

# **South Norfolk District Ecological Network Mapping**



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## 1 Introduction

This report is put forward to foster further discussion about the development of an ecological network in South Norfolk District. The report has been produced as a draft for further discussion and refinement, and is based on consultation carried out by the Norfolk Econet Topic Group<sup>1</sup>.

The overall aim is to take forward the findings of the county-level ecological network report<sup>2</sup> and to apply these at the district level. Specifically, the report seeks to:

- Identify the key statements contained in the county econet report pertaining to the district;
- Present recommendations on how the ecological network priorities can be further developed and implemented at the district level.

There are considerable limitations in the information base required to develop the ecological network and suggestions are made on how these can be addressed.

## 2 Ecological Features and BAP Habitats

### 2.1 Summary of key ecological characteristics

South Norfolk is dominated by arable agriculture with widely spaced and highly fragmented semi-natural woodland and grassland habitats. The key ecological features of the district can be summarised as:

- River valleys, particularly the Wensum, Yare and Waveney and their tributaries, which contain a mosaic of wetland habitats. Especially important are the European protected sites comprising the Wensum chalk river and valley fens at Coston and Claxton;
- Ancient and secondary woodland and shelterbelts; a number of these are SSSIs;
- Small and scattered grassland sites formed by commons, airfields, verges and village greens;
- Arable landscape features, including hedgerows, ponds, green lanes, roadside verges and ditches, secondary woodland and veteran trees. These are key components of the ecological network at a local scale and collectively, they amount to a significant biodiversity resource.

The suburban area of Norwich and other market towns are often associated with important areas of semi-natural habitat such as woodland, grassland.

The juxtaposition of the Broads to the district cannot be ignored. The land uses within the district will have a major impact on the wetland habitats of the Broads. It is important that actions undertaken in the district also secure the integrity of the Broads.

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<sup>1</sup> Attendees at consultation meeting: Officers from Natural England, Forestry Commission, Norfolk Wildlife Trust, Norfolk County Council, Environment Agency.

<sup>2</sup> Report of the Ecological Network Mapping Project for Norfolk. 2006. Norfolk Wildlife Trust, on behalf of the Norfolk Biodiversity Partnership.

## **2.2 BAP habitats of county and district importance**

The Econet Report identified the following components of the ecological network for South Norfolk

- Core area of BAP habitat incorporating a number of rivers – Wensum, Tud, Yare, Tiffey, Tas, Chet, Waveney
- Core area centred on the Broads (most within BA Executive Area).
- Zone of heath-grass-woodland enhancement covering the majority of the District
- Zone of general habitat enhancement extending over a limited area around Harleston (this covers such a small area of the District that it is not covered further in this report)
- Area of publicly accessible urban greenspace deprivation based on Norwich and also Wymondham and Diss despite the presence of some significant areas of semi natural habitat.

The county Econet Report identified the following BAP habitats as being important in the Norfolk context:

- Lowland meadows throughout the district, particularly those on the boulder clay soils;
- Woodland centred on Ashwellthorpe, Saxlingham-Wheatacre, Easton and Gawdy Hall-Brockdish;
- Wood pasture in the Easton area;
- Chalk river comprising the Wensum;
- Fens, wet woodland, floodplain grazing marsh and reedbed in the Wensum, Waveney, Yare, Tas and other river valleys.

In addition, the following BAP habitats are known to occur in South Norfolk and may be important in the county context:

- **Eutrophic Waters:** A Norfolk BAP for this habitat has not yet been prepared and a county-specific definition is therefore still lacking. However, it is likely that lakes in parkland and gravel pits could be considered under this heading. A number of these sites are CWSs;
- **Parkland** (eg, Hedenham Park, a County Wildlife Site): The Norfolk BAP does not cover this habitat comprehensively and so it was not specifically covered in the county Econet Report. It is difficult, therefore, to identify sites other than those identified as CWS or Historic Parkland.
- **Traditional Orchards:** There are a number of traditional orchards in South Norfolk, eg, in Aldeby. Traditional orchards were not considered during the preparation of the county Econet Report, as they were not a national BAP habitat at that time. However, it is expected that traditional orchards will be named as a national priority BAP habitat in 2007.

One of the objectives of the current exercise was also to identify components of the ecological network that are important in the district context. These include:

- Many of the Wensum, Yare and Waveney tributaries which contain mosaics of wetland habitats
- Heath-type habitats associated with the Waveney river terraces and between the Wensum-Tud and potentially in the Poringland and Easton areas (these are not shown on the District econet map as more work is required to identify where the potential is for new heathland) ;
- Areas of high secondary woodland density (not included in core woodland areas), eg, Framingham Pigot-Kirby Bedon (these are not currently identified on the District econet map);
- Areas of grassland associated with small airfields, eg, Tibenham; commons, green lanes, churchyards, railway lines etc. (these are not currently shown on the District econet map).
- Areas with a high proportion of ancient or species rich hedgerows (these are not currently shown on the District econet map).

### 3 Developing an Ecological Network for South Norfolk

In the section below, the key actions for econet implementation are outlined. It is important to note that the strategy does not cover the actions required to protect and maintain existing BAP habitats; it refers only to actions required for habitat creation and/or buffering.

#### 3.1 Econet priorities

The county Econet Report recommended that the following key measures be taken within South Norfolk in order to contribute toward the establishment of an ecological network:

- Enhance the wetland habitats associated with the Rivers Wensum, Tud, Yare, Tiffey, Tas, Chet and Waveney and the Broads including buffering of these areas.
- Enhance and create a mosaic of heathland, grassland and woodland habitats at appropriate sites within a broad zone covering the majority of the remainder of the district;
- Seek to address urban greenspace deprivation in Norwich, Wymondham and Diss.

#### 3.2 Strategy for econet implementation

The econet priorities for South Norfolk are also shown in the attached map.

Objective	Action	Potential delivery
Significantly increase the connectivity of woodland in core areas	<ol style="list-style-type: none"> <li>1. Assess functional connectivity within woodland core areas</li> <li>2. Expand existing woods, so that some are &gt;25ha and all are over 3ha.</li> <li>3. Buffer woodland to 30m minimum through restoration or creation of habitats adjacent to sites or encouragement of more sympathetic land uses.</li> <li>4. Enhance connectivity through creating new woodland linkages and enhancing the matrix (land uses surrounding a woodland)</li> </ol>	NCC Community Woodland Scheme English Woodland Grant Scheme s106 planning obligations Green infrastructure project implementation
Significant increase in area of grassland	<ol style="list-style-type: none"> <li>1. Identify areas of grassland that can form the nucleus for enhancement and expansion</li> <li>2. Expand existing grasslands where possible, eg, commons, verges, churchyards, pasture</li> <li>3. Create new grasslands and associated habitats such as scrub close to rural communities</li> <li>4. Buffer grassland through restoration or creation of habitats or encouragement of low input agricultural systems</li> <li>5. Enhance connectivity through creating new grassland linkages and enhancing the matrix (land uses surrounding a grassland)</li> </ol>	s106 planning obligations Environmental Stewardship Green infrastructure project implementation Claylands Project
Increase the area of heathland in suitable areas.	<ol style="list-style-type: none"> <li>1. Identify potential heath creation areas</li> <li>1. Create new heathland adjacent other habitats or on former</li> </ol>	s106 planning obligations GI Project implementation Environmental Stewardship

	<p>heathland sites and in association with mineral extraction restoration</p> <ol style="list-style-type: none"> <li>2. Buffer heathland through restoration or creation of habitats adjacent to sites or encouragement of low input agricultural systems</li> </ol>	
Restore natural functioning and wetland habitats to major rivers and tributaries	<ol style="list-style-type: none"> <li>1. Produce river restoration plans.</li> <li>2. Create new wetland BAP habitats in floodplain to expand sites</li> <li>3. Create habitat ecotones from wet to dry habitat</li> <li>4. Buffer floodplains by encouragement of low input agricultural systems or semi natural habitats</li> <li>5. Enhance connectivity through creating new wetland linkages and enhancing the matrix (land uses surrounding a wetland)</li> </ol>	FC Wet woodland project s106 planning obligations Environmental Stewardship Green infrastructure project implementation
Enhance Broads margins to buffer from adjacent land uses and create ecotones	<ol style="list-style-type: none"> <li>1. Develop greater connectivity between Broads wetlands and valley side habitats</li> <li>2. Buffer Broads from adverse impacts of hinterland</li> <li>3. Create habitat ecotones from wet to dry habitat</li> <li>4. Expand and link existing wetland habitats</li> <li>5. Create new habitats on the Broads margins</li> </ol>	Environmental Stewardship FC Wet woodland project River valley planning by BA s106 planning obligations
Create greenspace in urban areas and urban fringe.	<ol style="list-style-type: none"> <li>1. Produce biodiversity plan for green infrastructure plan</li> <li>2. Provide more accessible greenspace</li> <li>3. Ensure core areas of BAP habitats remain connected with wider countryside</li> </ol>	Green infrastructure project implementation s106 planning obligations

## 4 Other actions

There are a number of specific actions that could help establish an ecological network in the District. These are a mixture of practical projects and policy development. In particular, it is suggested that consideration be given to the following.

### 4.1 Strategic measures

- Local Development Frameworks:** It is recommended that South Norfolk District Council incorporate the econet concept in its Local Development Framework. This should include specific policies in the Core Strategy as well as the identification of habitat creation areas within Site Specific Proposals and Area Action Plans based on the attached map. There is also the potential to develop aspects of the ecological network through the implementation of the
- Section 106 planning obligations:** The potential for using Section 106 agreements to promote habitat creation related to development should be actively explored. Specific examples include the provision of urban greenspace that contributes towards an agreed green infrastructure plan; restoration of habitats in river valleys and creation of heathland and woodland. In addition

opportunities for creating areas of grassland and scrub habitats close to villages, in order to replace historical 'lost commons', should be encouraged. This would also help towards meeting the District's obligations under the NERC Act.

- **Landscape Characterisation:** It will be important for the District's landscape characterisation to integrate the ecological network concepts. This integration helps identify mutual objectives and possible areas of conflict. See annex.
- **Development of a green infrastructure plan for the District.** As a significant urban area it will be important to develop a plan for the development of accessible greenspace for Norwich involving the strategic provision of new greenspace in the form of BAP habitats. This should also be extended to market towns and larger villages. This could incorporate the idea of creating an area of 'common land' adjacent each village thus providing biodiversity and access benefits. In addition the possibility of looking at the rights of way and highway network to assess how these can contribute toward enhancing connectivity in the landscape could be investigated. Aspects of this work could be delivered through the District's PPG17 Open spaces, indoor sports and community recreation assessment.

## **4.2 Gaining further information**

The following actions are considered necessary to provide information to take forward the planning and development of implementation projects:

- There is a need to map information on the distribution of BAP habitats on County Wildlife Sites in the District and to assess each site to ascertain the opportunities for enlargement or buffering. Further survey work is also required to identify BAP habitats that are not CWSs.
- Ecological modelling can be used to identify where habitats need to be created in order to increase connectivity between BAP habitats. This will aid targeting of habitat creation. Initially it is suggested that a study is undertaken of a woodland core area to identify the current and desired level of connectivity.
- River restoration plans need to be produced identifying opportunities for the creation and expansion of habitats and how to restore natural functioning. In addition since rivers valleys represent important corridors across the county it would be beneficial to identify headwaters of rivers where there are opportunities to create a more wildlife friendly landscape. It is suggested that a study be undertaken to looking at the feasibility of river restoration and the potential for connectivity across watersheds. The proposed river Wensum restoration plans would form the basis of this work in South Norfolk but other studies are desirable.
- The Broads Authority's valley assessments should integrate buffering and habitat creation opportunities outside of the Executive Area. The margins of the broads are priority area for action involving buffering of broads habitats and creation of ecotones from wetland to dry.

# **5 Explanation of District ecological network map**

## **5.1 GIS layers provided**

The following layers make up the South Norfolk District ecological network map. The information is based on the County ecological network map but has been refined and expanded after consultation with representatives from Natural England, Broads Authority, Forestry Commission, Environment Agency, RSPB, Norfolk Wildlife Trust, Norfolk County Council, North Norfolk Council, NB. Some features have not been shown on the map but are mentioned in the text above. They are, however, considered as important in a District or even County context. Their omission was primarily based on the need to maintain the clarity of the map.

A District ecological network map has been produced based on a simplification of the GIS layers below. The content of this map is described in section 5.2 below. This has been provided in the

interests of clarity. Inevitably some information has been lost in this process and it is strongly recommended that when carrying out any interpretation of this map that reference is made to the other information supplied as set out below.

## **5.2 District ecological network map – summary**

The District map comprises the following layers from section 5.1.

1. South Norfolk district boundary and Broads Authority Executive Area boundary
2. Zone of grass-heath-wood enhancement – based on County ecological network map. This includes the core areas for lowland meadow and wood pasture.
3. Zone of general habitat enhancement. Based on the County ecological network map
4. Wetland habitat enhancement zone based on the LDUs that are classified as ‘wetland’ and the 1:100 flood risk area from Environment Agency. It is assumed that this incorporates the majority of the area available for the creation and enhancement of the following BAP habitats – wet woodland, reedbed, fen, chalk river, grazing marsh, mesotrophic waters and to a great extent eutrophic waters.
5. Woodland core areas as defined in the County ecological network report showing concentrations of primarily deciduous woodland. These areas generally have a high concentration of SSSI or CWS woodlands or ancient woodland. The core areas shown in the County ecological network report have been additionally expanded to include areas identified at the District level.
6. Buffer zones for Broads, Waveney and Wensum. These are shown as buffered to 1km to highlight the extreme importance of these areas and the need to consider adjacent land use.
7. Towns of Wymondham, Diss and also Norwich
8. Indicative arrows showing desirable connectivity between core areas

## ***Annex 1: Ecological Network Priorities by Landscape Type***

Ecological network requirements can be readily incorporated into landscape characterisation. In this annex, the landscape types described in the South Norfolk Landscape Assessment<sup>3</sup> have been listed, and the ecological network priorities which relate to each landscape type have been identified.

### **Rural River Valley**

The priority should be the management, enhancement and creation of mosaics of wetland habitats along all rivers and their tributaries along with restoration of the natural functioning of the rivers themselves. Particularly important is the River Wensum which is a European protected site. All other rivers also have significant areas of habitat that require enhancement and linking together.

The creation of heathland habitats should also be considered on the Waveney valley margins.

### **Tributary Farmland**

The priority should be the restoration of mosaics of wetland habitats along all tributaries along with restoration of their natural functioning.

Woodland core areas are priority areas for management, enhancement and creation through linking and development of new woodlands. Extensive areas of parkland and wooded estates are characteristic of this landscape type and woodland creation should seek to link these to woodland core areas.

The expansion of existing grassland sites and the creation of new grassland in this area is a high priority. The area contains a distinctive flora, much of which is now restricted to roadside verges and is at risk in the long term. The creation of heathland habitats should also be considered on river terraces

### **Tributary Farmland with Parkland**

Woodland core areas are priority areas for management, enhancement and creation through linking and development of new woodlands. Extensive areas of parkland and wooded estates are characteristic of this landscape type and woodland creation should seek to link these to core areas.

The expansion of existing grassland sites and the creation of new grassland in this area is a high priority. The area contains a distinctive flora, much of which is now restricted to roadside verges and is at risk in the long term.

### **Settled Plateau Farmland**

Woodland core areas are priority areas for management, enhancement and creation through linking and development of new woodlands. Extensive areas of parkland and wooded estates are characteristic of this landscape type and woodland creation should seek to link these to woodland core areas.

The expansion of existing grassland sites and the creation of new grassland in this area is a high priority. The area contains a distinctive flora, much of which is now restricted to roadside verges and is at risk in the long term.

There may be an opportunity to create areas of heathland in the Poringland area based on the once extensive Poringland Heath.

### **Plateau Farmland**

Woodland core areas are priority areas for management, enhancement and creation through linking of woodlands and development of new woodlands. Extensive areas of parkland and wooded estates are characteristic of this landscape type and woodland creation should seek to link these to woodland core areas.

The expansion of existing grassland sites and the creation of new grassland in this area is a high priority. The area contains a distinctive flora, much of which is now restricted to roadside verges and is at risk in the long term.

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<sup>3</sup> South Norfolk Landscape Assessment. LUC. 2001.



**Yare Valley Urban Fringe**

The priority should be the restoration of mosaics of wetland habitats along the river and the restoration of its natural functioning where possible. It will be important to maintain robust corridors of open country and BAP habitat through any development to the south of the A47.

**Fringe Farmland**

Woodland core areas are priority areas for management, enhancement and creation through linking and development of new woodlands. Extensive areas of parkland and wooded estates are characteristic of this landscape type and woodland creation should seek to link these to core areas.

The creation of heathland habitats should also be considered. These could be created in association with areas of wood pasture.