

Norwich Ecological Network Mapping



Compiled by
R.Land
Norfolk Wildlife Trust on behalf of
Ecological Network Topic Group
May 2007

Norwich

Ecological Network Mapping

1 Introduction

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 Group¹.

The overall aim is to take forward the findings of the county-level ecological network report and submission to the Greater Norwich Growth Point Green Infrastructure Study², and to apply these to the urban area of Norwich³. Specifically, the report seeks to:

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

2 Ecological features and BAP habitats

2.1 Summary of key ecological characteristics

The urban area is obviously dominated by the built environment with the city centre and surrounding high density housing having relatively little open space. Suburban areas tend to have housing at lower density with relatively large gardens and these can be important for wildlife and also for connectivity. Whilst urban expansion is occurring there is a relatively well defined boundary between the urban area and the surrounding fringe which is dominated by farmland but with the wildlife rich habitats of the Yare and Wensum valleys being notable.

Semi natural habitat is widely spaced and highly fragmented, especially outside of river valleys. The key ecological characteristics of the urban area therefore can be summarised as

- Two major river valleys comprising the Yare and Wensum. The latter is truncated by urban development in the city centre. These two valleys contain a range of valuable wetland habitats throughout their length. These include wet grassland, lowland meadows, wet woodland, reedbed and fen besides the rivers themselves. Especially important is the European protected site comprising the River Wensum. The valleys also contain an SSSI as well as a large number of County Wildlife Sites. In addition there are a number of other BAP habitats including grazing marsh, meadows, wet woodland and gravel pits (representing the BAP habitat Eutrophic waters).
- Remnant areas of heathland and woodland (largely on former heathland) at Mousehold Heath.
- Ancient woodland at Lion Wood and areas of secondary wood associated with parkland. These are scattered through the urban area but with concentrations along the Thorpe ridge, Bowthorpe, Earlham and Catton Park.

¹ Attendees at consultation meeting: Officers from Norfolk Wildlife Trust, Natural England, Norwich City Council, Norfolk County Council.

² Report of the Ecological Network Mapping Project for Norfolk. 2006. Norfolk Wildlife Trust, on behalf of the Norfolk Biodiversity Partnership.
Development of an Ecological Network and Green Infrastructure in the Greater Norwich Growth Point Area. April 2007 Norfolk Wildlife Trust, on behalf of the Norfolk Biodiversity Partnership

³ The area covered includes the City of Norwich and contiguous urban areas of Sprowston, Old Catton and Thorpe St Andrew but not Drayton, Hellesdon or New Costessey which are largely covered in a separate report – see footnote 2.

- A range of other land uses comprising grassland, scrub, large trees including cemeteries (Earlham and Rosary), railway lines (M&GN and Hall Road radial), parks (Earlham and Catton Parks), and golf courses (Eaton, Hellesdon). A number of other land uses, although having a relatively poor biodiversity, play an important role in facilitating connectivity and buffering of sites. Such areas include school grounds, formal parks and playing fields.
- Brown field sites and waste land associated with industrial estates and other land uses. These may be transitory but often contain a high level of biodiversity
- Within the urban area and adjacent river valleys there are 4 SSSIs (including geological sites), 23 County Wildlife Sites and 8 Local Nature Reserves.

2.2 BAP habitats in Norwich

The Econet Report did not identify specific components of the ecological network within the built up area of Norwich other than to identify the urban area as deficient in accessible greenspace. However any ecological network should link to the following

- Core areas for wildlife based on Wensum and Yare valleys
- Zone of heath-grass-woodland creation to the west and south of the urban area
- Zone of general habitat enhancement to the north and east

The following BAP habitats are present

- Woodland and possibly wood pasture centred on Thorpe ridge Bowthorpe/Earlham
- Heathland at Mousehold Heath
- Rivers of the Wensum and Yare
- Fen, reedbed, wet woodland, floodplain grazing marsh, eutrophic waters in Wensum and Yare valleys
- Parkland at Earlham, Catton often associated with large veteran trees
- Meadow (ie grassland) associated with large parks (Earlham) or golf courses (Eaton). At Earlham there is a remnant calcareous grassland which is rare in the area
- Urban habitats including gardens, cemeteries and churchyards, 'waste ground', buildings, parks and recreation areas

3 Developing an ecological network for Norwich

In the section below, the key actions for econet implementation are outlined. The key components of an ecological network are

- protection and enhancement of the key biodiversity areas;
- maintenance or creation of connectivity between habitats;
- buffering of habitats from potentially damaging land uses.
- Enhancing the permeability of the urban areas to wildlife movement by, for example, the creation of new habitats, enhanced management of existing sites with low biodiversity or retention of large gardens

It is recognised that the capacity to create new habitats is limited within the existing urban area. There are also significant constraints on the capacity to increase connectivity between habitats. All available opportunities should be taken to contribute toward the ecological network and this may include enhanced management of non BAP habitat such as playing fields and parks..

3.1 Ecological network priorities

In order to contribute toward the establishment of an ecological network the following are required:

- Enhance connectivity between habitats within the urban area and to the urban fringe as set out in the Ecological Network Topic group submission to the Green Infrastructure Strategy. In particular links to the Yare and Wensum valleys, Catton-Sprowston and Rackheath-Plumstead areas of 'open countryside' denoted in the above submission.

- Reduce fragmentation of habitats caused by existing and future development and enhance connectivity. In particular linking areas such as Earlham Cemetery and Mousehold Heath to areas of open countryside
- Enhance buffering of key BAP habitats from damaging land uses. In particular the river valleys are critical and the need to maintain undeveloped land on valley sides is crucial
- Enhance the wetland habitats associated with the Wensum and Yare valleys
- Enhance and create other BAP habitats such as heathland, wood pasture, grassland and woodland
- Enhance management of ‘urban habitats’ such as parks and playing fields for biodiversity

4 Ecological network framework for the urban area

In identifying an ecological network the priority is to link key habitats within the city to ‘open countryside’ beyond the urban area. Provide an opportunity to link other habitats into the basic framework.

It was decided that a series of corridors radiating from the centre of the urban area to the urban fringe and open countryside would achieve these priorities.

The critical open countryside (see submission to Green Infrastructure Study for details) comprises

- Wensum valley
- Yare valley
- Catton-Sprowston
- Rackheath-Plumstead

The key biodiversity assets within the urban area that need to have retained or enhanced connectivity comprise

- Wensum valley
- Yare valley
- Mousehold heath
- Earlham Cemetery
- Rosary Cemetery-Lion Wood-Weston Wood pit
- Earlham Woods
- Newmarket Road Conservation Area
- Catton park

There are a number of key corridors that link these assets to the open countryside which are substantially in place

- Thorpe ridge (Kett’s Hill-Lion Wood-Weston Wood)
- Hall Road railway line
- Newmarket Road Conservation Area
- Lakenham ridge Ber Street-Bracondale Conservation Area-County hall

Additional corridors need to be considerably enhanced or developed to make them more robust

- Mousehold heath to Rackheath-Plumstead
- Earlham Cemetery to Wensum valley and Yare valley
- West Earlham-Bowthorpe
- River Wensum city centre
- Catton Park to Catton-Sprowston
- A corridor through Hellesdon-Mile Cross-New Catton

4.1 Management recommendations for components of ecological network (see map)

	COMPONENT OF ECOLOGICAL NETWORK	DESCRIPTION	THREATS	OPPORTUNITIES
KEY BIODIVERSITY ASSETS				
1.	Wensum valley	River and valley extend into city as a green wedge. Wildlife rich river and associated floodplain habitats as well as woodland, grassland, scrub.	Development on valley sides that compromise its function as a corridor for wildlife and its role in buffering the valuable wildlife habitats from adjacent land uses	Retain maximum extent of valley as undeveloped land. Enhance management of floodplain habitats and river. Create BAP habitats on valley sides such as woodland, scrub, grassland
2.	Yare valley	ditto	ditto	ditto
3.	Mousehold heath	Large area of woodland with remnant heathland isolated from open countryside by development	Lack of management of heathland	Enhance management of site especially heathland component
4.	Earlham Cemetery	Extensive area of grassland with many mature trees	Intensification of use as a cemetery. Loss of large trees especially native	Enhance management of grassland and tree cover
5.	Lion Wood/Rosary Cemetery	Ancient woodland and large cemetery with grassland and mature trees	Intensification of vegetation management in cemetery. Loss of large trees especially native.	Enhance management of grassland and tree cover on both sites
6.	Earlham Woods	Relatively narrow tree belts mainly surrounded by urban development	Intensity of use by people	Enhance management of woodland
7.	Newmarket Road Conservation Area	Extensive area of well wooded gardens		Retain present character
8.	Catton park	Large area of parkland and		Implement woodland and grassland

	COMPONENT OF ECOLOGICAL NETWORK	DESCRIPTION	THREATS	OPPORTUNITIES
		woodland used as public open space		management to encourage wildlife
KEY CORRIDORS – REQUIRING ENHANCEMENT				
9.	Thorpe ridge (Kett’s Hill-Lion Wood-Weston Wood	A series of woodlands, large well wooded gardens and other open space such as playing fields stretching from the urban fringe to city centre	Infill development resulting in the loss of undeveloped ground and especially large gardens and tree cover. The corridor is very narrow at the city end	Enhance management of greenspace within and adjacent this area such as playing fields and grounds of institutions. Seek to increase size of corridor at city end through woodland planting. Identify or retain links to yare valley
10.	Hall Road railway line	Linear cycleway with woodland stretching from fringe to city centre	Narrow line of habitat susceptible to high levels of disturbance	Enhance management of greenspace adjacent railway line to improve robustness of this feature.
11.	Newmarket Road Conservation Area	Extensive area of housing set in large well wooded grounds forming an extensive corridor from the fringe to city centre	Infill development resulting in the loss of undeveloped ground and especially large gardens and tree cover	Enhance management of greenspace within and adjacent this area such as playing fields and grounds of institutions. Identify links to Eaton Golf Course and Eaton Park
12.	Lakenham ridge Ber Street-Bracondale Conservation Area-County hall)	Very narrow corridor at city centre end comprising wooded ridge widening into large wooded gardens and parkland	Poor management of existing open space, loss of large gardens and redevelopment of Carrow Abby site	Enhance management of existing greenspace to create grassland, scrub and wood habitats to make this corridor more robust
KEY CORRIDORS – REQUIRING SUBSTANTIAL DEVELOPMENT				
13.	Mousehold heath to Rackheath-Plumstead	The heath is effectively isolated from the open countryside by a large industrial estate.	Development of land adjacent the heath reducing buffering	Seek opportunities to create a heathland-woodland link to open countryside through adjacent school playing field or industrial estate
14.	Earlham Cemetery to Wensum valley and Yare valley	There is some connectivity through Woodland Park to the Wensum valley and some may have been retained through greenspace provision on old		Ensure development of Hospital site enhances connectivity between the cemetery and Woodlands Park and Sycamore Crescent Wood. Retain open space on allotments on Dereham Road.

	COMPONENT OF ECOLOGICAL NETWORK	DESCRIPTION	THREATS	OPPORTUNITIES
		Bowthorpe school site. There is limited connectivity towards the Yare valley		Seek opportunity to reinforce connectivity through to Earlham Park especially via allotments off Bluebell Road
15.	West Earlham-Bowthorpe	Wooded belts largely linked to each other and through Bowthorpe but with poor connectivity to river valley	Intensive use by people	Seek to enhance the links between Earlham and Yare valley and Earlham cemetery Enhance management of greenspace adjacent these wooded belts to extend habitat
16.	River Wensum city centre	Highly urbanised river frontage with very restricted areas of greenspace and little of biodiversity value. This probably acts as a barrier to movement of wildlife from the broads to the upper Wensum		Seek opportunities to create a green corridor in this stretch, in particular through the planting of marginal wetland vegetation
17.	Catton Park to Catton-Sprowston	A large area of greenspace isolated from open countryside. There may be significant connectivity with open countryside through the area of suburban housing to the north	Infill development thus reducing extent of gardens	. Identify component of corridor to the north to link to open countryside and enhance management of greenspace. Identify potential for developing a corridor towards the city centre and Mousehold Heath
18.	A corridor through Hellesdon-Mile Cross-New Catton	This corridor does not exist but there are a number of isolated greenspace that could form the basis of one. It is desirable to create a corridor in order to complete the radial network and provide additional greenspace in this area.	Piecemeal development of undeveloped land that could form part of the corridor	Identify components of a corridor and enhance management. Where possible safeguard from development or incorporate greenspace into plans

5 Strategy for econet implementation

There are a number of measures that could help establish an ecological network in the urban area. These are a mixture of practical projects and policy.

5.1 Strategic measures

- **Local Development Frameworks:** Norwich City, South Norfolk and Broadland Councils should incorporate the econet concept into their 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.
- **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.
- **Development of a green infrastructure plan for Norwich Growth Point.** As a significant urban area it will be important to develop a plan for the development of accessible greenspace involving the strategic provision of new greenspace in the form of BAP habitats. The development of green infrastructure should incorporate the ecological network principles.
- **Retention of large wooded gardens and green roofs.** These form a significant component in the ecological network and in facilitating connectivity through the urban fabric. It would be desirable to have policies that recognised the need to protect and maintain significant areas of housing with associated gardens. Policies to encourage green roofs should be considered. In many cases this may be a practical way of creating wildlife habitat where there are severe constraints on land.

5.2 Specific actions

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

- There is a need to map the distribution of BAP habitats within the urban area that are not of County Wildlife Site quality but may nonetheless have biodiversity value. Because of the highly fragmented nature of many habitats they may fail to meet the relevant criteria or landowners may be reluctant to allow designation of CWSs on their land.
- Whole valley enhancement and management plans need to be produced for the Wensum and Yare. These should form part of the development of a green infrastructure strategy for the Norwich area. They should consider opportunities for the creation and expansion of habitats both in the floodplain and valley sides and how to restore natural functioning to rivers.
- Management plans for existing wildlife sites (whole valley above plus CWSs as a minimum) setting out priorities for management to enhance wildlife and minimise conflicts with public use. This should be linked to the designation of Local Nature Reserves where appropriate. Priority sites include
- Management of greenspace. Management plans and statements should be produced for council owned land so as to enhance their value and contribution toward the ecological network. Similarly businesses should be encouraged to manage land eg on business parks where connectivity could be enhanced. This will be required if a link between Mousehold Heath and the open countryside is to be developed.
- Identify areas where there is a significant resource of large and well wooded gardens and other greenspace. These will form a significant component of the ecological network but currently their value and contribution are under valued.

- Raising profile of the ecological network in Norwich, its role, benefits and how individuals and business can contribute towards its development and expansion

NO MAP HAS BEEN PRODUCED FOR NORWICH CITY COUNCIL