4a Oxfordshire Wildlife and Landscape Study

The Oxfordshire Wildlife and Landscape Study (OWLS) was a three-year study jointly sponsored by Oxfordshire County Council, English Nature, the Countryside Agency and the Northmoor Trust. Its main aim was to investigate the landscape character and biodiversity resource of the county and use the results of the survey to help safeguard, maintain and enhance this resource.

Landscape Types

Map 8a opposite shows the 24 'Landscape Types' found throughout Oxfordshire, each Landscape Type is made up of individual Landscape Description Units which have similar geology, topography, landuse and settlements. Each Landscape Type is characterised by recognisable and distinctive patterns in the landscape created by the way the natural and human influences on the landscape interact.

Biomap

A biodiversity appraisal of the Landscape Description Units was undertaken, based on existing knowledge of designated sites and priority habitats. Each Landscape Description Unit was given a 'bioscore', dependent on the number, type, size, extent, and proximity of each habitat and its conservation status. The Landscape Description Units were then grouped according to their bioscore into six 'biobands'; these are shown on **Map 8b**, the 'Biomap'.

The Biomap can be interpreted as a basic measure of the number and type of habitats recorded within each Landscape Description Unit. Landscape Description Units with a large number of habitats, including priority habitats, automatically score more highly, and therefore end up in a higher bioband. For example, many landscape description units in the Chilterns score highly because they support many habitats including UK BAP habitats such as calcareous and acid grassland, beech-yew woodland and species-rich hedgerows. By contrast, landscape description units which are largely dominated by intensive arable farming tend to have a more limited range of habitats and few, if any, priority habitats. This map was the precursor to the development of Oxfordshire's Conservation Target Areas (see Section 4b).

Oxfordshire's Landscape Types

- Alluvial lowlands
- Chalk downland and slopes
- Clay vale
- Estate farmlands
- Farmland hills
- Farmland plateau
- Farmland slopes and valley sides
- Lowland village farmlands
- Pasture hills
- River meadowlands
- Rolling clayland
- Rolling farmland
- Rolling village pastures
- Settled ancient pastures
- Terrace farmland
- Upstanding village farmlands
- Vale farmland
- Wooded downlands
- Wooded estate lands
- Wooded estate slopes and valley sides
- Wooded farmland
- Wooded hills
- Wooded pasture valleys and slopes
- Wooded plateau

Bluebell Wood, Oxfordshire © Jim Asher

Using OWLS to inform biodiversity enhancement measures

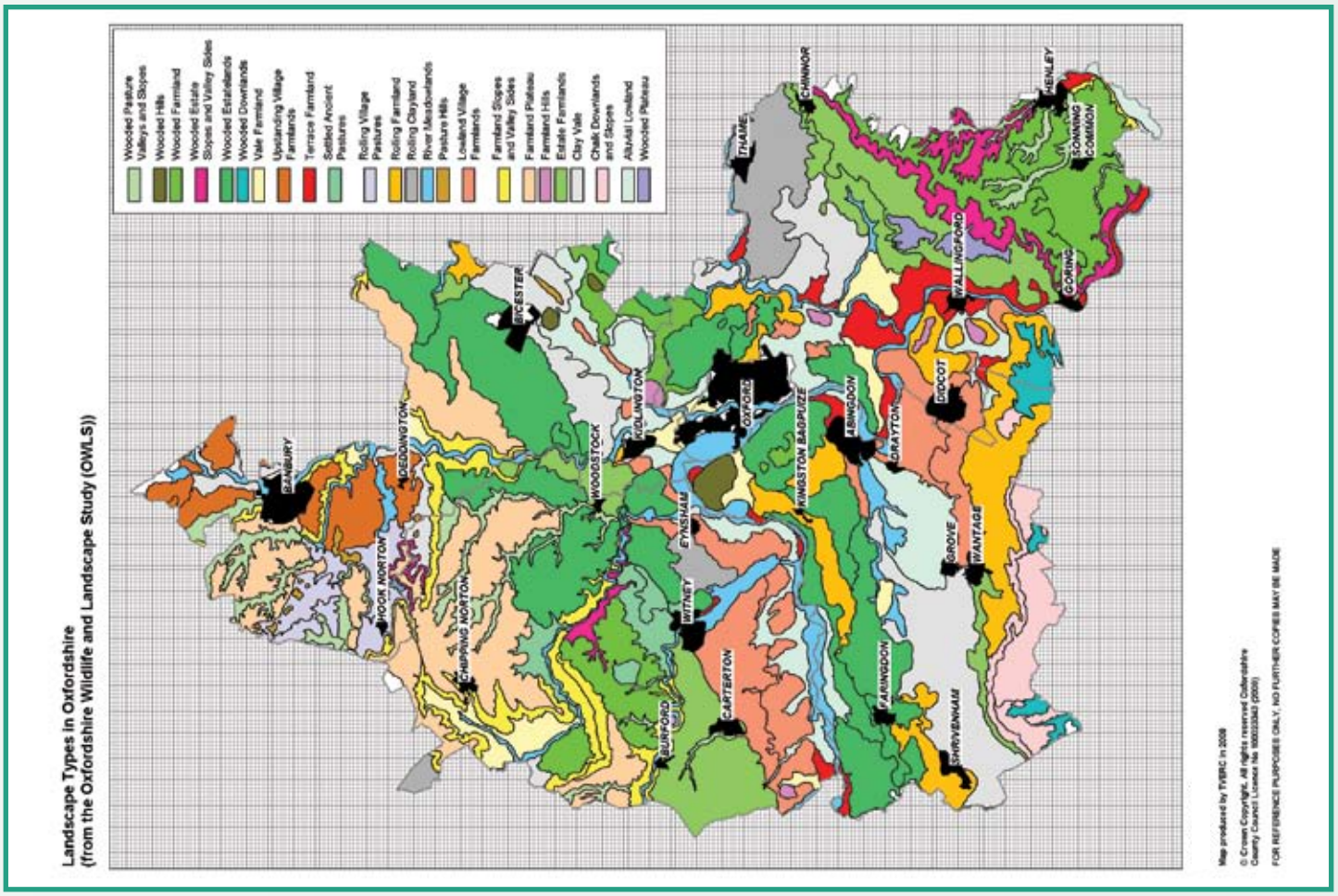
For each Landscape Type a detailed description of its landscape character and associated habitats has been produced, with strategic guidelines to help safeguard, maintain and hopefully enhance this resource. This information can be used to help decide how development might be able to contribute towards the landscape character and biodiversity of different parts of the county through delivery of biodiversity enhancements.

The results of the OWLS are on the Oxfordshire County Council website, with detailed descriptions of the biodiversity of each Landscape Type and guidelines for its protection and enhancement.

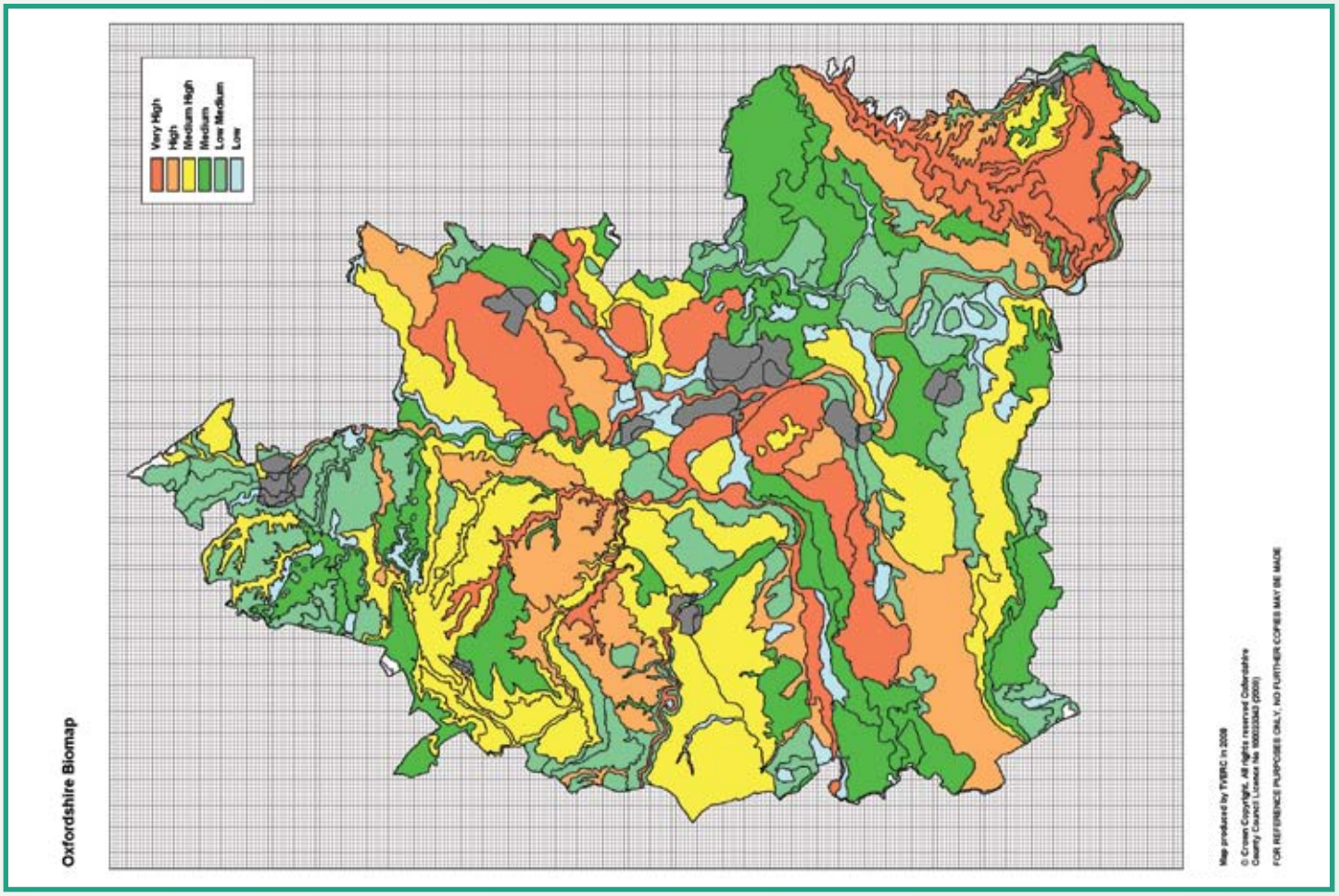
Key organisations

Oxfordshire County Council

Map 8a


Landscape Types in Oxfordshire
(from the Oxfordshire Wildlife and Landscape Study (OWLS))
Wooded Pasture Valleys and Slopes
Wooded Hills
Wooded Farmland
Wooded Estate Slopes and Valley Sides
Wooded Estatelands
Wooded Downlands
Vale Farmland
Upstanding Village Farmlands
Terrace Farmland
Settled Ancient Pastures
Rolling Village Pastures
Rolling Farmland
Rolling Clayland
River Meadowlands
Pasture Hills
Lowland Village Farmlands
Farmland Slopes and Valley Sides
Farmland Plateau
Farmland Hills
Estate Farmlands
Clay Vale
Chalk Downlands and Slopes
Alluvial Lowland
Wooded Plateau
BANBURY
DEDDINGTON
HOOK NORTON
CHIPPING NORTON
BURFORD
BICESTER
WOODSTOCK
KIDLINGTON
EYNSHAM
WITNEY
CARTERTON
OXFORD
KINGSTON BAGPUIZE
FARINGDON
FARINGDON
ABINGDON
DIDCOT
GROVE
WANTAGE
WALLINGFORD
CHINNOR
THAME
HENLEY
GORING
STONING COMMON
Map produced by TVBRC in 2008
© Crown Copyright. All rights reserved Oxfordshire County Council License No: 100023343 (2008)
FOR REFERENCE PURPOSES ONLY. NO FURTHER COPIES MAY BE MADE

Map 8b


Oxfordshire Biomap
Very High
High
Medium High
Medium
Low Medium
Low
Map produced by TVBRC in 2008
© Crown Copyright. All rights reserved Oxfordshire County Council License No: 100023343 (2008)
FOR REFERENCE PURPOSES ONLY. NO FURTHER COPIES MAY BE MADE

4b Conservation Target Areas

Important areas for wildlife conservation

Conservation Target Areas (CTAs) identify the most important areas for wildlife conservation in Oxfordshire, where targeted conservation action will have the greatest benefit. The main aim within CTAs is to restore biodiversity at a landscape-scale through the maintenance, restoration and creation of BAP priority habitats. CTAs are identified on **Map 9**, they are equivalent to the Biodiveristy Opportunity Areas that have been mapped across the South East in the South East England Biodiversity Strategy (in the future, the terminology relating to these areas is likely to change to reflect regional terms).

Conservation Target Areas are a relatively new concept and the planning policy approach is still in development. There is a requirement under PPS9 for the identification of areas of opportunity for biodiversity improvement in Local Development Frameworks (see right), and CTAs provide an important basis for this.

Until the policy approach has been developed further in Local Development Frameworks, it is suggested that development that would prevent the achievement of the aims of a CTA is avoided. In many cases this involves protecting the designated and priority habitats and species in the CTA (see Sections 2 and 3), but consideration should also be given to whether development will affect habitat connectivity, either positively or negatively.

As with all development, proposals within or adjacent to a CTA will be expected to deliver biodiversity enhancements, but within a CTA such enhancements will be most effective when they are tailored to meet the aims of a CTA. The scale of enhancements should be proportional to the size of the development. Examples of measures that might be involved include:

- restoration or maintenance of habitats through suitable management secured by planning obligations;
- habitat creation to link fragmented habitats;
- funding towards conservation initiatives in the CTA, secured by planning conditions and obligations;
- and provision of capital items needed to secure biodiversity enhancements (such as fencing to allow grazing).

Where a development has the potential to impact, either positively or negatively, on the known biodiversity interest of a CTA, a biodiversity survey and report will be required, to identify both constraints and opportunities. In some circumstances an Environmental Impact Assessment may be needed.

Delivering biodiversity gains in Oxfordshire's Conservation Target Areas

The CTAs were mapped by TVERC in consultation with local authorities and conservation organisations in Oxfordshire. They were identified by taking into account existing concentrations of BAP habitat and important areas for priority species. The potential for habitat restoration was also considered and took into account geology, topography and hydrology. Archeological interest and public access were also taken into consideration.

A statement has been produced for each CTA identifying the features of biodiversity importance and targets for maintenance, restoration and creation of habitats.

The CTAs provide a focus for coordinated biodiversity action in the county, including:

- Biodiversity project work by a range of organisations
- Delivery of agri-environment schemes
- Provision of biodiversity enhancements through the planning system

Delivery of CTA aims is coordinated by the Oxfordshire Nature Conservation Forum (ONCF), who also co-ordinate working groups for CTAs. Details of organisations leading these working groups are available from ONCF.

Planning policy

Planning Policy Statement 9, para's 5 and 12:

'Local development frameworks should... identify any areas or sites for the restoration or creation of new priority habitats which contribute to regional targets, and support this restoration or creation through appropriate policies.'

'Networks of natural habitats provide a valuable resource. They can link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. 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.'

South East Plan (NRM5):

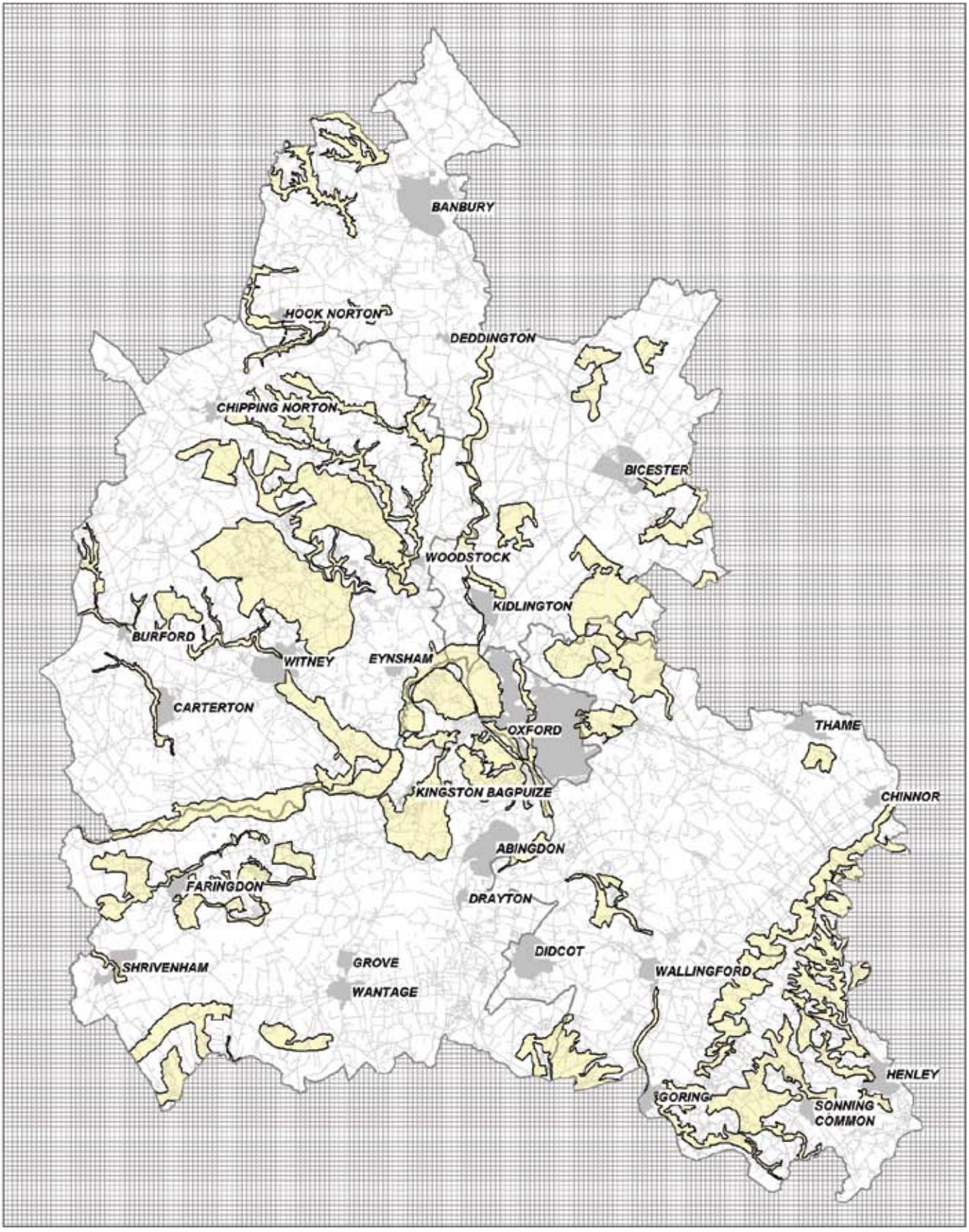
'Local authorities and other bodies shall avoid a net loss of biodiversity, and actively pursue opportunities to achieve a net gain across the region. Identifying areas of opportunity for biodiversity improvement and setting biodiversity targets… Opportunities for biodiversity improvement, including connection of sites, large-scale habitat restoration, enhancement and re-creation in the areas of strategic opportunity for biodiversity improvement should be pursued'.

Key organisations

Berks, Bucks and Oxon Wildlife Trust
Environment Agency
Local authorities
Natural England
Oxfordshire County Council
Oxfordshire Nature Conservation Forum
Thames Valley Environmental Records Centre

Map 9

Conservation Target Areas in Oxfordshire



Map produced by TVERC in 2009

4c Green Infrastructure

Networks of green spaces

Green Infrastructure consists of the green areas in both urban and rural settings. It fulfills a variety of functions including provision for biodiversity, alongside delivery of recreational and cultural objectives. Green Infrastructure can include nature reserves, designated sites, recreational grounds, parks and open spaces, public rights of way, canals, allotments, cemeteries and many other green areas.

Green Infrastructure should provide a network of interconnected habitats to enable dispersal of species across the wider environment. Open spaces within developments should be linked to biodiversity in the wider countryside, including on designated sites, BAP habitats and CTAs. Green Infrastructure should also be planned to provide ecosystem services such as flood protection, microclimate control and filtration of air pollutants.

New developments should be designed to maintain existing Green Infrastructure. In delivering biodiversity enhancements, measures should be taken to contribute to the Green Infrastructure network to maintain existing habitats and to reduce habitat fragmentation. Production of a Green Infrastructure master-plan should be considered for large scale developments. Development should aim to provide enough accessible natural greenspace relative to the scale of the development to achieve the Accessible Natural Greenspace Standard (see below) and meet relevant aims of the Rights of Way Improvement Plan. Some planning authorities have developed their own local standards for the provision of natural/semi-natural greenspace.

Local planning authorities should be including policies that address aspects of Green Infrastructure within their Local Development Frameworks. For example, the Homes & Communities Agency has identified Oxfordshire as one of three pilot areas to produce a Local Investment Plan, which will include Green Infrastructure. An example of district level assessment to inform a Green Infrastructure plan is the Biodiversity Network Map produced by Oxford City Council (**Map 10**). New development will be expected to contribute towards the achievement of these plans.

The Accessible Natural Greenspace Standard (ANGSt)

Access to natural spaces is known to improve quality of life, with benefits to health and well-being, as well as social cohesion. Natural England has developed a standard for the provision of accessible natural greenspace, known as ANGSt, the standards required are as follows:

- An accessible natural greenspace, of at least 2 ha in size, no more than 300 metres (5 minutes walk) from home
- Local Nature Reserves at a minimum level of 1 ha per thousand population
- At least one accessible 20 ha site within 2 km of home
- At least one accessible 100 ha site within 5 km of home
- At least one accessible 500 ha site within 10 km of home

It is recognised that some of these targets cannot be achieved over a short time period, but they provide a long term goal. In Oxfordshire, access to natural greenspace currently falls short of the standard (see An Analysis of Accessible Nature Greenspace Provision in the South East):

- 3% of households are within 300 m of a 2 ha site
- 36% of households are within 2 km of a 20 ha site
- 41% of households are within 5 km of a 100 ha site
- No households are within 10 km of a 500 ha site

It is important to note that whilst access to natural greenspace is essential, there will be some areas where allowing access would be detrimental to sensitive biodiversity.

Further information

- Natural England's Green Infrastructure Guidance
- South East Green Infrastructure Framework
- An Analysis of Accessible Natural Greenspace Provision in the South East

Planning policy

Planning Policy Statement 9, para 12:

'Networks of natural habitats provide a valuable resource. They can link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans networks should be protected from development, and, where possible, strengthened by or integrated within it. This may be done as part of a wider strategy for the protection and extension of open space and access routes such as canals and rivers, including those within urban areas.'

South East Plan (CC8, NRM5):

'Local authorities and partners will work together to plan, provide and manage connected and substantial networks of accessible multi-functional green space. Networks should be planned to include both existing and new green infrastructure. They need to be planned and managed to deliver the widest range of linked environmental and social benefits including conserving and enhancing biodiversity as well as landscape, recreation, water management, social and cultural benefits to underpin individual and community health and 'well being'."

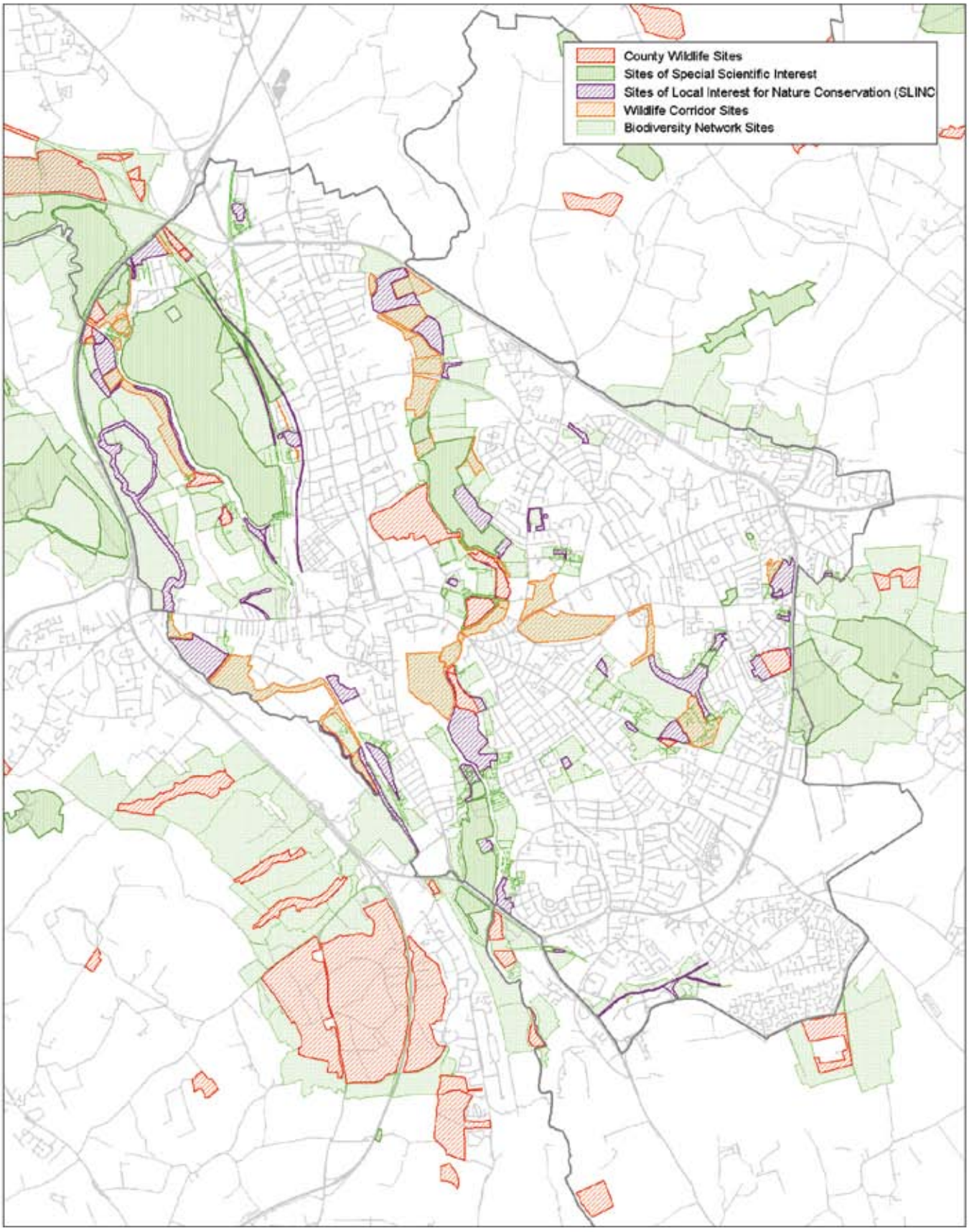
'...Local authorities and other bodies shall avoid a net loss of biodiversity, and actively pursue opportunities to achieve a net gain across the region. They shall require Green Infrastructure to be identified, developed and implemented in conjunction with new development.'

Key organisations

Berks, Bucks and Oxon Wildlife Trust
Chilterns Conservation Board
Cotswolds Conservation Board
Environment Agency
Local authorities
Natural England
North Wessex Downs AONB
Oxfordshire County Council

Map 10

Biodiversity Network in Oxford City



Map produced by TVERC in 2009

4d Biodiversity within developments

Biodiversity is not only found in rural areas; the built environment also provides opportunities to deliver enhancements for biodiversity. For large developments, features for biodiversity should be strategically planned to link up to Green Infrastructure and the wider environment.

Landscaping

Appropriate landscaping within developments can help reduce fragmentation of habitats by allowing wildlife to live within and move through built areas to the wider countryside. Landscaping should aim to retain and enhance existing biodiversity features.

Landscaped areas will be of most benefit to wildlife where native plant species are used as they are likely to support a wider range of native animals. Plant species originating from the local area will be even more beneficial, the OWLS (Section 4) can provide useful background information in determining the most appropriate plants to use in landscaping schemes in different parts of Oxfordshire.

Ponds can also provide an important habitat for wildlife. They should be designed with gently sloping edges to allow animals easy access in and out, and a variety of depths so that they are suitable for a range of different plants. Consideration should be given to the design of balancing ponds to provide wildlife habitat.

Landscaping should, wherever possible, link up areas supporting biodiversity. For example, native hedgerows could link up open spaces, providing routes along which species such as hedgehogs, butterflies and bats can move. A series of ponds can link with wetland features in the wider countryside.

Street trees can add to the wildlife linkages through developed areas and, again, native species will provide the most benefits. Gardens also contribute to habitat for wildlife within a built area and their layout should be designed to create a network linking with open spaces and Green Infrastructure.

Buildings

Developments are being built to ever increasing environmental standards, and biodiversity should not be forgotten here. There are very simple steps that can be taken to provide nesting and roosting opportunities for species such as bats and birds within buildings. Nest boxes can be mounted on the outside of buildings, special bat or swift bricks can be incorporated into the structure, and entire roof spaces can be designed to provide opportunities for bats to roost. A step further is to provide a green roof, which can provide foraging opportunities for birds, and support a range of native plants.

Thought should be given to the impact of lighting on wildlife, especially bats; areas of no or low level lighting along bat foraging routes should be considered.

Roads

Roads can provide a barrier to wildlife, and collisions with animals such as deer can also pose a safety threat. Mammal fencing can be used to exclude mammals from the road, and underpasses can be created for a range of species including badger, hedgehog and amphibians. Green bridges can be created in order to provide a safe crossing for both people and animals.

Planning policy

Planning Policy Statement 9, para 14:

'Development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design. When considering proposals, local planning authorities should maximise such opportunities in and around developments, using planning obligations where appropriate'

Protecting wildlife habitats within developments

Both new and existing biodiversity features within, or adjacent to, a development may be sensitive to human impacts such as recreational disturbance and vandalism.

Buffering of biodiversity features from areas of high human activity, such as roads, residential development or play areas can help to reduce impacts. Interpretation materials can be provided in wildlife conservation areas, where suitable. Community involvement in managing local wildlife areas can help to engender a feeling of ownership and can help ensure the long term survival of such areas.

A monitoring and management plan should be drawn up for green spaces to ensure long term suitable management.

Further information

- Pond Creation Tool Kit (Pond Conservation)
- UK Green Building Council Portal
- Biodiversity by Design (Town and Country Planning Association)

Oxfordshire pond © Jim Asher

Key organisations

Berks, Bucks and Oxon Wildlife Trust
Commission for Architecture and the Built Environment
Environment Agency
Local authorities
Oxfordshire County Council
Pond Conservation Trust
Town and Country Planning Association