

# What Does the Cotswolds Landscape Do for You?

## The Cotswolds Area of Outstanding Natural Beauty and Landscape Change: Approaches to a 50 Year Perspective

### *Report on a one-day workshop held at the University of Gloucestershire*

*12th June 2014*

1. In June 2014 the Cotswolds Conservation Board convened a meeting of a number of experts to discuss current expectations of long-term change in the Cotswolds AONB. They were keenly aware that in a single day's meeting little more than a sketch of so substantial a task could be achieved, but that even to place a first foot on the road would be worthwhile. Change was to be seen in terms not only of climate, but also of society, economic activity and communication, and the meeting, in the form of a workshop, was to seek to identify some of the areas meriting most attention and possible intervention. A list of those participating is at *Appendix C*.
2. The growth of broadleaf woodland to full stature may take several generations of human lives, and the effects of changes in water availability, in soil structures and in erosion patterns may be capable of mitigation only with lead times of decades. Thus it is not just in the short term that protected landscapes such as Areas of Outstanding Natural Beauty are vulnerable to change. The Cotswolds Conservation Board has become increasingly concerned that as expectations of climate change mature it becomes more and more clear that, if changes to the landscape are to be managed in ways that minimise economic, aesthetic and heritage damage, then planning for them may need to be done according to much longer timescales than have traditionally been the practice.
3. The objective of the workshop was to explore:
  - the key drivers for landscape change
  - the “special qualities of the Cotswolds AONB” identified in the AONB Management Plan and the underlying criteria which led to their selection
  - the nature and scale of landscape change that might be expected in the long term
  - levels of risk to the special qualities
  - landscape resilience and the continued delivery of ecosystem services
  - changes that would be/might be beneficial; and what action needs to be taken to accelerate such changes
  - changes that would be detrimental; and what action needs to be taken to reduce the impact of such changes.
4. A series of introductory addresses focussed the workshop on the following areas:
  - Martin Lane (Director, Cotswolds Conservation Board) on the challenge faced by protected landscapes, the need for a longer-term view and the need to maintain landscape quality

- Mark Connelly (Land Management Officer, Cotswolds Conservation Board), on the special qualities of the Cotswolds, and on the likely impact of climate change;
- Paul Silcock (Cumulus Consultants) and Janet Dwyer (Professor of Rural Policy, University of Gloucestershire) on economic drivers of future change; and
- Hugh Barton (Professor of Planning Health and Sustainability of the WHO Collaborating Centre for Healthy Urban Environments, Bristol) on current social and community issues, and their possible implications for the decades to come.

The remainder of the event was given over to workshop sessions.

5. All participants stressed the high level of uncertainty involved in speculating about such a distant future. There is the possibility that dominant trends in today's world may by then have been reversed, with the current drive to global free trade perhaps replaced by protectionism, or the implications of joining or leaving a European confederation perhaps being well-judged, or else indeed having gone badly awry. Then, there is the complexity of the ecological and economic systems involved, which mean that synergies and inter-relationships which cannot be identified may bring consequences which cannot be foreseen. It was accepted, however, that it was necessary to engage in scenario exercises in order to think sensibly about long-term strategy. Although the future can never be predicted, serious work on assumptions about it can produce invaluable conclusions identifying risks that can be avoided or mitigated, and opportunities that can be seized.

The Cotswolds and climate change

6. In 2010-11, the general thinking on climate change was for rather modest impacts, but already scientists have found that global warming has been faster than first estimated. Such change may be more fundamental than indicated in any of the previous studies, and at the same time there is now more awareness of its effects. Protected landscapes such as AONBs must aim to maintain their quality, but are also likely on current trends to be faced with diminishing public funds. Hence they must choose where to concentrate their efforts if public funding were tighter in future, whilst perhaps withdrawing from some areas where changes must be accepted as inevitable. An aim of the workshop was to begin thinking about these sorts of decisions.
7. The special qualities of the Cotswolds AONB include stone walls, traditional stone-built settlements, woods and hedgerows, and varied topography (Appendix A). The underlying geology has a strong influence, producing three main landscape types of scarp, high wold and river valleys. A significant variation in colour is offered by a combination of walls, grassland and woodlands which is dominant in the west but gives way more to more open arable landscapes in the south-east. The character of the landscape is one of well-managed farms and estates, with good accessibility on public rights of way, and a strong archaeological and historic heritage shown in numerous scheduled monuments, ancient features and historic buildings and parklands.

8. Climate change is predicted to lead to warmer, wetter winters and hotter, drier summers. But big variations were still likely, together with an increase in extreme events causing flooding, storms and drought. The high wolds have fast-draining soils, which could affect agricultural productivity and encourage arable cropping to retreat into the valleys. There will be deliberate changes in the crops grown, invasive species and new diseases; and perhaps more vulnerability, such as a risk of crop failure once every seven years or so. There will be change in tree species, with a diminution in the ubiquitous ash, and probably with loss of beech in the south-east of the AONB, though the prospects for the latter in the north-west are not known. A need to be more energy-efficient could lead to change in the building stock, and this ought to be done in keeping with the area's character – perhaps developing a new Cotswold vernacular style which is zero-carbon but still uses local materials and is designed to work with the landscape.
9. Current trends are for larger-area agriculture, including contract farming services. Hence land acquisition and accumulation continues, with high prices favouring existing owners whenever land parcels come onto the market. This could contribute towards attitudes changing towards sharper short-term commercial profitability at the expense of a more traditional balance of estate management objectives. Increases in food prices and desiccation of pastures may also favour a move away from stock-keeping towards more arable cropping; this could have consequential effects on plant and insect communities, increase eutrophication of water sources, and lead to further loss of traditional dry-stone walls and hedgerows in the landscape.

#### *Economic drivers of change*

10. Although the main activities affecting the Cotswolds landscape are farming and estate management, the AONB's economy is currently dominated by tourism. This is changing over time, with an increase in overnight stays and in weekday visits. The attractiveness of the landscape to tourists will depend on consistent and intelligent management and regulation. A relatively short period of uncontrolled or inappropriate housing development could do lasting damage. Other risks are of an over-manicured countryside that loses its authenticity, and some aspects of agricultural intensification, for example transitions to arable cropping which involve the removal of characteristic dry-stone walls.
11. Rising energy prices will drive more investment in the building stock to improve energy efficiency. They will also stimulate more renewable energy production by solar, anaerobic digestion, biomass or woodfuel, and ground-source heat. Now is the time to consider strategically the impact of such changes on the appearance of buildings in the landscape. Fracking is also a potential activity, though likely to be inhibited by competition from other regions which are more suitable in technical and landscape terms. On current trends, there is likely to be less public funding in future for land management, and more private sector demand for a wider range of land uses – in particular, more land used for housing and for energy generation.

12. The Cotswolds exhibit a wide variety of farm types and land cover, with only around 10% woodland; and a good network of recreational routes of different types. Key economic drivers include the globalisation of prices and markets, with likely upturns in markets for wood products (timber and fuels: there is much unmanaged woodland in the Cotswolds, before turning to new planting) and relatively buoyant food prices reflecting growth in global demand, moderated by greater market volatility. However, higher fossil fuel costs will mean that farm incomes may not rise as much as output prices. Moreover the impact of globalisation may be moderated by an increasing diversity of UK and regional markets, with the potential of a relatively wealthy local population to use more local products marketed through shorter supply chains: the Cotswolds already show enthusiasm for the localism agenda, with interesting examples of community initiatives extending to green tourism and ecosystem services – and more seem likely, adding to resilience.
13. Agri-technological advances could change farming systems and styles, and in combination with climate change will probably bring new crops, more drought-tolerant but also more responsive to warmer temperatures (sunflowers, maize, vines, year-round cropping). Subject to water availability, yields will be higher with the longer growing season. Growth of grasses could be challenged by drought in some areas, contributing to a decline in livestock. More storms and unpredictable weather may provoke more frequent changes in land use and increased use of rotation systems. But overall, shifting drivers for change need interpretation through the lens of local land suitability, land tenure and farmer motivations, and longer-term land-ownership trends.

### *Social and community issues*

14. Landscapes are protected because they are desirable places to be in, and the Cotswolds housing market is correspondingly buoyant: two-fifths of the new houses built become used as second homes, and the ratio of house prices to earnings is very high at 11:1. Thus there is great affluence alongside pockets of deprivation, and local people on ordinary incomes can find housing very hard to secure. Though the population is ageing, 65% of the working population works locally - a relatively high proportion, and some reverse commuting is evident to business parks within the area. Larger settlements have good services, while in smaller ones these struggle and are in decline. Car ownership and use continue to grow, while roads are busy, and for non-car users dangerous.
15. Population growth is likely in future, both in the AONB and in its vicinity; the increase in infrastructure to support it, however, may be mitigated, for example by new small-scale power generation technologies. Safeguarding the special amenity of the area while still providing for housing need and ensuring that local people can afford accommodation is a riddle which has not yet been solved, and needs to be addressed as a very high priority, though the latest wave of local plans should help. Household size continues to fall, but it not clear how this can best be accommodated within the typical Cotswolds house. And though it is certain that additional housing will be required using local stone, many current quarries are

nearing exhaustion: it will be important to make provision accordingly, perhaps by the use of borrow pits near development sites. Improved efficiencies in rail and road travel will further encourage longer-distance commuting, binding the Cotswolds ever closer to the London housing market, though this will be mitigated by the increasing ability to replace travel with electronic communication.

#### Future of the special qualities of the Cotswolds

16. The characteristics which caused the Cotswolds to be designated as an AONB in 1966 (its “special qualities”) are listed below (*Appendix A*). Many of these will not be affected by climate change, such as the unifying character of the limestone geology, the escarpment, or the dry-stone walls. But the future of others is more contingent. Will the communities of plants and animals remain the same? The high wolds will still be there, but will they still be an open landscape with commons, big skies and long-distance views? The workshop was concerned to scope the potential for change affecting the special qualities, and whether there were alternative formulations of the special qualities which would be more appropriate to the Cotswolds of 2064.
17. A number of possible additional or alternative special qualities were explored. These included:
  - The echoes and the concord between the natural and the built environment of the area, where a relatively dense rural population is rooted in limestone and honeycombed into a tumbled landscape;
  - The subtle interaction of different landscape types in a relatively small area (e.g. valleys, dry valleys, exposed rock, meadowlands, open views, beech woodlands);
  - The strategic scale of the landscape, stretching harmoniously across England from the edge of the Somerset levels all the way to the fringes of Warwickshire’s sandstones and lake sediments.
18. There will be a need to approach possible changes, including species changes, with an open mind, and keep open the possibility that certain changes may be beneficial. It is clear that there is much more work to be done in this area.

#### *Water and soils*

19. Looking especially at expectations of climate change, it is clear that certain fundamentals are especially vulnerable. The most important of these are hydrology and soils.
20. Increases in temperature extremes and fluctuations, and in erosion, are believed to be almost inevitable. These would be likely to accelerate the flow of watercourses, increase the incidence of both drought and local flooding, reduce the enrichment of soils from natural processes, and enhance the denudation of soils which are already thin. These processes are expected to be accentuated by economic development and population growth, which would combine to increase pressure for water abstraction, and by a rise in ambient temperatures which would heighten

evaporation and vulnerability to new diseases and invasive species – whose introduction would be more likely as a result of globalisation of trade and international tourism.

21. Issues with neither water nor soils are amenable to corrective action over the short term. They are very much the kind of problem which the present report is intended to bring into focus. If these difficulties are to be avoided, they will need careful and concerted action by partnerships of stakeholders over a long period. It will be important to ensure that water resources are carefully planned, not so much in terms of the Cotswolds themselves, but in terms of the whole Thames catchment. It will be important to rethink how water is held in the landscape, increasing capacity both in rivers and in ponds and farm reservoirs, and weighing carefully the roles both of built development and of hard landscaping and highway drainage. Better low-energy water treatment is needed, along with imaginative Sustainable Urban Drainage Systems, more building designs using grey water productively, improvements in woodland management, and more natural treatment and river realignment options to manage and reduce flooding and drought. Incentives will be vital, and where, as often, better land management practices can lead to better-quality water, the Conservation Board could have a role pressing partners such as the water companies and the Environment Agency to share these economic gains with landowners. It will also be important to raise the profile of soil quality issues among farmers and other land managers, and to keep *au fait* with the implications for soils issues of the new wave of automation of agricultural practice. There is potential for village schemes for renewable energy, sustainable water capture and use, and other greener trends.

## Conclusions

22. Among the risks identified are many which require careful planning if they are to be addressed satisfactorily. Most fundamentally, there is a need to understand what are the basic values which underlie the special qualities for which the Cotswolds AONB was designated. But following the workshop discussion a range of much more specific risks is apparent, including the following:
- i. It is known from other areas such as Spain that there can be too many tourists in an area for its character to be sustained: with a new influx of tourists from highly-populated economies such as China and India such a risk must be present for the Cotswolds.
  - ii. Tourist expenditure is increasingly syphoned away from the local area to corporates elsewhere: can action be taken to minimise such leakage from the local economy?
  - iii. Is a “Cotswolds choice” brand feasible, as a way of supporting marketing and encouraging local economic activity?
  - iv. Part of the attraction of the Cotswolds is the long views, which include very long views from the scarp out over the Severn Vale to Wales: what protection can and should such views enjoy?
  - v. Water stress and disease will threaten some key broadleaf tree species which are very prominent in the landscape: what response will be appropriate?

- vi. When the special qualities come under pressure, it may become necessary to make choices between them: which are the most important? ...should there be special attention to the most vulnerable? ...can they be expressed as ecosystem services?
- vii. Is the experience of planning control over siting and design since the 1947 Act a satisfactory one in terms of the historical settlement pattern in the Cotswolds, and if not what should be the strategy of the planning authorities for this in the future?
- viii. Are there ways of encouraging changes in land management practices which will increase water quality or the retention of field boundaries, and if so might CAP modulation schemes be bent towards ends like these?
- ix. Would it be possible to obtain a derogation from the Department for Transport to apply lower design standards on rural roads in AONB, thus enabling improvements to be made with less adverse landscape impact?
- x. Could the Conservation Board develop with the planning authorities a role in advocacy about what works, offering information and support on 'what successful development looks like'?
- xi. It is a truism of Cotswolds landscape analysis that a key issue is the mix and connections between settlements and open country, and between farmed land, woodland and features such as walls: can the way this balance is produced and sustained be articulated in a way which planning authorities or grant-giving agencies can easily manage?
- xii. Are there ways of slowing down or mitigating deleterious changes?
- xiii. How can issues which have been predicted be identified, and brought onto the agenda at the right time?

23. The workshop was much taken by the suggestion that a key question to ask is 'What does the landscape do for you? Such an expression could help people to understand and appreciate the value of the AONB, and to think about how best to sustain its benefits for the future. Moreover, their answers should encourage the Conservation Board to draw up the essential answer to the question: "What would success look like?" Many practical suggestions came forward at that stage of the discussion, including a Cotswolds water plan, work on the health value of the landscape, improved soil management for resilience and carbon sequestration, better tourism management backed by better knowledge about this sector, stronger Green Infrastructure analysis, and improved architectural advice and influence. In particular, many suggestions were made for pilots and experiments which are not listed here, but two are especially worthy of note:

- research to help strengthen our appreciation of the diversity of ecosystem services which flow to people from the Cotswolds (putting explicit values on these, where possible, to increase their persuasive power); and
- research to engage the public more directly in considering climate change impacts and their reactions to these, through 3D visualisations and a variety of participatory methods, to increase the profile of the AONB among the local population and visitors.

24. One of the strongest conclusions to come out of the workshop was that the Conservation Board should, in consultation with its stakeholders, prepare a long-

term plan for the Cotswolds AONB which would address the key issues relating to such changes. Its primary focus should be on three things:

- (i) a vision of the Cotswolds landscape looking at the longer term;
- (ii) the answer to a question offered to the public: "What can the Cotswolds landscape do for you?"; and
- (iii) the identification of the critical geographical issues, interventions and trade-offs that would be called for in addressing (i) and (ii).

25. In the process of compiling such a Plan, the Conservation Board might be able to draw common themes out of current Local Plans and Neighbourhood Plans in the AONB, to identify the carrying capacity of the Cotswolds for features such as housing or tourism, to draw up a more focused plan for water and perhaps for soils in the Cotswolds, and to encourage research into key areas such as the Special Qualities and the use of the concept of ecosystem services in this work.

26. Another strong conclusion was that the Board should monitor, validate and adjust this Plan, and see itself as an enabler of partnerships to implement it. A key part in this process might be played by inter-institutional case studies and experiments, which should be regularly designed to corroborate aspects of the Plan, and to assess the practicality and effectiveness of possible interventions designed to carry it forward.

## **Appendix A**

### **SPECIAL QUALITIES OF THE COTSWOLDS**

The area is a rich mosaic of historical, social, economic, cultural, geological, geomorphological and ecological features.

The special qualities of the Cotswolds include:

- the unifying character of the limestone geology – its visible presence as natural outcrops, its use as a building material and through the plant and animal communities it supports;
- the Cotswold escarpment, including views to and from it;
- the high wolds – a large open, elevated landscape with commons, ‘big’ skies and long-distance views;
- river valleys, the majority forming the headwaters of the Thames, with high-quality water;
- dry stone walls, which give the AONB its essential character in many areas;
- internationally important flower-rich limestone grasslands;
- internationally important ancient broadleaved woodland, particularly along the crest of the escarpment;
- variations in the colour of the stone from one part of the AONB to another which add a vital element of local distinctiveness;
- the tranquillity of the area;
- well-managed arable and livestock farms;
- distinctive settlements, developed in the Cotswold vernacular, high architectural quality and integrity;
- accessible landscape for quiet recreation;
- and historic associations

## Appendix B

### CONCEPTUALISATION OF PLANNING PROCESS

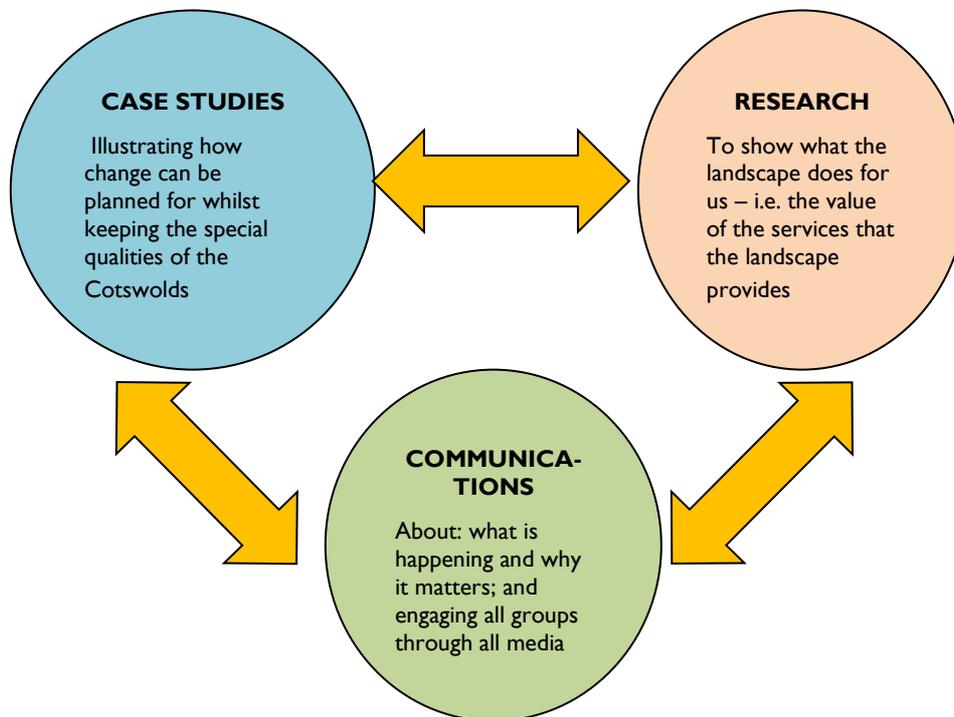
#### Landscape Change in the Cotswolds AONB

(note by Adrian Phillips )

##### Context

The future will bring significant change driven by various factors, e.g. globalisation, climate change and energy, all having a big impact on the landscape of the AONB

##### Strategic Response by CCB



NB this will require a strong emphasis on **partnership** as a way of working

## **Appendix C**

### **PARTICIPANTS AT WORKSHOP**

#### Attendance

##### Experts

1. Janet Dwyer , CCRI, University of Gloucestershire – Farming policy/EU dimension/facilitation
2. Rob Berry, CCRI, Visualisations
3. John Powell, CCRI, Facilitation
4. Ian Houlston, LDA Design – Landscape character
5. Keith Kirby, University of Oxford – forestry and woodland ecology
6. Jeremy Lake, English Heritage – Historic Environment
7. Emma Cross, Environment Agency – Hydrology
8. Joe Morris, Foresight Project – Natural Resources Management
9. Julie Martin, Julie Martin Associates – Landscape Issues
10. Eleanor Brown, Natural England – Geology
11. Lyndis Cole, LUC (Rtd) – Landscape Planning
12. Paul Silcock, Cumulus Consultants – Farming & Economy
13. John Conway, Royal Agricultural University – Soils and Climate Change
14. James Markwick, Natural England, Ecosystems Services
15. Peter Holmes, Natural England, Biodiversity
16. Hugh Barton, UWE (Rtd) – Planning
17. Nick Bumford – Farmer, Guiting Power

##### Cotswolds Conservation Board members and staff

1. Mark Connelly
2. Martin Lane
3. Richard Lloyd
4. Adrian Phillips
5. Val Kirby
6. Mark O’Sullivan
7. Charles Matthew

## Appendix D

### Postscript

1. Following the workshop, further discussion on the long-term implications for the Cotswolds AONB from globalisation, social changes and climate change took place at a meeting of the Board's Conserving and Managing Sub-committee on 11<sup>th</sup> September. A number of additional points and clarifications were made. As they were not part of the workshop discussion it was agreed to add an update to the workshop report as a postscript.
2. Future Landscapes links strongly with three of the purposes of the European Landscape Convention (ELC), namely to promote landscape protection, management of landscapes and landscape planning. The ELC defines these three purposes as:
  - Landscape protection means action to conserve and maintain the significant or characteristic features of a landscape
  - Landscape management means action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonise changes brought about by social, economic and environmental processes.
  - Landscape planning means strong forward-looking action to enhance, restore or create landscapes.

The UK Government signed the ELC in 2006 and it became binding from March 2007.

3. Farming in particular is the main driver for sustaining, or otherwise, the special qualities of the Cotswolds AONB. The state of the natural environment and therefore the Cotswold landscape is partially dependent on Government policy and governance which is subject to change. This could include the possibility of the UK leaving the EU which could have a substantial impact on farming and therefore the Cotswolds AONB.
4. Current rules for Inheritance Tax allow relief up to 100% for business, agricultural property and woodland making farmland attractive as an investment asset. This has helped drive up land prices and encouraged farm consolidation by enabling farmers to borrow against increasing land prices to buy neighbouring land. Non-farming investors look to share-farming. Share farmers are less likely to invest in dry stone wall repair, hedge and ditch maintenance or other beneficial activities normally undertaken by farmer occupiers. Once interest rates begin to rise there is likely to be considerable financial pressure on indebted farmers, particularly if commodity prices continue their downward trend. The potential subsequent fall in land prices could have consequences for the Cotswolds, but probably less compared to elsewhere due to the area's proximity to London and the attraction of the Cotswolds as sporting and amenity land.

5. The Future Landscapes workshop report assumes that energy prices will continue to rise. Some reports suggest that annual household energy bills will rise up to an additional £200 by 2020. However, there is the view that energy prices may stabilise or even fall if oil and gas reserves prove to be more abundant than predicted. One factor in this debate is the potential of unconventional hydrocarbons. The British Geological Survey (BGS) recently estimated there may be 1,329 trillion cubic feet of shale gas. At a 10% recovery rate this would supply 10% of Britain's gas needs for over 30 years. The US is currently constructing a plant to liquefy shale gas for export. This could make exploitation of unconventional gas in the UK less economic although the US president has said Europe must step up its own unconventional gas production.