Barningham Neighbourhood Plan

Landscape and Wildlife Evaluation

June 2019

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Prepared by:	Checked:	Date:
Jill Crighton BSc Hons	**Simone Bullion BSc PhD MCIEEM**	**16th July 2019**

Suffolk Wildlife Trust

Prepared by:
SWT Trading Ltd
Brooke House
Ashbocking
Ipswich
Suffolk IP6 9JY

Prepared for:
Barningham Parish Council
Neighbourhood Plan Working Group

Contents

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 survey has 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 undertake this three months after the submission of this report. If you wish to discuss this, please contact us within this time period.

NB: As part of the assessment of the whole parish, five areas were identified by the Parish Council that are being considered for further development. Whilst these were visited, they were not assessed in detail. Consequently, if any sites were to proceed further in the development process, each would still require a detailed ecological assessment to accompany any planning application.

Executive Summary

SWT Trading Ltd: Ecological Consultants, the wholly owned consultancy of Suffolk Wildlife Trust, was instructed by Barningham Parish Council to undertake a landscape and ecological evaluation of the parish as part of the Neighbourhood Plan that is currently under preparation. This survey and evaluation seek to provide the Neighbourhood Plan Working Group with evidence that will underpin and justify the concept of a 'valued landscape' and highlight the habitats and associated ecological networks as rich sources of biodiversity.

Suffolk County Council carried out The Suffolk Landscape Character Assessment in 2009 and found that two Landscape Character Areas are recognised within Barningham: Ancient Plateau Claylands and a small area of Plateau Estate Farmlands. As well as describing key characteristics of each landscape type, the citations describe key potential changes that could take place within them and set out a range of more detailed prescriptions in terms of Development Management and Land Management guidance. Landscape Character Assessments are currently included within St Edmundsbury Core Strategy (adopted December 2010), Policy CS:2 Sustainable Development.

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 for the Landscape Character within the parish.

Barningham contains only one non-statutory designated site, the 'locally designated' County Wildlife Site 'Aggie's Piece Pocket Park'. However, several statutory designated sites lie within close proximity to the Parish, most notably Weston Fen Site of Special Scientific Interest (SSSI), which is also part of the Waveney and Little Ouse Valley Fens Special Areas of Conservation (SAC), situated 150m north of the parish boundary.

Five Priority Habitats have been identified within the Parish: hedgerows, lowland mixed deciduous woodland, wood pasture and parkland, ponds and lowland haymeadow. Veteran trees are also highlighted as a feature of note within the Parish. The Priority habitat types within the Parish, with the exception of some small ponds, all lie within the Ancient Plateau Claylands. Within these habitats, 22 UK and Suffolk Priority Species (the majority of these being birds or plants) have been recorded which complement and underline their biodiversity value.

A wildlife corridor of note has been identified which includes the ditch running through Moat Plantation which eventually connects with Weston Fen, north-east of the Parish. Aggies Piece Pocket Park also lies within this corridor.

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

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 Barningham Parish Council on 1st February 2019 to undertake a landscape and ecological evaluation of the parish as part of the Neighbourhood Plan that is currently under preparation.

The Civil Parish of Barningham, within its formal parish boundary, is the 'Neighbourhood Area' for the purposes of the Plan. The Parish Council would like any future development to have a strong ecological base and are keen to preserve and encourage wildlife within the village and surrounding areas. The representative of the Council also highlighted five areas which are being considered for future development and these were a strategic focus for the survey, although the majority of the Parish was assessed.

This evaluation seeks to provide the Neighbourhood Plan Working Group with evidence that will underpin and justify the concept of a 'valued landscape' and highlight any habitats and associated ecological networks that are rich sources of biodiversity.

1.2 Parish Location and Statistics

Barningham is a rural village of Anglo-Saxon origin within St Edmundsbury District, around 12 miles north-east of Bury St Edmunds. The parish shares boundaries with the civil parishes of Coney Weston, Bardwell, Stanton, Hepworth and Market Weston. The westernmost boundary with Bardwell is marked by the course of the Roman Road known as the 'Peddars Way', although there is no public access along this section of the route. The parish of Barningham covers 530 hectares and its central point grid reference is TL 965767.

Data from the 2011 UK Census indicate that Barningham is a village within Accessible Countryside with a population of 956 people in 386 households [1]. The dwellings within the parish are mainly concentrated around the 5-way junction leading to each of the neighbouring parishes. There are a few scattered larger dwellings and farm steadings throughout the wider parish.

Outside of the road network, buildings and gardens there are approximately 50 plots of land given over to other land uses, with arable cropping being the most extensive.

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 (July 2018, as amended), 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:

- protecting and enhancing valued landscapes, geological conservation interests and soils;
- recognising the wider benefits of ecosystem services;
- minimising impacts on biodiversity and providing net gains in biodiversity;
- where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

NPPF states 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 polies in the development plan that covers the area.

2.3 St Edmundsbury Local Plan

In December 2010, St Edmundsbury adopted a **Local Plan** setting out the planning policies, proposals and actions for the future development of the District up to 2031 [4]. This Local Plan consists *inter alia* of:

- Core Strategy (adopted December 2010)
- Vision 2013, which consists of 3 Local Plans, Bury St Edmunds Vision 2031, Haverhill Vision 2031 and Rural Vision 2031 (adopted September 2014)
- Joint Development Management Policies Document (adopted February 2015)
- Local Plan Policies Map

The **Core Strategy** consists of a series of Strategic Objectives complemented by associated Core Strategy Policies - prefixed as 'CS'. Within Policy CS2 – Sustainable Development there are two Strategic Objectives G and H, which are applicable to this document.

The **Core Strategy** has designated Barningham as a 'Local Service Centre', in recognition of its range of local services and facilities to serve the community and surrounding rural population.

The **Rural Vision 2031** meets the council's priorities for the rural areas as set out in the adopted St Edmundsbury Core Strategy (December 2010). This will be achieved through the delivery of sustainable development which will:

- create the conditions for the growth of local employment and economic activity in the rural areas;
- secure a housing supply for local people at affordable levels which will help to maintain existing rural services and facilities;
- maintain and enhance the rural area's distinctive natural and built environment and heritage.

It highlights that there are no opportunities for infill development and the preferred area for growth is to the east or south of the village.

Policy RV15: Barningham in the Rural Vision indicates that a 0.7ha greenfield site at Hopton Road has already been granted planning permission for 21 dwellings.

The **Joint Development Management Policies Document** contain policies with the prefix 'DM'. These policies seek to protect and enhance important facilities and services in the village. The following policies are of particular importance to this document:

- DM5: Development in the Countryside;
- DM10: Impact of Development on Sites of Biodiversity and Geodiversity Importance;
- DM11: Protected Species;
- DM12: Mitigation, Enhancement, Management and Monitoring of Biodiversity;
- DM13: Landscape Features;
- DM25: Extensions to Domestic Gardens within the Countryside; and
- DM31: Farm Diversification.

2.4 Suffolk's Nature Strategy

Published in 2015, Suffolk's Nature Strategy describes the challenges faced by and the opportunities open to our natural environment [5]. This document has been compiled by a partnership consisting of Suffolk County Council, Suffolk Wildlife Trust, RSPB and National Trust and advised by Natural England, Environment Agency and Forestry Commission. It sets out the key natural environment priorities for the county and conveys to decision makers how the wildlife and landscapes of Suffolk not only have intrinsic value but are critically important building blocks for our own economic growth and well-being.

The Strategy has strong relevance and linkages to the Neighbourhood Plan process. Within the Our Health and Wellbeing section, it makes direct reference to Neighbourhood and Parish Plans, stating that:

- 'Once adopted, these plans become part of the Local Development Plan and as such become part of the statutory planning framework. These new powers provide a significant opportunity for communities to recognise, protect and improve local environmental assets.

- There is great scope for benefiting the environment, from designating green spaces to establishing 'green corridors' by linking open spaces and improving local watercourses. We

will support communities' writing and implementing their plans and help describe the wider context as we seek to build ecological networks across Suffolk'.

These aspirations are reflected in Recommendation 26 of the Strategy:

- 'By 2018, all Neighbourhood Development Plans and Parish plans should ensure the natural environment is fully considered. They should maximise opportunities to conserve, enhance and link Suffolk's green and natural spaces. We will support the development and implementation of these plans'.

Reference is also made within the Our Natural Environment Priorities section to a wide range of landscape and wildlife assets within the county and wherever appropriate these are highlighted below in relation to Barningham.

2.5 Biodiversity Net Gain

On 13th March 2019 the government confirmed that all new developments must deliver an overall increase in biodiversity. "Biodiversity Net Gain" will be mandated in the forthcoming Environment Bill. This will require developers to ensure habitats for wildlife are enhanced and left in an improved state than that of pre-development.

Examples of improvements to biodiversity include the creation of green corridors, planting more trees or forming local nature spaces. If for whatever reason, these improvements are not possible on a site then the developer will be required to pay a levy for habitat creation or improvement elsewhere [6]. It is anticipated that the current loss of biodiversity through development will be halted and ecological networks restored.

The mitigation hierarchy still needs to be followed to avoid, mitigate or compensate for biodiversity losses, but in addition to this, Biodiversity Net Gain will be implemented. It involves the use of a metric as a proxy for recognising the negative impacts on habitats arising from a development and calculating how much new or restored habitat, and of what types is required to deliver sufficient net gain [7].

3. Methods

3.1 Field Survey

A 'Phase 1 type' field survey and ecological audit of the parish was undertaken on 3rd June 2019, investigating and recording land use, habitat types and notable plant and animal species and taking digital images to illustrate these features. Using public highways, bridleways and footpaths it was possible to view and comment upon much of the parish land area. The timing of the survey was optimal for assessing habitats and for recording incidental species records.

3.2 Desktop Survey

A variety of existing source material was consulted including:

- Suffolk County Council website and other documents
- West Suffolk 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 – data for Barningham and final county report

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

Barningham does not lie within or close to any Special Landscape Areas (SLAs) or Areas of Outstanding Natural Beauty (AONB).

4.2 Local Landscape Policy

Policy DM13: Landscape Features

Development will be permitted where it will not have an unacceptable adverse impact on the character of the landscape, landscape features, wildlife, or amenity value. Areas of particular landscape sensitivity, including Special Landscape Areas (as defined on the Policies maps) have been identified. These areas, and other valued landscapes such as The Brecks and the Stour Valley (subject of a management and delivery plan through the Dedham Vale AONB and Stour Valley Project) have, by reason of their landform, historic landscape importance and/or condition, a very limited capacity to absorb change without a significant material effect on their character and/or condition. However, individual proposals within or adjacent to these areas will be assessed based on their specific landscape and visual impact. All proposals for development should be informed by, and be sympathetic to, the character of the landscape. Landscape Character Types are identified in the Suffolk Landscape Character Assessment.

However, the 'Type' boundaries are only indicative, being mapped for the whole county at a scale of 1:50,000. Therefore, the character of the site and setting of a proposal should be individually assessed. All development proposals should demonstrate that their location, scale, design and materials will protect, and where possible enhance the character of the landscape, including the setting of settlements, the significance of gaps between them and the nocturnal character of the landscape. Developers/applicants will be required to submit, where appropriate, landscaping schemes with applications for planning permission and for the approval of reserved matters. Where any harm will not significantly and demonstrably outweigh the benefit of the proposal,

development will be permitted subject to other planning considerations. However, it is essential that commensurate provision must be made for landscape mitigation and compensation measures, so that harm to the locally distinctive character is minimised and there is no net loss of characteristic features. Where this is not possible development will not be permitted.

Policy DM25: Extensions to Domestic Gardens within the Countryside

Extensions to domestic gardens within the countryside will not normally be permitted. Small, unobtrusive extensions of residential curtilages into the surrounding countryside, which will not adversely affect the character and rural amenities of the site and wider countryside will be permitted where the following criteria are met:

a. the development will not involve the loss of the best and most versatile agricultural land;
b. the proposal will not involve the loss of an important hedgerow or other important landscape feature;
c. there will be no significant detrimental effect upon biodiversity interests; and
d. that provision is made for suitable landscaping to ensure boundary treatment is of an appropriate rural character and appearance.

4.3 Suffolk Landscape Character Assessment

In 2009, 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), [8]. 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 mappable datasets: relief, geology, soils, tree cover, farm type and settlement. Application of this methodology maintained a consistent approach across Suffolk.

Development Control Officers, forward planners and other staff at County and District level are now using the Suffolk Landscape Character Assessment to manage landscape change and development across the county and to produce local detailed studies as appropriate.

It is important for the Barningham Neighbourhood Plan to acknowledge and make full use of both the descriptions and the land management guidelines related to the two Landscape Types that exist within the parish.

The Landscape Character Types (LCT) which cover Barningham parish are:

- **Ancient Plateau Claylands** (coloured pale green with stripes on Figure 1)
- **Plateau Estate Farmlands** (coloured olive on Figure 1)

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 Barningham - 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.

Additionally, two further Landscape Character Types border Barningham Parish boundary; **Rolling Valley Farmland and Furze** (coloured yellow on Figure 1) and **Wooded Valley Meadowlands and Fens** (coloured lilac on Figure 1). Of these, only Wooded Valley Meadowlands and Fens is of significance to Barningham, as a stream which runs through the Parish flows into a statutorily designated site approximately 150m north of the boundary; Weston Fen SSSI and Waveney and Little Ouse Valley Fens SAC. However, these Landscape Character Types will not be considered further in this document.

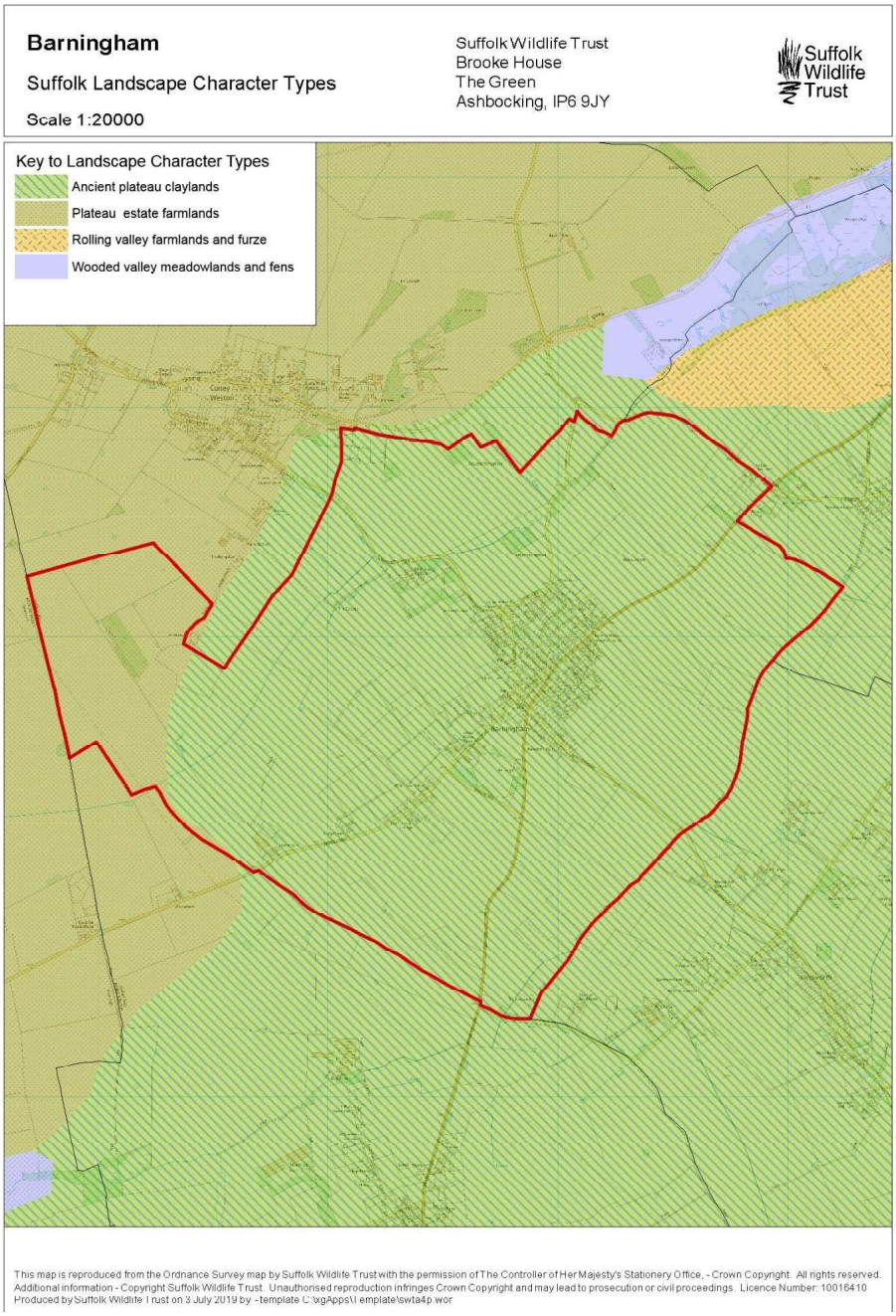

Figure 1: Suffolk Landscape Character Types ascribed to Barningham (Source: Suffolk County Council)

4.3.1 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 are characteristic of this landscape, although more common in the south. Several open areas were created for WWII airfields and by 20th century agricultural changes.

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

- Flat or gently rolling arable landscape of clay soils
- Field pattern of ancient enclosure often co-axial, particularly in the south-west of the Parish

- Dispersed settlement pattern of loosely clustered villages, hamlets and isolated farmsteads of medieval origin
- Villages often associated with medieval greens or tyes
- Farmstead buildings are predominantly timber-framed, the houses colour-washed and the barns blackened with tar. Roofs are frequently tiled, though thatched houses can be locally significant
- Hedges of hawthorn and elm with oak, ash and field maple as hedgerow trees

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

- Expansion of garden curtilage
- Change of land use to horse paddocks and other recreational uses
- Settlement expansion eroding the characteristic form and vernacular styles
- Conversion and expansion of farmsteads for residential use
- Impact of deer on the condition of woodland cover
- Large-scale agricultural buildings in open countryside
- Redevelopment of former airfield sites to new uses
- Development of wind turbines

Land Management guidelines for this Landscape Type relevant to Barningham include:

- Reinforce the historic pattern of sinuous field boundaries
- Recognise localised areas of late enclosure hedges when restoring and planting hedgerows
- Maintain and restore greens and commons
- 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
- Maintain and restore the stock of moats and ponds in this landscape

4.3.2 Plateau Estate Farmlands

Plateau Estate Farmlands mark the transition between the Claylands and the Brecklands. The soils are chalky clay till and light loam, sandy drift deposits. The field patterns have a large rectilinear pattern which has been largely lost as a result of 20th Century agricultural improvement. Across this Landscape Character type there are large areas of former heathland, with a network of tree belts and coverts. Additionally, parkland is a characteristic feature. As with Ancient Plateau Claylands, the villages are clustered with farmsteads around them and the countryside has an open feel.

Although this character type is poorly represented in Barningham, with only a small section in the west of the Parish, the key characteristics of this landscape type as they refer to Barningham are:

- Flat landscape of light loams and sandy soils
- Large scale rectilinear field pattern
- 18th, 19th and 20th century landscape parks
- Clustered villages with a scattering of farmsteads around them
- Vernacular architecture is often 19th century estate type of brick and tile

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

- Expansion of existing settlements into this landscape and creation of new settlement patterns and clusters associated with infrastructure development.
- Conversion and expansion of farmsteads for residential uses.
- Large-scale agricultural buildings in open countryside.
- Changes in the management and use of landscape parklands.
- The introduction of new agricultural techniques.
- Leisure as a driving factor for changes in economic activity.

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

- Reinforce the historic pattern of regular boundaries
- Restore the quality of the elm hedges with coppice management
- Restore, maintain and enhance the network of tree belts and small plantations found across much of this landscape type
- Restore, maintain and enhance the historic parklands and the elements within them

4.4 The Significance of the Landscape for the Neighbourhood Plan

The descriptions and discussions in Sections 4.2 - 4.3 indicate how Landscape Character Assessment is increasingly underpinning development management guidance.

5. Evaluation of Wildlife Assets

5.1 Local Biodiversity Policy

The Joint Development Management Policies Document is used in day-to-day planning decisions, in line with the adopted Core Strategy. Within the Core Strategy:

- Strategic Objective G aims to maintain and protect built and natural environment and ensure that new development maximises the opportunity to re-use previously developed land and protects and enhances assets of local design, cultural, historic and conservation importance, and character of the landscape and townscape.

- Strategic Objective H aims to maintain, protect and enhance the biodiversity, geodiversity and natural environment and seek opportunities to increase the provision of green open space and access to the countryside.

The Joint Development Management Policies Document sets out the biodiversity policies (DM10, DM11 and DM12) of the St Edmundsbury district. They seek to conserve or enhance the biodiversity and geological interests of the area and in particular ensure that protected species and habitats including those set out in UK and local Biodiversity Action Plans (BAPs) will be protected and, where possible, enhanced.

Policy DM10: Impact of Development on Sites of Biodiversity and Geodiversity Importance states that:

When considering development proposals which may have an adverse impact on nature conservation sites or interests, the local planning authority will have regard to the expert nature

conservation advice provided by Natural England, the Suffolk Wildlife Trust and other specialist sources and the following criteria:

a. the ecological or geological value and objectives for which the site was classified or designated;

b. the integrity of the site in terms of its wildlife value, its diversity and relationship with other ecological resources;

c. the cumulative impact of the proposal and other developments on the wildlife or geological value of the site;

d. the presence of protected species, habitat areas and wildlife corridors, or geological features, and proposed measures to safeguard and enhance them;

e. the opportunity to create new habitat areas and to improve the conservation status of locally vulnerable species;

f. guidance set down within Biodiversity Action Plans (BAP), habitat management plans and other relevant sources; and

g. the extent to which the imposition of conditions or planning obligation:

i. would mitigate the effects of the development and/or protect the geological or nature conservation value of the locality;

ii. ensure replacement habitat or features; and/or

iii. ensure that resources are made available for the future enhancement and management of the replacement habitat or feature to enable it to attain the quality and attributes that have been lost.

Proposals for development which would adversely affect the integrity of areas of international nature conservation or geological importance, as indicated on the Polices Map, will be determined in accordance with the Conservation of Habitats and Species Regulations 2010 (as amended).

Proposed development likely to result in adverse effects to a SSSI will not be permitted unless the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSIs.

Proposals which would result in significant harm to biodiversity, having appropriate regard to the 'mitigation hierarchy', will not be permitted.

Note: With respect to criterion g) the provision of replacement habitat or features is viewed as a last resort, rather than a regular development tool. Where compensation has been established as an acceptable approach, it will be necessary to provide replacement areas of at least equivalent value to the lost habitats. The local planning authority will normally expect new habitats to be in place to a satisfactory standard before the original habitats are lost.

Policy DM11: Protected Species states that:

Development which would have an adverse impact on species protected by the Conservation of Habitats and Species Regulations (2010) (as amended), the Wildlife and Countryside Act (1981), the Protection of Badgers Act (1992), and listed in the Suffolk Biodiversity Action Plan, or subsequent legislation, will not be permitted unless there is no alternative and the local planning authority is satisfied that suitable measures have been taken to:

a. reduce disturbance to a minimum; and

b. i. maintain the population identified on site; or

ii. provide adequate alternative habitats to sustain at least the current levels of population.

Where appropriate, the local planning authority will use planning conditions and/or planning obligations to achieve appropriate mitigation and/or compensatory measures and to ensure that any potential harm is kept to a minimum.

Policy DM12: Mitigation, Enhancement, Management and Monitoring of Biodiversity states that:

In addition to, or as part of the requirements of other policies in this DPD, measures should be included, as necessary and where appropriate, in the design for all developments for the protection of biodiversity and the mitigation of any adverse impacts. Additionally, enhancement for biodiversity should be included in all proposals, commensurate with the scale of the development. For example, such enhancement could include watercourse improvements to benefit biodiversity and improve water quality, habitat creation, wildlife links (including as part of green or blue infrastructure) and building design which creates wildlife habitat (e.g. green roofs, bird and/or bat boxes). All new development (excluding minor household applications) shown to contribute to recreational disturbance and visitor pressure within the Breckland SPA and SAC will be required to make appropriate contributions through S106 agreements towards management projects and/or monitoring of visitor pressure and urban effects on key biodiversity sites.

5.2 Protected Wildlife Sites

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.

5.2.1 Internationally Protected Sites in Barningham

The nearest internationally designated site is Weston Fen, a Suffolk Wildlife Trust owned Nature Reserve, which is part of the Waveney & Little Ouse Valley Fens SAC and is located just under 150m north-east of the parish boundary at its closest point [9]. This designation also covers Thelnetham Fen and Redgrave and Lopham Fens SWT Reserves to the north east. SACs are designated under the European Habitat Directive (92/43/EEC). Their function is to protect those habitats and species listed in Annex I and II of the Directive which are considered to be of European interest.

The features for which this SAC is designated are:

- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Calcareous fens with *Cladium mariscus* and species of *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge); and
- Desmoulin's whorl snail, *Vertigo moulinsiana.*

Redgrave and South Lopham Fen is also designated as an important wetland Ramsar site, 5.9km from the parish boundary at its closest point.

To the north and west of Barningham lies the Breckland Special Protection Area (4.8km), which is designated for its breeding bird populations, specifically stone curlew, *Burhinus oedicnemus;* European nightjar, *Caprimulgus europaeus* and woodlark, *Lullula arborea.*

To the west, 8.8km distant, there is an area of Breckland SAC, which is designated for a number of qualifying features, as follows:

- Inland dunes with open *Corynephorus* and *Agrostis* grasslands; Open grassland with grey-hair grass and common bent grass of inland dunes
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation; Naturally nutrient-rich lakes or lochs which are often dominated by pondweed
- European dry heaths
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*); Alder woodland on floodplains
- *Triturus cristatus*; Great crested newt

5.2.2 Sites of Special Scientific Interest in Barningham

SSSIs represent areas of national importance due to their flora, fauna, geological or physiological features. Although there are no SSSI's within Barningham parish, there are several close by, many of which are small parcels of woodland sites, characteristic of the Landscape Area Type, Ancient Plateau Claylands. To the south and east of Barningham Parish, these include Fakenham Wood, Euston and Sapiston Great Grove; which encompass Great Grove Ancient Woodland and Fakenham Wood Ancient Woodland and Stanton Woods encompassing the ancient woodlands: Kiln Wood, Half Grove, Sleights Wood, Dovehouse Wood and High Wood County Wildlife Site. Breckland Forest lies to the west. The condition assessments for these woodlands are a mix of favourable and unfavourable/recovering with a small proportion being unfavourable/no change.

Additionally, a number of important fen meadow sites lie to the north east of the Parish, including Redgrave and Lopham Fens, Blo' Norton and Thelnetham Fens and Weston Fen. These sites are in relatively good condition, with the majority being in unfavourable/recovering condition, closely followed by favourable, with only a small area of Weston Fen being unfavourable with no change.

Weston Fen is the only SSSI with direct links to Barningham Parish, via a stream which flows through the parish and into the fen at its southern boundary. The site contains a very valuable example of a species-rich, spring-fed valley fen, with areas of fen grassland and relict heath. Full citation can

be found in appendices.

The two Breckland heath sites, Knettishall Heath and Thetford Heath also have a mix of favourable, unfavourable/recovering and unfavourable/no change conditions

Breckland Farmland SSSI is notified for its internationally important population of stone curlew and is currently in favourable condition.

5.3 County Wildlife Sites

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, [10].

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 SSSSIs, 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 2018 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.

It is important to note that Environmental Impact Assessments are required by Natural England when areas of uncultivated land are to undergo agricultural change, including operations such as increases in stock density, cultivation, soil spreading and new drainage work.

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.

5.3.1 County Wildlife Sites in Barningham

There is one County Wildlife Site within the parish:

Aggie's Piece Pocket Park (TL 971776)

This site is a remnant of old pasture surrounded by ancient hedgerows, oak tree standards and scrub covering 1.37ha. There are attractive views across the grassland and a pleasant walk around the perimeter which winds through the perimeter scrub. It is cut for hay on an annual rotation.

The grassland is dominated by grass species with very few herbs or forbs, but historically oxlip and cuckoo flower have been recorded here. False-oat grass and tall ruderal vegetation such as nettle, cow parsley and creeping thistle has out-competed species which were formerly present (Photograph 1). The north of the site is currently less rank than the south, where some lesser stitchwort, common knapweed, field speedwell and cut-leaved crane's-bill can still be found in less densely vegetated patches. There is evidence of rabbit activity in this area, with droppings and mammal trails.

If the grassland was cut on a twice-yearly rotation this would help restore the species richness of the sward.

Photograph 1. Open pasture in Aggie's Piece

Photograph 2. Perimeter footpath through scrub

The scrub is starting to encroach on to the grassland, and although providing excellent habitat for nesting, foraging and roosting birds, some scrub management is essential to maintain the open feel to this site. Blackthorn, elder, hawthorn and dog rose are most frequent with guelder rose, holly, hazel and apple. Some mature hornbeams and oaks offer good structural diversity with bramble and hop frequently intertwined. The western-most corner is dominated by leggy blackthorn scrub which would benefit from rotational management.

A footpath circles the pasture between the scrub layer and the hedgerow on the perimeter. (Photograph 2). Some nest boxes are present throughout the boundary scrub and trees, and a barn-owl box is present in the north-eastern edge. The barn owl box would benefit from cutting back of branches in front of the entrance hole to improve the flight line.

A newly planted hedge; largely comprised of field maple, hawthorn and blackthorn; runs along the southern boundary (Photograph 3).

Photograph 3. Footpath with new hedgerow

5.4 Biodiversity Action Plans

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.

A change in strategic thinking followed the publication of the Convention on Biological Diversity's 'Strategic Plan for Biodiversity 2011–2020' and the launch of the new EU Biodiversity Strategy (EUBS) in May 2011. As a result, Government published 'Biodiversity 2020 – a strategy for England's Wildlife and Ecosystem Services', as successor to the UK BAP, [11].

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 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, [12] 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 Barningham. 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 Barningham

Of the 24 Suffolk Priority habitats, the field survey revealed five to be present in Barningham parish.

- Hedgerows
- Mixed deciduous woodland
- Woodpasture and parkland
- Ponds
- Lowland haymeadow

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 Barningham 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 Barningham.

5.5.1 Hedgerows

5.5.1.1. General description of this Priority Habitat in the context of Suffolk

Hedges 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.

5.5.1.2. Hedgerow Priority Habitat in Barningham

The field survey noted a network of hedgerows within the parish, although a number had been allowed to grow-on and are functionally more similar to lines of trees. Hedgerows are important for a number of bird Priority species, and specifically to Barningham, farmland bird species.

Barningham was one of the many parishes covered by the Suffolk Hedgerow Survey, 1998-2012. The 2012 report on this project [13] shows that out of the 86 hedgerows in the Parish, 44 sections no longer had hedgerow present. So, of the 42 hedges surveyed for woody species:

28.6% contained 4 species or fewer
40.5% contained 5, 6 or 7 species
30.9% contained 8 species or more

Therefore 71.4% of the sampled hedgerow resource within the parish can be deemed species rich.

It must be noted that this summary is based on data collected in the early stages of the Suffolk Hedgerow Survey (2003) 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.

Photograph 4. Ancient hedgerow north of Moat Plantation Photograph 5. Example of a veteran oak standard

The hedgerows throughout Barningham are an important feature in the arable landscape, which by itself, has relatively low biodiversity value. They offer a degree of connectivity, and when they are associated with farmland ponds this further increased the connectivity of the landscape. The majority of the hedgerows are of significant age and structure, some with features associated with ancient hedgerows, such as ditches and tree standards (Photographs 4 & 5). Species noted include hazel, hawthorn, blackthorn, dogwood, field maple, sycamore, dog rose, oak, elm, gorse and bramble.

5.5.1.3. Activities and developments most likely to affect Hedgerow Priority Habitat in Barningham

- Removal to facilitate arable, other farming operations or other developments (though this may require consent under the Hedgerow Regulations 1997)
- 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
- Losses of veteran trees that may not be replaced by new plantings

5.5.2 Mixed Deciduous Woodland

5.5.2.1. 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.

5.5.2.2. Mixed Deciduous Woodland Priority Habitat in Barningham

Although there are no areas of ancient woodland with Barningham Parish there are around five isolated blocks of plantation woodland associated with farmland north of the built-up village, and a further two areas associated with Barningham Hall and Barningham House within the village.

Access was limited to the perimeter of each of these woodlands with the exception of Moat Plantation directly north of Barningham village. The field survey noted deciduous woodland at the following sites, checked using OS 1:10,000 maps and Google Earth imagery:

- A. Moat Plantation (TL 968774)
- B. Square Plantation (TL 965778)
- C. West of Square Plantation (TL 963770)
- D. Tree belt in far west of Parish (TL 951770)
- E. Tree belt in far east of Parish (977775)
- F. Woodland associated with Barningham Hall (TL 965772)
- G. Woodland associated with Barningham House (TL 966764)

A. Moat Plantation appears sufficiently mature to have a semi-natural feel and contains a diverse range of tree species, most notably a significant number of mature hornbeams. Also present are pine, sycamore, maple, ash, oak and lime, with a scrub layer of hazel, silver birch, holly, yew, alder, dog rose, hawthorn and redcurrant (Photograph 6). The ground flora is relatively sparse with a heavy volume of leaf litter, although sycamore regeneration is pronounced and there are some areas with violet sp., garlic mustard and lords-and-ladies (Photograph 7).

A large pond bisects the woodland, which will be discussed under Section 5.5.4.2. The woodland tapers out along a ditch to the north-east and south-west. Some snowberry is located on the northern edge of the woodland, near the pond. Although snowberry is not listed on Schedule 9 of the Wildlife and Countryside Act (1981), it can be a prolific invasive species.

Photograph 6. North-eastern corner of Moat Plantation

Photograph 7. Within Moat Plantation

B. Square Plantation was only viewed from the perimeter, but mature oak, ash and sycamore were frequent, with some holly, crab apple and ivy cover. The woodland appeared to have excellent structural diversity.

C. West of Square Plantation there is a slightly smaller block of plantation woodland with a very similar species composition. A hedge of mainly hawthorn with privet, field maple and dog rose surrounds this woodland and false wood brome was evident in large patches beyond the hedge, along with garlic mustard.

D. Tree belt in far west of Parish was not assessed due to a lack of access but using OS 1:10,000 maps and Google Earth imagery it appears to be comprised of a strip of mature woodland in the west with a section of immature scrub/grassland habitat mosaic directly to the east.

E. Tree belt in far east of Parish is associated with the neighbouring property, The Firs. Along the side of Hopton Road, it is bounded by dense Leylandii so only small areas could be viewed. The canopy is fairly open near the roadside with some ancient stag-horned oaks and horse chestnut shading short-mown grassland. Further north, the canopy appears more dense, but individual tree identification was not possible due to limited access.

F. Woodland associated with Barningham Hall has a layout more associated with Wood Pasture and Parkland, but there are two areas where the woodland is more dense. Access was not permitted, but from the boundary of Coney Weston Road, the species appeared similar to those noted previously, in particular oak and ash.

G. Woodland associated with Barningham House again, has a more Wood Pasture and Parkland structure, with more significant blocks of woodland around the edges. These are comprised of oak, ash, field maple, sycamore, elm, hawthorn and dogwood.

5.5.2.3. Activities and developments most likely to affect the Mixed Deciduous Woodland Priority Habitat in Barningham

- Overgrazing and over-browsing by expanding deer populations changes woodland structure through reduced regeneration
- Invasion by sycamore and other species considered to be non-native
- Management of woodland for game species, although there is often compatibility between

this and managing for biodiversity if undertaken sensitively
- Intensification of management between woodland fragments reduces the ecological value of edge habitats and the connectivity between woodland blocks in the landscape

5.5.3 Woodpasture and Parkland

5.5.3.1. 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.

5.5.3.2. Wood Pasture and Parkland Priority Habitat in Barningham

One area, which resembled parkland was viewed from Drout's Lane during the walkover survey, but was within a private property with no access, Barningham House, so a full assessment could not be made. However, this area was not included on the map on the MAGIC website. Another area, associated with Old Hall on Coney Weston Road, to the north west of the village is classed as Wood Pasture and Parkland on the MAGIC map.

5.5.3.3. Activities and developments which may affect the Wood Pasture and Parkland Priority Habitat in Barningham

- 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
- Unsympathetic tree surgery including removal of fallen deadwood or standing deadwood (unless required for safety reasons)
- Cessation of grazing by cattle or sheep leading to changes to grassland habitat

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 Barningham

Suffolk Biodiversity Information Service have mapped forty-four ponds within the parish.

A density of 0.08 ponds per hectare in the wider landscape means that Barningham is an area of low pond density in comparison to other areas of Ancient Plateau Claylands where pond densities may be much higher. 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. However, several of these ponds lie within arable fields, which could imply that they are isolated and could be affected by run-off, which would influence their overall biodiversity value. These ponds still play an important role, as they trap flood water and are thought to help reduce the level of pollutants entering watercourses [14]. There may also be an additional network of garden ponds, but this was not possible to identify during the field survey.

A large pond bisects Moat Plantation (TL 968774) which is currently quite silted-up, but some management could easily improve biodiversity (Photograph 8). Water mint, fools water cress, gipsywort, brooklime and water figwort with some willow scrub on the edges at the northern end. This woodland is connected to the wider landscape by a ditch which is largely dry to the north-east and more damp to the south west. This ditch is lined with willow, alder, dog-rose, bramble, hawthorn and some large oak standards.

Photograph 8. Moat Plantation pond

Photograph 9. Farmland pond, adjacent Bishops' Croft

The pond adjacent to Bishop's Croft (TL 974774) lies at the end of a shallow dry ditch running from the roadside down the edge of the field (Photograph 9). It is a deep body of water with steep banks. There are some patches of scrub surrounding the pond including blackthorn, hawthorn, dog rose, bramble, elder, willow and elm and a large veteran oak at the southern-most end. No emergent vegetation is present but there is a large stand of hairy willowherb on the north-eastern bank and the south-western bank is relatively bare, with only some bittersweet and celery-leaved buttercup. Several lengths of felled tree have been deposited in this pond which could create high levels of eutrophication.

5.5.4.3. Activities and developments that could affect the Ponds Priority Habitat in Barningham

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.

The pond within Moat Plantation would benefit from some scrub clearance around the banks, and de-silting of the pond, by either chemical or mechanical means. As aquatic flora is present in the northern end of the pond, this will likely spread along the banks and shallows if conditions are favourable, increasing the biodiversity value of the pond.

5.5.5 Lowland Haymeadow

5.5.5.1. General description of this Priority Habitat in the context of Suffolk

Often termed 'old meadows', these grasslands are characterised by a long history of traditional management of haymaking and have not been altered through ploughing or the use of agro-chemicals. This definition is also broad enough to include unimproved pastures where livestock grazing is the main land use.

In addition to species-rich swards of grasses and other flowering plants, unimproved hay meadows and pastures support a wide range other wildlife, including birds, small mammals and invertebrates. 96% of this BAP Habitat has been lost in Suffolk since 1939, with less than 100 hectares still remaining, though churchyard flora and fauna can mirror this habitat to some extent.

5.5.5.2. Lowland Haymeadow Priority Habitat in Barningham

Aggies Piece Pocket Park CWS is an example of a lowland haymeadow, albeit its sward is now dominated by tall grasses with reduced numbers of forbs. This habitat has been described in detail in 5.3.1.

A small area of the churchyard of the ancient church of St Andrew which is flower-rich surrounding can also be classed as an example of this habitat, albeit of very small size. This is covered in 5.8.1.

5.5.5.3. Activities and developments that could affect the Lowland Haymeadow Priority Habitat in Barningham

- Agricultural improvement through ploughing, drainage, reseeding, fertiliser treatment and application of herbicides
- Declining agricultural value of species-rich hay
- Changes in plant communities through inappropriate grazing/cutting regimes
- Reduction in the availability of the appropriate type and size of farm machinery for traditional hay making
- Lack of resources for long-term management of hay meadows or churchyards
- Abandonment leading to rank overgrowth and scrub encroachment

5.6 Suffolk Priority Species in Barningham

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

Mammals: bats, including pipistrelle and one other species, and several records of hedgehog (highly concentrated around the Bardwell Road area). For reference, all bats in Suffolk are included on a Suffolk BAP grouped Plan.

Birds: A good range of Red List and Amber List Birds of Conservation Concern (BoCC) have been recorded, most of which are also Priority Species. This includes a number of key farmland bird species: lapwing, turtle dove, skylark, linnet, yellowhammer, grey partridge (all Red List). Species associated with settlements include: house sparrow, song thrush, starling (all Red List) and dunnock (Amber List). Other notable species found in woodland and hedgerow habitats include spotted flycatcher (Red List), dunnock and bullfinch (both Amber List). Two Suffolk Priority Species (swift and barn owl) are also recorded. Swift is classed as Endangered as a GB breeding bird according to International Union for Conservation of Nature (IUCN) criteria. Barn owls are protected under Schedule 1 of the Wildlife and Countryside Act (1981) as amended.

In addition to the historical records, some Priority species were noted during the walkover survey including brown hare, house sparrow, starling, yellowhammer and common lizard.

5.7 Veteran Trees

The NPPF 2018 considers veteran trees, along with ancient woodland as an 'irreplaceable habitat' and any development impacting on such features should be refused. The veteran trees noted within Barningham Parish were all within stretches of intact or remnant hedgerows. Although these areas are unlikely to be impacted by development, special care should be taken to protect and buffer them, along with the hedgerows. Consideration should be given to undertaking new planting in strategic locations, protected from livestock, to provide the veteran trees of the future.

Mature oak and ash are frequent throughout the hedgerows as standards (Photograph 10). Many with stag-horned branches, deadwood, splits and knot holes; which could provide habitat for protected species such as roosting bats or nesting birds (Photograph 11).

Photograph 10. Example of veteran trees within remnant hedgerow

Photograph 11. Standing deadwood within woodland edge

5.8 Sites of Importance around Barningham

5.8.1 Barningham Churchyard

Barningham Churchyard surrounds the 14th Century Grade I Listed Building, Church of St Andrew (Photograph 13). The churchyard is unmown with mostly common grassland species typical of neutral grassland. It is relatively rich in forbs including common cats' ear, common sorrel, creeping cinquefoil, knapweed, yarrow and red clover with rough meadow grass, meadow foxtail, Yorkshire fog, false oat and *Festuca spp.* grasses. Of note is a stand of ox-eye daisy near the entrance gate (Photograph 12), and one plant of cuckoo flower and also cowslip were also present.

The area of newer graves behind the churchyard is more regularly mown and species-poor with species more common to amenity grassland including daisy and dandelion (Photograph 14). The older cemetery across the road contains similar neutral grassland species to that of the churchyard, but was close mown.

Photograph 12. Ox-eye daisies in churchyard

Photograph 13. Church and boundary wall

Photograph 14. Short mown older cemetery

A local resident, who lives adjacent the churchyard provided information regarding their garden and pond. They have recorded newts and grass snakes within the garden, and within the last year both barn owls and tawny owls have used the boundary trees. Cuckoos have also been heard in the churchyard.

To the west of the churchyard, there is a grassy paddock with false oat-grass, nettle and cow parsley as the dominant species along with other species common to improved grassland such as creeping buttercup and hogweed. The occasional patch of bramble scrub is also present. Of note is the dense field boundary with three large oak trees (Photograph 15).

Photograph 15. Species-poor meadow with oaks

5.9 Strategic Development Site Options

The Parish council provided a map with five sections marked as potential development sites and these areas were the key focus of the survey.

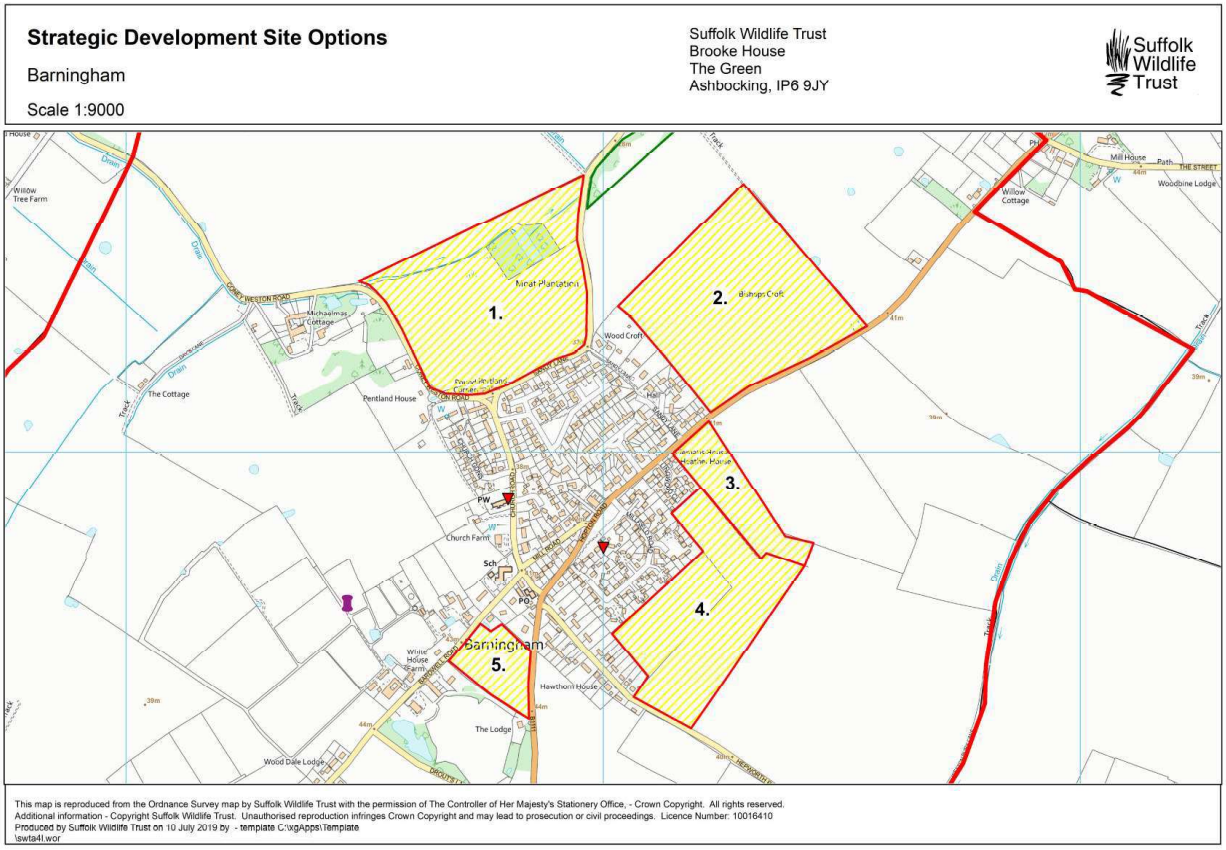

Figure 2. Strategic Development Site Options 1 - 5

5.9.1 Site 1. North of Sandy Lane (TL 968773)

Site 1 lies north of Sandy Lane, between Coney Weston Road and The Street. The site is largely an arable field (Photograph 16), sown with vegetable crop but northern section (north of Moat Plantation) includes a linear field which is dominated by creeping thistle with some cock's foot, meadow foxtail, broad-leaved dock and creeping buttercup. It has been previously used for cattle grazing and has a public footpath running along the northern boundary. Although this northern section is not proposed for development, it could provide important public green space for recreation and biodiversity enhancement.

On the south western corner of Moat Plantation, south of the ditch, there is an area of biodiversity interest with damp grassland containing large stands of common reed (Photograph 17). Also present are hairy sedge, field horsetail, common fleabane, hard rush, hoary ragwort and water mint, which, although there is currently no open water, indicate that it is likely wet for at least some of the year.

The pond within Moat Plantation connects to a ditch which ultimately links to Weston Fen. The eastern end of this ditch is currently dry, but a shallow stream is present to the west, lined with mature oaks, willow, hawthorn and bramble scrub. The roadside hedge is gappy with oak, ash and cherry.

All of the above habitats would require further detailed surveys in the event of this site coming forwards for development.

Photograph 16. Site 1 Arable Field

Photograph 17. Damp area adjacent Moat Plantation

5.9.2 Site 2. North of Hopton Road (TL 973773)

Site 2 is comprised of a large arable field north of Hopton Road, known as Bishops Croft. The field is lacking a hedge on roadside, north and north-west boundary with gardens bounding the south-west edge (Photograph 18). The there is a small, steep sided pond surrounded by scrub and a large oak tree on the northern boundary, which is described within the Ponds section 5.5.4.2. This pond is likely to support a range of species and would require further detailed assessment in the event of any development proposal.

Photograph 18. Site 2. Bishops Croft

Directly across the road from this site, there is an arable field which currently has a wide field margin. Although the species composition is typical, the presence of this margin is notable as all other field margins seen were very narrow. Wider field margins increase biodiversity value, and often attract invertebrates that will prey on pest species, reducing the need for pesticides.

5.9.3 Site 3. South of Hopton Road (TL 972769)

Site 3 is a linear arable field south of Hopton Road. On the eastern boundary there is a tall, thick hedgerow which has been allowed to grow up to become a tree belt. This comprises oak, hawthorn, dog rose, blackthorn and bramble (Photograph 19). A narrow field margin borders this tree belt and a dry ditch is present on the western boundary, bordering Site 4. A common lizard was noted on this boundary and consequently additional detailed surveys for this group would be required in the event that this site was considered for development.

Photograph 19. Site 3 with treeline

5.9.4 Site 4. East of Millfield Road Development (TL 972767)

This site is comprised of several sections of differing habitat. The meadow to the south of Millfield Road enclosed by hedgerow with trees is of the greatest biodiversity interest and contains a good diversity of plant species (Photograph 21). The hedgerow is similar to those described under the Hedgerows section 5.5.1.2, with the addition of cherry, apple and goat willow. Several grasses are present, including rough meadow-grass, Yorkshire fog, cock's foot, perennial rye, meadow foxtail, crested dog's tail, sweet vernal grass and meadow brome. There is also a rich mix of herbs and

forbs with ox-eye daisy, common vetch, lesser trefoil, hairy tare, goat's beard, common cat's ear, yarrow, red and white clover, tansy, fox-and-cubs and meadow vetchling (Photograph 20). It is likely that a wildflower seed mix has been sown in this area, but it provides excellent resources for invertebrates, birds, reptiles and small mammals. Further detailed surveys to cover protected and priority species should be undertaken in this area to fully understand its wildlife interest.

The largest section is arable field which lies north-east and south of the meadow, beyond the hedgerow. A dry ditch, overgrown with ruderal vegetation including nettle, cow parsley and cleavers, runs along the boundary of the adjacent Site 3.

At the end of Lingwood Close, there is an area of disturbed ground which has been colonized by ruderals. This is likely to have been cleared for prior development but has now been fenced off and left fallow. Species which have colonised this area include American willowherb, common cats' ear, common poppy, creeping thistle, white field pansy and grasses including barren brome, soft brome and cock's foot. This type of habitat provides excellent opportunities for invertebrates and reptiles.

Photograph 20. Site 4 Wildflower meadow

Photograph 21. Site 4 Hedgerow bisecting site

5.9.5 Site 5. Between Stanton Road and Bardwell Road (TL 968766)

Site 5 is a grassland field enclosed by hedges with dwellings to the north and south and main roads to the east and west. The grassland is dominated by grasses with evidence of recent spraying to treat thistle and nettle. Despite having little to no herbs or forbs, the site has a rich diversity of grasses including rough meadow, Yorkshire fog, meadow foxtail, cock's foot, false oat, barren brome, common bent, meadow brome, perennial rye and meadow barley (Photograph 22). The hedgerow is mainly hawthorn but also contains some sycamore, ash and hazel. The field offers good opportunities for foraging barn owl. Reptile species such as slow worm may be present and this would need to be assessed through a detailed survey in the event of this site coming forward for development.

On the north-eastern corner, on the boundary of the site is a very large oak tree which supports a barn owl box (Photograph 23). This tree should be suitably buffered and protected should any development take place within Site 5.

Photograph 22. Site 5 Meadow

Photograph 23. Veteran oak on boundary of Site 5

5.10 Built Environment and Associated Habitats

5.10.1. 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.

5.10.2. Built Environment Habitat in Barningham

The main settlement in Barningham is situated at the cross-roads leading to neighbouring parishes. Barningham contains eighteen Grade II Listed Buildings, and one Grade I Listed Building, which is the Church of St Andrew, a flint, brick and render building dating back to the 14th Century. The Church is situated on the western edge of the settlement and is the highest building in the village, which can be seen from several aspects around the Parish. The Royal George Freehouse is an ornately thatched building with render finish.

Notable Grade II Listed buildings include Barningham House on Barwell Road [15], a former rectory with sections dating back to the mid-18th and early 19th Century, which marks the southern-most point of the village, set within extensive grounds; and Old Hall on Coney Weston Road [16], a timber framed and rendered house with pantile roof dating from the early 17th Century. The traditional thatched cottages are mainly centred around the crossroads, but during the 20th Century there has been extensive infilling between and around these original buildings so most of the houses and accompanying gardens within the village date from this era.

There are some small greens around the village and several mature and newly planted trees, particularly along Church Lane.

5.10.3. Activities and developments that could enhance this habitat in Barningham to help provide Biodiversity Net Gain

There is a wide range of information and websites generally available on enhancing wildlife in towns and villages. Some of the positive actions to consider include at both individual and parish level:

- Creating ponds and mini wildflower meadows
- Relaxing mowing regimes on the greens and verges to benefit wildlife
- Putting up swift boxes on buildings
- Putting up bat boxes in trees
- Putting up bird boxes to suit a range of different species
- Creating hedgehog highways between gardens
- Composting and creating deadwood areas
- Harvesting rainwater
- Avoiding garden chemicals
- Not keeping gardens too 'tidy'

5.11 Ecological Networks and Connectivity

5.11.1 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) 2018 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 preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations. 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'.

5.11.2 Ecological networks in Barningham

Despite the greens and recent tree planting around the village itself, Barningham parish has relatively weak ecological networks compared with some other parts of Suffolk. This is largely because there is no river corridor passing through or adjacent to the parish. Habitat connectivity is largely provided through the network of ditches and hedgerows radiating across the parish.

- Core Areas: North of the village in the area of Moat Plantation and Aggie's Piece. Additionally, Old Hall and Barningham House estates contain a diverse range of habitats that will benefit wildlife.
- Corridors: The only substantial corridor within the Parish is the ditch that runs through Moat Plantation and connects with Weston Fen, north-east of the Parish.
- Stepping Stones: Although isolated, there are a number of farmland ponds and small pockets of woodland throughout the Parish.
- Restoration Areas: There is the potential to enhance the habitats for biodiversity value and create a village greenspace within Moat Plantation and the field to the north. Another area which could be targeted is within Site 4, where the wildflower meadow is enclosed with hedgerow. This is already used by dog walkers and could be enhanced with an appropriate mowing regime. Hedgerows should be enhanced by infilling gaps with similar species and further hedgerows could be planted on field boundaries to improve connectivity, particularly where associated with farmland ponds. Aggie's Piece would benefit from a revised mowing regime.
- Buffer Zones: Care should be taken to buffer and protect the existing hedgerows and mature trees.

Figure 3: Aerial view of landscape showing the distinctive field layout

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

Barningham contains one non-statutory designated site, the 'locally designated' County Wildlife Site, Aggie's Piece Pocket Wood within the parish boundary. County Wildlife Sites can support a wide range of Priority habitats and species. They complement statutory protected areas and nature reserves by acting as habitat in their own right, or by contributing to the wider ecological network.

Five Priority Habitats have been identified within the Parish, but they are fairly isolated parcels with limited connectivity. The most notable features within Barningham are the mature trees that intersperse the hedgerows.

It is worth noting that a small meadow adjacent to Old Hall appears to have been sown with wildflower seeds and is flourishing. It not only provides a beautiful focal point but benefits a range of taxonomic groups. By acting on the aforementioned measures for enhancement and restoration, a more connected and diverse landscape could be created which would benefit both wildlife and residents.

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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Appendix

COUNTY: WEST SUFFOLK SITE NAME: WESTON FEN

DISTRICT: ST EDMUNDSBURY

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: ST EDMUNDSBURY BOROUGH COUNCIL

National Grid Reference: TL 981787 Area: 48.6 (ha.) 120.1 (ac.)

Ordnance Survey Sheet 1:50,000: 144 1:10,000: TL 97 NE

Date Notified (Under 1949 Act): 1958 Date of Last Revision: 1972

Date Notified (Under 1981 Act): 1986 Date of Last Revision: –

Other Information:
Most of the site is a nature reserve owned by The Suffolk Trust for Nature Conservation.

Reasons for Notification:
This site contains a very valuable example of a species-rich, spring-fed valley fen, with areas of fen grassland and relict heath. These are fringed by a wide variety of grassland scrub and woodland communities. Of all the fens in the Waveney/Ouse valley it has been least affected by drainage or water abstraction. The water-table remains high and stable throughout the year and this is reflected in the rich and varied flora of the site.

The species-rich fen community which occupies the central area is dominated by Saw Sedge *Cladium mariscus* and Reed *Phragmites australis* with abundant Blunt-flowered Rush *Juncus subnodulosus*. Other species include Black Bog Rush *Schoenus nigricans*, Marsh Marigold *Caltha palustris*, Grass of Parnassus *Parnassia palustris*, Marsh Valerian *Valeriana dioica*, Southern Marsh Orchid *Dactylorchis praetermissa*, Fragrant Orchid *Gymnadenia conopsea* and the locally rare Narrow-leaved Marsh orchid *D traunsteineri*. The Greater Tussock Sedge *Carex paniculata* is prominent in parts of this area and there are also scattered patches of *Sphagnum* moss with Common Sundew *Drosera rotundifolia* associated with them. The locally rare Cowbane *Cicuta virosa* also occurs in these areas. The chalk springs feed into the fen on its western side and these seepage areas are very wet.

A smaller area of less species-rich, eutrophic fen occurs in the north eastern part of the site and the wetter parts of this are characterised by Great Reedmace *Typha latifolia*, Yellow Iris *Iris pseudacorus* and Marsh Horsetail *Equisetum palustre*.

Tall fen grasslands dominated by a variety of grasses, rushes and sedges cover low-lying ground in several of the surrounding meadows. Much of this is currently ungrazed and is often tall and rank. Soft Rush *Juncus effusus*, Yorkshire Fog *Holcus lanatus*, Hairy Sedge *Carex hirta* and Meadowsweet *Filipendula ulmaria* are the most

abundant and widespread species. Reed Sweet Grass *Glyceria maxima* and Hard Rush *Juncus inflexus* are locally dominant. Other frequent species include Meadow Vetchling *Lathyrus uliginosum*, Valerian *Valeriana officinalis* and Water Mint *Mentha aquatica*.

Towards the edges of the site this type of vegetation merges into damp neutral grasslands. The drier parts, especially those that are under-grazed, are dominated by False Oat Grass *Arrhenatherum elatius*. The wetter areas in the south eastern parts of the site are dominated by Sweet Vernal Grass *Anthoxanthum odoratum*, Yorkshire Fog and Red Fescue *Festuca rubra*. This area is grazed and is very species-rich. Species recorded include Large Bird's-foot Trefoil *Lotus uliginosus*, Yellow Rattle *Rhinanthus minor*, Common Spotted Orchid *Dactylorhiza fuchsii* and Southern Marsh Orchid *Dactylorchiza praetermissa*.

Relict heath communities to the north-west and south-east of the site have been heavily invaded by bracken along with gorse and hawthorn scrub. Some areas of bracken are now being cleared and acidic grassland is re-developing. Older established areas of acidic grassland contain Heather *Calluna vulgaris*, Petty Whin *Genista anglica* and Mouse-ear Hawkweed *Hieracium pilosella*. Where chalk comes close to the surface the grassland is covered by anthills and contains frequent Wild Thyme *Thymus drucei* and Cowslip *Primula veris*.

A small stream with good marginal and aquatic vegetation passes through the site. This stream is the main outlet for water from the site and the water level in it is close to that of the surrounding land surface.

Additional diversity is provided by a series of small wet hollows along the southern margin of the site, many of which contain standing water. These support a rich flora including Gipsywort *Lycopus europaeus*, Water Forget-me-not *Myosotis scorpioides*, Greater Tussock Sedge and two locally uncommon species, Bogbean *Menyanthes trifoliata* and Marsh Cinquefoil *Potentilla palustris*.

Secondary woodland and scrub have developed on several marginal areas. On drier parts this consists mainly of Oak, Sycamore and Birch and is species-poor. Wetter parts support Willow and Alder Carr. These areas are floristically much more diverse. The understorey contains a mixture of Wild Privet *Ligustrum vulgare*, Alder Buckthorn *Frangula alnus*, Buckthorn *Rhamnus catharticus* and Guelder Rose *Viburnum opulus*. The ground flora includes many characteristic wet woodland fen species.

The whole of the notified area is a hydrological unit. The marginal habitats ensure that the water-table in the centre of the site remains fairly constant and that the water which supplies it is relatively unpolluted. The diversity of habitats on the site also means that it has a rich bird and invertebrate fauna. The fen is particularly noted as a breeding place for Water Rail and Reed Warblers, and supports large numbers of Dragon and Damselflies.