A METHODOLOGY FOR MONITORING THE CHANGING CONDITION OF THE MALVERN HILLS AONB

Final Report
Prepared by the

Centre for Rural Research

N.J. Evans and E. Connolly
University of Worcester
Henwick Grove
Worcester
WR2 6AJ
UK

For the
MALVERN HILLS AONB PARTNERSHIP

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EXECUTIVE SUMMARY

Ex1. The Malvern Hills AONB Management Plan identifies four ‘special qualities’ of the Area, namely: landscape & geology; biodiversity (wildlife); historic & built environment (cultural heritage); and quiet enjoyment of the countryside (tranquillity). It is now necessary to monitor the effectiveness of the Plan in conserving these qualities, especially the distinctive landscape that lies at the heart of the AONB designation.

Ex2. This research reviews and explores a range of potential monitoring datasets. A recommendation is made that nine indicators of change are used in future monitoring. These include making use of: fixed-point photography; Landscape Character Assessment monitoring; agricultural census data; the Regionally Important Geological Sites database; SSSI condition monitoring, the Scheduled Ancient Monuments database; the Listed Buildings and Buildings At Risk Register; the Best Value Performance Indicator; and visitor surveys. The emphasis on landscape, which is the principal concern of this report, is justified because of its underlying importance to the AONB designation.

Ex3. At the national level, some interesting work is being developed under the auspices of the Countryside Quality Counts (CQC) Initiative. However, this is nascent and, in any case, a larger scale of analysis is needed to capture detailed change within the Malvern Hills AONB.

Ex4. Two Local Authorities within the AONB Partnership, Herefordshire Council and Worcestershire County Council, have conducted extensive work on a system of Landscape Character Assessment (LCA) over the last ten years. The work presented here draws upon the landscape building blocks, known as Landscape Description Units (LDUs), that have been defined to provide a logical, justifiable and robust framework for monitoring change in the Malvern Hills AONB.

Ex5. Using GIS data kindly supplied by the Local Authorities, the project re-cuts countywide LDU data to the AONB boundary. After manipulation, 27 LDUs emerge within the AONB, together with 4 supplementary LDU fragments. A methodology for monitoring change in each LDU within the AONB is devised and extensive fieldwork is used to construct a programme for monitoring change. Photographs have been taken to capture the current landscape and provide a benchmark for future work.

Ex6. Each photograph is analysed in two ways. First, it is annotated with features appropriate to its generic Landscape Character Type. Second, a condition statement is provided to highlight how the distinctive landscape elements are changing. This provides an early indication of the aspects of the landscape to which future monitoring should pay particular attention if the special qualities of the AONB are to be conserved.

Ex7 One drawback is that some annotation obscures the detail on the photographs. As detailed in the methodology, sketching would more satisfactorily highlight distinctive features that exist in the landscape. An isovist analysis of the photograph, where possible, would also provide some numerical data on the view observed which could be used in future rounds of monitoring. Unfortunately, constraints of time, due to fieldwork and GIS demands in particular, have not allowed these full analyses to be presented in the current report.

EX8. Despite the limitations, important steps forward have been made in the approach to monitoring change in the Malvern Hills AONB. The methodology is embedded in both national and local frameworks of landscape assessment. Further, in defining fixed photographic points, the process of actively monitoring change in the AONB can begin.
1. AONB Characteristics, Management and Monitoring

Context

1.1 There are currently 41 Areas of Outstanding Natural Beauty (AONBs) in England and Wales. These were designated between 1956 (Gower, South Wales) and 1995 (Tamar Valley, Cornwall) under the provisions of the 1949 National Parks and Access to the Countryside Act. The number of AONBs designated has been dynamic, a process that will continue if, for example, the South Downs is designated as a National Park replacing its current AONB status. The AONB designation itself can be considered a derivative of the broader concept of ‘conservation areas’ suggested by Huxley during the deliberations of the 1947 Hobhouse Committee which considered the case for creating protected areas in the UK. The idea was to provide a mechanism to conserve ‘medium-sized’ areas of countryside, fitting between large-scale National Parks and small-scale nature reserves given Sites of Special Scientific Interest (SSSI) status.

1.2 However, as enacted, and subsequently administered since the 1950s, AONBs have had a clear and more restrictive focus on landscape conservation. During the 1970s and 1980s, the lack of effectiveness of AONBs to conserve the countryside was subjected to persistent criticism. This led to a new round of thinking about AONBs. Thus, it is only since Smart and Anderson’s (1990) evaluation and a subsequent 1991 policy statement by the former Countryside Commission (Countryside Commission, 1991) that this focus has been widened to encompass other conservation needs, particularly those relating to recreational provision. Hence today, the main purpose of an AONB designation is to conserve and enhance natural beauty, taking into account the needs of agriculture, forestry and other rural industries and of the economic and social needs of local communities (Holdaway and Smart, 2001).

1.3 The Malvern Hills AONB was designated in 1959 in recognition of the high scenic quality of its landscape. At its heart lies an eight-mile ridge of high land, reaching 425m (1394ft) at its highest point, which provides a striking contrast to the adjacent lowland setting. Nevertheless, it is important to remember that the AONB is not just confined to the high hills of the Malvern ridge, but encompasses a wider area radiating north, south and south-westwards from this feature. The AONB contains a variety of settlement types, with Great Malvern (east) and Ledbury (west) identified as ‘gateway’ towns.

1.4 The AONB is governed by a Joint Advisory Committee (JAC) and managed by the Malvern Hills Partnership comprising a partnership of five local authorities:
   o Worcestershire County Council
   o Gloucestershire County Council
   o Herefordshire Council
   o Malvern Hills District Council
   o Forest of Dean District Council

The AONB is unique in England and Wales because the high hills and associated commonland (about 11% by area) has long been managed by a separate conservation organisation, the Malvern Hills Conservators (MHC). This body was constituted under the 1884 Malvern Hills Act primarily as a response to urban encroachment and piecemeal erosion of commonland by enclosure at that time. The role of the MHC is complementary to, but separate from, that of the AONB.

1.5 The Countryside and Rights of Way Act 2000 (CRoW Act) served to formalise the thinking about reinvigorating AONBs that had emerged during the 1990s. New
Priorities were established to raise the profile of AONBs and increase the powers of the local authorities and conservation boards responsible for their management. It also placed a new statutory duty on AONB local authorities to publish and implement Management Plans, which are to be reviewed at five year intervals.

1.6 The Malvern Hills AONB produced its first Management Plan in 1996, some four years before the CRoW Act established this as a statutory duty. It should be noted that the MHC have their own Management Plan, also published prior to CRoW (see Alma, 1999). The JAC has produced a new Management Plan for 2004-2009 that provides a guiding framework for maintaining the special character of the AONB and securing a thriving future for the area and its people. More specifically, the Plan has the following objectives:
  o to highlight the special qualities of the AONB, together with its unique features;
  o to present a future vision for the AONB;
  o to agree policies that help to achieve this vision;
  o to construct an action plan;
  o to monitor the condition of the AONB and the effectiveness of its revised Management Plan.

1.7 The Countryside Agency (CA) has published guidance for AONBs to help them prepare these documents (CA, 2001). This guide includes recommendations for ways to ensure that an AONB Management Plan results in action ‘on the ground’, emphasizing the need for ongoing monitoring and review. It stresses the need for AONB partnerships to develop mechanisms through which they can ensure that the objectives set out in an AONB Management Plan are being met. This vital function is highlighted in the list of objectives stated in the Malvern Hills Management Plan (para 1.6).

1.8 Monitoring can be divided into two separate, but related, types.
  o Monitoring Action – determining whether or not (or to what extent) tasks identified in the Action Plan are being carried out as specified.
  o Monitoring Condition – determining whether or not the tasks are having the desired outcomes in terms of the impact on the AONB itself.
It is the second of these, monitoring condition, that is the focus of this report. The findings of this monitoring process are intended to feed into the production of future ‘State of the AONB’ reports (see para 1.11).

1.9 It has become apparent that monitoring change within any AONB is an undertaking that sounds simple in theory but is proving to be more challenging in practice. A standardised methodology for monitoring has not yet been developed. Indeed, whilst general procedures could be established, the wide range of AONB landscapes means that a universal system of monitoring may not even be appropriate. Some of the key difficulties that can be identified include:
  o diversity of the characteristics of AONBs;
  o limited resources to undertake primary monitoring research work on a regular (chronological) basis;
  o variations in the quality, scale and completeness of data available from secondary sources, together with the dangers associated with using data originally collected to serve different purposes;
  o the need to ‘cut’ data to the boundaries of an AONB that frequently do not coincide with administrative areas.

1.10 This comprehensive Final Report has the following aims:
i. to identify the special qualities of the AONB underpinning the monitoring process;
ii. to review existing research and establish the usefulness of a range of AONB monitoring indicators;
iii. to devise a methodology for monitoring the distinctive character of the Malvern Hills AONB, especially its landscape;
iv. to initiate the monitoring programme within the AONB based on the developed methodology.

1.11 The proposed methodology will facilitate the production of future ‘State of the AONB’ reports. It will also help to develop an understanding of how far the AONB Management Plan has achieved its aims in managing the special qualities of the designated area.

1.12 Two main themes emerge as crucial to the success of the monitoring process. A first theme underpinning monitoring is the ‘special qualities’ of the Malvern Hills AONB. These are detailed in the Management Plan as:
- landscape & geology;
- biodiversity (wildlife);
- historic & built environment (cultural heritage);
- quiet enjoyment of the countryside (tranquillity).

It is such special qualities that make the area unique, so the Plan stresses that the focus of management in the AONB should lie in preserving and enhancing these qualities. The overall vision is explicitly linked to these qualities:

The vision is one of a landscape in perfect balance with its communities, economies and visitors, where the special qualities – the landscape, wildlife, cultural heritage and tranquillity – are cherished, and conserved and which in return deliver a sustained high quality of life for its residents, wonderful opportunities for visitors to sample local food and picturesque scenery, a skilled labour market and diverse economy of agriculture and high tech industries (MHAONB JAC, 2003, p.20).

1.13 A second theme is linked explicitly to a focus on landscape. The Malvern Hills AONB Management Plan (MHAONB JAC, 2003, p.36) itself identifies a strategic objective to:

Define a process for collecting and analysing detailed information about the state of landscape character, in order to identify priorities for maintaining, restoring and enhancing landscape character, and monitoring change within the framework of the Landscape Character Assessment.

Such an assertion therefore provides clear guidance on how to progress monitoring within the AONB.

Overview of Methodology

1.14 In devising a condition monitoring methodology, it was necessary to complete the following three logical stages.

I. Undertake a critical review of other approaches to AONB monitoring (Section 3), leading to the identification of key monitoring indicators based on special qualities (Sections 2 & 4).

II. Engage with recent initiatives that attempt to define landscape character, principally through exploring the application of Landscape Character Assessment (LCA) to the AONB (Section 5).

III. Establish an active primary programme of monitoring landscape within the AONB using the technique of fixed-point photography (Section 6).
2. The Special Qualities of the Malvern Hills AONB

2.1 The purpose of the Malvern Hills AONB Management Plan (MHAONB JAC, 2003) is to provide a guiding framework to help maintain the special character of the Malvern Hills AONB. In order to do this, it identifies the ‘special qualities’ that help to make the area unique. The Plan stresses that the focus management in the AONB should lie in preserving and enhancing these qualities and as such the overall vision is explicitly linked to these qualities:

*The vision is one of a landscape in perfect balance with its communities, economies and visitors, where the special qualities – the landscape, wildlife, cultural heritage and tranquility – are cherished, and conserved and which in return deliver a sustained high quality of life for its residents, wonderful opportunities for visitors to sample local food and picturesque scenery, a skilled labour market and diverse economy of agriculture and high tech industries* (MHAONB JAC, 2003, p.20).

2.2 The special qualities of the Malvern Hills AONB, as detailed in the Management Plan, are classified according to the following headings:

- landscape and geology;
- biodiversity (wildlife);
- historic and built environment (cultural heritage);
- quiet enjoyment of the countryside (tranquility).

For each of these qualities, apart from the last, the Plan details the special features and characteristics found within the AONB and identifies the key issues that need to be considered for the future. It states the aims of the Plan in relation to each quality, setting out detailed strategic objectives to be met in order to achieve these aims.

2.3 In addition to these qualities, the Management Plan also identifies six inter-related issues that are of particular significance and deserve consideration due to their potential impact on the special qualities of the AONB:

- farming and forestry;
- tourism, recreation and access;
- transport;
- community;
- development;
- sustainable environment.

These linked issues are examined in the same way as the special qualities, with the main features noted and aims and objectives set out. The quality of the ‘quiet enjoyment of the countryside’ is also addressed indirectly through aspects of these issues.

2.4 The strategic objectives of the Management Plan are not detailed here, since these objectives detail relatively specific action to be taken and are therefore of more importance to action planning. However, the aims and key issues raised for each of the themes are summarised in note form in the following nine subsections. These are of the most relevance for consideration in determining condition monitoring for the AONB.

*i) Landscape*

*Aims*

- To protect and, where appropriate, enhance those characteristics and features that contribute to the landscape beauty and amenity of the AONB.
To manage change in the landscape in such a way as to maintain the high quality of the AONB’s landscape character while promoting sustainable development.

In describing the special features and forces for landscape change within the AONB, the Management Plan uses the ten different landscape types that were identified by the application of Landscape Character Assessment (see Section 4).

**High Hills and Slopes**

**Special Features**
- Prominent, steeply sloping highland topography
- Extensive area of acid grassland and heath, and generally unwooded
- Expansive area of unenclosed land with rough grazing
- Exposed, panoramic views
- Unsettled landscape with few signs of human presence.

**Forces for Landscape Change**
- Reduced cattle and sheep grazing – increased scrub, bracken and secondary woodland cover and decreased % open grassland
- Visitor pressure – path and grassland erosion.

**Principal Wooded Hills**

**Special Features**
- Varied, often steeply sloping landscape
- Mixed broadleaved woodland, often of ancient origin
- Occasional hedged fields of pasture
- Views framed by blocks of woodland
- Scattered settlement.

**Forces for Landscape Change**
- Previous forestry practices – high proportion conifers, disrupting visual unity and compromising nature conservation value of woodland
- Woodland clearance and loss of trees along hedgerows and stream sides – damaging biodiversity and visual integrity between areas historically cleared and those still wooded.

**Principal Timbered Farmlands**

**Special Features**
- Hedged fields
- Ancient wooded character portrayed by woodland of varying scale and densely scattered, predominantly oak hedgerow trees
- Filtered views between hedgerow trees
- A small scale landscape with an organic closure pattern.

**Forces for Landscape Change**
- Evident and continuing deterioration – decline and fragmentation of tree cover, particularly hedgerow trees
- Increase in arable farming – reducing need for hedgerows, eventually leading to demise of hedgerow structure and pattern (although Hedgerow Regulations)
Inappropriate management – little new stock or regeneration of hedgerow oaks to replace mature oaks
Density of new development – does not respect characteristic dispersed settlement patterns.

Wooded Hills and Farmlands

Special Features
- Varied sloping topography leading to visually prominent field boundary hedgerows
- A pattern of large discrete blocks of ancient woodland;
- Mixed farming land use
- Medium framed views
- Sparsely clustered settlement pattern.

Forces for Landscape Change
- Loss of hedgerows, hedgerow and streamside trees, and addition of inappropriate small scale features – reducing strength and scale of character
- Previous conifer planting in some areas – significant loss of character.

Estate Sandlands (sometimes Sandstone Estatelands; see also Enclosed Commons)

Special Features
- Arable land use
- Hedged field boundaries
- Planned enclosure pattern of straight boundaries and roads;
- Planned woodland character and discrete woodland pattern;
- Heathy/acid grassland ground vegetation;
- Cluster settlement pattern.

Forces for Landscape Change
- Dominance of intensively farmed land by arable cropping – reduced need for hedgerows and continued deterioration in condition
- Intensive land management – destroys grassland and native plant communities
- Encroachment on parkland by other land uses – parkland trees marooned in sea of arable crops.

Unenclosed Commons

Special Features
- Rough grazing land use
- Unenclosed and wooded
- Heathy/acid grassland vegetation
- Small wayside cottages found on common perimeter, often constructed from red brick or stone.

Forces for Landscape Change
- Lack of grazing, with few people pursuing traditional commoners’ rights over last 50 years – encroachment by scrub and bracken
o Under-resourced management and maintenance for recreation and amenity – decline in commons character
o Uncharacteristic property development – altering integrity of traditional cottages and settlement.

Enclosed Commons

Special Features
o Hedgerow boundaries to fields
o Planned enclosure pattern of straight boundaries and roads
o Open farmland with pastoral land use
o Planned woodland character with pattern of discrete blocks
o Gently rolling topography.

Forces for Landscape Change
o Loss of strong regular enclosure pattern
o Hedgerow trees being lost or replaced by fencing in places
o Notable areas of horse culture and small industrial units.

Settled Farmlands with Pastoral Land Use

Special Features
o Hedgerow boundaries to fields
o Tree cover character represented by hedgerow and streamside trees as opposed to woodlands
o Small scale landscape
o Pastoral land use
o Heavy soils
o Groups of wayside dwellings and scattered farmsteads.

Forces for Landscape Change
o Hedgerow loss and deterioration – reducing scale and spatial character
o Replacement of strong pastoral land use by arable farming in places
o Variable condition and age composition of tree cover along watercourses and hedgerows, notably lacking in places.

Forest Smallholdings and Dwellings

Special Features
o Prominent thick field boundary hedgerows;
o Individual densely scattered trees in hedgerows and gardens;
o Densely settled pattern of smallholdings and wayside cottages, with distinctive buildings of red brick or stone;
o Complex network of narrow intersecting lanes;
o Non-conformist chapels, often constructed of corrugated iron;
o Heathly/acid grassland ground vegetation;
o Pastoral landscape.

Forces for landscape change
o Increasing urbanisation – changes in character of original cottages due to remodelling and extensions, and increased settlement density through infilling with new development;
Increased horse and pony ownership – small pastures changed to paddocks with loss of hedgerows and grasslands.

Settled Farmlands on River Terrace

**Special Features**
- Horticultural cropping land use
- Hedgerows delineate the field boundaries
- Sparsely dispersed settlement limited to small discrete clusters
- Open views.

**Forces for Landscape Change**
- Modern horticultural demands – loss of hedgerow trees and remaining hedgerows in poor condition
- Tree cover limited to those around building and growing along water courses where land not required for crops.

### ii) Biodiversity

**Aims**
- To protect, restore and enhance those habitats which contribute to the biodiversity of the AONB

Within the Plan, ‘biodiversity’ is defined as the variety of plants, animals, birds and habitats found in an area, and is closely related to the variety of landscapes and geology within the AONB.

**Special Features**
- Lowland mixed deciduous broadleaved woodland
- Acid grassland
- Lowland limestone grassland
- Unimproved neutral grasslands or meadows
- Traditional standard orchards
- Historic parkland
- Veteran trees
- Watercourses
- Hedgerows and hedgerow trees.

**Internationally protected and nationally rare species**
- dormouse;
- bats – lesser horseshoe, barbastrelle, pipistrelle, bechsteins
- bullfinch, skylark and song thrush
- great crested newt
- high brown fritillary butterfly.

**Animals, birds and plants with local conservation priority**
- black poplar
- polecat
- barn owl
- adder
- peregrine falcon
- kestrel
- other BAP species, especially invertebrates, fungi and plants.
**Key Issues**

- **Information**
  There is a lack of recent or complete information on state or condition of AONB wildlife and habitat resources. Existing BAPs are on county-wide basis, not linked to AONB boundaries. There is a lack of funding for such surveys.

- **Visitor Pressure**
  The impact of recreation can be acute and impacts on sensitive habitats. This includes erosion from walking, dog roaming, traffic levels, unrestricted parking and litter. Visitor pressure is often un-quantified and inhibits appropriate management.

- **Land Management Practices**
  Special wildlife is closely related to special landscapes and traditional forestry and farming techniques – maintenance therefore depends of good land management practices, eg. grazing hill tops, coppicing woodland, laying hedges. Dramatic shifts in practices over last 50 years from economic pressure have caused problems such as loss of hedgerow wildlife corridors, leading to greater isolation and vulnerability amongst wildlife populations.

- **Problem Species**
  Some species are found at sites where they are detrimental to biodiversity, often through ineffective land management eg. trees on open hills, dominant species suppressing native growth. Deer are a problem without sympathetic management.

- **Development**
  Insensitive development leads to direct loss of, or an adverse effect on, biodiversity, eg. conversion of barns destroying bat habitats.

- **Climate Change**
  Potential habitat change from altering weather patterns and temperature ranges could affect vulnerable species.

**iii) Historic Environment**

**Aims**
- To support the conservation and enhancement of the wider historic environment and improve awareness and appreciation of the historic environment within development and land use practices.

**Special Features**
- Bronze Age burial grounds
- Iron Age hill forts
- Industrial architecture
- Schedules Ancient Monuments
- Designed parks and landscape gardens
- Listed buildings
- Half timbered buildings
- Victoria villas of Malvern
- Victorian tree plantings
- Springs and wells
- Artistic associations
- Veteran trees
- Gardens and parks of local significance
- Medieval deer parks.
Key Issues
- Protection and conservation of prominent features
- Failure to respect the vernacular and local distinctiveness
- Impact of rural land use and recreation
- Poor awareness of the historic environment.

iv) Farming and Forestry

Aims
- To encourage a healthy rural land economy that conserves and enhances the landscape character, biodiversity and historic environment of the AONB.

Special Features
- Ancient semi-natural woodlands
- Historically grazed grasslands and commons
- Cider, pear and cherry orchards
- Hedges and hedgerow trees
- Large wooded estates and parklands
- Mix of pasture and arable farmland, with varying concentrations of native, conifer and mixed woodlands, reflecting distinct landscape characters.

Key Issues
- Pressure to intensify or diversify land use and buildings;
- Loss of trees to disease;
- Impact of existing coniferous trees within Ancient Semi-Natural woodland sites;
- Loss of traditional agricultural and woodland management practices;
- Locally sourced products.

v) Tourism, Recreation and Access

Aims
- To ensure that tourism, recreation and access management respect the conservation and enhancement of the AONB’s qualities.
- To ensure that the adverse impacts of tourism and recreation on the AONB are minimized and the quality of the environment is preserved.
- To ensure that tourism, recreation and access are provided for in a sustainable, accessible and coherent manner across the AONB.

Special Features
- Unspoiled natural environment
- Dramatic scenery and views
- Quiet rural lanes for walking, cycling and horse riding
- Visitor attractions, historic buildings and parks
- Villages and market towns (partly within the AONB boundary)
- Marked routes for leisure driving
- Wide range of other recreational activities (including angling, equestrian activities, hang gliding, kite flying, model gliding, sledging, cycling and walking).
Key Issues
- Fragmented nature of public footpath and bridleway network, leading to over intensive use in some sensitive areas and contributing to footpath erosion
- Network of ‘quiet lanes’ at risk from increasing traffic congestion
- Visitor impact, resulting in traffic congestion, parking on verges, damage to paths, agricultural land and habitats, and disturbance to residents – especially in central section of AONB
- Strengthening the link between rural land economy and tourism and recreation industry, for example by promoting distinctive locally sourced products
- Increasing accessibility for all sectors of society, particularly the less mobile.

vi) Transport

Aims
- To reduce the impact of car traffic on the special qualities of the AONB, and the quality of life of its communities.
- To encourage opportunities for sustainable transport means by people of all abilities.

Special Features
- Potential good bus-rail linked journeys and specific recreation based bus services (e.g. ‘Hills Hopper’)
- Regional rail access to and from the West Midland and the South East
- Easy access and car park provision to the high hills and ridges
- Rural character of minor roads defined by features such as hedgerows, routes for walkers, cyclist and horse riders, and cast iron road signs and milestones
- Quiet rural lanes that provide routes for walkers, cyclists and horse riders.

Key Issues
- Impact of high levels of car traffic and parking at peak times, causing damage from inappropriate parking, disturbance to wildlife and erosion of tranquillity, means sustainable transport should be encouraged wherever possible
- Unsympathetic and inappropriate road improvement design and street furniture.

vii) Community

Aims
- To promote awareness of, and pride in, the designation of the Malvern Hills as an AONB.

Special Features
- A reasonably content and cohesive community identity
- Skills in traditional landscape management such as hedge laying, coppicing and fencing
An attractive environment for low impact industries and a skilled workforce.

Key Issues
- Awareness of the AONB, its purpose, special qualities and extent is not as widespread or comprehensive amongst the local community as it could be.
- Decline in agricultural and woodland skills which are vital for conserving and enhancing characteristic landscape features.
- Lack of adequate telecommunications infrastructure (e.g., Broadband) for increasing the potential for home working.

viii) Development

Aims
- To minimise the adverse impact that development proposals and implementation have on the AONB’s landscape character, biodiversity, and historic environment.
- To ensure that new and redevelopment contributes to, rather than detracts from, the sense of place, local distinctiveness, and landscape character of the Malvern Hills.

Special Features
- Considerable protection offered by the AONB designation and planning law.
- Rural character and scale of settlements in the AONB adds to the sense of tranquillity.
- High quality environment across the AONB, including views from and of the Hills themselves.
- Community planning initiatives already exist in some areas.

Key Issues
- Impact of new development and the restoration or conversion of old buildings often has a detrimental impact on the special qualities of the AONB.
- Restrictions on mineral extraction mean a lack of sources of local building stone and materials.
- Analysis needed into the character of the built environment, in a similar way to Landscape Character Assessment, to inform planning guidance.
- Guidance for development proposals needs to be consistent across all AONB authorities to ensure continuity between county, unitary, and local development plans.

ix) Sustainable Environment

Aims
- To ensure the sustainable and efficient use of the AONB’s resources, such as land, air, and water.
- To maintain a clean and tranquil AONB.

Special Features
- World renowned spring water
- Relatively good air quality, aided by prevailing wind direction, relative lack of development, and rural settlement character
- Areas of tranquillity and dark night skies within AONB and beyond to the west of the Hills.

**Key Issues**

- Nitrate Vulnerable Zones
- Importance of hydrology on the Hills
- Litter and fly-tipping
- Light pollution from inappropriate lighting as well as new development
- Noise pollution, particularly from car traffic.
3. Review of Other Approaches

National and Regional Approaches to Condition Monitoring

3.1 At its most basic level, condition monitoring seeks to assess changes over time. As such, it generally needs to be ongoing so that comparisons can be drawn and changes within the AONB identified. A substantial amount of ongoing monitoring is already undertaken by other bodies in areas of relevance to their own interests, for example by English Nature (EN) or the CA. Similarly, locally based organisations, such as the Malvern Hills Conservators, also have monitoring schemes already in place. Condition monitoring can take advantage of these existing programmes, although there may be difficulties in using findings directly to assess the results of the AONB Partnership’s own planning and management. Nevertheless, some duplication of data collection can be avoided, reducing the time and money spent on monitoring. Importantly, it can also allow for comparisons, for example with adjacent areas or with other AONBs, as well as possibly contributing to larger national or regional databases.

3.2 Previous work has been conducted at both a national and regional level into the appropriateness of a range of monitoring indicators. This includes work by the CA and Countryside Council for Wales (CCW). Indicators have also been proposed for a variety of other AONBs, and in the West Midlands Region for Cannock Chase AONB in particular.

3.3 At the national scale, monitoring ‘themes’ have been identified relating to:
- culture;
- ecology;
- socio-economic factors.

How each relates to landscape features is then teased out, with reference on occasion to the activities and pressures that influence them and require monitoring. These are inevitably rather too broad brush to be of relevance across the very diverse family of AONBs. Some AONBs have co-operated to produce supra-regional monitoring statements which build in a degree of comparability across AONBs and contain more specific indicators. For example, some refer to indicators of water quality, relevant only to a subset of AONBs.

3.4 Cannock Chase AONB represents a good example of monitoring work being attempted locally (Holdaway, 2004) based on a CCW model (Holdaway, 2003), as well as drawing upon guidance from CA, Bakers Associates (2003) and other AONBs. The report focuses on the special qualities of Cannock Chase AONB, commenting upon its nature and current condition, and suggesting possible indicators for change. Key activities and pressures are then considered in a similar way. The report, however, does not explicitly state how the condition monitoring should take place, focusing instead on identifying the action needed by the appropriate agencies to develop indicators for the future. The information needed to establish a profile of the AONB is also set out, proposed to complement more detailed reporting.

Countryside Character Initiative

3.5 At national and regional level, landscape character finds expression in Joint Character Areas (JCAs). These were developed by EN and CA and are regarded as the principal unit for looking at landscape at a regional scale. The boundary of the AONB covers parts of five JCAs to varying extents (Figure 3.1). These are:
- Malvern Hills;
• Severn and Avon Vales;
• Herefordshire Lowlands;
• South Herefordshire and Over Severn;
• Herefordshire Plateau.

3.6 Perhaps understandably, the biggest area of the AONB is covered by the Malvern Hills JCA. A small area of the JCA lies outside the AONB boundary, concentrated to the north-east. The four remaining JCAs together account for approximately 30% of the AONB by area, so that they are minor but nevertheless significant. Full descriptions of each JCA can be accessed at the CA’s website: http://www.countryside.gov.uk/LAR/Landscape/CC/west_midlands/index.asp

**The Countryside Quality Counts Initiative**

3.7 The Countryside Quality Counts (CQC) initiative sits within the JCA structure. The project aims to provide broad indicators of change to inform future policy, for example by feeding into the Government’s annual ‘State of the Countryside’ report and by contributing to the evidence base underpinning the work of imminent Natural England (the new Government agency, comprising English Nature, parts of the Countryside Agency and most of Defra’s Rural Development Service). The project was initially intended to develop indicators capable of describing change in character and quality at national scales. However, consultation suggested that using the JCAs of England as a spatial framework would be the best compromise between the needs of potential users of the information, who required a detailed local view, and the requirements for a national index, in line with the 2000 Rural White Paper commitment. Headline indicators are also being developed for National Parks and AONBs as part of the CQC initiative.

3.8 The CQC project draws together a diverse range of data, which makes it applicable to a wide range of applications. However, the presentation of a set of headline indicators is unlikely to provide the level of detail required for monitoring the spectrum of change occurring within an AONB. The timescale of the project may also make it unsuitable. The first set of results available covered the period 1990-1998. The indicators have been updated for the period 1998-2003, but results from the next phase will not be available until the end of 2006 (CA, 2004). Individual datasets utilised by the CQC project may be of use for condition monitoring within the AONB. These would need to be those that are updated with a regular frequency. Choosing indicators that linked into CQC would be useful for drawing comparisons with other AONBs, or for placing the Malvern Hills in a regional or national context. Further information is expected shortly about the availability and suitability of these data sources.
Figure 3.1: Joint Character Areas in and around the Malvern Hills AONB.
4. Indicators for Monitoring the Malvern Hills AONB

4.1 It is the monitoring of uniqueness that is given emphasis when choosing diagnostic indicators. It is important to recognise the need for the Malvern Hills AONB Unit to develop an ongoing monitoring process that is well-suited to the unique character of the AONB, taking into account the available guidance from government agencies and examples of practice in other areas. This is necessary to show the extent to which the specific aims of the Management Plan are being met. Indicators for the Malvern Hills AONB have been selected on the basis that they are:

- directly related to the special qualities and linked issues of the Malvern Hills AONB, as laid out in the Management Plan;
- easily collected, or available from other agencies, so that they do not place unnecessary demands on the AONB unit in terms of time or cost;
- capable of being updated with a reasonable frequency that makes them useful for monitoring change over a given time period.

4.2 The strategic decision made here is that there is a requirement first and foremost for customised, specific monitoring of the AONB. As work at a more national, cross-AONB level continues, then increased comparability with other AONBs will become apparent. However, it would not seem prudent to pre-empt this process at this point in time. Indeed, the CQC initiative (Section 2) demonstrates that considerable work needs to be done to secure data availability, standardise data sets and to ensure that they are collected with adequate frequency.

4.3 The indicators selected for monitoring in the Malvern Hills AONB are summarised in Table 4.1. Their relationship with the special qualities of the AONB, data source, frequency of collection, availability and cost are outlined. The characteristics of each indicator are given in Table 4.1, together with a justification for selection. It should be noted that a high degree of selectivity has been employed to arrive at an indicator set that is both manageable to the AONB Team and pertinent to the specific qualities of the AONB. Brief reference is made to why some indicators suggested at the national level, or popularly suggested within other AONBs, have been excluded. A synopsis of indicators that may become useful in the future, but are unsatisfactory for use at present, is also provided so that a watching brief can be kept on them. A full exposition of each indicator is given from Para 4.6.

4.4 It is also vital to make a distinction between data yielding information that can build up a profile of the AONB and that which could inform the monitoring process. For example, the population census conducted every 10 years (with mid-term estimates) can be used to describe the numbers and characteristics of those living and working within the AONB boundary. However, this leaves a considerable amount of inference to be drawn about the landscape impacts of population change. It is suggested that periodic updates are commissioned of the ‘Statistical Digest’ previously provided via the Countryside Agency to ensure that an accurate profile of the AONB is maintained. Hence, the indicators have been selected here for the direct nature of their relationship to the special qualities identified.

4.5 Glossary: the following acronyms appear in Table 4.1.

BAR – Buildings At Risk
BVPI – Best Value Performance Indicator
EHT – Earth Heritage Trust
H&W – Hereford and Worcester
LA – Local Authority
4.6 There is no substitute for the setting up and implementation of a fixed point photography programme to monitor landscape change. However, it is essential to embed this programme within a structure that reflects the diversity and character of the AONB. It should not be a random or subjective process based on explicit or culturally explicit landscape bias. Unfortunately, seeking the opinion of people on ‘key views’ is likely to reflect both cultural valuations, particularly of scenic beauty, and knowledge of accessibility. Such localities are also likely to be in the general spotlight and subject to public and media reportage. For example, in the Malvern Hills AONB, the MHC already conduct a monitoring programme of the ‘spine’ of the Hills, with 50 fixed points monitored in the northern and central sections since 2000. Such information is currently available to the AONB by kind agreement of the MHC and a concentration of monitoring on the Malvern Hills themselves would lead to a very significant duplication of effort.

4.7 To avoid such pitfalls, it is strongly recommended that the fixed point photography programme for the Malvern Hills AONB draws upon recent advances in Landscape Character Assessment (LCA). The importance of LCA was recognised in the Management Plan (MHAONB JAC, 2003, Section 5) at a time when Local Authorities had just completed their LCAs. The time is now right to utilise this LCA process within the AONB. It involves some significant preliminary GIS work and exposition of the LCA methodology to ensure consistency across boundaries. Establishing a robust methodology, initiating a programme of fixed point photography and providing guidance on analysis to produce data are all developed fully in the subsequent sections of this report.

4.8 There are 27 ‘Landscape Description Units’ (LDUs) covering the AONB. It is recommended that half of these are monitored in any one year. This is less heavy in terms of resource costs, but the main advantage is that two years between photographs allows for a reasonable period over which to detect changes which, by their incremental nature, may be less discernible on an annual basis. It also means that each LDU would be revisited once within the lifetime of any one Management Plan, providing comparative material.
Table 4.1: Indicators and their characteristics in Malvern Hills AONB monitoring. Source: CRR.

<table>
<thead>
<tr>
<th>Principal Indicator</th>
<th>Special quality monitored</th>
<th>Source</th>
<th>Frequency of Review</th>
<th>Availability</th>
<th>Estimated Cost</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fixed point photography</td>
<td>Landscape</td>
<td>AONB Team</td>
<td>Biennial rolling programme – 14 LDUs in Year 1 and 13 in Year 2</td>
<td>In house (could contract out) each Spring</td>
<td>Min. 16 days fieldwork / basic analysis (£4200)</td>
<td>Best single source of landscape monitoring, tailor-made to the AONB and under the Team’s control. Important to bed it within a rational wider framework, in this case LCA, rather than based on preconceptions and culturally-loaded ideas of ‘good views’.</td>
</tr>
<tr>
<td>2. LCA monitoring</td>
<td>Landscape</td>
<td>AONB Team / LA partnership</td>
<td>Biennial</td>
<td>LA at early stage, so in house partnership</td>
<td>Free - if in partnership? Min. 16 days fieldwork / analysis. Reduced if combined with 1 above</td>
<td>Methodology is already defined by Local Authorities who are about to commence monitoring of LDUs. Represents an excellent wider context of change within which to interpret the fixed point photography.</td>
</tr>
<tr>
<td>3. Agricultural Census</td>
<td>Landscape</td>
<td>Defra</td>
<td>Annual</td>
<td>On-line, usually after Christmas</td>
<td>Free, 2 days analysis of farm type, size and enterprise structure (area of grass vs crops)</td>
<td>Data is out to the AONB boundary by Defra from individual farm business returns. This is a ready-made data set and the best for gaining an overall picture of land-use change in the absence of a farm survey.</td>
</tr>
<tr>
<td>4. RIGs condition database</td>
<td>Geology</td>
<td>H&amp;W EHT / Gloucestershire GeoConservation Trust</td>
<td>Annual</td>
<td>On request, irregular frequency due to cost and funding</td>
<td>Nominal fee of around £50 to reflect EHT staff time in retrieval of information</td>
<td>Generally ignored in other work on indicators, but a good way to monitor geology, at least in terms of visibility and accessibility of rock exposures. The AONB benefits from highly active Trusts in its boundaries. There are 12 RIGS in the AONB but more could be designated and Trusts seem willing to prioritise monitoring of these.</td>
</tr>
<tr>
<td>5. SSSI Condition</td>
<td>Biodiversity</td>
<td>Natural England</td>
<td>Annual</td>
<td>On-line, published each Spring</td>
<td>Free, 1 day to retrieve and provide a basic commentary</td>
<td>There are 15 SSSIs within the AONB, all of which are now monitored annually for condition (though not necessarily field surveyed each year). These are the best protected areas, so changes elsewhere can be assumed to be magnified. Further biodiversity information on specific species is available (at a cost) from the MHCs.</td>
</tr>
<tr>
<td>6. SAMs</td>
<td>Historic and built environment</td>
<td>H&amp;W County Archaeological Service</td>
<td>Annual</td>
<td>On request from English Heritage West Midlands Office</td>
<td>Nominal fee of around £50 to cover costs incurred by county Archaeological Services</td>
<td>There are 8 SAMs in the AONB which cover built structures and ground features. English Heritage maintains the most up-to-date information on listed ancient sites is held by the county Services</td>
</tr>
<tr>
<td>7. Listed Buildings &amp; BAR Register</td>
<td>Historic and built environment</td>
<td>BAR Register, LAs, English Heritage</td>
<td>Annual</td>
<td>On-line; LA Planning Depts; available at Swindon office</td>
<td>Free, 4 days</td>
<td>The BAR Register effectively contains a representative sample of the range of built interest at risk in the AONB and can be monitored for improvements. Local Authorities keep up-to-date information on listed buildings which can be compared with the benchmark for these data already contained in the current Management Plan.</td>
</tr>
<tr>
<td>8. BVPI</td>
<td>Quiet enjoyment</td>
<td>AONB Team</td>
<td>5% Annual Target</td>
<td>In house or contract out, May to November</td>
<td>Min. 12 days including fieldwork and analysis</td>
<td>Follows the methodology established by the IPRWO to determine the current condition of the rights of way network used for quiet enjoyment. A prescriptive set of indicators can be modified to meet specific needs or applied directly to afford comparison with LA areas.</td>
</tr>
<tr>
<td>9. Visitor surveys</td>
<td>Quiet enjoyment</td>
<td>AONB Team / MHC</td>
<td>Quinquennial / annual</td>
<td>In house / MHCs Annual report</td>
<td>Min. 12 days including fieldwork and analysis</td>
<td>Devising a standard questionnaire is an initial cost, but will provide customised and replicable data on visitors. Financial data relating to car-parking in the MHCs Annual Report can be considered as a surrogate for the minimum visitor numbers to the Hills themselves.</td>
</tr>
</tbody>
</table>
Indicator 2 – Landscape Character Assessment Monitoring

4.9 Herefordshire and Worcestershire are fortunate in that the Local Authorities have reached a relatively advanced stage in conducting a Landscape Character Assessment (LCA) for each county. From the mid-1990s, the components of the landscape have been identified and described in detail. It seems logical for the AONB team to draw upon this valuable resource to underpin the fixed-point photography monitoring programme. However, the LAs are now engaged in the next stage of LCA, that of monitoring the condition of the units that have been described. Thus, LCA also offers an indicator of change in its own right. At the time of writing, a methodology has been devised to monitor change in these building blocks of the landscape and it has been applied in an experimental way to a small area of Worcestershire outside the AONB. There is a strong case for the AONB to work in partnership with the LAs for mutual benefit. Condition monitoring using the same methodology would assist in refining the process by providing another experimental area and it would yield information that could be used directly by the LAs and AONB.

4.10 A synopsis of the approach taken to monitoring Landscape Description Units and Landcover Parcels is given in the next Section. This monitoring could be done simultaneously with the fixed-point photography and so represents an efficient use of resources.

Indicator 3 – The Agricultural Census

4.11 The June Agricultural Census is collected annually by Defra and provides the most comprehensive data on land use and the structure of the farming industry. However, it is insufficient simply to refer to the Agricultural Census as an indicator because it contains a host of specific variables that require interpretation. There is therefore a need to specify individual variables that are of use to landscape monitoring. Further, the use of the Agricultural Census is far from problem-free and its multitude of complex drawbacks needs to be appreciated before data are interpreted from it (see Clark and Gordon, 1982; Ilbery and Evans, 1989; Evans, 1996).

4.12 A particular difficulty concerns the scale at which data from the Agricultural Census are presented. Until 1988, data were available as small area statistics for civil parishes. However, the restructuring of the farming industry, particularly in terms of concentration which describes a trend towards fewer but larger farming units, meant that issues of confidentiality came to the fore. With fewer farms in parishes, the confidentiality of farmers who have to complete the census by law became breached in some cases, as the activities of individual farm businesses became discernible from the parish returns. There then followed a relatively brief period of experimentation with presenting data for parish groups (on average, an amalgamation of seven parishes across the two counties of Herefordshire and Worcestershire – see Evans, 1996). In both cases, these units present difficulties when attempting to extract data for the AONB area, the boundary of which cuts across many of these administrative areas. Since 2000, data have been presented by Defra using the NUTS system of areal classification. This is based on electoral wards, so is again inconvenient from an AONB perspective.

4.13 Since 2002, Defra have re-presented Agricultural Census data matched specifically to AONBs in England. The individual Census returns from farmers are used to calculate the data and so a tailor-made summary of the AONB is now freely available. One reason is that AONBs are sufficiently large units to prevent the
problem of breaching confidentiality, although for specific entries where there are few farms involved (such as the area of rhubarb grown) data may still be suppressed.

4.14 From the wealth of Agricultural Census data available, it is recommended that the AONB use a narrow selection of variables to help monitor agricultural land use change. These are listed in the following paragraphs, together with a brief justification for their selection.

4.15 Farm Type – this is pre-classified by Defra and the definitions of farming type should be consulted and familiarised. This is a broad indicator of the popularity of, and balance between, farm enterprises in the AONB. It is particular useful for inferring how the countryside is currently functioning, helping to indicate the underlying need for specific landscape features.

4.16 Farm Size – this is again pre-classified by Defra using specific definitions. The agricultural geography literature demonstrates that larger farms are capable of more landscape damage than smaller farms, such as removing hedgerows, yet have more money to devote to conservation projects (Potter, 1986). By contrast, smaller farms do less wholesale damage but have little money to invest in conservation. A growth of very small farms (at least, those that do not escape inclusion in the agricultural census) also brings with it a change of land use to activities such as ‘horsiculture’, agricultural diversification and non-agricultural diversification, with their associated landscape impacts. With the introduction of the Single Farm Payment decoupled from price support, it is necessary to determine whether farms in the AONB are attempting to engage with producing for the world market, which a growth in farm size would suggest, or whether they are able to generate income from diversification and agri-environmental payments which would lead to a stable or smaller farm-size structure over the short term. In landscape terms, fewer, larger farms also means fewer farmers to exercise a diversity of decision-making over their agricultural systems and methods of husbandry.

4.17 Specific Enterprises – for monitoring purposes, it is suggested that the total land uses be consulted rather than the individual components used. There may be cases, such as when drawing inferences about biodiversity, that may call for establishing the area of specific enterprises, such as ‘winter’ or ‘spring’ wheat for example, but there seems little need to do this on a regular basis. In any case, as Defra improve the sophistication of the Agricultural Census resource over time, it is becoming possible retrospectively to use historical datasets to construct trends over time. Hence, the totals that should be consulted refer to the relative proportions of arable and pastoral land uses as these clearly influence directly the overall appearance of the AONB landscape. The variables that need to be extracted from the Agricultural Census are;

- total area of permanent pasture (grassland over 5 years old)
- total area of ley (grassland 5 years old or younger)
- rough grazing
- total area of cropping (combinable and non-combinable, including feed for livestock)

High levels of price support formerly offered under the Common Agricultural Policy represented an incentive to farmers to ‘improve’ grassland, utilise areas of rough grazing and increase the area of arable crops. Volatile, but periodically profitable markets for unsupported crops such as potatoes has also contributed to wholesale land use change in the AONB since it was designated. Again, how the advent of Environmental Stewardship and the introduction of the Single Farm Payment will influence land use in the AONB deserves to be monitored.
Indicator 4 – Regionally Important Geological Sites

4.18 The AONB benefits from having two active Earth Heritage Trusts within its boundaries, namely the Herefordshire and Worcestershire Earth Heritage Trust (HWEHT) and Gloucestershire Geoconservation Trust. These Trusts have been actively engaged for approximately 10 years in the identification and monitoring of Regionally Important Geological Sites (RIGS). Details of these sites are stored on a database, which can be accessed for a small fee to cover the time taken by HWEHT staff to extract the data for sites listed within the AONB boundary using GIS. The condition monitoring of these sites usually refers to accessibility and to the visibility of any rock exposures.

4.19 The HWEHT has records for each RIGS and is in the process of collecting photographs to accompany the site reports, which would also be available to the AONB Team. Because of the funding required, the HWEHT has not yet been able to establish a regular programme of site monitoring, and tends to focus primarily on sites at which special projects have been carried out (such as English Nature’s ‘Facelift’). However, they are keen to work in partnership with the AONB to look at the RIGS within the area on an ongoing basis should this be required.

4.20 At present there are around 12 RIGS in the AONB, but the HWEHT are keen to expand this number and have identified approximately 50 further sites that warrant designation. From 2007 onwards the HWEHT will be working on a Geodiversity Action Plan, which will include most of the AONB (excluding the section in Gloucestershire, for which the Gloucestershire Geoconservation Trust has responsibility). Initially, this will involve a geological audit to assess the condition of existing sites and features. It is intended that through this audit new RIGS will be identified and designated. Finally, the Plan will set in place management strategies for maintenance and improvement. The Geodiversity Action Plan will involve an element of ongoing monitoring, which could be valuable for assessing the condition of the geology within the AONB, and should be something the AONB remains aware of in future years.

4.21 It is worth noting that this is one indicator that has been largely ignored by work in other AONBs and at the national level. Geology seems to be mentioned, but no-one knows how to monitor it! The closest approximation is the use of Natural Area profiles, although these are broad brush for AONB purposes. This is particularly the case for the Malvern Hills where geodiversity is one of its inherent characteristics, as further testified by the existence of the Abberley and Malvern Hills Geopark which completely encompasses the AONB. One explanation for the paucity of ideas on geological monitoring is that EHTs, which are often largely voluntary bodies, vary greatly in the extent of their willingness and resources to designate RIGS in their respective counties. A number of SSSIs in the AONB have also been designated for their geological interest and the HWEHT are also closely involved in carrying out monitoring at these sites on behalf of English Nature.

Indicator 5 – Sites of Special Scientific Interest Condition

4.22 A Public Service Agreement (PSA) was issued by Government at the start of the millennium dedicated to improving the condition of Sites of Special Scientific Interest (SSSIs). The target set was that 95% of SSSIs should be in a favourable or recovering condition by 2010. Condition monitoring was introduced to provide data to feed into this process to ascertain the extent to which the PSA was being met in each English Nature reporting year.
4.23 Condition surveys are carried out by English Nature (Natural England) as resources allow, targeted at those sites where improvement is necessary to meet the PSA standard. Not all SSSIs are monitored annually. There are 15 SSSIs within the AONB boundary, representing between 10-11% of its total area. These are listed in Table 4.2, together with summary details of their current conditions. These look set to be published at least until the end of the life of the PSA, which is into the next Malvern Hills AONB Plan period. A statement can be made about biodiversity (and geological) condition on this basis, as if the protected SSSIs are declining in their quality, then the situation is likely to be worse outside their boundaries in unprotected countryside.

Table 4.2: Condition of SSSIs within Malvern Hills AONB (at 1st March 2006) (Source: English Nature)

<table>
<thead>
<tr>
<th>SSSI NAME</th>
<th>AREA (ha)</th>
<th>CONDITION OF SSSI BY % AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Favourable</td>
</tr>
<tr>
<td>Bank and Cother Hill</td>
<td>18.78</td>
<td>72.52</td>
</tr>
<tr>
<td>Castlemorton Common</td>
<td>79.40</td>
<td>100.00</td>
</tr>
<tr>
<td>Crews Hill Wood</td>
<td>7.06</td>
<td>100.00</td>
</tr>
<tr>
<td>Crumpton Hill Wood</td>
<td>1.56</td>
<td>100.00</td>
</tr>
<tr>
<td>Eastnor Park</td>
<td>153.28</td>
<td>68.46</td>
</tr>
<tr>
<td>Halesend Wood</td>
<td>54.86</td>
<td>100.00</td>
</tr>
<tr>
<td>Ledbury Cutting</td>
<td>1.68</td>
<td>100.00</td>
</tr>
<tr>
<td>Leigh Brook Valley</td>
<td>46.83</td>
<td>73.09</td>
</tr>
<tr>
<td>Little Byefields Meadow</td>
<td>1.42</td>
<td>0.00</td>
</tr>
<tr>
<td>Mayhill Wood</td>
<td>7.00</td>
<td>100.00</td>
</tr>
<tr>
<td>New Inn Meadow</td>
<td>2.64</td>
<td>0.00</td>
</tr>
<tr>
<td>Ridgeway Wood</td>
<td>31.88</td>
<td>100.00</td>
</tr>
<tr>
<td>Starling Bank</td>
<td>2.16</td>
<td>100.00</td>
</tr>
<tr>
<td>The Malvern Hills</td>
<td>746.23</td>
<td>15.38</td>
</tr>
<tr>
<td>Upper Hall Farm</td>
<td>8.52</td>
<td>48.47</td>
</tr>
</tbody>
</table>

4.24 Detailed information about SSSIs is freely available through English Nature’s website. This includes a copy of the initial citation, explaining the reasons for designation, and 'Views About Management', setting out the basic management principles required for site conservation. Also available is detailed information about the state of each SSSI unit at the last condition survey. The website has been updated to include all information gathered as at 1 March 2006 (Table 4.2). The AONB should use these data to annually monitor the area of its SSSIs within each
condition category, with the % of SSSIs that are in a favourable or recovering condition being the headline indicator to facilitate a comparison with the Government’s PSA target.

4.25 If supplementary information on biodiversity is required, then the MHC have a series of projects monitoring individual species on land under their jurisdiction. Headline trends should be available without cost from MHC, although if more details are required from the biological records of individual species then a charge will be payable as these are not stored by MHC. The current species case studies include:
- A dormouse Survey
- Butterfly surveys in conjunction with Butterfly Conservation
- A moth trapping programme
- Adder recording
- Fungal recording by the Herefordshire Fungus Survey Group
- 3-yearly National Vegetation Classification Survey of grassland and scrub species.

*Indicator 6 – Scheduled Ancient Monuments*

4.26 Scheduled Ancient Monuments (SAMs) are archaeological sites of national significance that have been given legal protection by English Heritage. They are not necessarily visible above ground, and can represent any period of human activity from prehistoric times to the twentieth century. The AONB contains 8 SAMs, detailed in Table 4.3. These range from smaller, individual structures such as Bronsil Castle or the Dovecote at Barton Court, to the linear features of the Shire Ditch, which runs for many miles. Examining SAMs for condition monitoring addresses the AONB’s special quality of historic and built environment. SAMs should be considered in addition to listed buildings (where the emphasis is on buildings which have a continuing active use) to cover all aspects of this quality. Some SAMs are included in the Buildings at Risk register (see Para 4.31 below), but it is important to monitor SAMs separately since only structures are recorded on the register and the AONB contains a number of prehistoric features that are therefore not eligible for inclusion.

Table 4.3 Scheduled Ancient Monuments within the Malvern Hills AONB
(Source: English Heritage)

<table>
<thead>
<tr>
<th>SAM Name</th>
<th>Reference</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Malvern Priory</td>
<td>WT218</td>
<td>Worcestershire</td>
</tr>
<tr>
<td>The Shire Ditch</td>
<td>HE244/WT244</td>
<td>Herefordshire/Worcestershire</td>
</tr>
<tr>
<td>Herefordshire Beacon Camp</td>
<td>HE3/WT3</td>
<td>Herefordshire/Worcestershire</td>
</tr>
<tr>
<td>Midsummer Hill Camp</td>
<td>HE4/WT4</td>
<td>Herefordshire/Worcestershire</td>
</tr>
<tr>
<td>Barrows adjoining county boundary (E of Gardener’s Common)</td>
<td>HE177</td>
<td>Herefordshire</td>
</tr>
<tr>
<td>Bronsil Castle</td>
<td>HE62</td>
<td>Herefordshire</td>
</tr>
<tr>
<td>Dovecote at Barton Court</td>
<td>National monument 31979</td>
<td>Herefordshire</td>
</tr>
<tr>
<td>Moated site at Aubrey’s Farm</td>
<td>National monument 32334</td>
<td>Gloucestershire</td>
</tr>
</tbody>
</table>
4.27 At present, the National Sites and Monuments Record held by English Heritage is not available to search on-line, although this may change in the future. A Sites and Monuments Record for each individual county is held by the relevant County Archaeological Services for Worcestershire, Herefordshire and Gloucestershire, and this information, along with ESRI shapefiles for use with GIS, would be available to the AONB. However, Worcestershire Archaeological Service has advised that requests for this type of information need to be directed in the first instance to English Heritage (through the West Midlands Regional Office in Birmingham), since they have overall responsibility for SAMs. It is English Heritage who would have the most up-to-date information on any condition surveys that have been carried out. Archaeological Services also have details of other, non-scheduled sites within their county. The AONB should monitor this information for any changes on an annual basis initially, although given the relatively small number of sites this may need to be extended depending on English Heritage’s reporting cycle.

Indicator 7 – Listed Buildings and Buildings at Risk
4.28 The current AONB Management Plan makes reference to the fact that the built environment makes an important contribution to the landscape of the AONB. It also includes a map of listed buildings (MHAONB JAC, 2003, p.45, Map 5 ‘Cultural Heritage’) which shows a generally even geographical distribution of them throughout the AONB. The responsibility for listing buildings lies with English Heritage. As with most databases, the entries are selective and are arguably better viewed as representative of the range of built interest in the AONB rather than as a complete record of all valuable buildings (for details on how buildings are listed, see Cullingworth and Nadin, 2002).

4.29 Map 5 in the Management Plan has been compiled by consultation with records from the Planning Departments of Local Authorities which have a duty to respect the listings made by English Heritage. It is recommended that these listings be reviewed annually and that Map 5 be used as a benchmark to record additions and losses over time. The Local Authorities would be the source of the most up-to-date information regarding listed buildings. The AONB should construct its own database so that the data behind the map can easily be updated. If little change is evident on an annual basis, review could be moved to a biennial basis.

4.30 Unfortunately, a searchable national database seems a long way off. Paper records are available in English Heritage’s Swindon office from files known as greenbacks. The failure to move to a computerised records system has inevitably attracted criticism (see http://www.heritage.co.uk/apavilions/glstb.html).

4.31 English Heritage maintains a ‘Buildings at Risk’ Register, which includes all Grade I and II* listed buildings and scheduled monuments (structures, rather than earthworks) that are known to be ‘at risk’ through neglect or decay, or are vulnerable to becoming so. These are given a priority category grading from A to F according to how advanced the damage is (detailed in Table 4.4). This list is updated annually and is freely available to search online through English Heritage’s website, although this does not include a facility to search by AONB boundary. It may be possible to request this information cut to the AONB from English Heritage. However, the relatively small size of the register makes it straightforward to simply search the database by county and then identify locations within the AONB. The AONB should monitor changes in both the number of sites on the register and the priority category of sites, on an annual basis. This will provide a proxy indicator for the condition of the AONB’s historic environment by efficiently monitoring the condition of the buildings.
within the AONB that are of special architectural or historic interest. It should be remembered however, that these buildings benefit from statutory protection, and so are likely to represent the best examples of built heritage within the AONB.

Table 4.4: Priority categories for ‘Buildings at Risk’ (Source: English Heritage),

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Immediate risk of further rapid deterioration or loss of fabric; no solution agreed</td>
</tr>
<tr>
<td>B</td>
<td>Immediate risk of further rapid deterioration or loss of fabric; solution agreed but not yet implemented</td>
</tr>
<tr>
<td>C</td>
<td>Slow decay; no solution agreed</td>
</tr>
<tr>
<td>D</td>
<td>Slow decay; solution agreed but not yet implemented</td>
</tr>
<tr>
<td>E</td>
<td>Under repair or in fair to good repair, but no user identified; or under threat of vacancy with no obvious new user (applicable only to buildings capable of beneficial use)</td>
</tr>
<tr>
<td>F</td>
<td>Repair scheme in progress and (where applicable) end use or user identified; functionally redundant buildings with new use agreed but not yet implemented</td>
</tr>
</tbody>
</table>

Indicator 8 – Public Rights of Way

4.32 The Government established a Best Value Performance Indicator (BVPI) in December 2000 that required local authorities to report on the standard of their public rights of way network. BVPI No. 178 is defined as ‘the total length of footpaths and other rights of way which were easy to use by member of the public’. This definition ties in to the AONB’s special quality of ‘quiet enjoyment of the countryside’, and is linked closely with the objectives for transport, sustainable environment, and tourism, recreation and access. By employing the methodology set out for the BVPI, it may be possible to draw some comparisons between the condition of public rights of way within the AONB and those in the constituent counties of Worcestershire, Herefordshire and Gloucestershire, as well as at a national level.

4.33 Detailed information on the BVPI methodology is available online from the Institute of Public Rights of Way Officers. The recommendation is for a minimum random sample of 5% of the total length of all rights of way within the area. Surveys should be carried out between May and November, ideally spread out over time to minimise the effect of adverse weather conditions or agricultural practices. ‘Easy to use’ in terms of rights of way is broadly defined as:

- signposted or waymarked where they leave the road in accordance with the authority’s duty under s.27 of the Countryside Act 1968 and to the extent necessary to allow users to follow the path;
- free from unlawful obstructions and other interference, (including overhanging vegetation) to the public’s right of passage;
- surface and lawful barriers (eg. stiles, gates) in good repair and to a standard necessary to enable the public to use the way without undue inconvenience.

4.34 The guidelines are set out to facilitate reporting by the Audit Commission, and are therefore very prescriptive. However, they could easily be adapted to suit the needs of the AONB, perhaps by using a smaller sample size or by simplifying the assessment criteria. Provided a consistent approach is taken, it will still allow for year-on-year condition monitoring within the AONB itself, as well as general, if not direct, comparisons with other areas. If it is unfeasible for the AONB to carry out this
monitoring itself, it may be possible to use some of the information gathered by the Highways Authorities of the local authorities, provided this was available for the AONB area.

**Indicator 9 – Visitor Surveys**

4.35 Visitor survey questionnaires are the best way to obtain information about the AONB. These can be designed and delivered to meet the exact knowledge needs of the Team. However, there are costs in terms of the time-consuming nature of gathering responses, and particularly associated with data coding and analysis. A mixture of closed and open questions in a face-to-face format provides the optimum form of survey delivery. Specialist advice on conducting visitor surveys is available locally, including from CRR.

4.36 It should be mentioned that the MHC conduct visitor survey work on land under their jurisdiction. The Annual Report of this organisation also contains information that provides a sketch of visitor usage of the AONB. For example, money collected from car parking is easy to convert into approximate visitor numbers as there is a fixed £2.00 fee per day per vehicle.

**Exclusions and Future Developments**

4.37 Many sources suggest the use of voluntary agri-environmental scheme uptake data. This is fraught with difficulty. Schemes have proved to be relatively short-lived, with the flagship Environmentally Sensitive Areas scheme (not relevant to the Malvern Hills AONB) lasting less than 20 years in duration. Uptake is, of course, voluntary and depends upon a whole suite of farm and farmer characteristics, scheme structures and scheme regulations. Even then, the provisions of these schemes are designed to provide flexibility for landowners to help them fit agri-environmental scheme conservation into their business plans. Without recourse to original agreements, which are confidential, uptakes says little about what landowners are actually doing ‘on the ground’. Even aggregate scheme data are likely to be unavailable for the Malvern Hills AONB due to its limited size and the fact that it straddles three administrative counties.

4.38 The selection of indicators above is based on those that are available, have some proven longitudinal stability (hence the exclusion of agri-environmental scheme uptake data suggested in some sources) and have few resource demands or can be controlled by the AONB Team. New information sources are emerging, but they require further development by their authors and a more detailed evaluation than can be attempted here. Given the structuring of the AONB monitoring proposed here using LCA, there are two sources of particular note that may become of use in the near future. First, the Herefordshire MOHL (Mapping Opportunities for Habitats and Landscape) system conducted under the Lifescapes Project links biodiversity information to the Herefordshire LCA to establish basic habitat management objectives. This is shortly to become available and could be used to monitor the vital relationship between biodiversity and landscape in a structured manner. Second, a Historic Landscape Character Assessment is being undertaken in both Herefordshire and Worcestershire which should provide a similar link between landscape and the historic environment. Such an assessment already exists for Gloucestershire.

4.39 Aerial photographic surveys used by the Local Authorities could provide interesting monitoring data in the future, though both time and specialist interpretation skills are required to utilise them. CPRE is slowly developing a more localised tranquillity index, although only a sample of the methodological approach
used in the north east of England is available at the moment. The new work includes what people feel about the tranquillity of an area. Again, it should be possible for the AONB Team to measure this factor, perhaps in conjunction with the fixed point photography monitoring once an appropriate tranquillity measurement methodology is decided upon.

4.40 The LCM2000 mapping compiled by the Centre for Ecology and Hydrology derived from remotely sensed Landsat data is another potential information source. At present, this records land use once every ten years: 1990 and 2000 data being currently available. A subscription fee is payable to utilise these data.
5. Landscape Character Assessment and AONB Monitoring

5.1 In recent years, there has been a break with the 1940s approach to landscape conservation. This approach relied largely upon visual appearance as a basis from which to designate protected landscape areas. The underlying philosophy was one of the recognition of the scenic beauty. A critical look at this notion reveals that it is derived from a greater cultural valuation of ‘upland’ and ‘wilderness’ (Short, 1990; Warnock and Brown, 1998). This emerged in the era of the ‘romantic poets’ at the beginning of the 19th century. New cultural valuations were placed on the ‘wild’ Lake District landscape by Wordsworth, Coleridge and Southey, an area described less than one hundred years before (c.1725) by Daniel Defoe in his Tour through the Whole Island of Great Britain as nothing but ‘hideous hanging hills’. This new valuation of naturalness was reified throughout the 19th century, with J.W.M. Turner providing an early example through his 1798 landscape painting Morning Amongst the Coniston Fells, Cumberland (Dimbleby, 2005). Hence, it is these cultural constructions that provided the rationale in the 1940s for the designation of national parks and AONBs themselves.

5.2 Rethinking the way in which landscape can be assessed is a relatively recent phenomenon. It is apparent that one motivating factor behind the development of a more quantitative approach to evaluating the landscape is the need to present a logical and robust case for landscape protection in a legal context. The requirement for an overt justification for planning decisions made has resulted in a focus on the natural and human features that physically exist within all landscapes. These can be recorded independently of cultural judgements about what is beautiful.

5.3 A central aim of Landscape Character Assessment (hereafter, LCA) is to inform the planning process in order to allow landscape change that maintains or enhances individual distinctiveness and character. It is a reaction against previous planning policy that has tended to permit countryside change which makes places similar to one another. Hence, LCA contributes to an appreciation of the diversity of the landscape within the two counties of Herefordshire and Worcestershire and to the identification of its distinctive characteristics (WCC and HC, 1999).

LDUs in the Malvern Hills AONB

5.4 A full methodological account of the process of defining LDUs is available in other published sources and need not be repeated here (see Warnock and Brown, 1998a; WCC, 1999; WCC and HC, 1999; HC, 2004). In brief, LDUs are defined from a synthesis of physical and human landscape features compiled using GIS mapping overlays. Once delineated, a profile of each area can be expanded and refined by assigning descriptive semantic indicators to landscape elements, sometimes referred to as landscape ‘aspects’, through field survey. For example, ‘landform’ can be identified as an element and described semantically in terms of it being ‘dominant’, ‘apparent’ or ‘insignificant’ to the landscape being viewed. Following this procedure allows some robustness and consistency to enter the methodology. This phase of work is defined as one of ‘characterisation’ (WCC and HC, 1999). The way in which the landscape functions and evidence of change are also recorded in the field, as these enable LCA to move beyond being a purely descriptive tool.

5.5 The fact that LDUs/LCPs have been defined for some time and in some detail appears of critical relevance for the monitoring of the Malvern Hills AONB. Although identified in the Malvern Hills AONB Management Plan (MHAONB JAC, 2003, p.36), it is perhaps surprising that this LCA framework seems not to have entered into mainstream thinking about how to monitor landscape change in AONBs generally.
One possible reason is that the LCA process is not as advanced in some other areas as in the counties of Herefordshire and Worcestershire. Indeed, LCA is at an advanced stage in the two counties to the extent that not only have LDUs/LCPs been defined and described, but that LDU/LCP condition monitoring by these local authorities is soon to come on stream (see Para 5.7). When fully developed, LDUs/LCPs also have the potential to become an additional variable in the mix of useful indicators of change within the Malvern Hills AONB (Section 4).

Local Landscape Character Assessment
5.5 Within the national JCA framework (see Section 3 and Figure 3.1), landscape geographically named subsets known as ‘Local Character Areas’ can be identified. These are strongly linked to place and retain cultural connotations at a superficial level. This means that they are useful in strategic planning where connection to ‘real’ geographical space is needed. In parallel to ‘landscape character areas’ lie ‘landscape character types’. These latter units are generic categories from a classification of key visual characteristics in the landscape. Hence, ‘wooded hills’ or ‘village farmlands’ represent aspatial (not tied to place) examples of assemblages of landscape elements.

5.6 All Character Areas are themselves compiled from smaller detailed components of similar landscape structure, called ‘Landscape Description Units’ (LDUs). Some 267 LDUs (including urban units) have been defined and described for Worcestershire (WCC, 1999) and 505 in Herefordshire, although there is a degree of overlap across the administrative county boundary and, consequently, the area of the Malvern Hills AONB. In Herefordshire, LDUs are divided into smaller units known as Land Cover Parcels (LCPs). It seems advantageous to build upon the LCA work conducted in the Malvern Hills locality by Worcestershire County Council (WCC) and Herefordshire Council (HC) to inform primary monitoring within the AONB (Section 6). Extracting information from Herefordshire and Worcestershire LCAs, there are 27 LDUs, with very minor fragments of four others, that fall within the AONB boundary (see Figure 5.1).

5.7 The co-operation between Herefordshire and Worcestershire in the initial development of LCA in the 1990s means that a good degree of consistency in definitions of landscape types exists within the Malvern Hills AONB. Although similar, the two LDU databases from each county have been converted into a new dataset (with new coding and place-linked names to avoid confusion) of Malvern Hills AONB LDUs for the purposes of monitoring. This has involved a considerable amount of data editing and digitisation where the projections of the constituent datasets vary.

5.8 The two counties now operate their own LCA work, and so the type of information held on LDUs or for LCPs differs slightly. Herefordshire tends to work more at LCP scale, and subsequently has more data for these units. Worcestershire is in the process of developing a searchable LCA database through its website, due to come online later this year (2006), and from exploring the prototype version this is likely to prove a valuable future resource for the AONB to gain additional and up-to-date information about both the LDUs and LCPs in Worcestershire.
Figure 5.1: Landscape Description Units within the Malvern Hills AONB.
Local Authority Approaches to Monitoring Landscape Condition

5.9 The process of defining the basic building blocks of the Herefordshire and Worcestershire landscape (LDUs/LCPs) was largely complete in the two counties by 2000. Since this time, work has been ongoing within HC and WCC to refine initial methodologies associated with characterisation and to develop systems to monitor the condition of the LDUs described as part of a LA brief to evaluate the effectiveness of a planning process based on LCA. This is part of a second phase of work concerned with ‘evaluation and decision-making’. The purpose is to use LCA to define a management vision which shapes positively the direction of future landscape change (Warnock and Brown, 1998b). It addresses three important questions.

• What needs to be done to retain pattern and diversity in landscape?
• Where should resources be targeted to achieve the greatest benefit?
• How can change be accommodated, with minimum impact on regional diversity and local distinctiveness? (Warnock and Brown, 1998b, p.22)

5.10 Based on their character, LCA therefore goes on to define landscapes in terms of two further dimensions. First, the current state of the landscape, known as its ‘condition’, needs to be defined to ascertain the extent of any damage done compared with some ‘optimum state’ suggested by the nature, pattern and survival of key elements (Warnock and Brown, 1998b). Second, there is the need to measure the ability of a landscape to resist change. Hence, a range of indicators has been developed (for a full exposition see HC, 2004), including the following for example.

• ‘Function’ describes whether or not the appearance of the landscape is one actively supported by current countryside management or is a relic of a previous land use regime.
• Those landscape elements without an active function are clearly more vulnerable to trends of change over time, their reason for existence having been removed. Hence the concept of ‘vulnerability’ emerges.
• ‘Tolerance’ describes to the degree to which change will cause irreparable damage to the elements giving the landscape its distinctive character.
• ‘Vulnerability and ‘tolerance’ together help to predict the likelihood of change impacting upon the landscape, leading to ‘resilience’ (a composite of vulnerability and tolerance). It refers to the time over which changes can be endured by a particular landscape before its character becomes irreversibly damaged. It should be noted that the inspector in the Herefordshire UDP inquiry has very recently recommended that resilience be withdrawn as a planning tool. This is due to the way its calculation has the potential to compound errors and small variations into major differences in pre-formulated types of strategies to be applied to achieve future landscape change.

The way in which indicators are derived is usually through the comparison of landscape elements from field survey. Indicators are then derived using a series of simple, nested (the results from one comparison are used as subsequent inputs) two-way matrices. The results of the analysis of landscape condition and resilience through matrix calculations have mainly been evaluated in terms of the generic landscape character types (WCC and HC, 1999; HC, 2004).

5.11 In both Herefordshire and Worcestershire, a method of LDU monitoring has been devised using nine ‘attributes’ that together define the distinctive character of an individual LDU.

• Land use (farm type)
• Enclosure pattern
• Indicative ground vegetation
• Settlement pattern
• Tree cover character
• Tree cover pattern
• Field boundaries
• Spatial character
• Character features

Each attribute has between two and six descriptors of its features assigned to it, capturing the essence of the LDU. For example, the features of ‘settlement pattern’ can be described as unsettled, dispersed, clustered or wayside. Once the descriptor has been assigned from the pre-defined set of features of that attribute, it can then be transferred to a field sheet to undertake the next stage in the monitoring process.

5.12 Each landscape attribute of an LDU can be assessed in the field in two ways. First, its ‘representation’ in the LDU is considered. It is measured as a combination of the extent to which a characteristic attribute survives in the LDU and how that feature is being maintained. As Table 5.1 shows, a simple 3-point semantic scale is used to gauge the extent of the loss of the attribute and judge whether it is subject to active management (referred to as the ‘status’ of the attribute).

5.13 Second, the ‘modification’ of an attribute is assessed. This is a function of the number of non-characteristic features of an attribute that have been introduced into the landscape and the ease with which such features can be removed (Table 5.2). A large number of additional features that are out of character with the distinctive attributes of the LDU will require a high degree of modification through intervention and positive management.

5.14 The relative assessment of representation and the need for modification are quantitatively assessed using a simple points scoring system and multiplication in a two-way matrix. For each of the representation and modification dimensions, between one and three points can be allocated to reflect condition (Table 5.3).

Table 5.1: The measurement of the representation of LDU attributes.

<table>
<thead>
<tr>
<th>REPRESENTATION</th>
<th>Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Status</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Poor</td>
</tr>
</tbody>
</table>

Source: WCC and HC (unpublished).

Table 5.2: The measurement of the modification of LDU attributes.

<table>
<thead>
<tr>
<th>MODIFICATION</th>
<th>Additions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Potential for mitigation</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Partial</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

Source: WCC and HC (unpublished).
5.15 A score for each attribute is generated ranging between one and nine points. Once each of the nine attributes has been considered, a total condition score for the LDU can be computed. This can then be used in future monitoring to see if any improvement or deterioration in the condition of the LDU has occurred over time.

Table 5.3: Point scores for the representation and modification of LDU attributes.

<table>
<thead>
<tr>
<th>REPRESENTATION</th>
<th>Losses</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None (3)</td>
<td>Some (2)</td>
<td>High (1)</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good (3)</td>
<td>9</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Moderate (2)</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Poor (1)</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MODIFICATION</th>
<th>Additions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None (3)</td>
<td>Some (2)</td>
<td>High (1)</td>
</tr>
<tr>
<td><strong>Potential for mitigation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (3)</td>
<td>9</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Partial (2)</td>
<td>Not possible</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>None (1)</td>
<td>Not possible</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: WCC and HC (unpublished).

5.16 It should be noted that this method of deriving a management vision for the countryside is not universally accepted and is not problem-free. For example, the total condition score of an LDU may remain the same, yet in reality there may have been considerable landscape change. In this scenario, an improvement in the score of one attribute may cancel out a deterioration in others. The allocation of groups along the semantic scale does ultimately rely on the judgement of the observer. Having just three categories does minimise variation, but it remains possible for some variance in class assignment to occur. The extent to which this varies between individual assessors and over time requires research. The fact that the end scores are derived from several stages of points allocation can also mean that errors can become multiplied through the system, although again work is needed to evaluate the extent of this effect and its influence in deriving a management prescription.

5.17 Overall, there is potential for the AONB Team to engage with this approach to monitoring once it has been fully tested for reliability and been subject to critical evaluation. Indeed, the AONB Team could actively contribute to this process of testing in partnership with the LAs. It has the potential to provide an important context to any changes observed through the primary programme of fixed point photographic monitoring, suggested for the AONB in the next section, because both are based upon LDUs.
6. A Methodology for Monitoring Landscape Change Using LCA

6.1 Having defined the LCA framework, there are four considerations to consider when devising the AONB monitoring programme.

- Any monitoring programme must be situated entirely within the ownership of the AONB team.
- Landscape must remain the primary focus onto which other factors are superimposed.
- The programme must be cost-effective, time-effective and simple to conduct.
- A long-term perspective must be taken, meaning that not only should a clear methodology be established, but that future generations must be able to replicate at least the fundamental aspects of the monitoring process.

6.2 To meet these considerations, the most appropriate technique to use is fixed point photography. This is an established method and one that is identified in work by CCW as of use for monitoring ‘scenery’ in AONBs. Indeed, the technique has been considered by other AONBs in the West Midlands (Shropshire Hills, for example) and is now being actively used in Cannock Chase AONB. At the time of writing, images of the latter were available at: [http://www.cannock-chase.co.uk/galleries.asp](http://www.cannock-chase.co.uk/galleries.asp)

6.3 Fixed point photography as a monitoring technique is clearly advantageous, but it is not problem-free. To minimise potential difficulties, a consistent approach was devised and applied relating to selecting the location, taking the image and analysing the image data.

**Selecting the Location**

6.4 The following points are taken into account when selecting the location for the main monitoring image within any single LDU.

- No undue favour is given to popular, accessible and scenically beautiful viewpoints which reflect a cultural judgement or bias.
- LDUs are used as an organisational framework for fixed point photography by locating sites near to the geographical centre of an LDU. In GIS terms, this is calculated mathematically and is known as a ‘centroid’. The reason is to minimise the edge effect, where one landscape (or LDU) may merge into another through a zone of transition. It further ensures an objective starting point is used for the selection of monitoring locations. Where relevant, centroids are shown by stars on subsequent fixed point photographs.
- An awareness is needed of LDU boundaries to prevent the selection of a view that strays into an adjacent unit. Reference should be made to maps prepared from GIS data defining LDUs prior to fieldwork.
- A field survey sheet assists in recording relevant information about the fixed-point photography site (see Appendix 1). In establishing monitoring sites for the first time, a mapping grade GPS system is employed to ensure that exact point locations can be re-found using maps or basic GPS devices in future work.
- All locations selected are those to which there is public access (roads, bridleways, footpaths).

**Taking an Image**

6.5 Once an appropriate location is identified, three sets of considerations become apparent.
Camera type - a basic, but good quality digital camera (an Olympus C-470 Zoom) was selected for use to avoid the future need for highly specialised and expensive equipment. This has a four megapixel resolution and all photos were shot using the highest quality resolution setting. At no time was the zoom function used due to the loss of quality that this creates. In some cases, a tripod was used to ensure picture sharpness.

Time of year - Spring is an ideal time of year to conduct photography as views of actual features will be less restricted by leaf cover and light quality will be generally better than in winter (though bright winter days would be acceptable). Supplementary photography can be used in late spring or summer if it is particularly crucial to observe the influence of trees and other vegetation in the landscape.

Images should be studied carefully for the reference points they contain, such as buildings at the photographic centre or features on the horizon. This is important when attempting to replicate images. Digital camera technology is particularly advantageous in this respect.

**Interpreting the Image**

6.6 The main technique of image interpretation employed here is through the use of a pre-defined field survey sheet (Appendix 1). This prompts the observer to record features of the LDU and make some comments made about their condition.

6.7 Table 6.1 provides reference information about the photographs taken. Each photograph is annotated with information relating to the distinctive components of the generic landscape character type observable in the view taken. This is accompanied by a box which states the landscape character type and gives an indication of landscape condition. Over time, the latter will become considerably expanded. Of course, not all change can be anticipated and the captions or boxed commentary can updated, deleted or supplemented as appropriate each time a site is monitored.

6.8 In some cases, LDUs are of a shape that does not lend itself to easy photographic capture, even from the centroid. This is particularly the case with ‘long and thin’ LDUs and those that are sinuously woven amongst other adjacent LDUs. This can be further compounded both by topography and access, making the establishment of a viewpoint difficult. Figure 6.1 provides an indication of a location that may seem to be highly suitable for landscape monitoring on first glance, but the view is actually a complex composite of many LDUs. It would be all too easy to select such a location on the basis of convenience and a culturally loaded internal assessment of what constitutes a ‘good view’. Such instances are kept to a minimum but cannot be entirely excluded. Therefore, where relevant, the boundary of an LDU is indicated on the photograph to prevent the eye straying into adjacent, different LDUs.

6.9 Figure 6.2 indicates the relationship between the fixed photographic point and the GIS-defined centroid. It should be recalled that stars are used on the photograph where the centroid is directly in view.

6.10 Supplementary photographs were taken in some LDUs during the fieldwork, capturing different angles and scenes. A selection are included here to emphasise key points, but more are available on a separate CD-ROM and are an integral part of the project. They may well be of value in future monitoring.
Figure 6.1: Good ‘viewpoints’ may not always necessarily be good points from which to observe the landscape coherence defined by LDUs.
Figure 6.2: Fixed photography points and their relationship with LDUs, LDU centroids and Landscape Character Types in the Malvern Hills AONB.
<table>
<thead>
<tr>
<th>LDU Code</th>
<th>LDU name</th>
<th>6-fig grid ref</th>
<th>8-fig grid ref</th>
<th>GPS grid ref</th>
<th>Date</th>
<th>Looking</th>
<th>Character type</th>
<th>LA reference</th>
</tr>
</thead>
<tbody>
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<td>AONBLDU 1:</td>
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<td>7319 5264</td>
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**AONBLDU 1: Alfrick**

**Character Type:**
Principal Wooded Hills

**Condition Statement:**
Woodland is prominent on hilltops in the LDU, but this scene illustrates that a loss of tree cover is occurring. Note the juxtapositioning of extensive and intensive land uses. Some hedges have been removed, both along the roadside and between fields. It has left the odd-shaped field, shown centre-left, with a boundary in the process of growing out through lack of management. Arable fields are seen to be encroaching on the wooded and pastoral character of the landscape breaking the link between woodland and field habitats.

- Extensive land use (horses grazing) on steep slopes is typical of this type of landscape
- Hedges define field boundaries linked to woodland pattern
- View framed between woodland blocks on hills
**AONBLDU 1: Alfrick – Locational Data**

Nearest 1:25,000 OS place name / feature: between Alfrick and Lower Notgrove west south-west of Alfrick village.

Grid References: Explorer 208; SO745529; 7455 5293; (3)74551.2E (2)52931.8N

Parking: roadside opposite drive to Crews Court.

Directions to Fixed Point: From Alfrick village, take the southern road past the church to a crossroads. Turn right to a point 25m beyond crossroads along its northern arm.

Photo point: at top of path to converted oast house (Birchwood)

Orientation: Looking north-west

Date: 16-03-06

Relationship to centroid: lies within the woodland in view at the centre of the photo.

LDU Character Type: Principal Wooded Hills

LA Reference: WCC LDU06.2 Alfrick

Additional Remarks: Note lack of roadside hedge and juxtapositioning of extensive and intensive land uses.
Blocks of woodland on hill tops are characteristic; but there is some coniferisation from previous forestry practices.

Character Type: Principal Wooded Hills

Condition Statement: Hills are dominated by woodland, but coniferisation has had a clear impact on visual quality. The pastoral nature of the associated fields is intact, although donkeys (rather than a commercial livestock enterprise) currently occupy the fixed-point field. There are also standard orchard trees here which are individually fenced with ranch fencing but no wire. There is a small group of dwellings, the gardens of which encroach into views as shown, adding a suburban element which does not tie in with the wooded landscape character.
AONBLDU 2: Suckley Hills – Locational Data

Nearest 1:25,000 OS place name / feature: Blackhouse Farm.

Grid References: Explorer 204; SO731526; 7319 5264; (3)73190.0E (2)52647.1N

Parking: At road T-junction

Directions to Fixed Point: From Knightwick, take the road to the south signposted Suckley. After 2 miles, turn left (Suckley Green crossroads). A road comes in from the right forming a T-junction at a group of buildings. There is a green triangle with a bench and tree. Proceed eastwards up past the last building and entrance to Crews Court. On the right there is a footpath with steep steps up a bank to a stile. The path jinks left across a garden to meet a second stile which is crossed. This follows the garden boundary with moderate steepness into a field where views open out before a block of woodland is reached at the top of the field.

Photo point: at halfway point between garden and woodland, 40m into field beyond the corner of the garden boundary.

Orientation: Looking south

Date: 16-03-06

Relationship to centroid: 40m to the left of this view uphill on woodland margin.

LDU Character Type: Principal Wooded Hills

LA Reference: WCC LDU06.1 West Malvern

Additional Remarks: donkeys currently occupy the fixed-point field. There are also standard orchard trees here which are individually fenced with ranch fencing but no wire. Sheep grazing is active in the next field to the south.
AONBLDU 3: Stichin's Hill, Alfrick

**Character Type:** Principal Timbered Farmlands

**Condition Statement:** This is a small LDU that is itself further fragmented by the AONB boundary. No entirely satisfactory viewpoint was found and further exploration may be necessary. This is partly due to small size and the need to capture the derelict standard orchards that are a specific characteristic of the LDU (see supplementary photos). Indeed, the difficulty of finding a viewpoint within the LDU reflects the ‘filtered’ views characteristic of this Landscape Character Type. The predominance of tree cover contributes to the intimacy of the landscape, enhanced at this locality by the large old orchard. A landownership change will alter this. Indeed, beyond the trees pictured, a new commercial bush orchard has recently been planted and an extension of this seems likely. There may well be interesting ancient varieties of fruit tree here that deserve investigation. Hedges are in a poor condition, but hedgerow trees still seem to be developing.
AONBLDU 3: Stichin’s Hill, Alfrick – Locational Data

Nearest 1:25,000 OS place name / feature: Brookbatch Farm, above second ‘o’ in the name Brookbatch.

Grid References: Explorer 204; SO753517; 7536 5172; (3)75361.9E (2)51731.9N

Parking: in lane to Upper Sandlin.

Directions to Fixed Point: Take first footpath on right after entering lane to Upper Sandlin, travelling S. Houses in 125m. Take path up bank from drive to houses (may be overgrown and difficult to find). Jink right and then left to cross a stile and head west south-west up a shallow dingle, passing derelict vehicles. Exit from it up the bank to the right within 100m (effectively straight on) through derelict orchards to emerge at a stile by an oak tree and fence. Cross the stile into the field.

Photo point: Next to stile.

Orientation: Looking south

Date: 16-03-06

Relationship to centroid: there is little view from the centroid due to an extensive, overgrown and derelict orchard. The fixed point looks towards it in the top corner of the next field.

LDU Character Type: Principal Timbered Farmlands.

LA LDU Reference: WCC LDU45.2 Alfrick

Additional Remarks: This is a small LDU that is itself further fragmented by the AONB boundary. No entirely satisfactory viewpoint was found and further exploration may be necessary. This is partly due to small size and the need to capture the derelict standard orchards that are a characteristic of the LDU. Supplementary photos were therefore taken. Note the shallow ridge and furrow in next field west beyond the stile in the opposite field corner. The photo-point may be difficult to find.
AONBLDU 4: Storridge

Character Type: Principal Wooded Hills

Condition Statement:
Note that although trees are still present on hills, they are becoming sparse in places with little regeneration evident. This photograph clearly reveals light penetrating through thin skyline woodland. The condition of hedgerows linking woods with adjacent pasture is also a concern.
**AONBLDU 4: Storridge – Locational Data**

Nearest 1:25,000 OS place name / feature: Doddenham’s Grove; PH at 94m spot height.

Grid References: Explorer 190; SO759493, 7598 4933; (3)75983.1 E (2)49334.0 N

Parking: Lay-by or public house car park.

Directions to Fixed Point: on north-western side of A4103 at the Herefordshire / Worcestershire county boundary.

Photo point: 10m into car park from north-eastern corner of lay-by.

Orientation: looking west

Date: 16-03-06

Relationship to centroid: in view, with photograph centred upon it.

LDU Character Type: Principal Wooded Hills

LA Reference: WCC LDU05 Upper Colwall

Additional Remarks: the photopoint is on private land which can be accessed if the pub is patronised! A similar view is available from the lay-by, but more restricted in its extent by the large roadside hedge.
Character Type: Principal Wooded Hills

Condition Statement: This is the largest LDU in the AONB, but has less diversity than is apparent in some smaller Units. The uniform tree height and girth shown in the photograph appears to indicate woodland which has a poor age structure. There is a danger of future wholesale losses of tree cover either through natural degeneration or from a need to block fell at some optimum age. There is some conifer incursion into the landscape. The presence of a sewage farm shows the influence of nearby dense settlement (West Malvern) and represents creeping urbanisation of the countryside.
AONBLDU 5: West Malvern and Upper Colwall – Locational Data

Nearest 1:25,000 OS place name / feature: sewage works, Park Farm

Grid References: Explorer 190; SO756458; 7564 4582; (3)75643.5E (2)45822.2N

Parking: on roadside.

Directions to Fixed Point: heading westwards along the West Malvern to Mathon road, there is a gateway on the right hand (north) side at the corner with the lane to Bank Farm, opposite the driveway to Parkfield on the left.

Photo point: 5m west of gateway on roadside bank looking over the hedge.

Orientation: Looking north-west

Date: 16-03-06

Relationship to centroid: in view, on left of photo

LDU Character Type: Principal Wooded Hills

LA Reference: WCC LDU05 Upper Colwall

Additional Remarks: This is the largest LDU in the AONB, but has less diversity than is apparent in some smaller Units.
AONBLDU 6: Mathon Village

Condition Statement:
The woodland cover that should be prominent in a view of Principal Timbered Farmlands has all but gone. Arable cultivation is evident, as is intensive livestock grazing. Hedgerows are tightly managed with few characteristic hedgerow trees. A small block of woodland along a watercourse, pictured left, is one of the few distinctive features that remain. This makes for a landscape that has lost its small scale, organic enclosure pattern in favour of fields reorganised along straight boundary lines (of which the hedgerow in the foreground is part). Dispersed timber and brick housing is evident, but influenced by the appearance of modern farm buildings (shown) and sometimes inappropriate residential infill.

Character Type:
Principal Timbered Farmlands

Intensive agriculture – ploughed field and modern buildings

Hedgerows beyond village are indicative of former field pattern

Small block boundary of woodland
**AONBLDU 6: Mathon Village – Locational Data**

Nearest 1:25,000 OS place name / feature: Moorend Cross, north of 111m spot height.

Grid References: Explorer 190; SO732453; 7324 4533; (3)73248.8E (2)45337.7N

Parking: in lay-by opposite farm.

Directions to Fixed Point: From Mathon church, go west and turn left at two consecutive T-junctions. Park near the third and locate in a few metres the footpath that heads east alongside a modern barn of the farm. Cross a stile (possibly wet ground) to head up a gentle slope to a stile in the hedge north north-east of spot height 111m.

Photo point: Standing on stile.

Orientation: Looking north over the village of Mathon

Date: 16-03-06

Relationship to centroid (grid ref): this viewpoint looks directly towards the centroid which lies in the fields beyond the village. The centroid point is thus in view, although the photo point is one of the furthest viewpoints away from it of all LDUs. The benefit is that it is more revealing of the landscape because the shorter foreground gives a better depth of view.

LDU Character Type: Principal Timbered Farmlands

LA Reference: WCC LDU01.1 Cradley
**Character Type:**
High Hills and Slopes

**Condition Statement:**
This is a popular visitor destination, being the highest point on the Malvern Hills with associated extensive, open views. Traditionally, this exposed locality was grazed by commoners, maintaining an acid grassland sward. Grazing has declined due to socio-economic changes in the agricultural sector and an increase in the use of the Hills for recreation. Encroachment by bracken and scrub vegetation, and sometimes woodland, are all problems associated with deteriorating condition. A programme of active grazing has been reinstated by the MHC, who also monitor this locality, leading to some recent improvements.
AONBLDU 7: Malvern Hills North – Locational Data

Nearest 1:25,000 OS place name / feature: between Alfrick and Lower Notgrove west south-west of Alfrick village.

Grid References: Explorer 190, SO768452, 7687 4525; (3)76876.0E (2)45259.0N

Parking: Wyche Cutting.

Directions to Fixed Point: From Wyche Cutting, take the path that leads northwards onto the spine of the Hills. Walk to the highest point, Worcestershire Beacon, where there is an OS trig point (OS2764) and a toposcope.

Photo point: at the bench north of the toposcope and cutting through rock, slightly towards the eastern side of the ridge

Orientation: Looking north

Date: 19-03-06

Relationship to centroid: in view on lower spur 250m north, on the right of the photo.

LDU Character Type: High Hills and Slopes

LA Reference: WCC LDU01.1 Malvern Hills North Ridge

Additional Remarks: This is a popular visitor destination, being the highest point on the Malvern Hills with associated extensive views. The MHC also monitors this locality.
AONBLDU 8: Colwall (central)

Hedgerow trees are the outstanding feature of this section of the LDU

Hedgerow trees contribute greatly to the distinctive filtered views

Mixture of arable and pastoral agriculture

Character Type:
Principal Timbered Farmlands

Condition Statement:
This is the central area of the LDU covering the Colwall village locality. The hills in the background above the red line are not within the LDU. Filtered views are evident due to the influence of tree cover. Hedgerow trees are particularly dominant and variation remains good. There is some association with watercourses (for example, just out of shot to the right of the picture). Nevertheless, some hedgerows in this locality are tightly managed, with some gaps and post and wire replacement. The incursion of arable land uses into the LDU is apparent and associated with the negative change in hedgerow condition.
AONBLDU 8: Colwall (central) – Locational Data

Nearest 1:25,000 OS place name / feature: Lower Lodge, where woodland area meets minor road

Grid References: Explorer 190; SO730408; 7309 4087

Parking: roadside area beyond woodland entrance

Directions to Fixed Point: From Colwall church, take the road westwards to a T junction. Turn left and proceed for a short mile (1.5km) to a point where woodland on the right (west) meets the road. There is an entrance to the wood and a small bridge over a minor stream also at this point.

Photo point: North of stream on eastern roadside beneath trees.

Orientation: Looking north-east

Date: 13-03-06

Relationship to centroid: out of view to right of photo, 350m east south-east.

LDU Character Type: Principal Timbered Farmlands

LA Reference: HC MV-WFE-03

Additional Remarks: This is the central area of the LDU covering the Colwall village locality. The hills in the background above the red line are not within the LDU.
**AONBLDU 8: Colwall (south)**

**Character Type:** Principal Timbered Farmlands

**Condition Statement:**
This is a large LDU, the photograph covering the southern LCP of it. The field below the bottom red line is excluded and the long bank above the red line across the photo lies in AONBLDU 17 (north). The contrast with the condition observed in the northern part of the LDU is stark. The photo shows that some hedgerow trees and small blocks of woodland survive, but that much of the former tree cover has been removed. Intensive, usually arable, agriculture has become the dominant land use. Associated modern farm buildings have a further impact on the observed landscape. The field pattern has largely been reorganised to facilitate intensive farming practice.
AONBLDU 8: Colwall (south) – Locational Data

Nearest 1:25,000 OS place name / feature: Barton Farm

Grid References: Explorer 190; SO744402; 7441 4027; (3)74411.7E (2)40274.7N

Parking: Along the wide, tarmacked track on the eastern side of the B4218.

Directions to Fixed Point: Near the Wellington Public House on the A449, take the B4218 to head north, signposted Colwall. Within 125m, there is a wide track descending from the right, being the old road at Chance’s Pitch.

Photo point: on west side of the B4218 road, directly opposite the wide track and adjacent to telegraph pole 5.

Orientation: looking west

Date: 13-03-06

Relationship to centroid: out of view to right, but this photo covers the southern part of the LDU.

LDU Character Type: Principal Timbered Farmlands

LA Reference: HC MV-WFE-03

Additional Remarks: This is a large LDU. This photograph is one of two, covering the southern LCP of it. The field below the bottom red line is excluded and the long bank above the red line across the photo lies in LDU 15.
Hedgerow trees are the dominant feature of this LDU landscape.

There are some localised incongruous features.

Field pattern and hedges are evident, with some post and wire replacement.

Character Type:
Principal Timbered Farmlands

Condition Statement:
This is an LDU with a difficult shape, having two directional orientations (north-south and east-west) and no single satisfactory viewpoint. This is one of two photos and captures the landscape lying beyond the influence of the settlement of Colwall Stone itself. The views remain typically filtered, mainly due to the dominant influence of hedgerow trees. There are localised incongruous human influences, as depicted here, which could be improved relatively easily. There is a collection of ‘early modern’ farm buildings in the form of Dutch barns that lie adjacent to the photopoint. They make a contribution to the landscape but whether it is positive or negative is open to debate.
AONBLDU 9: Colwall Stone (north) – Locational Data

Nearest 1:25,000 OS place name / feature: Burfords Farm; west of 127m spot height

Grid References: Explorer 190; SO746445; 7466 4460; (3)74666.3E (2)44607.8N

Parking: lay-by on north side of minor road before fork.

Directions to Fixed Point: From the village of Colwall Stone, a minor road named Mathon Road on the map snakes northwards. On passing a nursery on the left, there is a left turn (spot height 129m), leading to a Y-junction. The lay-by is 200m beyond.

Photo point: back (eastwards) towards Y-junction on south side of the road opposite a large double gateway on the northern side, 50m from road junction.

Orientation: looking south

Date: 13-03-06

Relationship to centroid: looking towards it, but out of view (as this photo covers the northern landscape of the LDU).

LDU Character Type: Principal Timbered Farmlands

LA Reference: HC MV-WFE-03

Additional Remarks: This is an LDU with a difficult shape, having two directional orientations (north-south and east-west) and no one satisfactory viewpoint. This is one of two photos and captures the landscape lying beyond the influence of the settlement of Colwall Stone itself.
AONBLDU 9: Colwall Stone (central)

Character Type: Principal Timbered Farmlands

Condition Statement:
This is the second of two photographs of the LDU and is taken from within the village setting of Colwall Stone. Views are again distinctly filtered by tree cover and the influence of settlement is also apparent. In this case, tree cover is becoming modified away from natural species, such as oak, towards exotics associated with gardens or those associated with particular types of cultivation, as with the poplars depicted in the photograph. A possible danger to the landscape is urban infill. The land shown in the foreground picture lies roadside in the village between two dwellings but has so far escaped infill development.
AONBLDU 9: Colwall Stone (central) – Locational Data

Nearest 1:25,000 OS place name / feature: no name near, south-west of 123m spot height

Grid References: Explorer 190; SO753432; 7534 4327; (3)75342.0E (2)43273.6N

Parking: in area where road widens at the bottom of a shallow dell on south-east side of road

Directions to Fixed Point: From Colwall Stone village, take the minor road named Mathon Road on the map that snakes northwards. Within 500m, the road bends to the right round a corner to descend and ascend a shallow dell. From this point, retrace steps around the corner southwards to encounter a public footpath in 100m.

Photo point: At egress of footpath onto the road.

Orientation: Looking west

Date: 13-03-06

Relationship to centroid: directly in view.

LDU Character Type: Principal Timbered Farmlands

LA Reference: HC MV-WFE-03

Additional Remarks: This is the second of two photographs of the LDU and is taken from within the village setting of Colwall Stone.
Character Type: Sandstone Estatelands

Condition Statement: This LDU is greatly influenced by urbanisation and is a highly modified landscape. This is one of the few views that captures some of the essence of its open countryside. It is a large scale landscape and is less intensively farmed than is apparent in other Sandstone Estatelands character areas. Hence there are some surviving field trees, although these are increasingly isolated and decaying. Nevertheless, as is typical, hedgerows have been removed in this intensive agricultural landscape. The post and wire fencing pictured is a reflection of the fact that intensive livestock farming, rather than arable, is practised at this point. The metal railings shown in the foreground are an indicator that parkland features are common on Sandstone Estatelands, but few survive in good condition.
AONBLDU 10: Three Counties Showground – Locational Data

Nearest 1:25,000 OS place name / feature: phone symbol, south Malvern Wells

Grid References: Explorer 190; SO778420; 7788 4205; (3)77884.9E (2)42058.7N

Parking: in Rothwell Road, Malvern Wells.

Directions to Fixed Point: from Rothwell Road, enter derelict playing field with decaying pavilion and proceed to south-west corner (footpaths from the A449m and B4209 lead to this point if playing field route becomes inaccessible).

Photo point: Adjacent to stile in field corner.

Orientation: looking east

Date: 10-03-06

Relationship to centroid: the centroid lies deep within the Three Counties Showground itself – a greatly modified landscape.

LDU Character Type: Estate Sandlands

LA Reference: WCC LDU26.2 Three Counties Showground

Additional Remarks: this LDU is greatly influenced by urbanisation and is a highly modified landscape. This is one of the few views that captures some of the essence of its open countryside.
**Character Type:** Sandstone Estatelands

**Condition Statement:**
The view is arguably the least satisfactory of any LDU and further research is needed to establish the best viewpoint. A slightly more extensive view can be gained from next field south across the Dingle, but the useful knoll within it lies a few metres off the right of way. The field pattern is present to add unity to the landscape which can thus be considered to be in good condition. The survival of the watercourse boundary shown further demonstrates this. However, there are other points in the LDU where this field pattern has been erased. Indeed, turning through 180 degrees at the fixed point to look west provides a stark contrast to the picture shown, being a large open field bounded by hedgerows at its margins.
AONBLDU 11: Marlbank – Locational Data

Nearest 1:25,000 OS place name / feature: west of Marlbank Farm

Grid References: Explorer 190; SO786402; 7858 4023; (3)78581.2E (2)40230.1N


Directions to Fixed Point: a track heads southwards from the Marl Bank Public House on the A4104. Follow this for 150m.

Photo point: Immediately to the south side of a prominent oak tree, before the track starts to drop in height.

Orientation: looking east south-east to Welland church

Date: 10-03-06

Relationship to centroid: centroid is at the pub 150m north (left).

LDU Character Type: Estate Sandlands

LA Reference: WCC LDU25 Hanley Swan

Additional Remarks: The view is arguably the least satisfactory of any LDU and further research is needed to establish the best viewpoint. A slightly more extensive view can be gained from next field south across the Dingle, but the useful knoll within it lies a few metres off the right of way.
AONBLDU 12: Little Malvern

Character Type:
Sandstone Estateland

Condition Statement:
The forces of change associated with the Sandstone Estateland seem to have little affected this LDU. The field pattern is intact with a distinct abundance of field and hedgerow trees. This adds to the wooded feel of the landscape instead of the planned blocks of woodland that are more typical. Even so, the field pattern remains a planned one, having been enclosed from a former common. The land use is also less intensive than might be expected, being mainly pastoral. The result in the photograph is a moderate rather than large scale landscape. This exact point is an interesting example of a landscape relic within an otherwise changing LDU, so it is of particular value for monitoring purposes.
**AONBLDU 12: Little Malvern – Locational Data**

Nearest 1:25,000 OS place name / feature: ‘H’ in Hancocks Lane

Grid References: Explorer 190; SO777398; 7771 3985; (3)77712.4E (2)39857.9N

Parking: in Hancocks Lane.

Directions to Fixed Point: from Little Malvern Priory, travel east along the A4104 and take the first right turn into Hancocks Lane. In 500m the lane bends left at some bungalows.

Photo point: just above entrance of drive to houses in Hancocks Lane, immediately north of bungalows which are out of view on the left.

Orientation: looking west

Date: 10-03-06

Relationship to centroid: in view, next field on right of photo.

LDU Character Type: Estate Sandlands

LA Reference: WCC LDU23 Little Malvern
Character Type: High Hills and Slopes

Condition Statement: The Malvern Hills are traditionally ‘bare’ of vegetation other than rough grassland. Indeed, the name ‘Malvern’ is believed to be derived from the Welsh ‘moel bryn’, meaning ‘bare hill’. As fewer livestock animals are now grazed than previously, scrub encroachment is occurring and leading to poor condition. In this photograph, the process is at an advanced stage. Pioneer tree species, such as birch, have become established at a point on the ridge which represents a sheltered col. Control is needed to reduce woodland cover which is generally uncharacteristic of this open landscape character type.

A large number of visitors are present along the spine of the Hills.

Bracken is evident, merging into scrub vegetation.

There is some encroachment of trees onto the ridge line at this point.
This view from the Sir Barry Vincent Jackson memorial stone shows the extent of bare vegetation on the central section of the Malvern Hills. The effects of vegetation trampling are obvious as visitors move from the car park (dead centre) to benches on the path from which the photo was taken (which also leads in a short distance to the spine of the Hills). Settlement is uncommon within this landscape type and tends to be confined to large isolated dwellings.
AONBLDU 13: Malvern Hills Central – Locational Data

Nearest 1:25,000 OS place name / feature: to the east of ‘ns’ in ‘Euro Const’

Grid References: Explorer 190; SO767407; 7670 4076; (3)76704.2E (2)40761.1N

Parking: at Wynds Point car park, off A449 near British Camp.

Directions to Fixed Point: from the car park, walk east onto the spine of the Hills. The ridge is narrow here with two minor summits separated by a distinctive hawthorn tree on the ridge.

Photo point: the top of the northern minor summit, north of the tree and near a bench.

Orientation: looking north

Date: 10-03-06

Relationship to centroid: in view, but in trees below col (right of photo).

LDU Character Type: High Hills and Slopes

LA Reference: WCC LDU01.2 Malvern Hills South Ridge

Additional Remarks: A supplementary photograph is available of this central section

Supplementary Photograph

This is view from the Sir Barry Vincent Jackson memorial stone shows the extent of bare vegetation on the central section of the Malvern Hills. The effects of vegetation trampling are obvious as visitors move from the car park (dead centre) to benches on the path from which the photo was taken (which also leads in a short distance to the spine of the Hills).
AONBLDU 14: Ockeridge

Character Type: Principal Wooded Hills

Condition Statement:
Apart from the woodland on the Ridgeway and that below the summit of British Camp (see supplementary photograph) this LDU of Principal Wooded Hills can be considered to be in very poor condition. Highly intensive arable farming dominates and its effects can be seen in the photograph. Large fields dominate, with hedges actively being removed (hence the green line in the photograph) and in poor condition where they survive. Hedgerow trees are becoming increasingly isolated in this intensified landscape. Minor hills (there is one just visible behind the field tree on the right edge of the photo) are locally devoid of their woodland.

A long, narrow limestone ridge, known as the ‘Ridgeway’, provides a continuous backdrop of ancient semi-natural woodland.

Hedgerows define field boundaries.

Hedgerow trees are indicative of the link with woodland blocks.

Arable land use, ploughed for potatoes since the time of the photo.

Note green line in field (see Condition Statement).
Looking east to British Camp (left of telegraph pole, not itself within the LDU), demonstrating the juxtaposition of intensive agriculture with woodland blocks on higher slopes.
AONBLDU 14: Ockeridge – Locational Data

Nearest 1:25,000 OS place name / feature: midway between Ockeridge Farm and PH above Ockeridge Cottages / below 132m spot height.

Grid References: Explorer 190; SO 745399; 7452 3996; (3)74522.3E (2)39966.6N

Parking: roadside, lay-by at fixed point.

Directions to Fixed Point: A minor road leads off the A449 just in front (east) of the Wellington public house. There is a sharp left-hand bend in the road just beyond the pub and the lay-by lies on south side of the road 200m east of it.

Photo point: Lay-by near telegraph pole 5, viewed over hedge.

Orientation: looking south south-west

Date: 13-03-06

Relationship to centroid: looking at it, left of centre.

LDU Character Type: Principal Wooded Hills

LA Reference: HC MV-WHW-03

Additional Remarks: A supplementary photograph is available looking east to British Camp which dominates this scene.

Supplementary Photograph

Looking east to British Camp (left of telegraph pole, not within the LDU), demonstrating the juxtaposition of intensive agriculture with woodland block on higher slopes.
AONBLDU 15: Wellington Heath

**Character Type:**
Forest Smallholdings and Dwellings

**Condition Statement:**
This is a very small, almost suburban, fragment of a LDU within the AONB boundary. It is the only example of the Forest Smallholdings and Dwellings landscape character type in the AONB. Given its size, a challenge is to obtain a view that encompasses the LDU free from the influence of others. Urbanisation is a particular threat to condition. The distinctive small cottage-style dwelling associated with this character type is being swamped by infill from other, larger housing styles. The new ‘executive’ style housing being built in the photograph is a case in point. Also typical of change in the Unit type is the conversion of small pastures to pony paddocks, again illustrated as an active process.
This view looks back north north-east from Floyd’s Lane (which connects the ‘top’ and ‘bottom’ roads running parallel through the village) towards the fixed photo point. Such lanes are typical of the character of Units of this type. It shows the built-up nature of the settlement, with buildings interspersed with small grassland (sometimes overgrown, as in the foreground) enclosures. Note remnant boundary tree with mistletoe on left. Overall, the replacement of small wayside cottages with large modern style homes is re-emphasized as a negative force for change.
**AONBLDU 15: Wellington Heath – Locational Data**

Nearest 1:25,000 OS place name / feature: ‘W’ in Wellington Heath

Grid References: Explorer 190; S0714407; 7145 4071; (3)71450.4E (2)40714.4N

Parking: in village of Wellington Heath.

Directions to Fixed Point: from the road in the valley at the centre of the village, turn right at the top (northern end) and proceed for 100m to footpath on the right. Cross a paddock (two stiles) and walk to the end of the farm building on the right.

Photo point: In field, 16m from the telegraph pole on a bearing of 144 degrees south-east.

Orientation: looking west south-west

Date: 10-03-06

Relationship to centroid: 350m to south, but lies within a tree-lined lane with no view over LDU

LDU Character Type: Forest Smallholdings and Dwellings

LA Reference: hc MV-FSD-01

Additional Remarks: This is a very small, almost suburban, fragment of a LDU within the AONB boundary. It is the only example of the Forest Smallholdings and Dwellings character type in the AONB. Given its size, a challenge is to obtain a view that encompasses the LDU free from the influence of others. The centroid is unhelpful in this respect.

**Supplementary Photograph**

This view looks back north north-east from Floyd’s Lane (which connects the ‘top’ and ‘bottom’ roads running parallel through the village) towards the fixed photo point. It shows the built-up nature of the settlement, with buildings interspersed with small grassland (sometimes overgrown, as in the foreground) enclosures. Note remnant boundary tree with mistletoe on left.
AONBLDU 16: Beggars Ash

Character Type:
Settled Farmlands on River Terrace

Condition Statement:
The area above the line is in Wellington Heath AONBLDU 11. The LDU within the AONB represents only a fragment of its total area in Herefordshire and is the only example of the Settled Farmlands on River Terrace landscape character type. Intensive horticultural use over many years on fertile soils has led to the development of a highly specialised landscape. Woodland is generally absent and hedges only tend to appear at the margins of horticultural fields. The photograph reflects this modification of the landscape.

A large commercial orchard dominates the scene in the AONB part of this LDU

Note the bush fruit trees that can be mechanically harvested
This view looks towards the photo point (shown with a dot) from the house on the road. The orchards are extensive, but the shot shows some pastoral land use within this LDU beyond. The woodland is not in the LDU (it is AONBLDU 17) as tree cover is sparse in the Unit.
From the fixed point, a factory complex to the north of Ledbury impacts negatively on the landscape outwards from the AONB. These buildings lie immediately beyond the AONB boundary, but demonstrate how AONBs can be affected at their edge. Note the railway viaduct in the centre left of the photo. This is also a man-made feature, but cultural revaluation of such structures over time means that it is no longer regarded as incongruous in the landscape.
AONBLDU 16: Beggars Ash – Locational Data

Nearest 1:25,000 OS place name / feature: The Old Kennels

Grid References: Explorer 190; SO712389; 7121 3891; (3)71218.1E (2)38910.0

Parking: on roadside at Beggars Ash

Directions to Fixed Point: from Ledbury travelling northwards on the B4214, take the right turn at Beggars Ash and park. Continue to spot height 92m where a footpath leads east into a wide entrance by a farm building. Upon reaching the house, turn right to follow the right of way through orchards to the stile at the top of the field. Do not cross the stile.

Photo point: At the top of the large orchard field

Orientation: looking north north-east

Date: 10-03-06

Relationship to centroid: in orchards on right side of photograph

LDU Character Type: Settled Farmlands on River Terrace

LA Reference: HC LV-SFA-02

Additional Remarks: The area above the line is in Wellington Heath LDU 12. The LDU within the AONB represents only a fragment of its total area in Herefordshire.

Supplementary Photograph 1
Looking towards the photo point (shown with a dot) from the house on the road. The orchards are extensive, but the shot shows some pastoral land use within this LDU beyond.
Supplementary Photograph 2

From the fixed point, a factory complex to the north of Ledbury impacts negatively on the landscape outwards from the AONB. These buildings lie immediately beyond the AONB boundary, but demonstrate how AONBs can be affected at their edge. Note the railway viaduct in the centre left of the photo. This is also a man-made feature, but cultural valuation of such structures over time means that it is no longer regarded as incongruous in the landscape.
AONBLDU 17: Bradlow Hills (north)

An abundance of field trees is the distinctive feature of this landscape.

Pastures occur in between blocks of woodland.

Character Type:
Principal Wooded Hills

Condition Statement:
This is the northern part of a large LDU. This photo is one of two in the absence of a good central viewpoint. It demonstrates the intimacy between trees and pasture. However, the age structure of the field trees is poor, as all are similar with no signs of regeneration. Some trees are showing signs of becoming stag-headed and decaying. The woodland blocks themselves suffer from the planting of conifers in places that, as the photograph demonstrates, have a high degree of visibility in the landscape.
AONBLDU 17: Bradlow Hills (north) – Locational Data

Nearest 1:25,000 OS place name / feature: Oyster Hill

Grid References: Explorer 190; SO720410; 7231 4173; (3)72312.1E (2)41736.4N

Parking: on roadside at track/footpath junction.

Directions to Fixed Point: from the footpath at spot height 162m, proceed south taking the right hand fork to climb Oyster Hill (trig point OS7271).

Photo point: 100m south beyond trig point.

Orientation: looking south

Date: 10-03-06

Relationship to centroid: centroid is some 3km due south near to the fixed point for the southern photo.

LDU Character Type: Principal Wooded Hills

LA Reference: HC MV-WHW-04

Additional Remarks: This is the northern part of a large LDU. This photo is one of two for this large LDU in the absence of a good central viewpoint.
AONBLDU 17: Bradlow Hills (south)

Character Type:
Principal Wooded Hills

Condition Statement:
This photo is one of two for this large LDU in the absence of a good central viewpoint. It covers the southern section. The fields in the foreground lie outside the LDU and represent a change away from the pastoral land use generally associated with the Principal Wooded Hills. However, the photograph does show some incursion of arable cultivation into the LDU where pasture might be expected. This is clearly influencing the management of hedgerows which is generally poor as indicated by their ‘gappiness’.

Blocks of woodland cover the hill tops, a defining characteristic of this LDU

Field boundaries become more irregular and populated by hedgerow trees near to the main woodland block.

Some intensive arable land use – a contrast with the pastoral scene found in the north of the LDU.
**AONBLDU 17: Bradlow Hills (south) – Locational Data**

Nearest 1:25,000 OS place name / feature: no name is near, but there are two ponds, one either side of main road.

Grid References: Explorer 190; SO725383; 7254 3837; (3)72544.5E (2)38375.7N

Parking: large tarmacked lay-by on north side of A438.

Directions to Fixed Point: the A449, A438 and a minor road at White House Farm form a triangle around the entrance to the railway tunnel to the east of Ledbury. The fixed point is on the A438 section.

Photo point: Southern side of road at a large gap in the roadside hedge, about halfway between the layby and the long field boundary shown in the centre right of the photo.

Orientation: looking south

Date: 13-03-06

Relationship to centroid: behind, 250m to the north.

LDU Character Type: Principal Wooded Hills

LA Reference: HC MV-WFE-03

Additional Remarks: This photo is one of two for this large LDU in the absence of a good central viewpoint. It covers the southern section. The fields in the foreground lie outside the LDU, but represent a subtle rather than distinct change in landscape type.
**Character Type:**
Wooded Hills and Farmlands

**Condition Statement:**
There are difficulties in revealing the view due to the awkward shape of the LDU (long and thin) and limited access. There are some vegetated boundaries, particularly streamside which provide a link between woodland and farmland. However, the hedgerows have been largely removed which means the enclosure pattern has been lost. An increase in the scale of the landscape is a secondary consequence.
Looking east to Midsummer Hill (the hills are not within the LDU), taken from the entrance to Gold Hill farm off Clencher’s Mill Lane in the south of the LDU. It reveals the wooded character of the LDU, but suffers from the disadvantage of looking across the narrow LDU rather than along its axis. The discrete blocks of woodland associated with Wooded Hills and Farmland are clearly revealed.
**AONBLDU 18: Eastnor – Locational Data**

Nearest 1:25,000 OS place name / feature: ‘FBs’, above Eastnor Lake north west of 93m spot height

Grid References: Explorer 190; SO737371; 7379 3715; (3)73797.1E (2)37150.1N

Parking: roadside by entrance to Eastnor Deer Park.

Directions to Fixed Point: on north side of A438 east of Eastnor village.

Photo point: roadside verge, 20m to the east of Deer Park entrance.

Orientation: looking north north-east

Date: 13-03-06

Relationship to centroid: 350m to the west (left of photo), but it occurs at the narrowest point of a difficult-shaped LDU.

LDU Character Type: Wooded Hills and Farmland

LA Reference: HC MV-WHF-01

Additional Remarks: this is not an especially revealing view, as the problems of an LDU that is an awkward shape (long and thin) are compounded by limited access. A supplementary photo taken from the entrance to Gold Hill Farm off Clencher’s Mill Lane in the south of the LDU is available. This suffers from the disadvantage of looking across the narrow LDU rather than along its axis.

**Supplementary Photograph**

Looking east to Midsummer Hill (the hills are not within the LDU), revealing the estate character of the LDU.
Character Type:
Wooded Hills and Farmlands

Condition Statement:
The bank beyond the red line on the photograph lies outside the LDU. The wooded character of the LDU, on land of variable topography, is clearly revealed by this photograph. Stands of ancient woodland lie in juxtaposition to modern plantations. There is also a mixture of land use intensity, influenced by topography. The main deterioration in character lies in the removal of hedgerows which can still be observed as ‘ghost lines’ across fields in the centre of the landscape photographed. These are crucial elements in linking woodland to farmland, being visually prominent and adding unity to the landscape.
**AONBLDU 19: Bronsil – Locational Data**

Nearest 1:25,000 OS place name / feature: the ‘R’s in Rifle Range

Grid References: Explorer 190; SO757371; 7570 3713; (3)75704.8E (2)37136.7N

Parking: Midsummer Hill car park, Eastnor Estate, north of A438 at its summit.

Directions to Fixed Point: from car park, proceed northwards along the Worcestershire Way. Pass the entrance to Brewer’s cottage on the left and continue uphill until the brow is reached at the point where the path changes direction a few degrees to the west. There is a knoll on the left before telegraph post 6A and a green bulk storage tank in trees.

Photo point: 20m from path on the edge of the knoll.

Orientation: looking west

Date: 13-03-06

Relationship to centroid: on the left edge of the photo which mainly looks at the landscape directly to the north of it.

LDU Character Type: Wooded Hills and Farmlands

LA Reference: HC MV-WHF-02

Additional Remarks: The Somers family Obelisk on the Eastnor estate is just out of view on the right-hand edge of the photograph. The bank beyond the red line on the photograph lies outside the LDU.
**Character Type:**
High Hills and Slopes

**Condition Statement:**
The area above the red line lies in AONBLDU 19 Bronsil. High Hills and Slopes are generally distinguished by a lack of tree cover. The exception in this locality is Midsummer Hill, as shown. Even though it has the longest tradition of a tree-covered summit, the surrounding area would have been open grassland. Clearly scrub encroachment is a problem and is associated with poor condition.

- Midsummer Hill and the adjacent Hollybush Hill are distinctive in having the only wooded tops of the Malverns chain.
- An iron age hill fort encloses the summit.
- Note incursion of bracken in field adjacent to the high hills and on the hills themselves.
- Scrub vegetation leads into woodland.
- Hollybush Quarry remained active postwar, providing aggregate for the M5. It is now designated as a RIGS.
- Visitor pressure is evident, but less than in the central and northern Hills.
Supplementary Photograph

This is taken from a point on the ridge opposite where a well-defined path passes through rocks (the only rocks to the left of the path looking south). Note the extent of scrub in the foreground and the distinct line of bracken management on the west side of Chase End itself.
AONBLDU 20: Malvern Hills South – Locational Data

Nearest 1:25,000 OS place name / feature: ‘Co’ of Co Const Bdy at Ragged Stone Hill

Grid References: Explorer 190; SO759364; 7590 3648; (3)75908.9E (2)36373.4N

Parking: At Midsummer Hill car park, Eastnor Estate, north of A438 at its summit

Directions to Fixed Point: From car park, cross the road to its southern side and enter the woodland over the stile. Steeply ascend Ragged Stone Hill, stopping on the northern end of the summit ridge. Note that Ragged Stone Hill has two summit ridges, the western one being the true summit.

Photo point: northern spur of the true summit ridge

Orientation: looking north

Date: 06-03-06

Relationship to centroid: approximate location of centroid is in woodland that appears from the dead ground in the centre left of the photo.

LDU Character Type: High Hills and Slopes

LA Reference: WCC LDU 01.2 Malvern Hills South Ridge

Additional Remarks: The area above the red line lies in AONBLDU 19 Bronsil. A supplementary photo looking south from the southern edge of the true summit ridge to Chase End is available.

Supplementary Photograph

This is taken from a point on the ridge opposite where a well-defined path passes through rocks (the only rocks to the left of the path looking south). Note the extent of scrub in the foreground and the distinct line of bracken management on the west side of Chase End itself.
**Character Type:**
Unenclosed Commons

**Condition Statement:**
Future management is the challenge for Unenclosed Commons, and the photograph is a reflection of this requirement. Increased recreational pressures and a lack of the exercising of commoners’ rights have led to the encroachment of scrub in the face of a lack of grazing by livestock. In this case, bracken, gorse scrub and secondary woodland scrub are all evident and will need active control if the open character of this landscape is not to be compromised.

Settlement is usually restricted to wayside dwellings at the perimeter of the common land, frequently of red brick construction.

The open character of this landscape is distinctive.

Patches of scrub and lone trees on unenclosed permanent pasture or rough grazing is the main feature of this unit.
**AONBLDU 21: Castlemorton Common – Locational Data**

Nearest 1:25,000 OS place name / feature: telephone symbol

Grid References: Explorer 190; SO786389; 7860 3896; (3)78606.9E (2)38963.8N

Parking: in lay-by.

Directions to Fixed Point: from Welland, travel south to cross Castlemorton Common. Just before the Plume of Feathers Public House, turn right and park in lay-by 75m on right.

Photo point: in lay-by.

Orientation: looking north

Date: 06-03-06

Relationship to centroid: in view, centre right of photo.

LDU Character Type: Unenclosed Commons

LA Reference: WCC 24 Castlemorton North
This is a landscape of dispersed settlement and former commons now dominated by mixed farming.

Some trees are evident in tightly managed hedgerows, but tree cover is generally of a low density.

Cluster of housing is uncharacteristic.

Land use intensity is high, both in terms of arable and grassland systems. Note intense green of grassland indicating the use of fertiliser.

A regular, planned field pattern is indicative of an enclosure landscape.

Character Type:
Principal Settled Farmlands

Condition Statement:
This is the western fragment of a much larger LDU than that bounded by the AONB. Arable farming is reducing the functionality of hedgerows, which are tightly managed (see also the supplementary photograph). Lines in fields on the left of the photograph are diagnostic of boundary removal, even within pastures. The field pattern is usually one of small sub-regular enclosure, but here is being modified into a rather linear and uniform structure. Newer housing development, as shown in the photograph, tends to be nucleated and is contrary to the traditionally dispersed form of settlement. Landscape character at this locality has therefore been seriously disrupted.
The supplementary photograph shows a remarkably thick hedgerow boundary that runs along the roadside eastwards from the fixed point. Although wide at the gateway, there is little field margin as ploughing soon abuts the hedge.
AONBLDU 22: Newlands, West Castlemorton – Locational Data

Nearest 1:25,000 OS place name / feature: Eight Oaks

Grid References: Explorer 190; SO780381; (3)78053.6E (2)38192.4N

Parking: on roadside.

Directions to Fixed Point: travelling south on the B4208 towards castlemorton village, turn right at the Robin Hood pub into New Road for 550m.

Photo point: Gateway on right halfway between Oak Tree Cottage on the left and the brow of the road.

Orientation: looking north-east

Date: 06-03-06

Relationship to centroid: behind to the right 125m, in dwellings. Shown in Supplementary Photograph.

LDU Character Type: Settled Farmlands

LA Reference: WCC LDU 19.1 Castlemorton

Additional Remarks: This is the western fragment of a much larger LDU.

Supplementary Photograph

The supplementary photograph shows a remarkably thick hedgerow boundary that runs along the roadside eastwards from the fixed point.
AONBLDU 23: Hollybed Common

Character Type:
Unenclosed Commons

Condition Statement:
The open character of the landscape is generally well-preserved at this point, with only occasional patches of scrub and bracken. Part of this suppression of scrub can be attributed to heavy recreational use through the effects of trampling of vegetation. Nevertheless, providing the optimum amount of grazing, which is the best way of controlling scrub encroachment, remains a challenge in such an open landscape.

Note patches of scrub vegetation

Recreational use is evident where lines of grass are greener and shorter than the surrounding unimproved pasture

Termite mounds are a particular feature of the rough grassland

Individual dwellings border the area of common land

The open character of the landscape is striking
The supplementary photo shows the view looking north, 10m north of the fixed point. It captures the influence of settlement that lies in juxtaposition with the open commonland and demonstrates that tree cover is predominantly associated with the gardens of wayside dwellings.
**AONBLDU 23: Hollybed Common – Locational Data**

Nearest 1:25,000 OS place name / feature: 80m spot height

Grid References: Explorer 190; SO775377; 7759 3776; (3)77599.7E (2)37761.2N

Parking: on roadside.

Directions to Fixed Point: travelling south on the B4208 towards castlemorton village, turn right at the Robin Hood pub into New Road. Chandler’s Cross is reached in half a mile, whereupon turn left and follow the track that bends left after 350m and then right.

Photo point: after right bend, up the bank on the left to the 80m spot height.

Orientation: looking south-east

Date: 06-03-06

Relationship to centroid: the centroid is 350m west, but on the edge of the LDU boundary due the approximate ‘horseshoe’ shape of the Unit.

LDU Character Type: Unenclosed Commons

LA Reference: WCC LDU 22 Castlemorton South

**Supplementary Photograph**

The supplementary photo shows the view looking north from just 10m north of the fixed point as this captures the influence of settlement that lies in juxtaposition with the open commonland.
AONBLDU 24: Fairoaks Farm

**Character Type:** Principal Timbered Farmlands

**Condition Statement:**
This is the smallest LDU in the AONB. The area above the red line in the photo lies in AONBLDU 23 Hollybed Common. Tree cover is prominent in these landscapes but, as the photograph shows, is generally declining here. Certain hedgerows are becoming gappy, with some post and wire replacement alongside grass fields. A trend towards arable cultivation enhances the potential of hedges to become functionally redundant and inappropriately managed. This has tended to erode the distinctly irregular traditional field pattern.

Hedgerows are dominated by hedge trees leading to filtered views.

Field pattern is irregular and small scale, representing ‘organic’ enclosure.

Land use is mixed arable and pastoral on a generally rolling topography.
**AONBLDU 24: Fairoaks Farm – Locational Data**

Nearest 1:25,000 OS place name / feature: Hollybush Roughs

Grid References: Explorer 190; SO764376; 7643 3761; (3)76436.2E (2)37617.4N

Parking: in lay-by.

Directions to Fixed Point: from the junction of the A438 and B4208 at Rye Court, take the A438 west towards Ledbury. As the road climbs towards the Hollybush summit between Midsummer and Ragged Stone Hill, turn right (north) at the minor crossroads. Follow the narrow lane for 750m until a lay-by is reached on the left.

Photo point: on grass verge of road directly below lay-by.

Orientation: looking east

Date: 06-03-06

Relationship to centroid: in centre of photo

LDU Character Type: Principal Timbered Farmlands

LA Reference: WCC LDU 21 Fairoaks Farm

Additional Remarks: This is the smallest LDU in the AONB. The Area above the red line in the photo lies in LDU 23.
**Character Type:**
Principal Timbered Farmlands

**Condition Statement:**
A significant proportion of the hedgerows that define the field boundaries in this Principal Timbered Farmlands landscape character type LDU have become replaced by post and wire fencing. This is a deterioration in condition as the link with woodland is weakened and an element of straight line planning is inevitably introduced into the landscape. The field pattern is traditionally irregular where fields have been enclosed from woodland, but this sense of origin is becoming lost. However, on the positive side, views remain filtered due to the continued presence of field and hedgerow trees. The pastoral function of fields set within a dispersed settlement pattern is still evident, contributing to the maintenance of distinctive character.
The photograph is effectively an oblique aerial view of this LDU, obtained from the eastern (lower) summit ridge of Ragged Stone Hill (grid reference (3)76053.5E (2)36415.0N). The centroid (star) and fixed-photographic point (circle) are illustrated in this elevated view. The boundary of the LDU is also shown. The deterioration of hedgerows is clearly apparent.
**AONBLDU 25: White House Farm – Locational Data**

Nearest 1:25,000 OS place name / feature: ‘d’ of Whiteleaved Oak

Grid References: Explorer 190; SO764362; 7649 3622; (3)76498.2E (2)36225.3N

Parking: in lane.

Directions to Fixed Point: from the junction of the A438 and B4208 at Rye Court, take the A438 west towards Ledbury. As the road climbs towards the Hollybush summit between Midsummer and Ragged Stone Hill, turn left (south) at the minor crossroads. Follow the narrow lane for 750m.

Photo point: Standing on roadside bank on west side of lane.

Orientation: looking east

Date: 06-03-06

Relationship to centroid: centroid is 250m directly behind the farm

LDU Character Type: Principal Timbered Farmlands

LA Reference: WCC LDU 20 Whitehouse Farm

Additional Remarks: An aerial view of this LDU can be obtained from the eastern (lower) summit ridge of Ragged Stone Hill (grid reference (3)76053.5E (2)36415.0N). This is shown in the supplementary photograph

**Supplementary Photograph**

The centroid (star) and fixed-photographic point (circle) are illustrated in this elevated view of the LDU. The boundary of the LDU is also shown.
Hedgerow trees are present but have a tendency towards low density

Awkward field corner has a low intensity land use compared with the high intensity found in surrounding arable fields

Rolling topography with a lack of woodland is typical

**Character Type:**
Principal Settled Farmlands

**Condition Statement:**
This is a fragment within the AONB of a large LDU that straddles the Worcestershire-Gloucestershire border, lying predominantly in the latter county. The area above the red line on the left of the photo lies outside the LDU. Numerous small field ponds are shown on the OS map but they are not captured on the photograph and the extent to which they exist on the ground deserves further investigation. The scene is of predominantly arable agriculture in which hedgerows are tightly managed and declining in thickness. The change of boundary angle in centre of the skyline field indicates recent hedgerow removal and so contributes to a decline of the traditional field pattern. It also makes for a more open landscape in which minor topographical features, such as the low hill in the centre of the photograph, become emphasised.
AONBLDU 26: King’s Green – Locational Data

Nearest 1:25,000 OS place name / feature: Gate House, 56m spot height, the 77 easting grid line crosses the lane precisely at the photo point.

Grid References: Explorer 190; SO770350; 7700 3502; (3)77000.8E (2)35028.0N

Parking: on roadside.

Directions to Fixed Point: from the junction of the A438 and B4208 at Rye Street, travel south on the B4208 and take the first right after the telephone box into Black Lane.

Photo point: gateway 275m from western T-junction on north side of Black Lane, connecting Camer’s Green and Chase End Street.

Orientation: looking north

Date: 06-03-06

Relationship to centroid: centroid is 300m directly behind – there is no access within 150m of it.

LDU Character Type: Settled Farmlands

LA Reference: WCC LDU01 Wyndbrook

Additional Remarks: This is a fragment within the AONB of a large LDU that straddles the Worcestershire-Gloucestershire border, lying predominantly in the latter county. The area above the red line on the left of the photo lies outside the LDU. Numerous small field ponds are shown on the OS map but they are not captured on the photograph and the extent to which they exist on the ground deserves further investigation.
A mixture of intensive pastoral and arable farming dominate the LDU

Bank above A417 road is outside LDU

Clustered red brick settlement is typical

Sandstone geology clearly evident in soils

Character Type:
Sandstone Estatelands

Condition Statement:
The LDU lies within Gloucestershire and the horizon bank lies outside the LDU. The scene is one of intensive agriculture, mainly pastoral in this photograph although the LDU contains much intensive arable cultivation (see supplementary photograph). The landscape is large and open in scale. Field boundaries have often been removed or replaced, as pictured right, undermining the planned appearance of the landscape (again, this is especially evident in the supplementary photograph). Tree cover is restricted to roadside boundaries. The road itself impacts negatively on the tranquility of the area. Overall, the landscape is in a poor condition.
This photograph is taken from the roadside next to the north-heading footpath 40m to the west of the egress of the fixed point path. It looks west along LDU and captures the intensive arable nature of agriculture that exists alongside the mainly pastoral scene in the fixed-point photo. The removal of the older planned field pattern is starkly evident. The discrete block of plantation woodland is also characteristic.
**AONBLDU 27: Bromesberrow – Locational Data**

Nearest 1:25,000 OS place name / feature: below the large ‘O’ and ‘M’ in BROMESBERROW CP

Grid References: Explorer 190; SO740343; 7408 3436; (3)74082.2E (2)34366.5N

Parking: on roadside.

Directions to Fixed Point: Travel west north-west along Clencher’s Mill Lane from the centre of Bromesberrow for 750m to reach a green bank up to a gate on the left hand side before the brow of the hill. Cross and turn left to descend a track next to a small area of recently planted woodland. As the track swings to the right, there is a gate and wooden runged stile that crosses the track.

Photo point: The fixed point is at, but not over, the stile.

Orientation: looking south

Date: 13-03-06

Relationship to centroid: behind 400m north-east. There is no access to it. The neighbouring LDU dominates the scene when viewed from the road.

LDU Character Type: Estate Sandlands

LA Reference: WCC LDU01.1 Brookend

Additional Remarks: the horizon bank lies outside the LDU. The scene is pastoral, but the LDU contains intensive arable cultivation which is captured in a supplementary photograph taken from the roadside next to the north-heading footpath 40m to the west of the egress of the fixed point path. The LDU lies within Gloucestershire.
Further Image Analysis

6.11 Generating data - an alternative approach would be to use the CA’s well-established (founded in 1972) but seemingly little-known methodology for interpreting landscape change (Westmacott and Worthington, 1974, 1984 and 1997). The ‘isovist’ technique of landscape evaluation emerged in the field of urban design and architecture in the 1970s (now also known as ‘space syntax’). In essence, it involves analysing the field of view from any one point, considering the spaces that appear and lines of connectivity between them (Batty, 2001). Tandy first applied the isovist concept to an analysis of changing agricultural landscapes (Tandy, 1972). The technique involves recording the proportion of the horizon formed by different landscape features. From any viewpoint, the horizon can be classified into seven possible groups and the percentage devoted to each calculated.

i. over one mile distant;

ii. wooded, hedged or with clumps of trees/copses;

iii. hedged and with hedgerow trees;

iv. hedged without hedgerow trees;

v. with roadside hedges immediately adjacent to the viewer, sub-divided into 4 categories based on total dominance, more than half, less than half and absent;

vi. with buildings;

vii. cropped or with bare ground.

The aim of this classification is to allow the relative importance of landscape components to be determined based on the assertion that the eye of the viewer is attracted towards the horizon and comes to place a disproportionate emphasis on it when interpreting landscape (Westmacott and Worthington, 1974). From this, the removal or addition of elements can influence the amount of any horizon seen as the eye gets there by navigating through the interconnected spaces (the isovist). The amount of ‘dead ground’ in a view is also influenced by landscape element change. In old map interpretation texts (eg Speak and Carter, 1970), dead ground is defined as the area obscured from a viewer by an intermediate horizon. This generally decreases as landscape elements are removed. An important aspect of the application of this technique for Westmacott and Worthington (1974) was to identify those landscapes with restricted views and large areas of dead ground because these were considered as more able to absorb elements regarded as visual intrusions. In this respect, there are parallels with measures of resilience that have been devised in more recent LCA work. This technique is no longer adequate for monitoring landscape change in itself, but is of potential use when embedded in a LCA framework. Nevertheless, a practical difficulty is that the horizon of the view is not necessarily the horizon of the LDU, which complicates matters significantly.

6.12 Sketching – a more qualitative approach to interpretation is to use sketching. A sketch simplifies the information that a photo presents, allowing for the stripping out of less useful elements and emphasis of those aspects of landscape that are most important in the monitoring process. Some examples of images and their associated sketches can be seen in Figures 6.3 to 6.8. Figures 6.3 and 6.6 are photographs of landscapes found within the south of the AONB, previously supplied to CRR for work on providing the Malvern Hills AONB Partnership with Management Plan data (CRR, 2002). Thus, in Figure 6.4, the sketch especially emphasises tree cover and field boundaries.

6.13 Artistic licence should be resisted and the sketch should be an accurate interpretation of the actual landscape viewed. It should be used to compensate for the fact that camera lenses tend to depress verticals and extend distances in landscape photography. The photograph in Figure 6.3 has the disadvantage of
compressing the visible landscape to approximately one-fifth of the area of the photograph. A stylised sketch can go some way towards correcting this deficiency, as shown in Figures 6.4 and 6.5. A series of sketches can be built up over time and the annotation revised to reflect specific changes that have occurred between images. The text is important because it provides interpretation which captures processes at work at the time the image was taken. The context of change can easily become eroded over time – processes that may have been obvious and assumed at the time of the photograph may not be as prevalent when the next image is recorded. It further avoids tendencies towards post facto rationalisation of change.

6.14 Once collections of images are built up, cross-comparisons can be made which identify similar processes at work in the field sites. These can then come to represent the key dynamics of change throughout the wider AONB. This potentially provides a more ‘bottom-up’ approach to the evaluation of landscape change than that which frequently seeks examples of processes derived from the analysis of wider policy effects.
Figure 6.3: The southern landscape of the Malvern Hills AONB, Bromesberrow.

Figure 6.4: A stylised sketch interpretation of the landscape in Figure 6.3.
The future loss of trees and hedges may make this low hill landform more prominent in the future.

Discontinuous boundary: the profitability of arable cultivation compared with livestock enterprises has reduced the need to maintain stockproof hedges.

Woodland blocks: this landscape is notable for the way woodland is concentrated into significant blocks between arable fields.

Prominent line of semi-mature trees: this type of distinctive feature is usually associated with a watercourse but here appears unusually located in a mid-slope position. A watercourse is not visible.

Hedgerow trees: these elements are a particular feature of this landscape and are of varied species composition (further fieldwork could identify species type).

Arable cultivation: crops dominate land use in this landscape which may appear to be pastoral at first glance. Tram lines (created where tractors repeatedly pass across a field) are a diagnostic characteristic of cropland.

Figure 6.5: An annotated sketch of the scene in Figure 6.3.
Figure 6.6: The southern landscape of the Malvern Hills AONB, Redmarley.

Figure 6.7: A stylised sketch interpretation of the landscape in Figure 6.6.
Hedgerow trees: mature trees provide a valuable landscape feature and habitat, but they may not be replaced.

Fences: corral or post & wire fencing has replaced hedges as field boundaries. They have the advantage of being quicker to install, a consideration for farm businesses which have shed labour to reduce costs.

Hedge management: the replacement of farm labour with machinery has led to hedges being cut mechanically ('flailed'). As time becomes a factor, or contractors are used, the opportunity for hedge tree growth is restricted.

Farm buildings: modern barns have replaced traditional buildings to provide the flexibility for modern farming methods. Such structures were grant-aided by government until the mid-1980s.

Figure 6.8: An annotated sketch of the scene in Figure 6.6.

6.15 It has not been possible to provide interpretation through sketches or isovist analysis of AONB LDUs in this report due to time constraints. Instead, key features of the LDU from each LDU fixed point scene have been shown directly on the photograph. It is acknowledged that this technique leads to some obscuring of the features that the annotation attempts to show.
7. Conclusions and Summary of Recommendations

7.1 The Malvern Hills AONB is a unique area of the British landscape that deserves a monitoring programme that is capable of capturing change to the special qualities of its countryside (Section 2). A critical review of work by other organisations (Section 3) and investigation here suggests that nine indicators are capable of monitoring the essence of the Malvern Hills AONB.

7.2 The indicators are summarised as:
1) Fixed point photography
2) Landscape Character Assessment monitoring
3) June Agricultural Census
4) Regionally Important Geological Sites condition database
5) Sites of Special Scientific Interest condition monitoring
6) Scheduled Ancient Monuments database
7) Listed Buildings & Buildings At Risk Register
8) Rights of Way Best Value Performance Indicator
9) Visitor surveys

7.3 Recent advances in LCA undertaken by the relevant local authorities that cover the AONB provide a relevant framework in which to embed AONB landscape monitoring. LDUs, grounded in landscape character, have been used as a definitional framework for the objective selection of fixed photography points that are representative of the unique diversity of the Malvern Hills AONB landscape.

7.4 The research presented is based on GIS and fieldwork, resulting in 27 main LDUs having been identified. Fixed photographic monitoring points have been established for them all. A significant advantage is that no one area of the AONB has been favoured over another, circumventing a potential problem in the Malvern Hills whereby there is the obvious temptation just to focus on the most dramatic high hills themselves. A logical methodology for the analysis of photographic data has thus been established (Section 6). Images have been interpreted for character and a separate discussion provided on points of specific relevance to condition monitoring.

7.5 Further research is needed to analyse fully the photographic data, as limitations of time have prevented it appearing in this report. Interpretation through sketches and isovist analysis are recommended. An additional element of fieldwork is desirable to explore all possible monitoring points in individual LDUs, although CRR is confident that the essence of landscape character is captured in each photograph. Supplementary monitoring points could also be established to monitor specific special qualities. Further consideration is also worthy on how to treat the marginal LDU fragments.

7.6 It is hoped that this report helps to place the Malvern Hills at the forefront of national AONB monitoring work. There appears no reason why this methodology cannot be translocated to other AONBs. Some areas may require an initial LCA where not yet attempted by local authorities, representing an additional stage in the process. Nevertheless, this is not insurmountable as the CA in particular has published guidelines on how to undertake LCA (CA, and SNH, 2002).
8. References


## APPENDIX 1: FIELD SURVEY SHEET – AONB LDUs

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