TEN YEARS OF LANDSCAPE CHANGE IN THE MALVERN HILLS AONB

Final Report

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Spring 2017

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EXECUTIVE SUMMARY

Ex.1 The Malvern Hills Area of Outstanding Natural Beauty (AONB) came into existence in 1959. It was based on postwar conceptions about the need to protect landscape areas exhibiting 'natural beauty', primarily from the effects of urbanisation. No specific criteria were set out in the enabling legislation of the 1940s to help determine precisely the boundaries of AONBs, so this was largely a subjective process based on the cultural valuations of individual surveyors.

Ex.2 Following designation, Government concern for the suite of AONBs in existence waned over the decades. This coincided with an unstinting policy goal of industrialising agrarian systems to maximise food output; one pursued with vigour. It meant that farming became the main agent of landscape change within AONBs. Both the ability and resources of teams responsible for operating AONBs were severely limited until a reaffirmation of their importance was given by Government in the 2000 Countryside and Rights of Way (CRoW) Act. Since this time, there has been more systematic concern for maintaining the distinctive character of AONBs principally, though not exclusively, through the production and monitoring of management plans.

Ex.3 This report looks back over ten years of monitoring undertaken between 2006 and 2016 within the Malvern Hills AONB. This is part of a process that seeks to evaluate the effectiveness of the designation, and its management planning, at preventing detrimental landscape change whilst encouraging positive contributions to distinctiveness. A monitoring programme based on Landscape Description Units (LDUs) within the AONB, derived from previous county-based work (in Worcestershire and Herefordshire) on Landscape Character Assessment, was established using fixed point photograph monitoring as its main methodology. Since the initial set-up in 2006, this monitoring has taken place twice within the last ten years (2009 and 2014), and has been supplemented by the use of secondary data to produce periodic *State of the Malvern Hills AONB* reports.

Ex.4 The new set of images produced for this report are compared directly with those taken in 2006 and analysed for evidence of change within the limitations of the technique. As might be anticipated over such a short period, changes to the AONB landscape have been found to have been small and incremental, but nevertheless significant. One effect captured, enabled by the interim monitoring, is the often positively and negatively fluctuating nature of landscape change during the decade. In many cases, change is demonstrated not to be a linear process. The influence of ad hoc, one-off, 'events' are therefore not to be underestimated when assessing landscape change.

Ex.5 To interpret such fluctuations with greater coherence, a typology is developed with the purpose of summarising both the state of key characteristics within individual LDUs and their overall direction of change. The report finds that of the 27 LDUs for which ten-year monitoring is available, fewest in number are improving (6). Half as many again are in decline (9), whilst the majority exhibit 'no change' (12). A management vision is also noted to help provide guidance on the possible nature of interventions required based on the photographic evidence. Clearly, much remains to be done, not only in continuing to conserve landscape character, but also in restoring and (re)creating it.

Ex.6 Although usually initiated in periods before the commencement of the 2006 monitoring, the main landscape consequences originate from a change away from predominantly livestock-based or mixed farming systems towards greater emphasis on intensive arable production. This has meant less need for field boundaries, the

removal of shade-providing field and hedgerow trees and more mechanised approaches to land management.

Ex.7 It is boundary features in particular that have suffered a deterioration within the monitoring period. Doubtless, the 1997 Hedgerow Regulations have limited removal, but agri-environmental measures through voluntary participation schemes have had little impact at the landscape scale. Overall, the influence of the latter has been too dispersed to bring about coherent, and thus noticeable, change. The AONB Partnership itself has intervened to provide recent funding for restoration of old orchards, which has been important in some localities, although the overall picture is one of decline of this traditional landscape feature.

Ex.8 Regarding the Landscape Character Types represented within the AONB, the open character High Hills and Slopes are generally improving due to the active intervention of the Malvern Hills Conservators in providing grazing initiatives and in mechanically cutting invading scrub. Principal Timbered Farmlands emerge as threatened from the loss of individual trees and Enclosed Commons continue to suffer from the effects of intensive arable and livestock agriculture. In contrast to the latter, Unenclosed Commons, which are a distinctive component of the Malvern Hills landscape, are vulnerable from less intensive land use. The cause is two-fold: a decline in the profitability of livestock, together with pressures from growing recreational demands made by the general public.

Ex.9 From the outset of monitoring, careful attention was paid to the need to consider the landscape of each LDU comprising the AONB on an equal basis (not just from obvious vantage points or honeypots within the AONB). However, it is acknowledged that the fixed point photography method has limitations. As currently constituted, it can only capture the view of the individual LDU landscape in one direction. Hence, some elements of change observed over the decade remain just ‘out of shot’. The images can also give the impression of a static landscape, yet what cannot be captured is where the only reason for the lack of change has been active intervention; for example, by the AONB Partnership,. Therefore, Section 5 of the report attempts to redress this potential imbalance by documenting important interventions made by the AONB Partnership across the designation over the last ten years. Overall, it can be concluded that the strengths of the 2006-16 monitoring approach are its ability to identify incremental landscape change, capture subtle fluctuations, and provide unrivalled comparability of change over time which will serve to increase in value as time progresses.

Ex.10 When considering future monitoring, it is essential to continue with the fixed points as the cumulative effects of the small changes observed becomes progressively more apparent. The experience of the last ten years suggests that a five-year interval between surveys seems an adequate trade-off between capturing change and conserving resources. Beyond reliance on fixed points, consideration should be given to getting underneath the ‘skin’ of each LDU within the AONB. In keeping with more contemporary approaches to landscape research, it is recommended that such monitoring becomes more experiential, unfolding in a sequential way to complement the static and spatial nature of the fixed points This is best achieved through devising walkthrough routes using the existing public access network. This is shown to be possible for all LDUs in the AONB. The AONB Unit should use further fixed reference points, but combine them with traverses of the landscape. The purpose would be to reveal changes between them at a particular moment in time in a more flexible way. It would further allow for greater engagement from all stakeholder groups in monitoring the landscape of the Malvern Hills AONB.

1. INTRODUCTION TO LANDSCAPE CHANGE IN THE MALVERN HILLS AONB

1.1 This report examines the state of the Malvern Hills Area of Outstanding Natural Beauty (AONB) over the decade between 2006 and 2016. By way of introduction, a synopsis is provided of the nature of AONBs as a designation. It is divided into five sections to include consideration of the following aspects. First, a brief historical summary is given addressing how the AONB family in England and Wales came about after the Second World War. Second, it traces how the designation has developed in the period since. Third, there is an examination of the concept of 'natural beauty' that has underpinned the designation of AONBs. Fourth, attention is drawn to some of the broad challenges AONBs have faced to their effectiveness as measures to protect the countryside. Fifth, there is a brief introduction to the Malvern Hills AONB itself.

The Origins of the AONB Designation

1.2 Various accounts of the history of AONBs as a designation are available (see for example Holdaway and Smart, 2001; Landscapes for Life, 2006), so that only the essence of the designation is captured here. The origins of AONBs can be traced to the Government's commissioning of the Dower Report, published in 1945, which recommended that national parks be established in England and Wales. The importance of other political issues in the aftermath of war, the likely opposition (particularly by the large landowning lobby of the time) to Dower's proposal for powerful National Parks and the costs of setting up a National Parks Commission (NPC) meant that Government lacked urgency to act. As a result, a weak decision was made to constitute another committee, known as the Hobhouse Committee, to 'firm up' Dower's proposals for designating national parks. Within it, two sub-committees were established to look at specific issues. One was run by Sir Arthur Hobhouse himself to look at Access to the Countryside. The other, under the direction of Julian Huxley, was concerned with wildlife protection and produced a report entitled *'The Conservation of Nature in England and Wales'*. All three reported in 1947. Little known but important work by John Sheail (1981) reveals that, despite growing pre-war pressure for the designation of areas of countryside that could specifically provide for public recreation (as famously recorded on Kinder Scout, Peak District, in 1932), Government remained unenthusiastic primarily on the grounds of cost (even the 1945 'Labour Landslide' regime). Sheail's examination of Ministry of Health archives, which in itself is a surprising yet telling source, unearthed the view that *'the Government will be exposed to serious criticism and discredit if a purely negative reply continues to be given to the large body of opinion in favour of definite action for the preservation of the countryside. The National Parks appear to provide the best opportunity of making a gesture…'* (Ministry of Health memo c.1945, quoted in Sheail, 1981, p.117). Countryside protection in the UK, therefore, started life as a tokenistic political move.

1.3 The importance of the Hobhouse Committee is not in its headline conclusion, which merely reiterated Dower's view that national parks should be created, but in Huxley's Sub-committee. It advanced an argument that 'conservation areas' should be established. The group went as far as to identify 52 of these. They were large areas of countryside which were envisaged as occupying the 'middle ground' between small protected national nature reserves (those that became Sites of Special Scientific Interest or SSSIs) and the larger, semi-wild areas to be covered by

the National Parks. It was Huxley's intention that these medium-sized areas should enjoy *an equal level of status* to national parks and not be regarded as a secondary tier. It was stated that the difference was merely one of character rather than quality.

1.4 Government provided loose scope for Huxley's proposed conservation areas to be designated within the key legislation enacted as the 1949 National Parks and Access to the Countryside Act. It was the national parks that grabbed the headlines and served Government's purpose of reacting in a way to appease the pro-protection countryside recreation lobby. Conservation areas, however, were much lower down in the political imagination. Legislation relating to them was confined to two paragraphs of one page of some 105 making up the Act. The first part states:

> *87 …(i) The Commission may, by order made as respect any area in England and Wales, not being in a National Park, which appears to them to be of such outstanding natural beauty that it is desirable that the provisions of this Act relating to such areas should apply thereto, designate the area for the purposes of this Act as an area of outstanding natural beauty; …*

A seemingly small but significant fact is that the title to be used to represent the conservation area designation is not named. It is not even assigned capital letters hence the legislative term became abridged from the wording of the Act as 'Area of Outstanding Natural Beauty'. The default nature of the title 'AONB' explains why some commentators over the years have found it to be 'awkward'.

1.5 The possibility of designating AONBs was thus provided, but it is difficult to view the intent as being anything other than to keep them low key and perhaps, hopefully, uncontroversial. This argument is certainly enhanced when it is remembered that there was no provision made for any special authority neither to oversee the general programme of designation nor to manage individual AONBs, as proposed with national parks. Other notable points from the legislative extract are that AONBs are not assigned with any designation or management criteria. Further, the emphasis within them is upon *'natural beauty'.* AONB designation would therefore recognise the visual value of the landscape of these areas rather than the broader values that Huxley's 'conservation areas' had implied.

1.6 Despite the obvious lack of political will, AONBs first appeared in 1956 after the initial round of designating national parks was complete. The Gower peninsula, South Wales, was the first to be designated, not least because of an active local anti-development (preservation) society there which was objecting to the establishment of a 'Butlins' holiday camp.

1.7 Some 41 places in England and Wales became designated as AONBs over the subsequent years, culminating in the protection of the Tamar Valley on the Cornwall-Devon border as late as 1995. The number of AONBs has since been reduced because some have been replaced by a new round of national parks in England. Hence, the designation of the South Downs National Park led to the disappearance of two AONBS (Sussex Downs and East Hampshire) and the new Forest one (South Hampshire Coast). The current AONB total for England and Wales stands at 38, covering a land area of 21,042 km^2 (15.6%). (Northern Ireland has eight, but there are none in Scotland).

1.8 Although the majority of AONBs had been designated by the 1980s, it was not until then that the former Countryside Commission (CoCo), the body charged with overseeing AONBs on behalf of Government, started to formalise the meaning of the designation. This was partly a response to criticism of their lack of effectiveness, with

calls for their abolition from some quarters (Shoard, 1980); and partly a continued desire from, as yet, unprotected areas, such as the North Pennines, to seek AONB status. Thus, CoCo established the following formal definition:

> *'parts of the countryside of England and Wales which, while they lack extensive areas of open country suitable for recreation and National Park status, are nonetheless of such fine landscape quality that there is a national as well as local interest in keeping them so'* (Countryside Commission, 1983).

1.9 An analysis of this definition reveals three important points:
i) Huxley's idea of protecting medium-sized areas remained the basis of identifying areas as AONBs;
ii) the emphasis in AONBs, as in National Parks, was the protection of landscape, their 'outstanding' quality, as judged in legislative terms, being defined according to 'natural beauty'.
iii) a lower level of suitability of AONBs for recreation compared with National Parks, explaining why the provision of recreation was to be 'taken into account', but not a statutory objective. The consequences of this affirmation are demonstrated later in a CoCo 1989 publicity leaflet statement that:

> *'In contrast ...[to NPs]...AONBs have a much lower profile. Of course, many of their areas are popular with visitors. But, because of their fragile natural beauty or vulnerability of traditional farming, conservation is the primary aim of AONBs rather than their promotion for public enjoyment. In fact, some people don't even know they live in one!'.*

Since this time, efforts have been made to increase the profile of AONBs in the public consciousness.

1.10 The precise way in which the boundaries of individual AONBs were drawn during the period of original designations outlined above has become clouded by time (see Para 1.33 for a more general account of the designation process; Woolmore, 1998/9). A previous investigation into the process by CRR in relation to the Malvern Hills AONB (CRR, 2002) revealed very few surviving details about it in the archive of the (now defunct) Countryside Agency. The conclusion drawn was that this was a very subjective process, based on the personal interpretation of natural beauty by individual surveyors. With hindsight, it can be interpreted that this fluid way of defining the extent of individual AONBs was viewed as unproblematic because a periodic programme of boundary changes was envisaged. Indeed, there have been major boundary revisions in some AONBs (Mendip Hills, Dedham Vale, Chilterns and Cornwall), but this process proved to be time and resource consuming. In most cases, subsequent boundary revision has been limited to minor adjustments and the original designated areas remain largely intact. No future intention to undertake wholesale redefinition of AONBs has been evident from Natural England or Natural Resources Wales, the bodies currently responsible for overseeing them.

Reviews of AONBs as a Designation

1.11 The effectiveness of AONBs in protecting landscapes from detrimental change has strayed on and off Government agendas during the lifetime of the AONB designation process. The former CoCo first began assessments of AONBs from 1978, but three main reviews of AONBs as a designation can be identified.

1.12 The first review was conducted by Himsworth (1980) who considered a range of important questions, including whether AONBs should be scrapped altogether. His conclusion was that AONBs should remain and made recommendations to increase funding, to embrace recreation as an express purpose and to draw up management

plans. These were watered down by Government when published by the CoCo in 1983 who declared that 'encouragement' should be given to consider recreation and construct management plans (Countryside Commission, 1983). Controls over agriculture, the main agent of change in all AONBs, were of course resisted.

1.13 The response of Government to Himsworth was adjudged to be unsatisfactory and such discontent amongst the growing conservation lobby in the UK led directly to a second review; that of Smart and Anderson (1990). They produced a report for the CoCo entitled *'Planning and Management of AONBs'* and concluded that the strength of AONBs was their ability to control development. However, key weaknesses included that *'positive conservation was thin on the ground, and hardly affected agriculture (which has caused most change in AONBs)'*. Lack of funding and data on AONB landscape fabric were identified as further critical deficiencies (see Holdaway and Smart, 2003). This led to a new Policy Statement in 1991 to try to improve both the conservation performance and public awareness of AONBs (Countryside Commission, 1991). A suite of administrative improvements were announced. Government 'urged' local authorities (where relevant) to treat AONBs as single units, with more emphasis to be placed on the role of Joint Advisory Committees (JACs) to coordinate running such AONBs. Some AONBs had had JACs previously, but they then became dormant through lack of funding and enthusiasm; as happened with the Malvern Hills where this was the case for over 20 years until reformed in 1991 (Woolmore, 1998/9). Further measures were that local authorities had to instigate management plan preparation and appoint a person to the role of 'AONB Officer'.

1.14 The third main review of AONBs came in 1998 with the CoCo's Consultation Report *'Protecting Our Finest Countryside'*. It addressed resource issues, recommending that local authorities should be obliged to fund AONBs fully. It also recommended:

- increases in overall expenditure;
- conservation boards for large AONBS;
- permitting 'challenge funding' for projects;
- charity status for AONBs;
- the production of marketing products, increase car parking charges etc.

1.15 The reviews of the 1990s paved the way for formal legislation aimed at making the 1998 recommendations legally binding. This came through the 2000 Countryside and Rights of Way (CRoW) Act which provided a firm Government (re-)commitment to the concept of AONBs for the first time since 1949. Part IV of the Act made four important contributions to the future of AONBs.

i) It clarified the procedure to be adopted to designate more AONBs.

ii) It decisively declared that AONBs should thenceforth be treated in the same manner as National Parks within the planning system for the purpose of development control. Some parts of the 1949 Act relating only to NPs were retrospectively applied to AONBs (such as the ability to make access orders). Public bodies, in particular, had to take into account the purpose of AONBs when operating within them.

iii) s86 of the CRoW Act makes provision for the establishment of conservation boards in AONBs. The idea was first trialled on the Sussex Downs in 1992. This was viewed as helping to unify control and management of AONBs, particularly where they are large and have parts in many counties. In particular, they were assigned a duty not only to practice conservation but to explain it to those people using the AONB for recreation. Board membership draws representatives with a national, rather than purely local, brief. This structure became active in both the Chilterns and the Cotswolds AONBs from 2004.

iv) Local authorities were instructed to produce a management plan for all AONBs by the end of 2003 (s89/90), to be reviewed on a 5-year cycle. The production, let alone

revisions, of plans had been a rather random occurrence before. The main purposes of management plans are to identify pressures and enhance management, ensuring that conservation and local interests are met. The former Countryside Agency first produced guidelines in 2006 on how AONB teams could review the efficacy of such plans.

1.16 Prior to the global 'credit crunch' of 2008, Government agreed to increase spending on AONBs. As part of this initiative, in April 2002, Government raised core funding of AONBs to 75%, with local authorities left to find the remaining 25%. This was necessary because many local authorities at that time had not budgeted for an increase in AONB spending and so would have been unable to match fund if the requirement to fund had remained at 50%. Specific projects within AONBs were encouraged from other sources (such as the lottery, and used in the Malvern Hills to restore heritage via the funding of grazing projects and spring water features. Defra (Department for Environment, Food and Rural Affairs), the Government department with ultimate responsibility for AONBs, also introduced a Sustainable Development Fund (SDF) for AONBs from 2005. Its aim was to encourage AONBs to commission projects that contributed to the delivery of management plan objectives (specifically, sustain the countryside, improve environment and enhance/integrate delivery of rural services). In 2006/7, the first year of SDF operation, the Malvern Hills AONB Unit supported 13 projects of between £1000 and £9000, with recipients representing a mix of private, public and charitable interests. SDF income for such projects amounted to £151,080, a figure comparable to the core funding received to run the Malvern Hills Unit (£159,382), demonstrating the limited operational resources upon which most AONBs had subsisted up to this point.

More on the Concept of Natural Beauty

1.17 Each AONB possesses specific features which gives it special character and underpins the demand for public protection. These have only been defined since the 1985 public inquiry into the designation of the North Pennines AONB, a long and somewhat tortuous seven-year legal process that raised the need for specific evidence and data. As a consequence of this experience, and the conclusion of the Smart and Anderson review (1990), Landscape Assessments were published from the early 1990s to help explain why an individual AONB is of national importance. This was not only for the benefit of the public, but also for those working within AONB teams who required more specific guidance on the important qualities and priorities for protection in the face of increasingly legalistic challenges to their administration.

1.18 The basis of all AONB designations, as with their (generally, though not exclusively) larger national park cousins, is founded in the concept of *natural beauty*. It is vital to appreciate that natural beauty is not an objective idea; one that is a composite of measureable facts. Instead, it is a subjective judgement based on cultural valuation (see para 1.10), which in the UK is strongly influenced by the 19th century romantic movement that came to revere wild, picturesque places (Short, 1991; Bunce, 1994). According to Selman and Swanwick (2010), natural beauty is part of a 'subjectivist paradigm' in which, effectively, beauty is in the eye of the beholder rather than in the object itself being viewed. It is this combination of the cultural and aesthetic (Figure 1.1) which has consistently influenced the designation of AONBs rather than the actual environmental attributes existing within any area.

1.19 As Figure 1.1 summarises, the cultural components are socially constructed, being acquired, dynamic and malleable (Selman and Swanwick, 2010). In contrast, the aesthetic describes landscape features linked by human preference to mental

and physical well-being. Only within the last 25 years have attempts been made to record actual environmental attributes, primarily through systems based on variations of 'Landscape Character Assessment' (LCA) (Warnock and Brown, 1998a and b). The aim has been to produce a more 'consistent and replicable' approach to describing landscape; one that would be more robust to challenge in a legal context. Inevitably, this has meant a switch to a more quantitatively-based way of assessing landscape that captures less of the emotional and sensual qualities that it can provoke in people. Whether LCA anticipated the possibility of legal challenge to natural beauty as the founding concept for protecting areas of the British countryside (stemming from the experience of the 1985 Public Inquiry into the designation of the North Pennines AONB), or served to open it up to the possibility of challenge, is a moot point. Either way, a significant legal challenge did arise to it in the course of renewed round of designation of national parks in England in the mid-2000s: specifically, that of the New Forest National Park.

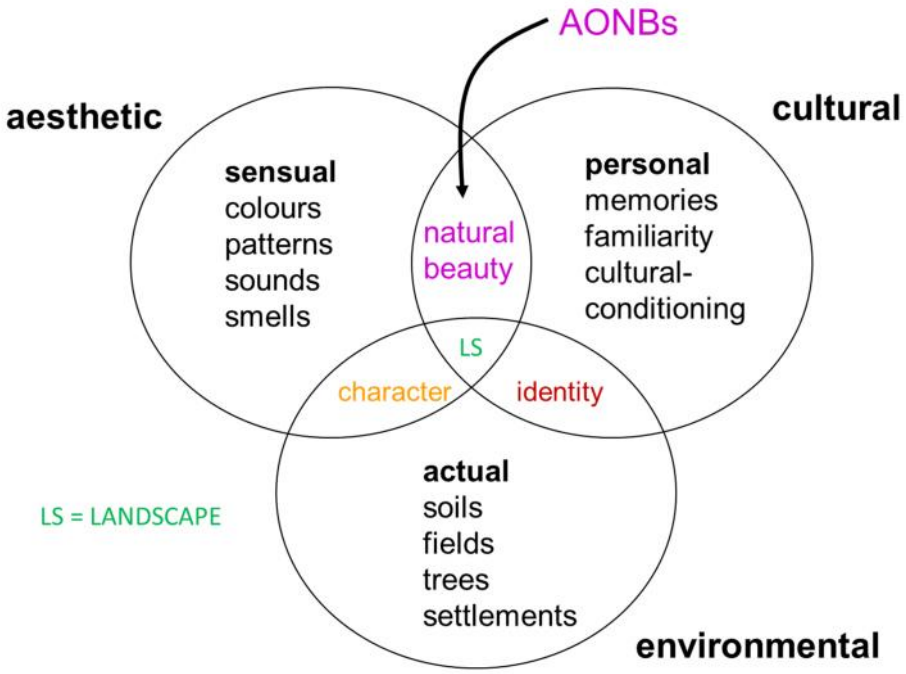


Figure 1.1: The position of AONBs within the components of landscape (adapted from Warnock and Brown, 1998a).

1.20 During the course of designating the New Forest National Park, a private landowner operating as Meyrick Estate Management Limited legally appealed against the inclusion of the Admiral Hinton Park Estate (in the south west) within the proposed area. Two principal problems arose with the term natural beauty which were then exploited to support their case. First, they argued that the Estate contained no 'natural beauty', the landscape being entirely man-made primarily to support intensive dairy farming. Second, there was a technicality whereby the meaning had been clarified in relation to the management of national parks, but not in relation to their designation. The judge found in favour of the objector, a decision henceforth known as the Meyrick Judgements (Royal Courts of Justice, 2005; The Planning Inspectorate, 2008).

1.21 To ensure that the designation of the New Forest and also the South Downs as national parks continued, a late amendment was introduced into the 2006 Natural Environment and Rural Communities Act so that cultural heritage (as, for example, reflected in parkland) and wildlife interest could be taken into account alongside natural beauty when considering the potential enjoyment of the special qualities of protected areas for recreational purposes. The intention was to diffuse any challenge to the meaning of natural beauty by recourse to other criteria that could support and justify designation.

1.22 In their stakeholder research conducted for the former Countryside Council for Wales, Selman and Swanwick (2010, p.22) concluded that a 'modern understanding of natural beauty' incorporated six attributes relating to:
i) a lack of urban development;
ii) landscapes that may well have been heavily manipulated by humans;
iii) a broad conceptualisation of landscape, in which all components displayed in Figure 1.1 interact;
iv) landscapes which have a unified and distinctive character;
v) a move beyond the aesthetic ('look') valuation of landscape established in the 19th century;
vi) landscape value, as defined socially and culturally.

An Introduction to Pressures on AONBs

1.23 It is appropriate to provide a brief overview of the pressures that AONBs face. These were especially potent until the 2000 CRoW Act reaffirmed AONBs as an important landscape protection designation; one indeed equivalent in status to national parks (something inherent since the passing of the 1940s legislation but a proviso that had consistently been forgotten, either unwittingly or deliberately). It is intended that this sketch be illustrative rather than detailed, serving to bring the key processes to the fore. Providing detailed evidence, within the specific context of the Malvern Hills AONB, is indeed the specific and central aim of the remainder of this current 'State' report.

1.24 One general problem, and a criticism that was voiced at the AONB as designation type, concerned their diversity (for evidence of such, see Countryside Commission, 1992). Therefore, it proved difficult to construct a coherent set of management principles to apply with any sense of universality. Hence, AONB policy effectiveness has been highly variable. In some areas, it has been good, and a comparative view across AONBs as a whole suggests that this has been the case in the Malvern Hills AONB. There have been clear benefits from working in partnership with the Malvern Hills Conservators (MHC), leading to success in maintaining the end of all quarrying activity and delivering positive land management. However, beyond specific projects, initiatives and interventions, generally across the AONB family there has simply been a lack of power to control the main agents changing the appearance of the landscape (Holdaway and Smart, 2001). As far back as a 1990 report, the former CoCo identified four broad concerns about the lack of effectiveness of AONBs (Countryside Commission, 1990).

i) Damage by land-based industries.

1.25 AONB designation has been relatively powerless to stop change emanating from three potent sources. First, the change to agricultural systems has been rapid postwar. Much of the area of AONBs is not 'natural', and its landscape and

associated biodiversity depends upon a 'traditional' system of land management. A common, though by no means exhaustive, set of landscape changes evident from the practice of more industrialised agriculture include:

- conversion of grassland to arable crops;
- grassland 'improvement' (in terms of livestock-feeding capacity);
- intensive grazing;
- drainage of wetlands;
- lack of grazing, causing scrub invasion;
- use of small woods for 'early bite' grazing;
- construction of modern farm buildings;
- farm amalgamation, stimulating boundary removal.

Of course, AONBs were first established in recognition both of existing high landscape value and the need to protect such value from change. The geography of designation reveals that these characteristics were most frequently encountered in the lowland landscapes of Britain. It is therefore something of an irony that having identified and sought to protect the most delicate and intricate British landscapes through AONBs, agricultural change has been most prevalent in precisely these localities. The lowlands have suffered most from 'improvement' for agricultural productivity, especially a switch from grass-based to arable farming systems. Postwar Government policy, including that of the European Union's Common Agricultural Policy (CAP) since the mid-1970s in the UK, has consistently sought to favour the profitability of cropping over other forms of agricultural practice.

1.26 Second, forestry practices have also undergone modernisation away from traditional 'ways of doing'. Afforestation has been less potent in AONBs than in national parks, but is a threat in some of the upland AONBs that have been designated since the 1970s. A more subtle change, but perhaps one more important for biodiversity than for landscape, has been the 'improvement' of unproductive broadleaved woodland. Conifers have been planted inside existing wooded compartments by the Forestry Commission and other private landowners (using state-sponsored schemes) in most areas.

1.27 Third, mineral workings were at the time of the CoCo (1990) report estimated to be active in one in three AONBs. Planning permissions were often granted with long extraction licences, including renewal options, before designation took place. The dilemma emerging here is the extent to which sourcing local stone to maintain distinctive character can be balanced against the need for the wholesale destruction of the fabric of the landscape.

ii) Damage from growing recreation pressures

1.28 There are a variety of concerns as public interest grows in utilising AONB spaces for recreational purposes. Of course, AONBs are crucial in connecting people with the concept of the conservation of protected areas, even if they were not assigned a specific recreational function (by virtue of their lacking both size and areas of 'wild' land) within the 1940s legislation. Thus, a persistent challenge has been how to provide for visitors at honeypots (heavily visited areas) in the absence of specific resources whilst not compromising conservation objectives. Noise and congestion (contributing to a lack of tranquillity) has steadily worsened over the years due to increased car ownership, the accessibility of many AONBs from large urban centres and increased leisure time. Added to this mobility, places within AONBs (if not the AONBs themselves) have been promoted by tourism organisations and businesses, often with the laudable intention to the benefit of local rural economies,

but without coherent strategies to minimise conflict and damage. Environmental carrying capacity, or the amount that the physical and biotic environment can withstand from tourism-induced pressures, was reported by CoCo (1990) to be exceeded in one in four areas. Consequences include trampling of vegetation (dunes are a particular problem in coastal AONBs), footpath erosion, over-use by off-road vehicles and pollution. Essentially, AONB management has certainly not commanded anywhere near the same level of financial resource as tourist promotion.

iii) Changing local communities

1.29 AONBs have been most effective at restricting urban development, and two issues arise as a consequence. First, tight control over village development is justified in landscape terms, but this has reduced the availability of affordable housing. A Lloyds TSB report of 2012 concluded that house prices in AONBs were, on average, £15,000 higher than in their surrounding localities, albeit with significant regional variation. It has also led to some (more modest) restrictions on opportunities for boosting rural economies. Second, the urbanization of the countryside is often a subtle process occurring by stealth over long periods of time. Such incremental developments have proven difficult to resist in AONBs, such as the spread of golf courses, appearance of wind energy turbines and telecommunication masts. Poor design was a feature reported in one in five of all AONBs in CoCo's 1990 report prior to the strengthening of conditions under the 2000 CRoW Act.

iv) Administrative and resource difficulties

1.30 Lack of available funding has been a challenge faced by all AONBs since their inception. AONB Partnerships are set up by local authorities and generally run by small teams or units who contribute to exercising planning and development control. Only since the 2000 CRoW Act has there been a need for active Joint Advisory Committees, AONB Officer appointments, management plans and periodic (5-year) reviews of such plans. Finance comes from the state and total expenditure on AONBs in 1999/2000 was approximately £7m; rising only to £8m by 2004/5 (but see Para 1.32). Until 2002, finance took the form of a 50% government grant via the former Countryside Agency (note that national parks received 75% by comparison). Local authorities were expected to match this, but there was no financial obligation for them to do so. So, not only were funds for AONBs modest in themselves, AONBs did not always receive their fair share of funding from hard-up and financially pressed local authorities. Areas only received match funding based on the local authority contribution (e.g. if a local authority could only afford 20%, that was all that was matched by the Countryside Agency). This was the reason why AONBs were widely regarded as the 'Cinderellas' of UK conservation, or financially poor 'jewels in the landscape' (Shoard, 1980, p.144; MacEwen and MacEwen, 1987; Holdaway and Smart, 2001).

1.31 Since the enactment of the 2000 CRoW Act, the scale and effectiveness of interventions made by AONBs have improved significantly, as has strategic planning and public awareness. The placing of AONBs under the jurisdiction of Natural England (in England) has undoubtedly assisted the joining up of landscape and nature conservation. Work with land managers has improved through co-ordinating action under various rounds of agri-environmental incentive schemes (such as the original Countryside Stewardship Scheme and Higher Level Stewardship of the Environmental Stewardship scheme – both now defunct, but with some 'live' agreements remaining under the latter).

1.32 Nevertheless, considerable challenges to the effectiveness of AONBs remain, not least the significant cuts to public spending under austerity measures since the financial crisis of 2008. According to Land Use Consultants (2013), English AONB core funding in 2013 amounted to £6.6m, but this had slipped further to around £5.5m by 2016.

1.33 The large size of some AONBs has been a source of criticism because 'less valuable' landscape areas were included in them, although this has receded as it has become realised that larger areas act as a protecting buffer to those pockets of exceptional beauty which would otherwise be fragmented.

Introducing the Malvern Hills AONB

1.34 The Malvern Hills were designated as an AONB in 1959, occupying 105km^2, representing an example of one of a suite of 'high ridge' AONBs within a lowland setting (comparable example AONBs can be considered to be the Mendip Hills; the Quantock Hills; and the Clwydian Range and Dee Valley). The eight-mile north-south ridgeline of the high hills is therefore modest in geographical extent (explaining its suitability for AONB rather than National Park status – see above), although the AONB boundary encompasses a larger area of countryside than this, particularly to the west of the ridgeline.

1.35 The Malvern Hills can be considered to be in the vanguard of protected areas in the UK. An Act of Parliament was passed in 1884 to establish an organisation to protect the area's 1200ha of common lands from urban and agricultural development – the Malvern Hills Conservators (MHC) – which remains in existence today (see www.malvernhills.org.uk/conservators/index.aspx for details). The aims and scope of MHC have since been modified by four further Acts of Parliament, the most recent in 1995. Thus, the protective activities of MHC pre-date those of the AONB by some three-quarters of a century, providing both a basis for subsequent AONB actions and continuing to offer another layer of the protection, approached differently, to its core. However, one complication was the control of quarrying activity, primarily undertaken as a source of roadstone from the granite rocks that comprised the Hills, which had become widespread by Victorian times. Quarrying rights had been retained by local landowners as part of a 'trade-off' to secure an agreement to set up a body to protect the Hills (the MHC). Following the passing of the 1884 Act, such rights progressively became leased to private quarrying companies, so that more than a dozen quarries were active in the early 20th century. The distinctive appearance of the Hills' ridgeline became an increasing cause for concern as quarrying threatened irreversibly to alter its natural shape. The MHC became embroiled in decades of manoeuvres to acquire the quarrying rights that had originally been bargained away to allow their formation. Through the 1909 Malvern Hills Act, MHC had attempted in its draft Bill to acquire powers to control quarrying, but these were struck out to appease quarry business owners and those concerned about levels of local employment. The 1924 Malvern Hills Act that followed finally enacted powers, such as compulsory purchase, for MHC to deal with the problem and can be viewed as particularly timely, coming at a point when widespread road improvements were being made to accommodate increasing road traffic across the country. Quarrying was ceased only in 1977, the last works being at the Gullet towards the southern end of the ridge.

1.36 The Malvern Hills had featured in the original suggestions for 'conservation areas' that emerged out of the Hobhouse Committee (see Para 1.3), According to Woolmore (1998/9), the MHC were important in first attempting to secure a national

park designation on the Malvern Hills in 1952, although this was always unlikely to succeed given the limited extent of 'open country'. On the advice of the NPC, it was suggested that the Conservators seek AONB status for the Hills by working with the three local authorities involved (the Three Counties – Herefordshire, Worcestershire and Gloucestershire). Woolmore (1998/9) argues that rapid progress towards compiling boundary maps and the identification of project work effectively bumped the Malvern Hills up the priority list for Area designation. Differences of opinion about the exact boundaries were recorded, particularly a debate about the inclusion of lower-lying land to protect 'foreground' views of the Hills themselves; an early expression of the concept of buffer zones. Following a revision of this nature, Woolmore (1998/9) records no further change to the suggested boundary throughout the entire course of the designation process. The designated area was thus significantly larger than initially sketched by the Hobhouse Committee. Beyond the general account of the designation process provided by Woolmore (1998/9), as previously noted (Para 1.10), the exact criteria and methods used to determine the AONB boundaries are hazy at best, there being firm evidence only for the greater inclusion of common lands at the behest of the MHC.

Monitoring the State of the Malvern Hills AONB

1.37 Under the directive of the 2000 CRoW Act, monitoring the effectiveness of the management plans devised for the Malvern Hills AONB began in a deliberate and structured way in 2006. A methodology was devised for the monitoring process based on the LCA system outlined in Para 1.19 (for full details, see Evans and Connolly, 2006). This has been used in consistent fashion since and published in three interim reports (Malvern Hills AONB Partnership, 2006, 2009 and 2014). Previously, much detailed monitoring had been undertaken on the landscape of the ridge of high hills, including that by the MHC, yet the remainder of the AONB remained neglected by comparison. One important objective of the monitoring work has been to assess all parts of the AONB, not just that for which it is most well-known.

1.38 A complete account of the monitoring process can be gleaned from the previous work, so that only a brief contextual summary is provided here to aid interpretation of the new work that follows.

1.39 Based on the work of local authorities in Herefordshire and Worcestershire (see WCC, 1999; HC, 2004; WCC, 2013), the landscape of the Malvern Hills AONB contains ten broad 'Landscape Character Types', plus the urban areas which are not considered further at this juncture (Figure 1.2). Smaller, distinct areas expressing unity of landscape character can be found within these Types, known as Landscape Description Units. Ignoring small fragments, some 30 LDUs have been identified and it is these that act as the basis for monitoring effort inclusive of all local landscapes in the AONB (Figure 1.3). Within each LDU, a mathematically calculated areal point (centroid) provided the target location from which to monitor change using fixed point photography. At that stage, more subjective elements were introduced dictated by accessibility and extent of view (Evans and Connolly, 2006). Therefore, the original final images were all taken from, adjacent to, or looking at, the centroid. Supplementary images were also taken where the selected locations were perhaps not entirely satisfactory, or where LDUs were extensive (a number of LDUs in the Malvern Hills possess the geometrical form of being 'long and thin', arranged on a north-south axis, which makes reliance on a central point harder to justify).

1.40 The aim of the current work is to provide a new set of images for 2016 for direct comparison with those taken at the initiation of monitoring in 2006. The way the AONB landscape has changed, together with its timing, can be traced by reference to the sets of images taken in 2009 and 2014 to build up a picture of direction of change. One interesting feature that will be revealed in the work is inconsistency in trends observed. Sudden shifts in the condition of the landscape, both in positive and negative directions, are a hallmark of the analysis. It is important to note, of course, that the report is deliberately based upon the fixed points which 'look' in a specific direction (for reasons just outlined in Para 1.39). This methodological advantage is also a limitation in that, on occasions, major changes to the landscape have occurred in a LDU that are not covered by the photographic evidence, sometimes in close proximity to the fixed point. In acknowledgement of this, the report does move on after the image analysis to provide a wider overview of the context of change and exemplars of the interventions made by the AONB team (Section 5).

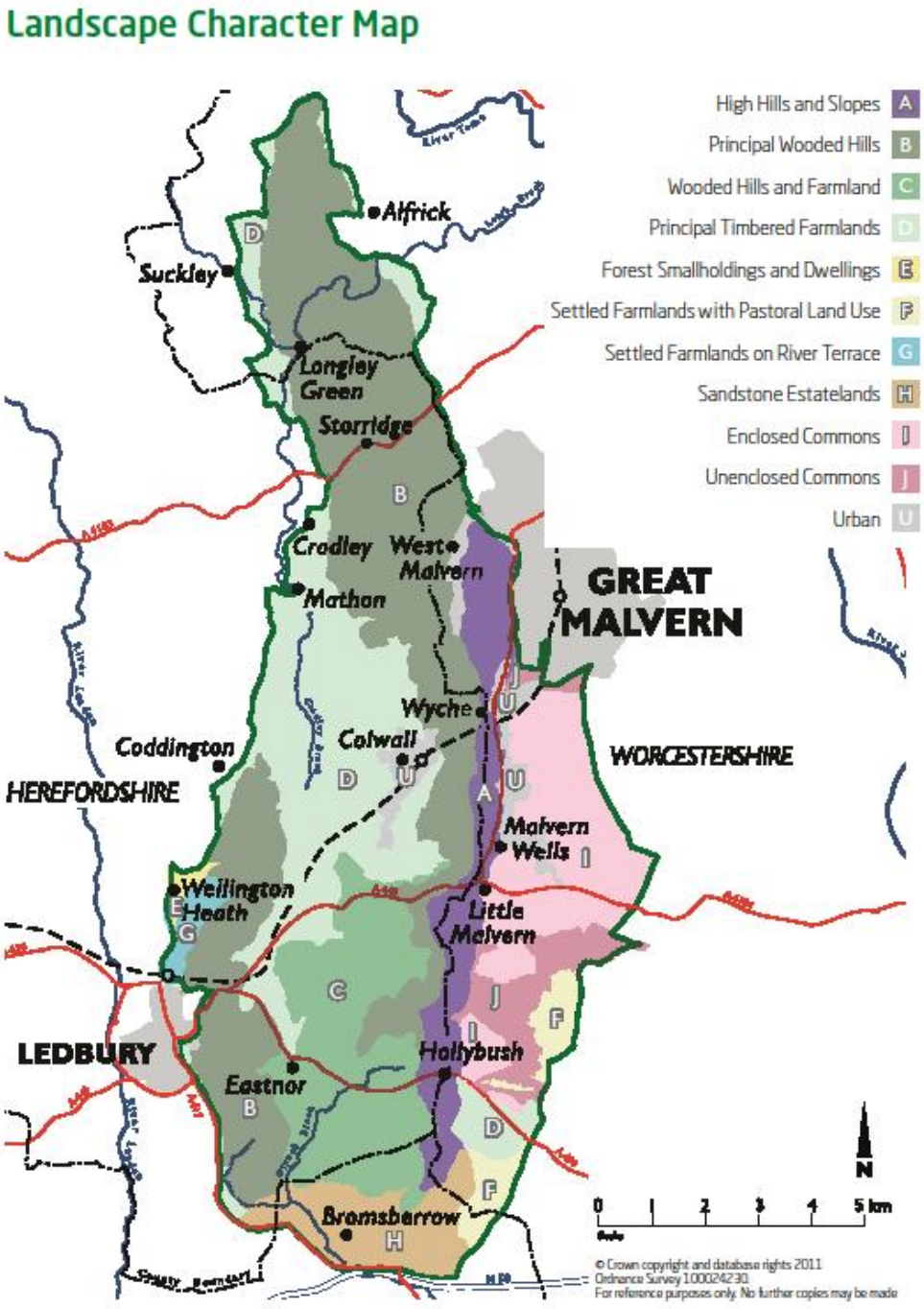


Figure 1.2: Landscape Character Types in the Malvern Hills AONB.

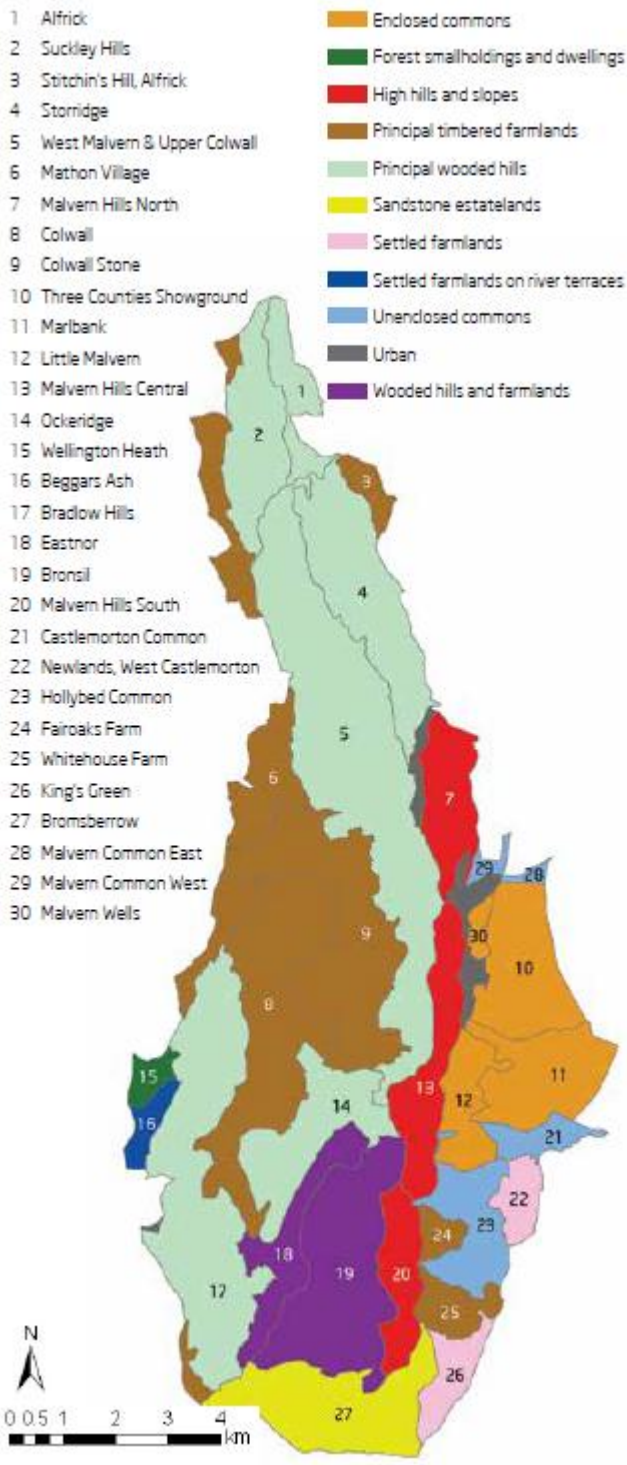


Figure 1.3: Monitored Landscape Description Units (LDUs) within the Malvern Hills AONB.

2. IMAGES OF CHANGE, 2006-2016

Methodological Notes

2.1 The 2006 State Report (Evans and Connolly, 2006) establishing the landscape monitoring methodology for the Malvern Hills AONB contained 40 images based on Landscape Description Units (LDU) 'centroids'. From these, 27 have been used regularly over the last ten years for monitoring purposes and presented in interim *State of the Malvern Hills AONB* publications (Malvern Hills AONB Partnership, 2006, 2009 and 2014). A further three images of urban fringe land on the southern edge of Great Malvern and at Malvern Wells were added to the 'State' reports in 2009, to include LDU parcels subsequently modified by the local authority within the AONB, although these were not part of the initial monitoring work (and so do not feature prominently here).

2.2 This section newly assesses landscape change between the 2006 and current set of 2016 images. These images are presented side by side so that the full extent of change over the decade can be examined. The advantage of the interim monitoring is that the timing of the changes can be identified with much more precision than has been achieved before.

2.3 Annotations are restricted to the 2016 images and changes identified on that set of images. The justification for this is that the current images are the ones that show change and can be annotated to greatest effect. Also, the landscape can be viewed in the field at any current point to compare with the historical set. Hence, it seems most appropriate and logical to leave the original 2006 images uncluttered.

2.4 The annotations themselves (boxes of text) comprise a range of content intended to draw attention to observed change and the processes underlying that change. The former is selective evidence specifically contained within the photograph, highlighting what has changed and what is either 'in' or 'out' of character for the Landscape Character Type represented by the LDU. The latter are those forces which help to explain the changes observed, but are underlying and not in themselves directly observable. They are included to move beyond passive description and help in viewing the bigger picture of change. *Explanations* are distinguished from observations in the annotations through the use of italicised text. Note that both observation and explanation can occur within the same box of text.

2.5 The 2016 images have been taken to match as closely as possible those published in 2006. No problems with access have been encountered, although there have been some changes over the intervening decade that mean the 2006 view, in a small number of cases, is now far more obscured than was formerly the case. The current images have still been shot from the 2006 point and the temptation to move a few metres to obtain a clearer view has been resisted for the sake of comparability. Indeed, this would, in fact, represent a side-step of the change which the photographs were originally conceived to capture. Thus, the suitability of the continued use of some 2006 locations for future monitoring of landscape change will need to be reviewed to determine if additional monitoring points are required (see Section 6).

A Typology of Change

2.6 A broad summary of the *state* of key characteristics and direction of *change* is given for each main monitoring photograph of the 27 LDUs. This is based on a nine-fold typology constructed to capture simultaneously these trends over the entire decade. This is shown in Figure 2.1. As with all typologies, each category incorporates a range of circumstances within it and the distance of the boundary between some LDUs placed in adjacent categories is closer for some than others.

Dimension

		Direction of Change		
		Declining	*No Change*	*Improving*
State of Key Characteristics	*Disintegrated*	disintegrated declining	disintegrated, no change	disintegrated improving
	Mixed	mixed declining	mixed, no change	mixed improving
	Intact	intact declining	intact, no change	intact improving

Dimension

Figure 2.1: A state of change key characteristics typology for monitored LDUs.

2.7 The first dimension of the typology, that which lies along the vertical y-axis of the table, is the 'state of key characteristics' of the landscape. These are identified and described as *disintegrated*, *mixed* and *intact*. A plethora of terms has built up around the process of LCA over the last 20 years, with many having defined meanings along broadly similar lines founded in the 'Warnock school' of LCA adopted by many local authorities and managers of protected areas (Warnock and Brown, 1998a and b; WCC, 2013). Precise meanings do vary based on variations from the Warnock LCA process dependent upon how they have been interpreted at a local level. Hence, potentially useful descriptors of landscape, such as integrity, unity, functionality and condition, may have specific connotations attached to them and so are now limited in scope.

2.8 The essence of the situations described by the terms comprising the 'state of key characteristics' may be considered as follows:
i) intact: a monitoring point landscape which retains and expresses many of the key characteristics that underpin the original distinctiveness associated with the Landscape Character Type of the LDU within which it is situated.
ii) mixed: a monitoring point landscape which possesses some of the key characteristics associated with its character type but into which incursions by non-distinctive elements has occurred, or from which significant losses of distinctive elements have been made. The distinctive character is 'there', yet weakened.
iii) disintegrated: a monitoring point landscape which is far removed from having assemblages of characteristics that are key to defining the Landscape Character Type in which the LDU sits. Elements of the landscape appear as a random mix or else are more akin to a different Landscape Character Type.

2.9 The use of the term ‘condition’ remains valid to summarise the state of the landscape in any LDU. However, an emerging and unfortunate problem concerns the interpretation of the concept of ‘condition’ by certain parties. If assigned an interpretation of ‘weak’ or ‘poor’, some agents advocating large scale or potentially damaging development can seize upon such ‘ratings’ to argue that their proposals are acceptable because the landscape is degraded. This lies far from the original intention of ascribing ‘condition’ because, in many cases, limited change can quickly reverse landscapes considered to be in poor condition. The use of the state of key characteristics and assigned descriptors (which do appear in local LCAs, but more as general descriptors than prescribed determinants of landscape distinctiveness, vulnerability and sensitivity), is therefore intended to circumvent some of these difficulties for the purposes of this report.

2.10 With such problems in mind, return is made here to the observable aspects of landscape that underpin the mapping and field surveying exercises that were conducted in the original iterations of most local LCAs. There are nine which can be identified:

i) landform and topography;
ii) natural features;
iii) tree cover;
iv) land use intensity;
v) field pattern;
vi) habitat network (a ‘connectedness’ aspect);
vii) scale (in terms of intimacy versus openness);
viii) building style (in terms of consistency rather than presence / absence);
ix) incongruous features (visual effects of man-made intrusions).

A review of the combined state of features contributing to these aspects is made in order to decide if the LDU is intact, mixed or disintegrated in relation to the prominence of such features, as monitored over the last decade, in the Landscape Character Type of which the LDU is part. The importance of the contribution of characteristics is judged according to those to be expected within a specific Landscape Character Type based on the previous work conducted by the Malvern Hills AONB Partnership in the publication *Landscape Strategy and Guidelines* (2011). The emphasis is on those landscape characteristics that are most susceptible to agricultural and land use change, such as hedgerows, rather than more ‘fixed’ structural features of the Landscape Character Types, such as topography, natural (geomorphological) features, and road and settlement spatial layouts. Of course, this is not to deny that the fixed landscape fabric can become more evident with changes to those features associated with the use of the land.

2.11 The second dimension of the typology, along the horizontal x-axis of the table, is that of ‘direction of change’. This is identified as *declining*, *no change* and *improving* over the last decade. This is not as straightforward as might first appear, involving difficult judgements about LDUs where, for example, some positive changes are evident, perhaps over two of the three most recent periods, but where they have been offset by much more significant negative changes in an earlier first period. In other words, two periods of small improvements may not be sufficient to offset the depth of change experienced in just one other period. No simple quantitative system of accounting for change can therefore be applied. Nevertheless, as an aid to interpretation, accompanying the change dimension is a *quick reference ‘barometer’*. The analysis provided in the State of the Malvern Hills documents published in 2006, 2009, 2014 has been reviewed for direction of change against the current set of photographs. Photographs from other time periods are held, but the assessment confines itself only those published in accessible reports where previous analysis has

been explicit. Of course, it is recognised that there is unevenness between the length of the time periods covered and hence they are not directly comparable in themselves. However, the symbols capture the overall direction of change between these points. Three periods are therefore summarised: 2006-9; 2009-14; 2014-16. For each period the symbols represent change as follows:

⇗ trend towards improvement in specific elements contributing to character, or overall character, based on Landscape Character Type;

⇘ trend towards decline in number or quality of elements;

⇔ no change in elements apparent. Some LDUs show consistency in this respect whilst others exhibit volatility.

It is important to stress that 'no change' should not be interpreted simplistically as an undesirable outcome.

2.12 Reasons behind the placement of specific LDUs within any one category of the typology are highly variable. The allocation of an LDU to a type is based on an overall qualitative assessment rather than quantitative indicators (which, in any case, do not exist either generally for individual landscape elements or at such small scale). This qualitative judgement is based on the photographic scenes captured, trends shown by supplementary photographs and observations made around the monitoring point. These are not necessarily representative of change and condition within the LDU as a whole, so that a need for a more comprehensive approach to monitoring is becoming increasingly apparent (see Section 6). This said, it can be taken as a qualitative analytical method in keeping with the way in which AONBs were originally defined. However, the purpose of a qualitative method is not one of obscurity so, to avoid such a pitfall, the justification for the allocation of an LDU to a type is supported by the listing and description of 'primary determinators' (Table 4.2). These are the aspects of landscape distinctive to a Landscape Character Type which remain prominent and/or are changing in ways that are influencing that distinctiveness.

2.13 The end point of the process of LCA typically is to provide guidance to define a future landscape management vision for LDUs. The advantage of the typology devised above is that that it can map directly onto such a vision (Figure 2.2). The return to the first principles of LCA in the state of key characteristics dimension and the evidenced-based change dimension means that this can be derived without recourse to multiple matrices. It has been common practice to build matrices up in a stepwise fashion, where new categories are themselves derived from previous rounds of quantitative scoring of qualitative landscape elements. Indeed, a particular criticism of deriving a management vision for LDUs from LCA is that large compound errors can occur from marginal decisions made early-on in the process. Hence, one debatable allocation between two categories of an assessed element in a LDU can lead to a radically different management vision as outcomes from one matrix become used as a starting point for the next matrix. Direct mapping avoids many of these difficulties.

2.14 The management actions that the terms within Figure 2.2 indicate are as follows, ordered according to the extent of the required intervention.

i) conserve – look after what is there;

ii) enhance – build on features already in existence;

iii) restore – put features back based on relics and remnants;

iv) create – construct new landscape features.

It is important to note that these are not statements of effort, as the time and resources to conserve the landscape of an LDU may well be considerable and complex.

2.15 The ninth vision in Figure 2.2, based on an intact and improving LDU assessment, may require two different management practices dependent upon the extent to which the landscape is intact. If there is room for improvement despite being generally intact, then enhancement will be appropriate. Alternatively, the landscape may be considered to contain sufficient distinctiveness to merit conservation as the most appropriate and resource efficient action.

Management Vision

		Direction of Change		
		Declining	*No Change*	*Improving*
State of Key Characteristics	*Disintegrated*	create & restore	create	restore & enhance
	Mixed	create & enhance	restore	restore & conserve
	Intact	enhance & conserve	conserve	enhance or conserve

Figure 2.2: A management vision for monitored LDUs based on 'state' and 'change' using LCA actions. European Landscape Convention actions are superimposed as colours.

2.16 These specific LCA terms provide details of future actions needed. They map easily onto the broader European Landscape Convention (ELC) actions to 'protect', 'manage' and 'plan' the landscape previously identified in the Malvern Hills AONB Partnership (2011) *Landscape Strategy and Guidelines*. Hence, protect compares with conserve, create compares with plan, and the enhance and restore categories relate to manage. The colour coding in the table reflects this congruency of LCA-based actions with those of the ELC. The primary colours represent the three ELC categories (red – plan; blue – manage; yellow – protect) and combinations of actions follow logically from them.

Images Monitored: 2006-2016

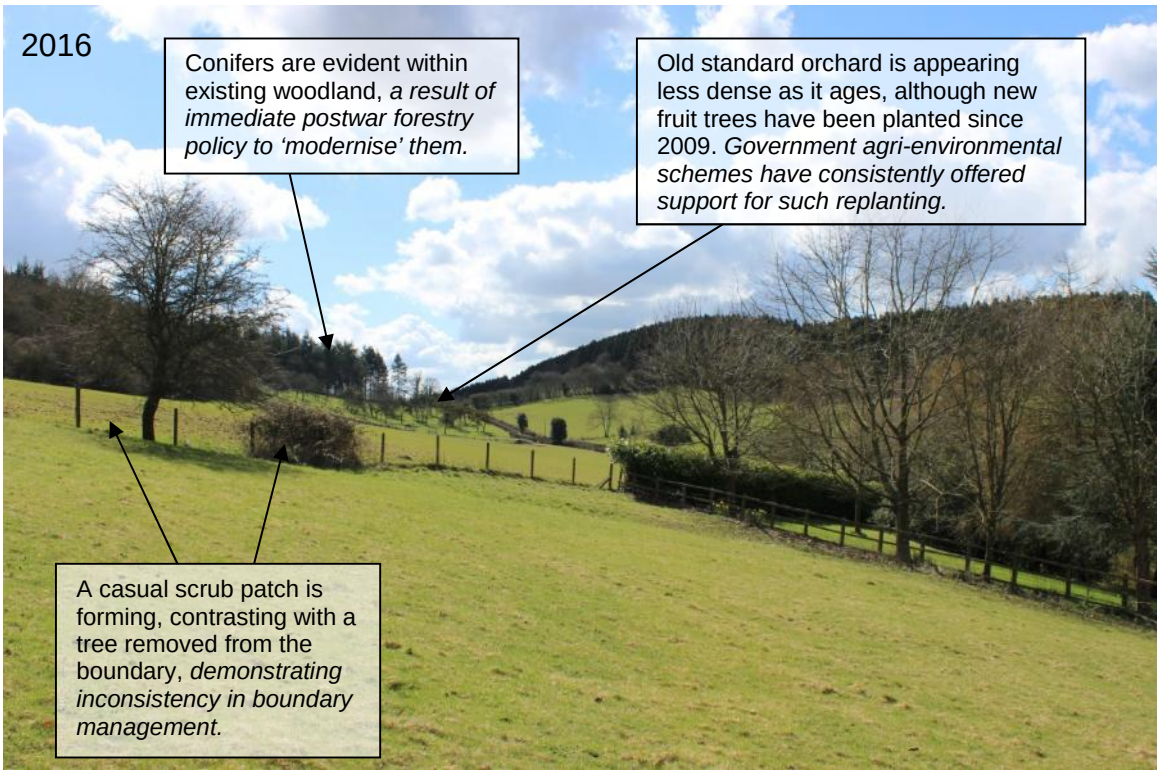
2.17 Using annotation in the way described above, the remainder of this section of the report now provides direct comparisons between the images taken from the fixed point monitoring points in 2006 and 2016 for each LDU within the Malvern Hills AONB.

***AONBLDU 1*: Alfrick** *disintegrated improving ⇔ ⇔ ⇗*

restore and enhance

***AONBLDU 2*: Suckley Hills** *intact improving ⇔ ⇔ ⇗*

enhance or conserve

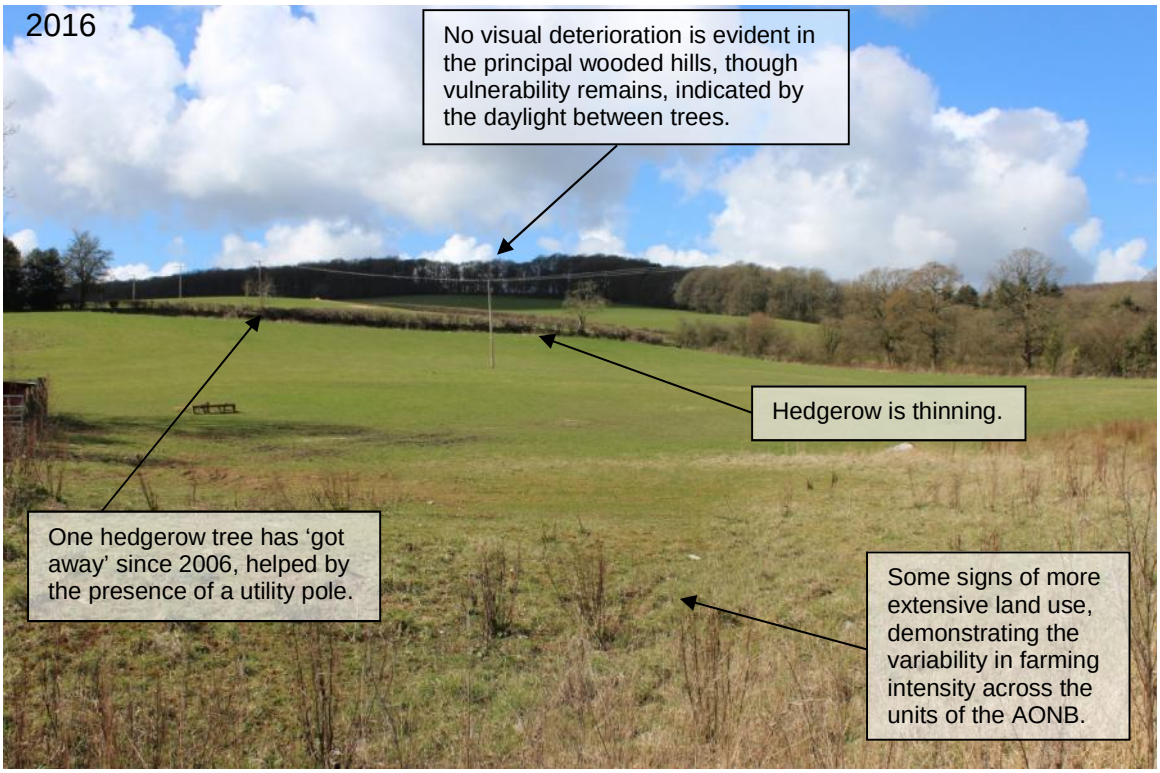


***AONBLDU 3*: Stichin's Hill, Alfrick** *intact declining* ⇔ ⇔ ↘

enhance and conserve

***AONBLDU 4*: Storridge** *mixed no change ↘ ⇔ ⇔*

restore

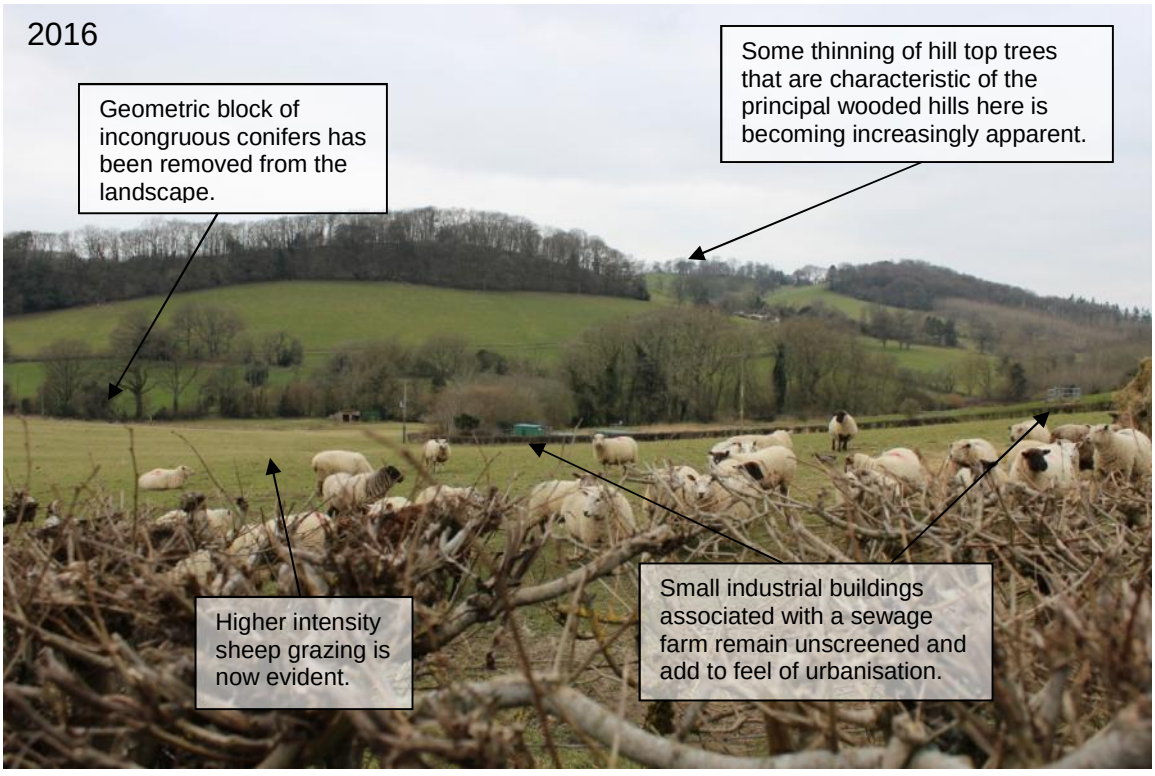


***AONBLDU 5*: West Malvern and Upper Colwall** *mixed improving ⇔⇗ ⇔*

2006

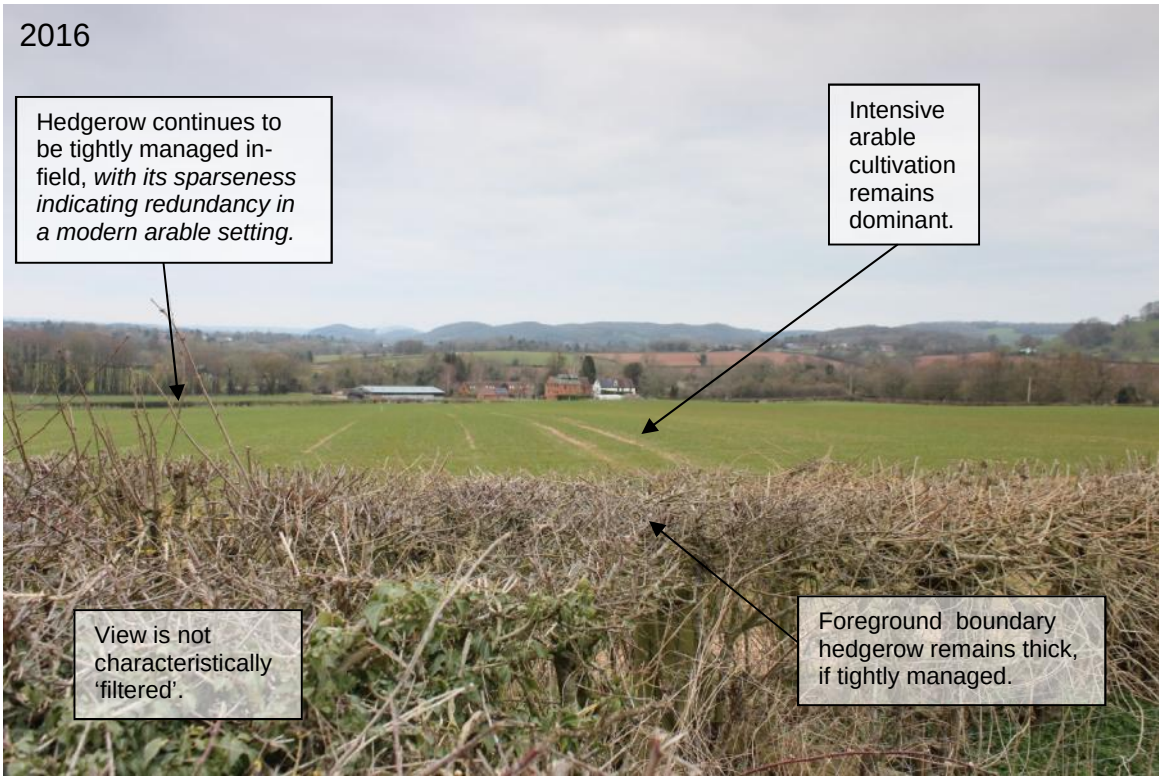
restore and conserve

2016



***AONBLDU 6*: Mathon Village** *disintegrated no change ⇔ ⇔ ⇔*

create

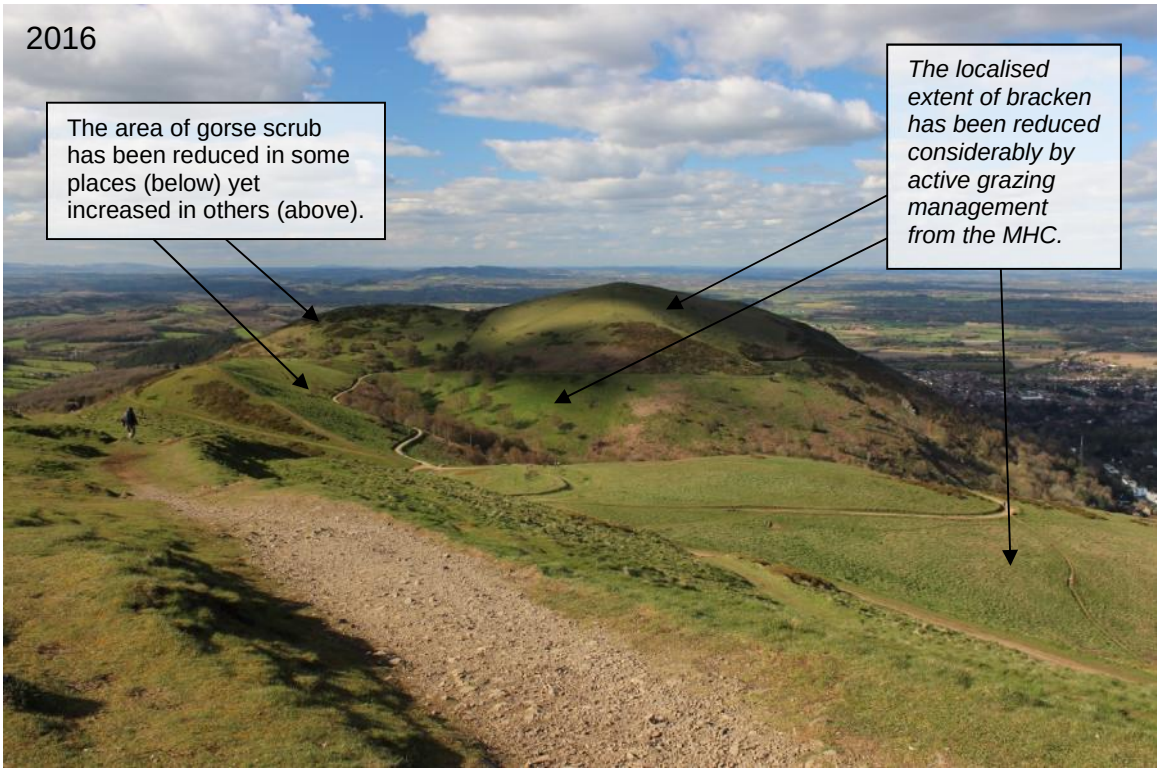


***AONBLDU 7*: Malvern Hills North** *intact improving* ⇔⇗ ⇔

2006

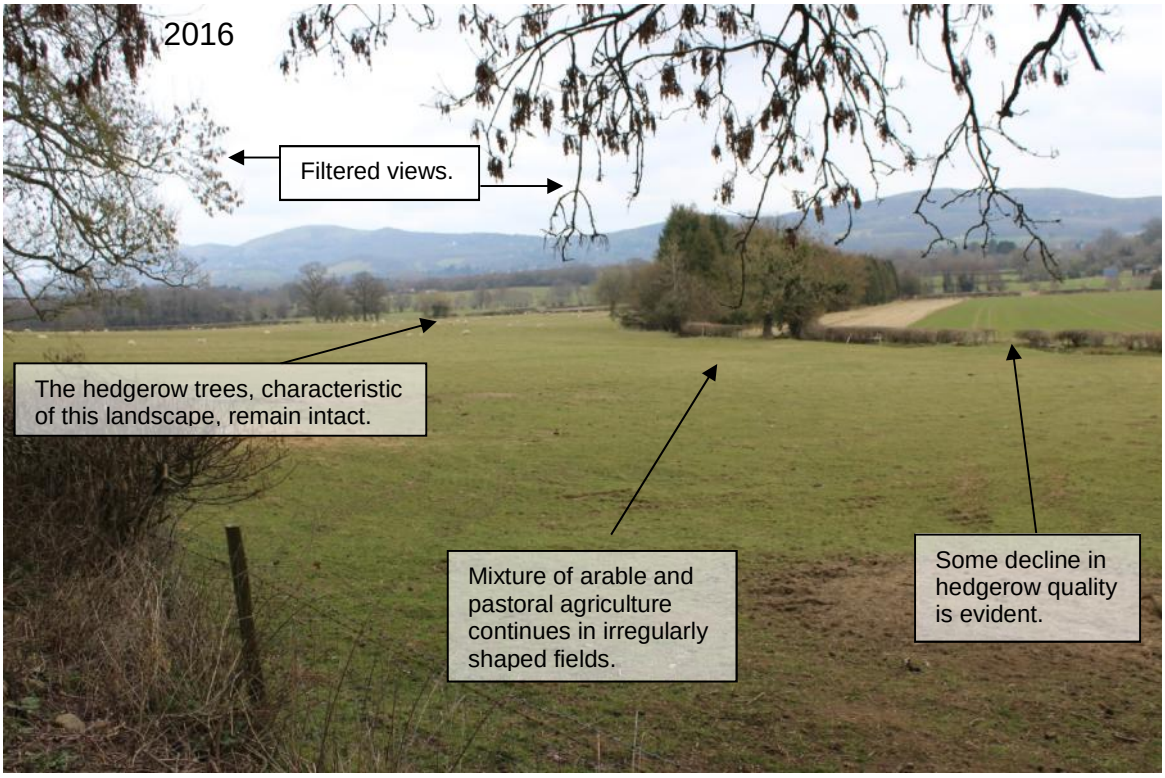
enhance or conserve

2016

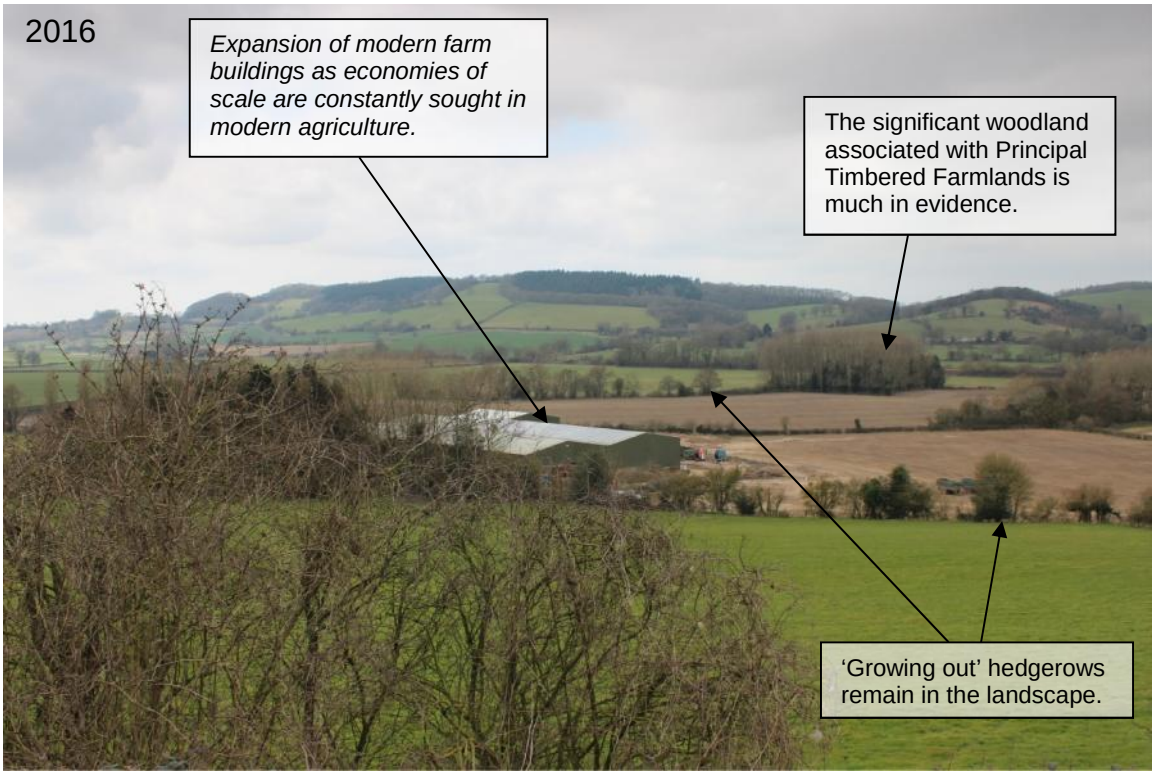


***AONBLDU 8*: Colwall (central)** intact declining ⇔ ⇔ ⇘

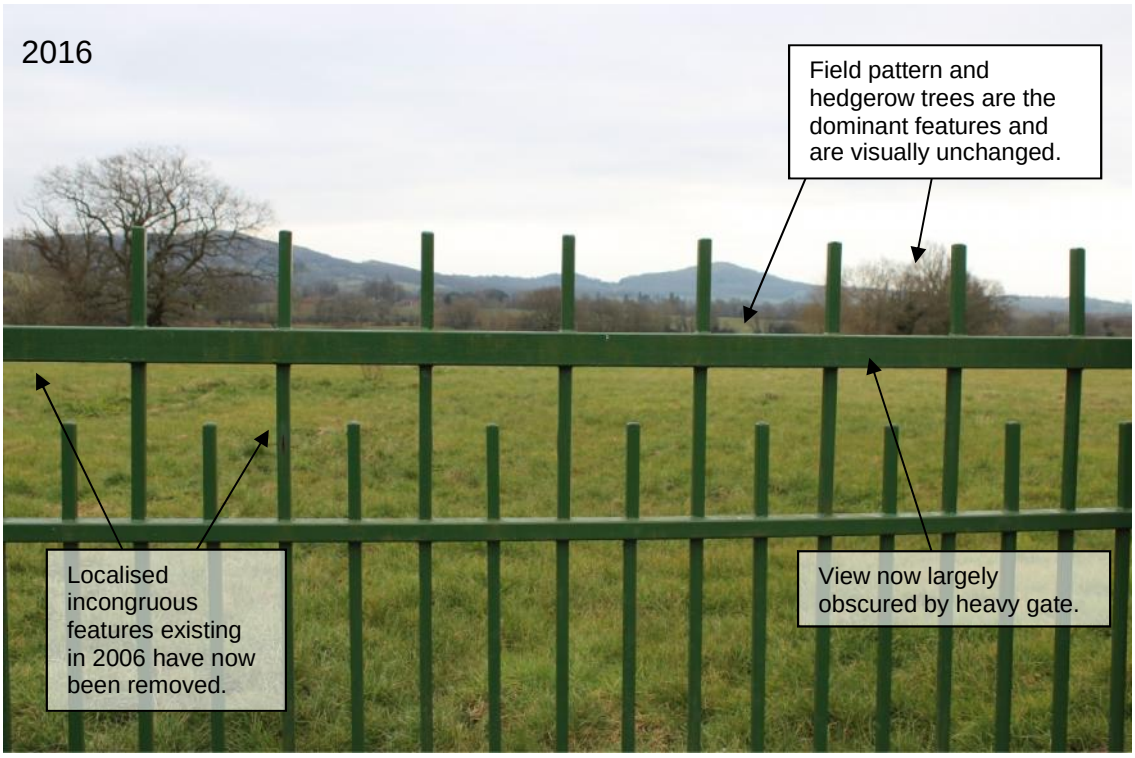
enhance and conserve



AONBLDU 8: *Colwall (south)*

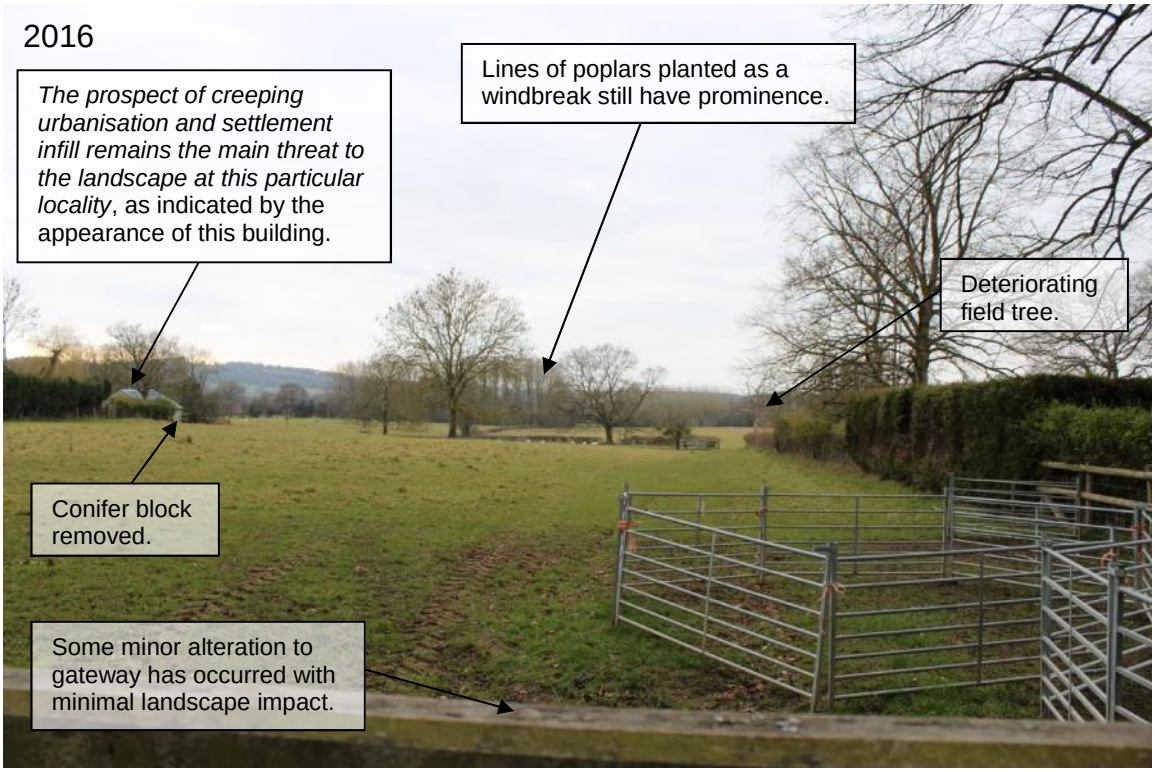


***AONBLDU 9*: Colwall Stone (north)**



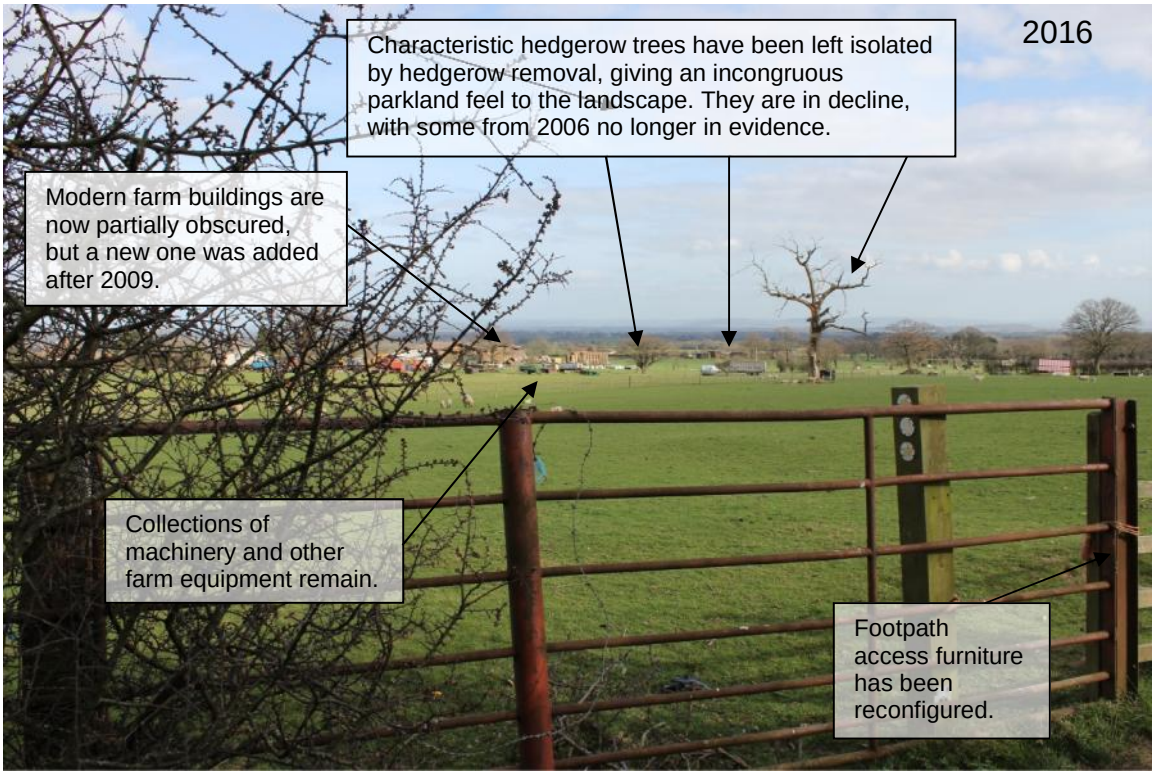
***AONBLDU 9*: Colwall Stone (central)** *mixed no change ⇔⇔ ⇔*

restore



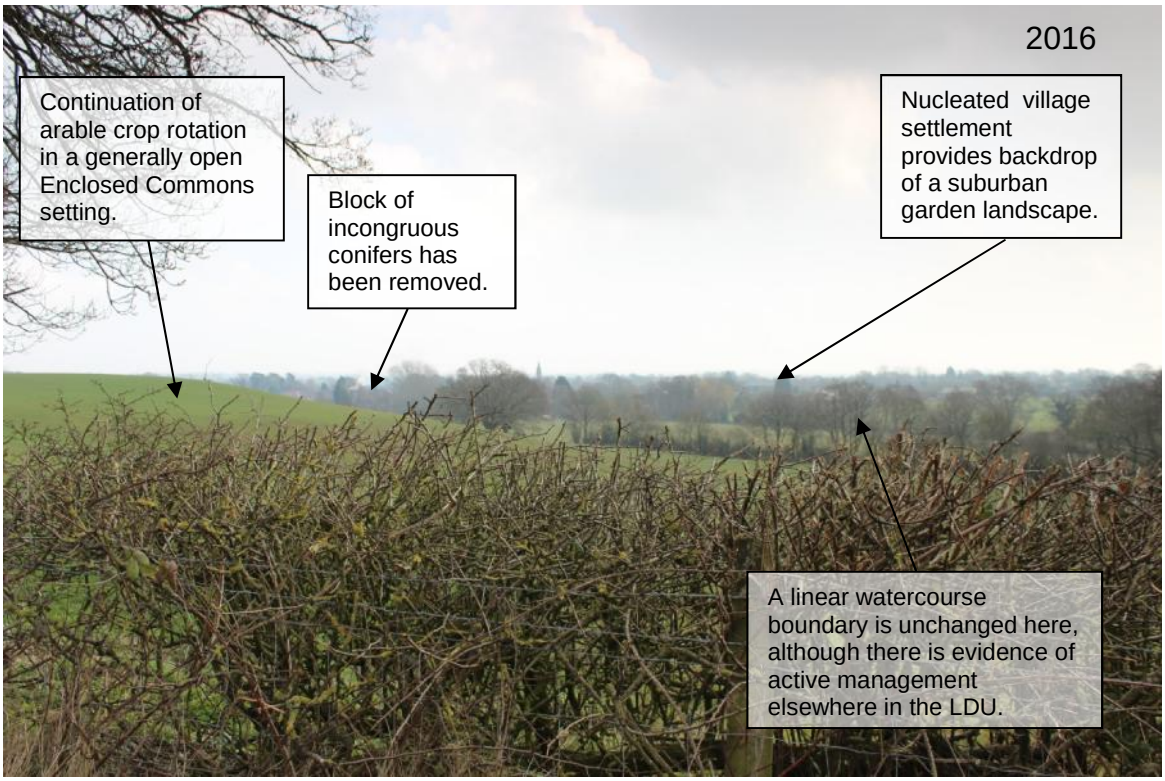
***AONBLDU 10*: Three Counties Showground** *disintegrated declining ↘ ⇔↘*

create and restore



***AONBLDU 11*: Marlbank** *mixed no change ⇘ ⇔ ⇔*

restore

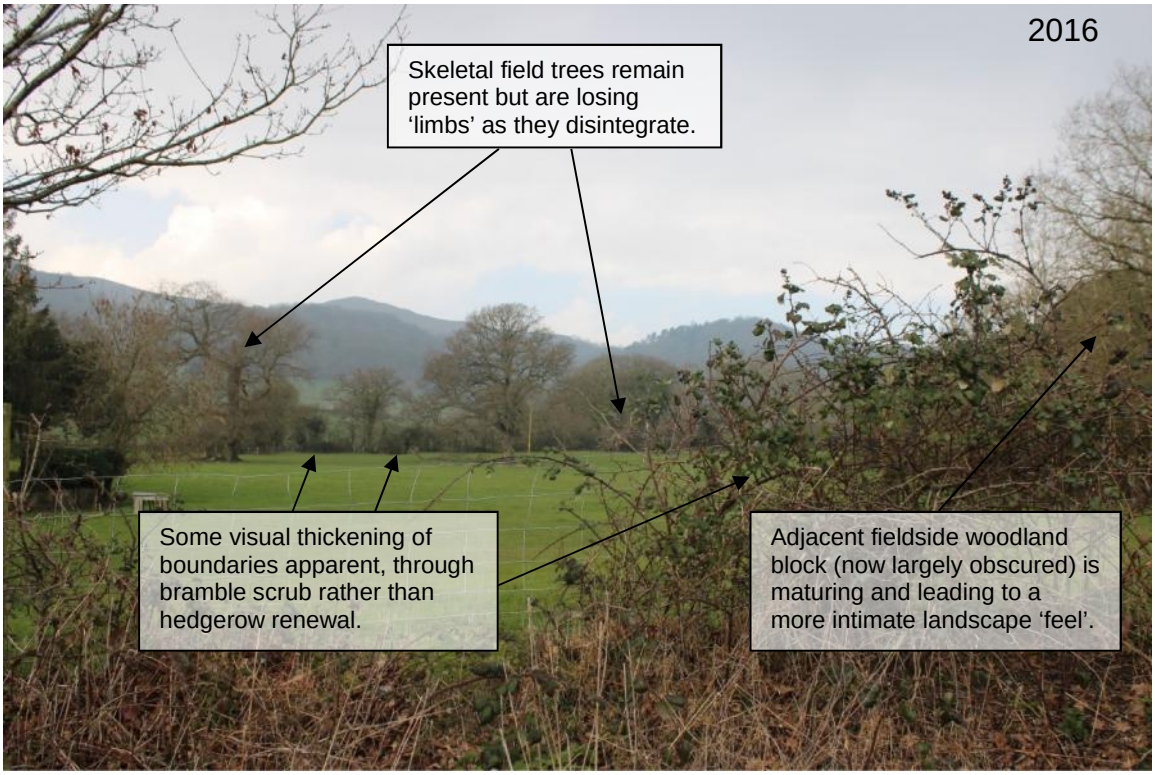


AONBLDU 12: Little Malvern *intact declining* ⇔↘⇔

2006

enhance and conserve

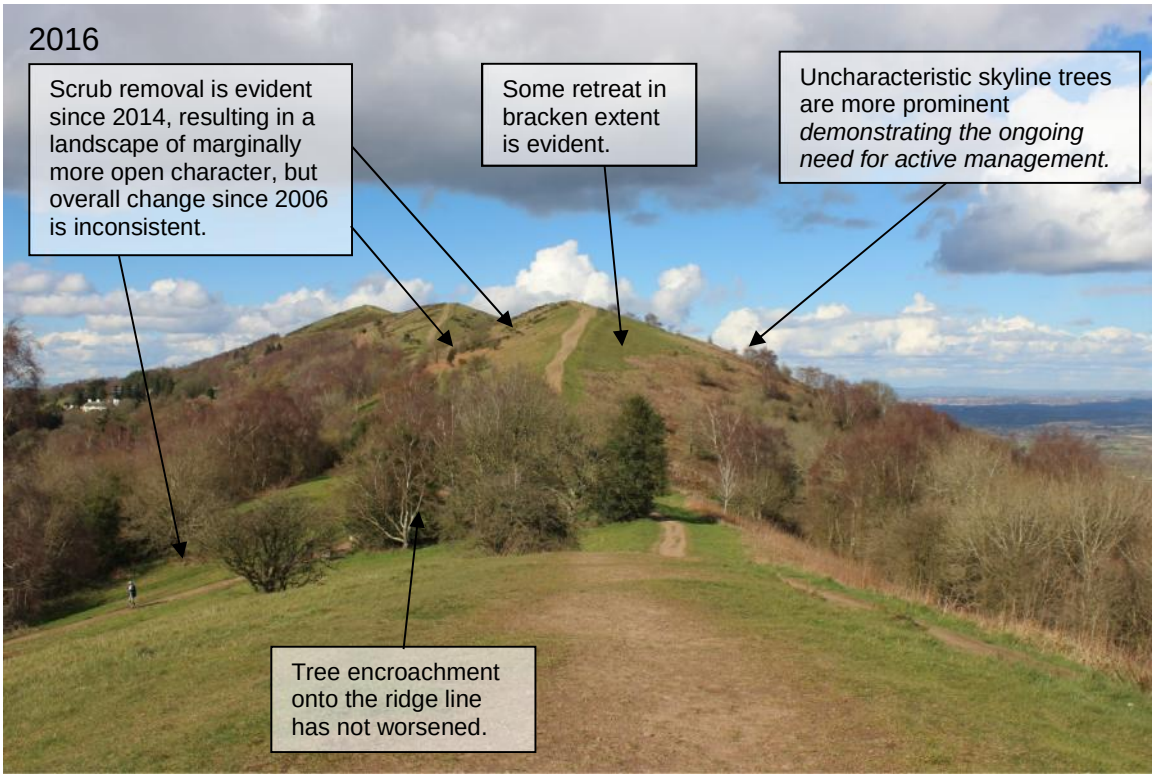
2016



***AONBLDU 13*: Malvern Hills Central** *intact improving* ⇔ ↘ ↗

2006

enhance or conserve



Supplementary Photograph

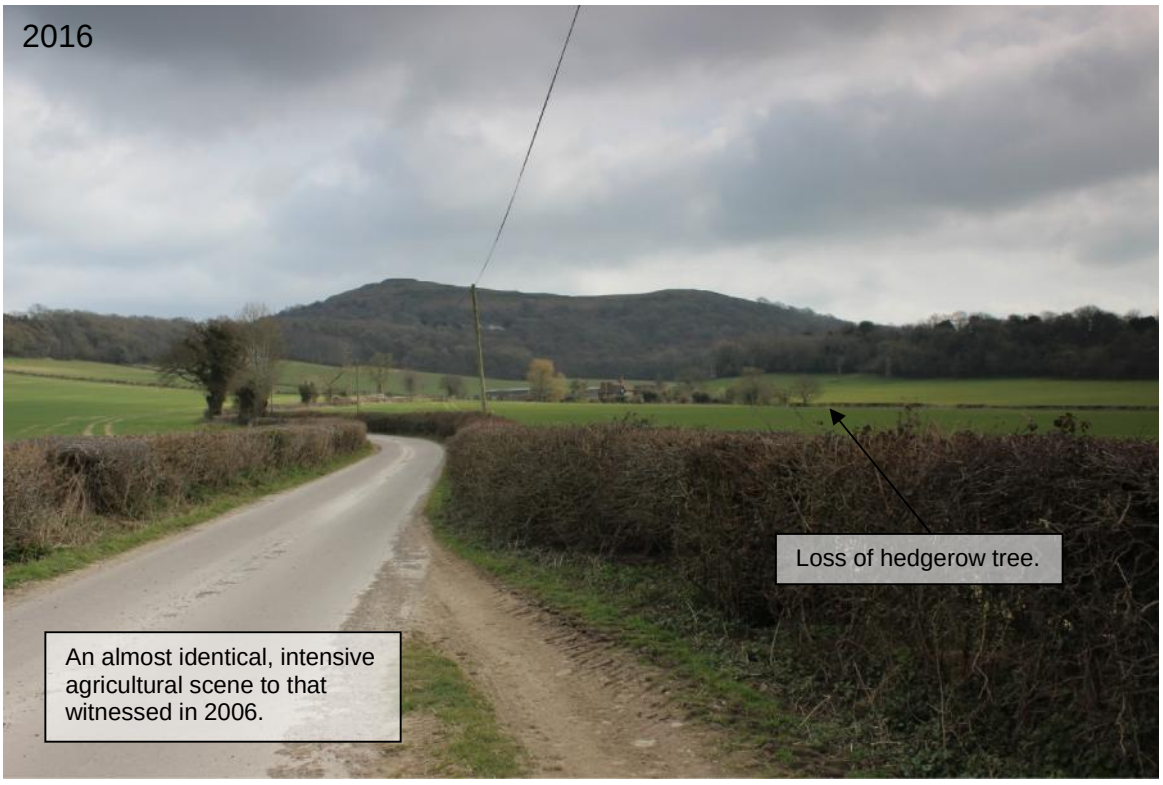
***AONBLDU 14*: Ockeridge** *disintegrated no change ⇔⇔⇔*

2006

create

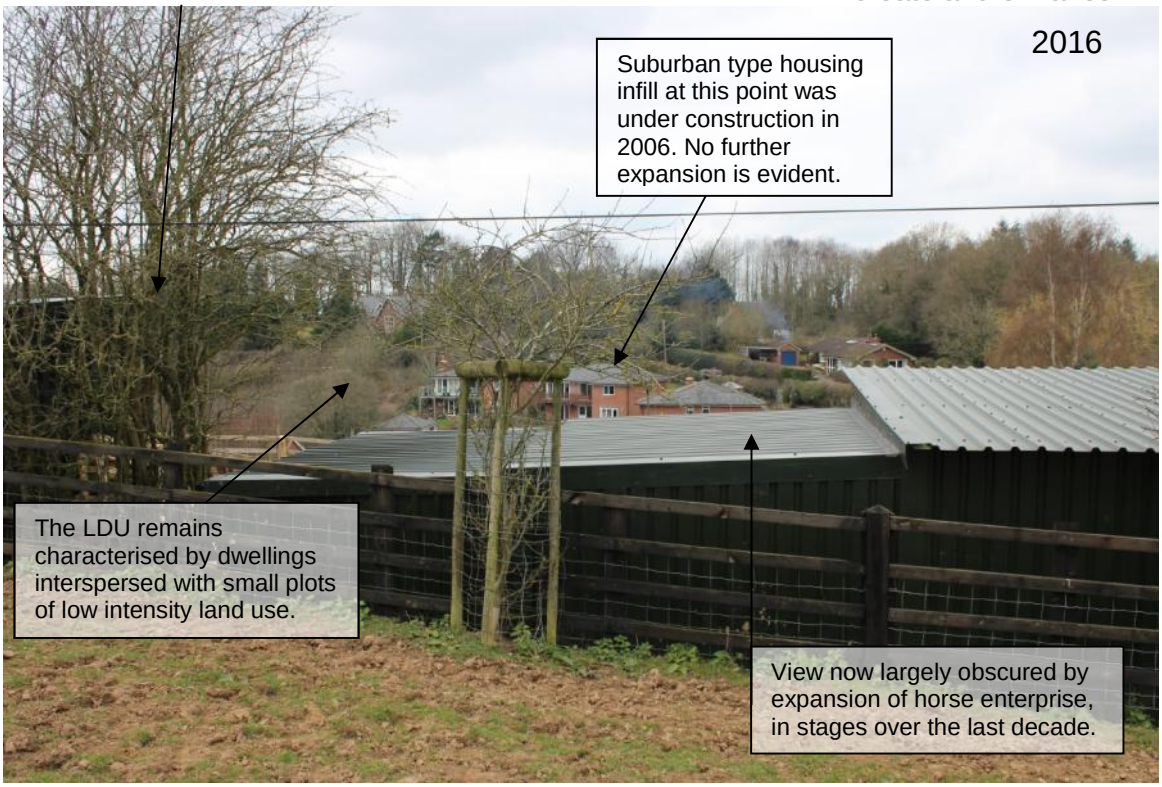
2016

Supplementary Photograph



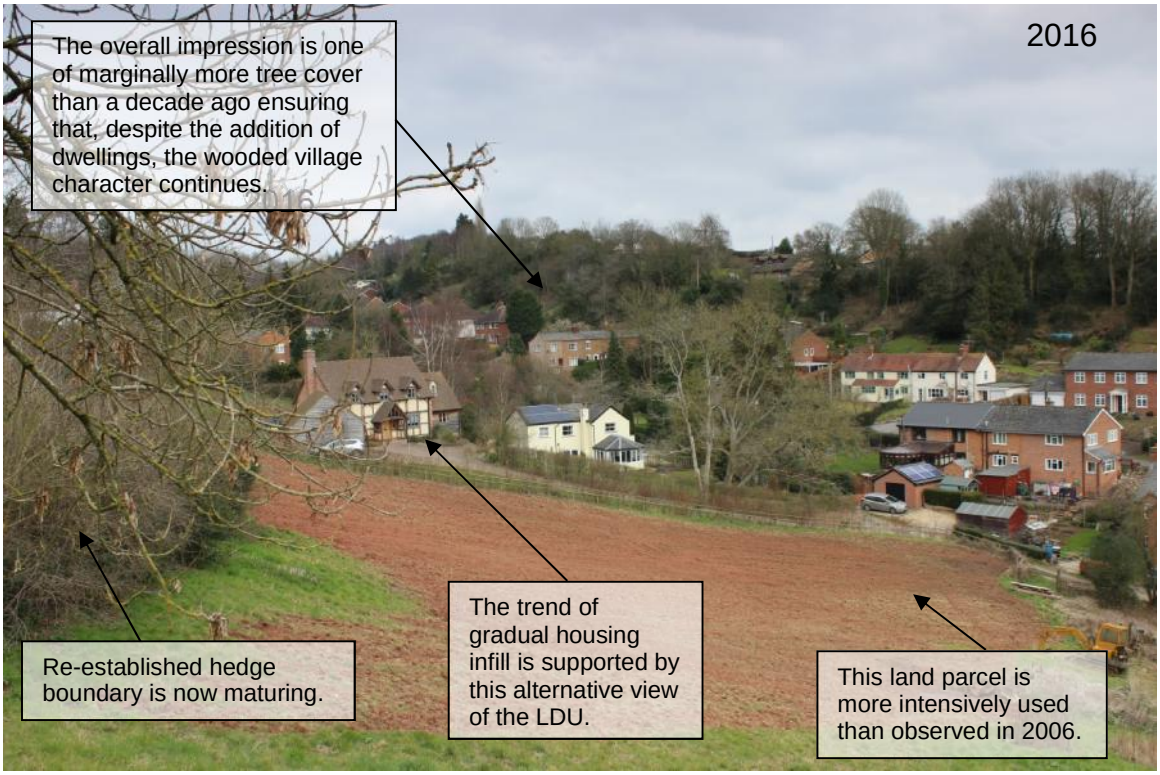
***AONBLDU 15*: Wellington Heath** *mixed declining ↘⇔↘*

create and enhance



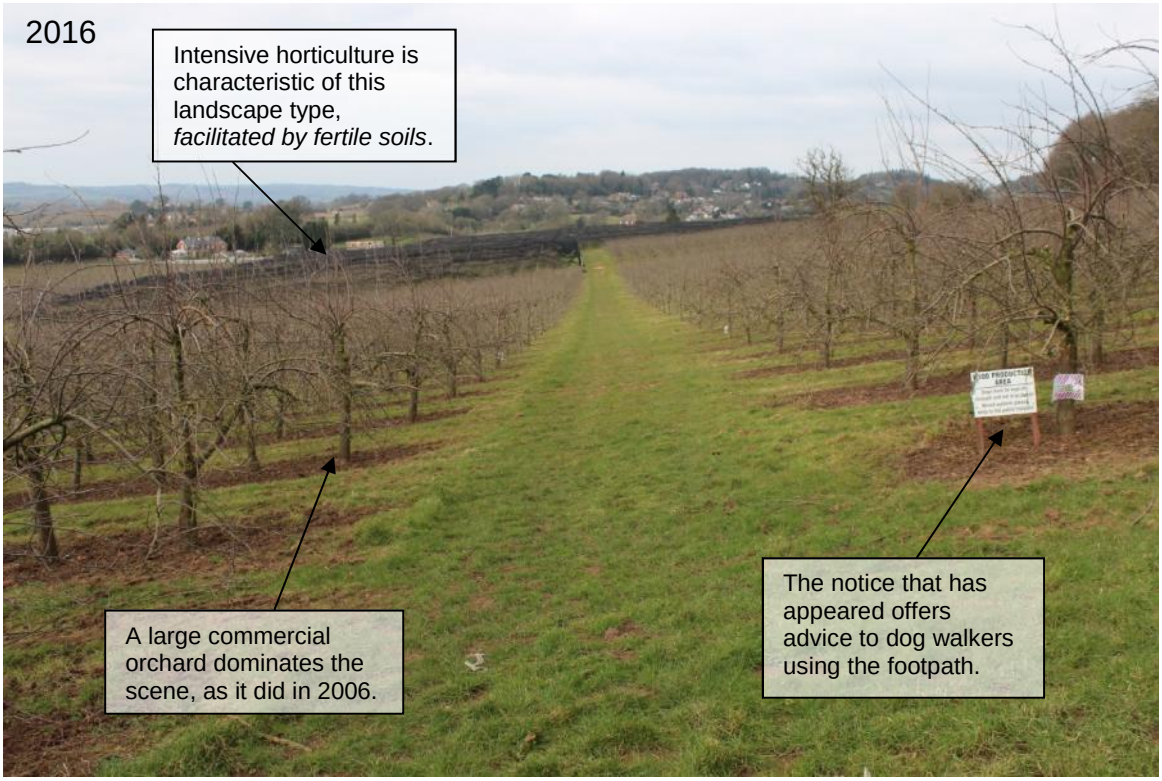
Supplementary Photograph

2006



***AONBLDU 16*: Beggars Ash** *intact no change ⇔⇔⇔*

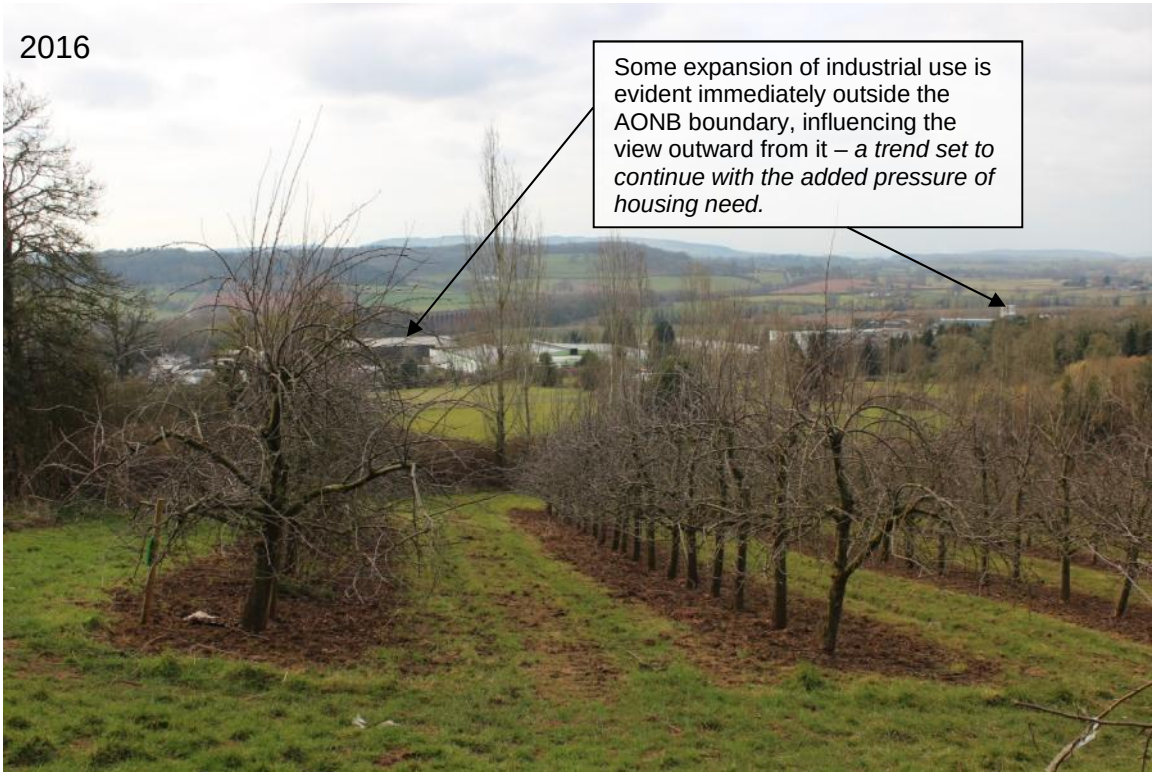
conserve



Supplementary Photograph 1

2006

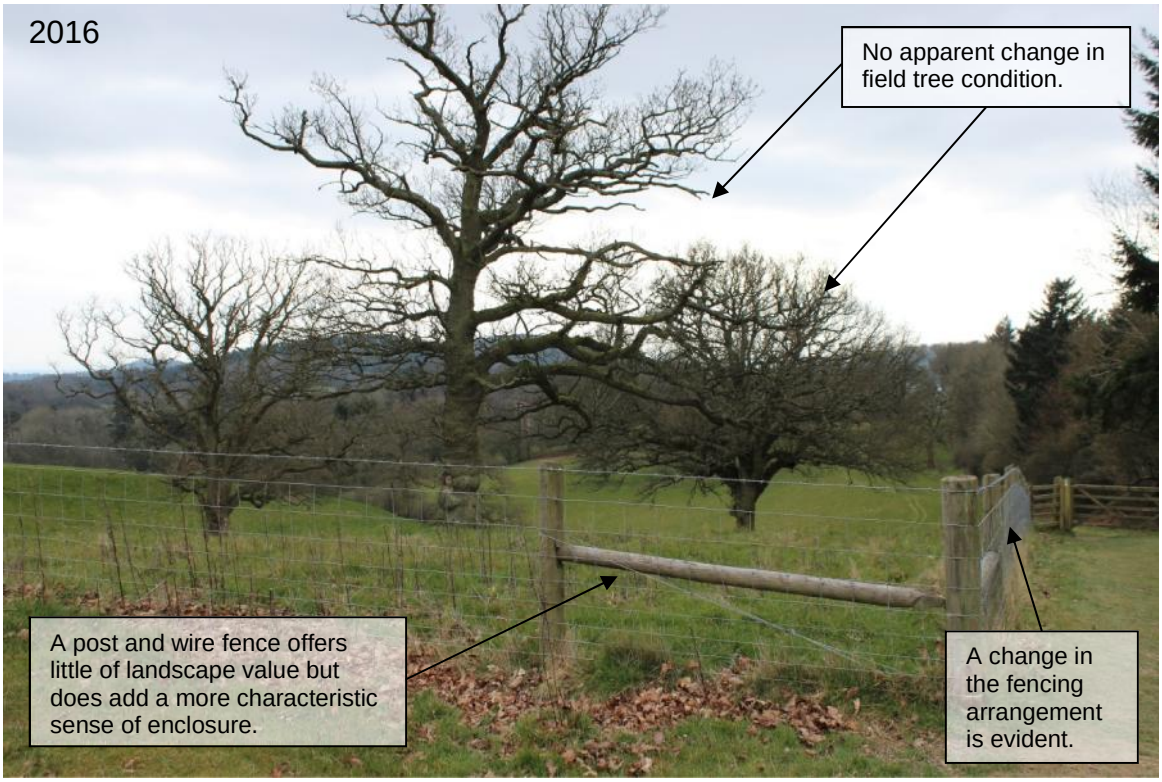
Supplementary Photograph 2



AONBLDU 17***: Bradlow Hills (north)***

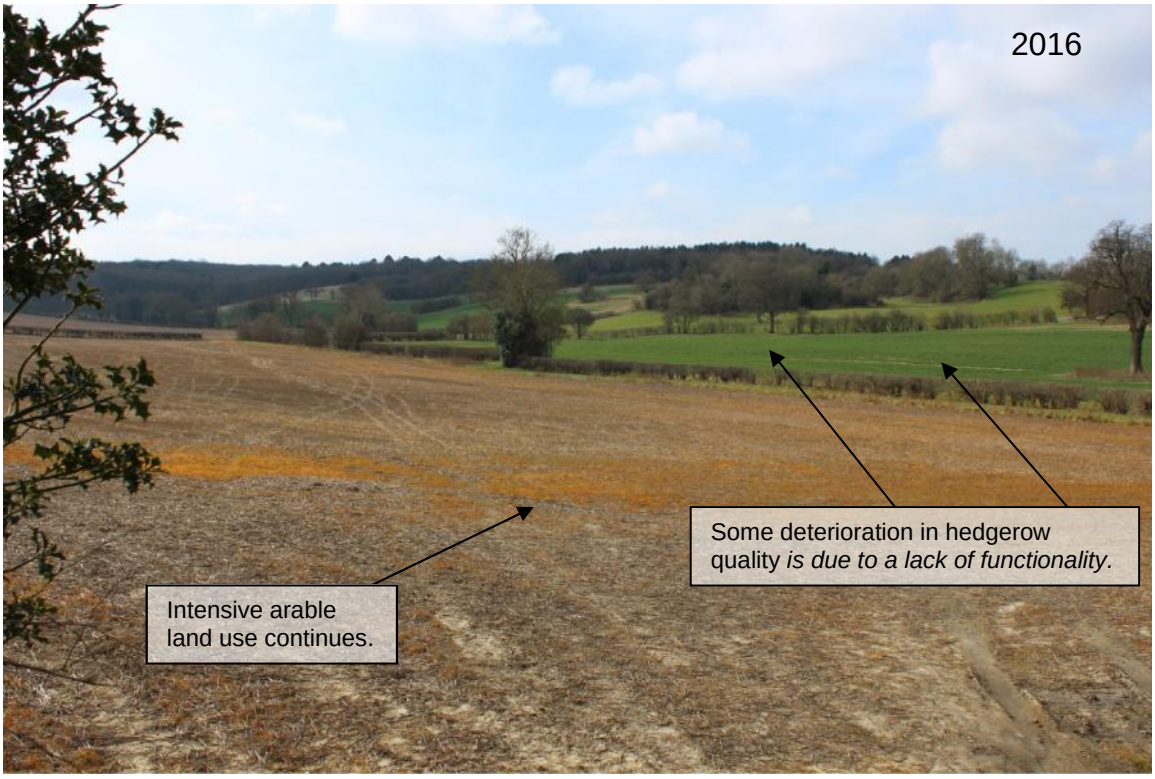
2006

2016



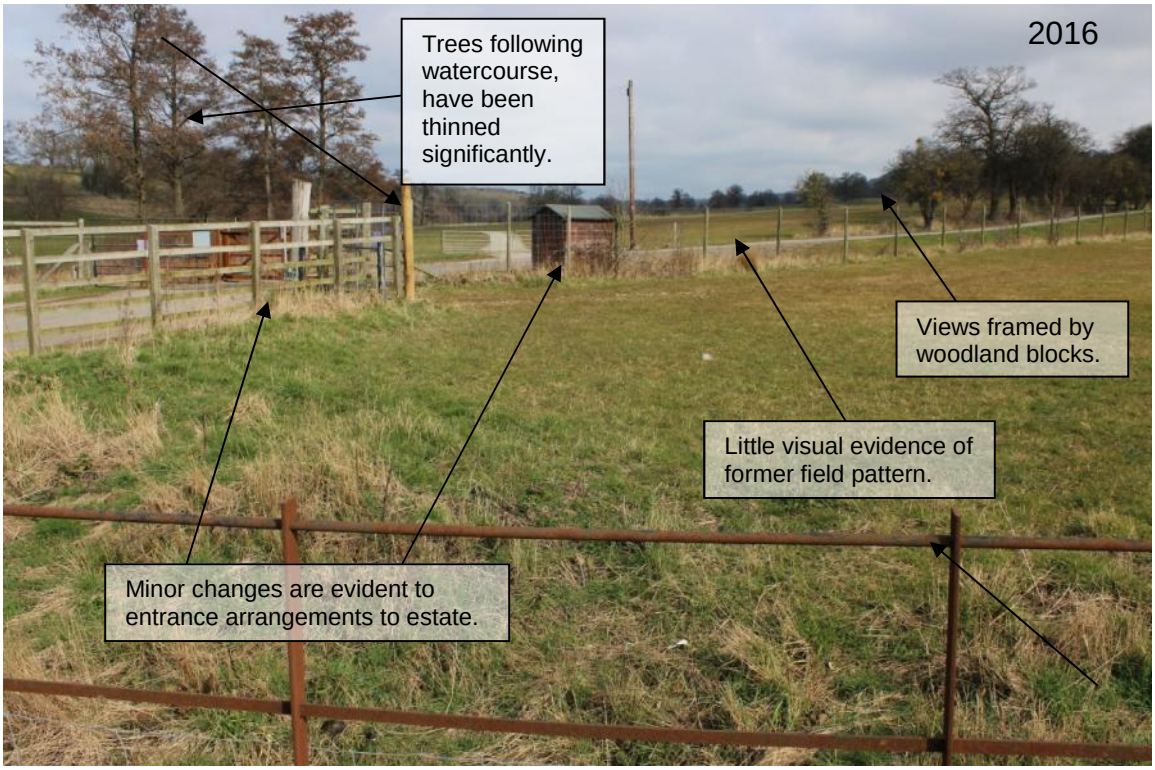
***AONBLDU 17*: Bradlow Hills (south)** *disintegrated declining* ⇔⇔↘

create and restore

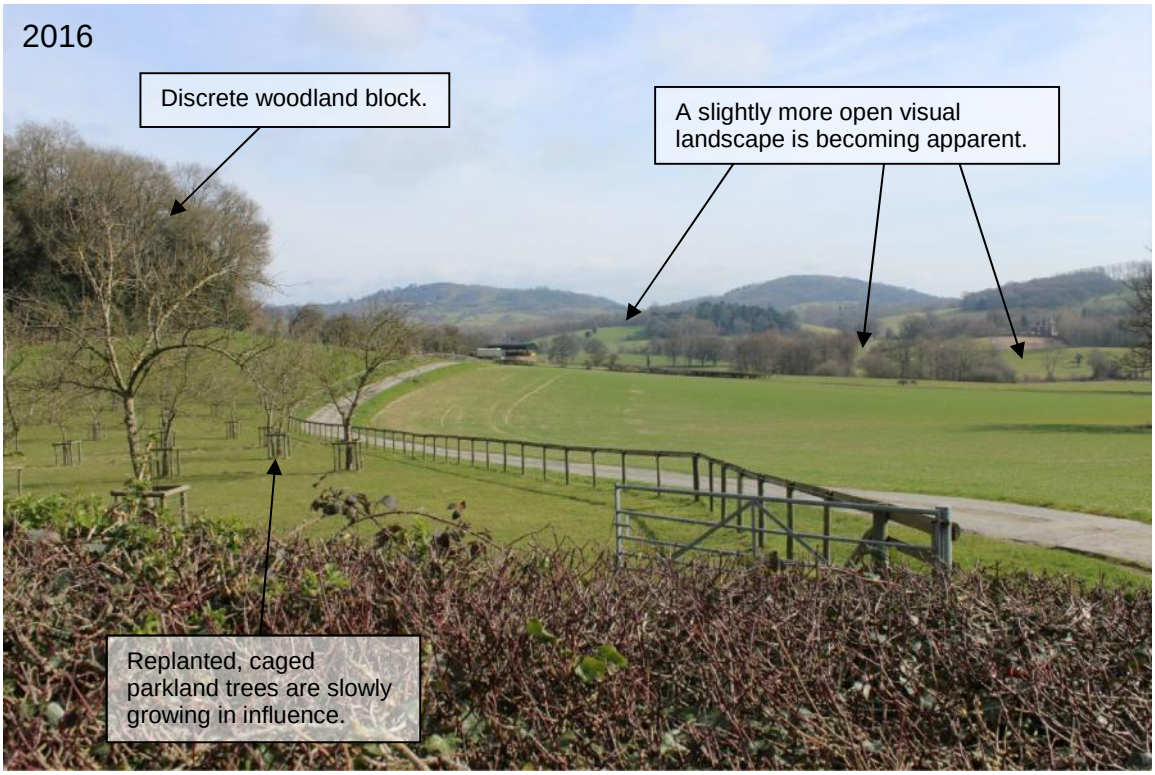


***AONBLDU 18*: Eastnor** *mixed no change ⇔⇔⇔*

restore

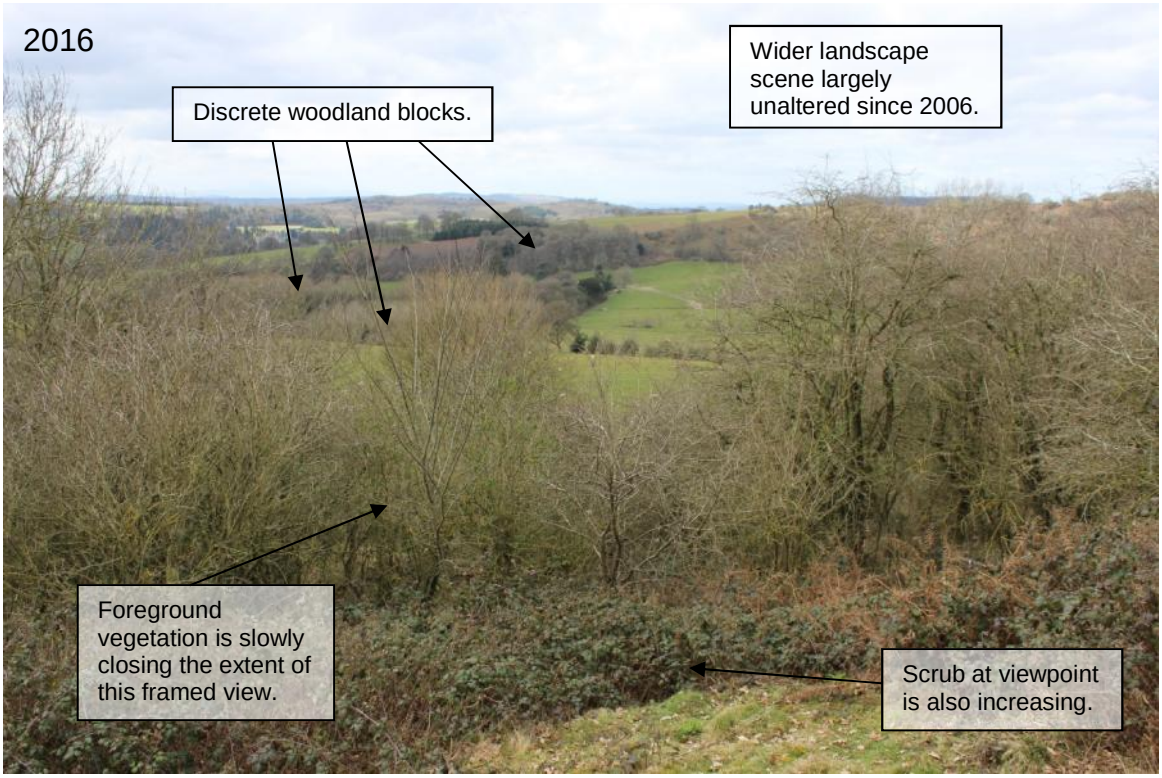


Supplementary Photograph



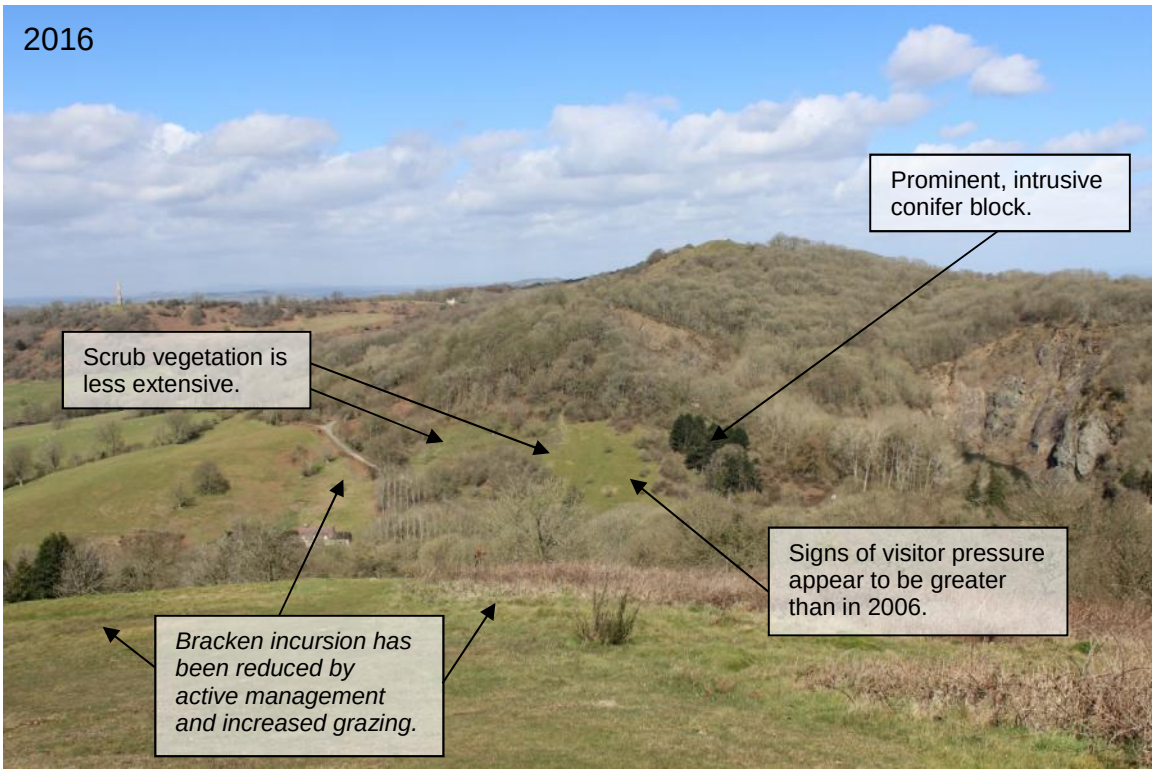
***AONBLDU 19*: Bronsil** *intact no change ⇔⇔⇔*

conserve



***AONBLDU 20*: Malvern Hills South** *intact no change ⇔⇔⇔*

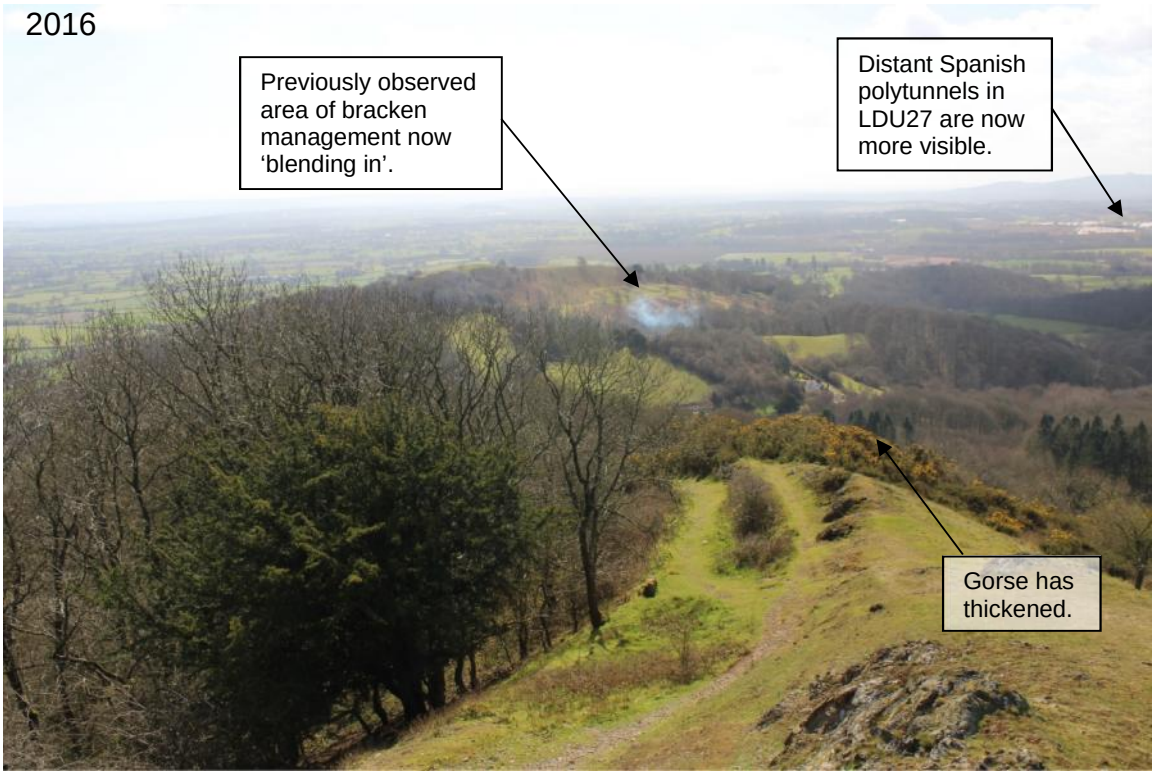
conserve



Supplementary Photograph

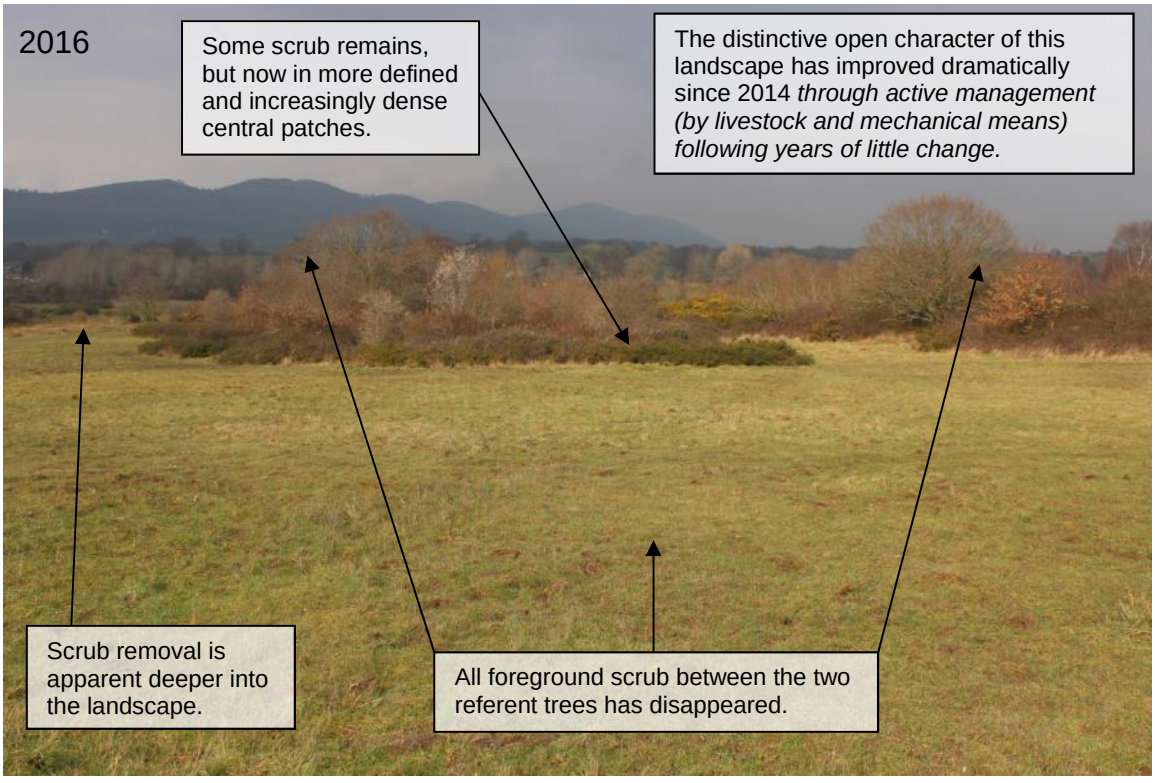
2006

2016



***AONBLDU 21*: Castlemorton Common** *intact improving ↘↘↗*

enhance or conserve

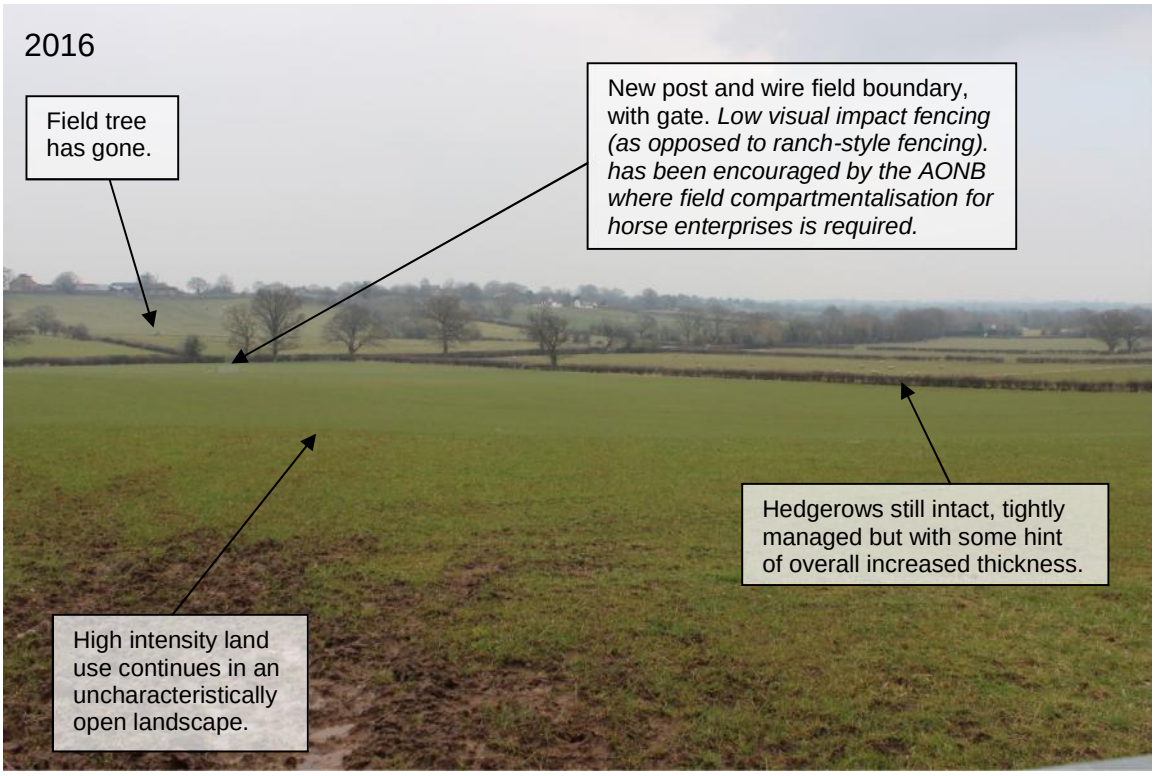


***AONBLDU 22*: Newlands, West Castlemorton** *disintegrated declining ⇘⇔⇔*

2006

create and restore

2016



Supplementary Photograph

2006

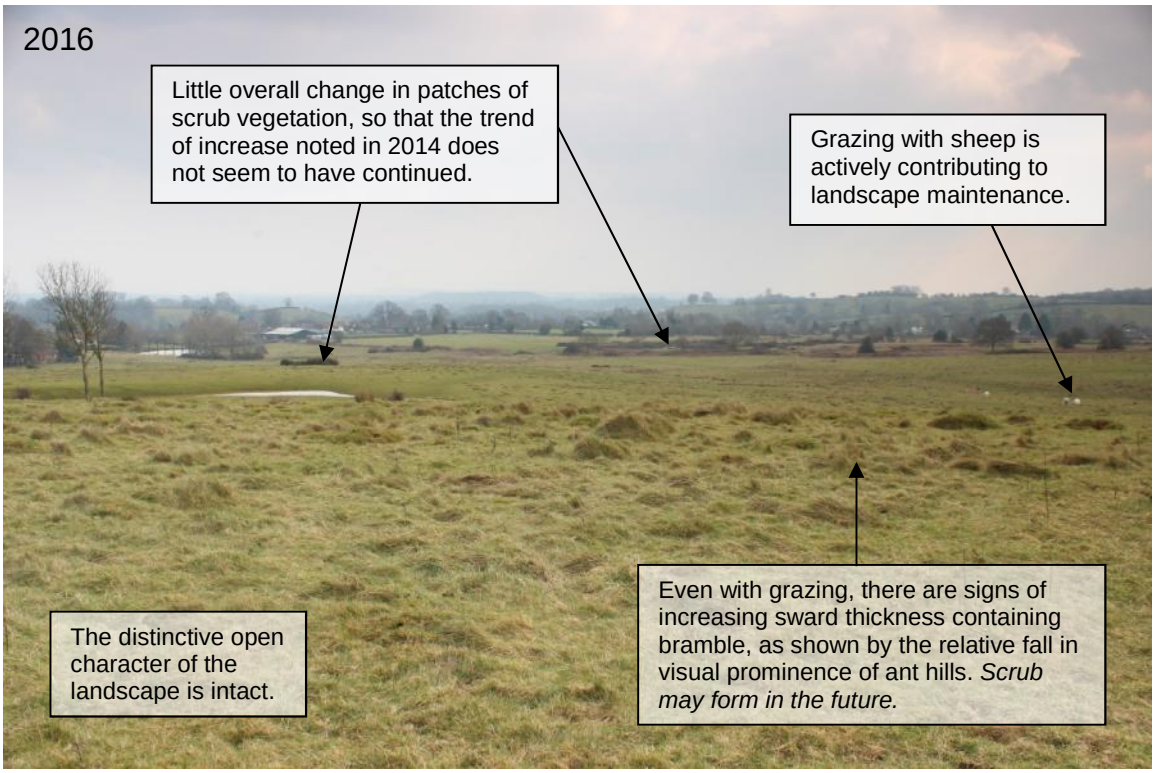
2016

***AONBLDU 23*: Hollybed Common** *intact no change ⇘⇔⇔*

2006

conserve

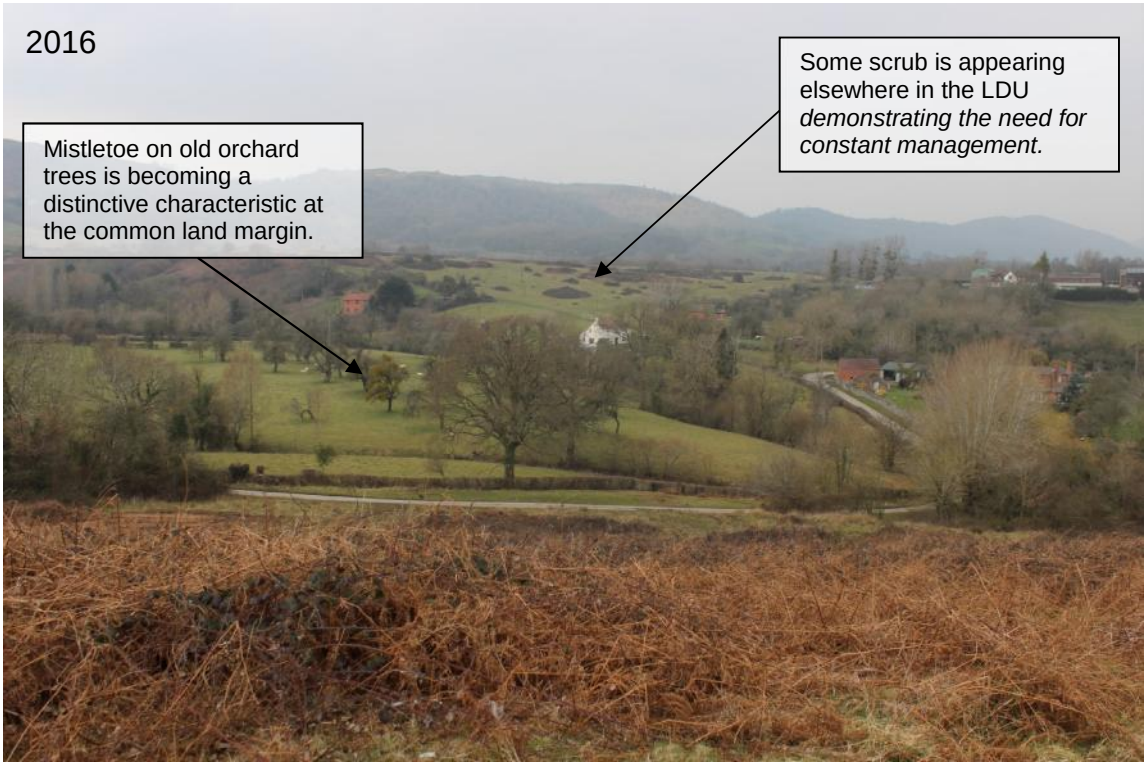
2016



Supplementary Photograph

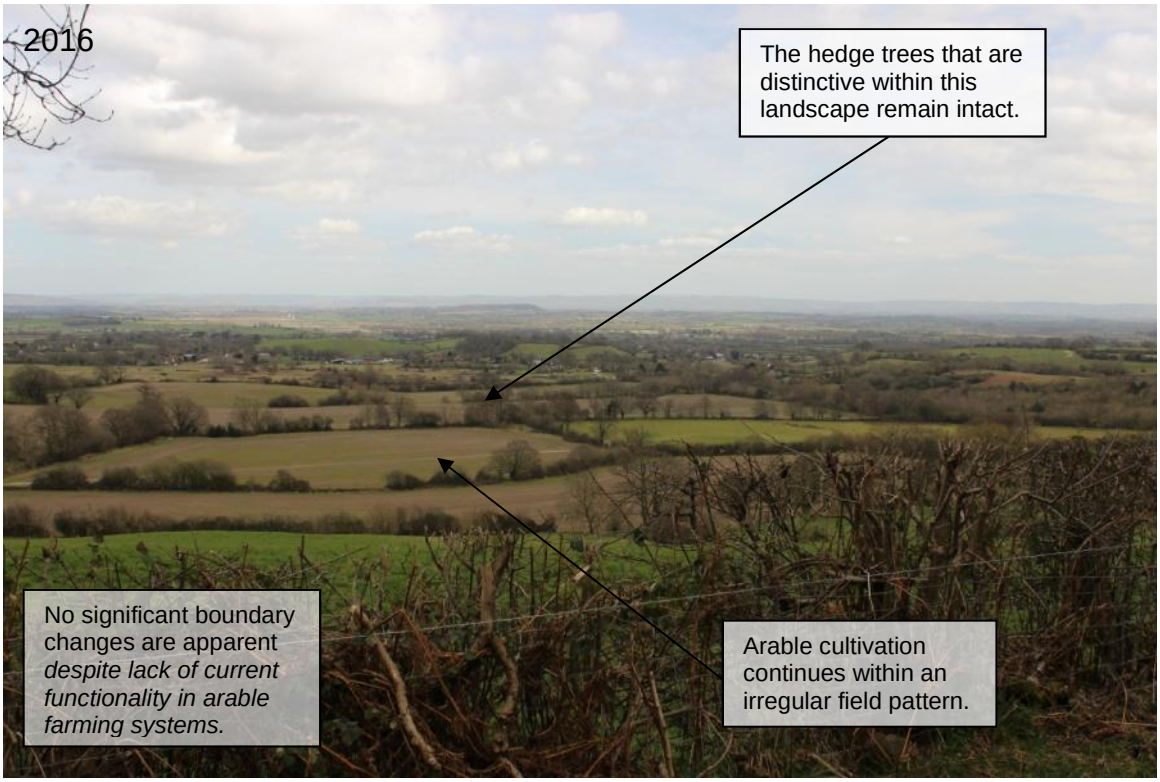
2006

2016



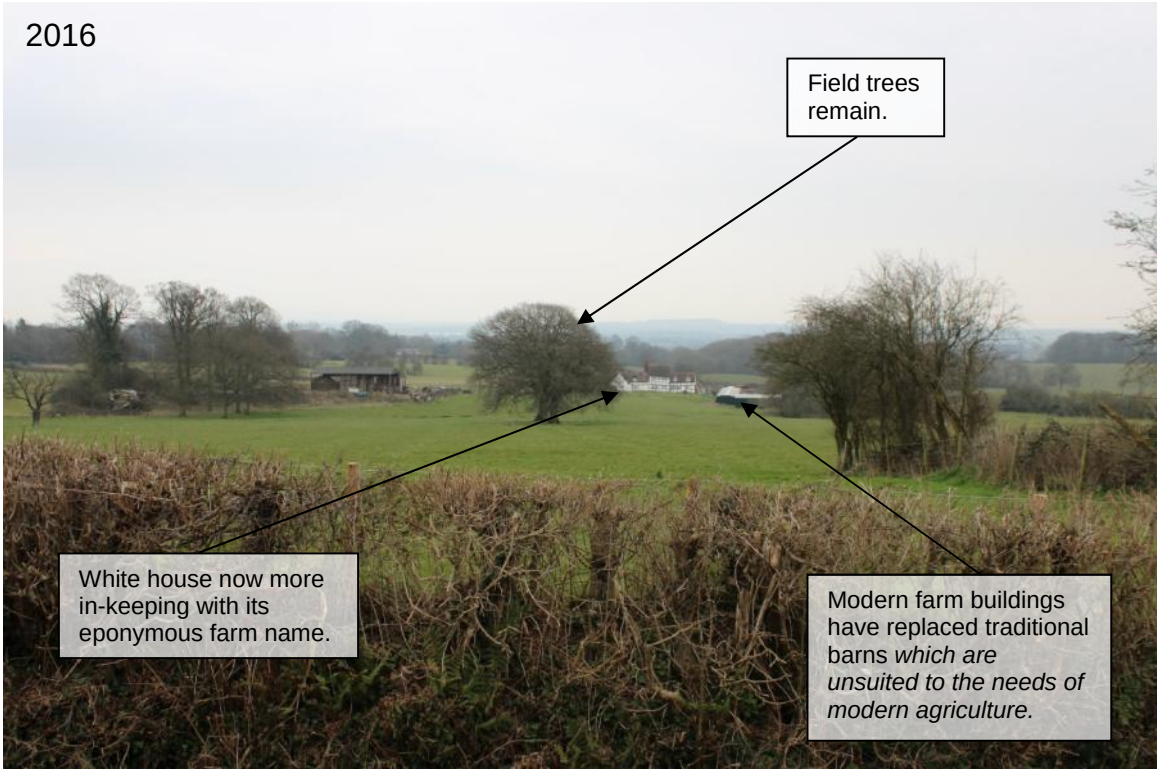
AONBLDU 24: Fairoaks Farm *intact no change ⇔⇔⇔*

conserve

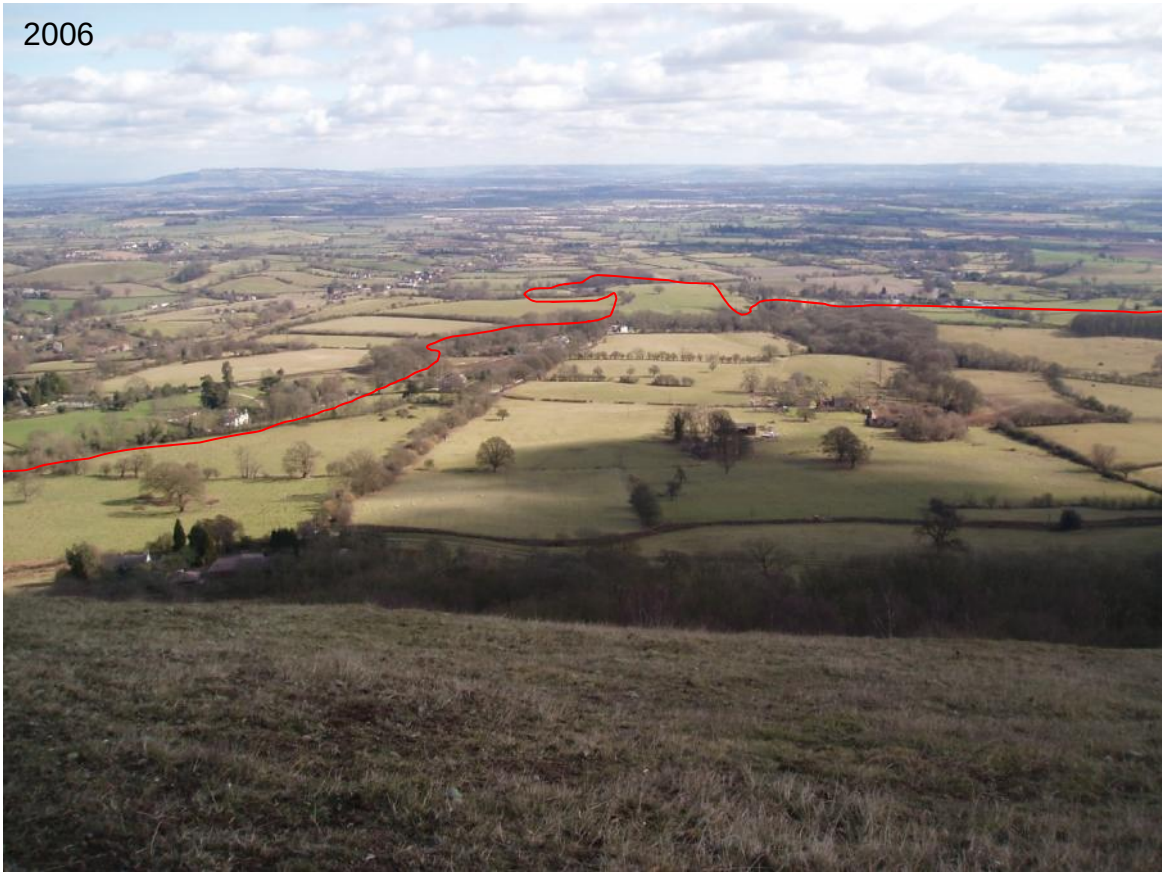


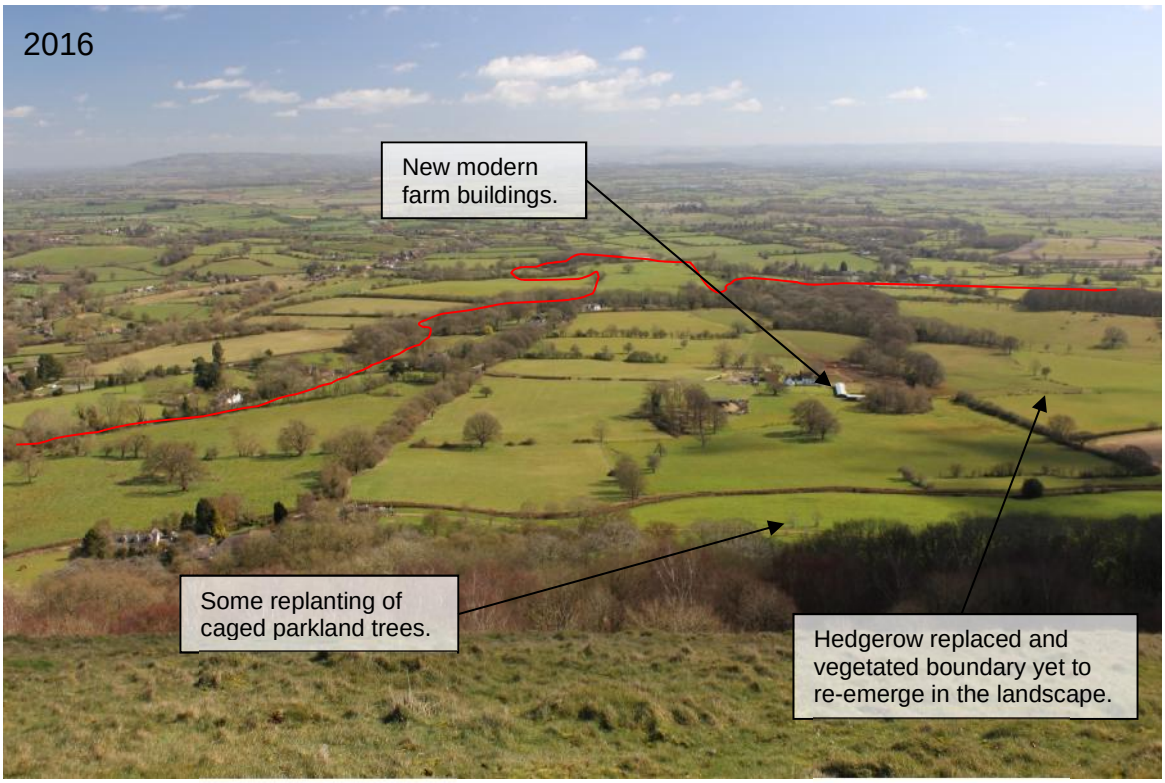
***AONBLDU 25*: Whitehouse Farm** *intact declining* ⇔⇗⇘

enhance and conserve



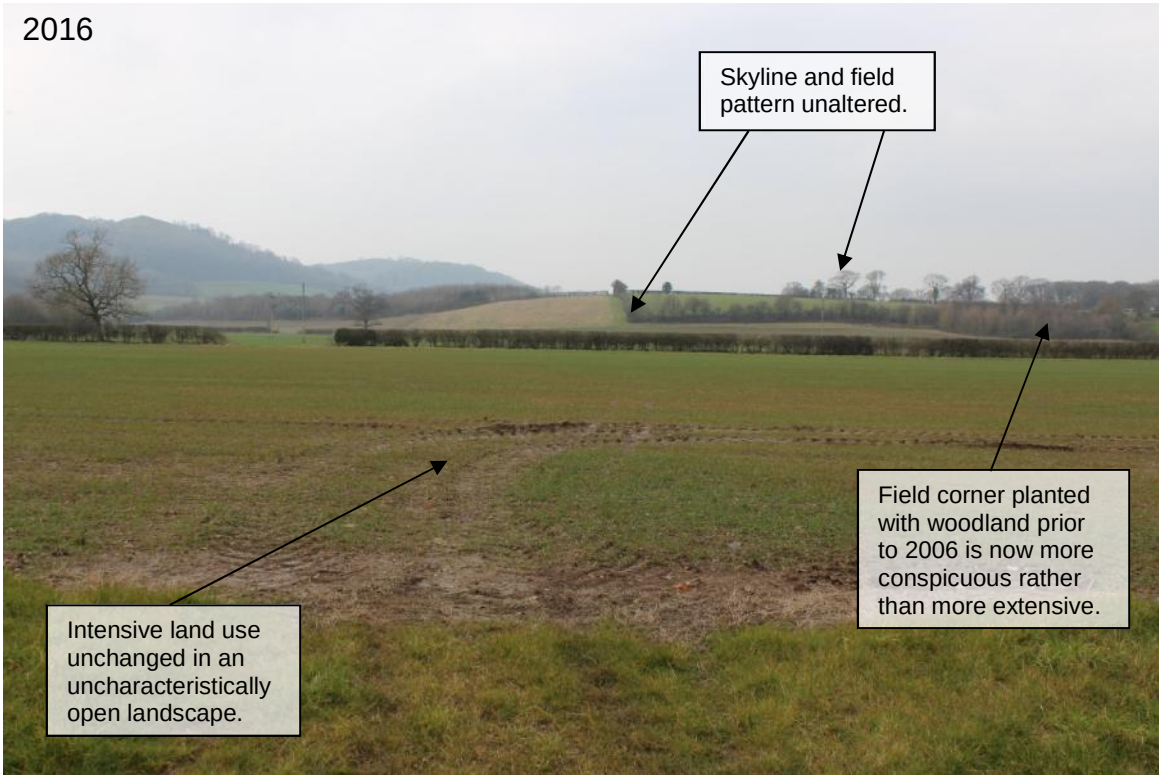
Supplementary Photograph





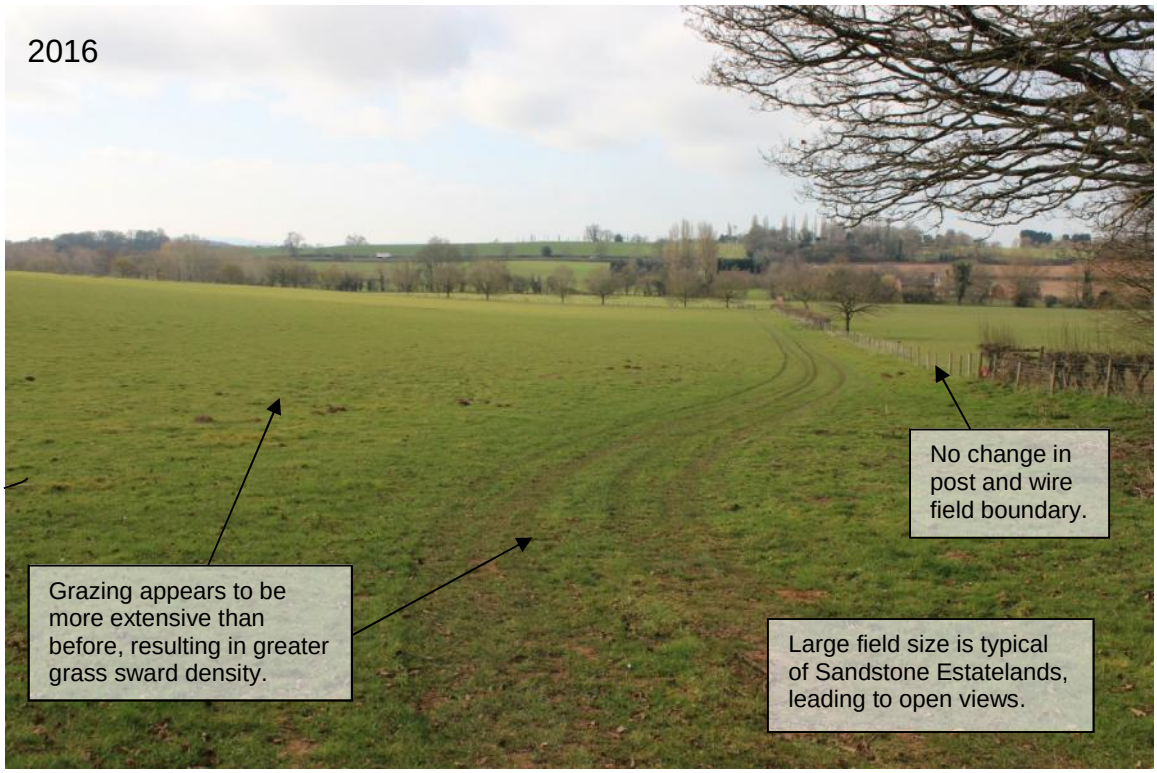
***AONBLDU 26*: King's Green** *disintegrated no change ⇔⇔⇔*

create

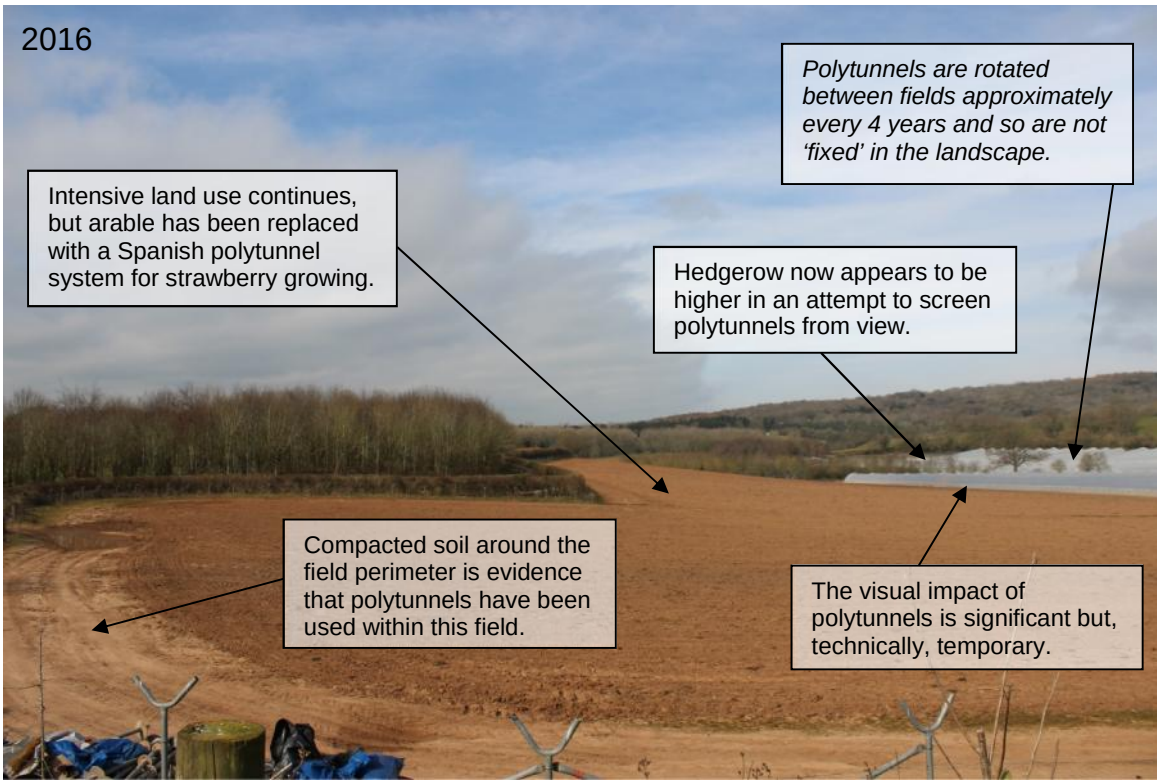


AONBLDU 27: Bromesberrow *mixed declining ↘⇔↘*

create and enhance



Supplementary Photograph



3. ASSESSMENT OF LANDSCAPE ELEMENTS, FEATURES AND CHARACTERISTICS IN MONITORED LDUs

3.1 Over the ten years of monitoring change, the images have captured alterations to specific elements of the AONB landscape, together with well-known features (particularly prominent or eye-catching elements) and collections of elements (characteristics). These in themselves may have been minor and insufficient to influence outcomes in either the quick reference barometer of change or in the state and change typology itself. However, the entirety of the evidence gathered over the decade can be reviewed to comment on how elements, features and characteristics have fared over this period of time. This offers the opportunity to explore reasons behind changes to elements and to comment upon the prospect of their quality and existence into the future. The latter judgement is made primarily against prevailing trends in agricultural practices and land use policy conditions, but including forestry techniques and planning of the built environment where relevant.

3.2 The main landscape elements considered here are:

i. hedgerows
ii. hedgerow trees
iii. field trees
iv. trees as woodland blocks and orchards
v. non-vegetative boundaries
vi. watercourses and water features

3.3 Within any landscape, the combination of such elements contribute to providing much of its distinctive character. Elements are intrinsically interlinked, with changes in one influencing another directly or indirectly, as captured in the observable aspects of landscape used in the LCA process (see 2.10; WCC, 2013). Those identified separately here are merely to facilitate discussion.

i) Hedgerows

3.4 Reductions in the length of hedgerows, leading to less density and changes in field pattern, have been long (since the early 1970s) at the centre of concerns about the impact on modern farming methods on the landscape. The loss of the small field 'patchwork quilt' effect that hedgerows imposed on the landscape of the mid-20th century is still greatly lamented today and their restoration, or at least an arrest in the rate of hedgerow disappearance, has been the result of both statutory regulation preventing removal (the 1997 Hedgerow Regulations) and consistent embeddedness in all various rounds of incentive-based agri-environment policy measures.

3.5 The spread of modern arable farming into an area traditionally dominated by pastoral farming pre-World War Two lies at the heart of any explanation of hedgerow decline and removal. This key process was first encouraged by domestic farm subsidies to increase self-sufficiency in food, and then second re-affirmed by the full application of the EU's Common Agricultural Policy in the UK from 1977. Economies of scale, achieved through the use of large machinery, have led to a rationalisation of fields into larger units. Hedgerow removal has also contributed to greater intensification, defined as increasing output per hectare, as land formerly occupied by a hedge is brought into cultivation. This, together with a loss of function associated with the switch from potentially wandering livestock to sedentary arable crops, has led to hedgerow loss.

3.6 Where hedgerows survive, changes in farm business structure have also altered management. Reductions in costly farm labour mean that hedgerow management is now undertaken by mechanical means, thought to lead to a general weakening of their health. Not only this, farm workers formerly completed hedgerow cutting in winter months when land work was not possible or made low demands on their time. No doubt, labourers used their local knowledge to make decisions about how individual hedges should be treated. With remote contractors increasingly used, or lack of time from land occupiers, a far less consistent and more functional approach to hedgerow management is inevitably now taken.

3.7 In the Malvern Hills AONB, the qualitative data from the photographic monitoring does not deliver a rosy picture of the current state of hedgerows. Very few signs of removal are evident, although this does exist occasionally over limited stretches even if this has been done with a view to replacement. Moreover, the issue in the AONB is one of gradual deterioration over the decade monitored, evidenced primarily through an observed loss of hedgerow thickness, together with the appearance of a greater number of gaps in continuity. These occur mainly in arable settings on what was pastoral land (as intimated in 3.5, such change to farming systems occurred well before the current decade monitored). Thus, within arable systems, farmers seem to be tolerating the existence of hedgerows whilst ensuring that they are closely managed. There is no sign of a 'one in three year' cut favoured by some land managers.

3.8 Boundary hedges, such as those at the roadside, seem to be afforded more potential to grow (Figure 3.1), as shown by their obscuration of views from monitoring points between surveys. Particular hedges seem destined to close off entirely a particular view, yet returning to monitoring points a few years later sees the hedge back to the form it exhibited in 2006.

Figure 3.1: Boundary hedges at roadsides represent the thickest examples within the AONB but remain subject to 'tight' management using mechanical methods.

3.9 The generally poor condition of hedgerows in the arable situations monitored at the fixed points occurs despite a deliberate focus of agri-environmental schemes on improving their presence and health within the farmed landscape, notably the Entry Level Scheme (ELS) of Environmental Stewardship that operated for most of the monitoring period (2005-2014). In the absence of farm survey work to elicit farmers' attitudes and actions, the monitoring evidence can be interpreted in two ways. First, it could simply be misfortune in failing to capture the positive effects of schemes in the specific vistas recorded, coinciding with a lack of uptake by farmers in the AONB at the localities observed. Second, it may be revealing the limited impacts of the schemes themselves. A long-held criticism of the former ELS was that, although relatively simple, it insufficiently delivered 'on the ground' improvement (Davey *et al,*, 2010; Hodge and Reader, 2010). Given the *State 2014* report noted that 82% of the AONB was under ELS, the former seems unlikely compared with the more piecemeal (but complex) predecessor of ELS, 'original' Countryside Stewardship which covered 25% of the AONB area (see *State 2006* report). Overall, with reference to observable change within this monitoring work, there is nothing to contradict the conclusion drawn in *State 2014* about the agri-environmental schemes that have applied in the AONB. They may well have enrolled farmers passively in conservation but have been ineffective at delivering actual positive change to hedgerows under both prevailing economic conditions and long-established postwar cultural practices of 'improvement' founded in processes of intensification and specialisation.

ii) Hedgerow Trees

3.10 Hedgerow trees feature prominently in some LDU landscapes within the AONB. A 2012 survey commissioned by the AONB Partnership revealed that of 195 hedgerow trees examined just 0.5% could be categorised as 'young'. Such data are reflected in the landscape (Figure 3.2). The odd specimen has appeared in the views monitored, but they are inhibited very much by the way hedgerows themselves are managed (see 3.6). A hedgerow component selected for growth and left one year may well not even be noticed by someone else, such as a different contractor, cutting the following year.

Figure 3.2: Veteran hedgerow trees, characteristic of many AONB LDUs, are reaching the end of their life and so increasingly vulnerable to storm damage.

3.11 The hedgerow trees in the monitored views are usually veterans (as in Figure 3.2). Such specimens are very prominent within landscape vistas and so their removal is more obvious than that of younger 'developing' hedgerow trees. Large specimens also represent something of a loss of habitat within LDUs. In sum, the appearance of new hedgerow trees in the LDUs is exceeded by the disappearance of old ones. Additional survey data from other work conducted by the AONB Partnership suggests that this is an established trend throughout the designated area and not confined simply to the locations monitored. As observed directly in AONBLDU4, as well as just a few metres to the right in the foreground hedge of AONBLDU24, the most common place for a new hedgerow tree to 'get away' is adjacent to a utility pole where a mechanical flail is lifted around it. Unfortunately, such specimens are invariably doomed because they have to be cut manually after a few years' growth when they start to interfere with the wires carried by the pole.

iii) Field Trees

3.12 Field trees generally take one of three forms. First, they are often indicative of a former wooded landscape from which fields have been created in an ad hoc way (a process of assarting), often referred to as 'organic' enclosure. This is the case with the Principal Timbered Farmlands and Forest Smallholdings LDUs found in the western, Herefordshire section of the AONB. Oaks are the dominant species in such situations and, like hedgerows, formerly served an active function in pastoral farming systems by providing shelter and shade for livestock. This need has been eroded by the progressive conversion of pasture to arable production, where field trees are a handicap both to crop growth (shade, nutrient depletion, moisture loss) and management (spraying, harvesting), leading ultimately to their removal. Consequently, they frequently appear as isolated specimens in the landscape (Figure 3.3), part of the palimpsest of previous historical periods of land use.

Figure 3.3: Where they survive, field trees are often isolated in the landscape, as in this example from AONBLDU18.

3.13 The second form of field tree results from former deliberate planning as parkland specimens that often occurred within large estates. These trees are now frequently surrounded by arable cultivation, as apparent on the Sandstone Estatelands to the south of the AONB. Hence, they are also vulnerable to loss associated with the decline of small and medium-sized estate forms of land ownership from the First World War onwards.

3.14 The third form of field tree occurs where there has been a radical alteration of an historic field pattern that formerly contained a predominance of hedgerow trees, as with the Principal Timbered Farmlands and Settled Farmland with Pastoral and Use Landscape Character Types. Hedged boundaries themselves have been removed, perhaps replaced by post and wire fencing, leaving former mature hedgerow trees isolated as field trees. This is seen to occur in AONBLDU10 where hedged field boundaries originally used to plan enclosure of former common land have been removed, even though hedgerow tree cover would have been relatively sparse within this type of landscape.

3.15 Field trees within the AONB are generally in decline. At present, this manifests itself mainly as losses of limbs. The monitoring process has picked up the rather subtle changes that occur to field trees through time as they gradually decay (see for examples AONBLDU10 and AONBLDU12). This is the dominant contemporary process as compared with wholesale removal in previous periods. Some cage planting is evident, although the current approach is to plant specimens in ‘blocks’ (see Figure 3.4) rather than scatter them through the landscape and place them in the centre of fields where they will represent an inconvenience to ‘efficient’ land management.

Figure 3.4: An example supporting the assertion of cage planting of trees in blocks, from AONBLDU25.

iv) Woodland Blocks and Orchards

3.16 Woodland is a prominent landscape feature within the AONB, especially to the western side of the Malvern Hills ridgeline. This comprises a mixture of ancient woodland on hill tops (evident as the Principal Wooded Hills Landscape Character Type) and in sinuous lines, together with more functional blocks of woodland such as those of willow associated with protecting hop yards and fruit trees in orchards, for which the region is renowned. Government policy has encouraged 'block planting' through various iterations of grant schemes for woodland. Not only have these been chronically unpopular amongst landowners since their appearance on the policy menu from the mid-1980s, where uptake has occurred, a corner of land of poor quality, or that which is inconvenient for 'efficient' agricultural production, will logically have been selected for woodland planting. This has enhanced an effect already evident within the AONB whereby blocks of woodland are very definitely separated from land in agricultural production. Unity and flow within many LDU landscapes have therefore been further disrupted over recent times.

Figure 3.5: Old orchards of tall 'standard' trees associated with smallholdings are distinctive yet in decline. Note the clumps of mistletoe on trees which, whilst adding to landscape distinctiveness, can hasten the demise of old trees as habitat.

3.17 In the case of orchards in the AONB, commercial ones survive with no apparent change evident over the decade monitored (see AONBLDU16). Some removal was recorded before the commencement of the monitoring (for example, in AONBLDU3), and new ones have been planted (AONBLDU6). A distinctive characteristic of the AONB landscape is the encounter with old orchards comprising standard (tall) fruit trees. These have fallen out of favour postwar for a range of reasons, including intensive labour requirement, difficulty of fruit picking, low yield and the prevalence of varieties formerly suited to canning and jam-making for which there is no longer any strength of consumer demand. As the trees themselves become ancient and infirm, old orchards have become progressively more patchy and biodiversity lost (both in terms of fruit varieties and habitats). Their contribution to the landscape in the AONB is key, reflecting a culturally distinct pattern of smallholding within the shadows of the

Malvern Hills where extended garden orchards contributed to the generation of additional income (Figure 3.5).

3.18 Occasional renewal of trees within a traditional orchard setting is apparent in the AONB, as observed in the Suckley Hills (AONBLDU2) and illustrated in Figure 3.6 at Eastnor (AONBLDU18). It can be surmised that this has been facilitated by options within the agri-environmental schemes that have been active over the last decade. The original Countryside Stewardship Scheme deliberately targeted old orchards within its remit for supporting landscape. This specific measure became more generalised within the Environmental Stewardship scheme that followed on from it, necessitating a comprehensive farm plan in its Higher Level option that may have deterred old orchard owners from seeking support. In the absence of landowner interviews, more research is needed into this aspect of how best to support old orchards whilst they still exist.

Figure 3.6: Cage planting of old varietal standard orchard trees contribute to the restoration of this distinctive feature within the Malvern Hills landscape.

3.19 Despite attempts through targeting of measures within agri-environmental policy, traditional orchard decline is also addressed actively by the AONB Partnership. This has represented the dominant form of intervention from this source to arrest any trend of decline in landscape character within the AONB as a whole (Figure 3.7).

Figure 3.7: Old orchards are distinctive landscape features and are supported by restoration initiatives from the AONB Partnership, but remain in decline.

v) Non-vegetative Boundaries

3.20 These mainly take the form of post-and-wire fencing within the Malvern Hills AONB, given that stone walls are absent from the upland which historically has always been managed as open common land. Ditches are also not in themselves a way of dividing land (as occurs in Longdon Marsh immediately adjacent to the south-eastern boundary of the AONB). Where they exist, ditches accompany hedgerows due to the predominant sloping topography of the Area.

3.21 Post-and wire fencing is a quick and cost-effective way for farmers to adjust the division of their land and repair vegetated boundaries. Both are evident within the AONB, and it is now underpinning many of the 'gappy' hedgerows recorded by the monitoring process. This has been the case because of the decline in available farm labour and consequent use of contractors to erect fences. On the one hand, compared with vegetated boundaries, a problem is that such fencing is generally difficult to see in the landscape, even a short distance away from the observer. The effect is to produce a generally larger scale, more open landscape, even where the functional need for land division still exists. On the other hand, post and wire is preferable when accommodating the expansion of horse enterprises by virtue of its relative invisibility compared with ranch-style fencing that serves to introduce a suburban element into the landscape. Positive intervention of the latter kind is apparent from the AONB Partnership, as demonstrated in Figure 3.8. However, the negative effects of increasing the scale and reducing the intimacy of the characteristic landscape remain the same.

Figure 3.8: This new post-and-wire fence in AONBLDU22 is not easily noticeable in the landscape, even from within the fixed-point monitoring photograph.

3.22 No signs of new hedgerow planting within the AONB were observed from the fixed points or other photographic data collected over the ten-year period covered by this report. One hedgerow in AONBLDU25 removed and replanted has been supported by wire fencing as an interim measure to facilitate growth (Figures 3.9 and 3.10). The effect is to increase landscape scale, albeit on a temporary basis constituting a number of years, until the vegetative boundary becomes re-established.

3.23 Such a situation is again indicative of the unambitious nature of much agri-environmental policy that has prevailed over the last decade. ELS paid for hedgerows to be maintained. However, based on observations within the fixed points, it appears that little has been added to the stock of vegetative boundaries within the AONB. Of course, no scheme has been devised and tailored to meet the specific needs of individual protected areas in England. In more advanced forms of scheme, such as HLS, general provisions have instead been bolted together on a holding-by-holding basis, latterly according to priorities based on National Character Areas.

Figure 3.9: A former hedgerow (boxed, left centre) has been replaced by post-and-wire fencing, although here this is part of vegetated boundary renewal.

Figure 3.10: Detail of replaced boundary in Figure 3.9, as indicated by the double-fencing and tree guards.

vi) Watercourses and Water Features

3.24 Watercourses in the AONB are limited almost exclusively to a small network of small streams within and between fields (Figure 3.11) draining into the Rivers Severn (south and east) and Teme (north and west). Leigh Brook in the north is the only substantial watercourse (though not sufficient to fall within the Riverside Meadows

Landscape Character Type at this point). Cradley Brook to the west is the only other watercourse named at 1:50,000 scale on Ordnance Survey maps of the Area. Hence, the influence of watercourses on the landscape is limited, despite the heritage of 'Malvern Spring Water'. This said, some of the best and longest established vegetated corridors in the AONB are those following watercourses.

3.25 No significant alterations, such as straightening or culverting, are evident over the last decade. Some ongoing active management of streamside willows is evident, as with the pollarding observed in AONBLDU11 in 2014. Hedgerows adjacent to streams are managed in the way described in that section above (Figure 3.11).

Figure 3.11: Watercourses are generally small and are found alongside hedgerows, as in this example from AONBLDU8.

3.26 Ponds are again not prominent in the views monitored. One, on Hollybed Common (AONBLDU23), seems to come and go depending upon the water table. There is no evidence of active pond creation. Of course, this does not mean that this has been entirely absent within the AONB, but no trend towards creation is discernible from the ten years of monitoring evidence collected.

4. ASSESSMENT OF CHANGE ACCORDING TO LANDSCAPE CHARACTER TYPES

4.1 The presence/absence and arrangement of features covered in Section 3 represent the cultural dimension of landscape character and combine with the natural dimension (topography, landforms) to define Landscape Character Types. The monitoring process over the last decade has been based on 27 (later expanded to 30 in 2009) LDUs representing ten Landscape Character Types identified by landscape character assessments undertaken in the counties of Worcestershire (1999) and Herefordshire (2004) (see WCC, 1999; WCC and HC, 1999; HC, 2004).

4.2 Table 4.1 lists the ten Landscape Character Types and records their incidence within the AONB. The type of Principal Wooded Hills is the most represented by both number and area within the AONB, followed jointly by Principal Timbered Farmlands and Enclosed Commons (see also Figure 1.2). The types are arranged in the Table from largest to smallest areal extent rather than by frequency of occurrence.

4.3 Note that AONBLDU24 (Fairoaks Farm) was reclassified by WCC in 2011 from the Landscape Character Type of Principal Timbered Farmlands to Enclosed Commons (WCC, 2013), and thus varies from previous *State of the Malvern Hills* reports.

Table 4.1: Landscape Character Types in the Malvern Hills AONB.

Landscape Character Type	Number of LDUs
Principal Wooded Hills	6
Principal Timbered Farmlands	5
Enclosed Commons	4+1
High Hills and Slopes	3
Wooded Hills and Farmlands	2
Sandstone Estatelands	1
Unenclosed Commons	2+2
Settled Farmlands	2
Settled Farmlands on River Terraces	1
Forest Smallholdings and Dwellings	1

4.4 This section is therefore concerned with an assessment of change recorded by the monitoring process according to the key characteristics of each type derived from the AONB Partnership's *Landscape Strategy and Guidelines (*Malvern Hills AONB Partnership, 2011). It provides a broader perspective based on *combinations* of change amongst landscape elements within the collections of LDUs that represent each type. Hence, changes in common land or field pattern can be dealt with situated within the cultural and natural contexts provided by their Landscape Character Types.

4.5 Each Landscape Character Type is now discussed according to the order established in Table 4.1. Full details of each Type, including descriptions, key characteristics, threats of change and conservation strategy can be found in Malvern Hills AONB Partnership (2011) and partially on the WCC website (see also WCC, 2013) and so are not repeated in full here. Rather, selected facets of each Type are emphasised to demonstrate either continuity or change (or evidence of both, varying

according to specific landscape features) in a way most pertinent to the directions of change observed within the AONB context over the last decade. The key characteristics selected are made overt in Table 4.2. This specifies the features and thus provides the underlying justification upon which the allocation of any one LDU to a typological category is based. For ease of interpretation, these have been colour-coded to reflect where they either contribute to or detract from the character that can be typically found in any Landscape Character Type, as identified in the documentation referred to above.

4.6 Figure 4.1 records each LDU colour-coded to its Landscape Character Type across the state-change typology developed in Section 3. Collectively, this provides an immediate visual impression of the current status of the Landscape Character Types found in the AONB and thus assists in compiling summaries of each (below). The results recorded in Figure 4.1 also serve to demonstrate the effectiveness of the typology in that a good spread of status outcomes is apparent, meaning that it has the power to differentiate between LDUs.

LDU Status

		Direction of Change		
		Declining	*No Change*	*Improving*
State of Key Characteristics	*Disintegrated*	10 17 22	6 14 26	1
	Mixed	15 27	4 9 11 18	5
	Intact	3 8 12 25	16 19 20 23 24	2 7 13 21

Figure 4.1: Assessment of monitored LDUs based on ‘state’ and ‘change’.

i. Principal Wooded Hills

4.7 The six LDUs representing this Landscape Character Type are well distributed across the typology, indicating the complexity of their current character and future management needs. For these LDUs, woodland blocks are dominant and shaped to hills, typically occupying the highest ground. From this interconnected pattern of woodland, hedged irregular fields emerge where historically they have been cleared from woodland. This means that hedgerow trees are important, reflecting the organic way in which the landscape pattern was created.

4.8 For observed change, intensive arable cultivation associated with modern farming systems has been a particularly negative force, leading to the creation of large fields which give the landscape an uncharacteristic openness. Not only has the field pattern been rationalised away from irregularity, but the hedgerows that do survive are tightly managed and are very much lacking in quantity of hedgerow trees. The woodland blocks that survive have become less connected and increasingly present a standalone appearance rather than exhibiting close links with other blocks,

disrupting landscape unity and also the functionality of the habitat network provided. From the monitoring process, it is evident that most of the decline took place prior to the commencement of the monitoring process in 2006, probably from a time immediately postwar up to the end of the 1970s (Westmacott and Worthington, 1974 and 2013).

4.9 Where the full force of change is yet to be witnessed, hilltop trees are seen to be becoming thinner, as are hedgerows. Hence, the fabric of the landscape survives, but has a vulnerability to future deterioration associated with it. This said, three of the six LDUs of this Type are improving their character, albeit from different starting points. This has involved improvements to hedgerow quality through replanting and active management, together with some replanting of trees and removal of incongruous features such as, for example, the conifer block in AONBLDU5.

ii. Principal Timbered Farmlands

4.10 Principal Timbered Farmlands are areally dominant in the centre west of the AONB and also occur as fragments of larger LDUs cross-cut by the AONB boundary in both the north and south. The topography in these localities is more rolling and less steep, explaining the distinction from Principal Wooded Hills. The remainder of the landscape is similar, with irregular fields assarted from woodland and a predominance of hedgerow trees providing linear wooded cover connecting woodland blocks of variable size.

4.11 The AONB LDUs of this Character Type remain largely intact and have changed little over the last decade, even though this cannot be consistently stated for every individual LDU. The irregularity of the field pattern remains the strong intact feature of the AONB's Principal Timbered Farmlands. Where disintegrated, this pattern has been removed well before the monitoring period began to accommodate intensive modern agriculture. Larger fields, open views and a thin scattering of trees are indicative features of disintegration within this type. Where intact, views are filtered and thick hedges accompany lanes as they wind through the irregular pattern of fields.

4.12 The main threats observed from the tendency towards decline comprise the thinning of hedged boundaries and the aging of traditional orchards of tall, 'standard' trees. Some commercial 'bush' orchards offer a degree of compensation by maintaining tree cover, even if more visual regularity is introduced into the scene. Concerns about the age structure of hedgerow trees within this Landscape Character Type seem well-founded as few young specimens are evident throughout.

iii. Enclosed Commons

4.13 There are now five Enclosed Common LDUs within the Malvern Hills AONB. One is a later addition and influenced largely by a golf course, rendering it of urbanised character (not considered further here). Another is a reclassification from Principal Timbered Farmlands within the WCC framework. This Type again shows considerable variability in the state of key characteristics across the typology.

4.14 The most significant change again appears to be based upon large-scale intensive arable land use, albeit historic. The regular planned field pattern resulting from enclosure is mostly still evident, but the compartmentalisation of fields has been compromised by the removal of hedge boundaries as farmers have sought

economies of scale in production. Some post and wire fencing has become evident where land is used for grazing, now at a much higher intensity than at the immediate postwar benchmark.

4.15 Trees remain evident mainly along watercourses, but the thin scatter of hedgerow trees are now in general decline as they all reach old age together. They are often isolated specimens, so this deterioration is all the more noticeable. Discrete woodland blocks, which are associated with this Character Type, remain few and far between, but essentially intact with limited evidence of micro-scale planting of trees at their fringes.

iv. High Hills and Slopes

4.16 It is this Landscape Character Type, above all others, which commentators would agree represents the essence of the Malvern Hills (see for example Hurle, 1984 and 2007; Smart, 2009). The spine of high country that runs as an eight-mile ridge through the heart of the AONB is represented by three distinct LDUs reflecting nuances in the scene provided by this unenclosed land of rough grazing.

4.17 All are intact and improvements have been made during the monitoring period to ensure that this open character survives ('Malvern' is said to originate from the Welsh *'moel bryn',* roughly translating as 'bare hillside'). This is due largely to the actions of the MHC in managing the common lands in the locality (see Para 1.33). A series of grazing projects using hardy cattle, such as Belted Galloways, as well as sheep in electric-fenced compartments, have done much to conserve the open character of the High Hills. Mechanical means have also been used to reduce scrub in the short term, given the scale of the task. This is because commoners' rights are now infrequently exercised by local residents, either because they do not have stock (property with rights has been bought by counter-urbanisers) or due to the intense recreational pressure experienced on the ridge (the popularity of dog-walking is especially challenging to stock-keeping).

4.18 The last decade has witnessed major fluctuations in the extent of bracken, gorse and other scrub vegetation evident at the monitoring points. The overall picture is one of improvement, but scrub vegetation growth is apparent at some specific places in which it was limited or absent in 2006. Therefore, scrub has waxed and waned over the monitoring period according to where there has been grazing input or mechanical treatment. Some scrub has emerged in patches cleared a decade ago. Such variability serves to emphasize the 'constant battle' MHC and other land managers face to maintain the culturally valued open nature of the High Hills and Slopes. Although common management is a statutory duty assigned to MHC, resources are limited and future encroachment cannot be ruled out as an increasingly targeted approach becomes necessary.

v. Wooded Hills and Farmlands

4.19 There are two LDUs of this Character Type. lying adjacent to one another and occupying the central southern part of the AONB west of the spine of High Hills and Slopes. As the name suggests, farmland is dominant within this Type, but here one large estate dominates land use across both LDUs. Typically, there are large woodland blocks, large hedged fields and streamside tree cover reflecting mixed farming use and producing framed views of moderate scale.

4.20 Landscape character is disrupted in AONBLDU18 because of the specific context of the estate (a main entrance for public events) at the monitoring point in what is geometrically a very slender LDU. Elsewhere, from supplementary photographs, fields are indeed large, but with some deterioration of the hedgerows surrounding them evident over the last decade. The trend emerging is a visually more open landscape than might be expected for this Character Type.

4.21The larger Unit (AONBLDU19) shows remarkably little change over the last ten years and is largely intact, any loss of character being 'postwar historic'.

vi. Sandstone Estatelands

4.22 Found in the south of the AONB, this Landscape Character Type is represented by one LDU. The key characteristics of regular field pattern, arable land use and planned woodland are in evidence. However, the monitoring period has witnessed little improvement in the distinctiveness provided by the arrangement of such features. In particular, the historic decline in hedged boundaries has shown no signs of recovery, with no replacement of post and wire fencing and existing hedgerows tightly managed.

4.23 Most significant has been the emergence of a Spanish polytunnel enterprise for growing strawberries in this LDU. It has a negative landscape impact which is best described as semi-permanent (see Evans, 2013). These plastic structures occupy whole fields, comprising metal superstructures covered with very large sheets of plastic. Although they are agricultural structures, case law has established that planning permission is required. This has been granted within this LDU. The plastic itself is in place normally from March to November meaning that, in technical terms, it has a temporary landscape impact. In reality, the metal structures remain in place throughout the year and in any one field for up to four years, in tune with the cycle of replacement of strawberry plants. The collection of grey metal hoops very much influences the winter scene. Open situations offer most efficiency for growers with polytunnels so that boundaries are only of a concern where stipulations have been made by planners about screening such enterprises from general view. Some growers have ensured that their hedgerows grow much higher than in traditional or modern agricultural situations (both arable and grass), but the polytunnels in this LDU have only materialised within the last decade and signs of such adjustment are only just becoming visible.

4.24 The polytunnels continue the intensive nature of farming in this large-scale landscape in a new form, although there is some disparity in the approach to land use suggested from the monitoring. It appears that where grass-based systems exist, the grazing has become slightly less intensive. It is unclear whether or not this represents a trend throughout the entire LDU.

4.25 It is worth commenting that the move in the 'Three Counties' region to a system that can be described as 'plasticulture' generally has a much more extensive landscape impact than one confined to the AONB or specific LDU itself. Polytunnels are now easily visible looking outwards from the AONB, being particularly prominent from the eastern edge of AONBLDU14 and from the southern High Hills and Slopes of AONBLDU20. In the case of the latter, looking south, the plastic appears to shimmer and is easily mistaken (especially by visitors, ascertained by listening and talking to them informally) for a large body of water.

vii. Unenclosed Commons

4.26 As with the High Hills and Slopes, the management of these areas lies within the jurisdiction of the MHC. This helps to explain why both Castlemorton (AONBLDU21) and Hollybed (AONBLDU23) Commons, comprising the bulk of the AONB's Unenclosed Commons, have their key characteristics of this Type intact. In short, these represent an open landscape of rough grazing with settlement at the perimeter.

4.27 Similar problems are evident to those noted with the exercising of grazing rights on the common land of the High Hills and Slopes of the Malvern Hills ridge itself; namely, a lack of livestock-keeping. Management of the open nature of the commons requires active and constant inputs by the Conservators, either using livestock or mechanical means.

4.28 The size of the challenge is daunting, but over the last ten years Hollybed Common has maintained its character, even if there are signs of scrub vegetation within the sward. At Castlemorton, there is the added challenge of road traffic compromising grazing with livestock through danger of vehicular collisions. Significant fluctuations in the sward are evident, at first becoming thicker despite the introduction of cattle grazing, and then a dramatic improvement in the last two years through a combination of grazing with hardy cattle/sheep breeds and mechanical management. The grass area of the common has increased, but the scrub vegetation has retreated to a more central locality where it has increased in density. Hence, in some respects the landscape is more open, yet in others the range of views has become more restricted by scrub density. The viability of maintaining grazing and management of open commons in the longer term will need to be assessed.

viii. Settled Farmlands with Pastoral Land Use

4.29 Together, the two LDUs of this Landscape Character Type are furthest removed from the characteristics that are identified as representing them. Rather than small-scale hedged fields arranged in a sub-regular pattern, there has been historic postwar removal of field boundaries to create a more intensive, often open scale arable landscape. There is little sign of the relic commons and small enclosure for pastoral purposes from which this type derives its distinctiveness. An imprint of the former field pattern sometimes remains as post and wire fencing or angular corners visibly jutting out into large fields.

4.30 Individual hedgerow trees remain within a tightly managed pattern of remaining field boundaries. The trees themselves are of similar maturity, are thinly scattered and are becoming increasingly disfigured with age. This lack of tree cover therefore fails to provide the filtered views associated with this Type, particularly from the monitoring points. Trees along small watercourses generally remain as the dominant type of woodland cover in these LDUs.

4.31 It seems that little has changed in these Units over the last ten years to replenish their character, with a slow deterioration of the boundaries and trees within them evident. There appears to be little prospect of a return to character in these localities over the medium term and they will continue to constitute generic rather than distinctive countryside within the AONB.

ix. Settled Farmlands on River Terraces

4.32 There is one LDU of this Character Type at the central western fringe of the AONB and it is of limited areal extent. Most of it is occupied by large commercial orchards in keeping with the cropping land use and medium sized sub-regular fields that are associated with this Type. The orchards themselves represent the main tree cover, there being limited numbers of hedgerow trees and occasional trees associated closely with sparse roadside dwellings.

4.33 Despite fluctuating markets for top fruit products, there is little change observed within the LDU over the ten years of monitoring. Hedgerows remain alongside roads and are not prominent within the intensive orchard landscape. It is the adjacent countryside that continues to frame and influence this enclave of Settled Farmlands on River Terraces within the AONB. An adjacent unit within the AONB (AONBLDU17) provides the woodland backdrop from its Principal Wooded Hills Type, whilst industrial, residential and intensive agricultural (polytunnel) development adjacent to the LDU, but outside the AONB boundary, is increasingly negatively reshaping the view outward from it.

x. Forest Smallholdings and Dwellings

4.34 This represents a very small area within the AONB, mainly comprising the environs of the village of Wellington Heath. The key characteristics are of an intricate and intimate landscape with dense wayside settlement of small cottages and a random pattern of small pastoral fields, all a result of historic haphazard enclosure of commons and forest clearance.

4.35 Such distinctiveness is present in AONBLDU15, but housing infill has been witnessed over the monitoring period which is effectively removing some of the small plots of land that are interspersed between dwellings. The houses themselves are often larger than traditionally associated with this Type and their curtilages are enclosed by fences, indicative of creeping urbanisation.

4.36 Tree cover has remained dominant, or even increased, over the last ten years with a continued presence through tall hedgerows and trees within them, small patches of old orchards and trees within gardens. It is also likely that secondary woodland has regenerated on small areas of land that are no longer viable to use, but historically would have been used for stock grazing.

4.37 As far as land use is concerned, some former derelict plots of land appear to have been put back into more intensive use. Perhaps most significant, though, and also contributing to a more urbanised feel within the landscape, is the expansion of ‘horsiculture’. The paraphernalia associated with horses such as stabling, ranch-style fencing and training equipment can serve to have a transformative visual impact. This is certainly true at the Wellington Heath monitoring site, with various changes captured within an overall trend of enterprise expansion. As with industrialised agriculture, any benefit to the rural economy of such activities is greatly offset by the importance to society of maintaining landscapes of distinctive character, as well as the effectiveness of designations to be seen to protect them.

Table 4.2: Summary of typologically defining characteristics in AONB LDUs.

LDU	*State of Key Characteristics*	*Overall Change 2006-16*	*Primary Determinators for Classification: contributors to typical character contributors to loss of character*
1	disintegrated	↑	open views; large intensive arable rather than irregular fields; framing hilltop woodland block; scrub patch.
2	intact	←→	interconnected woodland offering visual unity; hedgerow trees; irregularly shaped fields; traditional orchard with some replanting.
3	intact	↓	irregular woodland; surviving mature hedgerow trees; old orchards present, but in decline.
4	mixed	←→	framing woodland blocks; thinning of woodland; hedgerows present, but thinning.
5	mixed	↑	framing woodland; many hedgerow trees; deterioration of hilltop woodland; multiple incongruous man-made features; conifer block removal; intensive grazing.
6	disintegrated	←→	open landscape with lack of filtered views; intensive arable cultivation; rationalisation of field pattern.
7	intact	↑	open, large-scale landscape; rough grazing; active management of scrub.
8	intact	↓	filtered views; predominance of hedges and hedgerow trees, but with some decline; irregular medium-sized fields.
9	mixed	←→	scattered trees, but with some deterioration; intrusive woodland blocks; medium-scale filtered views.
10	disintegrated	↑	loss of planned enclosed field pattern; replacement of boundaries with post and wire fencing; decline in hedgerow trees with age; former boundary trees left as field trees.
11	mixed	←→	field enlargement for arable cultivation; loss of planned field pattern; active management of watercourse trees.
12	intact	↓	planned field pattern visible; hedgerow and field trees evident, if over-represented; discrete woodland block.
13	intact	↑	open, large-scale landscape; rough grazing; active management of scrub, but with some inconsistent outcomes.
14	disintegrated	←→	high intensity arable; thin, gappy hedges; loss of hedgerow trees.
15	mixed	↓	scattered dwellings; some infill with large modern suburban housing; iregularity; plentiful tree cover; roughly vegetated small plots; more prominent horsiculture.
16	intact	←→	intensive orchard dominant; medium scale open landscape.
17	disintegrated	↓	open, large-scale landscape; lack of filtered views; declining hedgerow quality.
18	mixed	←→	lack of field pattern; large fields; open, but framed views; large discrete woodland blocks; lack of tree cover.
19	intact	←→	woodland blocks; framed views; irregular field pattern.
20	intact	↑	open, large-scale landscape; rough grazing; active localised management of scrub.
21	intact	↑	open landscape; rough grazing; diminishing scrub area; active grazing management.
22	disintegrated	↓	large-scale, open landscape; intensive arable land use; hedged fields, but tightly managed; scattered hedge trees in decline.
23	intact	←→	open landscape; rough grazing; active grazing management.
24	intact	←→	planned field pattern visible; largely pastoral land use; hedgerow trees significant.
25	intact	↓	prominent scattering of field trees; thick laneside hedges; increasing agricultural intensity.
26	disintegrated	←→	large-scale, open landscape; intensive arable land use; removal of field pattern.
27	mixed	↓	large fields; declining field boundaries; intensive 'plasticulture' land use; trees in blocks; open views.

5. LANDSCAPE CHANGE ACROSS THE WIDER AONB AND THE WORK OF THE MALVERN HILLS AONB PARTNERSHIP

5.1 Sections 2 to 4 of this report deal with changes in the AONB landscape observed from a series of fixed points over the period 2006-2016. As documented in Evans and Connolly (2006), their selection started by working from unbiased target locations and then making qualitative adjustments to cope with on the ground realities, such as obtaining a publically accessible vantage point. Hence, it is obvious that such points, looking in one direction of the compass, can only offer a partial perspective on the change which has taken place across the AONB. Indeed, in some LDUs, changes have been observed just 'out of shot' of the camera. Rather than to deny that such change has taken place, this section seeks to provide a brief and more general overview of larger scale landscape change that has taken place across the wider AONB in the same period through reference to the work of the AONB Partnership. In this way, it provides a contextual complement to the assessment of change provided in the rest of the report which is deliberately focused upon the results of observations at fixed the points.

5.2 It must be appreciated that the Malvern Hills AONB Partnership is an umbrella term for a large number of bodies and individuals that work together to conserve and enhance the special qualities of the Malvern Hills AONB. This Partnership includes: Government agencies that incentivise and regulate many land management operations; local authorities that influence and control activities, such as the management of waste, minerals and development; many landowners, or those that represent them locally or regionally; voluntary bodies; community groups; and parish councils. All undertake, in different ways and at different times, actions which help to conserve and enhance the natural beauty of the AONB landscape.

5.3 In an ideal world, it would be possible to document all of the achievements of the AONB Partnership. However, a shortage of resources for monitoring, combined with the loose-knit nature of the Partnership and the very varied way in which it operates, makes this all but impossible. For example, guidance produced by the Partnership which encourages the restoration of native hedgerows may stimulate a landowner to carry out such activity, yet the results may well go unnoticed and undocumented if this does not happen as part of an established agri-environment scheme. Irrespective of whether or not the AONB Partnership has inspired environmental action by landowners, the fact remains that individual and ad hoc conservation efforts of a great many landowners are difficult to capture. It is certain that such positive actions are thus generally under-represented in all forms of recording, which can also be a source of frustration to those who have invested time and resources in them. Detailed farm survey work would be necessary to help top redress this deficiency.

5.4 Additionally, it must be noted that there are difficulties associated with linking the activities of the Partnership to a specific period of time. Although the tangible evidence of conservation and enhancement activity may appear on the ground at one point, such evidence may stem from prior, behind the scenes, efforts which often pass unnoticed (for example, developing projects, planning, applying for funds, allocating resources etc.).

5.5 For these reasons, this section seeks to provide a flavour of just some of the Partnership's activities which have taken place to conserve and enhance the landscape of the AONB. It does this through reference to a range of quantitative and qualitative data provided by partners. It follows the lead of previous sections by focusing primarily on observable aspects of landscape and categories of information and elements that contribute to landscape character and condition. In particular,

hedgerows, hedgerow trees, field trees, trees as woodland blocks and orchards, non-vegetative boundaries, watercourses and water features are considered. However, this section does also bring in some other examples of work which have had an impact on the landscape. In-keeping with the methodology outlined earlier and, notwithstanding the drawbacks mentioned above, this section of the report focuses upon obvious changes which arose in the AONB for the period 2006-2016.

5.6 It must be noted that in the following section all data cited from Natural England sources are based on land which is inside the AONB boundary and under an agri-environment agreement with a start date between 1st February 2007 and 1st December 2013.

i) Hedgerows

5.7 Section 3 of this report highlights that a significant issue in the AONB is one of gradual deterioration in hedgerows, evidenced by little increase in observed hedge thickness or height and the appearance of a greater number of gaps within them. This is described as being a particular problem within arable field systems. The report recognises that boundary hedges have often fared much better.

Figure 5.1: Newly laid hedge and young hedgerow tree.

5.8 Data supplied by Natural England indicate that the AONB agri-environment agreements starting 2006-16 supported:

- 1665m of hedge maintenance (specifically hedges with a 'high environmental value');
- 2291m of new hedgerow planting (see Figure 5.1);
- 4266m of hedgerow restoration.

5.9 In the same period, grants provided directly to landowners by the AONB Unit, which were coupled with financial contributions from landowners themselves, supported:

- 2162 metres of new hedgerow planting, and;
- 3360m of hedgerow restoration.

ii) Hedgerow Trees

5.10 When considering the wider AONB landscape, the observation made in Section 3 holds true: that the appearance of new hedgerow trees is exceeded by the demise of old ones. As is noted, this is especially so because the most abundant and prominent hedgerow trees in the landscape tend to be veterans, and their demise gains higher probability with each passing year. A 2012 survey commissioned by the AONB Partnership provided stark evidence of the predominance of the ageing stock of extant hedgerow trees compared with the very low recruitment of new ones (Figure 5.2).

Figure 5.2 Newly planted hedgerow tree.

5.11 Data supplied by Natural England indicate that agri-environment agreements starting 2006-16 supported the planting of just three new hedgerow trees. In the

same period, grants provided directly to landowners by the AONB Unit, which were coupled with financial contributions from landowners themselves, further contributed to the establishment of a small number of hedgerow trees.

5.12 The very low recruitment of new hedgerow trees in the AONB is the consequence of a range of factors, including the now ubiquitous mechanised approach to managing hedgerows (see Para 3.6). Flailing around hedgerow trees precipitates a suite of future inconveniences for land managers, including: higher management costs; shading and water loss for arable crops; and concerns over future liabilities associated with trees near roads and footpaths. However, there is recent, albeit limited, evidence to show that some landowners are willing to take the time and trouble to foster new hedgerows trees in appropriate locations. Figure 5.2 shows one such example, together with the special effort required to initiate such positive change.

iii) Field Trees

5.13 Data supplied by Natural England indicate that the AONB agri-environment agreements starting 2006-16 supported the protection of:

- 11 infield trees on arable land;
- 169 infield trees on grassland;

and the planting of:

- 52 field/parkland trees.

5.14 In the same period, grants provided directly to landowners by the AONB Unit which were coupled with financial contributions from landowners themselves supported the planting of:

- 13 field/parkland trees.

5.15 These data provide evidence that some field trees are being supported in the AONB. However, this level of activity is unlikely to reverse the general decline observed in Section 3. Again, decline seems to be particularly evident in arable settings.

iv) Woodland Blocks and Orchards

5.16 Data supplied by Natural England indicate that the AONB agri-environment agreements starting 2006-16 supported:

- 818ha of wood pasture and parkland maintenance.

5.17 Data supplied by Natural England indicate that the AONB agri-environment agreements starting 2006-16 also supported:

- 32ha of high value traditional orchard maintenance;
- 5ha of traditional orchard restoration;
- 7.5ha of traditional orchard creation.

5.18 In the same period, grants provided directly to landowners by the AONB Unit, coupled with financial contributions from landowners themselves, show that:

- 681 fruit trees were planted in traditional orchards.

5.19 Traditional orchards are one type of valued habitat in the AONB which often benefit from 'non-standard' approaches to conservation and enhancement. Traditional orchards may not be the best fit for agri-environment grant schemes. This is due to their generally small size and because land holding small orchards may not be entered onto the Rural Land Register, which is a prerequisite for receiving such funds. Over the years, the AONB Partnership has, therefore, sought other opportunities to conserve traditional orchards.

5.20 For example, during the period between 2009 and 2016, the AONB Partnership provided financial support to the establishment and subsequent activities of the Colwall Orchard Group (COG). This small charity exists to restore, promote and celebrate traditional orchards in and around the parish of Colwall within the centre west of the AONB. The Partnership's interest in supporting COG was driven by the potential it offered for engaging local orchard owners and local volunteers in caring for and managing traditional orchards.

5.21 Since 2009, COG has delivered the following in the Malvern Hills AONB and:

- planted over 450 fruit trees in 16 traditional orchards;
- pruned in excess of 1000 fruit trees in traditional orchards;
- carried out restoration work in 20 traditional orchards, covering over 15 ha of land;
- re-established traditional orchards on three sites where historical orchards had been cleared (Figure 5.3);
- supplied 75 fruit trees for people to plant in their gardens.

5.22 The Malvern Hills AONB Partnership has also worked flexibly in other ways to conserve and enhance traditional orchards. For example, in 2015, the AONB Unit accessed Innovation Funding from Natural England to grow 300 particularly rare varieties of fruit tree which will be planted out to help gap-up traditional orchards. The Three Counties Traditional Orchard Project – a 3 year project funded by the Heritage Lottery Fund and managed by the AONB Unit – is also set to deliver the management and restoration of 39 orchards across the three counties of Gloucestershire, Herefordshire and Worcestershire.

5.23 The fixed point images contained in this report show no evidence of woodland creation from 2006. It does exist elsewhere, but tends to be 'block' planting (the history of which is acknowledged in Section 3) which serves to disrupt the unity and flow of landscapes.

5.24 Under the United Kingdom Forestry Standard (UKFS) and other relevant guidance, there is now a much greater emphasis on ensuring that woodland creation is sensitive to local landscape character. For example, within the last decade, the Forestry Commission's Woodland Creation Grant has stimulated the creation of some 4ha of new mixed native broadleaf woodland in the Suckley Hills (northern) part of the AONB. As well as being appropriate to local character, this creation has also benefitted biodiversity by connecting and buffering existing wooded areas, thus facilitating the movement of woodland wildlife within and across the landscape. Local distinctiveness was further reinforced through the use of variable spacing between planted trees – something which helps to mimic natural colonisation – and the selection of species based on local site factors, such as soil type, soil moisture level and exposure.

Figure 5.3: Re-established traditional orchard, Colwall.

v) Woodland Management

5.25 The fixed point images of Section 3 sometimes hint at the changes taking place within established woodlands in the landscape; for example, whether gaps are appearing or whether woods in certain views appear to be becoming more or less dense. However, such images can seldom provide a detailed insight into the nature of change in actual woodland structure.

Figure 5.4: Woodland management round mature oak trees.

5.26 A suite of measures collected by The Forestry Commission exist for whether change is being introduced in public and privately owned woodlands. These include issuing of felling licences and grant offers for activities such as woodland creation, management and improvement. Anecdotal evidence suggests that, in common with

most areas of the UK, many woods in the AONB did not benefit from management between 2006-2016.

5.27 This said, active woodland management does occur in the AONB (Figure 5.4). For example, in June 2010, an assessment by Natural England showed that the woodland known as Tinker's Hill, a Site of Special Scientific Interest (SSSI) on the east side of the Malvern Hills, was in need of management. The Forestry Commission issued a Woodland Improvement Grant and the following management was delivered:

- the network of woodland rides (which had become overgrown) was re-opened;
- graded woodland edges were created through a zonal management system, with the habitat cut at different times and in different ways;
- the canopy of the woodland was thinned to allow more light through, with a focus on removal of sycamore to reduce its distribution, whilst also providing a firewood resource;
- non-indigenous species, such as cherry laurel, were removed and stumps treated to prevent regrowth.

5.28 Another example relates to the public forest estate and a programme of thinning which was in place 2006-2016 in Coneygree Woods and Frith Wood. This included the removal of a non-native plantation on an ancient woodland site as part of restorative management, the cutting of sweet chestnut coppice coupes and rotational management of the ride network.

vi) Watercourses and Water Features

5.29 Section 3 notes no evidence of significant changes to watercourses over the last decade, based on the qualitative data provided by the fixed point images and by observation. However, the significance of these features and the threats to them are not always reflected in visible changes. For example, data from 2009 and 2015 provided by the Environment Agency indicate that almost all of the watercourses within the AONB failed to meet EU Water Framework Directive quality parameters, often in relation to ecological and/or physicochemical factors.

5.30 One example of an attempt to address this situation took place in the latter part of 2016 when the AONB Partnership worked with the Severn Rivers Trust and with a local landowner in the north of the AONB to improve the water quality of the Suckley Brook. Bankside vegetation thinning took place to allow more light to get through to the watercourse. New fencing works were undertaken to prevent cattle from eroding the banks to achieve a reduction in sedimentation and nutrient enrichment of the stream (Figure 5.5). The various parties involved have also collaborated, alongside willing volunteers, to monitor the presence of non-native wildlife in the watercourse and to begin to take management steps to eradicate this problem.

Figure 5.5: Cattle fencing adjoining the Suckley Brook – copyright Severn Rivers Trust.

vii) Grassland

5.31 The focus of Sections 2 to 4 is upon the visible change discernible in particular views over a ten-year period of time. Such an approach does not always pick up on the nuances of management which can add so much to the richness of landscape, or indeed to its degradation. This is especially the case because fixed point images are taken in February and March before most plants are in leaf or flower.

5.32 Data supplied by Natural England indicate that within the AONB agri-environment agreements starting 2006-16 supported:

- 246ha of species rich semi-natural grassland maintenance;
- 881ha of species rich semi-natural grassland creation.

5.33 The efforts of many other partners and landowners have also helped to secure appropriate management of species-rich grassland within the same time frame (Figure 5.6).

Figure 5.6: Wildflower meadow, Malvern Common – copyright Jane Smith.

5.34 For example, between 2006 and 2009 the Malverns Heritage Project (a Partnership project supported by the Heritage Lottery Fund, managed by the AONB Unit and involving various landowners and local groups) sought to encourage and support graziers to re-stock common land and to explore ways in which grazing activity could be sustained into the future. There were five key achievements.

- The Malvern Hills between the A449 (British Camp road) and the A438 (Hollybush road) were encompassed with cattle grids and gates to assist those managing livestock on the Hills (Figure 5.7).

- A Coordinating Committee was established to promote consultation between all those who hold grazing rights over the Castlemorton Commons. This was necessary to achieve consensus amongst graziers prior to applying for agri-environment support for grazing management in this part of the AONB.
- A booklet and a website on the Castlemorton Commons were published to promote information exchange and to enthuse and inform locals and visitors.
- A public inquiry into the installation of cattle grids in the highway at Chase End Hill was successfully negotiated and two new grids were subsequently installed to assist in stock management at the southern end of the Hills.
- Financial support was provided to a local grazier to help manage livestock on the Hills.

Figure 5.7: Newly installed cattle grid to assist livestock management, British Camp.

viii) Burying Overhead Power Lines

5.35 Section 3 identifies incongruous features (visual effects of man-made intrusions) as observable aspects of landscape change. It is important to note that change in this area can be either negative, when such features are erected, or positive, when they are removed.

5.36 Since 2008, the Office of the Gas and Electricity Markets (OFGEM) has supported a scheme which allows local electricity companies to remove overhead power cables and to bury them underground. This scheme – which aims to improve

Figures 5.8 and 5.9: Burial of low voltage overhead power cable, Eastnor Estate (AONBLDU18), before (5.8, top) and after (5.9, bottom).

the natural beauty of the landscape and people's enjoyment of it - only applies in National Parks and AONBs.

5.37 Between 2009 and 2016, the Malvern Hills AONB Unit liaised with a wide range of landowners to identify overhead power lines which might be suitable for burial in the area (such as the one in Figures 5.8 and 5.9). The Unit then worked with Western Power Distribution – the local power company – to achieve the following:

- 12,705m of overhead power cable buried across 16 separate schemes.

ix) Built Development

5.38 Section 3 identifies building style (in terms of consistency with others) and incongruous features (visual effects of man-made intrusions) as observable aspects of landscape change. The overall impact of new built forms in the landscape may be lower than a change in land use management, but the former may be more apparent to the casual observer because the nature of that change is evidently man-made.

5.39 The AONB Partnership invests a very considerable amount of time and energy into the work of 'planning' to ensure that new development is sustainable and helps to conserve and enhance landscape and scenic beauty in the AONB. The Local Planning Authorities are at the forefront of this effort. They lead on the production of Local Development Plans and Minerals and Waste Plans which provide a policy framework for the area, before then applying this framework in day-to-day development management decision making. Statutory and non-statutory consultees also play an active role in both of these areas of work, influencing the development of draft strategic plans, contributing to Examinations In Public (EIPs), attending Public Inquiries and commenting on individual planning applications. In addition, much effort goes into the production of guidance which seeks to inform the nature of development. This may be produced by Local Planning Authorities themselves or by other partners. For example, in the period 2006-2016, the AONB Partnership produced a suite of documents, including Guidance on Building Design and Guidance on the Selection and Use of Colour in Development (Figure 5.10).

5.40 This report is concerned with visible change in landscapes and, as such, is not the place for an exposition on planning in its many forms. It does not itemise all of the various strategic documents which have been produced between 2006-2016, nor does it seek to quantify any impacts of them. Similarly, it cannot seek to aggregate, document or analyse the many hundreds of development management decisions which have taken place over that time period. The key point here is to recognise that what does appear on the ground is often the result of a great deal of 'behind the scenes' effort.

Figure 5.10: New roof cladding on Wye Hall at the Three Counties Showground (AONBLDU10). Colour and finish of new roof material selected to be recessive when seen from the nearby Malvern Hills and not to reflect sunlight.

5.41 It is also important to note that a significant amount of planning effort sometimes goes into the maintenance of the status quo in terms of the AONB landscape. Over the period 2006-2016 certain development proposals that would have led to significant and sometimes major changes in the area have not materialised because of the combined efforts of members of the AONB Partnership and others to resist them. This was especially true in the period 2012-2016. National changes in planning policy created a presumption in favour of sustainable development in local planning authority areas where evidence of a five year supply of developable land could not be provided. The local authority areas of Herefordshire Council and Malvern Hills District Council (and so land within the AONB) came within this bracket for much of that period. Providing visible evidence of the effort to deny change and its outcome on the landscape is, clearly, rather challenging! However, Figures 5.11 and 5.12 offer some examples of places that have been spared major change.

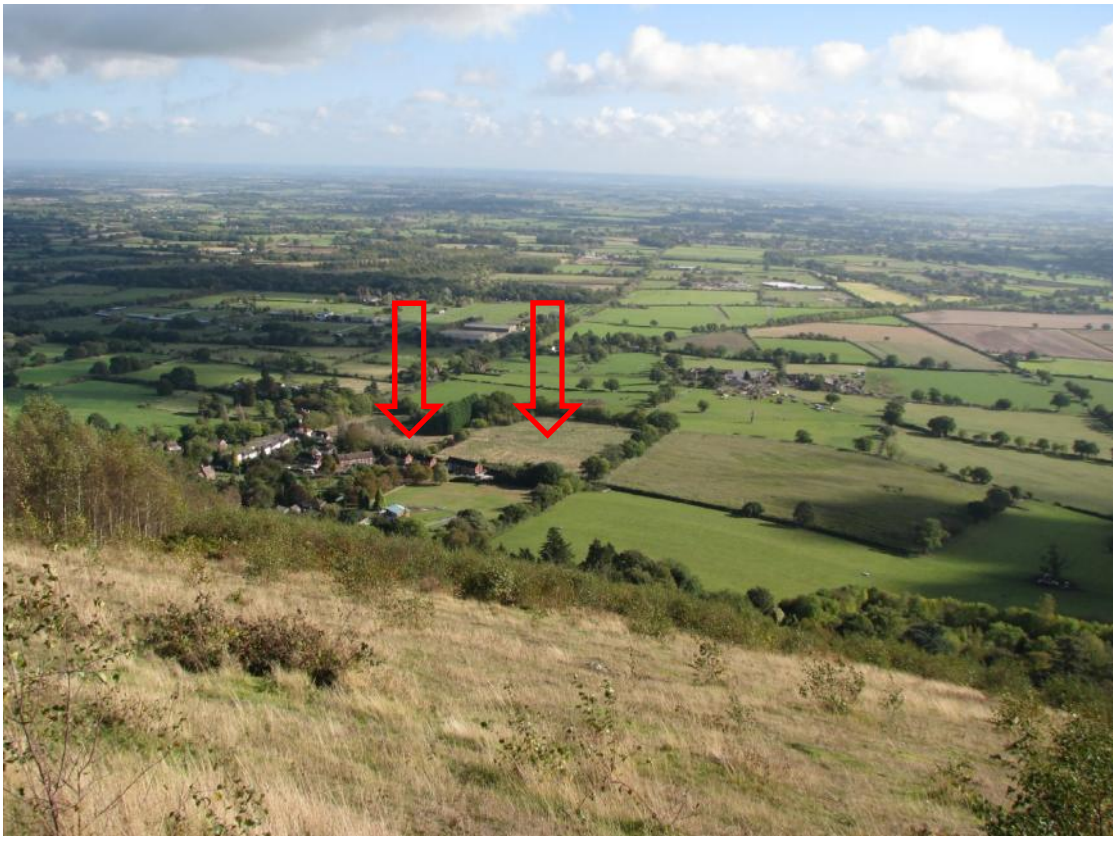


Figure 5.11: Land allocated for the development of housing in the draft South Worcestershire Development Plan. This site allocation was removed from the plan at the request of the Inspector who listened to arguments that the development would compromise the special qualities of the AONB.

Figure 5.12: The site of a proposed development of four industrial-scale poultry units. The proposal for development was withdrawn following concerns made about the magnitude of effects on landscape character and visual amenity.

6. CONCLUSION: THE FUTURE OF MONITORING LANDSCAPE CHANGE IN THE MALVERN HILLS AONB

Overview of Change 2006-16

6.1 This report has examined the state of the Malvern Hills AONB over the decade between 2006 and 2016. As might have been anticipated at the outset, the overall extent of landscape change is found to have been limited and its rate gradual over such a relatively short period of time. The situation is certainly not comparable to that of the main period of change from 1945-80 caused mainly by the postwar industrialisation of agricultural systems (Westmacott and Worthington, 1974 and 2006). Legislative interventions (such as that associated with hedgerow removal – the Hedgerow Regulations 1997 – administered through the planning system) and the availability of voluntary incentive-driven agri-environmental schemes (such as the current Countryside Stewardship scheme) serve to moderate landscape change at the present time. Further, the projects and actions outlined in Section 5, together with the often unaccounted actions of environmentally motivated landowners and occupiers, serve to check negative change and promote positive improvement in the specific landscapes of the AONB.

6.2 Nevertheless, a central argument of this work and that preceding it (Evans and Connolly, 2006) is that incremental change should be given careful attention because, at some stage, as was realised in the late 1970s, the cumulative effect of many small changes becomes 'all of a sudden' noticeable. Monitoring at a fine grain scale, that of the LDU in this case, further permits the nature and direction of change to be are detected and provides a more coherent and evidence-based justification for any early interventions to limit or reverse negative change. This work has attempted to capture such dimensions using a simple typology (Figure 2.1), which also helps to work towards the identification of a forward-looking management vision at the LDU scale.

6.3 Situations where the unity or distinctiveness of the LDUs comprising the AONB landscape are found to be compromised are, in most cases, a legacy of historical change that has occurred before the monitoring commenced (ie. pre-2006). Notions of 'condition' therefore need careful interpretation because they may not be the result of active processes.

6.4 In terms of wider landscapes, the most threatened in the AONB are those where livestock practices have been largely replaced by arable systems of agricultural production, as on Sandstone Estatelands or Settled Farmlands with Pastoral Land Use Landscape Character Types. Woodland management issues, particularly a lack of regeneration, are affecting Principal Wooded Hills; the most extensive Landscape Character Type in the AONB. Scrub encroachment on areas of Unenclosed Commons compromises their character of openness and represents something of a constant battle for land managers. Without the active presence of MHC and their grazing projects, the outlook for the future integrity of these distinctive landscape components of the AONB would be bleak indeed.

6.5 For specific features, it is hedgerow trees that seem to represent most cause for concern by virtue of a lack of replacement; an issue particularly pertinent on Principal Timbered Farmlands. Field trees also suffer in the same vein, but here the subtle changes observed through monitoring are less immediately obvious. Currently, branches are being lost from such trees as they age, rather than the trees themselves, which means that their deterioration is much less apparent. Local

initiatives supported by the AONB, such as through COG reported in Section 5, are helping to stem the loss of traditional orchard trees, but replacement cannot match loss from age and there will continue to be an erosion of these distinctive elements of the AONB landscape.

6.6 The overall conclusion is that landscape change is actively taking place, but in a way that is barely visible to even the keen observer. This is evenly balanced between positive and detrimental change, as Table 4.2 evidences, across LDUs in the AONB. Without the intervention of the AONB Partnership, together with the supporting policies and legislation that has built up around the concept of countryside conservation primarily since the 1980s, the situation would be much worse (a less distinctive landscape), Unfettered change and lack of intervention would have resulted in dramatic alteration to the visible landscape, something akin to that predicted by Westmacott and Worthington (1974) in the 1970s for their study areas by the 1980s.

Reflections on Fixed-Point Monitoring

6.7 The fixed point photographic monitoring gives clear guidance for future management, both in terms of providing evidence for actions to be identified in forthcoming management plans, and for decision-making about the funding of specific projects and initiatives. It is strongly recommended that monitoring of the fixed points continues, although a five-year survey interval may be considered an adequate trade-off between capturing change and conserving scarce resources.

6.8 However, it is recognised that the fixed-point photographic monitoring methodology has its inherent drawbacks and so is not problem-free. The pointing of the camera in one direction can only ever give a partial window out into the landscape of any particular LDU of the AONB; the analogy being one of looking into the dark with a torch, the illumination being only ever partial at best. That said, the photographs provide a powerful visual record and offer a qualitative perspective on landscape change which is consistent with the way in which AONBs were first designated (see Section 1); certainly compared with the generic nature of the quantitative statistical data held by Government bodies. Previous *State of the Malvern Hills* reports (2006, 2009 and 2014) have attempted to capture the complexity of the AONB landscape through photographic material and complementing this by using a range of statistical indicators relating to, for example, changes in the structure of the farming industry, SSSI condition and the levels of uptake of agri-environmental scheme measures. The latter quantitative forms are the best available and have value, so will continue to be used as supporting evidence for reporting on positive and negative landscape change. Nevertheless, such data are typically a proxy for landscape; their collection being for the purpose of measuring other factors, such as wildlife abundance or value for money in the delivery of public goods. They are also subject to shifting targets, which in the case of Government agri-environmental schemes is often influenced by the money available to support them in any one year. These are unstable over time, with changing schemes and variations in the amount of resource available for funding (a pattern has emerged whereby more money has been available in England under CAP Pillar 2 rural development plans at the commencement of the programming period compared with that at the end of it). Such figures are therefore unsuitable for coherent monitoring of landscape over long periods of time; that in which trends in landscape change become firmly discernible. As this report has demonstrated, it is essential to observe even the slightest changes and assess their cumulative effect to gain proper insights

into the nature of landscape change; an exercise that can only be completed over extended timescales.

6.9 Further, few indicators are able to broach the cultural/aesthetic dimension of landscape, thereby failing to capture the human power of landscapes (ones of traditional character) to evoke feelings, provide connection with place (identity) and engender a sense of well-being. Snapshot indicators have emerged only occasionally as a result of specific research projects, such as the Campaign to Protect Rural England's (CPRE) tranquillity one used in *State* reports, but these are often broad brush, standalone and seldom replicated pieces of work. Landscapes are intrinsically about the unseen, as well as the seen, so that measuring hidden components remains a challenge for future monitoring. The fixed-point photographs capture the 'cultural' dimension of landscape to a greater extent than do quantitative data. The use of centroids to define target locations within the LDUs represents some concession to the acknowledgement of cultural bias in the appreciation of natural beauty, as discussed in detail in Section 1. Nevertheless, photographs still require active interpretation to guide the viewer towards processes of stasis and change, thereby explaining the approach of annotation taken in this and previous *State* reports.

6.10 These reasons, together with the fact that a fine-grained stock of visual material has now been accumulated, mean that the continued monitoring of fixed point locations is clearly justified and should continue, building up greater time-depth and thus value in future times. A key strength of the current monitoring using fixed point photography has always been its equal treatment and coverage of all parts of the AONB, not just focusing upon the most 'spectacular' honeypot sites which, for most observers (due to our cultural conditioning about which environments to value in the UK – see 6.9 and Section 1), are associated with High Hills and Slopes. A time-series resource on landscape change throughout all parts of the AONB, not just those that could be considered to exhibit natural beauty to the greatest extent, has therefore been built up for future generations to access.

6.11 With the fixed-point monitoring programme well-established, and its advantages and limitations becoming more and more familiar over the ten years it has been operationalised in the field and analysed in reports, it is appropriate to make tentative suggestions on how to extend and build upon the foundation it has laid.

Future Monitoring

6.12 One way forward is to supplement the fixed (or spatial) points with a more sequential (linear) approach to monitoring. This is best achieved by utilising public rights of way (mainly footpaths), byways, roads and areas of open access that traverse the LDUs. Fortunately, in most cases, as represented on Figure 6.1, evaluation shows that access can be gained to the heart of the LDU broadly following its longest axis for much of its length. Out of the 30 LDUs, only in numbers 1, 16, 24 and 30 is this problematic and it is difficult to enter the centre of the Units. However, even here it is still possible to walk along the perimeter of all and look into the LDU.

6.13 Along such routes, specific features that are characteristic of the LDU could be assessed using simple terminology. These defining features are available from the initial assessments made by County surveyors in the 1990s (Worcestershire) and 2000s (Herefordshire). The precise recordings made will vary according to LDU but, for example, hedgerow condition, presence of hedgerow trees, extent of scrub

encroachment, tree age, landscape intimacy/openness/connectedness could all be noted during a walk through the LDU. An appropriate standard recording form could be compiled, adapted from previous LCA field survey sheets.

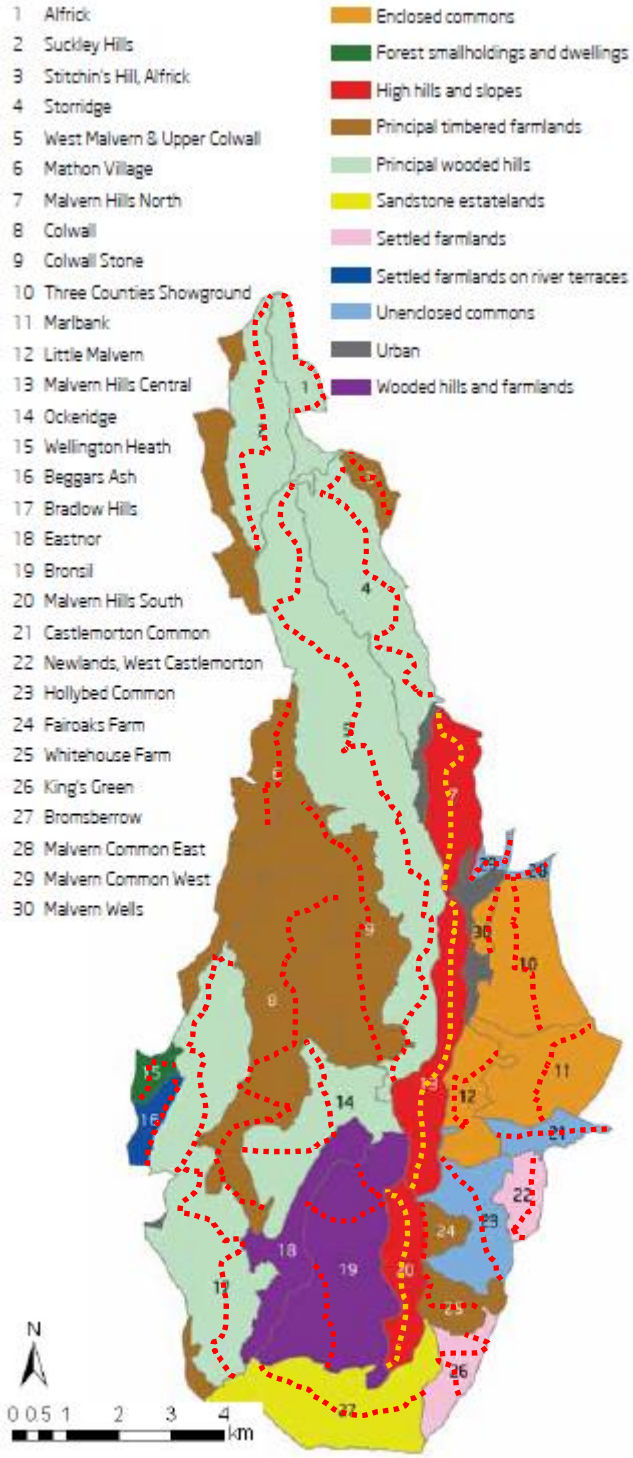


Figure 6.1: LDUs in the AONB with possible walkthrough survey routes based on existing rights of way or other forms of public access through them.

6.14 With scarce resources in mind, it is suggested that six LDUs be 'walkthrough' monitored each year, meaning that complete coverage would be obtained once in every five years; the lifetime of the management plans. These would comprise a mixture of longer and shorter LDU traverses so that a similar distance is covered each year. Table 6.1 outlines a suggested rota for walkthrough surveying, capturing varying route length and diversity of Landscape Character Type.

Table 6.1: Suggested pattern of annual walkthrough surveys for LDUs in the AONB over a five year period based on size of area and Landscape Character Type.

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
LDU (larger)	17	19	8	5	9
LDU	27	11	4	14	10
LDU	13	2	7	18	20
LDU	23	6	26	12	1
LDU	3	16	21	25	22
LDU (smaller)	15	29	30	28	24

6.15 This approach offers considerable flexibility and would make the monitoring process more dynamic than based upon fixed points alone. For example, surveys could be undertaken in different seasons, or walkthroughs could be completed not only routinely by 'expert' surveyors but also by interested laypersons so that the aspects of the landscape important to them could be highlighted. Indeed, there are excellent possibilities for deep and inclusive community engagement with the AONB landscape, such as with the participation of local schoolchildren with the interpretation and assessment of landscape.

6.16 It is envisaged that each route would have a fixed point near to its start, middle and end, walking in a south-north direction to maintain light from behind. The direction of view would be decided more subjectively from that point, based largely upon the extent of view into the LDU. It would also be possible to develop 360 degree panoramas from any one point which would then work in a virtual way, allowing the desk-based viewer to 'look around' with a purpose appropriate to their needs. Between the three fixed reference points, it is expected that the surveyor would be at liberty to take photos of whatever features captured interest during the walkthrough, there being no fixed points or set number of photos required. Each photo would be annotated to record the reason for it being taken and the condition or processes of change (positive or negative) in the landscape that it attempts to capture.

6.17 With such an addition to the monitoring process, comprehensive coverage of all three dimensions of landscape would be achieved (see Figure 1.1). Hence, environmental factors would be included by the cataloguing of features (presence,

abundance), supplemented by secondary data. Aesthetic factors would be recorded in terms of the sensing of patterns, colours and sounds from the experience of completing the LDU walkthroughs. Cultural factors would be reflected in the more personal choice of photographs of surveyors taken along routes and the recording of their meaning to the individual at that point in time.

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