

Carlton Colville Neighbourhood Plan

Landscape and Wildlife Evaluation 2020

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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 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 surveys have taken place.

It is our policy to submit any biological records to the Suffolk Biodiversity Information Service, in accordance with BS42020 (6.4.7). We will do this 3 months after the submission of this report. If you wish to discuss this, please contact us within this time period.

Executive Summary

SWT Trading Ltd: Ecological Consultants, the consultancy of Suffolk Wildlife Trust, was instructed by Carlton Colville Parish Council to undertake a landscape and ecological evaluation of the parish as part of their review of the existing Neighbourhood Plan. This document seeks to provide the Neighbourhood Plan Working Group with an evaluation of landscape character and in particular, highlight specific habitats and associated ecological networks as a rich source of biodiversity.

There are four different landscape character types within the parish. The largest area, in the north half of the parish, is defined as 'Coastal Levels'. The next largest area to the south is defined as 'Rolling Valley Farmland and Furze' and is located either side of a third area: 'Ancient Plateau Claylands'. A very small area of 'Wooded Valley Meadowlands and Fens' intrudes into the parish at the mid-western edge. A fifth landscape character type 'Urban' has not been fully assessed within this project. Overall, these landscape character types help define the different habitats across the parish and also the species within them.

Sprat's Water and Marshes, located within the Coastal Levels in the northern half of the parish, is designated as a Site of Special Scientific Interest (SSSI), and is also part of the Broadland Special Protection Area (SPA) and Ramsar Site, primarily for its breeding and non-breeding bird assemblage and wetland habitats respectively. It is also part of the Broads Special Area of Conservation (SAC), also designated for its unique wetland communities and a number of rare species. There are also three non-statutorily designated sites within the parish: The River Waveney, Share Marsh Dykes and Carlton Grove County Wildlife Sites (CWS).

Seven Priority Habitats have been identified within the Parish, grouped broadly into two categories and located within two main areas. Across the central-southern half of the parish with its golf course and farmland, the Priority habitats include hedgerows, lowland mixed deciduous woodland and ponds. Within the northern coastal levels there is a complex mosaic of wetland habitats including wet woodland, lowland fen, coastal and floodplain grazing marsh and reedbed. Across the Parish, 95 UK and Suffolk Priority Species have been recorded which complement and help define the biodiversity value of the locality.

The principal ecological network within the parish is associated with the River Waveney and associated habitats. Continuous riparian habitat is associated with the river corridor demarcating the northern boundary of the parish. Directly to the south of the river is the expansive network of reedbed, grazing marsh and wet woodland associated with Suffolk Wildlife Trust's Carlton Marshes Nature Reserve, part of which is of international importance. On a smaller scale, the network of hedgerows, woodland and the Kirkley Stream within the southern half of the parish also provide local connectivity.

Development Management guidance for any new developments within the area covered by this Neighbourhood Plan should seek to protect existing landscape and ecological assets and restore, enhance and reconnect the ecological network. Recommendations are provided with regards to the creation of the new country park on land south of The Street and also to protect and enhance Carlton Grove CWS and its associated hedgerow network in association with the proposed Oakes Farm development.

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1. Introduction

1.1 Brief and Terms of Reference

SWT Trading Ltd: Ecological Consultants, the wholly-owned consultancy of Suffolk Wildlife Trust, was instructed by Carlton Colville Parish Council on 15th June 2020 to undertake a landscape and ecological evaluation of the parish as part of their Neighbourhood Plan that is currently being refreshed.

Carlton Colville Parish Council have made an application to Waveney District Council and the Broads Authority in accordance with the Neighbourhood Planning (General) Regulations 2012, to designate a Neighbourhood Area, for the purposes of developing a Neighbourhood Plan. This was designated a Neighbourhood Area by Waveney Council and the Broads Authority in May 2019. The Civil Parish of Carlton Colville, within its formal parish boundary, is the 'Neighbourhood Area' for the purposes of the Plan along with a small area of Gisleham Parish Council which forms part of a site allocated in the Waveney Local Plan.

The Carlton Colville Town Council indicate that the main purpose of their Neighbourhood Plan 2019-2030 is to guide development within Carlton Colville. It will provide guidance to any interested parties wishing to submit planning applications for development within the designated Neighbourhood Area.

This document seeks to provide the Neighbourhood Plan Working Group with a consideration of landscape character and use this as a basis to highlight key habitats and associated ecological networks as a rich source of biodiversity.

1.2 Parish Location and Statistics

Carlton Colville is a settlement located on the south-west fringe of Lowestoft within the former Waveney District (now East Suffolk Council). It covers around 835 hectares and its central point grid reference is close to TM 5025 9115. The parish also shares boundaries with the Suffolk civil parishes of Barnby, Mutford, Gisleham, Lowestoft, Oulton and also Burgh St Peter in Norfolk.

Data from East Suffolk Council [1] indicate a population of around 8505 people with approximately 3441 households. Built up areas represent about 25% of the parish, largely concentrated in the south-east, but also includes part of the settlement associated with the parish of Gisleham.

The Parish is bisected East-West by a railway line which at this point connects Beccles with Lowestoft. North of the railway, the land is low lying and the majority forms part of the Carlton Marshes wildlife reserve, owned by Suffolk Wildlife Trust. Between the railway line and the A146, is Rookery Park golf course. South of the A46, the land is given over to residential, leisure and agriculture.

Outside of the SWT wildlife reserve, the road network, buildings and gardens and arable farmland are the most frequent and extensive land use.

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) [2]. 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 Ministry of Housing, Communities and Local Government (February 2019), which provides national planning policy [3].

Of particular relevance to this project is Paragraph 170, under Section 15 'Conserving and Enhancing the Natural Environment', which states

The planning system 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 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

The NPPF also sets out the plan-making framework in Paragraph 17, in that development plans must include strategic policies to address each local planning authority's priorities for the development and use of land in its area. These can be contained in a local plan and/or a spatial development strategy. Policies to address non-strategic matters are also included in local plans and in neighbourhood plans. These set out more detailed policies for specific areas, neighbourhoods or types of development. Neighbourhood plans must be in general conformity with the strategic policies in the development plan that covers the area.

2.3 The Broads Authority Local Plan

In 1988 the Westminster Parliament gave the Broads the same status as the other National Parks designated under National Park and Access to the Countryside Act 1949. The Broads Authority is the equivalent of a National Park Authority but with some additional powers and responsibilities which include the management of the waterways. The designated Broads Authority Executive Area covers parts of Norfolk and North Suffolk. The Executive Area includes part of the former Waveney District Council (now East Suffolk Council) area. East Suffolk Council does not have planning powers in the Broads area but retains all other local authority powers and responsibilities. The Local Plan for the Broads was adopted 17th May 2019 [4]. This covers the Northern half of the Parish, north of the railway line.

Strategic Policy: SP6: Biodiversity: Development will protect the value and integrity of nature conservation interest and objectives of European, international, national and local nature conservation designations and should demonstrate biodiversity gains wherever possible paying attention to habitats and species including ecological networks and habitat corridors, especially linking fragmented habitats of high wildlife value.

Development Management Policy: DM13: Natural Environment includes the following within the policy:

All development shall:

- a) Protect biodiversity value and minimise the fragmentation of habitats;
- b) Maximise opportunities for restoration and enhancement of natural habitats;
- c) Incorporate beneficial biodiversity and geological conservation features where appropriate which are positively managed; and
- d) Include green infrastructure where appropriate (see policy DM8).

Strategic Policy SP7: Landscape character is also applicable, along with **Development Management Policy: DM16: Development and landscape.**

2.4 Waveney Local Plan

The Waveney Local Plan, within the East Suffolk Council area and covering the former Waveney Local Planning Authority area was adopted 20 March 2019 [5].

This Plan sets out the planning policies, proposals and actions for the future development of the District to 2036. It sets out the level of growth which needs to be planned in the Waveney area (excluding the Broads Authority area) and identifies where that growth should be located and how it should be delivered. The Plan also sets out the planning policies which the Council will use to determine planning applications in the Waveney area.

Section 2 of the Plan, detailing the strategy for the Lowestoft area includes the Parish of Carlton Colville. There are two strategic allocations:

Policy WLP2.16 – Land South of The Street, Carlton Colville/Gisleham

Land South of the Street, Carlton Colville/Gisleham (54.88 hectares) as defined on the Policies Map is allocated for a comprehensive mixed use development including:

- Approximately 900 new dwellings;

- Retirement community comprising a care home / nursing home and/or extra care and/or sheltered dwellings;
- 2 form entry primary school and a pre-school setting (2.2 hectares);
- Country park (at least 15 hectares);
- Allotments, flood mitigation and play space; and
- Local shops comprising a convenience store.

Aecom were commissioned by Carlton Colville Parish Council to produce a comprehensive Design Guide for this allocation [6].

Policy WLP2.19 – Oakes Farm, Beccles Road, Carlton Colville

Land at Oakes Farm, Beccles Road, Carlton Colville (30.23 hectares) as identified on the Policies Map is allocated for sports and leisure uses. The site should deliver at least 20.75 hectares of sports pitches, non-pitch sports and other sports and leisure facilities to relevant standards together with changing facilities and car parking.

District- wide strategic planning policies include the following relevant policies:

Policy WLP8.34 – Biodiversity and Geodiversity

Policy WLP8.35 – Landscape Character

2.5 Biodiversity Net Gain

Following the consultation on mandating biodiversity net gain in development, it was confirmed in March 2019 that the government will use the forthcoming Environment Act to mandate ‘biodiversity net gain’ – meaning that new developments must deliver an overall increase in biodiversity.

Net gain in planning terms describes an approach to development that leaves the natural environment in a measurably better state than it was beforehand. The approach to delivering net gain still requires the application of the mitigation hierarchy, in that impacts on biodiversity should be first avoided, then minimised and only as a last resort be compensated. Where losses cannot be compensated within the development footprint then biodiversity losses may be offset by delivery of gains elsewhere. As a very minimum a target of 10% net gain should be sought as currently specified in the emerging Environment Bill. However, it should be noted that impacts on irreplaceable habitat cannot be offset to achieve no net loss or net gain.

A key part of the process is demonstrating measurability and The Biodiversity Metric 2.0 Beta Edition designed by Natural England (often termed the ‘Defra Metric’). This metric provides the means to account for the ecological value of a site and how changes arising from development or management will impact on this value over time.

Achieving the best outcomes for biodiversity requires credible evidence derived from ground-truthing and justifiable choices based on ecological knowledge. In addition, the delivery of net gain is dependent upon the financial means to undertake the necessary habitat management, in order to secure a long-term biodiversity benefit.

3. Methods

3.1 Field Survey

A 'Phase 1 type' field survey and ecological audit of the parish was undertaken, with the main visit to encompass areas outside the SWT Nature Reserve being undertaken on 7th September. The objectives of the field survey was to investigate and record land use, habitat types and notable plant and animal species and take digital images to illustrate these features. Using public highways, bridleways and footpaths it was possible to view and comment upon all but a small percentage (around 10%) of the parish land area.

3.2 Desktop Survey

A variety of existing source material was consulted including:

- Suffolk County Council website and other documents
- Waveney District Council website and other documents
- Suffolk Biodiversity Information Service website and databases
- The MAGIC website (provides geographic information about the natural environment from across a range of government sources) including Sir Dudley Stamp 1933-1949 Land Use Inventory).
- Suffolk Wildlife Trust databases
- Suffolk Hedgerow Survey – County Report
- Suffolk Bird Atlas 2007-11

3.3 Evaluation of Landscape and Wildlife Assets

The descriptions and evaluation that follow in the report draw on information collected during the field and desktop surveys. For convenience and clarity, elements concerned with the wider landscape are considered first in Section 4. These are then followed in Section 5 by wildlife elements, from protected sites through to wider ecological networks habitats.

However, these two sections should be considered together as there is integration of significant landscape and wildlife elements, resulting in a network of landscape and wildlife features.

4. Evaluation of Landscape Assets

4.1 Protected Landscapes

4.1.1 The Broads:

The area of the parish which lies north of the railway line falls within an area known as 'The Broads'. The Broads is an internationally important wetland and designated protected landscape of the highest order with a status equivalent to that of a National Park

The statutory duty to conserve and enhance natural beauty within The Broads is fully recognised within the NPPF (Paragraph 172), The Broads Local Plan Policy DM16: Development and landscape and in the Waveney Local Plan in Policy WLP8.35 – Landscape Character.

4.1.2 Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB).

The south-westernmost boundary of Carlton Colville Parish lies less than one kilometre from the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB). The statutory duty to conserve and enhance natural beauty within the AONB is fully recognised both within the NPPF and in the Waveney Local Plan.

4.2 Local Landscape Policy

WLP8.35 – Landscape Character within the Waveney Local Plan sets out the landscape policy for those parts of the parish which falls outside of The Broads

4.3 Suffolk Landscape Character Assessment

In 2008, Suffolk County Council completed a project to describe landscapes throughout Suffolk in detail and assess what particular character and qualities make up the different landscape areas of the county. This is known as the Level 2 Suffolk Landscape Character Assessment (LCA), [7]. The guidance required the preparation of landscape character assessments in order to review and/or replace local landscape designations. The results of these assessments could then be used as supplementary planning guidance and to help produce landscape management guidelines.

Suffolk County Council worked in partnership with the Living Landscapes Project based at Reading University, private consultants and all District and Borough Councils in Suffolk, using methodology in which discrete units of broadly homogeneous land were identified according to a set of physical and cultural characteristics. These characteristics were defined by four principal attributes: physiography, ground type, landcover and cultural pattern, which in turn were derived from six mapable datasets: relief, geology, soils, tree cover, farm type and settlement. Application of this methodology maintained a consistent approach across Suffolk.

It is highly appropriate for the Carlton Colville Neighbourhood Plan to acknowledge and make full use of both the descriptions and the land management guidelines related to the three Landscape Types that exist within the parish.

The main Landscape Character Types (LCT) which cover Carlton Colville parish are:

- **Coastal Levels** (coloured pale blue on Figure 1)
- **Rolling Valley Farmland and Furze** (coloured ochre Figure 1)
- **Ancient Plateau Clayland** (coloured green on Figure 1)

A small 10-hectare area shown as blue in the west of the parish represents **Wooded Valley Meadowlands and Fens**. Due to lack of public access this area was not assessed under Landscape Character Assessment, but it should be noted that this Landscape Character Type makes a significant contribution to neighbouring Barnby parish. Similarly, an area of grey is shown on Figure 1, this represents **Urban** area which also has not been assessed under Landscape Character Type. However, many areas now shown as urban are relatively recent in origin and have replaced other landscape character types, notably Rolling Valley Farmland and Furze and extent Ancient Plateau Claylands.

For each of these Landscape Character Types, Suffolk County Council has produced written guidance involving detailed descriptions of:

- key characteristics
- sensitivity to change
- key forces for change
- development management guidelines
- land management guidelines

SCC notes highlight that the guidance documents have been written principally to address the needs of development management. That is, to provide a summary of the forces that have been and are at work in the landscape and the key forces for change operating in the landscape at the time of writing.

However, the caveat is added that guidance cannot be considered to be definitive for a particular site, nor is it exhaustive. Rather it is intended to give a clear indication of the issues raised and principles to be followed when dealing with a particular type of development.

This evaluation for the Neighbourhood Plan therefore distils the essence of the information provided - as it applies to Carlton Colville - as a guide for any future development here. Much of the discussion on development guidance is taken verbatim from the documents, but linkages and comments are added that make it relevant to this parish.

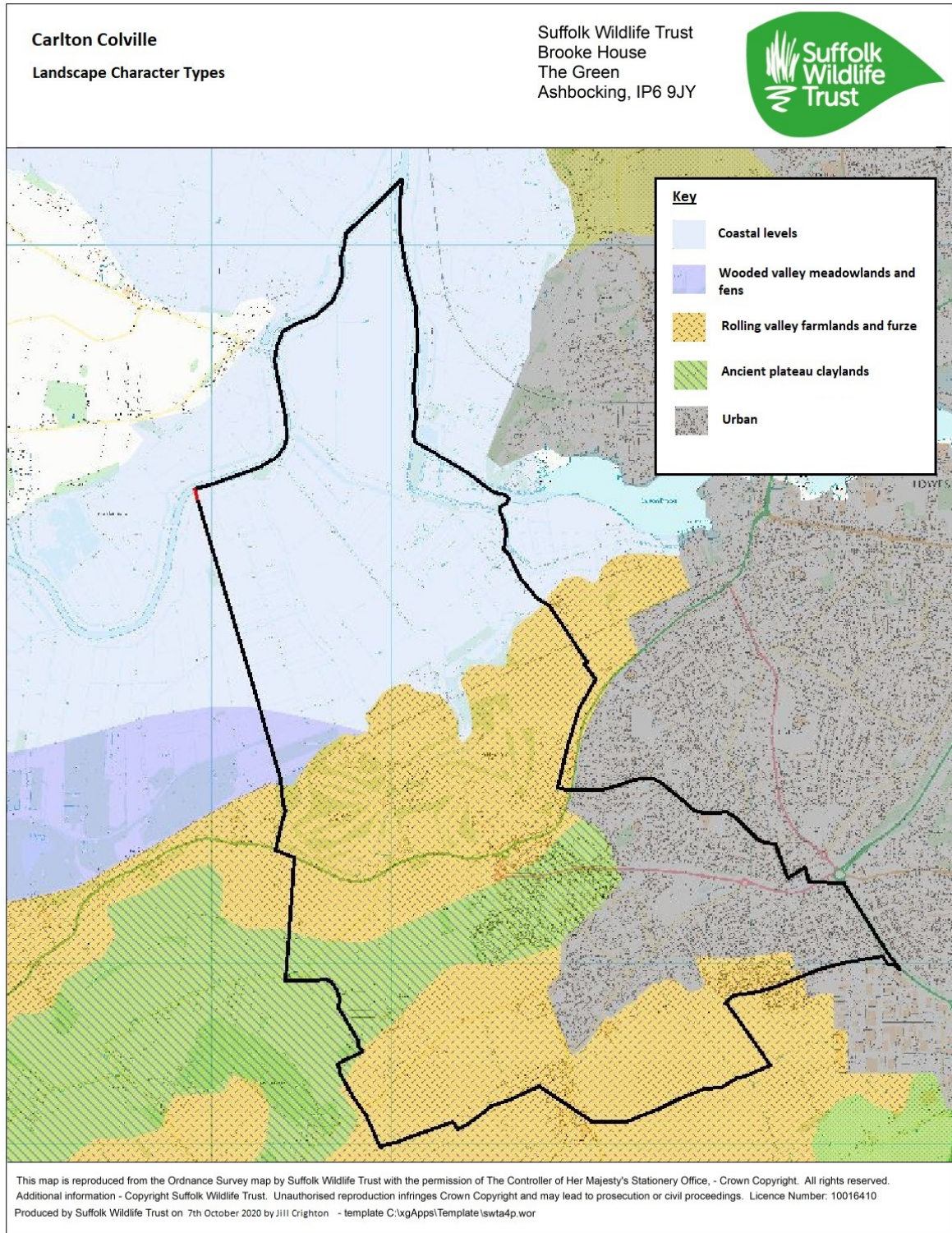


Figure 1: Suffolk Landscape Character Types ascribed to Carlton Colville (Source: Suffolk County Council)

4.3.1 Coastal Levels

This represents flat coastal land, behind river and sea walls and is found beside estuaries and coastal valleys along the whole of Suffolk's coast. Ancient settlement was limited to the edges of the marshes, with virtually no domestic buildings actually within the landscape, which is more often used for grazing livestock. There are wide open views due to no widespread tree cover but woodland plantations and belts can occur found on inland sides, adjoining slopes.

The landscape type is found in the northern half of the parish, amounting to nearly 300 hectares and with much of the land within Suffolk Wildlife Trust's Carlton Marshes Wildlife Reserve.

Key characteristics of this landscape type as they refer to Carlton Colville are:

- Flat marshland adjacent to the coast or estuaries
- Uniform 19th century dyke networks
- Important wildlife conservation areas
- Unsettled landscape with domestic buildings on the fringes
- Cattle-grazed wet grassland
- Widespread modification for arable production

Key potential changes and Development Management guidance related to this landscape type:

- Changes of land management and land use adjacent to this landscape, especially the changes to the quantity, scale and style of built development. Due to its flat, open nature, this landscape is highly sensitive to any interruption of the horizon by built structures. Therefore, if any development is permitted, high standards of design and effective mitigation strategies should be applied, including reduced height structures, the use of sympathetic and unobtrusive materials and appropriate planting schemes.
- Sea level rises. Manage coastal realignment to retain and enhance the local landscape character. Minimise the use of structures for flood or sea defence, but where required, use sympathetic material and low, unobtrusive structures bearing in mind the potential increased need for ecological management if natural processes have been restricted.
- Management of land for nature conservation should be undertaken sensitively with consideration for the historic landscape and wider visual landscape impacts, along with the issues raised by increased visitor pressure.
- Changes to agricultural practice and land use within this landscape should be carefully controlled. Cattle grazing is the characteristic land cover, but ancient dyke features and woodland cover have been lost to arable production.

Land Management guidance for this Landscape Type as relevant to Carlton Colville include:

- Support the continuation of the traditional economic activities;
- Restore and retain the historical pattern of drainage ditches and dykes within the meadows, delivering ecological benefit;
- Maintain levels of grassland by entering into agri-environment schemes or expanding livestock enterprises.



View northwards across the Coastal Levels within SWT's Carlton Marshes nature reserve

4.3.2 Rolling Valley Farmland and Furze

As well as other parts of Suffolk, this landscape type is found in north Suffolk in the Waveney valley. This landscape type occurs on a mixture of outwash deposits from the ice-sheets of the Anglian glaciation, principally silts, sands and gravels. A typical landscape feature is valleys with prominent river terraces of sandy soil.

The landscape type is found in the central and southern parts of the parish, amounting to around 400 hectares and separated by a narrow band of Ancient Plateau Clayland.

Key characteristics of this landscape type as they refer to Carlton Colville are:

- Mixed hedgerows of hawthorn, blackthorn and dogwood with oak, ash and field maple
- Fragmentary cover of woodland
- Straight boundaries associated with late enclosure
- Golf courses
- Focus for larger settlements

Key potential changes and Development Management guidance related to this landscape type:

- It is important to maintain the existing pattern of settlement clusters on the valley sides and minimise visual intrusion on the very sensitive landscapes of the valley floor.

- Settlement expansion in a valley side landscape is likely to have a significant visual impact and adversely affect the character of the landscape, for example through highly visible new 'roofscapes'.
- Change of land use to horse paddocks, with associated subdivision of land and temporary boundaries can have a significant landscape impact, and on the quality and condition of the grassland in more ecologically sensitive areas. Mitigation strategies in terms of design, layout and stockings rates should be employed where possible and opportunities taken to design field layout that is in keeping with the local field pattern or historic pattern of boundaries.
- It is important that new structures are located to make the best use of existing hedges and trees both to screen the development and as a backdrop. Existing hedge lines should also be reinforced to improve the mitigation they provide.

Land Management guidelines for this Landscape Type relevant to Carlton Colville include:

- Reinforce the historic pattern, which tends to be a mix of sinuous and regular hedge boundaries
- Carry out coppice management on elm-dominated hedgerows
- Maintain and increase the stock of hedgerow trees
- Maintain the area of woodland cover: siting of any new woodland should be based on information from the Historic Landscape Characterisation and in consultation with the Suffolk Archaeological Service



View north towards the southern edge of the Carlton Colville settlement

4.3.3 Ancient Plateau Claylands

This landscape lies on the edges of the great plateau of glacial till or boulder clay deposited by the retreating ice-sheet of the Anglian Glaciation around 430,000 years ago. The Claylands tend to have dense, water-logged chalky clay soils. A scattering of Ancient Woodland parcels is characteristic of this landscape, although more common in the south.

This habitat, which is much more extensive beyond the west of the parish boundary, represents the most north-easterly 'tongue' of this landscape type. It forms a relatively narrow, central belt running east-west across the parish, amounting to 80 hectares of which the eastern half has now been utilised for housing in recent years. Within the currently undeveloped areas, the only ancient woodland in the parish, Carlton Grove, is found, along with notable tall, thick, ancient, species-rich hedgerows.

Key characteristics of this landscape type as they refer to Carlton Colville are:

- Flat or gently rolling arable landscape of clay soils
- Field pattern of ancient enclosure often co-axial,
- Hedges of hawthorn and elm with oak, ash and field maple as hedgerow trees
- Network of winding lanes and paths often associated with hedges create visual intimacy

Key potential changes and Development Management guidance related to this landscape type:

- Settlement expansion eroding the characteristic form and vernacular styles. The release of land for development should, if at all possible, reflect the local pattern.
- Conversion and expansion of farmsteads for residential use. Changes to the surrounding land from agricultural to residential, which entails the introduction of lighting and other suburban features, can be extremely intrusive. Unless the site is well hidden, it may be necessary to impose clear conditions relating to screening from the wider landscape.
- Change of land use to horse paddocks and other recreational uses can have a significant landscape impact. Opportunities should be taken to design a field layout that is in keeping with the local field pattern or historic pattern of boundaries.

Land Management guidelines for this Landscape Type relevant to Carlton Colville include:

- Recognise localised areas of late enclosure hedges when restoring and planting hedgerows
- Maintain and increase the stock of hedgerow trees
- Maintain the extent, and improve the condition, of woodland cover with effective management, especially if this can be economically viable



Ancient species rich hedgerow on plateau clayland

4.4 Broads Authority Landscape Character Assessment and Landscape Sensitivity Study

The Broads prepared a Landscape Character Assessment in December 2016. Section 1 provides a comprehensive account of the evolution and history of the Broads, Section 2 describes the landscape types, of which 2: River, Ronds and floodbanks, 4: Estuarine Marshlands, 5: Peat Fen Areas and 11: Settlement Fringe are most applicable.

In Section 3 [8], the Landscape Character Area relevant to Carlton Colville is:

- Area 6: Waveney-Boundary Dyke, Barnby to The Fleet, Oulton

A Landscape Sensitivity Study was also been prepared July 2012. This study specifically assesses the impact of wind turbines and solar panels to provide criteria to planning applicants and inform policy [8].

4.5 Waveney District Landscape Character Assessment

In April 2008, land Use Consultants provided Waveney District Council with the Waveney District Landscape Character Assessment [10]. This report presented a characterisation of the whole district at 1:25,000 scale. The study identified 10 landscape types which are then subdivided into component landscape character areas (23-character areas in total). Three landscape character types identified in this assessment are relevant to Carlton Colville. Two can roughly be equated with the Suffolk County Council LCA Rolling Valley Farmland and Furze:

- H2 Waveney Tributary Valley Farmland
- H3 Hundred Tributary Valley Farmland

A third landscape character type broadly relates to the narrow strip of Ancient Plateau Clayland

- I2 Saints Plateau - East

4.6 The Significance of the Landscape for the Neighbourhood Plan

The northern half of the parish lies within the Broads National Park and the low-lying land behind the river wall has correspondingly wide views across an open landscape. Much of this area contains habitats of high ecological significance, supporting important assemblages of scarce species that are frequently known to be declining elsewhere. A significant amount of habitat restoration in the northernmost part of the parish has been undertaken in the last two years by Suffolk Wildlife Trust, with re-profiling of former arable land to allow creation of extensive grazing marsh and reedbed. This has substantially contributed to an increasing sense of 'wilderness' in this part of the parish.

To the south of the Broads National Park the land gently rises and includes an increasing amount of woodland to provide a wooded backdrop when viewed from the north. This part of the parish outside of the urban area is given over to a variety of other uses, including arable farmland, horse paddocks and leisure uses including a golf course and two caravan parks.

As well as adherence to Local Plan Policy, development management guidance for any new developments within the area covered by this Neighbourhood Plan should consistently reflect the Development Management and Land Management Guidelines drawn up within the Suffolk Landscape Character Assessment and the Broads Authority and Waveney District Landscape Character Assessments.

5. Evaluation of Wildlife Assets

5.1 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 Site. Large areas of the nearby estuaries and coastline are protected in this way.

5.1.1 Sites of European and International Importance

An area in the north of the Parish is designated as part of the Broads Special Area of Conservation (SAC) and also part of the Broadland Special Protection Area (SPA) and also Broadland Ramsar Site.

In summary the SAC designation is for the following reasons [11]: The Broads in East Anglia contain several examples of naturally nutrient-rich lakes. Although artificial, having been created by peat digging in medieval times, these lakes and the ditches in areas of fen and drained marshlands

support relict vegetation of the original Fenland flora, and collectively this site contains one of the richest assemblages of rare and local aquatic species in the UK.

The qualifying features of the SAC are as follows:

Qualifying habitats:

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.; Calcium-rich nutrient-poor lakes, lochs and pools
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation; Naturally nutrient-rich lakes or lochs which are often dominated by pondweed
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Transition mires and quaking bogs; Very wet mires often identified by an unstable quaking`surface
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge)
- Alkaline fens; Calcium-rich springwater-fed fens
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*); Alder woodland on floodplains*

Qualifying species:

Vertigo moulinsiana; Desmoulin`s whorl snail
Lutra lutra; Otter
Liparis loeselii; Fen orchid
Anisus vorticulus; Little whirlpool ram's-horn snail

The Broadland SPA [12] qualifies because it is used regularly by 1 % or more of the GB population of a species listed on Annex 1 of the Birds Directive (79/409/EEC) in any season:

The qualifying features of the SPA are as follows:

Botaurus stellaris; Great bittern (Breeding)
Cygnus columbianus bewickii; Bewick`s swan (Non-breeding)
Cygnus cygnus; Whooper swan (Non-breeding)
Anas penelope; Eurasian wigeon (Non-breeding)
Anas strepera; Gadwall (Non-breeding)
Anas clypeata; Northern shoveler (Non-breeding)
Circus aeruginosus; Eurasian marsh harrier (Breeding)
Circus cyaneus; Hen harrier (Non-breeding)
Philomachus pugnax; Ruff (Non-breeding)

The Broadland Ramsar Site [13]: qualifying features include element of both the SPA and SAC designations:

Floodplain alder woodland
Floodplain fen
Wetland invertebrate assemblage
Wetland plant assemblage
Bewick's swan, *Cygnus columbianus bewickii* – Wintering
Gadwall, *Anas strepera* – Wintering
Shoveler, *Anas clypeata* – Wintering
Wigeon, *Mareca penelope* - Wintering

5.1.2 Site of Special Scientific Interest in Carlton Colville

The above-mentioned area also has the national designation of SSSI and is named as Sprat's Water and Marshes, Carlton Colville Site of Special Scientific Interest (SSSI) [14]. In Summary: Sprat's Water and Marshes are situated in the Lower Waveney Valley and comprise areas of spring-fed mixed fen, open water, alder carr and wet grazing marsh on deep peat. The fen community is of a type that is typical of Broadland but which is rarely found elsewhere in Suffolk. Maintenance of high summer water levels together with seasonal grazing and reed cutting have led to the development of a very rich flora which includes several uncommon species. The site is also Important for breeding birds.



Sprat's Water and Marshes SSSI

5.2 County Wildlife Sites

5.2.1 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', as described on the Suffolk Wildlife Trust website [15]. CWS designation is non-statutory but is recognition of a site's high value for biodiversity. Suffolk currently has over 900 County Wildlife Sites representing approximately 2.6% of the county's land area.

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 County Wildlife Sites support UK Priority Habitats and Species (see 5.3 and 5.4 below). 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.
- 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 2019 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.

Suffolk Wildlife Trust monitors planning applications for potential impacts on County Wildlife Sites.

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.

The CWS partnership appreciates the difficulties that achieving the conservation management of CWSs can present and is therefore happy to offer advice on management and on potential sources of funding. Free advice is available from Suffolk Wildlife Trust to CWS owners and managers and includes:

- Information on the wildlife and nature conservation interest of the site;
- Advice and site visits can be made to establish the best management to maintain and enhance wildlife value.

5.3.2 County Wildlife Sites in Carlton Colville

There are three County Wildlife Sites associated with Carlton Colville: Share Marsh Dykes, River Waveney and Carlton Grove

River Waveney– Waveney 4: TM 462 983

71.28: ha River

The ecological value of the river are its reed fringes. Other plants which occur here in good numbers are lesser reedmace, marsh woundwort, marsh-mallow, marsh sow-thistle and meadow rue. This linear reedbed provides suitable nesting conditions for reed and sedge warblers and reed bunting. In winter it provides shelter for overwintering wildfowl and waders.

Share Marsh Dykes – Waveney 5: TM 495 915

1.04 ha: Grazing Marsh Dykes

This series of dykes is situated to the south west of Oulton Broad, to the north of the railway line and to the south of the River Waveney. These dykes are designated for their botanical interest including water soldier, frogbit, water violet, stonewort sp. and bladderwort. They are also important for water vole and also breeding and wintering waders and other bird species.

Carlton Grove – Waveney 17: TM 503 903

0.65ha: Ancient Woodland

This CWS lies to the west of the built-up area of Carlton Colville and the ancient woodland includes a good variety of tree and shrub species, with oak standards with ash and field maple. The shrub layer consists of hawthorn, holly and hazel. The ground flora includes a good variety of ancient woodland indicator species including dog’s mercury, three-nerved sandwort, bluebell, wood millet and enchanter’s nightshade. In the north-east of the woodland there is a pit, which is likely to hold water seasonally. In the south-west of the site, there is another smaller pit and a shaded pond.



Carlton Grove CWS (in distance), well-linked to the ancient hedgerow network

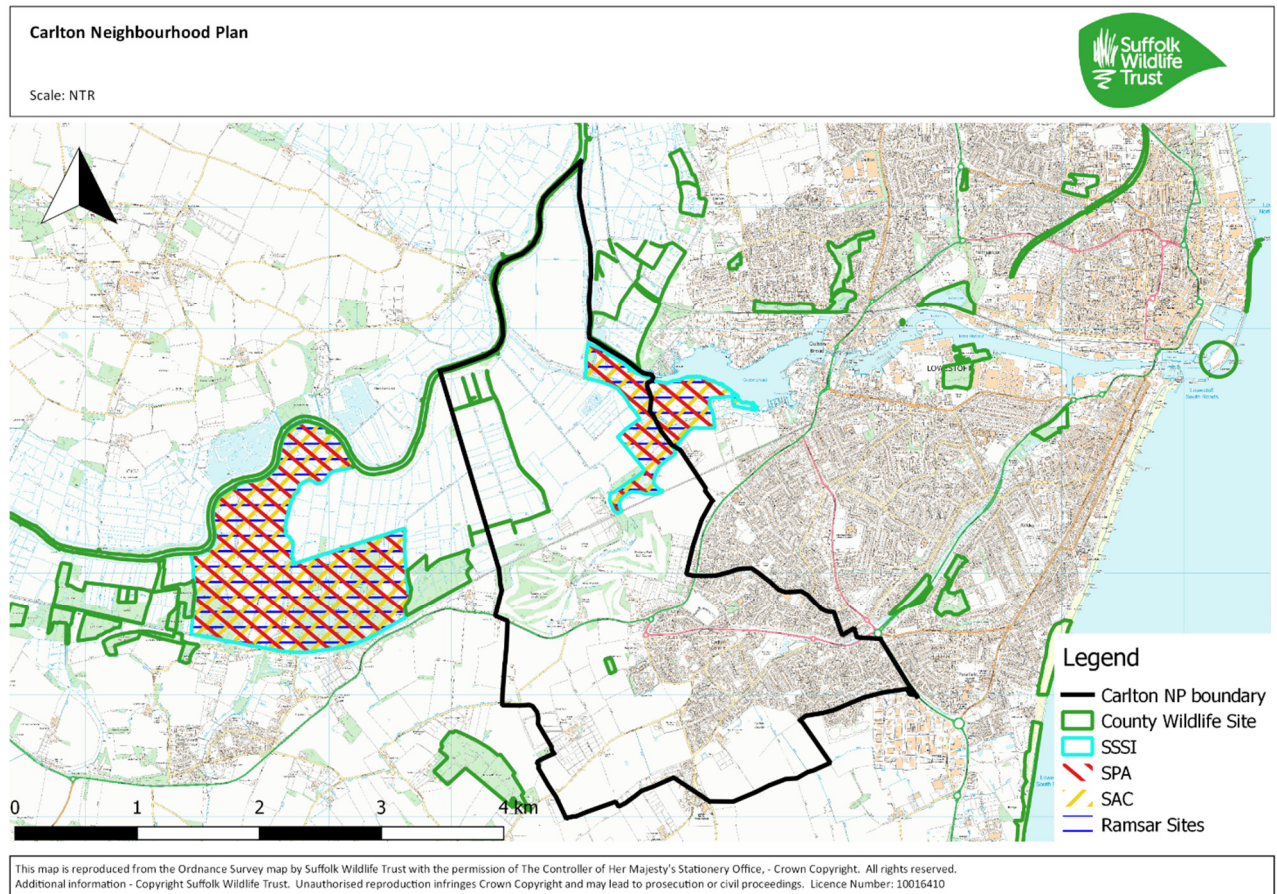


Figure 2: Location of designated sites for biodiversity

5.4 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.

In January 2014, Suffolk Biodiversity Partnership (SBP) - a consortium of over 20 organisations working for wildlife within the county - published revised statutory lists of Priority Habitats and Species occurring in Suffolk, [16] and these have been subsequently updated and amended. In a small number of cases where previously no national BAP existed, certain species are described as Suffolk Character Species to reflect their particular importance within the county.

The following section deals with the Priority Habitats that are present in Carlton Colville. 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.

5.5 Suffolk Priority Habitats in Carlton Colville

Of the 24 Suffolk Priority habitats, seven are known to be present in Carlton Colville parish:

In the Broads:

- Coastal and floodplain grazing marsh
- Lowland Fen
- Wet woodland
- Reedbed

In the southern half of the parish:

- Hedgerows
- Mixed deciduous woodland
- Ponds

There are three areas of wood pasture and parkland shown on the Defra website 'MAGIC,' drawn from historic maps, but these areas were not specifically viewed during the walkover survey and are now likely to be subsumed within modern land uses.

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
2. These are followed by descriptions of the Priority habitat as found in Carlton Colville 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 Carlton Colville.

5.5.1 **Mosaic of wetland Priority habitats (Coastal and floodplain grazing marsh, lowland fen, wet woodland, reedbed).**

These Priority habitats collectively form a very important habitat mosaic and ecotone within the northern half of the parish within the Broads National Park. Consequently, they are reviewed collectively.

Coastal and floodplain grazing marsh

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. Ditches are especially rich in plants and invertebrates. Large losses of this habitat have occurred throughout the UK in the last century.

The seasonal inundation of water gives the vegetation a distinct composition, with species such as orange foxtail, creeping bent-grass, southern marsh orchid and lesser spearwort.

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 also invertebrates such as the Norfolk hawker dragonfly and Desmoulin's whorl snail. In 2012, an introduction of the extremely rare fen raft spider took place into this habitat type at Carlton Marshes.

Share Marsh, within Suffolk Wildlife Trust's Wildlife Reserve now supports extensive areas of floodplain grazing marsh following habitat restoration. In addition, the southern part of Peto's Marsh has also been restored to grazing marsh.

Lowland fen

Fen habitats support a diversity of plant and animal communities. Some can contain up to 550 species of higher plants, a third of our native plant species; up to and occasionally more than half the UK's species of dragonflies, several thousand other insect species. Most fens in Suffolk are designated as SSSI.

The fen habitats in Carlton Colville are an example of 'floodplain rich fens', characterised by an open vegetation structure of mosses and species-rich grassland. They are fed by mineral-enriched calcareous waters (pH 5 or more) and are mainly confined to the lowlands. Although floodplain fens are more widespread in the UK as a whole, they only occur around the broadland area of north Suffolk, in the lower Waveney valley at Barnby Broad, Carlton and Oulton Marshes.

There may be overlap with the following habitats: grazing marsh; reedbeds; ponds and other areas of open water and wet woodland. Other species associated with fens include otter, water vole, Desmoulin's Whorl Snail and Fen Raft Spider.

Fen habitat is found within Sprat's Water and Marshes SSSI.

Reedbed

Reedbeds are wetlands which are dominated by stands of common reed and where the water table is at or above the ground level for most of the year. They tend to incorporate areas of open water and ditches and are also often associated with small areas of wet grassland or carr woodland.

Reedbeds are among the most important habitats for birds in the UK. They support a distinctive breeding bird assemblage including bittern, marsh harrier, Cetti's warbler and bearded tit. They also provide important feeding and roosting sites for a number of migratory species and are often used as roosting sites by raptors during the winter. Several Priority mammal species are associated

with this habitat including water vole and harvest mouse. Several rare invertebrates are also strongly associated with this habitat.

A significant area of new reedbed is being created at Peto's Marsh on Suffolk Wildlife Trust's Carlton Marshes Wildlife Reserve. This was formerly arable land where most of the original dykes had been filled in. Thanks to a Heritage Lottery award, extensive reprofiling of the central and northern parts of this Marsh have allowed a sinuous dyke network to be reinstated, interspersed by reedbed.



Peto's Marsh with newly created reedbed

Wet woodland

Wet woodlands occur on land that has waterlogged or seasonally waterlogged soils, where the water table is correspondingly high and drainage poor. They are frequently associated with river valleys, floodplains, flushes and plateau woodlands.

Typical tree species include grey willow, alder and downy birch. The habitat supports a number of important Priority species in Suffolk. These include mammals such as otter and various bat species, birds such as marsh tit and various scarce species of beetles and weevils.

Most of the wet woodland in the parish is associated with Sprat's Water and marshes SSSI.

5.5.2 Hedgerows

5.5.2.1 General description of this 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 and amphibians and invertebrates such as white-letter hairstreak butterfly on elm hedges also all make use of this Priority Habitat.

5.5.2.2 Hedgerow Priority Habitat in Carlton Colville

The field survey noted the main concentration of hedgerows was associated with the Ancient Plateau Clayland landscape. There are fewer hedgerows within Rolling Valley Farmland and Furze and they are absent as a feature within the Coastal Levels.

During the walkover surveys, it was noted that the hedgerows within this landscape type are tall, thick and species-rich and also link to the ancient woodland at Carlton Grove. Recorded species include hawthorn, blackthorn, dog rose, field maple, elm, dogwood, crab apple, holly with English oak, ash and sycamore as standard trees.

Hedgerows are important for a number of bird Priority Species and the Suffolk Bird Atlas 2007-11 recorded several species typical of this habitat: dunnock, yellowhammer, linnet, bullfinch and also redwing and fieldfare in winter.

Carlton Colville was one of the many parishes covered by the Suffolk Hedgerow Survey, 1998-2012. The 2012 report on this project [17] shows that, although access was not granted to some landholdings, out of the 27 hedges surveyed for woody species:

4 contained 4 species or fewer

8 contained 5, 6 or 7 species

15 contained 8 species or more

Therefore at least 55.5% of the sampled hedgerow resource within the parish can be deemed species-rich. It should be noted that the hedgerow resource of the parish in this survey is attributed to the Rolling Valley Farmlands Landscape character type, with no reference to any hedgerows within Ancient Plateau Clayland. Because the latter is a minority landscape feature within the Parish, the decision may have been taken to report under a single landscape character type for the purposes of the hedgerow survey.

It must be noted that this summary is based on data collected in the early stages of the Suffolk Hedgerow Survey (2004) and that changes will have occurred since that time, both positive and negative. However, it remains broadly true that the hedgerows in the parish are an important reservoir for wildlife.



Ancient, species-rich hedgerow along a bridleway in the west of the parish

5.5.2.3 Activities and developments most likely to affect Hedgerow Priority Habitat in Carlton Colville

- 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 and structural coherence (and occasionally leads to their complete disappearance);
- Too-frequent flailing can lead to structural incoherence 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;

5.5.3 Mixed Deciduous Woodland

5.5.3.1 General description of this 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 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.

5.5.3.2 Mixed Deciduous Woodland Priority Habitat in Carlton Colville

The main representative of this habitat type is the ancient woodland of Carlton Grove, already mentioned in 5.3.2.

The remainder of this Priority habitat resource are woodlands within Rookery Park Golf course. In addition, a narrow belt of woodland adjacent to Sprat's Water and Marshes, on the north-western edge, is also classified as this habitat type on the MAGIC website.

5.5.3.3 Activities and developments most likely to affect the Mixed Deciduous Woodland Priority Habitat in Carlton Colville

- Further fragmentation of and within the existing woodland area;
- Intensification of management between woodland fragments reduces the ecological value; of edge habitats and the connectivity between woodland blocks in the landscape.

5.5.4 Ponds

5.5.4.1 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

5.5.4.2 Ponds Priority Habitat in Carlton Colville

Information provided by Suffolk Biodiversity Information Service and from aerial photographs indicate that there are approximately 20 ponds within the Parish of Carlton Colville. This may be an underestimate as this does not include all ponds within individual gardens. Nearly all the ponds lie to the south of the railway line, with the greatest concentration associated with the golf course. Additional ponds have been created in recent years as sustainable drainage features.

Considering only the land south of the railway line, a density of 3.8 ponds per square km (5.7 ponds/km²) shows that Carlton Colville contains around half the average of 7.9 ponds/km²

throughout the rest of the Waveney District, but is similar to the entire County average of 5.9 ponds/km² [18]. This may be a reflection of the soil type in the area

As access was limited it was only possible to visit very few of these ponds during the walkover survey, but reference to Google Earth imaging suggests that the majority still exist. There may also be an additional network of garden ponds, which it was not possible to identify during the field survey.

5.5.4.3 Activities and developments that could affect the Ponds Priority Habitat in Carlton Colville

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 (*aka* Australian swamp stonecrop), 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.

5.6 Suffolk Priority Species in Carlton Colville

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: Bats including soprano pipistrelle, pipistrelle spp, Myotis spp,. There are a number of hedgehog records for the urban areas and brown hare records for the arable farmland. Additionally water vole, otter, harvest mouse, water shrew have been recorded at Carlton Marshes nature reserve. N.B. Badger is also recorded and whilst is not a Priority species, it is protected under its own specific legislation.

Birds: A very great number of Red List and Amber List Birds of Conservation Concern (BoCC) have been recorded, most of which are also Priority Species. The majority of these are associated with SWT Carlton Marshes Nature reserve. Some will breed in the parish, others arrive as winter visitors or are recorded on passage.

Key species likely to be associated with woodland, hedgerows, scrub and farmland include yellowhammer, linnet and bullfinch. There are also records of the exceedingly rare turtle dove, tree pipit and corn bunting. The species also associated with settlements include starling, song thrush, house sparrow and dunnock. Spotted flycatcher and lesser redpoll are also recorded.

Various birds are associated with wetland and riverine habitats including herring gull, little tern,

black-tailed godwit, Bewicks swan, white fronted goose, hen harrier, yellow wagtail, curlew, lapwing, marsh warbler, bittern, brent goose, dark bellied brent goose, marsh tit, reed bunting and cuckoo.

Swift and barn owl are also recorded and are Suffolk Priority Species. Swift is classed as Endangered as a GB breeding bird according to International Union for Conservation of Nature (IUCN) criteria. Barn owl is listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

Invertebrates: The most notable are the invertebrates associated with SWT Carlton Marshes nature reserve and the River Waveney: Norfolk hawkler, water dock case bearer, depressed river mussel, Desmoulin's whorl snail, little whirlpool ram's horn snail, large mouthed valve snail, the shining Ramshorn snail and fen raft spider.

Several moth species have been recorded (mostly listed as 'Research-only': including oak hook-tip, sawfly, grey dagger, mouse moth, dot moth, rustic, buff ermine, powdered quaker, rosy rustic, white ermine, cinnabar, small phoenix, blood-vein, centre-barred sawfly, knot grass, brown spot pinion, large nutmeg, dusky brocade, garden tiger, sprawler, broom moth, latticed heath, square pot, dusky thorn, garden dart, dusky dart, crescent, ghost moth, shoulder striped wainscot, rosy minor, brindled beauty, shaded broad bar.

Butterflies include wall, small heath and white admiral. Two Priority bee species are also included: red shanked carder bee and moss carder bee.

Three amphibian and reptile species have been recorded in the parish: Common lizard, grass snake and common toad.

In addition, outside of the SWT Carlton Marshes nature reserve (which has significant numbers of notable plant records) four rare plant species have been recorded: crosswort, corn spurrey, common cudweed and quaking grass.

Collectively, the habitats across the parish support a large range species including 95 protected and/or Priority species (1 amphibians, 2 reptiles, 30 birds, 9 mammals and 45 invertebrates).

There are also records of plants listed as invasive on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) including New Zealand pigmyweed, Nuttall's waterweed, Canadian waterweed and water fern - all wetland invasive species. Variegated yellow archangel, a garden escape is also listed. There are three records of invasive plant species for Gisleham to the south (Japanese knotweed, giant hogweed and wall cotoneaster).

5.7 Built Environment and Associated Habitats

5.7.1 General description of this habitat in the context of Suffolk

This habitat refers broadly to the wide range of structures, materials and microhabitats found in the built environment, including (though not exclusively) farm buildings, houses, gardens, allotments and waste land. These built-up areas, gardens and associated spaces can form a significant proportion of the land use within a settlement, but still provide a wide range of habitats with significant biodiversity value. All provide opportunities and in some case refuges for a wide range of species to complete their life cycles.

The conservation importance of the built environment and its associated habitats also lies as much in the opportunities they provide for people to have close contact with wildlife as in the protection of common and scarcer species. Becoming familiar with the wildlife in a garden often stimulates interest in species and habitats within the wider countryside.

5.7.2 Built Environment Habitat in Carlton Colville

Carlton Colville is an ancient settlement and by 1086 it had a recorded population of 45 households, putting it in the largest 20% of settlements recorded in the Domesday Book. A hundred years ago old maps show that the settlement is still separated from Lowestoft, but 'ribbon' development along the roads from the 1930s onwards, followed by significant expansion in 1970 and 1980s means that geographically, Carlton Colville is now effectively a suburb of the Town.

However, there are a number of greenspaces interspersing areas of housing. The most significant is Carlton Meadow Park, a large area of semi-natural greenspace that is also well connected to the wooded margins of the A1145 and contains a habitat mosaic of tall neutral grassland, scrub, bracken along with sustainable urban drainage features which have developed their own semi-natural character and are densely vegetated with reed mace, common reed and willow. The Kirkley stream rises in this area. Elsewhere, there are a number of smaller 'pocket parks' with mown grassland and planted shrubs.

The churchyard of St Peter's Parish Church also contains a reasonably diverse range of grassland species typical of free-draining soils, along with hedges and some notably large yew trees. Elsewhere, the urban scene is characterised by a number of mature established trees (mostly oaks) and small stretches of mixed hedgerow. These are primarily in the older part of the Plan area.

5.7.3 Activities and developments that could affect this habitat in Carlton Colville

Rather than note adverse actions, there is a wide range of information and websites generally available on wildlife gardening. Some of the positive actions that individual gardeners can consider include:

- Creating ponds and mini wildflower meadows;
- Planting native trees;
- Putting up swift boxes on buildings;
- Creating hedgehog highways between gardens ;
- Composting and creating deadwood areas;
- Harvesting rainwater;
- Avoiding garden chemicals.

5.8 Ecological Networks and Connectivity

5.8.1 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 of 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) 2019 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.

In addition, Biodiversity 2020: A strategy for England's wildlife and ecosystems services also features a number of Priority Actions, including to 'establish more coherent and resilient ecological networks on land that safeguards ecosystem services for the benefit of wildlife and people'.

5.8.2 Ecological networks in Carlton Colville

The principal ecological network within the parish is associated with the River Waveney and associated habitats. The river demarcates the northern boundary of the parish and wraps around Peto's Marsh in an inverted u-shape. Continuous riparian habitat is associated with the river corridor with extensive reed-fringes on the river ronds.

Immediately to the south of the river is the expansive network of reedbed, grazing marsh and wet woodland associated with Suffolk Wildlife Trust's Carlton Marshes Nature Reserve, part of which is of international importance.

On a smaller scale, the remaining network of hedgerows and woodland blocks within the southern half of the parish also provide local habitat connectivity. The banks of the A1145 are also densely wooded and link to Carlton Meadow Park off the Lowestoft Road.

A chain of water features, both above and below ground, follow the line of Kirkley Stream from the west, north of the area of a Scheduled Monument (which features a permanently filled moat), with natural ponds appearing at time of rain. The stream runs alongside and under The Street, through ditches and grassland behind the Red House Public House, then back under the road, appearing above ground again in Carlton Park where large ponds have been created. It then heads east and then in a north-eastly direction through Lowestoft within semi-natural habitats adjacent to the A12 (Tom Crisp Way) and finally into Lake Lothing.

Figure 3: Opportunities for ecological enhancement in southern Carlton Colville

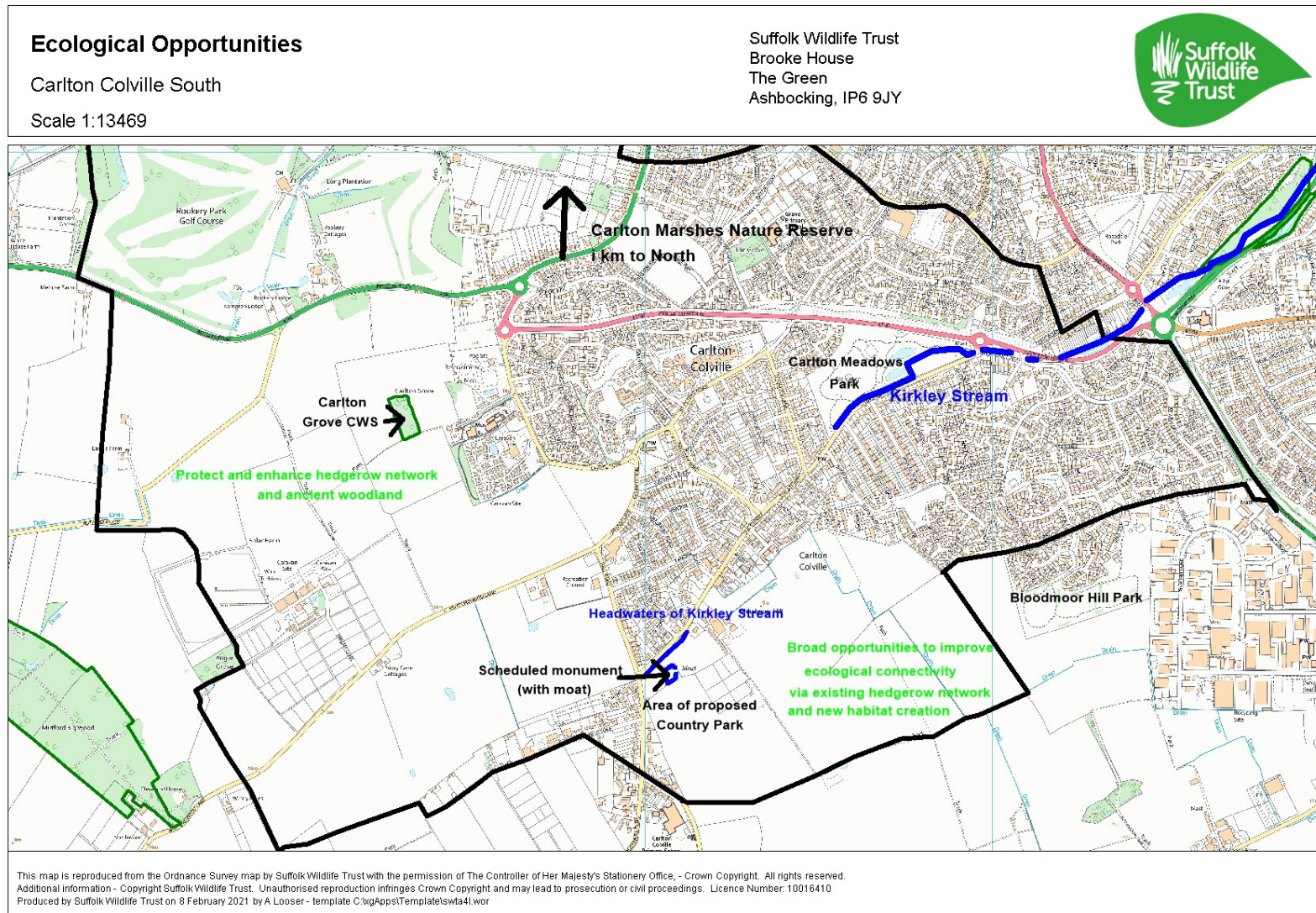


Figure 3: Opportunities for ecological enhancement in southern Carlton Colville

5.9 Proposed Country Park on land south of The Street

5.9.1 Background

The creation of a country park is included within the proposals for the allocated site for mixed use development on land south of The Street, Carlton Colville (also incorporating a small part of Gisleham) (Policy WLP2.16 in the Waveney Local Plan). The area proposed for the country park lies within the westernmost third of the allocation and incorporates a scheduled monument described as a rectangular moated area, probably dating from the Medieval period, located 200m south-west of Bell Farm. The area occupied by the monument is defined by a small copse of trees, which links to a mature hedgerow along the southern boundary of the monument. This hedgerow then links to the roadside hedges bordering Rushmere Road to the west and The Street to the north. The Kirkley Stream also rises in this area and flows eastwards, through a series of culverted sections before emerging in Carlton Meadows Park.

This area proposed for the country park site is largely flat and with the exception of the land associated with the scheduled monument described above, is largely arable with few hedgerows. The Aecom [6] report notes that the current open vista of the site maintains views southward towards the Grade 1 listed Holy Trinity Church at Gisleham.

This part of the parish lies wholly within the Suffolk Landscape Character Type 'Rolling Valley Farmland and Furze'. Woodland cover within this landscape type is fragmentary and where present, hedgerows have mixed species including hawthorn, blackthorn and dogwood with oak, ash and field maple. As these soils are relatively free draining, ponds are not a particular feature of this landscape type.

5.9.2 Country park design

The new country park should seek to deliver significant biodiversity benefits, whilst maintaining the local landscape character. As the site is largely arable there are significant opportunities to create new habitats and enhance existing habitats, whilst strengthening the local ecological network.

The main ecological aims when designing the country park should therefore be:

- Retaining and protect the existing features of ecological value;
- Seeking to enhance the local habitat network;
- Creating substantial new habitat opportunities for a range of species;
- Providing an attractive recreation and amenity area for local residents and promoting an enjoyment of wildlife.

The Aecom report indicates that areas required for sustainable urban drainage (SUDs) will be sited away from the country park, within a linear park that divides the two main areas of proposed residential development. However, there are also additional requirements to include:

- Ensuring that proposals safeguard the scheduled monument;
- Preserving the views to the south towards the church at Gisleham.

To deliver the above the following are recommended:

Best use should be made of existing hedges and trees. This is particularly relevant to the north of the site where the historic monument is located. Existing hedge lines should be reinforced using native species typical of the local area and the stock of native hedgerow trees should be increased. These features should be maintained as dark corridors for nocturnal animals such as bats.

Opportunities should be taken to improve ecological connectivity by enhancing the hedgerow network and the strategic placing of new linear woodland features. The best opportunities to undertake this are along the western boundary and also to some extent on the eastern boundary. Due to there being an archaeological interest in this area, the siting of any new woodland should be based on information from the Historic Landscape Characterisation and in consultation with the Suffolk Archaeological Service.

When designing the park, a habitat mosaic is most likely to support the highest number of species. As well as new woodland, the principal habitat type across the centre of the site will be grassland of varying types. Some areas of regular amenity use will be better suited to a regularly managed, short grassland, but elsewhere a taller sward will provide a more ecologically valuable habitat. Flower-rich grassland can be relatively easily created and as well as providing important habitat for invertebrates is visually attractive during the flowering season. However, in order to maintain a herb-rich sward into the long term, specific management prescriptions are required both for the timing of the cuts and also the requirement to remove the arisings each time, to ensure that the more competitive grasses do not become dominant at the expense of other species. It is therefore important that these management requirements are included from the outset for this habitat type.

Suitably located small patches of scrub within the grassland and at the boundaries of the site are also highly desirable, as these will support nesting birds and invertebrate species. This can include blackthorn, hawthorn, bramble and dogwood. The juxtaposition of scrub and rough grassland habitats is particularly important for many species.

Individual oak trees can also be planted within the grassland to become the parkland trees of the future.

There are opportunities to improve connectivity between the country park and existing semi-natural open space at Bloodmoor Hill to the east, by strengthening the existing hedgerow network and new habitat creation.

5.9.3 Detail of delivery

In association with any future planning application, measures to deliver the country park should be detailed within an Ecology Strategy to include specific details of the habitats and means of creation and enhancement. In addition, a Landscape and Ecology Management Plan should also be submitted to provide a strategic and integrated approach to the management of existing, retained and proposed landscape and ecological resources.

5.10 Oakes Farm allocation

This allocation on the western side of Carlton Colville includes the ancient woodland County Wildlife Site of Carlton Grove and a network of ancient, species rich hedges. Policy WLP2.19 states amongst other things that: ‘The County Wildlife Site, hedgerows, ditches and trees should be conserved and enhanced through development’ and that ‘The impact of any floodlighting on wildlife and residential amenity should be mitigated’.

It is therefore important that the County Wildlife Site is protected and buffered from development and the associated hedgerow network is protected and enhanced. It is also important that there is no light spill from external lighting into such areas and that dark corridors are retained for nocturnal animals, including foraging and commuting bats [19]. Consequently, a lighting strategy in accordance with current guidelines should be designed for this scheme.

5.11 The significance of wildlife and ecological assets for the Neighbourhood Plan

Carlton Colville contains a significant part of the statutory designated site of Sprat’s Water and Marshes SSSI, part of the Broads SAC and Broadland SPA and Ramsar Site, as well as three County Wildlife Sites. In addition to the above, seven Priority habitats have been identified within the parish, four of which make up the diverse and ecologically important mosaic of wetland habitats within the northern part of the parish, within the Broads National Park. Much of this area lies within Suffolk Wildlife Trust’s Carlton Marshes Nature Reserve, the ‘Southern Gateway to the Broads’. This water-filled, biodiversity-rich landscape provides a year-round destination for nature-based recreation, learning and play. The reserve provides a unique opportunity to get close-up to wildlife, brought to life by the new visitor centre and helping connect all ages to the natural world.

In the southern half of the parish there are three other Priority habitats typical of farmland (Lowland Broadleaf Woodland, Ponds and Hedgerows). Within the built-up area are areas of semi-natural green space with grassland, scrub and woodland, as well as watercourses, natural and man-made ponds, small stretches of hedgerow and notable trees. A country park and other areas of green space are proposed as part of the development south of The Street. Collectively these areas provide significant opportunities for the benefit of wildlife and people.

Development Management guidance for any new developments within the area covered by the Neighbourhood Plan should seek to protect existing ecological assets and restore, enhance and reconnect the ecological network.

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