



WARWICKSHIRE, COVENTRY & SOLIHULL

SUB-REGIONAL GREEN INFRASTRUCTURE STRATEGY



Prepared by

Warwickshire Museum and Natural Environment



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Vision

A diverse and well-managed Warwickshire, Coventry and Solihull Green Infrastructure network that underpins the quality of life for communities. This will be the result of a well-connected, accessible and biodiversity resilient landscape, supporting economic growth, social health and climate change adaptation.

Executive Summary

'Green Infrastructure is a network of multifunctional greenspace, both new and existing, both rural and urban, which supports the natural and ecological processes and is integral to the health and quality of life of sustainable communities'.¹

The purpose of this Strategy is to provide evidence for the preparation of plans, policies and strategies relating to Green Infrastructure (GI) at a sub-regional level and at a local level. It also details how GI can be delivered with the help from landholders and partners. . The strategy covers the disciplines of

- Landscape
- Biodiversity
- Accessibility

Figure 1 shows the extent of the sub-regional area of Warwickshire, Coventry and Solihull that this Strategy covers.

Landscape

The main strategic areas of opportunity for strengthening landscape character are identified in the Warwickshire Landscapes Guidelines and are still relevant, including opportunities to demonstrate exemplary approaches to landscape conservation management. However, it is recommended that the Enhancement Zones be re-assessed to identify target areas for landscape restoration. In particular, planning and implementing substantial landscape frameworks, well in advance of major developments and transport infrastructure, can bring many benefits, including safeguarding and enhancing vital landscape assets, helping to create a sense of place for new development and retaining vital links with the past.

Biodiversity

The strategy identifies sub-regional GI Biodiversity Assets and identifies Strategic Areas for delivering the Biodiversity Strategy's aim to reconnect habitats throughout the sub-region. It makes the recommendation consistent with national policies and strategies to safeguard, enhance and create GI Biodiversity Assets to connect individual sub-regional GI Biodiversity assets together to form core areas creating large functional clusters of woodland, wetland and grassland habitats. After this has been scientifically demonstrated the next aim is to Connect the large functional areas together. However, this does not preclude the opportunity to create new areas that will be large enough to function independently.

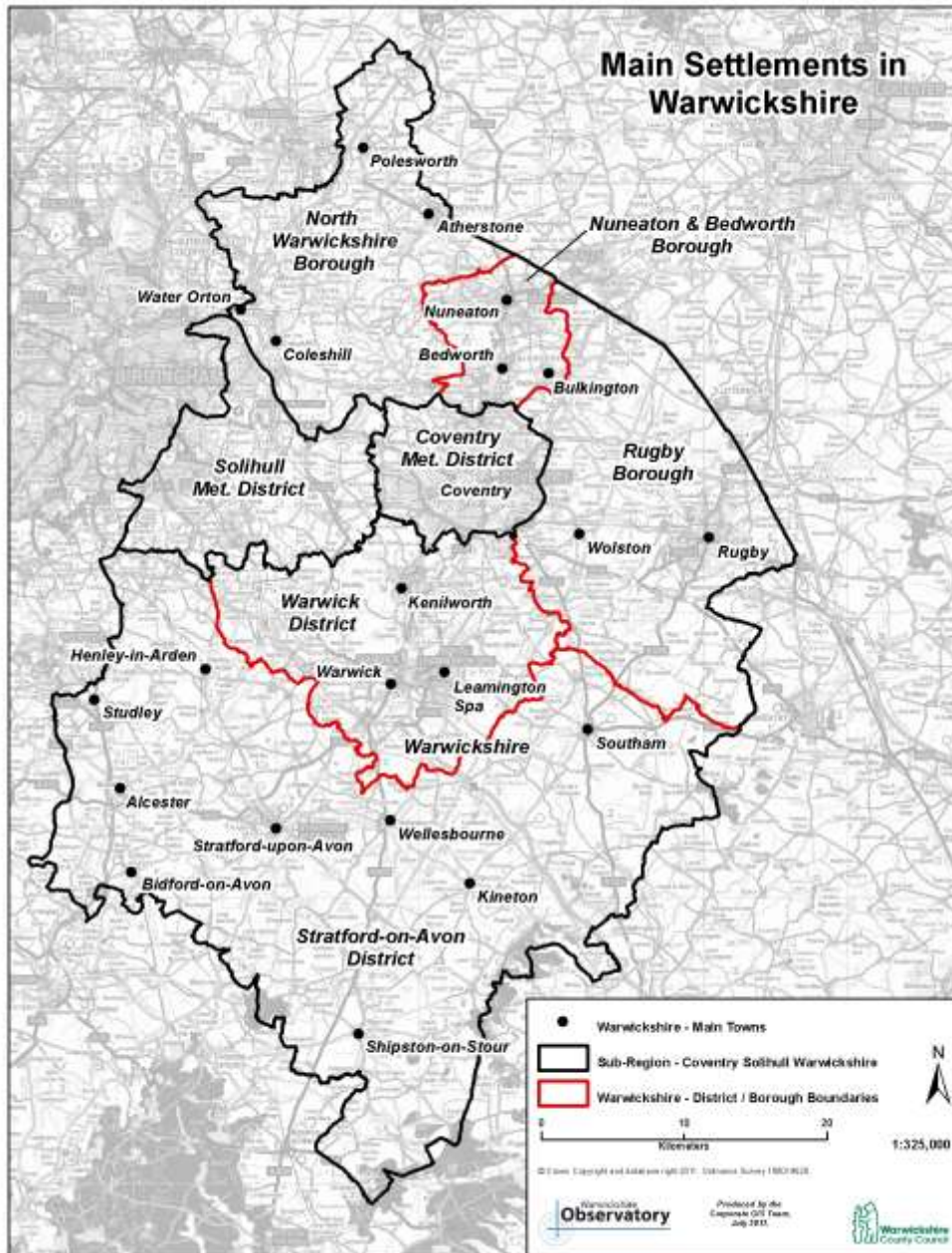
Accessibility

The Strategy uses the Natural England's Accessible Natural Greenspace Standard criteria and the Woodland Access Standards to identify sub-regional GI Accessibility Assets. It

¹ English Nature (2003) English Nature Report 526 'Accessible Natural Green Space Standards in Towns and Cities: A Review and Toolkit for Implementation'.

recommends that areas of deficiency are identified so that new or existing features can be created or enhanced to meet the sub-regional needs.

Figure 1: Sub-regional area covered by the Green Infrastructure Strategy



INTRODUCTION

Purpose

The purpose of this Strategy is to provide evidence for the preparation of plans, policies and strategies relating to Green Infrastructure (GI) at a sub-regional level. It is to be available for adopting as a strategic mechanism to deliver GI enhancements across the partner authorities to meet national, sub-regional and local Green Infrastructure needs. However, there will be elements that can be applied at a local, parish and field level through partnership and landowner assistance.

Structure

Green Infrastructure is dynamic, being subject to change from many influences: from land-use change to climate change; from political approaches and scientific modelling to identifying assets. It is therefore essential that this strategy has the flexibility to evolve. This evolution, however, must be evidence based and democratically approved within an accountable partnership.

To allow for this flexible approach the strategy will form three parts:

PART A - STRATEGIC CONTEXT

This part will be 'static'; providing the background and reasoning as to why sub-regional GI Assets are important.

PART B - ASSESSMENTS and RECOMMENDATIONS

This part will be 'semi-static'; detailing methods as to how sub-regional GI Assets have been identified and how models of delivery have been determined.

PART C - ASSETS and MAPS

This part will be 'living'; showing the location of sub-regional GI Assets as they are now and as they change over time.

Framework

The Strategy will broadly follow the 'North West Green Infrastructure Guide'² (NWGIG) as a framework for its production and the monitoring of progress in delivering its objectives. The NWGIG identifies five basic steps to Green Infrastructure Planning:

- STEP 1 - Partnerships and Priorities
- STEP 2 - Data Audit and Resource Mapping
- STEP 3 - Functional Assessment
- STEP 4 - Needs Assessment
- STEP 5 - Intervention Plan

More detail on this process is available at www.greeninfrastructurenw.co.uk. Further explanations of the above steps with tools, actions and methods that go towards the

² North West Green Infrastructure Guide (NWGIGThink Tank, 2008)

successful completion of these Steps, together with the progress made to complete them are found within Appendix 1.

Outputs and Outcomes

The desired outcome is a comprehensive, interactive and highly flexible evidence base, which can be used for a range of purposes:

- A framework for the sustainable land management of the area;
- A tool for predicting the implications of change on the natural environment;
- Informing the sustainable management of the historic environment and the conservation and enhancement of heritage assets;
- An accurate picture of the green infrastructure of an area – essential in making planning decisions, informing developments and strategies;
- A tool for delivering the natural environmental contribution to identified priorities in the fields of health, economy and quality of life;
- A structured plan for delivering environmental change;
- Attracting funding by demonstrating researched needs and outcomes;
- Attracting inward investment; and
- Assisting priority setting for neighbouring authorities in areas of common interest.

Governance

Warwickshire County Council on behalf of Coventry, Solihull and Warwickshire Association of Planning Officers (CSWAPO) owns this document. The reporting of the strategy's progress will be from the Warwickshire, Coventry and Solihull Green Infrastructure Partnership (WCSGIP) as detailed in Appendix 1. This partnership will be a professional group of the WCS Local Nature Partnership with links to the Local Enterprise Partnerships.

Each of this strategy's structural parts will require updating. Each may require different mechanisms to ensure all partners approve these changes and continue to work towards common goals.

Changes to PART A – STRATEGIC CONTEXT or PART B – ASSESSMENT and RECOMMENDATIONS: Any changes to these parts of the strategy will need to be initiated through the WCSGIP for subsequently approval by CSWAPO. If CSWAPO believe that the changes are of a material nature then this will trigger a full public and stakeholder consultation to be carried out in accordance with the County Council's Statement of Community Involvement. The Warwickshire, Coventry and Solihull Local Nature Partnership will then acknowledge the final changed document.

Changes to PART C – ASSETS & MAPS and ANNEXES: This part will be updated on a regular basis. These changes will not require any approval as they will be in the form of maps that show the location of any Green Infrastructure Assets as defined in Part B. Any queries relating to the evidence detailed on the maps are to be made to the WCSGIP.

PART A – STRATEGIC CONTEXT

What is Green Infrastructure?

'Green Infrastructure is a network of multifunctional greenspace, both new and existing, both rural and urban, which supports the natural and ecological processes and is integral to the health and quality of life of sustainable communities'.³

There are a number of definitions of Green Infrastructure, but they all promote the concept of multi-functionality, a holistic approach and the need to connect together different types of green space. Green Infrastructure considers both public and private assets in both a spatial dimension (for example areas or links/corridors) and also at a conceptual/thematic level (for example sustainable living, as individual elements within sites such as trees and their contribution to shading and cooling, and as part of wildlife corridors). The multifunctional character of GI means that it also incorporates all of the following:

- Cultural as well as landscape and ecological assets/habitats;
- Concepts such as sustainable water and resource management;
- Use of river and canal corridors and floodplains for amenity greenspace and biodiversity;
- Positive benefits to human health and mental wellbeing
- Positive benefits to supporting economic growth; and
- sustainable travel modes including walking and cycling.

At a more holistic level it is seen as part of the life-support systems of an area; providing 'ecosystem services'.

What are the benefits?

The benefits of Green Infrastructure are wide ranging and relate to the principles of sustainable development, including economic growth. One of the key challenges will be to ensure that Green Infrastructure can penetrate and impact upon all planning and land management decision-making processes. By planning, implementing and managing Green Infrastructure at the strategic landscape scale, it is possible to deliver a range of benefits, often in combination:

Environmental Benefits:

- reinforce and enhance landscape character, local distinctiveness and aesthetic qualities;
- safeguard and enhance natural (including soils) and historic assets;
- provide the context for a living, working landscape and associated land management;
- improve environmental quality, e.g. better air and water quality, local adaptation to climate change, noise and light pollution;
- contribute to sustainable drainage and flood mitigation;
- provide an opportunity to protect, recreate and rehabilitate landscapes and habitats damaged or lost by previous development or agricultural change; and

³ English Nature (2003) English Nature Report 526 'Accessible Natural Green Space Standards in Towns and Cities: A Review and Toolkit for Implementation' and National Planning Policy Framework (2012)

PART A – STRATEGIC CONTEXT

- help maintain and enhance biodiversity, reversing habitat fragmentation and increasing biodiversity to restore functioning ecosystems that underpin a rich wildlife resource.

Social Benefits:

- help establish local identity and a sense of place;
- promote a sense of community, providing the essential contact between people and the aesthetic and spiritual qualities of landscapes and nature;
- develop a multi-functional landscape resource that meets local needs and aspirations, and provide opportunities for community involvement;
- improve health and well-being, including increased physical activity such as walking and cycling, and opportunities for quiet contemplation;
- provide community resources for learning and training, creating a focus for social inclusion and environmental education; and
- inspire cohesive partnership working across a range of disciplines and sectors.

Economic Benefits:

- provide an enhanced environmental setting that will assist in attracting business and inward investment, as part of a narrative for growth and retaining people;
- promote employment in the environmental sector;
- enhance the potential for investment in tourism;
- improve and sustain land and property values;
- reduce land management costs;
- reduce sickness absence; and
- Increase business productivity and staff retention.

From a 'Strategic Enhancement Working Agricultural Landscape' perspective our landscapes have been almost entirely created by man. They are dynamic, working landscapes, and can only be sustained by appropriate, positive management which is best delivered by viable agricultural, forestry and rural businesses, especially those that are responsible for the sustainable appearance of the landscape – primarily, land owners and land managers. The rural economy of our landscapes is multifunctional, diverse, and dynamic, and is no less subject to change than urban society. The rural economy of our landscapes requires development to modernize as does any modern business in this country.

Our landscapes and the businesses that produce them need to evolve to be able to adapt to new challenges such as climate change or the current global financial crisis. Not only does the world need to develop alternative mechanisms to produce energy to which the contribution of renewables is vitally important, but in addition, the countryside will provide the mechanism by which our valued flora and fauna species will be able to migrate to new habitats. Land managers will also need to adapt their businesses to cope with new species and diseases that could have a detrimental effect on the output of ecosystem services. In terms of financial markets, businesses need to be resilient to changes in market forces; these challenges need to be acknowledged with the delivery of this strategy

Disciplines

For the purpose of identifying assets this strategy has sub-divided Green Infrastructure into three disciplines:

- Landscape
- Biodiversity
- Accessibility

Typology

The Draft Planning Guidance Green Infrastructure for Biodiversity⁴ (ALGE, 2012) has produced a typology list of Green Infrastructure assets. Table 1 shows these typologies and their associations with the three disciplines covered by this strategy.

Table 1: Typology of Green Infrastructure Assets and their Discipline Association

Typology	Landscape	Biodiversity	Accessibility
Natural and semi-natural rural, peri-urban and urban green spaces, including: woodland and scrub, grassland (for example downland and meadow), heath and moor, wetlands, open and running water, brownfield sites, bare rock habitats (for example cliffs and quarries), coasts, beaches, ancient trees and community forests.	++	++	+
Parks and gardens – urban parks, country and regional parks, formal and private formal gardens, and institutional grounds (for example schools and hospitals).	++	++	++
Amenity green space – informal recreation spaces, play areas, outdoor sport facilities, housing green spaces, domestic gardens, roof gardens, village greens, urban commons, other incidental space, green roofs, hedges and trees, community woodland, civic squares and spaces, and highway trees and verges.	+	+	++
Allotments, city farms, orchards and urban edge farmland.	++	++	++
Cemeteries and churchyards.	++	+	++
Green corridors – rivers and canals including their banks, road and rail corridors, cycling routes and rights of way.	++	++	++
Existing national and local nature reserves and locally designated sites for nature conservations (for example Local Wildlife Sites etc).	++	++	+
Archaeological and historic sites.	++	+	+
Functional green space such as sustainable urban drainage schemes and flood storage areas.	++	++	+
Built structures – bird and bat nesting, roost sites attached to existing and new build developments.	+	++	0

Key

- ++ Strong association
- + Relevant association
- 0 No association

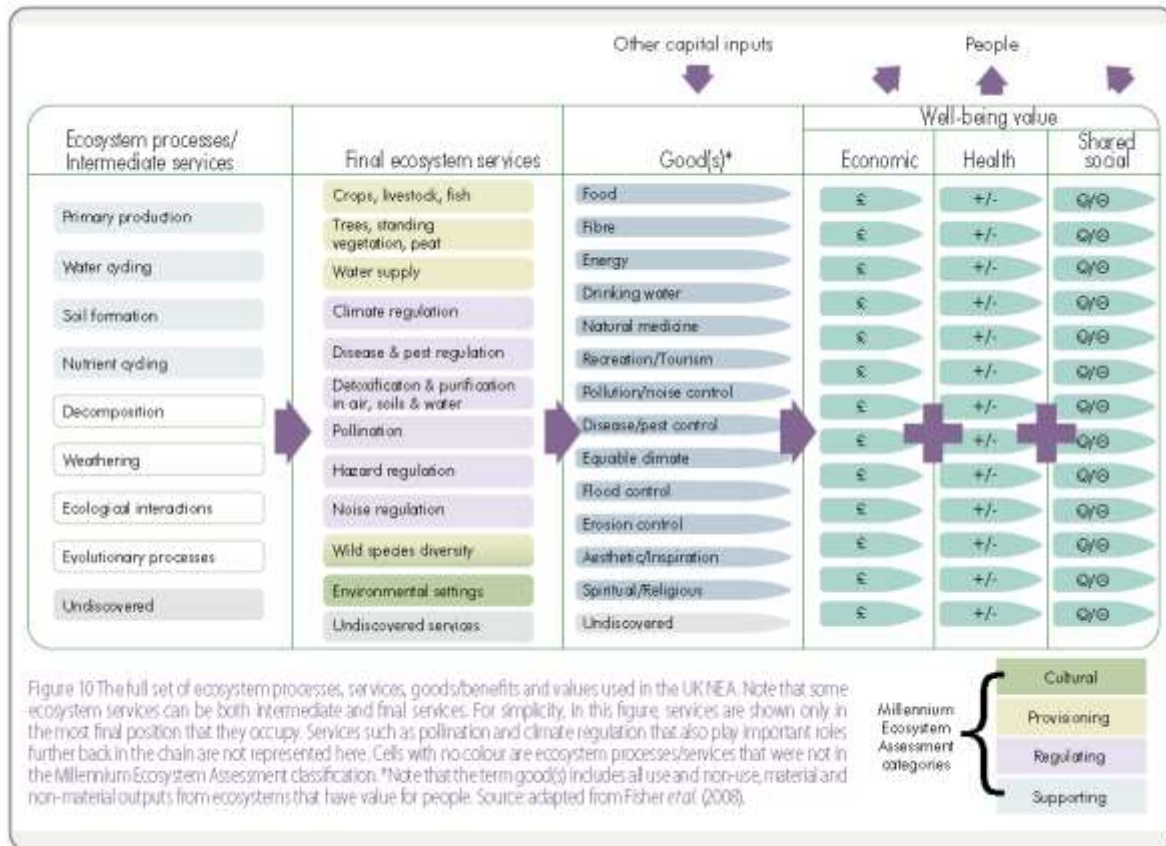
⁴ Draft Planning Guidance – Green Infrastructure for Biodiversity was produced by the Association of Local Government Ecologist, February 2012.

Ecosystems Services

Ecosystem services are the benefits that people obtain from ecosystems. These include: **provisioning services** such as food and water; **regulating services** such as flood and disease control; **cultural services** such as spiritual, recreational, and cultural benefits; and **supporting services** such as nutrient cycling that maintain the conditions for life on earth.

The National Ecosystem Assessment⁵ (UNEP-WCMC, 2011) illustrated various processes, their services, goods/benefits and their values in Figure 2 below. Figure 2 depicts ecosystem services associated with broad habitat types. It attempts to illustrate how habitats play an important role in our environmental, social and economic well-being.

Figure 2: Set of processes, services, good/benefits used in the UK National Ecosystem Assessment⁶

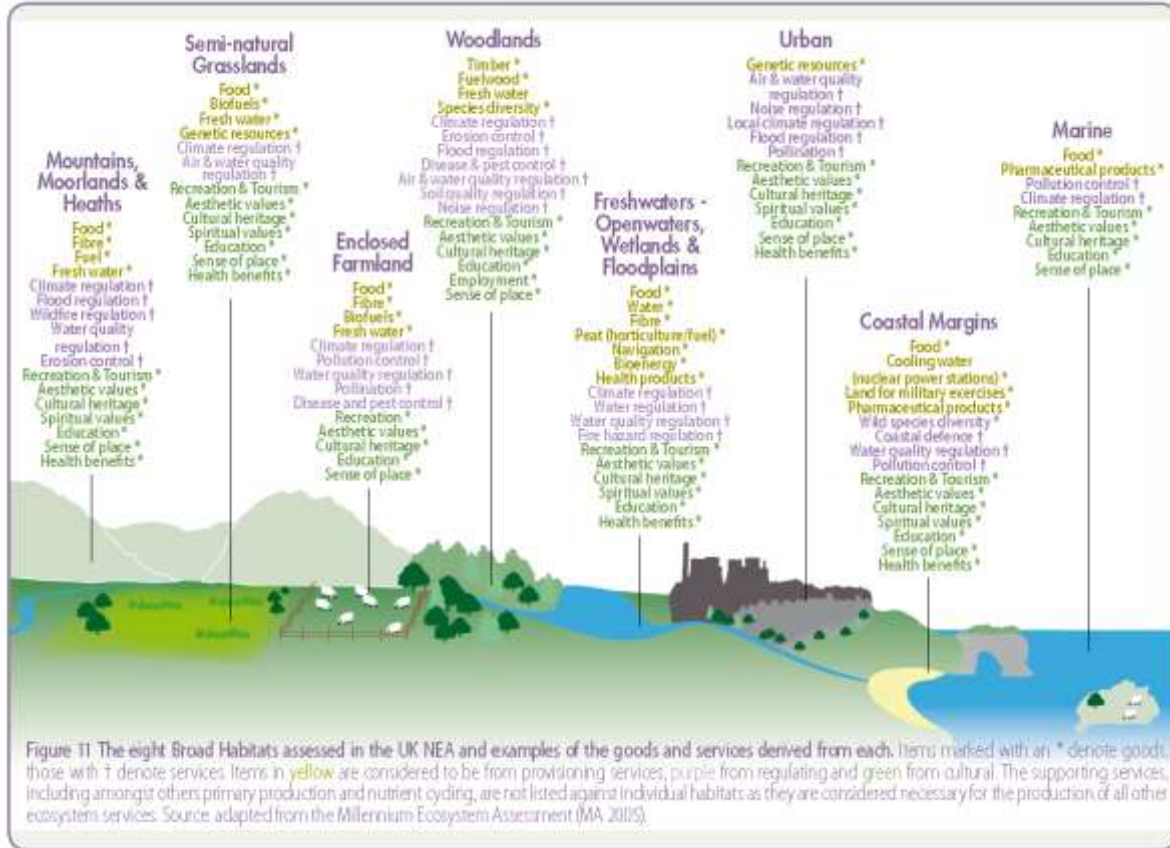


⁵ UK National Ecosystem Assessment Secretariat is based at United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) in Cambridge.

⁶ <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

PART A – STRATEGIC CONTEXT

Figure 3: Eight Broad Habitats assessed in the UK National Ecosystem Assessment



In accordance with the Millennium Ecosystem Service categories, there are five potential functions performed by GI. This categorisation enables the sub-regional GI assets available in different parts of the sub-region to be compared against potential functions to help establish where functional deficiencies might exist.

PART A – STRATEGIC CONTEXT

Table 2: GI Functions and Links to Categories of Ecosystem Services

		Ecosystem Service Categories (Millennium Assessment)			
Functions performed by GI	Examples of relevant GIS datasets	Provisioning	Regulating	Cultural	Supporting
Habitat provision and access to nature	Nature conservation designations, biodiversity records, local biodiversity data, Biodiversity Action Plans	✓	✓	✓	✓
Sustainable resource management and climate change adaptation	Vulnerability mapping, flood risk mapping, UKCIP data, Water Framework Directive datasets		✓	✓	
Productive landscapes	Natural England HLS target areas, allotments, orchards, Agricultural Land Classification	✓	✓	✓	✓
Landscape setting and context including historic environment	Landscape character assessments, historic landscape character, cultural heritage designations, tranquillity and intrusion maps	✓		✓	
Access, recreation and movement	Infrastructure, green space (NPPF assessment of open spaces), ANGSt analysis, local green space provision standards, Public Rights of Way, Cycle Network	✓	✓	✓	✓

✓ Represents an association between the Function performed by GI and the Ecosystem Service Category.

The evaluation of ecosystem services within the sub-region is being evaluated and may form an addition to this strategy in the future.

Landscape

Vision

“The integration of development and modern land management into the landscape, especially in areas with strong landscape character, in order to ensure that the beauty and diversity of the sub-region is conserved for present and future generations to enjoy.”

Background

In its narrowest sense, landscape simply means the appearance of land. However, strategic landscapes and Green Infrastructure are not just concerned with the visual appearance of the landscape, its qualities of shape, form and colour, but, more particularly, with the way in which the various components come together to create different landscapes. Where these components occur in a distinct and consistent pattern, they give character to the landscape.

A strategic and integrated approach to landscape conservation and enhancement would benefit the whole community and repair, to some degree, the damage caused to our landscapes in the recent and not so recent past. Such an approach also has the potential to inspire a community effort in the widest sense, with everyone having a valuable part to play.

As yet, there is no consensus about what a given landscape should look like in the future and to what extent this should draw upon the past. Denton-Thompson (2009) considered that “whilst we accept that we have the power to transform landscapes by intent or as a bi-product of other drivers of change ... we still do not have a clear vision for the multi-functional landscape that future generations will require”(Denton-Thompson, M. (2009), An Emerging Imperative, Landscape, March 2009, p. 8-11). GI has considerable potential to help address this question and Green Infrastructure can contribute to the management, conservation and improvement of strategic and local landscapes. It should be designed and managed as a multi-functional resource, capable of providing the landscape, ecological services and quality of life benefits that are needed to underpin sustainability. Its design and management should also protect and enhance the character and distinctiveness of an area with regards to habitats and landscape types.

International

The European Landscape Convention (ELC) defines Landscape as: *“an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.”*

The European Landscape Convention introduced a Europe-wide concept centring on the quality of landscape protection, management and planning and covering the entire territory, not just outstanding landscapes. Through its ground-breaking approach and its broader scope, it complements the Council of Europe’s and UNESCO’s heritage conventions.

National

In 2005 the Countryside Agency produced a map, dividing England into areas with similar landscape character, which were called National Character Areas (NCAs⁷). This map

⁷ At the time of writing the National Character Areas are being revised by Natural England; published ones being Arden, Severn & Avon Vales, Cotswolds and Mease Sence Lowlands

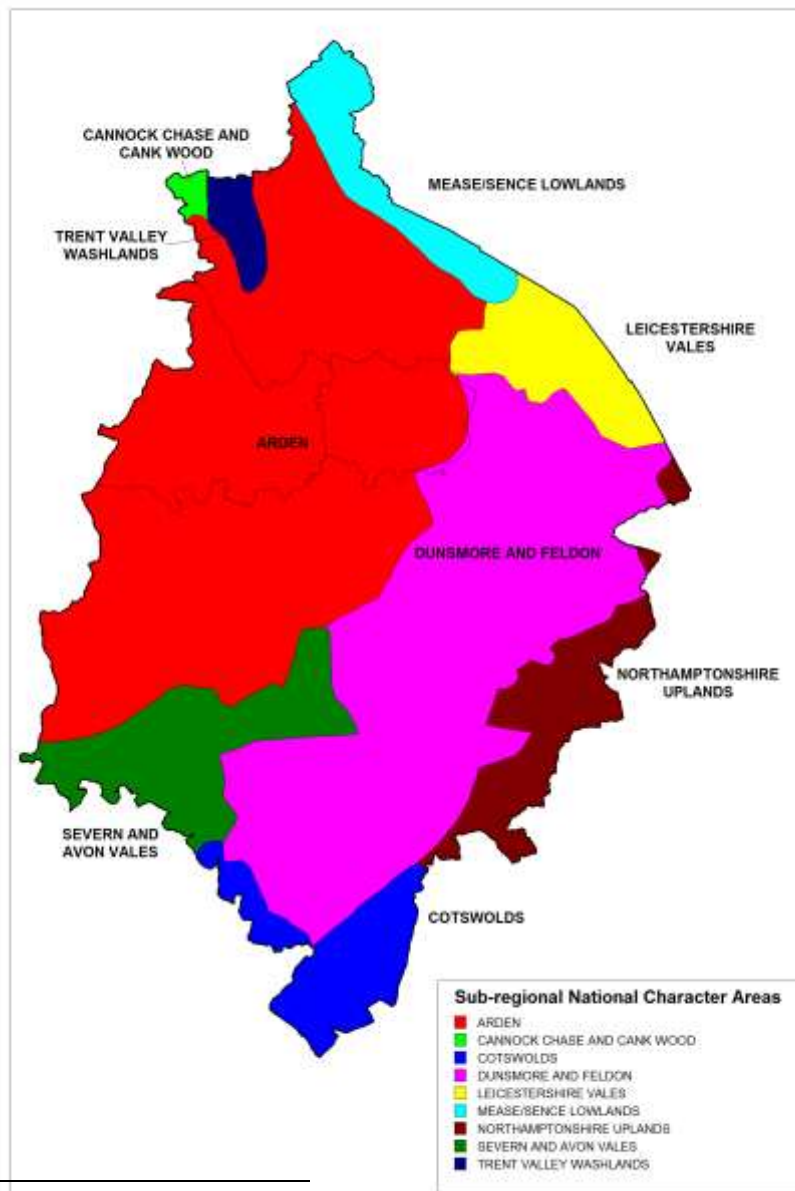
PART A – STRATEGIC CONTEXT

subdivides England into 159 NCAs, providing a picture of the differences in landscape character at the national scale.

Character descriptions for each of the NCAs were produced and published in regional volumes to highlight the influences determining the character of the landscape, such as land cover, buildings and settlements. The descriptions can be found on the Natural England website⁸. Each of the regional groupings breaks down into a longer list of NCAs sitting within each of the regional areas.

The NCAs are now a widely recognised national spatial framework, used for a range of applications. Examples include the targeting of Natural England's Environmental Stewardship scheme and the Countryside Quality Counts project. It is important to remember that the boundaries of the NCAs are not precise and that many of the boundaries should be considered as broad zones of transition. NCAs form part of the data gathered for a Landscape Character Assessment (LCA). LCAs provide more detailed descriptions at a local level within NCAs. Figure 4 below shows the NCAs for the sub-regional area covered by this Strategy.

Figure 4: Natural England - Sub-regional National Character Area Map



⁸ National Character Area – West Midlands

Sub-regional

In 1987, a three year pilot project was initiated by the Countryside Commission (now Natural England) with Warwickshire County Council, “to consider the unique and distinctive landscapes of Warwickshire, and to develop a new methodology for landscape assessment tailored to the needs of lowland England.” This methodology was subsequently described in some detail in the Countryside Commission’s publication: *Assessment and Conservation of Landscape Character – The Warwickshire Landscapes Project Approach* (CCP 332). The project carried out a systematic landscape assessment within the old geographical area of Warwickshire, including the countryside in and around Coventry and Solihull. After extensive consultation with all the major agencies and local authorities having an influence on the countryside, the Warwickshire Landscapes Project published the first of its studies in 1990. This was subsequently revised and republished in 1993, entitled *Warwickshire Landscape Guidelines – Arden*. These guidelines became the accepted model by the Countryside Commission for assessing the character of lowland landscapes within England.

The study represented the first comprehensive and systematic assessment of the historic Arden landscape, extending from Alcester in the south to Atherstone in the north, and including most of Coventry and Solihull. The Guidelines described Arden’s special landscape character, assessed pressures affecting it and put forward management strategies and guidelines to conserve, restore and enhance its appearance. It embraced the interests of landowners, farmers, foresters, planners, river and highway engineers and conservationists, to take in the whole spectrum of countryside activity.

Subsequent Warwickshire Landscapes Guidelines were prepared to cover the landscapes of the Avon Valley, Feldon, Cotswolds, Dunsmore, High Cross Plateau and Mease Lowlands. Coventry City Council also published complementary ‘*Design Guidelines for Development in Coventry’s Ancient Arden*’ in 1995, which is Supplementary Planning Guidance.

The Warwickshire Landscapes Guidelines were originally produced in the early to mid-1990s by Warwickshire County Council and revised in the light of the information produced by the regional mapping of the Midlands. These Guidelines have proved an invaluable planning and land management tool, in helping to ensure that the diversity and beauty of the Warwickshire landscapes are conserved for present and future generations to enjoy. Although the system of landscape assessment is an evolving science, more recent studies⁹ have demonstrated that these Guidelines remain highly relevant today, and particularly in the context of Green Infrastructure.

The diverse landscapes throughout Warwickshire, Coventry and Solihull, as identified in the Warwickshire Landscapes Guidelines, are particularly valued for their scenic qualities, rich wildlife and cultural associations, and are fundamental to the intrinsic character and local distinctiveness of the area. These landscapes are also an essential part of the narrative for delivering environmental, social and economic objectives.

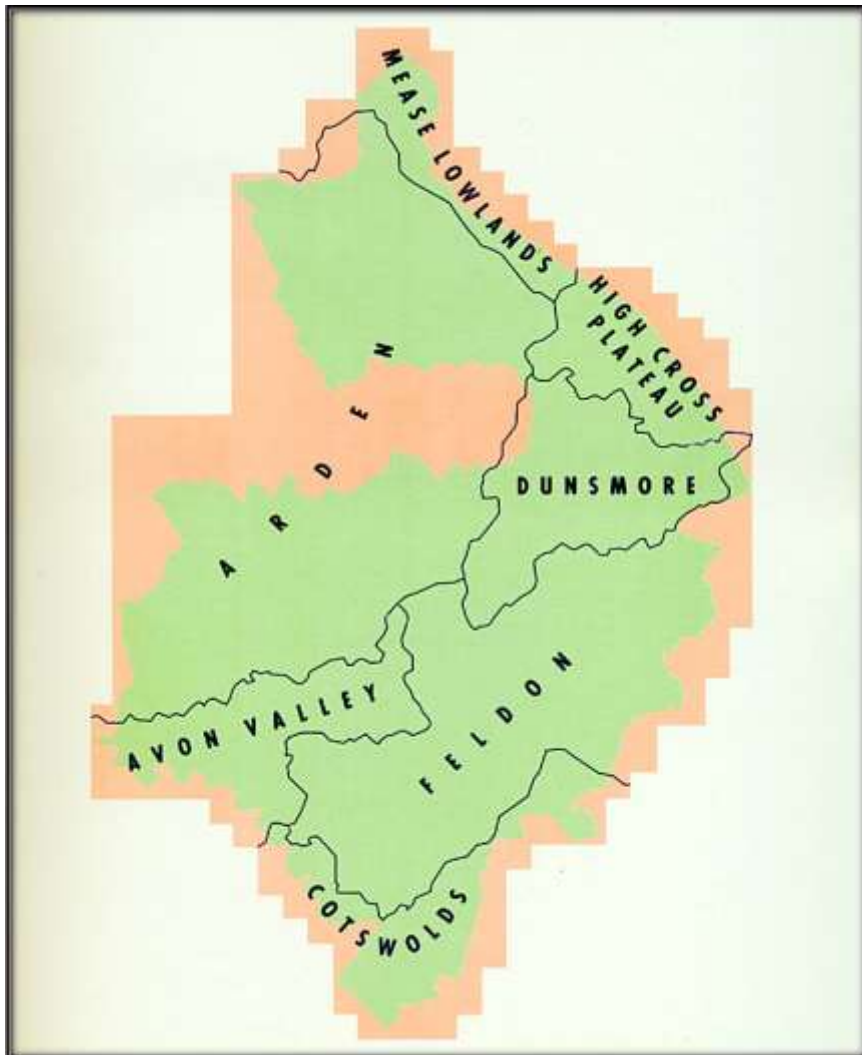
The Warwickshire Landscapes Guidelines divide the county into seven broad regional character areas, outlined below. However, only four of these - Arden, Dunsmore, Avon Valley and Feldon - can truly be described as strategic Warwickshire landscapes. The others show characteristics more typically associated with surrounding counties. This is especially true of the Cotswolds, the Ironstone Wolds and the High Cross Plateau. Nevertheless, they form a distinct upland fringe along the southern and eastern edge of the county. Similarly, Mease Lowlands is another marginal Warwickshire region. A summary of the seven broad regional landscape character areas (shown in Figure 5) are:

⁹ Recent landscape studies include: Stratford-on-Avon District Landscape Sensitivity Assessment, White Consultants (July 2011) and Nuneaton and Bedworth Borough Council Landscape Character Assessment, Entec (September 2004).

PART A – STRATEGIC CONTEXT

1. **Arden** – an historic region of former wood pasture and heath characterised by a dispersed settlement pattern, Ancient Woodlands and mature hedgerow oaks.
2. **Dunsmore** – a well wooded, and in places urbanised, region characterised by low glacial plateaus, sandy soils and remnant heathy vegetation.
3. **Avon Valley** – a prosperous agricultural and market gardening region closely associated with the river Avon and characterised by historic market towns, nucleated villages and orchards.
4. **Feldon** – a lowland agricultural region strongly influenced by Tudor and later parliamentary enclosures and characterised by heavy clay soils, large geometric fields and a nucleated settlement pattern of small rural villages.
5. **Cotswolds** – a sparsely populated region of limestone and ironstone uplands characterised by open wolds, large walled fields and distinctive stone villages.
6. **High Cross Plateau** – a rural agricultural region characterised by open clay wolds and small nucleated villages.
7. **Mease Lowlands** – a rural agricultural region of large country estates and small nucleated villages characterised by tall church spires.

Figure 5: Warwickshire Landscape Guidelines¹⁰



¹⁰ Diagram taken from the Warwickshire Landscape Guidelines series, published by Warwickshire County Council Planning & Transport Department, 1993

PART A – STRATEGIC CONTEXT

At a county level, the Landscape Character Assessments identify and describe the seven generic Landscape Character Types. Detailed descriptions assess the character of each type in terms of its key characteristics. The positive features of key significance, strength of character and condition of each Landscape Character Type are evaluated, leading to identification of a landscape strategy and management guidelines for landscape renewal.

Also at a county level, the Warwickshire Historic Landscape Characterisation Project, better known as HLC¹¹, is part of an ongoing national programme funded by English Heritage that aims to digitally map the present day historic character of the English landscape on a county-by-county basis to inform its management, conservation and understanding at local, county, regional and national levels. HLC looks at the whole landscape from the present day back to the medieval period and characterises areas into a number of standard types such as fields, settlement and designed landscapes. Detailed information about the historic character of each mapped area and its development over time is recorded in a linked database.

¹¹ A report with more information about the project including detailed analysis of the results together with maps and photographs is available online at: <http://www.warwickshire.gov.uk/hlc>

PART A – STRATEGIC CONTEXT

Local

Districts and Borough have produced local landscape studies that refresh and update the Warwickshire Landscape Guidelines. Where these have been produced they are important documents that must be taken into consideration during decision making.



Biodiversity

Vision

A Warwickshire, Coventry and Solihull where wildlife thrives alongside humans within a resilient landscape; where land and buildings are managed positively for biodiversity, and where biodiversity enhancements are embedded into development, contributing to the extension and joining up of existing biodiversity assets.

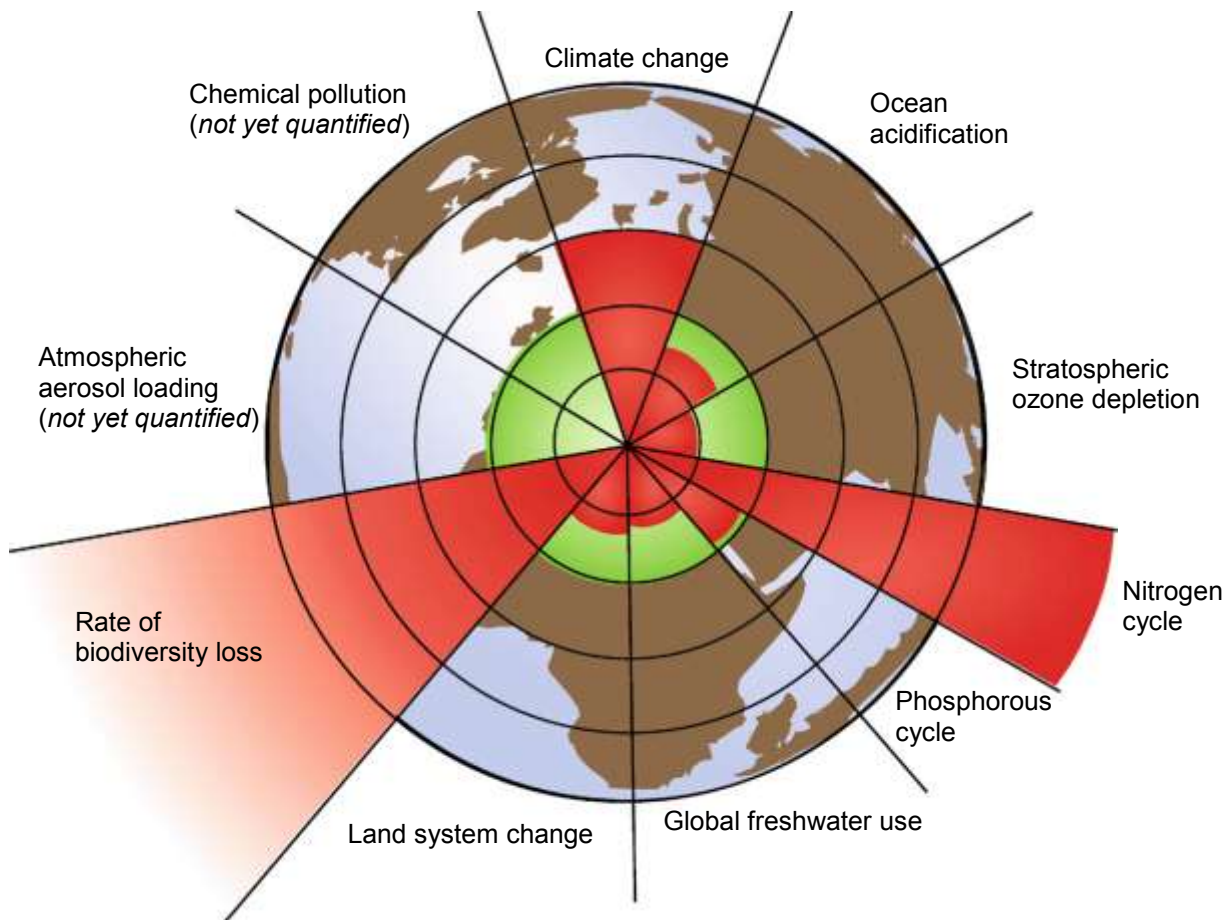
Background

Biodiversity describes the variety of life on Earth, encompassing the whole of the natural world and all living things with which we share the planet.

International

Biodiversity is being unsustainably lost on a global, national and local scale. Figure 6 below shows the nine planetary boundaries that have been proposed which, if respected, would likely ensure that the Earth remains sustainable for human life. It is estimated that three of the boundaries – those for climate change, the nitrogen cycle and biodiversity loss – have already been transgressed while we are approaching transgression of several others¹².

Figure 6: Planetary Boundaries (Rockström, J et al, 2009)



¹² The Anthropocene: From *Global Change to Planetary Stewardship*, Will Steffen, A ° sa Persson, Lisa Deutsch, Jan Zalasiewicz, Mark Williams, Katherine Richardson, Carole Crumley, Paul Crutzen, Carl Folke, Line Gordon, Mario Molina, Veerabhadran Ramanathan, Johan Rockstro'm, Marten Scheffer, Hans Joachim Schellnhuber, Uno Svedin

PART A – STRATEGIC CONTEXT

In layman's terms the unprecedented extinction rates the planet is currently experiencing and the relationship between this and human influences. Figure 6 illustrates the rate of biodiversity loss if left to natural safeguarding processes. Scientifically, it illustrates the estimate of quantitative evolution of control variables for seven planetary boundaries, from preindustrial levels to the present. The inner (green) shaded nonagon represents the safe operating space with proposed boundary levels at its outer contour. The extent of the wedges for each boundary shows the estimate of current position of the control variable. Points show the estimated recent time trajectory (1950–present) of each control variable. For biodiversity loss, the estimated current boundary level of >100 extinctions per million species-years exceeds the space available in the figure¹³.

At the tenth meeting of the Conference of the Parties, held from 18 to 29 October 2010 in Nagoya, Aichi Prefecture, Japan, a revised and updated Strategic Plan was adopted for Biodiversity, including the Aichi Biodiversity Targets¹⁴ for the 2011-2020 period. This new plan will be the overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system. The tenth meeting of the Conference of the Parties agreed to translate this overarching international framework into national biodiversity strategies and action plans within two years.

Additionally, the meeting decided that the fifth national reports, due by 31 March 2014, should focus on the implementation of the 2011-2020 Strategic Plan and progress achieved towards the Aichi Biodiversity Targets. These targets are outlined below.

- Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.
- Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use.
- Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.
- Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services.
- Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building.

The EU biodiversity strategy to 2020 has a vision that “By 2050, European Union biodiversity and the ecosystem services it provides — its natural capital — are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided.” This includes a 2020 headline target of “Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.”

National

Nationally, the 2020 mission for The England Biodiversity Strategy (Defra 2011) is “to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.”

¹³ Planetary Boundaries: Exploring the Safe Operating Space for Humanity, Rockström, J. et al, 2009

¹⁴ Aichi Biodiversity Targets: <http://www.cbd.int/sp/> and <http://www.cbd.int/sp/targets>

PART A – STRATEGIC CONTEXT

The “fragmentation of natural environments is driving continuing threats to biodiversity. The previous global target to reduce significantly the rate of loss of biodiversity by 2010 was not met. In England, species and habitats are still declining. In 2008, for example, 18 out of 42 priority habitats and 120 out of 390 priority species were in decline” (Natural Environment White Paper, Defra, 2012).

The National Ecosystem Assessment recorded a significant loss in many areas of the UK habitats. The findings have been summarised below.

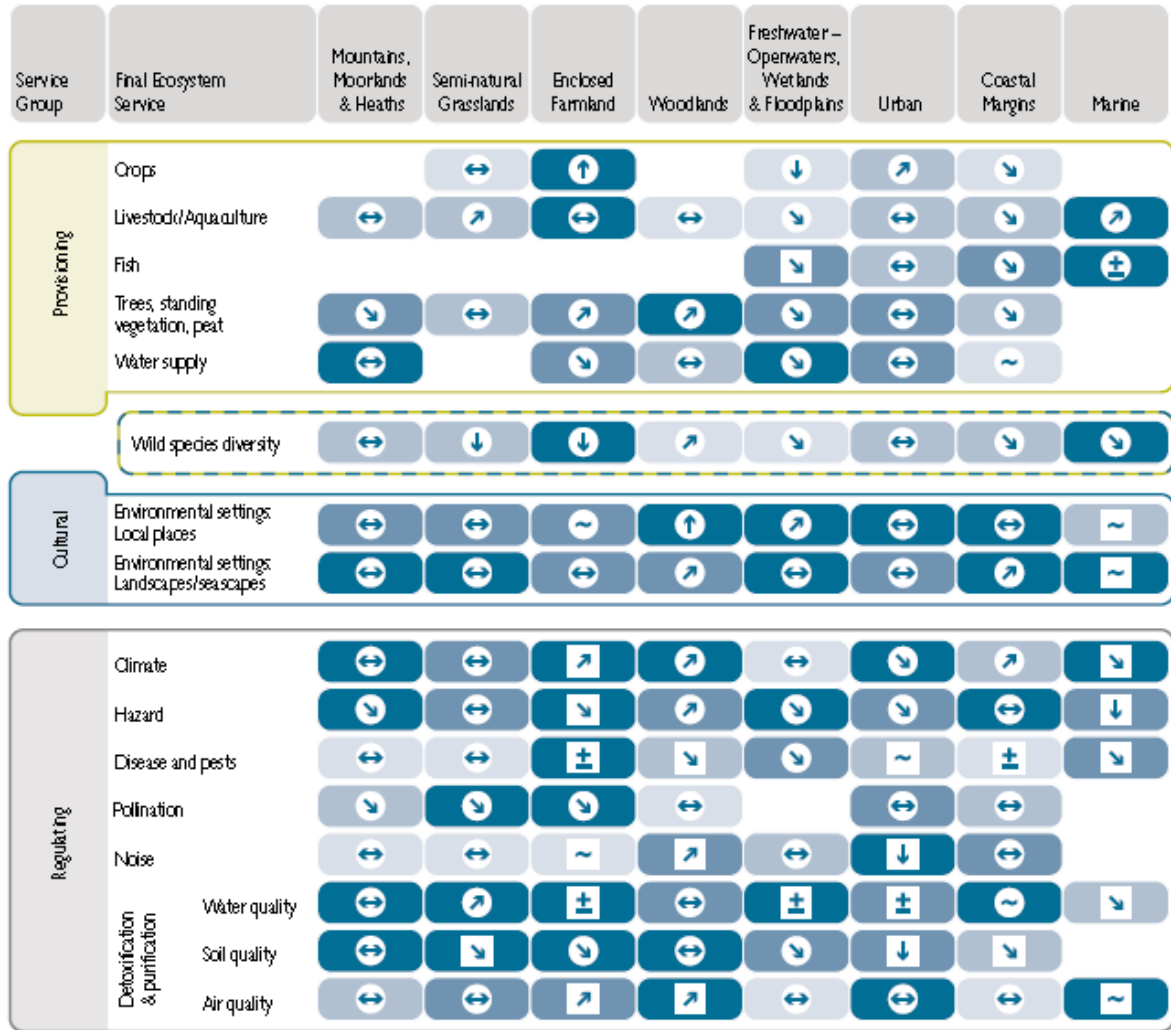
Summary of the status and trends of the UK’s ecosystems and the services that they provide to society (taken from the National Ecosystem Assessment):

- The landscape of the UK has changed markedly during the last 60 years with the expansion of Enclosed Farmlands, Woodlands and Urban areas, and the contraction and fragmentation of Semi-natural Grasslands, upland and lowland Heaths, Freshwaters wetlands and Coastal Margin habitats.
- Changes in the extent and condition of habitats have significantly altered the ecosystem services they provide.
- Within Enclosed Farmland, crop and livestock production has increased significantly, but accompanied by a loss of landscape diversity, an increase in soil erosion and reduced soil quality, and a reduction in farmland birds and pollinators, in particular. However, there have been a number of recent improvements, including a reduction in greenhouse gas emissions, due to both reduced fertiliser application and lower livestock numbers, and improved chemical quality of water.
- The expansion of Woodlands has contributed to both improved climate regulation, through greater carbon sequestration, and air quality, while at the same time increased timber supply. More recent changes in forest policy and woodland management have enhanced general amenity value and wild species diversity.
- Expansion of Urban areas has degraded regulating services for climate, hazards, soil and water quality, and noise.
- Fragmentation and deterioration of wetlands, and in particular the separation of rivers from their floodplains, has compromised hazard (flood) regulation and many other ecosystem services.
- Across all habitats apparent reductions in soil quality and continuing declines in the diversity of many wild species, including the variety and abundance of pollinators, is of particular concern.

The impacts of the above trends on the Ecosystem Services and their associated habitats at the UK-wide scale since 1990 is illustrated in Figure 7. Full details of the methodology involved in quantifying the impacts can be found in the National Ecosystem Assessment technical report¹⁵.

¹⁵ <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

Figure 7: National Ecosystem Services trends since 1990



Relative importance of UK NEA Broad Habitats in delivering ecosystem services and overall direction of change in service flow since 1990. This figure is based on information synthesized from the habitat and ecosystem service chapters of the UK NEA Technical Report (Chapters 5–16), as well as expert opinion. This figure represents a UK-wide overview and will vary nationally, regionally and locally. It will therefore also inevitably include a level of uncertainty; full details can be found in the Technical Report. Arrows in circles represent where there is high evidence for or confidence in the direction of service flow amongst experts; arrows in squares represent where there is less evidence for or confidence in the direction of service flow. Blank cells represent services that are not applicable to a particular Broad Habitat.

Importance of Broad Habitat for delivering the ecosystem service

- High
- Medium – High
- Medium – Low
- Low

Direction of change in the flow of the service

- ↑ Improving
- ↗ Some improvement
- ↔ No net change
- ± Improvement and/or deterioration in different locations
- ↘ Some deterioration
- ↓ Deterioration
- ~ Unknown

Sub-regional

In terms of species and habitats at the local level, there have been winners and losers. The 2010 Local Biodiversity Action Plan (LBAP) progress is illustrated in Table 3. This is based on the results of reporting on targets and actions by the LBAP partnership between 2008 and 2010 (Action Plans are reported on in a three year cycle and the ‘Year’ column relates to the last reporting period for that plan).

PART A – STRATEGIC CONTEXT

Table 3: Local Biodiversity Action Plan Report 2007 - 2010

Species Action Plans	Progress 2007	Progress 2008-2010	Habitat Action Plans	Progress 2007	Progress 2008-2010
Adder	↓	↓	Allotments	↔	↔
Argent & Sable Moth	↔	↑	Canals	↑	↑
Barn Owl	↑	↑	Churchyards & Cemeteries	↑	↔
Bats	↔	↔	Disused Industrial & Railway Land	↓	↑
Bittern	↔	↔	Fen & Swamp	↔	↑
Black Poplar	↑	↑	Field Margins	↑	↑
Bloody-nosed Beetle	↑	↓	Gardens	↔	↑
Chalk Carpet Moth	↑	↑	Hedgerows	↔	↔
Common Dormouse	↓↓	↔	Lowland Acid Grassland	↔	↑
Cuckoo Bee	↑	↑	Lowland Calcareous Grassland	↑	↑
Dingy Skipper Butterfly	↑	↑	Lowland Heathland	↔	↔
Dotted Bee-fly	↑	↑	Lowland Neutral Grassland	↑	↑
Farmland Birds	↔	↔	Parks & Public Open Spaces	↑	↑
Great Crested Newt	slight ↓	slight ↓	Ponds, Lakes & Reservoirs	↔	slight ↑
Lapwing	↓	↑	Quarries & Gravel Pits	↑	↑
Leaf-rolling Weevil	↑	↔	Reedbeds	↑	↑
Otter	↑	↑	Rivers & Streams	↓	↑
Rare Bumblebees	↑	↑	Roadside Verges	↓	↔
Red Wood Ant	slight ↑	↑	School Grounds	↓	↔
Scarce Arable Plants	↑	↑	Scrub & Carr	↓	↓
Small Blue Butterfly	↑	↑	The Built Environment	↔	↓
Snipe	↓	slight ↑	Traditional Orchards	↑	↔
Song Thrush	↑	↑	Woodlands	↑	↑
Water Vole	↓	↓	Wood-pasture, Parkland & Veteran Trees	↔	slight ↑
White-dawed Crayfish	↓	↔			
Wood White Butterfly	↑	↑			

A green, upward arrow indicates that positive progress has been made towards achieving the targets set out within the Local Biodiversity Action Plan for that species or habitat. Two horizontal orange arrows indicate that no progress has been made, but there has been no loss to that species/habitat either. A downward red arrow indicates that the species/habitat has suffered a loss, therefore there has been negative progress towards achieving the LBAP targets.

Warwickshire, Coventry and Solihull

Table 8 below illustrates the distribution of habitats within the sub-region, suggesting that the county is primarily composed of arable land and improved grassland, which dominate the county at 49% and 29% of the county's area respectively. This is followed by woodland at 8%, of which broadleaved comprises 6%, and then neutral grassland at 4%. It is interesting to note that amenity grassland covers 4% of Warwickshire, although this does include golf courses. The low percentage of woodland habitat cover within the county is of particular concern, as Warwickshire is well known for its Forest of Arden landscape.

PART A – STRATEGIC CONTEXT

Table 8 – Percentage of each Phase 1 Habitat within the sub-region¹⁶

Habitat Type	%age	Habitat Type	%age
Broad-leaved semi-natural woodland	3.12	Continuous bracken	0.04
Broad-leaved semi-natural plantation	2.41	Tall ruderal	0.47
Coniferous semi-natural woodland	0.00	Other tall herb and fern - non ruderal	0.00
Coniferous plantation	0.71	Dry heath/acid grassland mosaic	0.00
Mixed semi-natural woodland	0.03	Sphagnum bog	0.00
Mixed plantation	0.76	Acid/neutral flush	0.00
Dense/continuous scrub	0.83	Basin mire	0.00
Scattered scrub	0.24	Swamp	0.07
Parkland/scattered broad-leaved trees	0.17	Inundation vegetation	0.00
Parkland/scattered coniferous trees	0.01	Standing water	1.01
Recently felled woodland	0.01	Running water	0.39
Orchard	0.08	Quarry	0.29
Unimproved acid grassland	0.00	Spoil	0.01
Semi-improved acid grassland	0.04	Refuse-tip	0.07
Unimproved neutral grassland	0.10	Arable	49.00
Semi-improved neutral grassland	3.58	Allotments	0.18
Unimproved calcareous grassland	0.02	Arable field margins	0.67
Semi-improved calcareous grassland	0.04	Amenity grassland	4.23
Improved grassland	28.66	Ephemeral/short perennial	0.07
Marsh/marshy grassland	0.22	Introduced shrub	0.01
Poor semi-improved grassland	2.12	Bare ground	0.32

Local

North Warwickshire

North Warwickshire has just less than half of the sub-region's acid grassland and dry heath and acid grassland mosaic habitat types plus significant areas of marsh/marshy grassland and inundation grassland, both of which are vulnerable habitats. These are probably associated with the River Tame and Anker corridors, which correspondingly may be the reason for North Warwickshire having a large proportion of the sub-region's open water habitat resulting from mineral extraction.

Nuneaton & Bedworth Borough

Nuneaton & Bedworth Borough has an underlying geological hard rock lending itself to deep quarrying activities. These habitats, which include rock exposure, short-ephemeral vegetation and scrub, can be particularly important for invertebrates such as butterflies and insects.

Rugby Borough

Rugby Borough has no significantly high percentage of any of the sub-region's habitat types. However, it does have a range of agricultural habitats, which include a significant amount of the sub-region's arable land and improved grassland. It also contains relatively high proportions of neutral grassland and poor semi-improved grassland.

Warwick District

Warwick District contains a relatively large proportion of the sub-region's woodland. This is consistent with the Forest of Arden Landscape Character, which is associated with the west of Warwickshire. However, the Habitat Biodiversity Audit (HBA) does not report on the management of this woodland, therefore the quality of this habitat is unknown. Aside from woodland, this area has a similar agricultural landscape to Rugby.

¹⁶ *State of the Environment* report, Habitat Biodiversity Audit, 2012 (in preparation)

PART A – STRATEGIC CONTEXT

Stratford District

Stratford District has almost all of the sub-region's calcareous grassland plus a large proportion of the sub-region's neutral grassland. Stratford also holds the majority of the sub-region's traditional orchard habitat, which is a valuable and vulnerable habitat.

Coventry

Coventry is mainly a built environment habitat. The remaining primary habitats are mostly composed of amenity grassland land and improved grassland, which dominate the city. This is followed by arable land, then neutral grassland, then broadleaved. The district also contains a moderate amount of scrub habitat, which can be particularly important for a range of wildlife including birds and invertebrates such as butterflies and insects. Woodland habitats appear to be increasing through scrub or planting schemes such as community woodlands, allotments and parkland. Species-rich grassland of acid, neutral and marshy is declining. These are important habitat types for wildlife with both local and national targets to reduce this loss. Improved grassland is also declining. The only grassland type increasing is poor semi-improved. This habitat type is often the result of either unmanaged species-rich and improved grassland, potentially inferring that less grassland management is being carried out within Coventry than in other areas.

Solihull

Solihull district is also fairly urbanised, but has a greater proportion of rural habitats than Coventry. Arable, amenity grassland and improved grassland are the dominant habitats, followed by semi-natural neutral grassland. The district also has a relatively large area of broad-leaved woodland for its size, which correlates with its position within the Arden Landscape Character Area.

Accessibility

Vision

An accessible Warwickshire, Coventry and Solihull landscape where residents, workers and visitors can responsibly enjoy the natural world, be it in an urban or rural setting.

Background

The Coventry, Solihull and Warwickshire area contains attractive and distinctive landscapes with several significant visitor attractions and areas of historic importance, including Shakespeare's Stratford-upon-Avon, Warwick and Kenilworth Castles and the Cotswolds Area of Outstanding Natural Beauty. This landscape is accessible to both people who live in the area as well as those visiting from outside through a number of ways:

- Paths – e.g. Public Rights of Way and canal towpaths;
- Estates – e.g. Country Parks and publicly accessible estates; and
- Open Spaces – e.g. Parks and Gardens, village and urban greens and accessible Nature Reserves.

Visitors to the sub-region are primarily drawn by the appeal of our history and heritage. However, access to Green Infrastructure, including our network of canals, country parks, cycling and walking trails etc., broadens the visitor offer to encourage longer stays and more opportunities to spread the economic benefits of tourism to more communities. Our Green Infrastructure and connections with our natural landscapes also help to reinforce what is special and distinctive about the place.

At a strategic level, the visitor economy has been recognised by the Government as one of a number of priority sectors able to bring about a step change in our economy and employment prospects. The visitor economy has a number of clear strengths, assets and opportunities that can be targeted and better utilised to help stimulate and strengthen future economic growth. Tourism provides jobs, brings new facilities to communities and contributes to positive perceptions of our area as a great place to visit, work, study, live and invest.

In supporting the growth agenda, it is essential that we continue to conserve the sub-region's distinct sense of place in the form of its landscape heritage, historic environment and Green Infrastructure, and the opportunities that these provide to grow tourism locally.

As well as tourism, Green Infrastructure improves accessibility to greenspace for local residents, and helps to enhance quality of life within the sub-region and make this an attractive place to live.

International

There are sites within Warwickshire Coventry and Solihull that have international appeal as visitor destinations. No direct references to these locations have been found within European or wider strategies. However, this strategy recognises that Stratford-on-Avon, with its association to Shakespeare, and Warwick Castle are both sufficiently significant to be considered as international sites.

National

The Government has produced a Tourism Policy Summary of Approach¹⁷, which seeks to outline in a single document an approach to Tourism on behalf of Government departments across Whitehall. It has a focus on domestic and inbound policies and activities. This builds on the Government's position to prioritise Tourism as a growth industry in this Parliament. Relevant Goals and Policies for Green Infrastructure include:

- Increase the proportion of UK residents who holiday in the UK to match those who holiday abroad each year.
- Improve skills and productivity to make the UK's visitor economy one of the most competitive in the world, while reducing red tape so that UK tourism businesses can flourish.

There are a number of more specific goals relating to domestic tourism and inbound tourism. These can be found by following the link in footnote 15 below.

The Strategic Framework for Tourism in England 2010 - 2020¹⁸ (British Tourist Authority (trading as VisitEngland) June 2011) has a vision 'To maximise tourism's contribution to the economy, employment and quality of life in England'. It aims to deliver these through associated Action Plans¹⁹ produced after extensive consultation and collaboration with England's tourism industry. It sets out the ways in which the industry can work together to achieve a 5% growth in value, year-on-year, over the next decade. This will lead to an additional £50bn in expenditure and the creation of 225,000 jobs. The Strategic Framework aims to achieve four interdependent objectives, which are designed to address the opportunities and challenges for England's visitor economy;

- Objective 01 - To increase England's share of global visitor markets.
- Objective 02 - To offer visitors compelling destinations of distinction.
- Objective 03 - To champion a successful, thriving tourism industry.
- Objective 04 - To facilitate greater engagement between the visitor and the experience.

There are also a number of relevant national documents that emphasise the importance of accessibility to greenspace for local residents as well as for visitors to the area:

The National Planning Policy Framework states that Planning policies should protect and enhance public rights of way and access. Local authorities should seek opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails.

The Countryside and Rights of Way Act 2000 (the CROW Act), through section 60, places a duty on highway authorities to publish a plan which considers local rights of way (defined as including cycletracks but excluding footways).

Natural England have produced '*Nature Nearby*' *Accessible Natural Greenspace Guidance*²⁰ aimed at parks and greenspace practitioners and their partners. The guidance proposes the adoption of three key standards by greenspace professionals that will deliver high quality and inspiring visitor experiences in local green spaces, to connect people with the natural environment. The standards include the Accessible Natural Greenspace Standard (ANGSt).

¹⁷ http://www.culture.gov.uk/images/publications/Government2_Tourism_Policy_2011.pdf

¹⁸ http://www.visitengland.org/Images/Strategic%20Framework%20main%20document_tcm30-33240.pdf

¹⁹ <http://www.visitengland.org/strategicframework/actionplans/Index.aspx>

²⁰ <http://publications.naturalengland.org.uk/publication/40004?category=47004>

PART A – STRATEGIC CONTEXT

ANGSt was developed in the early 1990s and is based on research into minimum distances people would travel to the natural environment. ANGSt recommends that everyone, wherever they live, should have accessible natural greenspace:

- of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home;
- at least one accessible 20 hectare site within two kilometres of home;
- at least one accessible 100 hectare site within five kilometres of home; and
- at least one accessible 500 hectare site within ten kilometres of home; plus
- a minimum of one hectare of statutory Local Nature Reserves per thousand population.

ANGSt can act as a powerful tool in assessing current levels of accessible natural greenspace, and planning for better provision, helping to achieve the Green Infrastructure Strategy's aims of improving access to and connectivity with greenspaces.

The Woodlands Trust believe that in terms of provision of natural greenspace, woods should be seen as the optimal habitat and that a separate standard for woodland, which should complement the Accessible Natural Greenspace Standard (ANGSt) (Woodland Trust, Space for People, 2010).

The newly formed Canal and Rivers Trust has also produced its strategic priorities in the 2012 Shaping Our Future document²¹. One of the key priorities is:

- Ensuring our canals and rivers are open, accessible and safe.

Green Infrastructure planning also has strong links with the national health agenda, as ready access to greenspaces is proven to improve people's mental well-being²². The Local Government's Information Unit's 2012 'Measuring National Well-being – Where We Live'²³ study shows that access to greenspace was identified as having a significant bearing on well-being, with over 9 in 10 adults believing it to be important to have local green spaces nearby.

This link is addressed by the Town and Country Planning Association in their 2012 'Reuniting health with planning: healthier homes, healthier communities' document²⁴. This document aims to support the aims held within the 2012 National Planning Policy Framework²⁵ regarding supporting healthy communities through the planning process.

Sub-regional

The 'Visitor Economy Strategy (2005 -2009)²⁶ for Warwickshire and Coventry has the following Green Infrastructure related Strategic Priorities:

- **Destination Health Check**
 - Work with Heart of England Tourism to establish the procedure for destination health checks, and then pilot these in the sub-region starting with Stratford, which is an international cultural icon.
- **Impressive Infrastructure**

²¹ <http://canalrivertrust.org.uk/media/library/1442.pdf>

²² http://www.mind.org.uk/assets/0000/2138/ecotherapy_report.pdf

²³ <http://www.ons.gov.uk/ons/rel/wellbeing/measuring-national-well-being/where-we-live/art-where-we-live.html>

²⁴ http://www.tcpa.org.uk/data/files/TCPA_FINAL_Reuniting-health-planning.pdf

²⁵ <http://www.communities.gov.uk/planningandbuilding/planningsystem/planningpolicy/planningpolicyframework/>

²⁶ This strategy is currently being updated

PART A – STRATEGIC CONTEXT

- Develop Stratford's Tourist Information Centre (TIC) to be a regional flagship, fulfilling its role as a gateway to the region.
- Take a partnership approach to the development of a Destination Management System (DMS) for the sub-region.
- **Effective Delivery**
 - Support the Visitor Economy Forum to develop a strategic approach to tourism infrastructure.
 - Investigate how the whole sub-region can engage with Destination Management Plans.
 - Commission reliable and consistent research and data across the sub-region to monitor the health of the visitor economy and effectiveness of the strategy.

There are also a number of national documents which relate to the rights of way and recreational highway network. These include:

- Rights of Way Improvement Plans (ROWIP) - Statutory Guidance to Local Highway Authorities in England (Defra Nov 2002);
- Guidance on Local Transport Plans (LTPs) and the Natural Environment (Natural England 2009);
- LTP and ROWIP Integration (Natural England 2009);
- Guidance on LTPs (DfT 2009);
- Handbook for Local Access Forum members (published March 2008)²⁷ Guidance issued by Natural England;
- The Local Access Forums (England) Regulations 2007²⁸ - these are the regulations which set out the framework within which the Forum must operate; and
- Guidance on Local Access Forums in England (published February 2007)²⁹ - this is the guidance issued to authorities by DEFRA.

All of the above documents are to be delivered at a local level (see below). However, in 2002 Warwickshire, Solihull and Coventry authorities agreed to set up a joint Local Access Forum³⁰, or 'LAF', in response to a new duty introduced by the Countryside and Rights of Way Act 2000. The membership of the LAF includes a Councillor from each of the three authorities (upper tier or unitary), as well as individuals representing various interests from across the three authority areas.

Local

Warwickshire County Council has produced a Rights of Way and Recreational Highway Strategy 2011-2026 that covers:

- all rights of way;
- cycle routes where they are part of the rights of way network; and
- unclassified county roads, which are managed in a similar way to the rights of way network and which have mainly recreational use.

²⁷

[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/60DB5300C4A206D08025719900579895/\\$file/LAFhandBook_tcm2-32136.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/60DB5300C4A206D08025719900579895/$file/LAFhandBook_tcm2-32136.pdf)

²⁸

[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/60DB5300C4A206D08025719900579895/\\$file/2007+regulations.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/60DB5300C4A206D08025719900579895/$file/2007+regulations.pdf)

²⁹ [http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/60DB5300C4A206D08025719900579895/\\$file/2007+laf-guidance.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/60DB5300C4A206D08025719900579895/$file/2007+laf-guidance.pdf)

³⁰

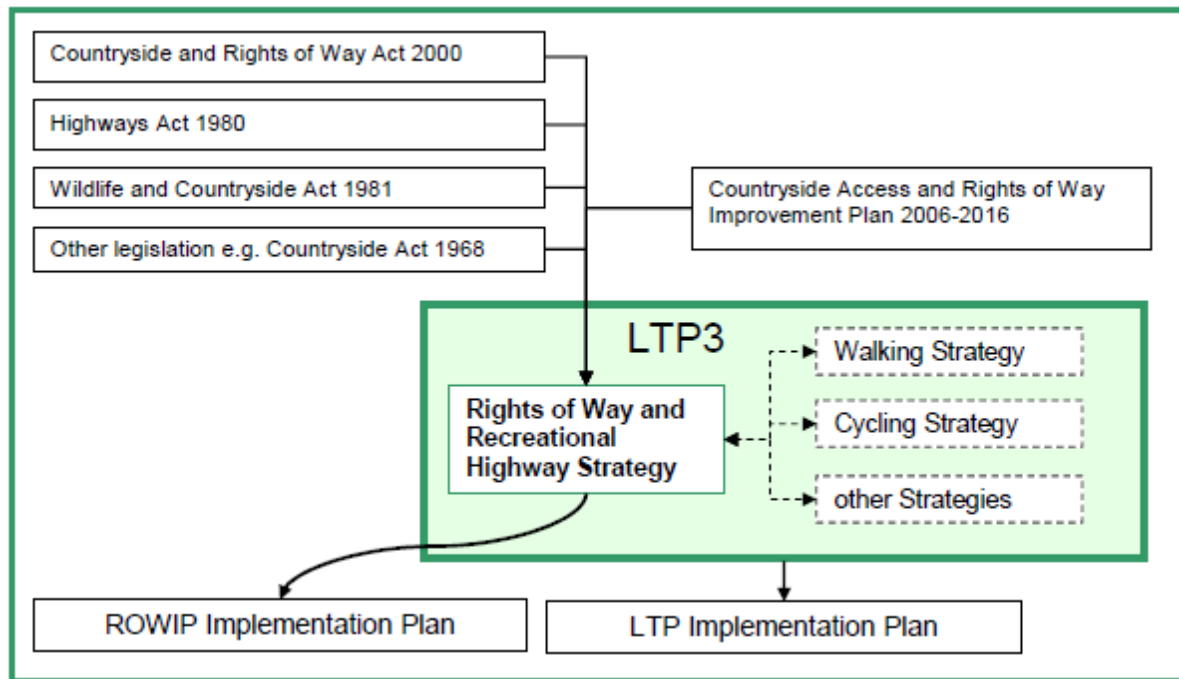
<http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Pages%20by%20Department/60DB5300C4A206D08025719900579895>

PART A – STRATEGIC CONTEXT

Improvement of rights of way and highways enhances accessibility to greenspace both for residents and for visitors to the sub-region. These improvements should be flexible to mitigate any significant conflict there might be with the modern land use (Natural England Stakeholder Working - 'Stepping Forward' in 2010).

The Natural England Good Practice Note on Rights of Way Improvement Plans (ROWIP) and Local Transport Plans (LTP) integration states that 'The new Local Transport Plan guidance recognises the role of active travel solutions such as walking and cycling. There is now an opportunity for local authorities to take a broader, more holistic approach to transport and address the rights of way network as an integral part of urban and rural transport systems and in contributing to the achievement of all the national transport goals'. It also states that 'Integration gives local authorities an advantage in delivering positive benefits for people and the natural environment – a more active lifestyle in a greener, healthier, low carbon, quieter and safer environment'. This has been integrated into the West Midlands Local Transport Plan (LTP) and promoted through the Centro's draft integrated transport prospectus³¹ and Green Transport Charter (Centro, 2010). Warwickshire County Council has integrated this into their Local Transport Plan, which is shown in Figure 9 below.

Figure 9: Integration between WCC's Rights of Way Improvement Plan and Local Transport Plan 3



The Rights of Way and Recreational Highway Strategy vision is "To ensure that the public gain maximum use and enjoyment of the network, whilst protecting and improving it for future generations of residents and visitors'. The overall objectives in implementing the Strategy are to achieve:

- A well-managed and maintained asset;
- A sustainable network which meets the needs of modern users;
- A network which is accessible to, and used by, a wide variety of people from different backgrounds and with differing abilities;

³¹ Additional Centro document links are <http://www.centro.org.uk/LTP/LTP.aspx> and <http://www.centro.org.uk/corporateinformation/publications.aspx> Case studies can be found at <http://www.centro.org.uk/LTP/LSTF.aspx>.

PART A – STRATEGIC CONTEXT

- Responsible users who respect the countryside as a working environment and as an investment for the future; and
- A better rights of way network for all.

This covers issues and challenges including:

- **Accessibility** – increasing access to the countryside for the whole community;
- **Education** - Enabling people to learn about the opportunities that the countryside and rights of way network offer can act to make the countryside more accessible to all, as well as reducing the potential for conflict;
- **Health, wellbeing and social benefits** - It has been well documented that walking, cycling and other forms of exercise such as running and horseriding can be important contributors to people's ongoing health and fitness. A number of 'walking for health' groups have been set up around Warwickshire, but these groups operate independently of WCC;
- **Path networks and connections** - Modern users are very different and whilst the network has a role in transport links for walkers and cyclists between settlements and destinations, the majority of the people use the network for recreation;
- **Paths on the ground** - The majority of the paths are maintainable at public expense and so the responsibility for the maintenance of the path network rests mainly with the Highway Authority, although the landowner or land manager does bear some responsibility;
- **Records, changes and mapping** - The survival and protection of rights of way though the 20th Century is largely down to the requirement for each highway authority to create and maintain a Definitive Map and Statement. The document gives legal protection to those routes which are included and must be constantly reviewed;
- **Strategic development and promotion** - As recreational pastimes, walking, cycling and horseriding have a broad appeal and many people travel outside their immediate area to participate. There are several regionally and nationally important long distance promoted routes which pass through Warwickshire, such as the Heart of England Way and the Monarch's Way, as well as many smaller locally devised and promoted trails. These have been developed and are promoted mainly by voluntary organisations and this is largely outside the control of WCC; and
- **Tourism and leisure** - Warwickshire is well known as a tourist destination, with several honeypot sites. The challenge is to expand that tourist destination to include the countryside so as to bring additional visitors to the County and to extend the stay of current visitors. It is recognised that visitors to the rights of way network do add value to the rural economy.

Further details of the strategic interventions to safeguard and maintain the green infrastructure outlined above are contained in each of the District/Borough and City Council's Green Infrastructure Plans and other relevant local plans, such as the Solihull and Metropolitan Borough Council (2009) Walking Strategy³² and Cycling Strategy³³.

Local Authority Greenspace audits will also play an important role in making achieving this objective.

³² http://www.solihull.gov.uk/Attachments/Appendix_D_-_Walking_Strategy.pdf

³³ http://www.solihull.gov.uk/Attachments/Appendix_C_-_Cycling_Strategy.pdf

PART B – ASSESSMENTS and RECOMMENDATIONS

Landscape

The original landscape guidelines for Warwickshire pioneered the development of an objective and systematic method for mapping the physical and cultural character³⁴ of landscapes in England. In the light of these guidelines, considerable resources have been invested in helping to maintain and restore these Warwickshire landscapes at a local level. For example, since 1980 there has been a Countryside Project within Coventry, originally established as a partnership between Coventry City Council and the Countryside Commission, helping to conserve and enhance the character and quality of Ancient Arden as a working landscape, and as a bridge to the countryside and a gateway to the city. A number of initiatives have been undertaken, often in partnership with local landowners, to maintain the distinctive features of this characteristically ancient landscape and, in particular, to maintain the sharp distinction between urban and rural in the Green Belt.

More recently, between 2006 and 2008 further studies³⁵ have been commissioned within Warwickshire and Coventry to evaluate the extent to which the Warwickshire Landscape Guidelines have been implemented. These studies have been used to:

- review the character and condition of the landscapes;
- review recent management and conservation activity;
- identify forces for change and management priorities; and
- where necessary, recommend modifications to the boundaries of the Landscape Character Areas.

These landscape character assessments will be used to help inform the provision and management of future Green Infrastructure networks. They will also be supported by National Character Area assessments and environmental opportunities promoted by Natural England, and the pioneering work being developed by Warwickshire County Council on Biodiversity Offsetting and Connectivity/Opportunity Mapping, in partnership with the University of York.

The Landscape Description Unit (LDU) method emerged from the Warwickshire Landscapes Project; a detailed study which combined a review and analysis of existing written and mapped information, together with field surveys, to describe the character and special features of the different landscapes within the county. The LDU now forms the spatial framework for a substantial area of landscape character mapping across the country by Natural England, including all the counties in the West Midlands. A map of LDUs has already been produced for Warwickshire and in some local studies, including the Ancient Arden landscape within Coventry, these have been sub-divided into smaller (c 1:10,000 scale) Land Cover Parcels (LCPs). Land Cover Parcels are derived by sub-dividing each LDU based on differences in land cover and historic pattern. The land cover analysis identifies features within the landscape, such as areas of parkland, larger woodlands, and patches of disturbed land, smaller urban areas and other non-agricultural land. The historical analysis identifies parish units and areas of farmland with different sizes and patterns of fields.

³⁴ Landscape Character is described as “*the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people*” (Guidelines for Landscape and Visual Impact Assessment; Landscape Institute and IEMA, 2002)

³⁵ Joint green belt study (Coventry city, Nuneaton and Bedworth Borough, Rugby Borough and Warwick District)

The analysis was followed by an evaluation of recent changes which had affected the landscape and the factors likely to influence change in the future. From this a series of management strategies and landscape guidelines were developed. The guidelines were designed for people directly involved in landscape management, providing advice about how and where landscape character needed to be conserved, restored and/or enhanced.

The historical development of the Warwickshire landscapes is a major factor influencing the character of the present day landscapes. In a region with few dramatic physical features, it is these human influences, developed over many centuries and underpinned by nature and geology, which has created the man-made landscapes and special features that clearly embody the local distinctiveness of Warwickshire's landscapes. However, these distinctive landscapes are both robust and vulnerable. After surviving for hundreds of years, subtle aspects of a farm's history, including distinctive ridge and furrow meadows, can be erased in one afternoon of deep ploughing. The alignment of a new bypass, which may help a village to breathe again, can cause historical landscape features to disappear forever. In many cases, changes may be small and piecemeal but, cumulatively, they can have hugely detrimental effect on the landscape and the difference between town and country. The key is to provide the development and infrastructure that present day society – after measured reflection – decides it needs, but in a way that retains 'local distinctiveness' and the essential visual harmony of the landscape, and in ways that still respect and reinforce local tradition and a sense of place.

Strategic Landscape Opportunities

This Study highlights the need for a more strategic framework and delivery program for Green Infrastructure planning in Warwickshire, Coventry and Solihull. It should be considered in the context of the sub-region and its aspirations for environmental transformation and strategic landscape improvements. Green Infrastructure planning will be a key to the delivery of Local Plans and will complement other regional initiatives such as the West Midlands Forestry Framework to create woodlands, including Woodland Opportunity Mapping, and Natural England's work on National Landscape Character Areas. Green Infrastructure planning offers a unique opportunity for strategic landscape conservation and enhancement to be at the fore of all development and land-use initiatives, and accorded the same importance as other forms of infrastructure.

Landscape Character

The process of landscape characterisation involves a combination of desk study and field surveys to systematically divide the countryside into discrete and relatively homogenous units of land, within which the constituent physical, biological and historical elements occur in repeating patterns and share certain aesthetic characteristics. The desk study generates landform, land cover and historical overlays in the GIS which, combined with field surveys, results in landscape types that have discrete and distinctive character.

The intrinsic character of Warwickshire's landscapes has remained largely intact since the publication of the Warwickshire Landscape Guidelines. The maintenance and enhancement of the character of the landscape has been encouraged by the adoption of management strategies and sensitive countryside management schemes, in partnership with the local community, farmers and conservation organisations.

Landscape Condition

The condition of a landscape, which should be clearly distinguished from its character, is a measure of how far removed that landscape is from an 'optimal' state, where all the key characteristics are present and functional. Condition, therefore, has a visual as well as a functional dimension. The former reflects the degree to which the existing landscape pattern appears visually fragmented, owing to the loss of existing features or the imposition of new

features which appear ‘out of place’. The functional dimension embraces a range of issues related to the ecological quality of the countryside and the extent to which present day land use respects the inherent ecological and cultural character of the land.

The pastoral character of the landscape survives in places, but in many areas there has been a shift to a more intensive system of mixed arable farming, a long-term trend that has affected many parts of formerly mixed farming in lowland agricultural landscapes in the UK. This shift towards a more arable farming system has been associated with the loss of semi-improved grasslands and hedgerow boundaries; a process that has slowed since the introduction of legislation to retain hedgerows and Countryside Stewardship schemes. There is evidence of the decline in hedgerow function resulting in ‘gappy’ and thinning hedgerows, especially in areas of intensive arable farming, and the urban fringe where horse grazing has increased significantly, as traditional farming has declined.

Management Priorities and Recommendations

Much has been achieved at the landscape scale since the publication of the Warwickshire Landscapes Guidelines as a result of initiatives to retain and, where possible, enhance the character of the Warwickshire landscapes. While many of these initiatives have been small-scale, at the broader scale, initiatives to work with landowners to maintain and restore permanent grassland, and to plant new woodlands and hedgerows, is also evident. However, the region is suffering from the type of neglect of trees, hedgerows and wildflower meadows, evident across large areas of lowland England as farming changes. The ecological interest of the region is also confined largely, but not solely, to Ancient Woodlands, many of which are in need of urgent management, and species rich grassland. Both these habitat types are only widespread in a few Land Cover Parcels.

Warwickshire is largely a rural county with very strong historical connections and the image of ‘leafy Warwickshire’. The south of Warwickshire comes closest to this traditional image, supported by new initiatives such as *The Heart of England Forest Project*, which aims to “plant and preserve a large native forest in the heart of England.” However, farming changes, Dutch elm disease, new developments, and associated light and noise pollution have fundamentally changed the appearance of the countryside. Ancient Woodlands, together with ancient/veteran trees, represent an irreplaceable semi-natural habitat. With only 2.07% of Warwickshire now covered by Ancient Woodland, which is below the national average, we cannot afford to lose any more of this finite resource.

Warwickshire also contains a large number of ancient trees, of which many may not be formally recorded. The Woodland Trust and Ancient Tree Forum are running a national project – the Ancient Tree Hunt – to identify and map ancient trees, so that they can be protected and enhanced for the benefit of all.

The Warwickshire Landscapes Guidelines identified Enhancement Zones, considered to be strategic priorities for landscape conservation and enhancement. In the light of new information, including the regional character area mapping of the Midlands, Historic Landscape Characterisation (HLC) project, the Habitat Biodiversity Audit (HBA) and Connectivity/Opportunity Mapping, it is recommended that these Enhancement Zones be re-assessed in order to identify key priorities for conservation and enhancement. An integrated and partnership approach will be required. This will be particularly important in relation to planning for sustainable landscapes in and around the urban fringe, major growth areas and transport infrastructure projects.

Recommendation 1

1a) Re-assess the Warwickshire Landscapes Guidelines in the light of:

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- i) new strategic landscape initiatives and partnership working, including the Local Nature Partnership, Nature Improvement Areas (NIA), Connectivity/Opportunity Mapping and Biodiversity Offsetting;
 - ii) new regional information in partnership with the Warwickshire, Coventry and Solihull Habitat Biodiversity Audit Partnership (HBA), Historic Landscape Characterisation (HLC) and Natural England;
 - iii) GIS mapping of the Landscape Description Units (LDUs) and Land Cover Parcels (LCPs – c. 1:10,000 scale); and
 - iv) recent policy changes, with particular reference to
 - o Warwickshire, Coventry and Solihull Strategic Green Infrastructure Study, 2012
 - o Warwickshire, Coventry and Solihull Local Plans
 - o National Planning Policy Framework, 2012
 - o West Midlands Biodiversity Partnership, Landscapes for Living, 2012
 - o Biodiversity Strategy for England, 2011
 - o Green Infrastructure Partnership, 2011
 - o Natural Environment White Paper – The Natural Choice: securing the value of nature, July 2011
 - o West Midlands Forestry Framework, 2010, Woodland Opportunity Mapping and Woodland Uplift 2012
 - o Section 40 of the Natural Environment and Rural Communities Act, 2006.
- 1b) It is recommended that a review of the Enhancement Zones be undertaken, with priority broadly characterised into three strategic categories:
- i) areas in which the primary aim should be landscape conservation;
 - ii) areas in which the primary aim should be landscape enhancement; and
 - iii) areas in which the aim should be a roughly equal prescription of landscape conservation and enhancement.

It is important to note that these categories should be designed to reflect the primary characteristic rather than the exclusive characteristic of these areas. For example, within areas which primarily demand landscape conservation, there will be pockets of degraded landscape which will require enhancement. The same principle applies to areas in which the primary aim is landscape enhancement, which will also include pockets of high quality landscape that will need conserving. It will also be important to consider Connectivity and Opportunity Mapping, as part of an integrated approach to improving strategic local landscapes.

Recommendation 2

- 2a) Prioritise strategic landscape improvements, having regard to the selective evaluation of the Warwickshire Landscape Guidelines in 2006 - 2007.

Hedgerows and Field Boundaries

- Enhance the structure of the landscape through replanting and regeneration of primary hedgerow boundaries.
- Reintroduce mixed native species hedgerows along primary boundaries.
- Enhance the age structure of hedgerow tree cover, particularly hedgerow oaks.

Woodlands

- Conserve and enhance the biodiversity of Ancient Woodlands and veteran trees, through sensitive woodland management.

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- Identify opportunities for restoring Ancient Woodland on former sites.
- Identify opportunities for new tree planting, to strengthen the sense of landscape cohesion and connectivity.

2b) Use Woodland Opportunity Mapping to help target woodland creation opportunities, including Ancient Woodland restoration at a landscape scale.

Grasslands

- Conserve neutral grasslands and enhance species diversity.
- Maintain and restore areas of older permanent pasture, including ridge and furrow meadows.
- Conserve the ecological character of wet grasslands.
- Identify opportunities for sensitive grassland management, to strengthen the sense of landscape cohesion and connectivity.

Wetlands

- Maintain the special character and continuity of river and canal corridors.
- Enhance the unity and wetland character of river valley wetlands, through habitat creation and management.

Rural Character

- Maintain strong rural character.
- Conserve pastoral character.
- Restrict and, where possible, reverse the sub-urbanisation of the landscape.
- Identify opportunities to strengthen 'local distinctiveness' and a 'sense of place'.
- Identify opportunities for new tree planting to soften the impact of buildings and 'grey' infrastructure.
- Landscape character assessment to be a major consideration at the inception, planning and design of all major development and infrastructure projects.

Recommendation 3

Green Infrastructure provision and development should strengthen landscape character, reflecting locally distinctive natural and cultural landscape patterns, and integrating with natural processes and systems and land-use change, contributing to their long-term protection, conservation and enhanced management. Proposals should be informed by the guidance contained in the Warwickshire Landscapes Guidelines, Connectivity/Opportunity Mapping and complementary landscape character assessments produced by local authorities. Targeted enhancement should include urban fringe landscapes and growth areas, strategic transport corridors and agricultural landscapes:

Strategic Enhancement: Countryside In and Around Towns

The landscape quality of the urban fringe countryside is a key influence on how the overall characters of the Warwickshire landscapes are perceived and enjoyed. Rural urban fringe landscapes close to the main towns are widely recognised as highly important to people's experiences and quality of life. Opportunities should be sought to reinforce and enhance landscape character, by creating new and maintaining existing Green Infrastructure, linking urban areas with the wider countryside. For example, this could include establishing new community woodlands and wildflower meadows. New development on the edges of settlements has the potential to be visually intrusive, particularly in the early years before landscape mitigation schemes mature. In responding to the planned expansion of settlements, particular attention will need to be given to the manner in which new developments can be sensitively accommodated into the rural-urban fringe landscape in terms of their siting, materials and design, including scale, layout and landscape mitigation.

Strategic Enhancement: Transport Corridors

The strategic transport routes are a primary means by which many people see and experience Warwickshire, Coventry and Solihull, including visitors, tourists and investors. These routes include motorways and major road corridors, as well as the railway network. Opportunities exist to enhance these corridors in order to improve the overall visual experience, strengthening landscape character and a sense of place. Such enhancements may include the ecological management of roadside verges for wild flowers and wildlife habitats, the extension of roadside verge tree and shrub planting, clearing litter, reducing unnecessary clutter and limiting standardised treatments during highway improvement schemes. Landscape enhancement can help contain the impact of transport corridors and conserve landscape features. Mitigation and enhancement of these transport corridors, to strengthen landscape character, should be a priority in the future planning of strategic Green Infrastructure.

Strategic Enhancement: Working Agricultural Landscapes

While not mapped for any specific area, it is recognised that the quality and appearance of the working agricultural landscape is crucial as a framework for more specific environmental enhancement. Conservation and enhancement of traditional features of the farmed landscape is a common theme within the Warwickshire Landscapes Guidelines, particularly for landscapes assessed as being in poor condition and where intensive farming practices dominate.

Due to the intensification of agricultural practices, coupled with the loss of many hedgerows, and field trees through Dutch elm disease, the landscape has become much more open and fragmented over the past 30-40 years. Opportunities exist to enhance the landscape, restore connectivity and so enrich the visual experience of the countryside through the Environmental Stewardship and other agri-environmental grant schemes - for example, by restoring hedgerows and field patterns, reintroducing hedgerow trees and establishing new copses, woodlands and wildflower meadows on farmland. In addition, opportunities exist to create richer green lanes through a mixture of tree and hedge planting beside rights of way, in order to 'break up' views across large areas of open farmland. These types of enhancements would help create a richer and more varied complex of views and vistas across the area. The use of Connectivity and Opportunity Mapping will be critical to this process.

Infrastructure Delivery Mechanisms

The delivery of this strategy will be through a variety of mechanisms, including Biodiversity Offsetting (see Annexe A for more details).

Grants

Landscape priorities can be delivered through various grants such as Heritage Lottery Fund (HLF) and English Heritage funding. Bids that are coherent with the aims of this strategy should be supported.

Local Planning Authority

The mechanism to deliver landscape priorities within the planning system is through local Infrastructure Delivery Plans (IDPs), Community Infrastructure Levies, Public Open Space contributions, legal agreements and Biodiversity Offsetting³⁶. Biodiversity Offsetting is explained in the following section.

³⁶ Biodiversity Offsetting -

Other Land Management Systems

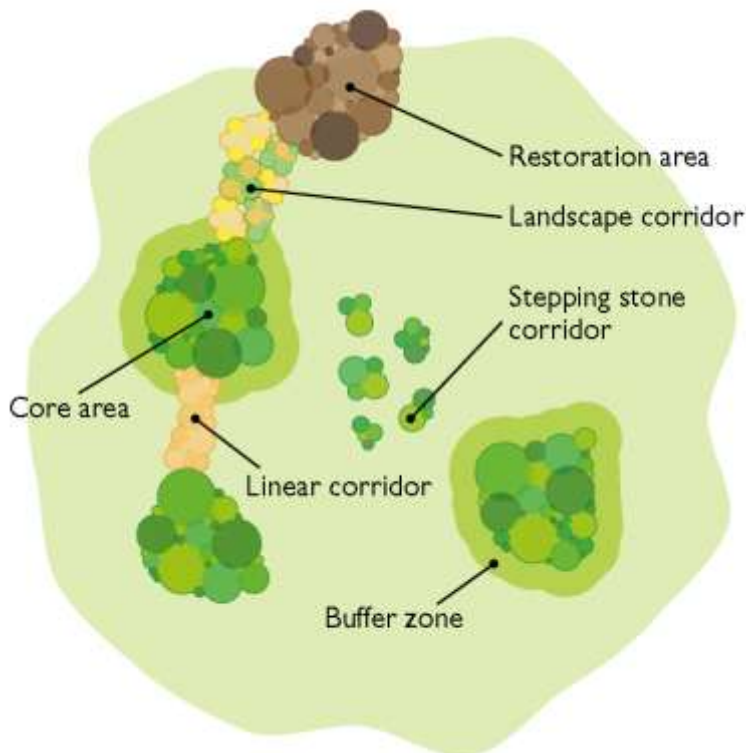
For example:

- Agri-Environment schemes – e.g. Entry-level Stewardship (ELS) and Higher-level Stewardship (HLS);
- Local Authority land management – e.g. of highway verges, Country Parks etc;
- Environment Agency management and capital spend – e.g. flood alleviation works;
- Non-Government Organisational land management – e.g. canal works, Wildlife Trust Reserves;
- Outdoor sporting provision – e.g. golf courses, sports grounds
- Voluntary land management - including agricultural;
- Neighbourhood Plans – e.g. village greens, community orchards, Local Green Space Designations; and
- Local amenity groups, e.g. tree planting bodies.

Biodiversity

The principles of conserving the biodiversity within the sub-region are based on the Lawton Review of Making Space for Nature (2010)³⁷. Professor Sir John Lawton concluded unequivocally that England's collection of wildlife areas is fragmented and does not represent a coherent and resilient ecological network capable of responding to the challenges of climate change and other pressures. The review called for 'a step-change in nature conservation [...] a new, restorative approach which rebuilds nature and creates a more resilient natural environment for the benefit of wildlife and ourselves'. The review made 24 recommendations, but summarised what needed to be done in just four words: **more**, **bigger**, **better** and **joined**. This has been summarised into Figure 10.

Figure 10: The components of ecological networks (from Making Space for Nature)



The diagram shows that natural areas can be increased by habitat creation ('**more**'), extended, for example through adding protected buffer zones to existing natural areas ('**bigger**'), enhanced through habitat restoration ('**better**') and connected by stepping stone corridors, landscape corridors and linear corridors such as road verges or railway embankments ('**joined**').

The sub-region has formed partnerships with the Universities of Warwick, Coventry and York to build upon previous Landscapes for Living and other studies using the Habitat Biodiversity Audit data. These studies will be used to identify Biodiversity Core Areas, corridors, stepping stones and restoration areas for three main habitat categories:

- Woodland;
- Grassland; and
- Wetlands.

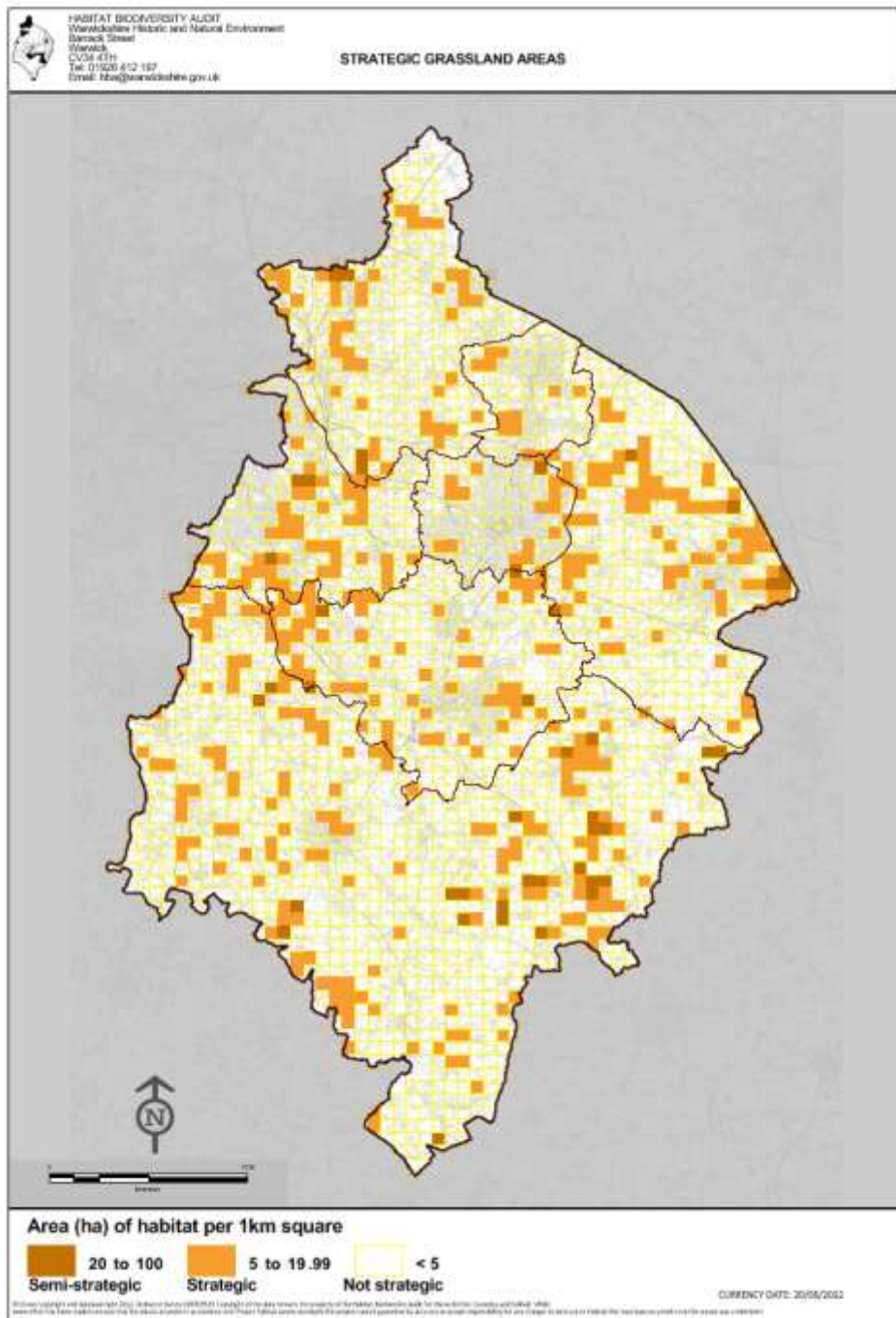
³⁷ <http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

Appendix 2 includes details of the habitat classification for each of these habitat categories.

Biodiversity Core Areas

BAP priority habitats have been mapped (see Figure 11) and the results have been used to identify Biodiversity Core Areas, using either a 500m² or 1000m² grids as appropriate for each habitat category. They have followed a methodology developed by Natural England but adapted for this strategy to identify strategic, semi-strategy and non-strategic areas where enhancements will be focused. However, biodiversity is not restricted to these areas and opportunities to create new features and core areas should not be overlooked.

Figure 11: Sub-regional Core Area Habitat Map for Grasslands



Biodiversity Connectivity Mapping

Distinctiveness Mapping

The distinctiveness scores have been derived from the UK National Ecosystem Assessment ((UK NEA, 2011). The scores have been adapted from the Defra Biodiversity Offsetting Technical Paper and associated documents³⁸. The Defra scores are interpreted as those that best match the HBA Phase 1 habitat categories. For this strategy this scoring is used to identify important habitats from the Phase 1 habitat types. The distinctiveness scores range from 3 - high, 2 – moderate and 1 – low as briefly equate to the following:

High distinctiveness scores equate to Biodiversity Action Plan (BAP) habitats. They can be divided into three main categories; semi-improved woodlands and species rich hedgerows; semi-improved and unimproved grasslands and wetland habitats.

Moderate distinctiveness scores are a mid-way assessment for areas that are either a transition from high to low or vice versa; or are of indeterminate biodiversity.

Low distinctiveness score are areas of low biodiversity interest. These areas cover the majority of the survey areas for the settlements, and includes agricultural farm land, amenity grassland and coniferous woodland.

Management Priorities and Recommendations

These mapping approaches are being used to identify sub-regional GI Biodiversity Assets and identify Strategic Areas for delivering the Biodiversity Strategy's aim to reconnect habitats throughout the sub-region.

Sub-regional GI Biodiversity Assets – are all qualifying woodland, grassland and wetland features that have a connective function or a high distinctiveness value.

Recommendation 1

The aim of the sub-regional GI Strategy is to safeguard and enhance all GI Biodiversity Assets.

Recommendation 2

The aim of the sub-regional GI Strategy is to fulfil two priorities for each of the woodland, grassland and wetland habitat categories:

Priority 1) - Connect together individual sub-regional GI Biodiversity assets to form core areas .

Priority 2) – Connect the Core Areas together [where Priority 1 has been achieved] to form large functional clusters.

Recommendation 3

An additional aim is to create either new Core Areas large enough to function independently as an individual site or a functional cluster of larger and smaller sites where there is a distinct local need or deficiency in a habitat category.

Infrastructure Delivery Mechanism

The delivery of this strategy will be through a variety of mechanisms.

³⁸ Biodiversity Offsetting: Coventry, Solihull and Warwickshire is one of the 6 national pilots that is testing the Offsetting metrics system between 2012 -2014. It is anticipated that the sub-regional pilot is to be delivered through the Sub-regional GI Strategy.

Grants

Biodiversity priorities can be delivered through various grants such as Heritage Lottery Fund (HLF) and English Heritage funding. Bids that are coherent with the aims of this strategy should be supported.

Local Planning Authority

The mechanism to deliver Biodiversity priorities within the planning system is through site landscape and restoration plans, local Infrastructure Delivery Plans (IDPs), Community Infrastructure Levies, Public Open Space contributions, legal agreements, but mainly through Biodiversity Offsetting³⁹. The procedure and governance model for enacting Biodiversity Offsetting is detailed in the supplementary document associated with this strategy: Annex A – Biodiversity Offsetting.

Essentially, where Biodiversity Offsetting has been agreed the offset will be guided to put “the right habitat in the right place”. This is encouraged in the Defra Biodiversity Offsetting Metrics⁴⁰ by a ‘spatial risk’ of three area categories:

- Strategic Areas;
- Semi-Strategic Areas; and
- Non-Strategic Areas.

Within the sub-region these have been identified through the Biodiversity Connectivity Mapping at the appropriate average dispersal distance (500m or 1000m) and defined as follows.

Strategic Areas – Areas where habitat enhancement or creation will connect one or more high quality habitat areas together.

Semi-Strategic Areas – Areas where habitat enhancement or creation will expand existing habitat within a Biodiversity Rich Area.

Non-strategic Areas - Areas where habitat enhancement or creation will not expand upon existing habitat.

These sub-regional Green Infrastructure Biodiversity Core Areas and Strategic Areas Maps are available on Warwickshire County Council’s Green Infrastructure web pages ([link to be added after consultation](#)). These will be updated on a regular basis to reflect the dynamic changes that affect ecosystems both for good or bad.

Neighbourhood Areas

The inclusion of biodiversity in Neighbourhood and Parish plans will help in creating and enhancing local GI Assets that could build into the sub-regional objectives.

Other Land Management Systems

For example:

- Agri-Environment schemes – e.g. Entry-level Stewardship (ELS) and Higher-level Stewardship (HLS);
- Local Authority land management – e.g. of highway verges, Country Parks etc;

³⁹ <http://www.defra.gov.uk/environment/natural/biodiversity/uk/offsetting/>

⁴⁰ <http://www.defra.gov.uk/publications/2012/04/02/pb13745-bio-tech-paper/>

PART B – ASSESSMENTS and RECOMMENDATIONS

- Environment Agency Catchment Area Plans - management and capital spend – e.g. flood alleviation works;
- Non-Government Organisational land management – e.g. canal works, Wildlife Trust Reserves;
- Outdoor sporting provision – e.g. golf courses, sports grounds
- Voluntary land management;
- Neighbourhood Plans – e.g. village greens, community orchards, Local Green Space Designations; and
- Local amenity groups, e.g. tree planting bodies.

Accessibility

The importance of Green Infrastructure assets to people at different geographical scales is central to this study. A set of criteria was established to systematically define and identify those Green Infrastructure assets in the study area that could be considered to be of sub-regional importance; i.e. assets that have importance to people beyond their own local authority boundaries. Green Infrastructure assets would be considered if they fell within the sub-region itself or within a 10km buffer outside of the sub-region.

The first criterion was based on Natural England's Accessible Natural Greenspace Standard (ANGSt) Model2. ANGSt uses distance thresholds, and defines the maximum distance that any resident should have to travel from their home to reach accessible natural or semi-natural greenspace. It is divided in to four tiers, as shown in Table 4 below.

Table 4: ANGSt thresholds for maximum distance that a resident should have to travel to reach accessible greenspace

Sub-regional provision	Sites or habitats over 500ha	Within 10 km
County scale provision	Sites or habitats over 100ha	Within 5 km
District scale provision	Sites or habitats over 20ha	Within 2 km
Neighbourhood scale sites	Sites or habitats over 2ha	Within 300 m

Given that the sub-region has very few large assets, all sites over 100ha (the county scale and sub-regional assets under ANGSt) were considered to be sub-regional assets for the purposes of this study. In addition significant linear assets, including all the canals, main rivers and large water bodies, and the long distance walking and cycling routes of national, regional and county level importance were included. Clusters of sites that are within 500m of each other that collectively are over 100ha have also been included as sub-regional assets. Table 5 below provides a summary of the criteria used for selection of sub-regional Green Infrastructure assets.

Table 5: Summary of the criteria for identifying sub-regional Green Infrastructure assets

Criteria for identifying Sub Regional Green Infrastructure Assets
1) Sites over 100ha (County and Sub-regional level sites as defined by ANGSt);
2) Canals, main rivers, large water bodies;
3) Long distance walking and cycling routes of national, regional or county level importance.
4) Clusters of sites that are within 500m of each other that collectively are over 100ha.

5) Sites that are under 100ha that may still be considered a sub-regional asset as nominated by each local planning authority.

The final criterion for identifying sub-regional assets proved to be the most difficult to define. It was felt that there were a number of sites that, whilst they were under 100ha in size, may still be considered a sub-regional asset. Each planning authority identified any additional assets that are below 100ha in size that they felt warranted being included as sub-regional assets.

In order to identify the Green Infrastructure assets in the study area that fall within the first four criteria, the data sets listed below were used and then the outputs were reviewed to help ensure that no significant assets had been missed. Each authority within the sub-region then identified and provided data for any assets that would fall under criterion number five.

The datasets that were used in identifying sub-regional assets are listed below.

- Access Land (under the Countryside and Rights of Way Act)
- Registered Common Land
- Section 15 land (S.15 of the Countryside and Rights of Way Act 2000 – pre-existing public rights of access that on CROW land apply instead of CROW rights)
- Section 16 land (land voluntarily dedicated for public access under the Countryside and Rights of Way Act)
- SAC
- SSSI
- National Nature Reserves
- Local Nature Reserves
- Country Parks
- Parks and Gardens
- National Trust sites
- RSPB Reserves
- Warwickshire Open Spaces
- Bancroft Gardens / Recreation Ground
- Coventry Green Belt
- Nuneaton & Bedworth Woodland Grant Scheme
- Rugby Core Strategy proposed urban extensions
- Habitat Biodiversity Audit

In order to protect the unique value of ancient woodlands and ancient/veteran trees, support new native woodland creation in suitable locations and work towards implementing the Woodland Access Standards promoted by the Woodland Trust:

- No person should live more than 500m from at least one area of accessible woodland of no less than 2ha in size; and
- There should be at least one area of accessible woodland of no less than 20ha within 4km (8km round trip) of people's homes.

Management Priorities and Recommendations

Recommendation 1

To map areas with GI Accessibility Asset deficiency throughout the sub-region.

Recommendation 2

PART B – ASSESSMENTS and RECOMMENDATIONS

To identify how to secure resources and increase accessibility to existing GI assets and create or enhance new GI Accessibility Assets in those areas of deficiency.

Infrastructure Delivery Mechanism

The delivery of this strategy will be through a variety of mechanisms.

Grants

Accessibility priorities can be delivered through various grants such as Heritage Lottery Fund (HLF) and English Heritage funding. Bids that are coherent with the aims of this strategy should be supported.

Local Planning Authority

The demand for additional sub-regional accessibility Green Infrastructure will be obtained through local Community Infrastructure Levy outlined in Infrastructure Delivery Plans and/or other legal agreements.

The Countryside and Rights of Way Improvement Plan will also set out intentions on improving accessibility to the countryside through the Community Access Forum.

Other Land Management Systems

For example:

- Local Authority land management – e.g. of Country Parks etc;
- Environment Agency management and capital spend – e.g. flood alleviation works;
- Non-Government Organisational land management – e.g. canal works, Wildlife Trust Reserves;
- Outdoor sporting provision – e.g. golf courses, sports grounds
- Voluntary land management;
- Neighbourhood Plans – e.g. village greens, community orchards, Local Green Space Designations; and
- Local amenity groups, e.g. tree planting bodies.

PART C – ASSETS & MAPS

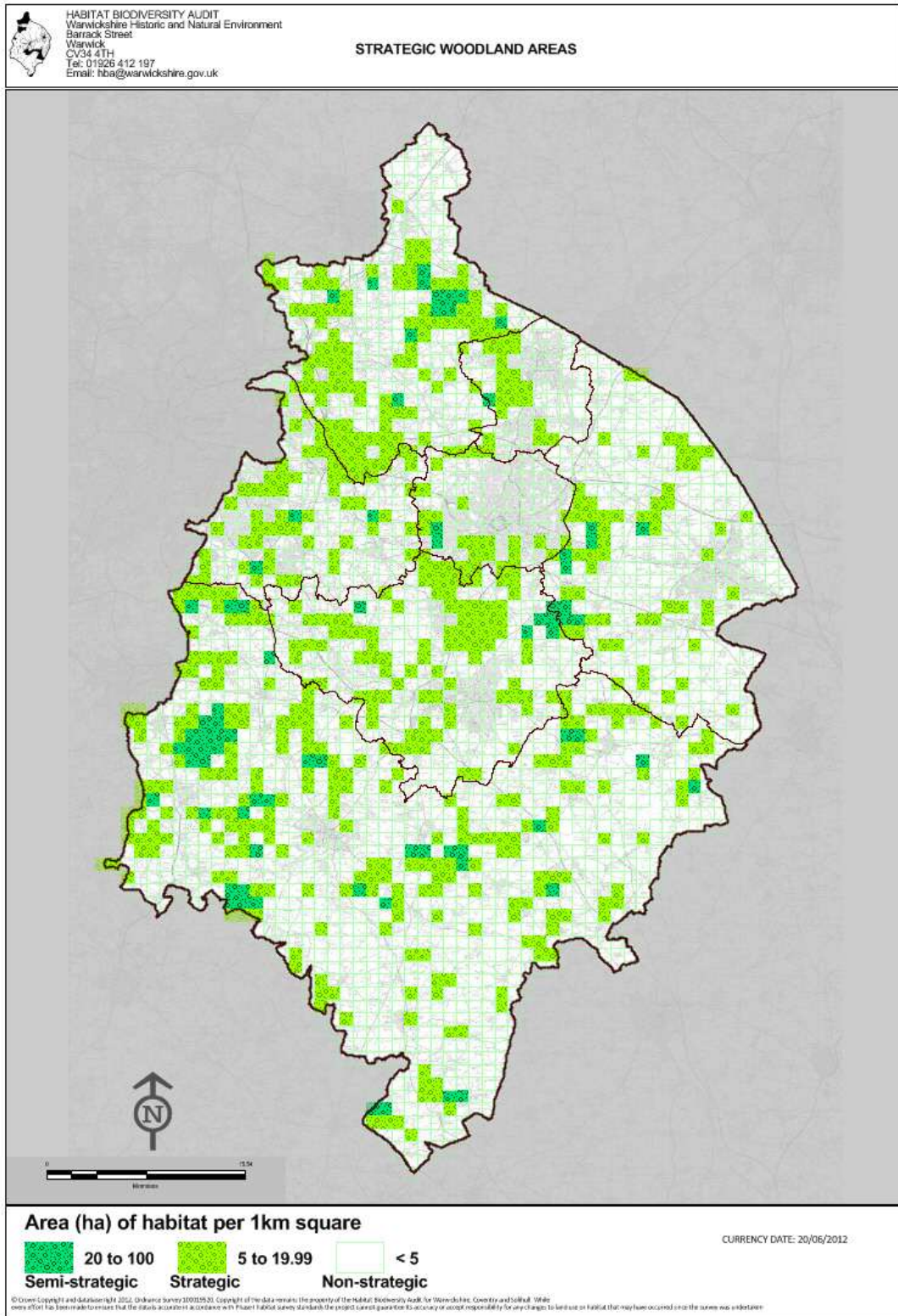
Landscape

This evidence can be found at www.warwickshire.gov.uk/greeninfrastructure

Biodiversity

This evidence can be found at www.warwickshire.gov.uk/greeninfrastructure

Figure 13: Example Map for Strategic Woodland Areas



Accessibility

Figure 11 and Table 6 below identify all those assets that were regarded as sub regional assets for the purpose of this study.

Table 6: Listing of Sub-regional Assets

LUC ID Number	Name	area (ha)	Broad Accessibility
2003	COVENTRY NORTH WEST GREEN BELT	1,869.0	Limited Access
2004	COVENTRY SOUTHERN GREEN BELT	705.8	Limited Access
865	STONELEIGH ABBEY	390.4	Limited Access
851	RAGLEY HALL	346.8	Limited Access
903	WARWICK CASTLE (and Warwick Castle Park)	319.9	Limited Access
833	PACKINGTON HALL	318.7	No Access
836	COOMBE ABBEY	316.2	Publically Accessible
1308	KINGSBURY WATER PARK	259.6	Publically Accessible
832	MEREVALE HALL	193.8	No Access
899	COMPTON VERNEY	191.8	Limited Access
2005	COVENTRY SOUTH WEST GREEN BELT (incl War Memorial Park)	186.3	Publically Accessible
860	NEWNHAM PADDOX	176.2	Limited Access
1501	ARBURY ESTATE	175.6	Limited Access
849	ARBURY HALL	172.9	Limited Access
2000-1	RUGBY PROPOSED URBAN EXTENSION GREEN SPACE	168.2	Limited Access
1324	MIDDLETON LAKES (CURRENT BOUNDARY FROM 28/02/2007)	158.9	No Access
854	FARNBOROUGH HALL	142.7	Limited Access
141-148	ALVECOTE POOLS	129.3	Publically Accessible
905	KENILWORTH CASTLE	120.3	Limited Access
1988	NEWBOLD COMYN PARK	120.1	Publically Accessible
893	WROXALL ABBEY	119.1	No Access
1991	WAVERLEY WOOD	117.4	Limited Access
869	CHARLECOTE PARK	110.3	Limited Access
871	ALSCOT PARK	108.8	No Access
115-116	BENTLEY PARK WOOD	105.4	Limited Access
1989	HAY WOOD	104.3	Publically Accessible
1322	HARTSHILL HAYES	54.8	Publically Accessible
1311	BURTON DASSETT HILLS	39.8	Publically Accessible
2002	BANCROFT GARDENS / RECREATION GROUND	22.8	Publically Accessible
1301	DRAYCOTE WATER	8.8	Publically Accessible

PART C – ASSESSMENTS and RECOMMENDATIONS

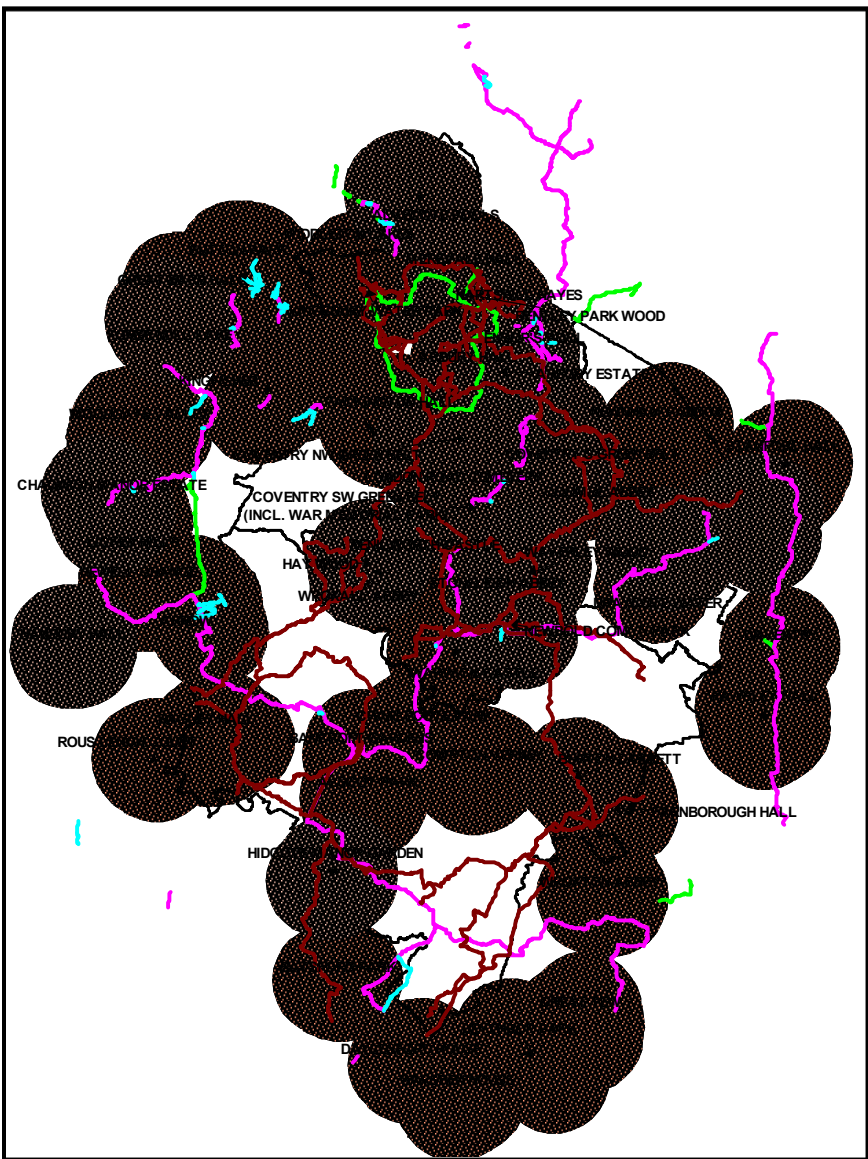
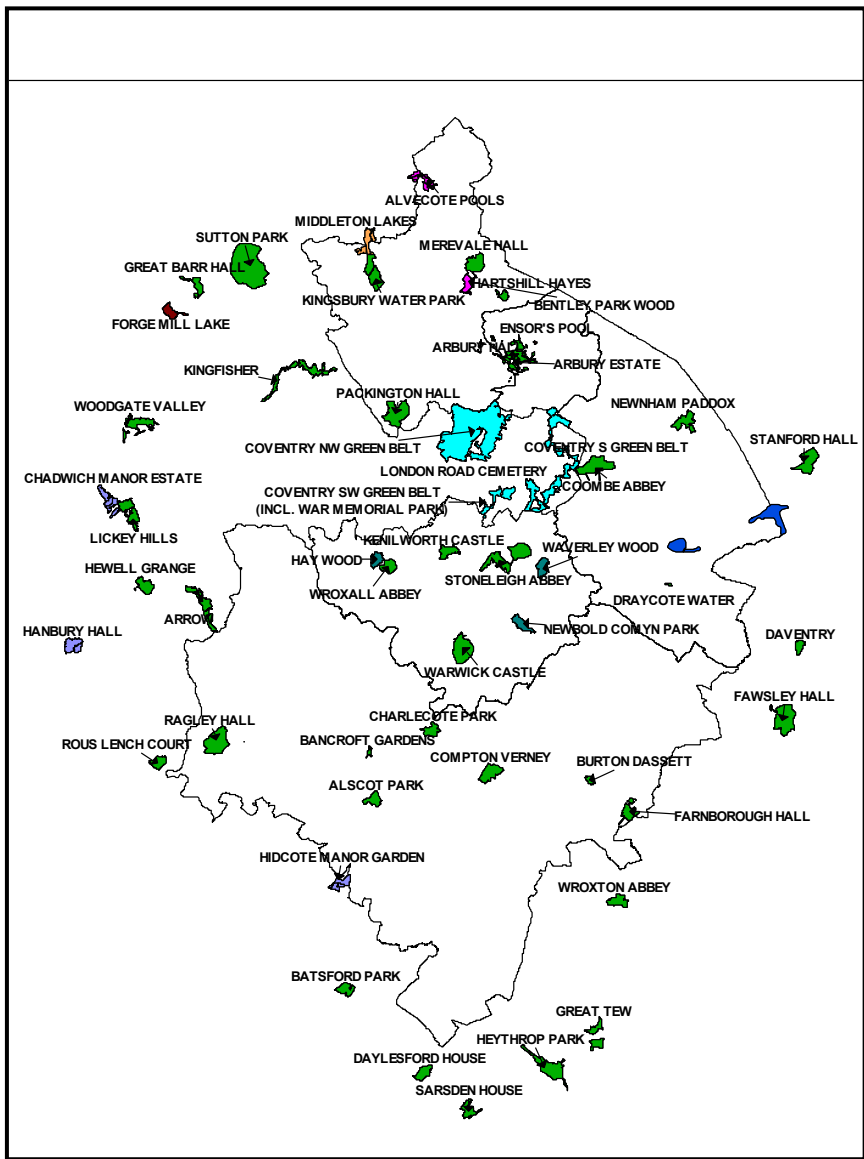
LUC ID Number	Name	area (ha)	Broad Accessibility
890	LONDON ROAD CEMETERY, COVENTRY	7.7	Publically Accessible
1	ENSOR'S POOL	3.6	Publically Accessible
1998	RUGBY PROPOSED URBAN EXTENSION GREEN SPACE	281.7	Limited Access
898	SUTTON PARK	912.5	Publically Accessible
881	STANFORD HALL	238.0	Limited Access
1313	RIVER ARROW	223.0	Publically Accessible
1306	KINGFISHER (including Babbs Mill and Yorks Wood)	246.0	Publically Accessible
904	WROXTON ABBEY	130.7	No Access
141-148	ALVECOTE POOLS	129.3	Publically Accessible
325	HIDCOTE MANOR GARDEN	125.6	Limited Access
870	DAYLESFORD HOUSE	119.9	No Access
887	BATSFORD PARK	114.6	Limited Access
839	ROUS LENCH COURT	110.2	No Access
1305	DAVENTRY	67.5	Publically Accessible
896	FAWSLEY HALL	364.6	No Access
880	HEYTHROP PARK	315.2	No Access
1320	LICKEY HILLS	213.6	Publically Accessible
1304	WOODGATE VALLEY	192.4	Publically Accessible
329	CHADWICH MANOR ESTATE	173.9	Unknown
338	HANBURY HALL	157.2	Limited Access
895	GREAT TEW	155.2	No Access
867	HEWELL GRANGE	137.2	Publically Accessible
850	SARSDEN HOUSE	117.7	No Access
858	GREAT BARR HALL	109.5	No Access
300	FORGE MILL LAKE	104.9	Publically Accessible

PART C – ASSESSMENTS and RECOMMENDATIONS

Linear Assets

Name	Asset
Avon River Walk	Promoted Route
Centenary Way	Promoted Route
Coventry Way	Promoted Route
Heart of England Way	Promoted Route
Macmillan Way	Promoted Route
Millenium Way	Promoted Route
Monarchs Way	Promoted Route
North Arden Heritage Trail	Promoted Route
North Arden Heritage Trail Loops	Promoted Route
Shakespeare's Avon Way	Promoted Route
Warwickshire Cotswold Route	Promoted Route
Solihull Way (Cole Valley Way)	Promoted Route
COTSWOLD WAY	National Trail
Ashby Canal	Canal
Birmingham & Fazeley Canal	Canal
Coventry Canal	Canal
Digbeth Branch Canal	Canal
Grand Union Canal	Canal
Oxford Canal	Canal
Rushall Canal	Canal
Stratford-upon-Avon Canal	Canal
Tame Valley Canal	Canal
Worcester & Birmingham Canal	Canal

Figure 14: GI Accessibility Assets



APPENDIX 1

North West Green Infrastructure Guide (NWGIG)

Appendix 1 - North West Green Infrastructure Guide (NWGIG)

The Strategy will broadly follow the 'North West Green Infrastructure Guide'⁴¹ (NWGIG) as a framework for its production and the monitoring of progress in delivering its objectives. The NWGIG identifies five basic steps to Green Infrastructure Planning:

- STEP 1 - Partnerships and Priorities
- STEP 2 - Data Audit and Resource Mapping
- STEP 3 - Functional Assessment
- STEP 4 - Needs Assessment
- STEP 5 - Intervention Plan

More detail on this process is available at www.greeninfrastructurenw.co.uk. Further explanations of the above steps with tools, actions and methods that go towards the successful completion of these Steps, together with the progress made to complete them are found within Appendix 1.

STEP 1 - Partnerships and Priorities

- Build partnerships of stakeholders who benefit from, and lobby for, green infrastructure.
- Review relevant policies and strategies.
- Determine the key outcomes for the green infrastructure mapping process.
- The Partnership determines the scope of the plan based on resources, objectives and information available.
- Build organisational support for the Green Infrastructure Plan.

STEP 2 - Data Audit and Resource Mapping

- Identify available information, including maps, regional and national guidance, datasets, relevant policy frameworks, regional and national strategies and stakeholders.
- Generate a map of the physical area showing Green Infrastructure types and locations, usually on a Geographic Information System (GIS).

STEP 3 - Functional Assessment

- Assess current situation – what the Green Infrastructure is doing, where it is functioning well and needs to be maintained, and where it needs to be improved.
- Assess future situation – consider the threats to Green Infrastructure; seek out the opportunities for improvement; consider how it might need to change; determine how to secure change.

STEP 4 - Needs Assessment

- Cross-reference Green Infrastructure planning with strategic outcomes identified in Step 1.
- Reference relevant datasets such as deprivation indices, market research, house prices etc.

STEP 5 - Intervention Plan

The Green Infrastructure Plan will set out:

- What the green infrastructure of an area is;
- What it is doing and what it might do;
- Where the Green Infrastructure is functioning well and needs maintaining;

⁴¹ North West Green Infrastructure Guide (NWGIGThink Tank, 2008)

Appendix 1: North West Green Infrastructure Guide (NWGIG)

- How it needs to change; and
- What will be done to secure change.

Outputs and Outcomes

The desired outcome is a comprehensive, interactive and highly flexible evidence base, which can be used for a range of purposes:

- A framework for the sustainable land management of the area;
- A tool for predicting the implications of change on the natural environment;
- An accurate picture of the green infrastructure of an area – essential in making planning decisions, informing developments and strategies;
- A tool for delivering the natural environmental contribution to identified priorities in the fields of health, economy and quality of life;
- A structured plan for delivering environmental change;
- Attracting funding by demonstrating researched needs and outcomes; and
- Attracting inward investment.

The progress of the Outputs and Outcomes associated to the five Steps listed above is reported within Annexe B. Changes to this Annexe will accord with the governance procedures detailed in the main strategy document.

Indicative steps for the for the planning process have been listed in the table below.

Steps in the green infrastructure planning process

Step	Tools and Data	Process Steps	Methods
1 Partnerships and Priorities	<ul style="list-style-type: none"> Regional and sub-regional strategies LDF Documents Community Plans Local Strategies and Neighbourhood Plans 	<ul style="list-style-type: none"> Assemble partnerships Assess policy frameworks Determine strategic priorities to which GI will contribute Agree scope and scale of GI planning project 	<ul style="list-style-type: none"> Identify GI stakeholders & champions Compile GI Strategy position into central evidence database Local and strategic values Public Benefit Assessment?
2 Data Audit and Resource Mapping	<ul style="list-style-type: none"> Aerial Photographs National Land Use Database OS Mastermap Web-source geographic and demographic data Data held by local authorities and partners Data from Greenspace audits Socio-economic data 	<ul style="list-style-type: none"> Identify data shortfalls and how these will be addressed Identify existing GI components, their quality, distribution, connectedness Identify geographic context of GI – relationship to surrounds communities and environmental features 	<ul style="list-style-type: none"> GIS mapping of green infrastructure components and relationships to surround land uses and demographic data
3 Functional Assessment	<ul style="list-style-type: none"> Landscape character assessment Historic Landscape Characterisation Conservation area appraisal Concept statements Town and village statements Greenspace strategies Biodiversity Action Plans Habitat Audits 	<ul style="list-style-type: none"> Identify existing GI components, their quality and functionality Map of existing functions Consider spatial implications of forces for change Map potential functions 	<ul style="list-style-type: none"> Workshops with key stakeholders to discuss forces of change GIS mapping of spatial implications of forces for change Case study methodologies Clere model
4 Needs Assessment	<ul style="list-style-type: none"> Greenspace provision guidelines Open Space/Greenspace audits Census Data Deprivation statistics Rural economy profiles Climate change adaption requirements Proposed built developments and spatial changes Strategic priority and forward planning documents 	<ul style="list-style-type: none"> Identify whether the existing GI is appropriate to local need Determine how strategic priorities can be represented by datasets Relate existing GI and functionality to strategic priorities and standards 	<ul style="list-style-type: none"> GIS mapping of local needs and strategic priorities Comparison of existing GI functions and local needs Case study methodologies
5 Intervention Plan	<ul style="list-style-type: none"> GIS datasets and wider evidence database from stage 1, 2 & 3 Engagement with regional, sub-regional and local policy development and consultation including LSPs Use of existing, proven delivery mechanisms 	<ul style="list-style-type: none"> What changes are needed to GI design, development, maintenance and management? Where are these changes needed? By what means will changes be sought? 	<ul style="list-style-type: none"> Using steps 1 to 4 determine type and locations required Advocacy and promotion through policy frameworks; LEPs, LNPs, LDFs, Neighbourhood Plans Incorporate intervention plan into proposed project and programmes e.g. CROWIP Section 106 agreements, endowments, ring fenced funds and match funding.

Update: January 2013

APPENDIX 2

Habitat Classifications for Woodland, Wetland and Grassland Categories

Appendix 2: Habitat Classifications for Woodland, Wetland and Grassland Categories

Habitat Connectivity Categories

The following habitat classifications have been selected for evaluating both the Core Area Maps and the Connectivity Mapping. These have undergone peer review as appropriate habitat for establishing strategic priorities.

HABCODE	Habitat description	Woodland	Wetland	Grassland
A111	Broad-leaved semi-natural woodland	X		
A112	Broad-leaved plantation	X		
	Wet Woodland	X	X	
A121	Coniferous semi-natural woodland	X		
A122	Coniferous plantation	X		
A131	Mixed semi-natural woodland	X		
A132	Mixed plantation	X		
A21	Dense continuous scrub	X		
A22	Scattered scrub	X		X
A31	Broad-leaved parkland/scattered trees	X		X
A32	Coniferous parkland/scattered trees	X		X
A4	Recently felled woodland			
A5	Orchard	X		X
B11	Unimproved acidic grassland			X
B12	Semi-improved acidic grassland			X
B21	Unimproved neutral grassland			X
B22	Semi-improved neutral grassland			X
B31	Unimproved calcareous grassland			X
B32	Semi-improved calcareous grassland			X
B4	Improved grassland			
B5	Marsh/marshy grassland		X	X
B6	poor semi-improved grassland			
C11	Continuous bracken			
C31	Tall ruderal			X
C32	Non-ruderal			
D5	Dry heath/acidic grassland mosiac			X
E11	Sphagnum Bog		X	
E21	Acid/neutral flush		X	X
E32	Basin Mire		X	X
F1	Swamp		X	
F22	Inundation vegetation		X	
G1	Standing water		X	
G2	Running water			
I21	Quarry			
I22	Spoil			
I24	Refuse tip			
J11	Arable			
J112	Allotments			

Appendix 2: Habitat Classifications for Woodland, Wetland and Grassland Categories

J113	Set-aside (field margins)			X
J12	Amenity grassland			
J13	Ephemeral/short perennial			

HABCODE	Linear Habitat description	Woodland	Wetland	Grassland
A21	Linear Scrub	X		X
A3	Linear Trees	X		
J21	Intact hedge	X		X
J211	Native species-rich intact hedge	X		X
J22	Defunct hedge			
J23	Hedge with trees	X		X
J231	Native species-rich hedge with trees	X		X
G1	Standing water		X	
J25	Wall (if drystone)			X
J26	Dry ditch			
J28	Earth bank			X