, common knapweed and bird's-foot trefoil. Bee orchids and pyramidal orchids also occur throughout the grassland. Other species present include field madder, selfheal and knotted hedge-parsley. There are scattered trees within the southern area of the site, with species including silver birch and white beam.



Photo 15. Bee orchids flowering within grassland on the Maltings Garth Open Space.

Management recommendations to benefit biodiversity

There is clearly local interest in the biodiversity of this area, as the location of bee orchids has been marked by canes. Similarly to the northern section of the Heather Close Open Space, the Maltings Garth Open Space provides excellent wildlife habitat and could become one of the flagship biodiversity areas within the parish. The grassland should continue to be managed in order to maintain some open areas of grassland and paths which are mown regularly so that these areas can be used by local people. Areas of grassland which are being managed for wildlife should be left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. These areas should then be cut and cleared in late-July/August, ensuring to remove all the grass cuttings. This management regime will promote the spread of wildflower species present on site such as orchids, oxeye daisy, common knapweed and bird's-foot trefoil. Some of the verges along Maltings Garth Road could also be managed in this way to provide increased connectivity for wildlife. The signs which have been used on the northern section of the Heather Close Open Space should be used here to highlight the benefits to biodiversity to local people.

There are several positive actions which could be undertaken at Maltings Garth Open Space which would benefit biodiversity and help to involve the local community, these include:

- Putting up bird boxes – bird boxes should be located high enough so that they cannot be accessed by people and on the north facing side of the trunk.
- Creating a bug hotel - similar to the one which has been created within the wildlife garden using recycled materials such as old wooden pallets, bricks, tiles, pots and pipes.
- Creating wood piles - using material left from tree safety works, which will provide habitat for insect species as well as small mammals and hedgehogs.
- Creating a wildlife pond - there is lack of water provision for wildlife throughout Thurston village. Ponds should be located so that they are open on their southern aspect to ensure they receive plenty of sunlight and they should avoid the species rich areas of grassland. Ponds will need to be lined in order to retain water due to the soil type locally.

A picnic bench could also be added to the area of grassland which is mown regularly in order to provide a place for local people to sit and enjoy wildlife.

4.5.8 Barton Road Chalk Pit

It was not possible to access this site during the field survey as it has been fenced off and seems to be used as a garden by local residents. It was possible to look over the fence and the site consists of area of grassland which has been regularly mown as a lawn with a football goal and garden chairs.

4.5.9 School Road Old Gravel Pit Open Space

School Road Old Gravel Pit is an area of open space with scattered trees. The grassland here is species-poor due to it being regularly mown which provides limited opportunities for biodiversity. Common species are present within the grassland including common chickweed, ground-ivy and daisy. There are scattered trees across the site with species including oak, white beam, lime and silver birch.

To the west of this area, along St Peters Ways, are a couple of small areas of grassland which are being managed positively for wildlife. Here the grassland has been left uncut to benefit biodiversity and signs have been erected to explain the benefits to biodiversity to local people.



Photo 16. School Road Old Gravel Pit Open Space with mown grassland and scattered trees.

Management recommendations to benefit biodiversity

The condition of the grassland and its value for biodiversity could be improved by a change in grassland management. Defined areas of grassland should be left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. These areas should then be cut and cleared in late-July/August, ensuring to remove all the grass cuttings. This management regime will promote the spread of more desirable wildflower species which will also benefit pollinators and other invertebrate species. Other areas of grassland should be mown more regularly as well as grass paths to create an area which provides habitat for wildlife whilst also looking well maintained. Signs should be erected, similar to those along St Peters Way, to explain the reasons for the change in management.

4.5.10 St Peter's Church and Churchyard

St Peter's Church and Churchyard provide a varied mosaic of habitats which are beneficial to wildlife including grassland, mature trees and dense scrub. Churchyards often contain some of the last remaining fragments of wildflower rich grassland which hasn't been fertilised or reseeded. The grassland on site is species-rich, with positive indicator species frequent across the site including lady's bedstraw, oxeye daisy and common knapweed. Other species present include selfheal, common sorrel and ribwort plantain. Unmanaged areas of grassland along the boundary of the site have dense stands of nettle which benefit common butterfly species such as red admiral.

There are a variety of tree species present across the site, mature tree species present include horse chestnut, oak and yew. Several trees are covered in ivy which provides additional benefit for wildlife. There are also several mature fruit trees which have beneficial features for wildlife such as deadwood and holes. Patches of bramble scrub across the site provide

suitable nesting habitat for species such as house sparrow. Chiffchaff were heard during the field survey and are likely to breed on site.

The church itself also provides valuable habitat for species of lichen and plant which survive on the stonework, as well as for bats which could use the church to roost. There is also potential for the church to be used by breeding birds such as starling and house sparrow.



Photo 17. St Peter's Church and Churchyard with grassland, scrub and mature trees.

Management recommendations to benefit biodiversity

Where graves are still visited, as well as on paths throughout the site the grassland should continue to be mown more regularly. Defined areas of grassland in areas with older graves could be managed for wildlife and left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. These areas should then be cut and cleared in late-July/August, ensuring to remove all the grass cuttings. This management regime will promote the spread of more desirable wildflower species which will also benefit pollinators and other invertebrate species.

Some areas of grassland could be managed as rough grassland and be allowed to overwinter. Many insect species, including butterflies, spend part of their lifecycle in dead stems and seed heads, so require areas of grassland to be left uncut overwinter. It is beneficial to allow areas of rough grassland to develop adjacent to patches of bramble scrub, as well as along the edges of the site where there are hedgerows and trees. Some areas of the site are already being managed in this way, and it would be beneficial to manage more areas in a similar way. These areas should be managed on a rotation to prevent scrub encroachment. 1/3 of the rough grassland should be cut annually, allowing 2/3 of the grassland to overwinter. These areas should be cut and cleared, ensuring to remove all grass cuttings, to prevent nutrient build-up. Rough grassland adjacent to areas of scrub is particularly valuable for species such as hedgehogs, small mammals and reptiles.

Swift boxes could also be added to the exterior of the church building.¹⁸

4.5.11 Children's Play Area, Heath Road

The Children's Play Area on Heath Road is an area of open space which contains a play area, basketball hoop, benches and large open area of grassland for recreational use. The open area of grassland is species-poor with less than 6 species per m² due to it being regularly mown in order to allow for recreational activities. Common species are present within the grassland including yarrow, common stork's-bill, dove's-foot cranesbill and ribwort plantain. The grassland on site provides limited opportunities for biodiversity.



Photo 18. Children's Play Area with hedgerow and grassland.

Surrounding the play area is a mixed native hedgerow with trees. Whilst sections of the hedgerow are managed in a variety of way, much of the hedgerow has a dense structure which provides suitable nesting habitat for birds as well as foraging and commuting habitat for bat species. The hedgerow contains a wide variety of native species including hawthorn, bramble, crab apple, holly, elder and rowan, with ivy and honey suckle abundant throughout. Tree species include horse chestnut, oak and sycamore.

Management recommendations to benefit biodiversity

Whilst the majority of the grassland within the children's play area is mown regularly to allow for recreational activities, there is scope to relax the mowing regime in some areas in order to improve conditions for biodiversity. Areas of grassland which are not used as regularly could be left uncut between April and late-July/August to allow plants the opportunity to flower and set seed. These areas should then be cut and cleared in late-July/August, ensuring to remove all the grass cuttings, as if left on they will increase nutrients which favours less desirable species such as nettle. Grassland could be managed in this way for a 1 – 2 metre strip along

¹⁸ www.suffolkwildlifetrust.org/swifts

the base of the hedgerows on site, where access is not required to play equipment, which will improve the condition of hedgerows for biodiversity as well as the grassland.

A wildlife area could be created in the western corner of the site which is used less for recreational activities. Here the grassland could be managed in the way described above, in order to increase the diversity of wildflowers present. Grass paths could be cut through this area, which will require more regular cutting, to create an area for children to explore. A small orchard could be created in this area to improve the habitat for wildlife, as well as create interest for local children using the site. Fruit trees could be planted such as apple, plum and pear as well as other native fruit and nut bearing species such as rowan, hawthorn, hazel and whitebeam.

Hedgerow trimming should be carried out outside of the bird nesting season (March – August), ideally delaying trimming until late December to leave berries for wintering birds. Only one side of the hedgerow should be trimmed in a year. Whilst the hedgerow surrounding the site is in good condition, it will require management in the future to maintain a dense structure which is valuable nesting habitat. Consider managing the hedgerow in future by coppicing short sections between late December and the end of February. Coppice the hedgerow by cutting it to just above ground level at an angle to allow water to run off. Multiple new shoots will then regrow, which will create a dense hedgerow in a few years after coppicing. Coppice a short section of hedgerow each year until the entire hedgerow has been coppiced.

4.5.12 Thurston Park Public Open Space and SUDs lagoon

Thurston Park Public Open Space and SUDs lagoon was created alongside the recently developed Thurston Park housing development to the east of Thurston village. The southern section of the public open space contains an area of grassland, dense scrub and scattered trees which has recently had pathway cut through for use by local people. The northern section has a large SUDs lagoon surrounded by recently sown grassland. The dense scrub to the south contains a mix of native and non-native species, including bramble, dog rose, cherry and buddleia. Tree species include oak and field maple. The scrub has a dense structure suitable for nesting birds and linnets were seen during the field survey and are likely to breed on site.

Along the edge of the pathways through the scrub and throughout the open area adjacent to the SUDs lagoon, grassland is developing from bare ground left after the development. These areas have an interesting variety of ruderal and wildflower species, due to the land being recently disturbed and a seed mix being sown to establish the grassland in the newly created public open space. Several ruderal species are present such as creeping thistle, ragwort and teasel, as well as a mix of wildflowers including bird's-foot trefoil, salad burnet, viper's bugloss and hedge bedstraw. The range of species present provides suitable habitat for pollinators and other invertebrates, as well as providing foraging habitat for seed eating bird species such as goldfinch and linnet.

The SUDs lagoon has a range of aquatic plant species which indicate good water quality, with marginal, emergent and floating plants providing habitat for aquatic invertebrates. Aquatic plant species present include broad-leaved pondweed and common spike-rush, as well as great reedmace (also known as 'bulrush'). Several dragonfly species were observed during the field survey including emperor dragonfly and four-spotted chaser. Several damselfly species

have also been recorded by local people including common blue, azure and banded demoiselle. These species all indicate good water quality within the lagoon.



Photo 19. Thurston Park SUDs lagoon.

Management recommendations to benefit biodiversity

The SUDs lagoon is currently providing good habitat for a range of species including dragonflies and amphibian species such as common frog and smooth newt. The lagoon may need management in the future to ensure that it stays open. Great reedmace can spread quickly throughout lakes and ponds and cause them to become choked, with little open water. If this occurs it will be necessary to use a digger to clear out the lagoon, removing all of the great reedmace. Any management works undertaken should be completed in late autumn/winter (November-January inclusive) to avoid impacts to amphibians using the pond, in particular great crested newts which have been recorded locally. If great crested newts are found, work must cease immediately, and advice should be sought from a suitably qualified ecologist.

During the site walkover a dog was seen swimming in the SUDs lagoon. Regular use of the lagoon by dogs will decrease the water quality and reduce the potential of the lagoon to support biodiversity. Information signs could be erected to highlight the wildlife benefits of the lagoon and discourage dog owners from allowing their dogs to swim.

The grassland to the north of the lagoon within the surfaced path could be allowed to develop into a grassland and scrub mosaic which is more beneficial to wildlife than grassland alone. If this area is left unmanaged for several years, scrub will develop naturally in small patches. This will provide habitat for a wide range of bird species which have been recorded locally such as yellowhammer and linnet.

4.6 Suffolk Priority species in Thurston

Suffolk Biodiversity Information Service has provided records of species within the Parish. Those that are listed as protected or Priority Species are as follows:

Mammals: Hedgehog (100+ records) have been recorded throughout the parish, particularly within the residential areas. Several bat species have been recorded including Western barbastelle, noctule, serotine, soprano pipistrelle and brown long-eared bat, Western barbastelle and serotine have been recorded within the Black Bourn Valley CWS. Otter and water vole have also been recorded in association with the Black Bourn Valley CWS, along the Black Bourn River and adjacent ditch network. Brown hare have also been recorded locally.

Birds: Several red and amber listed Birds of Conservation Concern (BoCC⁵) have been recorded locally. Species associated with the residential area include swift, house sparrow, dunnock, linnet, song thrush, greenfinch and starling. Several species have also been recorded in association with farmland, particularly within the Black Bourn Valley CWS, these include skylark, nightingale, bullfinch, yellowhammer, yellow wagtail, turtle dove, grey partridge, lapwing and barn owl. Spotted flycatcher and marsh tit have also been recorded in association with woodland habitats within the Black Bourn Valley.

Amphibian and reptiles: Grass snakes have been recorded locally, as well as four amphibian species including smooth newt, common frog, common toad and great crested newt. Great crested newt is a protected species and have been recorded in newly created and restored ponds at Black Bourn Valley CWS.

Invertebrates: Several butterfly species have been recorded including small heath, white admiral, purple emperor and white-letter hairstreak. Moth species recorded include grey dagger, beaded chestnut, green-brindled crescent, brown-spot pinion, large nutmeg, deep-brown dart, sprawler, centre-barred sallow, mottled rustic, latticed heath, small square-spot, small phoenix, dusty thorn, white-line dart, small emerald, rustic, rosy rustic, shoulder-striped wainscot, powered quaker and hedge rustic. Scarce emerald damselfly has also been recorded at the Black Bourn Valley CWS

Plants: Black poplar has been recorded in a few locations throughout the parish. Marsh ragwort, early marsh-orchid, fine-leaved water-dropwort, shepherd's-needle and spiny retharrow have been recorded at Black Bourn Valley CWS.

There are also records of New Zealand pygmyweed, which is listed as invasive on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

4.7 Ecological Networks and Connectivity

4.7.1 The significance of ecological networks and connectivity

Maintaining and improving connectivity between habitats is important in ensuring the longer-term survival of biodiversity in an increasingly fragmented landscape and with a changing climate.

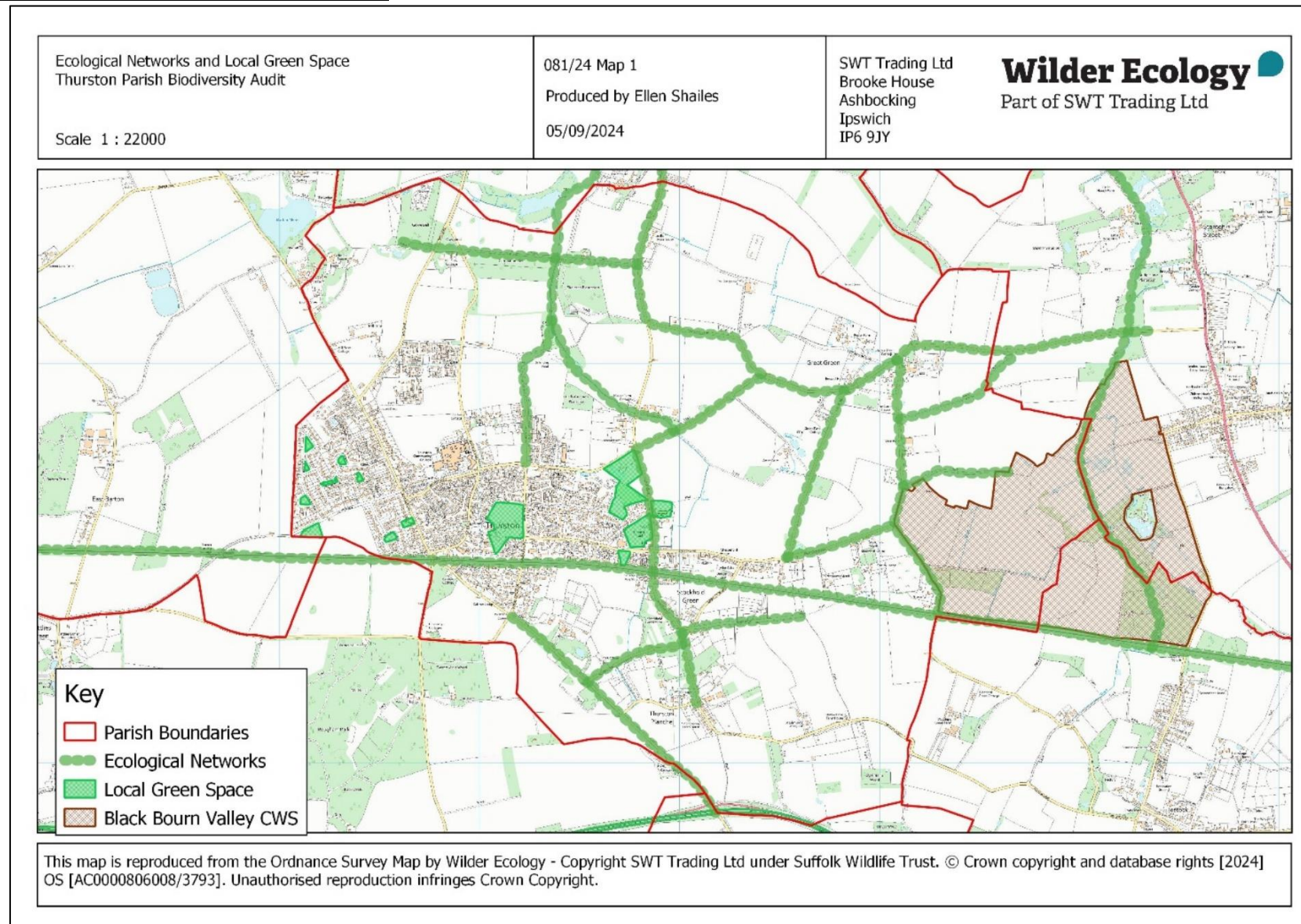
An ecological network is the basic natural infrastructure that enables biodiversity assets (both habitats and species) to become re-established if damaged or in decline and become resilient to the impacts of climate change. Integrated with the natural cycling of water, soil and nutrients, biodiversity provides what are increasingly recognised as vital 'ecosystem services'. These services are not only intrinsic of social and economic value but will create social and economic problems if they fall too far into deficit.

The major components of an ecological network can be identified as:

- Core Areas: existing areas/features/resources of importance for biodiversity
- Corridors: existing linear features providing structural connectivity between Core Areas and into the wider landscape
- Stepping Stones: existing habitat patches providing functional connectivity between Core Areas and into the wider landscape
- Restoration Areas: areas/features/resources with the potential to become future Core Areas, or to improve connectivity, if they are enhanced or restored
- Buffer zones: can be included around all these elements to lessen the likelihood of direct or indirect impacts upon them

As already noted, the National Planning Policy Framework (NPPF) 2023 states that Plans should take a strategic approach to biodiversity. It includes a range of requirements to conserve and enhance the natural environment, among them requiring Local Plans (and by association Neighbourhood Plans) to: '...promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species.' Consequently, it is essential that decision makers have access to high quality ecological advice in order to meet these requirements.

4.7.2 Ecological networks in Thurston parish



The key ecological network within the parish is associated with the hedgerow network, in particular where there are hedgerows with associated trees and grassland along footpaths, small lanes and field boundaries which connect larger blocks of semi-natural habitat. To the east of the parish there are some old byways which have hedgerows along their length with wide grass margins. These help to link the habitats associated with the Black Bourn Valley CWS with the wider countryside. Here there are also mixed native hedgerows with trees along several of the smaller lanes and roads which are well managed for wildlife. In particular the small lane which borders Black Bourn Valley CWS to the west, Oak Road and Barrell's Road have good condition hedgerows along their lengths and several veteran trees. Some of the oaks along the appropriately named Oak Road are of a significant age, one in particular has a very large girth and features such as large rot cavities and deadwood in the crown which are characteristics of ancient trees.

To the south of the parish there are also several smaller lanes and roads with hedgerows and trees along their lengths which are well managed for wildlife, providing improved connectivity for wildlife. In particular Bird's Road, Pepper Lane, Church Road and Beyton Road have good condition hedgerows along their length, with several veteran oaks as well as small patches of woodland.



Photo 20. A potentially ancient oak along Oak Road.

To the north of the parish an important ecological network is associated with Sheep Lane and the footpath which heads north along Meadow Lane from Thurston village to join Sheep Lane. Hedgerows, trees and grassland which are well managed for wildlife link larger blocks of Priority Habitat including historic parkland and mixed deciduous woodland. Veteran oaks along the footpath and lane suggest these are old byways.



Photo 21. Sheep Lane with mixed deciduous woodland, historic parkland and hedgerows along its length.

River and streams form an important part of the ecological network of the parish. The Pakenham Fen stream is bordered by semi-natural habitats as it leaves the arable landscape to the east of Thurston village and flows north. The Black Bourn River borders the village to the east and this river and its associated habitats are a key part of the ecological network of the parish. Several Priority Habitats border the river including mixed deciduous woodland and coastal and floodplain grazing marsh. The ecological networks along rivers and streams provide connectivity between the neighbouring parishes of Pakenham, Norton and Tostock and allow species such as otter, water vole and bat species to disperse into the wider countryside.

The railway line also provides an important part of the ecological network of the parish, with habitats along its length including grassland, hedgerows, woodland and trees. Again, the railway line improves connectivity between Black Bourn Valley CWS and the wider landscape as it passes to the south of the Black Bourn Valley CWS. Species such as reptiles and farmland bird species are able to disperse along this ecological network.

There is some connectivity between local green space within the village where grass verges are being managed well for wildlife. Church Road and the trees and hedgerows along its length provide connectivity between local green space to the east of the village, such as the Thurston Park Public Open Space and St Peter's Churchyard.

There are opportunities to improve the ecological network of the village and help wildlife to disperse more easily between habitats. Simple changes to management of hedgerows and grass verges along roads and footpaths can make a significant difference. Allowing hedgerows to grow wide and tall where this does not impact road safety and visibility, as well as changing the management of grass verges to leave grass verges uncut throughout most of the summer. For example, some verges along Maltings Garth Road have been left uncut between April and late-July/August, allowing species such as oxeye daisy and bird's-foot-trefoil to flower.

4.8 Conclusion

Thurston parish contains a County Wildlife Site and six Priority habitats. Hedgerows within the parish have local significance for wildlife, due the quality of the habitat they provide as well as improving the ecological network. The Suffolk Hedgerow Survey demonstrates that Thurston has a high number of hedgerows compared with other Suffolk parishes and 70% of these are species rich. Several hedgerows in the parish are quite mature and have features such as veteran/ancient trees which suggest some may be ancient hedgerows. Thurston contains a higher than average number of ponds for Suffolk, several ponds have been created in the parish in recent years and have good water quality, providing habitat for protected species such as great crested newts. There is a large area of Priority Habitat to the north of the parish including mixed deciduous woodland and wood pasture and parkland. The wood pasture and parkland associated with Nether Hall is of particular importance for biodiversity within the parish due to the presence of several ancient oaks which provide microhabitats for a range of specialist species.

Local green space throughout the village of Thurston provides refuge for wildlife within the urban setting. Some of the local green space is being well managed for biodiversity, such as the wildlife garden within the New Green Open Space Area, the northern section of the Heather Close Open Space and the Maltings Garth Open Space. These areas could become flagship biodiversity areas within the parish and be used as examples of how local green space managed for wildlife can benefit local people. Local green space within the parish supports several species of wildflower, as well as providing habitat for nesting birds, reptiles and insects. Small changes in management could improve the value for biodiversity as well as providing benefits to local people.

Protected species recorded in the parish include otter, water vole, grass snake and bat species. Several red and amber listed Birds of Conservation Concern have been recorded associated with the residential area of Thurston including swift, house sparrow, song thrush and linnet. Several Priority Species have also been recorded locally include hedgehog, common toad and common frog.

There is a good ecological network across the parish, outside of the residential areas, due to the significant number of hedgerows and trees along lanes and footpaths which are well managed for wildlife. These hedgerows link larger blocks of habitat such as woodland and grassland. The Pakenham Fen stream to the north and the Black Bourn River to the east are also a key part of the ecological network of the parish. Habitats along the railway line link Black Bourn Valley CWS with Thurston village. Here again small changes in management to hedgerows and grass verges could improve the ecological network and benefit biodiversity within the entire parish.

Housing development coming forward in Thurston parish should ensure to avoid impacts to the existing biodiversity assets of the parish, including local green space, Priority Habitats and the ecological network. Development within the parish should also ensure to restore, enhance and reconnect ecological networks to benefit biodiversity and maintain access to nature for local people.

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End of Report