Planning Guidance

Mapping for Biodiversity in Yorkshire and Humber: A guide to identifying and mapping biodiversity opportunity areas and ecological networks

Prepared and endorsed by the Yorkshire and Humber Biodiversity Forum

September 2009

CONTENTS

	Page
Non-Technical Summary	*3*
1. Introduction	*4*
1.1 Aim of the Document	
1.2 Importance of Enhancing Biodiversity	
2. Policy context	*5*
2.1 Statutory Requirements	
2.2 National Planning Policy	
2.3 Yorkshire and Humber Regional Spatial Strategy	
2.4 National and Regional Biodiversity Strategies	
2.5 Climate Change	
3. Ecological/habitat Networks	*11*
3.1 England Habitat Network	
4. Biodiversity Opportunity Area Mapping	*13*
5. Yorkshire and Humber Biodiversity Forum Biodiversity Opportunity Areas/Mapping	*14*
5.1 Methodology	
5.2 Using the Regional Mapping	
6. Biodiversity Opportunity Mapping and Ecological Networks at a Local Level	*16*
6.1 Local Habitats Networks	
6.2 Local Biodiversity Opportunity Mapping	
6.3 Preparation of maps	
6.4 Evidence	
6.5 A Strategic Approach	
7. Incorporating Local Opportunity Mapping and Habitat Networks into LDFs	*23*
8. Links to Green Infrastructure	*24*

NON-TECHNICAL SUMMARY

This **Planning Guidance** prepared by the **Yorkshire and Humber Biodiversity Forum**, provides guidance for local planning authorities on how to understand and use regional biodiversity maps to identify and map **'Local Ecological Networks**' and **'Local Biodiversity Opportunity Areas'**. The guidance summarises statutory requirements, national and regional planning policy and will assist local authorities in meeting their statutory obligations for enhancing biodiversity. Implementation of the guidance will make a major contribution towards national and regional biodiversity objectives.

Specifically the guidance will assist local authorities:

a) To identify areas at a local level that can contribute towards regional targets for the restoration and creation of priority habitats, while ensuring they link to regional planning at a landscape-scale
b) To write and use appropriate policies in their LDFs

Ecological (or habitat) networks are an approach to conserve and enhance biodiversity across landscapes, where the linkages (or connectivity) between habitat areas are developed. The creation, and enhancement of ecological networks allows species to move over larger areas and is considered a key conservation action to assist biodiversity in adapting to climate change.
Biodiversity Opportunity Areas are areas where conservation action is likely to have the greatest benefit for biodiversity. They are centred on existing areas of biodiversity interest but have a key role as areas which offer strategic opportunities for biodiversity enhancement (habitat restoration and expansion) and are expected to contribute towards the **UKBAP priority habitat targets** identified in the Yorkshire and Humber Regional Biodiversity Strategy.

Green Infrastructure is the network of green and natural spaces that intersperse and connect our cities, towns and villages. Green Infrastructure elements are valuable for many reasons, they provide networks and corridors for wildlife movement; natural habitats help to clean our air and water and open spaces provide people with health, recreation and amenity opportunities. However, the natural environment is the core element and ecological networks need to be assessed in their own right. Local Opportunity Mapping and Green Infrastructure planning should be seen as complementary, and Local Development Frameworks should confirm the links between the two processes.

Planning Policy Statement 9, *Biodiversity and Geological Conservation* (PPS9), strongly emphasises the importance of enhancement as well as conservation of biodiversity, including the need to identify '*areas or sites for restoration or creation of new priority habitats*' and '*to maintain networks'*. **The Yorkshire and Humber Regional Spatial Strategy** and the **Yorkshire and Humber Regional Biodiversity Strategy** both promote the identification and enhancement of an integrated ecological network of habitats as key to the protection of the region's biodiversity. The restoration and recreation of habitats is also identified as a priority to reverse many years of loss of habitats and species and is promoted through the **England Biodiversity Strategy.**

This guidance outlines the approach that has been taken to identify Ecological networks and Biodiversity Opportunity Areas at the regional scale, and describes how this mapping provides a strategic framework for local authorities to produce local maps. The guidance outlines a methodology for developing local mapping and highlights the benefits of the approach. The guidance reminds Local Authorities of the requirement to develop and maintain a robust evidence-base, and identifies key stakeholders and/or data sources which are available to assist with the work.

1 INTRODUCTION

1.1 Aim of Document

The principle purpose of this document is to provide guidance for local planning authorities, as to how the identification of **Ecological Networks**, and the production of **Local Biodiversity Opportunity Mapping**, in the Yorkshire and Humber Region will make a major contribution to achieving national and regional policy objectives, and statutory requirements for enhancing biodiversity. This guidance should assist local planning authorities to:

a) Identify areas at a local level that can contribute towards regional targets for the restoration and creation of priority habitats, while ensuring they link to regional planning at a landscape-scale

b) Write and use appropriate policies in their LDFs

1.2 The Importance of Enhancing Biodiversity

The maintenance and enhancement of biodiversity is of fundamental importance because it is:

- an integral part of sustainable development;
- an essential component of improving quality of life;
- critical to our future health and well being;
- important for economic development and regeneration;
- provides a range of essential ecosystem services [1]
- an expectation of government policy; and
- a statutory obligation.

[1] www.millenniumassessment.org

2 POLICY CONTEXT

2.1 Statutory Requirements

Section 40 of the Natural Environment and Rural Communities Act 2006 requires:

"*Every public authority 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…..Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.*"

Section 41 of the Natural Environment and Rural Communities Act 2006 requires:

"the Secretary of State to publish a list of habitat and species which are of principal importance for the conservation of biodiversity in England".

The S41 list is used by decision-makers, such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Section 37 of the Conservation (Natural Habitats, &c.) Regulations 1994 also requires development plans:

"*to include policies encouraging the management of features of the landscape which are of major importance for wild flora and fauna. Such features are those which, by virtue of their linear and continuous structure (such as rivers with their banks or the traditional systems of marking field boundaries) or their function as stepping stones (such as ponds or small woods), are essential for the migration, dispersal and genetic exchange of wild species*."

Sections 13 & 14 of the Planning and Compulsory Purchase Act 2004 sets out the requirements for Local Planning Authorities to undertake surveys of their area to keep abreast of factors which may have an effect on development or the planning of such development. This includes the environment and land-use, both of which are relevant to the habitats present in an area and the spatial distribution of these as part of the planning evidence base.

Section 13 provides for the survey function of local planning authorities:

*"**An authority must keep under review matters which are likely to affect the development of their area or the planning of its development.** An authority may also keep matters in any neighbouring area under review, to the extent that those matters might affect the area of the authority, and in doing so they must consult the authority for the neighbouring area concerned".*

2.2 National Planning Policy

Planning Policy Statement 9, *Biodiversity and Geological Conservation* (PPS9), strongly emphasises the importance of enhancement as well as conservation of biodiversity. It indicates (paragraph 4) that Government expects local planning authorities to ensure that:

"*policies in local development documents reflect, and are consistent with, national, regional and local biodiversity priorities and objectives (including those agreed by local biodiversity partnerships)*."

The 'key principles' set out in PPS9 include:

- Local authorities should assess the potential to sustain and enhance environmental resources in the consideration of up-to-date information.

- Plan policies and planning decisions should aim to maintain, enhance, restore or add to biodiversity and geological conservation interests.

- Plan policies should take a strategic approach to the conservation, enhancement and restoration of biodiversity and geology.

- Plan policies should promote opportunities to incorporate beneficial biodiversity and geological features within the design of development.

- Development proposals where the principal objective is to conserve or enhance biodiversity and geological conservation interests should be permitted.

PPS 9 (paragraph 5) also goes on to say that the Local Development Frameworks should:

"identify any areas or sites for restoration or creation of new priority habitats which contribute to regional targets, and support this restoration or creation through appropriate policies".

PPS 9 (paragraph 12) urges local planning authorities to use their plan policies to prevent further fragmentation, and also to repair the fragmented networks that currently exist:

"*Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development, and, where possible, strengthened by or integrated within it*."

PPS 9 (paragraph 2) states that:

"*Over time the distribution of habitats and species, and geomorphological processes and features will be affected by climate change and such change will need to be taken into account*."

DETR Circular 04/2001 *Countryside and Rights of Way Act 2000,* further emphasises the importance of Local Biodiversity Action Plans in spatial planning, urging that Local Biodiversity Action Plans are one of the elements that local authorities should build upon when preparing their Community Strategy, which in turn informs and shapes the direction of the Local Development Framework (LDF).

2.3 The Yorkshire and Humber Regional Spatial Strategy

The Yorkshire and Humber Regional Spatial Strategy (RSS) includes Biodiversity Policy ENV8 which provides guidance to local authorities in complying with and taking forward their responsibilities under PPS9. Natural England and regional and local biodiversity partnerships are identified as key partners to help local authorities define areas of regional, sub-regional and local importance for biodiversity.

POLICY ENV8: Biodiversity

The Region will safeguard and enhance biodiversity and geological heritage, and ensure that the natural environment functions as an integrated network of habitats. Plans, strategies, investment decisions and programmes should aim to maintain and enhance, restore or add to distinctive elements of the natural environment in line with international, national, regional, sub regional and local importance for biodiversity, to:

A Maintain and restore natural processes, especially sediment flow on the Holderness coast and in the Humber Estuary taking account of the likely impacts of climate change

B Protect geological and geomorphological features and processes, especially cave systems, karst landscapes and dinosaur remains on the East Coast

C Support the recovery of priority species and restore and enhance priority habitats and functional networks of biodiversity in the floodplains, peat lands and saline lagoons of the Humber, calcareous grasslands, heaths and bogs, limestone pavements and meadows, especially in parts of North Yorkshire, East Yorkshire, and South and West Yorkshire.

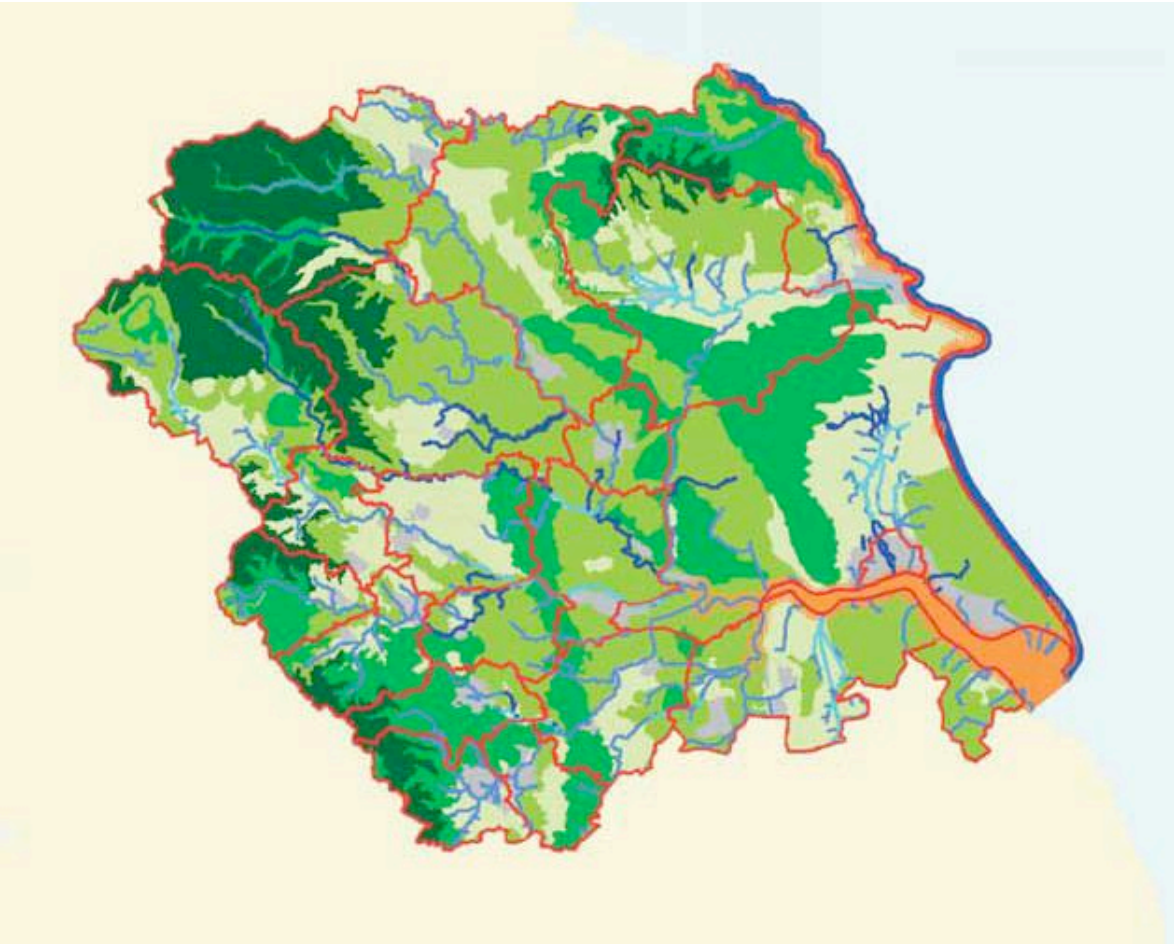
D Retain and incorporate biodiversity in development and encourage networks of green infrastructure and ecological corridors in line with the Region's habitat enhancement areas identified in Figure 10.5 and explained in Table 10.3.

The primary purpose of policy ENV8 is to safeguard and enhance the region's ecology, and in particular to ensure that it functions as **an integrated network of connected corridors and buffer zones.** The policy also identifies the need for local authorities to work with Natural England and Local Biodiversity Partnerships to 'provide for habitat restoration/recreation'. The focus on the restoration of networks of habitats highlights the need to reverse the pattern of fragmentation, loss and decline of habitats and associated species. ENV8 refers to the region's habitat enhancement areas which are shown in figure 10.5 of the RSS (provided below) and described in Table 10.3 of the RSS (provided in Annex 1 of this guidance note).

Habitat and River/floodplain Enhancement Areas

The **Enhancement Area** map in the RSS identifies specific 'zones' in the region and sets broad objectives for enhancing biodiversity in these zones. The Enhancement Areas have been identified by the Yorkshire and Humber Biodiversity Forum (YHBF) and the Yorkshire and Humber Assembly, using the best available consistent regional data sets (including the habitat inventories and England Habitat Networks). This provides a strategic (regional) view, identifying broad biodiversity characteristics of geographic areas; the associated descriptions provide guidance on priority policies and actions relating to the areas. In recognition of the importance of rivers and floodplains, the map also includes riverine enhancement areas.

It is important to note that the Enhancement Areas do not identify individual designated sites, Biodiversity Action Plan habitats or individual locations for priority species, but broad areas with associated policies.



Map 1 Biodiversity Enhancement Areas Reproduced from the Yorkshire and Humber Regional Spatial Strategy – for key to habitat and river enhancement zones see the RSS

2.4 National and Regional Biodiversity Strategies

England Biodiversity Strategy

The England Biodiversity Strategy[2], and its delivery framework (the England Biodiversity Framework) proposes a region-led approach to the delivery of England's UKBAP targets for restoring and expanding priority habitats. The framework has identified and provisionally agreed regional targets for priority habitats, which, when taken as a whole, meet England's contribution to the UKBAP.

Regional Biodiversity Strategy

The **Yorkshire and Humber Regional Biodiversity Strategy**[3] has identified the **"improvement of functional habitat networks and the enhancement of the wider environment"** as one of its six key themes. The Strategy indicates that the traditional approach to protecting wildlife through a suite of protected sites is not sufficient to ensure that our biodiversity remains viable into the future. The Strategy highlights that it is imperative to begin work at a landscape-scale maintaining and increasing habitat linkages across our landscapes and improving the quality of the wider farmed and urban landscapes. beginning with actions to:

- Provide a regionally endorsed habitat network map
- Take a landscape-scale approach to the allocation of resources for habitat and species conservation
- Identify and incorporate habitat network approaches into all regional and local statutory plans

The YHBF has used the England Habitat Network approach to identify the region's indicative ecological networks, producing a first iteration of a **regional Biodiversity Opportunity Areas** map, which will be used to target action towards achieving the region's contribution towards the UKBAP 2015 habitat targets[4]. This guidance note provides advice as to how to interpret or develop this at a more local scale.

Local Biodiversity Partnerships and Local Biodiversity Action Plans

The region has comprehensive coverage of Local Biodiversity Action Plans produced by Local Biodiversity Partnerships. These Partnerships have been responsible for identifying the status of habitats and species within their areas and developing a suite of actions to maintain, and where appropriate enhance, the whole range of biodiversity. The Partnerships are a key stakeholder in the identification and delivery of local ecological networks and biodiversity opportunity areas. The Partnerships should be consulted to assist in developing the evidence base as they have key local knowledge and experience and are responsible for implementing priority actions on the ground. The work of the local partnerships is supported by four sub-regional Biodiversity Partnerships who are currently leading on the implementation of the regional plan for the UKBAP targets.

[2] www.ukbap.org.uk

[3] www.yhbf.org - Yorkshire and Humber Biodiversity Forum, 2008. Regional Biodiversity Strategy

[4] Yorkshire and Humber Regional Biodiversity Strategy – annex 3

2.5 Climate Change

The consequences of climate change for the natural environment are potentially very large. It is essential that development does not exacerbate any negative impacts of climate change. Instead development should seek opportunities to help the natural environment adapt to climate change. This may involve preserving vulnerable habitats and species, either in their current locations, or in locations that are most conducive to long term survival.

Direct impacts of climate change upon biodiversity include shifts in suitable climatic conditions for individual species, changes in habitats in which species live, changes to composition of plant and animal communities and changes to ecosystems as a whole[5]. One of the key issues is the impact of existing habitat fragmentation on the ability of species to move to new habitats and/or climatic conditions; some species may simply become extinct as they are trapped in small isolated 'island's of habitat. The creation and enhancement of ecological networks, which improve connectivity between isolated patches of habitat and allows species movement over larger areas, is a key conservation action. The need to enhance the connectivity of habitats is one of a number of recommended adaptations reviewed at a local authority level on the **Yorkshire and Humber Climate Change Adaptation Study website**[6].

Planning and Climate Change: Supplement to Planning Policy Statement 1 includes, in paragraph 9, the need to conserve and enhance biodiversity, recognising that the current distribution of habitats and species will be affected by climate change. Paragraph 12 of the supplement sets out key requirements in relation to biodiversity and climate change. When considering climate change as an issue affecting the selection of land for development, **planning authorities should take into account the effect of development on biodiversity and its capacity to adapt to likely changes in the climate** (paragraphs 23 and 24). This means that corridors that would aid species and habitat movement in response to climate change should not be allocated for any development that would create a barrier to such movement. Rather, planning authorities and their partners should be **seeking ways to protect and enhance such corridors** in order to facilitate the adaptation of biodiversity to climate change[7]. The identification and application of Ecological Networks and Biodiversity Opportunity Areas has a clear role in making the natural environment more robust in the face of climate change.

[5] Conserving Biodiversity in a Changing Climate: guidance on building capacity to adapt. Hopkins, J. et al. Published by DEFRA (on behalf of the UK Biodiversity Partnership)

[6] http://www.adaptyh.co.uk/Download/Download.htm

[7] Planning authorities will find the 2007 Defra publication, *Conserving Biodiversity in a Changing Climate: Guidance on Building Capacity to Adapt*, helpful in taking forward biodiversity enhancement initiatives to meet the expectations of the Supplement to PPS1. Other useful Defra guidance includes *Guidance for Local Authorities on Implementing the Biodiversity Duty*

3 ECOLOGICAL HABITAT NETWORKS

Ecological (or habitat) networks are an approach to conserve and enhance biodiversity. The maintenance and restoration of ecological networks is particularly relevant where landscapes have been greatly influenced and/or degraded by human activity and the coverage of semi-natural habitats has been substantially reduced, leaving the remaining habitats fragmented and isolated from each other. Small and fragmented habitats are generally very vulnerable to damaging events and, as they are isolated from other habitats, the species they contain are unable to migrate/move between them. Increasing connectivity, that is the degree to which a landscape facilitates or impedes the movement of species between habitats (also sometimes known as permeability), is considered to be the key factor in the maintenance or enhancement of networks. This can be by physically connecting habitats or by making the landscapes within which they sit more hospitable to species. **Enhanced connectivity between natural habitat areas will make our current biodiversity resource less vulnerable to damage, and will also help buffer the effects of climate change.**

There are a wide range of differing approaches taken to identifying, maintaining and enhancing ecological networks, however in 1995, fifty-three European countries agreed to the establishment of the Pan-European Ecological Network.[8]

A detailed report undertaken on behalf of the EU suggested a precautionary approach in the development of ecological networks[9] and some of the principles identified (see below) are provided as guidance in the development of networks at a regional or local scale.

Ecological network design

- The highest priority should be given to maintaining, expanding and enhancing existing areas of key habitats
- Increasing ecological connectivity can be achieved in some circumstances by improving the overall ecological quality of the landscape as well as by creating physical linkages or stepping stones of small patches of habitat
- Promotion of wildlife-friendly management of connective elements of the landscape such as hedgerows and ditches can assist with species movements

[8] Parliamentary Office of Science and Technology, February 2008, Postnote no 300 - Ecological Networks

[9] Kettunen, et al. 2007. Institute for European Environmental policy

3.1 England Habitat Network

Whilst no standardised method for mapping ecological habitats exists across Europe, the UK has adopted a common approach in England, Northern Ireland, Scotland, and as part of this work Natural England has produced the **England Habitat Network (EHN)**.[10]

This methodology was selected as a consistent, repeatable approach capable of being applied at a national scale. The approach models the ability of a range of species associated with specific broad habitats (woodland, grassland, heathland and mire, fens and bogs) to move through landscapes. Habitats were identified from statutory sites (SSSIs) and other sites identified through national habitat inventories for ancient woodland and UKBAP priority habitats.

National habitat inventories and statutory site data were aggregated in the following way to create the England Habitat Network:

- **Grassland networks** were derived from inventories for lowland calcareous grasslands, lowland meadows, lowland dry acid grasslands, upland calcareous grasslands and upland hay meadows;
- **Heathland networks** were derived from inventories for upland heaths and lowland heaths;
- **Mire, fen and bog networks** were derived from inventories for reedbeds, fens, lowland raised bogs, blanket bogs and purple moor grass and rush pastures;
- **Deciduous woodland networks** were derived from inventories for ancient semi-natural woodland and deciduous/coppice broadleaved woodland.

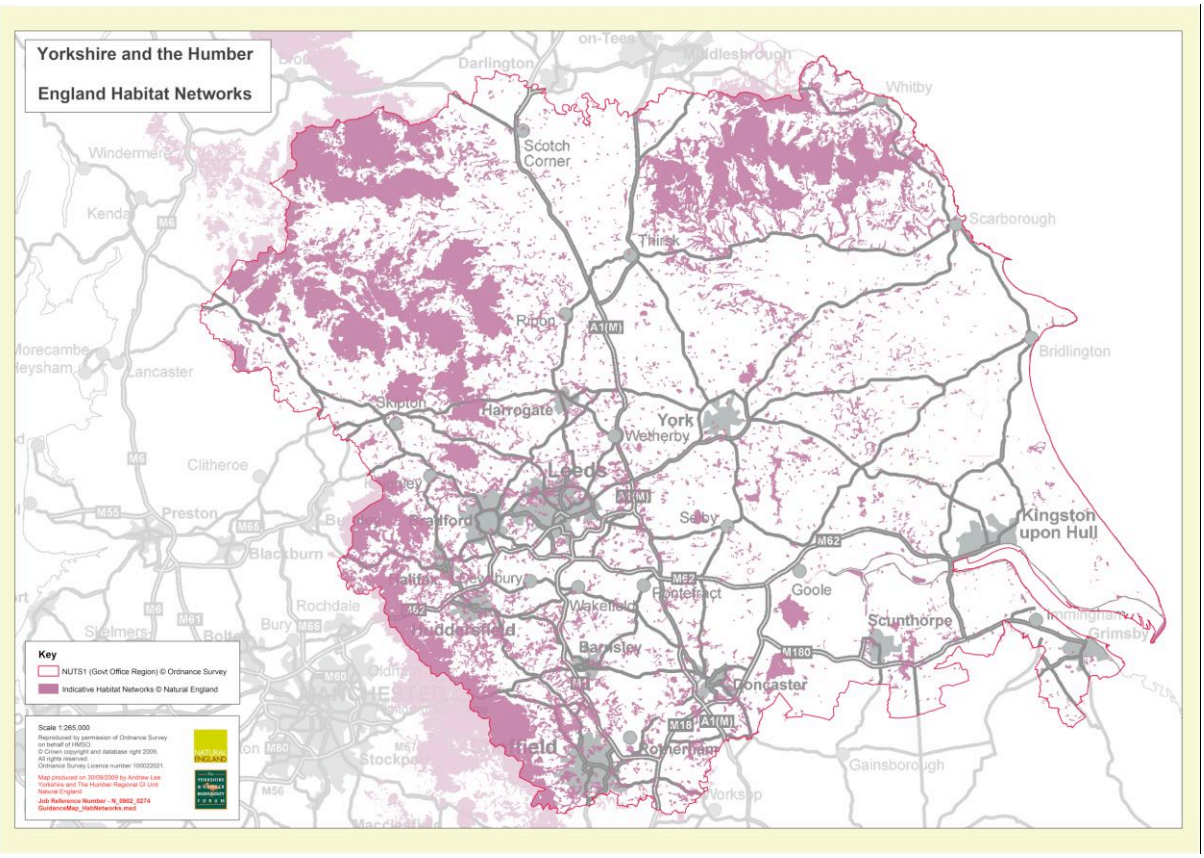
The EHN identifies indicative networks which will be reviewed and updated when there are significant changes in knowledge or as new geospatial information emerges. Although the EHN has been modelled with regional and national datasets, it does have the capacity to be used with more detailed local data. There are a number of similar approaches for modelling and identifying ecological networks, for example BEETLE (Biological and Environmental Evaluation Tools for Landscape Ecology) developed by Forest Research[11], which, along with the EHN, can be considered for mapping indicative networks at a local scale.

The Yorkshire and Humber Biodiversity Forum, has utilised the regional cut of the EHN as a guide to identify strategically important ecological networks at a regional scale (see Map 2). The EHN is also used as a base layer in the development of its opportunity mapping as ecological networks are fundamental to landscape-scale conservation and hence are one of the building blocks of landscape-scale habitat restoration mapping and planning.

[10] Catchpole R.D., 2007. English Nature Research Report 687. Planning for Biodiversity – opportunity mapping and habitat networks in practice: a technical guide.

[11] www.forestresearch.gov.uk/fr/infd-69pla5

.



Map 2 – Yorkshire and the Humber Regional cut of the England Habitat Networks

4 BIODIVERSITY OPPORTUNITY AREA MAPPING

Biodiversity Opportunity Maps define specific landscape-scale areas where conservation action is likely to have the greatest benefit to biodiversity. They are identified as areas where conservation action will not only benefit existing habitats or species but will result in the expansion/creation of habitats at a landscape-scale and with this, the restoration of whole ecosystems. Mapping is therefore based both on the existing biodiversity interests and physical opportunities for enhancement.

Biodiversity Opportunity Areas provide the building blocks of a landscape-scale vision for biodiversity which will:

- Restore habitat quality on existing sites
- Expand habitat area and reconnect fragmented habitats to increase the extent, function and resilience of ecological networks and counter the effects of climate change.
- Re-create natural systems to support biodiversity and other land management objectives such as the delivery of sustainable farming and the restoration of river features and floodplain systems to alleviate flooding.

Biodiversity Opportunity Area maps should identify priority areas for the restoration and creation of priority habitats as identified in the UKBAP and the England Biodiversity Strategy.. At a regional level they will be used directly to identify priority areas for targeting

action that will achieve the targets set in Annex 3 of the Yorkshire and Humber Regional Biodiversity Strategy.

There is no one agreed approach for the identification of Biodiversity Opportunity Areas but available methodologies use good habitat, geological, geomorphological, hydrological and topographical data alongside expert stakeholder knowledge.

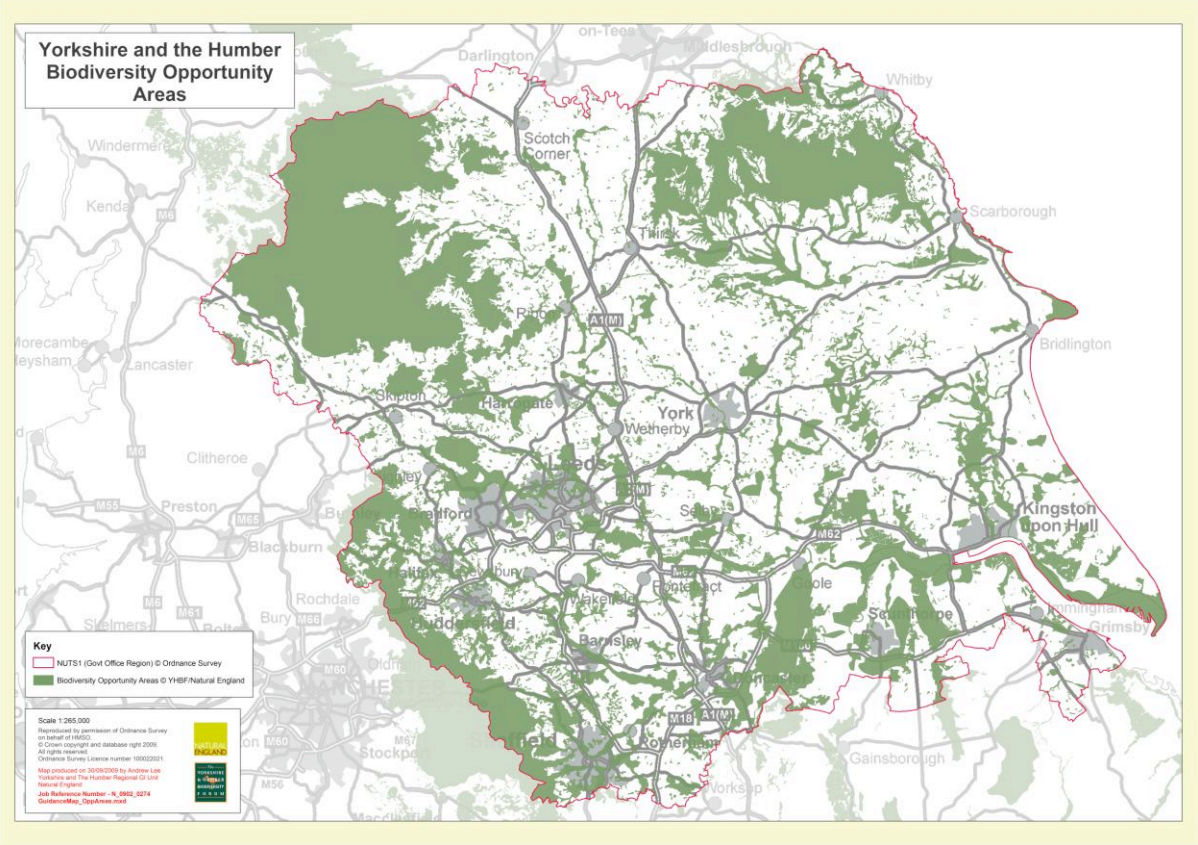
Regional Biodiversity Opportunity Areas maps provide a spatial plan for delivering biodiversity targets but are not necessarily a comprehensive approach covering all aspects of biodiversity. As such they may not:

- include the total BAP habitat resource and therefore do not include all the areas where maintenance of this resource is necessary
- represent any level of constraint due to biodiversity, although they will contain designated sites and BAP habitat that do give rise to constraints
- include all the areas where creation and restoration of BAP habitat will be possible. *There will be other local opportunities, and more diffuse opportunities*. For this reason local opportunity maps may differ from regional mapping.

5 THE YORKSHIRE AND HUMBER BIODIVERSITY OPPORTUNITY AREAS MAP

The Yorkshire and Humber Biodiversity Forum has developed a regional Biodiversity Opportunity Areas Map (Map 3). This map represents a development of the current RSS Regional Biodiversity Enhancement map (Map 1). The map uses ecological/habitat networks (EHN) as a building block for the vision and makes use of many of the data sets employed in the development of the RSS map. However, further analysis and stakeholder-led appraisal of the data has produced a more detailed, strategic regional scale spatial plan. The resulting map provides a clear representation of priority biodiversity areas in the region from a regional perspective, and acts as a strategic vision for enhancement of biodiversity at a landscape-scale. Any priority local networks should broadly fit within this strategic overview, but may differ in terms of the precise boundaries of the networks on the ground as some species and habitats identified as a priority from a local perspective may not be regarded as a priority from a regional perspective.

The **Yorkshire and Humber Biodiversity Opportunity Areas map** will provide the focus for more integrated work across the region to meet our contribution to the UKBAP. Work will be taken forward through a suite of partnership projects at regional, sub-regional and local levels.



Map 3 -Yorkshire and Humber 'Biodiversity Opportunity Areas Map'

The regional Biodiversity Opportunity Areas map identifies core areas based on the existing biodiversity interests and physical opportunities for enhancement. They are identified as areas where conservation action will not only benefit the existing habitats or species but will result in landscape-scale enhancement and expansion/creation of habitats. Further work is underway to ensure that priority species interests will be met through work to habitats within the Biodiversity Opportunity Areas, and to identify where more specific action may still be required. **As the availability of biodiversity data improves in the region the map will be reviewed and updated by the Yorkshire and Humber Biodiversity Forum.**

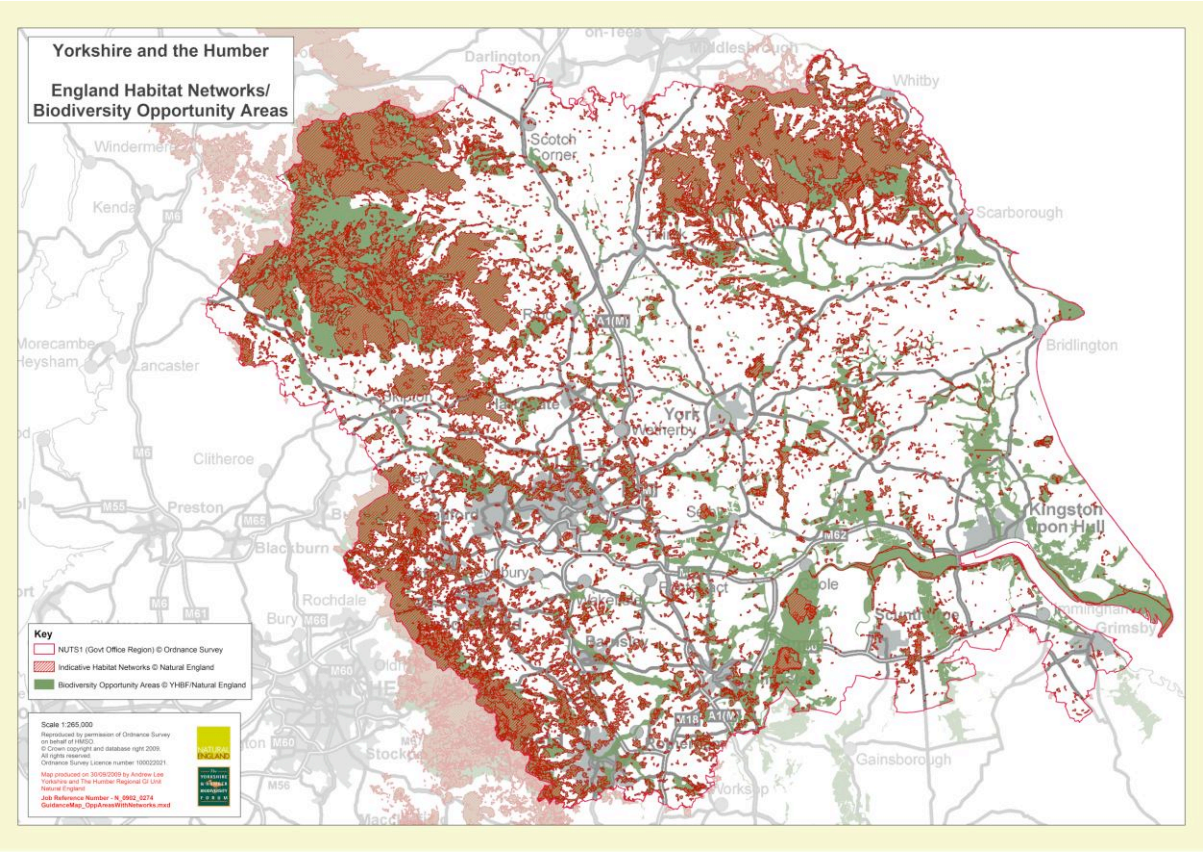
Further work is currently being carried out to ensure that the national and regional habitat priorities are fully represented within the defined Opportunity Areas.

5.1 Methodology

The full methodology utilised in the production of the regional Biodiversity Opportunity Areas map is available on the Yorkshire and Humber Biodiversity Forum website[12]. In summary the regionally consistent datasets, i.e. the England Habitat Networks, were used to identify the existing biodiversity interests and their functionality in the landscape providing the base layer of current interests. Stakeholder expertise was then sought from across the region, alongside more detailed local datasets (where available), to identify priority areas of opportunity where conservation work should be targeted to build on the existing core

[12] www.yhbf.org

biodiversity habitats. Map 4 below shows inter-relationship between the ecological habitat networks and the biodiversity opportunity mapping.



Map 4 –The relationship of the EHN with the regional Biodiversity Opportunity Areas

5.2 Using the Regional Biodiversity Opportunities Areas Map

The Yorkshire and Humber Biodiversity Forum recommends that the regional Biodiversity Opportunity Areas map will be used by the region's decision makers, conservation organisations and businesses to:

1. Identify where most of the major biodiversity concentrations are found and where targets to maintain, restore and re-create wildlife might best be met;

2. Formulate sustainable choices for development *e.g.* through Local Development Frameworks and the Regional Spatial Strategy;

3. Guide the production of local biodiversity opportunity maps (although there are limitations in the use of the regional map at a local scale –see section 6)

4. Assist in targeting of agri-environment and other funding, including Environmental Stewardship and England Woodland Grant Scheme

5. Develop partnerships and projects for biodiversity in the region;

6. Provide a focus for projects that will help biodiversity to adapt to climate change.

7. Identify gaps in the evidence base that need addressing to better inform future plans, policies and strategies

At a regional level it is not suggested that every part of each Biodiversity Opportunity Area is restored. The map identifies areas of highest priority (with regards to their existing habitat resource) and with the greatest potential for habitat restoration and creation works. The map provides a plan and promotes a vision to reduce the vulnerability of the existing regional biodiversity resource and restore it at a landscape-scale.

6 BIODIVERSITY OPORTUNITY AREA MAPPING AND ECOLOGICAL NETWORKS AT A LOCAL SCALE

6.1 Local Ecological/Habitat Networks

Policy ENV8 (Biodiversity) of the Yorkshire and Humber Regional Spatial Strategy states:
"The Region will ... ensure that the natural environment functions as an integrated network of habitats".
Justification is provided in paragraph 10.47:
"that the purpose of ENV8 is to safeguard and enhance the Region's ecology, and in particular to ensure that it functions as an integrated network of connected corridors and buffer zones, thereby reversing the pattern of fragmentation, loss and decline".

Local Authorities and others are asked:
"to work with Natural England and regional and local biodiversity partnerships to identify areas of regional, sub-regional and local importance for biodiversity, and in particular areas where development can enhance the functional networks".

Ideally all local authorities in the Yorkshire and Humber region should identify priority **ecological networks** and opportunities for habitat restoration and creation (see section 6.4, PPS 9 and RSS ENV8). These should be identified and mapped in LDFs (see section 7)

6.1.1 Methodology

Ecological/habitat networks are one of the core building blocks of Biodiversity Opportunity Areas mapping, but they are different to, and will extend beyond the boundaries of Biodiversity Opportunity Areas. There is therefore value in the identification of priority ecological networks as a separate exercise, or as an initial step in the production of Biodiversity Opportunity Areas maps. The England Habitat Network (EHN) can be used at both regional and local scales as a tool for spatial development control providing opportunities for conservation and restoration of biodiversity. There are, limitations in applying the EHN as it stands at a more detailed local scale, primarily that the current resolution/scale of the mapping is not detailed enough to inform allocation/development on the field-by-field basis required for local authorities.

At a regional level the EHN has been modelled using regionally consistent data sets, however the EHN model can be run with more detailed local data sets where these are available. They should also be aware that the EHN model identifies existing networks and further work will be required to map opportunities to enhance these. Using the EHN locally will help link regional and local spatial planning systems, so that priority areas are identified in planning documents and protected accordingly. Figure 1 demonstrates the links between regional and local mapping. Although the EHN identifies grassland, woodland, wetland and heathland networks separately, habitats rarely exist or function in isolation and usually form part of a wider landscape mosaics. While identifying and developing strategies for enhancing ecological networks at a local-scale it is therefore appropriate to consider multi-habitat networks, where individual habitats exist as part of a wider, ecologically functional landscape.

As an alternative to using the EHN a desk-based exercise could be used for defining local ecological networks, by identifying core clusters of habitats and making judgements over connectivity between them, or new models developed around core ecological principles of permeability of landscapes and mobility of individual species. Either way, local authorities must be aware of the limitations in coverage, accuracy and age of data available to them at a local scale, and the need to continually improve their local evidence base.

6.2 Local Biodiversity Opportunity Area Maps

LDF documents should include **local biodiversity opportunity maps** that take account of regional and local targets for habitats and species, as outlined in the RSS, the Regional Biodiversity Strategy and in Local Biodiversity Action Plans. Local authorities will be encouraged to use the regional Biodiversity Opportunity Areas map to develop a **local biodiversity opportunity map**

Local biodiversity opportunity mapping should consider the regional Biodiversity Opportunity Areas alongside designated sites and priority habitats and species but may also include other areas that are identified locally for actions at a local level. The Yorkshire and Humber Biodiversity Forum also advises that Strategic Riverine Enhancement areas identified in the RSS (and included on the regional Biodiversity Opportunity Areas map) should be promoted and should complement the Biodiversity Opportunity areas that generally cover the dry terrestrial habitats.

6.2.1 Methodology

Local Authorities are encouraged to use the strategic framework which the regional Biodiversity Opportunity Areas map provide, as a starting point in the development of local biodiversity opportunity maps, thereby ensuring that national and regional priorities are fully addressed and integrated. Local authorities will still need to identify locations that hold important habitats and species within their locality, particularly when those important habitats and species lie outside the boundary of designated sites, and analyse these against the regional map.

The Regional Biodiversity Audit[13] provides a list of priority habitats and species within each local authority area. It is a valuable starting point, but local planning authorities will need to be aware that this list was prepared in 1999 and it is in need of revision. Local authorities should only use this list in consultation with their **Local Biodiversity Partnership** (usually through the Local Authority Ecologist) and their Local Records Centres to help determine local priorities and agree what further information may be required to ensure a satisfactory evidence base for the LDF. Annex 3 of the Regional Biodiversity Strategy provides a list of regional targets for priority Biodiversity Action Plan habitats. There may be further revision of these targets in light of the national review of priority BAP habitats and species in 2007(at present there are no regional targets for new habitats introduced under the 2007 review).

Many methodologies have been developed and implemented to define areas of opportunity for biodiversity action, some involving extensive stakeholder knowledge and some utilising computer modelling. Whichever approach is developed locally it is essential that a strong and robust evidence base is utilised and where it is lacking a programme of work should be instigated to develop the evidence. It would be desirable to have up-to-date GIS information on all UKBAP species and habitats, however in the absence of such a comprehensive dataset it will be necessary to utilise the experience and knowledge of the regional and local biodiversity community.

[13] A Biodiversity Audit of Yorkshire and Humber, 1999. Selman, Dodd and Bayes

6.3 Preparation of local Ecological Networks and Local Biodiversity Opportunity Areas maps.

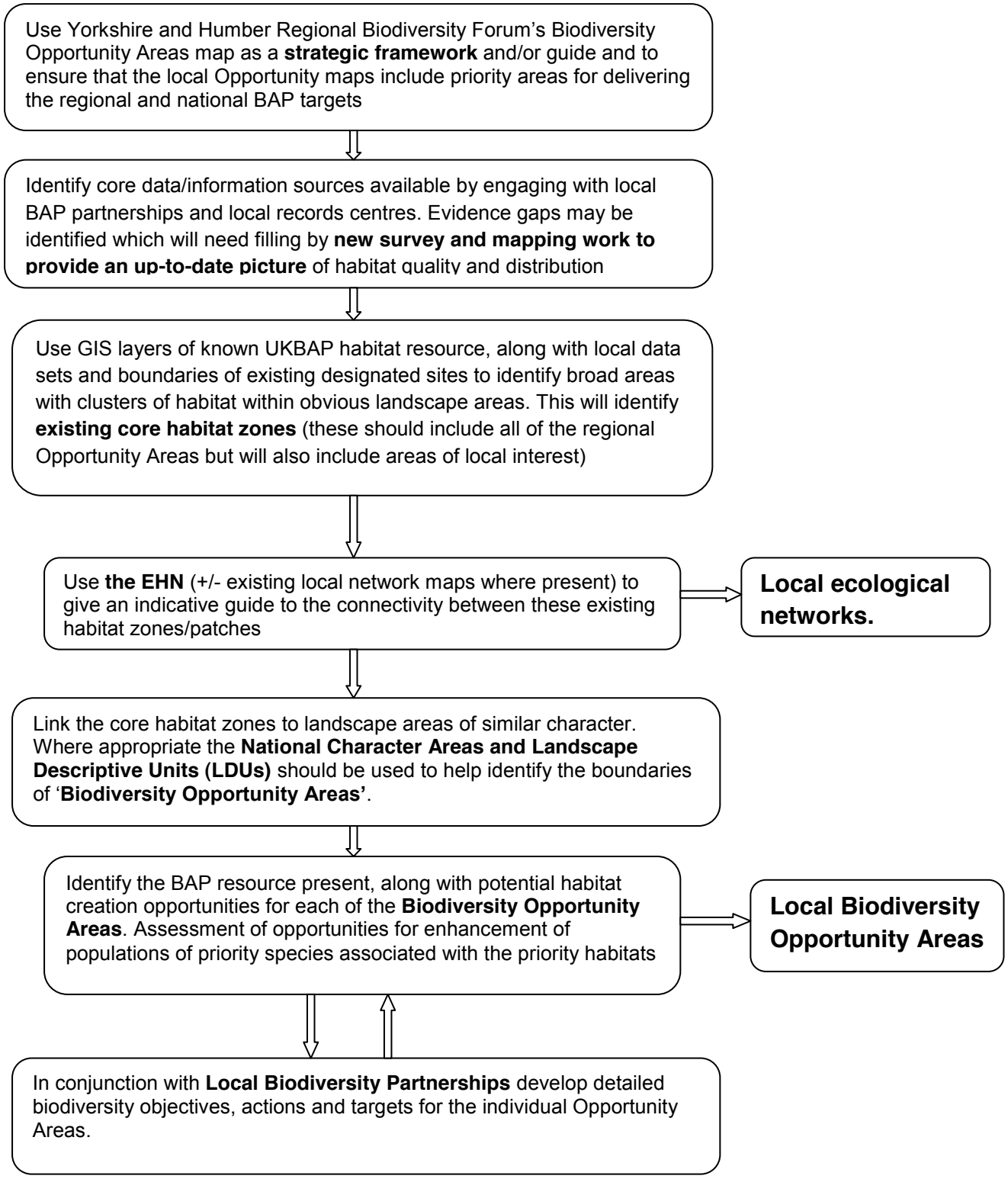


Figure 1 – simple guide to process for developing ecological networks and biodiversity opportunity maps

Figure 1, outlines a clear process for the preparation of local maps and highlights the linkages between the mapping of Ecological Networks and Biodiversity Opportunity Areas. The process of mapping Ecological Networks can be carried out independently to that for Biodiversity Opportunity Areas, however there is potential to combine the two processes. The information/evidence gathered in the identification of networks can contribute directly towards the identification of Biodiversity Opportunity Areas.

The above process will create a basic local Opportunity Areas map, however this will be indicative and further work looking at habitat potential of the actual land will be required to identify suitable areas for habitat creation/restoration. This will include assessments of soils, hydrology and topography against ecological requirements of individual habitats and species. Various models/approaches to this are available (for example habitat potential models). Land ownership, current use and other local factors would also be considered when identifying habitat creation potential however as an initial phase, the process identified above will deliver an Opportunity map which fulfils the basic requirements of PPS9.

The production of the map should not be an end point but should then be used proactively to identify where there are potential opportunities for the enhancement of biodiversity, including:

- Initiation of sensitive management regimes for important sites currently suffering from inappropriate management (this will include management of Local Sites and contributions to NI197)
- Development of management plans for sites currently without management
- Restoration of habitat expanse where remnant habitats are reduced to small, unsustainable pockets
- Restoration of linkages between sites where they have previously been severed i.e. the restoration of ecological networks
- Re-creation of habitat where it is now completely lost
- Creation of new habitat where opportunities arise
- Creation of new habitat linkages to link isolated sites of biodiversity importance, and encourage species dispersal

6.4 Evidence needs

Building on the work of the regional maps, **local ecological network maps** and **local biodiversity opportunity maps** should initially utilise local survey information to highlight areas of biodiversity importance, particularly focusing on regional and local biodiversity action plan priorities (in accordance with Regional Policy ENV8) but also take advice from Local Biodiversity Partnerships to ensure that priorities are up to date and locally relevant. **This initial work will highlight any areas where the evidence base is weak or lacking and flag where further survey work is necessary, so contributing to the overall evidence base for the LDF.** It is imperative that local authorities maintain or have access to an up-to-date evidence base to develop their biodiversity mapping and the wider Local Development Framework, and also to assist in setting-up and monitoring their local sites programmes, having due regard to the purpose of conservation of biological diversity in exercise of their functions with regard to the NERC Act Biodiversity Duty[14] and ensuring planning applications are fully appraised. Local planning authorities should refer to 'Planning

[14] Section 40 of the Natural Environment and Rural Communities Act 2006

for Biodiversity and Geological Conservation: a Guide to Good Practice (ODPM 2006)'[15], with Chapter 2 (section 2.3) providing useful help on the key elements of an evidence base for biodiversity, including reminding local authorities of the need to support a local records centre.

6.5 A Strategic Approach to Mapping

The natural environment rarely conforms to local authority or regional boundaries as the distribution of habitats and species is generally governed by bio-geographical features. The use of national approaches such as the England Habitat Network and regional approaches described above ensures that mapping respects the ecological requirements of biodiversity and connectivity and linkages are maintained and promoted. It is essential that locally identified ecological networks and biodiversity opportunity mapping relate and link across neighbouring local authority boundaries, and where appropriate across regional boundaries. The use of the regional maps as a strategic framework should assist with this process, but sub-regional and regional biodiversity partnerships should be consulted to ensure that appropriate linkages are promoted and maintained.

[15] ODPM, Defra and English Nature (2006) Planning for Biodiversity and Geological Conservation: A Guide to Good Practice.

7 INCORPORATING LOCAL OPPORTUNITY MAPPING AND HABITAT NETWORKS INTO LDFS

Local authorities can include the England Habitat Network (EHN) into Local Development Frameworks (LDFs) providing them with the locations of conservation priority areas and enabling them to work more closely with wildlife agencies (although it is suggested that the EHN be refined through the use of local data sets and verified by local knowledge -see section 6.4). Local authorities can integrate EHN into other policy areas as well such as housing, social and economic development as the identification networks and opportunity areas could be a key contributor to sustainable development. Alternatively local network maps can be produced using a locally developed methodology (see 6.1.1).

Local Biodiversity Opportunity Areas maps should be provided in LDFs (see Section 2.1 & 6.1). In line with PPS9, adopted proposal maps should also show the full extent of Biodiversity Opportunity Areas and Ecological Networks in their local authority areas. In addition to the general biodiversity policies that may be required within LDFs, the following wording is suggested to assist with local opportunity mapping policy formation in Core Strategies to ensure the issue of biodiversity enhancement is taken into account. It is expected that the wording will be used as a basis on which more distinctive and locally reflective policy wording can be developed. Supporting text should make reference to local biodiversity assets and their importance to the local community, environment and economy. Please note that the suggested policy and related text relates to the protection and enhancement of opportunity areas and/or ecological networks, and its inclusion in a LDF does not negate the need for existing specific policies for biodiversity, e.g. designated sites and protected species

Policy Example/Framework

"*Development should promote the appropriate maintenance, enhancement, restoration and/or recreation of biodiversity through its proposed nature, scale, location and design. The local biodiversity opportunity map, in conjunction with the Local Biodiversity Action Plan, should be used to guide biodiversity enhancement measures to be included in development proposals as appropriate to the nature and scale of the development proposed and other environmental interests".*

Supporting Text Example

The Council has prepared a local biodiversity opportunity map, shown at X. The map illustrates the most important areas within the district/borough for biodiversity, and also indicates where it is considered that it is most important and feasible to target biodiversity enhancement action, and what that action should be. The map is produced in conjunction with the Local Biodiversity Action Plan, and provides a spatial representation of local biodiversity priorities, including designated sites, existing Biodiversity Action Plan habitats, and wider biodiversity opportunities outside these important areas, including the opportunity to create or restore linkages between important wildlife areas.

The local biodiversity opportunity map will be continually developed and updated as local biodiversity action is progressed. For the most up to date version of the map and further guidance on how to utilise the map to develop suitable biodiversity enhancement measures to be incorporated into a development proposal, please refer to your Local Biodiversity Partnership (LBAP)

8 LINKS TO GREEN INFRASTRUCTURE

The policy on Green Infrastructure in the Yorkshire and Humber RSS (Policy YH8 – Green Infrastructure) identifies the need for LDFs to identify strategic networks of accessible, multifunctional sites (including sports and playing fields, historic sites and natural assets) as well as identifying linkages or networks which need maintaining and enhancing (such as the river corridors and floodplains, and wildlife corridors). It makes the clear link between these environmental assets (and quality) and their contribution towards people's well-being.

POLICY YH8: Green Infrastructure

A Areas and networks of green infrastructure will be identified, protected, created, extended, enhanced, managed and maintained throughout the region to ensure that an improved, accessible and healthy environment is available for the benefit of present and future communities whilst protecting the integrity of internationally important biodiversity sites

B LDFs should:

1. Define a hierarchy of green infrastructure, in terms of location, function, size and levels of use, at every spatial scale and across all areas of the region based on analysis of existing natural, historic, cultural, sport and playing field, and river and landscape assets, including the identification of new assets required to deliver green infrastructure;
2. Identify and require the retention and provision of substantial connected networks of green infrastructure, particularly in urban, urban fringe and adjacent countryside areas;
3. Ensure that policies have regard to the economic and social as well as environmental benefits of green infrastructure assets; and
4. Identify the functional role of green infrastructure in supporting the provision of renewable energy, urban microclimate control, and flood risk management.

C Assets of particular significance for the protection and enhancement of green infrastructure include national and inter-regional trails (policy T5E), floodplains (policy ENV1),,woodlands (policy ENV6), biodiversity(policy ENV8) and heritage (policy ENV9) and distinctive landscapes (policy ENV10).

Green Infrastructure networks should consist of a series of features (both existing and new), appropriate at various spatial scales, preferably with links connecting smaller, more local sites with larger, more strategic ones, including the region's National Parks and key nationally and internationally important habitats. Green infrastructure networks are formed, developed and protected by other policies in the RSS, particularly ENV6, ENV8, ENV9, and ENV10.

Green Infrastructure is the network of green spaces and natural elements that intersperse and connect our cities, towns and villages. It is the open spaces, waterways, gardens, woodlands, green corridors, wildlife habitats, street trees, natural heritage and open countryside. Green Infrastructure also provides multiple benefits for the economy, the environment and people. Green Infrastructure can be applied at all scales. For instance, the Town and Country Planning Association (2004) [16] defines it as:

"The sub-regional network of protected sites, nature reserves, green spaces and greenway linkages. The linkages include corridors and floodplains, migration routes and features of the

[16] TCPA's *Biodiversity by Design* provides excellent guidance on how to integrate green infrastructure into spatial planning at all scales, from the regional to the very local.

landscape, which are of importance as wildlife corridors. Green infrastructure should provide for multi-functional uses i.e. wildlife, recreational and cultural experience, as well as delivering ecological services, such as flood protection and microclimate control. It should also operate at all spatial scales from urban centres through to open countryside."

Much of the government's and Natural England's[17] recent guidance and policy promote the essence of green infrastructure as being its sustainable and multifunctional nature and as a place for both wildlife and people[18] The links between, and potential benefits of green infrastructure for biodiversity are many fold, so long as the network has continuous natural features and is not 'green' merely because it includes intensively managed amenity areas with poor species diversity.

Green infrastructure in its own right can provide the following benefits for biodiversity:

- Supports wildlife reservoirs and refuges from anthropogenic pressures (human disturbance, pollution, invasive/domestic species etc).
- Supports environmental processes and natural resource remediation (air, soil and water, sustainable urban drainage and flood alleviation)
- Protects, restores and reconnects fragmented habitats that support priority species currently threatened by agricultural intensification, urban spread and climate change.
- Provides supporting habitat for mobile species within designated sites.
- Has the potential to make a significant contribution to the achievement of Regional and Local Biodiversity Action Plan targets.
- Enables connections with, and an appreciation of wildlife close to people's homes without travelling to the wider countryside.

The identification of Green Infrastructure **cannot be seen as an alternative or replacement for the identification for ecological networks or Biodiversity Opportunity Areas**. Biodiversity is a core element of Green Infrastructure and will play its part in a multi-functional landscape. However, biodiversity is important in its own right and its ecological requirements, particularly with regards to species movement and basic ecological functions require it to be considered independently. Biodiversity Assets, whether as Ecological Networks or Biodiversity Opportunity Areas will however contribute directly to both regionally strategic and locally important Green Infrastructure and planning positively for Green Infrastructure can, for example, play an important role in maintaining ecological networks by avoiding or repairing fragmentation and isolation of natural habitats and by creating new features wherever possible (see PPS 9; paragraph 12).

Local Opportunity Mapping and Green Infrastructure planning should be seen as complementary, and Local Development Frameworks should confirm the links between the two processes.

[17] http://naturalengland.etraderstores.com/NaturalEnglandShop/Product.aspx?ProductID=cda68051-1381-452f-8e5b-8d7297783bbd

[18] For example, Department for Communities and Local Government, 2007. *Planning Policy Statement: Planning and Climate Change. Supplement to Planning Policy Statement 1*, paragraph 42.

An annex will be prepared shortly for this document which will include case studies along with examples of LDF policies. This will be made available on the YHBF website.

Guidance note produced and endorsed by the Yorkshire and Humber Biodiversity Forum (YHBF)

Many thanks to the West Midlands Biodiversity Partnership, and Natural England for allowing the YHBF to use key parts of their planning guidance, prepared by David Tyldesley and Associates for Natural England in July 2008.