

Climate Change Strategy for the Cotswolds Area of Outstanding Natural Beauty



Adopted June 2012

Foreword

With the pressing problems of the economy to the fore, we have heard rather less about climate change in the past couple of years. However, the scientific evidence for man-made climate change keeps growing, while the scale of the required policy response seems ever more daunting. For the Cotswolds Conservation Board, which is charged with the care of the Cotswolds landscape, this is worrying news. Many elements of our much loved landscape are under threat from climate change, and its indirect effects on the economy and land use could be serious and far reaching. Because climate change appears to be a slow process, it may not always seem a priority, whether for public policy or private action. But its cumulative implications are such that we have no choice but to address these issues before it is too late.

This is why the Board has drawn up a climate change strategy: to help those who manage land or services in the Cotswolds to work together on the actions they need to take to cope with the consequences of climate change, as well as playing their part in reducing its impact. At a time when environmental conditions are becoming increasingly unstable, we need such a strategy, if the things that we value in the Cotswold landscape are to survive.

Jeff West

Chairman of the Cotswolds Conservation Board

The Cotswolds Area of Outstanding Natural Beauty (AONB)

The Cotswolds Area of Outstanding Natural Beauty (AONB) was designated in 1966 and extended in 1990, under the National Parks and Access to the Countryside Act 1949. The primary purpose of AONB designation is to conserve and enhance the natural beauty of the area.

AONBs are also recognised and valued at the international level. The World Conservation Union (IUCN) considers AONBs to be of international importance as Category V Protected Landscapes and are therefore listed on the World Database of Protected Areas compiled by the United Nations Environment Programme's World Conservation Monitoring Centre

Cotswolds Area of Outstanding Natural Beauty Climate Change Strategy

The Intergovernmental Panel on Climate Change (IPCC) states that 'warming of the climate system is unequivocal' and that 'most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentration' (see Appendix 1). Similar judgements have been reached by the 2006 Stern report for the UK Government, and by other authorities. Indeed, in recent documents such as the Beddington report last year on *The Future of Food and Farming*, climate change is taken as read, and no longer needs to be argued. The best science is agreed that significant climate change cannot be prevented as the century progresses.

Climate change does not mean just warming, with milder winters and warmer summers. It also means more frequent and more accentuated extremes of weather in a variety of ways, such as drought, frost, heavy rain and storms.

The impact on the Cotswolds is likely to be considerable, and lead to changes in the landscape, biodiversity, the historic environment, natural resources, land management and tourism. Many ecosystem services will be threatened and, collectively, such changes could be very damaging. Although there is potential to reduce the extent of climate change through mitigation measures, significant impacts are now inevitable as a result of past greenhouse gas emissions. Moreover, further increases in greenhouse gases are unavoidable, even under the most optimistic of scenarios.

Consequently, climate change is likely to significantly affect the special qualities for which the Cotswolds are designated as an Area of Outstanding Natural Beauty.

A Climate Change Strategy for the Cotswolds AONB

The Cotswolds Conservation Board, in its AONB Management Plan 2008-2013, identified climate change as an external factor that will have a significant impact on the Cotswolds AONB. Specifically, it found a need to develop a Climate Change Action Plan to mitigate and adapt (see below) to the effects of climate change; and a need for research into the effects of climate change on the special qualities of the AONB.

That research was commissioned as a study of the *Impacts of Climate Change and Globalisation on Farming and Forestry in the Cotswolds AONB*. The report of the study also recommended the production of a Climate Change Action Plan, as well as recognizing a need to proof AONB and Board policies for climate change. Its findings have contributed to this Strategy, which the Board now considers to be a more appropriate response at this stage than the original intention of an Action Plan.

Purpose of the Climate Change Strategy

The principal purpose of the strategy is to help those living and working in the AONB to make the Cotswolds more resilient to the impacts of climate change, guiding landscape change in a way that will minimise adverse effects on the inherent character of the area. Its secondary purpose is to help those in the Cotswolds to take part in the wider effort to minimise the extent of future climate change.

The strategy will inform the next Cotswolds AONB Management Plan, due for completion by March 2013, and other policies, guidance and position statements which the Board may adopt in the future.

It is also hoped that this strategy will have an influence on plans and documents produced by other organisations (including local authorities, Natural England, the Forestry Commission, the Environment Agency, the CLA, the NFU, and conservation bodies such as the National Trust and wildlife trusts), as well as on Neighbourhood Development Plans, Village Design Statements and Parish Plans.

Communication of the Strategy is a vital part of its purpose. Issues around that are treated under the theme of *Awareness and Appreciation* below.

Tackling Climate Change

Actions to tackle climate change are normally divided into two groups:

Mitigation – actions that reduce future greenhouse gas emissions, to minimise the extent of future climate change, such as energy efficiency measures, renewable energy generation and optimising livestock diet.

Adaptation – actions that help cope with the consequences of climate change, such as linking habitats, changing farming practices and the use of drought resistant crop varieties.

Themes

The structure of the Strategy is built on eleven themes grouped under three sections drawn from the purposes of the Cotswolds Conservation Board and from the Cotswolds AONB Management Plan. These themes are:

1. Climate Change and the Special Qualities of the Cotswold Landscape

- 1a. Landscape
- 1b. Soil and Water
- 1c. Biodiversity
- 1d. Historic Environment

2. Climate Change and Living and Working in the Cotswolds

- 2a. Farming and Forestry
- 2b. Energy
- 2c. Development and Transport
- 2d. The Cotswolds Economy
- 2e. Health and Wellbeing¹

3. Climate Change and our Understanding and Enjoyment of the Cotswolds

- 3a. Enjoying and Exploring
- 3b. Awareness and Appreciation

¹ 'Health and wellbeing' was not identified as a theme in the existing Management Plan but has emerged as an important topic in the preparation of the new plan.

1. CLIMATE CHANGE AND THE SPECIAL QUALITIES OF THE COTSWOLD LANDSCAPE

1a. Landscape

The Cotswolds are the most prominent and best known part of the band of Oolitic limestone that arcs across England from Dorset to the North Sea. The dominant landform is a steep west-facing escarpment behind which lies the high wold and a long, rolling dip-slope dissected by a series of river valley systems. The Cotswolds AONB Landscape Character Assessment (LCA) identifies 8 principal landscape elements that occur across the AONB, and which, either singly or in combination, contribute to the unique character and quality of the Cotswold landscape. These principal elements are:

- Drystone walls
- Ancient semi-natural woodland and veteran trees
- Permanent pasture including unimproved calcareous grassland
- Archaeological sites and their settings, and remnant historic landscapes
- Vernacular stone buildings and their settings
- Settlement patterns and their relationship to landscape
- Parkland and historic designed landscapes
- Hedges

The LCA also identifies 19 different landscape types within the AONB. Whilst this indicates a great variety of landform and land cover, the Cotswold landscape has nevertheless a strong fundamental unity.

By area, 10% of the Cotswolds AONB is woodland and 86% is farmland. 44% of farmland is grassland (CCB 2009), a total 38% of the AONB

Impacts of climate change on landscape

Collectively the impacts of climate change on the Cotswold landscape are expected to be very considerable.

While the basic pattern of land use is likely to remain relatively unchanged, areas of arable cultivation and grassland may switch to take advantage of deeper, more drought resistant soils for cropping, and there could be a move towards mixed farming, with an increased use of short term leys and of lucerne and clover as green manure. Cropping patterns and timing are expected to change, with the appearance of novel crops and crops for energy production introducing new colours and textures into the landscape. Invasive species may become more prevalent and need more attention.

Drier warmer summers would lead to a 'droughty', parched landscape of bleached grassland, 'thin' arable crops and wilting trees and hedges.

Woodland and tree cover are likely to increase slightly as a result of action to extend and link existing woodlands, and of the planting of copses and shelter belts to increase

cover and protection for livestock and crops. The range of tree species may change, with in particular the potential loss of beech on the thinner soils and on exposed sites.

Hedges, parkland trees and veteran trees are likely to be lost through more frequent drought conditions and extreme weather events.

Increased demand for, and use of, renewable energy may benefit woodlands, but alter the appearance of settlements and individual vernacular buildings.

Aim

The landscape of the Cotswolds should be managed so as to adapt it to the impacts of climate change whilst retaining its special qualities.

Strategy

	Strategy	Stakeholders
L1	Ensure that Board policies and guidance recognise and take account of climate change and the need for mitigation and adaptation.	CCB
L2	Promote understanding of the landscape changes and adaptations likely to result from climate change	Local authorities, tourism bodies and businesses, NE, FC, EA, residents and visitors

1b. Soil and water

Cotswold soils are predominantly thin, well-aerated and brashy (stony), making them prone to drying out. Deeper alluvial and more clay-rich soils are largely restricted to valley bottoms and dip-slope lowlands, and are less well drained and consequently less prone to drought.

The recent average annual rainfall for the Cotswolds AONB has been 800mm. Most of the Cotswolds drain south-east through the river systems and the limestone aquifer. Most Cotswold rivers are tributaries of the Thames, but the River Avon and river systems in the south of the AONB around Bath drain into the Severn Estuary. The Cotswolds are an important source of good quality water both from surface rivers and boreholes into the limestone aquifer, mostly supplied to areas outside the AONB. However, there are some concerns with phosphate and sediment levels in some watercourses and ground water supplies. Because of this 'downstream' demand, Catchment Abstraction Management Strategies (CAMS) class most of the Cotswolds as 'no water available'. The Cotswolds are not at present an area prone to flooding. However, in extreme rainfall events, such as that of July 2007, some towns and villages have been affected by flooding from rivers or as a result of limited drainage.

Predicted impacts of climate change.

Soils: with a predicted 22% decrease in summer rainfall by 2080, the free draining Cotswold soils, particularly the thin brash, will become more prone to drought. Extreme weather events and a predicted 22% overall increase in winter rainfall could lead to flooding and poaching of soils. These combined impacts would lead to soil damage, erosion events and nutrient loss. Soil management practices will become more important.

Water: some stretches of Cotswold rivers are already prone to low flows, resulting in damage to riverine habitat, concentration of pollutants and less water for abstraction. Summers are predicted to become drier, which would exacerbate this problem and further reduce the amount of water available from boreholes in the limestone aquifer. Conversely, the risk of flooding is likely to increase in winter months and following extreme weather events. There is likely to be an increased demand for water capture and storage, for erosion control, and for flood defence schemes. Invasive species may be a growing problem in the aquatic environment.

Aim

Soils and water should be sustained through good management to improve their quality and resistance to climate change.

Strategy

	Strategy	Stakeholders
SW1	Manage soils to increase organic content and resilience to drought and erosion	NE, EA, Farmers and occupiers, landowners/managers, RAC

SW2	Protect water courses from siltation and nutrient enrichment from run-off	NE, FC, EA, Defra
SW3	Avoid low flows due to water abstraction.	EA, Water Companies
SW4	Encourage rainwater harvesting and storage	CCB, Water Companies, local authorities, NFU, CLA, rural businesses, householders.
SW5	Provide information and guidance on rainwater harvesting and sustainable irrigation systems that are consistent with AONB and Board objectives	CCB

1c. Biodiversity

Traditional land management practices have enabled the Cotswolds to support a range of habitats and their dependent flora and fauna. Many sites of importance for biodiversity are the remnants of semi-natural communities and depend on low-intensity land management practices. The Cotswolds AONB contains five SACs, three NNRs, 89 SSSIs and a large number of Local Nature Sites. Many of these areas are under increasing pressure or declining in value as a result of inappropriate management, fragmentation, changes in surrounding land use and management, and perceptions of low importance. Of particular significance in the Cotswolds are unimproved grasslands and meadows, ancient woodland, limestone streams and rivers, and open farmland. These are key elements in the two Nature Improvement Areas identified by the Cotswolds Ecological Network Partnership: the Cotswold Scarp and the Cotswold River Valleys.

Predicted impacts on biodiversity

Climate change will lead to changes in temperature, water, soils and land management. Consequently, areas climatically suited to host particular species and suites of species are likely to migrate, leading to changes in the range and abundance of species, and in some instances to local extinction. This, in turn, would lead to changes in the composition of plant and animal communities and to local extinctions and the establishment of species new to the Cotswolds. There are likely to be changes in the timing of seasonal events leading to a loss of synchrony between species and the resources that they depend on, notably for food and pollination.

Changes in the principal land uses of farming and forestry, such as the timing of cultivation and harvest, new crops and crop varieties, and energy crops (such as miscanthus and short rotation coppice), could adversely affect some species. Such changes could also provide opportunities for more southerly and near continental wild species to become established. Some predicted changes in farming and forestry practice could be beneficial for indigenous species, such as extensive cooperative grazing on the Cotswold grasslands.

Other potential impacts include an increased threat of wild fire. There may also be an increased threat and from a range of pests and diseases such as *Phytophthora ramorum* and chestnut bleeding canker, as well as midge-borne diseases. Invasive species may be a growing problem.

Aim

The impacts of climate change on biodiversity should be mitigated by managing, extending and linking priority habitats, and creating a permeable landscape.

Strategy

	Strategy	Stakeholders
B1	Prevent any further loss of priority habitats (as identified in the Cotswolds AONB Management Plan)	NE, FC, Plantlife, Butterfly Conservation, Wildlife Trusts, local conservation groups, farmers, landowners, LNPs
B2	Ensure priority species (as identified in the Cotswolds AONB Management Plan) have 'climate space' to move in to by linking, extending and connecting priority habitats, and in particular develop two major Nature Improvement Areas (on the Cotswold Scarp and along the Cotswold River Valleys) to increase resilience to the effects of climate change	NE, FC, Plantlife, Butterfly Conservation, Wildlife Trusts, local conservation groups, farmers, landowners, LNPs and other members of the Cotswold Ecological Network Partnership, local planning authorities
B3	Ensure land management schemes include options and prescriptions to suit changing species and habitat needs and trends	NE, FC, Defra, Water Companies, EA
B4	Monitor the impact of climate change on priority habitats and species.	Wildlife trusts, NE, FC, EA
B5	Monitor the impact of pests and diseases and promote management to minimise negative effects	Defra, FC, NE, AHVLA

1d. Historic Environment

The Cotswolds have a particularly rich historic environment ranging from Neolithic longbarrows to Second World War airfields. The Historic Environment Record contains over 17,000 sites within the Cotswolds AONB, including 452 Scheduled Ancient Monuments. The Cotswolds AONB also has 10,433 listed buildings.

The historic dimension of the wider landscape is an important part of the character of the Cotswolds, with 121 historic landscape types identified in the Cotswolds Historic Landscape Character Assessment (HLCA), of which 43 are primary. The Cotswolds were once an area where open field agriculture predominated, and consequently the dominant historic landscape type reflects the enclosure of former open fields, which at their maximum extent covered 65% of the AONB.

Predicted impacts on the historic environment

Warmer, drier summers and wetter winters, along with an increase in extreme weather events such as drought, frost and flooding, would increase the extremes of wetting and drying leading to accelerated decay of stonework and an increased risk of ground subsidence. On the other hand, less frost damage should occur due to milder winters. Increased flooding and erosion may cause damage to buildings and to archaeological sites such as earthworks and buried archaeological deposits, as well as to vernacular features like walls and barns. Structural damage, particularly to buildings and monuments, can also be caused by strong wind, either directly or where trees suffer windthrow.

Changes in agricultural practices and crops could threaten the visibility and integrity of archaeological remains and historic landscapes, particularly historic designed landscapes and traditional farm buildings.

As with farming and forestry, there is an increased risk to buildings and historic landscapes (such as landscaped parks) from pests, diseases and introduced species.

Actions to mitigate and adapt to climate change, such as developing renewable energy sources including biomass crops and associated infrastructure or creating new flood defences and farm reservoirs, can affect archaeological remains and historic buildings, and compromise historic landscapes. Poorly designed or inappropriate energy saving measures can detract from the historic character and fabric of buildings and landscapes.

Aim

The historic environment of the Cotswolds should be managed to protect it from the negative impacts of climate change, whilst making a positive contribution to the understanding of such impacts and to their mitigation and adaptation.

Strategy

	Strategy	Stakeholders
H1	Reduce carbon emissions from traditional Cotswold buildings and adapt them to a changing climate whilst retaining their special characteristics	Planning Authorities, EH, CCB, Property owners and managers
H2	Clarify the thermal efficiency of traditional Cotswold buildings and promulgate the findings	CCB, EH
H3	Manage the historic environment to prevent or minimise damage or loss due to the impacts of climate change	EH, local authorities, landowners and managers, NE
H4	Encourage appropriate design of new energy efficient buildings. New build can incorporate modern techniques as well as old traditional methods re-invented.	Local authorities, EH, Architects and developers
H5	Minimise the visual and physical impact on the historic environment of mitigation schemes such as flood defences and renewable energy infrastructure	EA, local authorities

2. CLIMATE CHANGE AND LIVING AND WORKING IN THE COTSWOLDS

2a. Farming and Forestry

Farming and forestry are the principal drivers of change in the Cotswold landscape, accounting for 96% of the land area. There is an estimated annual farm-gate income of £106million (June 2007), making farming essential for the rural economy and second only to tourism in value. The predicted impact of climate change on farming and forestry will have a major effect on the landscape, on biodiversity and on the economy of the Cotswolds including tourism – indeed, without a well-managed agriculture, tourism may decline.

Predicted impacts on farming

Crop and grass yields are likely to increase, but with a greater variability in quantity and quality, including crop failure. The area of winter wheat and oil seed rape is not expected to change, but new management methods and new varieties (including GM) are likely to be adopted in response to warmer, drier conditions. The area of energy crops and novel crops is likely to increase. The overall area of grassland is not expected to change significantly, but management may become more extensive.

A trend towards reducing livestock numbers is expected to continue and new types and breeds are likely to be introduced.

Different types of pest and disease are to be expected, and more emphasis will need to be placed on soil and nutrient management, water conservation, energy efficiency and on-farm energy production. There could be a move to more mixed farming and inter-farm cooperation in order to make efficient use of manure, slurry and straw. Longer term farm business planning and diversification to spread risk will have greater emphasis.

Predicted impacts on forestry

Increased timber and biomass production can be expected, but with a reduction in quality. Some species, such as oak, are expected to fare better than others, such as beech. More damage from wind, pests, disease and fire is likely.

Changes in rotation length, stocking rates and forestry operations can be expected along with the use of different species and provenance. The current trend towards broadleaves is likely to continue and there could be a drive, nationally, to increase woodland cover slightly. Markets for biomass/woodfuel are likely to increase.

Aim

Farming and forestry should adapt to climate change whilst remaining economically viable and maintaining the special qualities of the Cotswold landscape.

Strategy

	Strategy	Stakeholders
FF1	Adopt land management practices that encompass climate change mitigation and adaptation measures appropriate to the AONB	Landowners, Farmers, NFU, CLA, NE, EA, FC
FF2	Adopt land management schemes (ES and EWGS) that deliver climate change mitigation and adaptation measures	Defra, NE, FC, EA
FF3	Localise food production and supply. Promote Community Farming initiatives	Farm businesses, NFU, CLA, local communities
FF4	Monitor the impact of pests and diseases and promote management to minimise effects	Defra, FC, NE, AHVLA
FF5	Monitor populations of introduced and problem species such as deer and grey squirrel, and promote control measures as necessary	Defra, FC, NFU, CLA, DI, NE, EA, Wildlife Trusts
FF5	Promote energy conservation in agriculture and forestry particularly through reduced use of fossil fuels.	NFU, CLA, Defra, Confor
FF6	Promote forms of farming and forestry business diversification that deliver local energy production appropriate to the AONB	CCB, NFU, CLA, FC, Confor. Energy Agencies

2b. Energy

Energy production in, or immediately adjacent to, the Cotswolds AONB can be controversial, especially energy from wind turbines. However, there are certainly opportunities within the Cotswolds to exploit sources of energy which are consistent with AONB designation. These can include the use of biomass such as woodfuel, solar, anaerobic digestion, air and ground-source heat and micro-hydro. The amount of renewable energy produced within the Cotswolds is slowly increasing: planning consents up to 2012 for energy production total at least 12MW.

Predicted impacts of climate change

Climate change may have little direct effect on energy use in the Cotswolds. However, the national and international emphasis on reducing carbon emissions to contain CO₂ levels will have an effect, and the impact could be increased if the cost of fossil fuels continues to rise.

The first response should be reduced energy use through improved efficiency and insulation. This will pose difficulties with traditional building designs and materials, and specialist architectural advice will be required, though as ambient temperatures go up such interventions will be increasingly helpful in the summer as well as in the winter.

Demand for local sources of renewable energy and heating is expected to increase, and be encouraged by support from government and energy generation companies. Whilst the Cotswolds can produce more energy, care needs to be taken to avoid adverse effects on the special qualities of the AONB.

Small scale renewable energy schemes may be accommodated within the landscape without causing harm, particularly close to existing settlements where man-made structures are already part of the local landscape. There will probably be more community-based energy schemes, affecting some settlements. However, local energy schemes only tend to be viable where the settlement/development is fairly 'dense' to prevent energy loss over distance. Schemes in open countryside, however, could have an unacceptable visual impact, particularly large wind turbines which require exposed locations and can have a visual impact over a wide area.

Increased demand for firewood, woodfuels and feedstock for anaerobic digesters is likely to benefit woodlands and unimproved grasslands by providing an economic function for these habitats which will affect their management. However, management could become unsustainable as demand continues to rise, especially if deer populations in woodlands are not managed. Existing storage facilities may no longer be suitable and may need to be replaced

Planning of renewable energy schemes, and assessment of their acceptability, should take account of any necessary associated infrastructure such as access roads, cables and ancillary buildings. Increased demand for domestic schemes may harm the historic environment through their visual impact on traditional buildings and streetscapes. One way to minimise the impact would be to develop district heating schemes.

Aim

The Cotswolds should provide their share of renewable energy whilst protecting the special qualities of the AONB

Strategy

	Strategy	Stakeholders
E1	Promote energy conservation in stone-built structures in ways that do not affect architectural quality	Local authorities, EH
E2	Promote forms of renewable energy that are consistent with AONB and Board objectives	Local authorities, FC, NA, EA, Energy Agencies
E3	Promote localised (district) heating networks	Local Authorities, developers, local communities, Energy Agencies
E4	Promote increased biomass production consistent with AONB and Board objectives. Priority should be given to biomass from existing woodlands.	CCB, FC, NFU, CLA, Energy Agencies

2c. Development and transport

The use of local limestone has created a distinctive architecture. The importance of this built environment in defining the character of the Cotswolds cannot be stressed too highly. Planning policy aims to ensure that new development respects the character of the Cotswolds, whilst promoting economic and social viability.

The Cotswolds are easily accessible from major population and tourist centres, with motorways and other high-speed roads passing through or close by the AONB, while four railway lines cross the AONB and a fifth runs parallel to the scarp between Birmingham and Bristol. Good accessibility has favoured tourism, and also enabled commuting from the AONB. As a result of the rural nature of the Cotswolds, there is a high reliance on the car which it will be difficult to reduce.

Road transport green-house gas emissions account for 90% of all UK domestic transport emissions and even with improvements in new car fuel economy rose 2% between 1990 and 2009. Cars and taxis account for 58% of domestic greenhouse gas emissions. Emissions are predicted to fall slightly and stabilise below current levels.

Predicted impacts of climate change on development and transport.

Development

Warmer, drier weather, resulting in an increase in visitor numbers, especially in the summer, would lead to pressure to improve infrastructure and develop additional accommodation and attractions as farms and tourist-related rural businesses diversify and expand. New buildings will need to be energy efficient and use forms of renewable energy consistent with the objectives of AONB designation.

Transport

High temperatures can damage rail and road infrastructure and affect passenger comfort. Rising fuel prices may encourage people to use public transport more. However, a switch could occur away from public transport, which may be perceived as too uncomfortable, to private cars with air conditioning. Extreme weather events such as gales and heavy rain can adversely affect road and rail safety as well as leading to flooding, erosion and travel disruption. Warmer, drier weather may lead to increased visitor numbers resulting in traffic congestion, increased noise levels and reduced air quality.

Rising fuel prices and warmer summers could encourage more 'Active travel' (walking and cycling)

Aim

That greenhouse gases and the carbon footprint of development and transport should be reduced and that development and transport should be able to adapt to a changing climate.

Strategy

	Strategy	Stakeholders
DT1	Ensure that all new development is energy and water efficient. Housing should aim towards the Zero Carbon Home Standard	Planning authorities, developers, water companies
DT2	Promote forms of renewable energy that are consistent with AONB and Board objectives	Local authorities, FC, EA
DT3	Ensure that Local Transport Plans contribute to climate change mitigation and adaptation measures	Local authorities
DT4	Protect transport infrastructure from extreme weather events in ways that are consistent with AONB and Board objectives	Local authorities, HA, Network Rail, ATOC
DT5	Ensure that all new and retrofit development recognises the need to compensate for hotter summers and extreme weather events	Local authorities
DT6	Provide charging points for electric vehicles	Local Authorities, accommodation providers
DT7	Ensure increased opportunities for 'Active Travel'. Cycle lanes, well maintained rights of way network etc	Local authorities, HA
DT8	Promote the use of public transport and reduced use of the private cars	Local authorities, Dept for Transport, CCB
DT9	Lobby public transport providers to make sure public transport is an attractive option by providing clean trains and buses with air-conditioning and heating for the comfort of passengers	ATOC, Dept. for Transport, Passenger Focus

2d. The Cotswold Economy

The economically active population of the Cotswolds AONB is around 80,000. The unemployment rate is low, and higher income bands are better represented than the UK average.

The main economic activities within the Cotswolds AONB are tourism and farming, which together employ about 10% of the employed population. Nearly half of the employed population of the AONB work in real estate, manufacturing, and the wholesale and retail trades. Managers and other professional occupations account for some 50% of the working population of the AONB, much higher than the rest of the UK. The AONB has a high proportion of well qualified residents, with over 20% having a degree, while the possession of higher qualifications is 40% above the national average.

Many AONB residents commute to work outside the AONB to places such as Cheltenham, Gloucester, Bristol, Bath, Oxford, Swindon and London. Likewise people from nearby towns and cities outside the AONB travel into the Cotswolds to work as they are priced out of the local Cotswold housing market.

Impacts of climate change

Farming and tourism may see some medium-term benefit from climate change, since agricultural yields are predicted to improve with warmer weather, and the tourism season is likely to be prolonged (see sections 2a and 3a). This in turn would provide opportunities for business diversification, including visitor accommodation, food processing and marketing, new crops and low carbon energy production. But against this there will be reduced water availability, rising energy and transport costs, more frequent droughts and increasingly volatile markets.

Businesses in the Cotswolds will need to mitigate and adapt to the effects of climate change, notably by improving water use and taking precautions against extreme weather events. Meanwhile, national policies to reduce energy use, rising energy prices and greater competitiveness pressures will increase demand for better energy efficiency and encourage more renewable energy production. Improvements in broadband, coupled with rising transport costs, are encouraging people to work from home full-time or part-time. However, for this trend to continue, further improvements in rural broadband provision and speed must be delivered, and businesses need to become more confident in allowing employees to work from home.

Aim

The Cotswolds economy should thrive by mitigating and adapting to the impacts of climate change whilst contributing to the conservation of the special qualities of the Cotswolds AONB.

Strategy

	Strategy	Stakeholders
GEC1	Reduce the need for business travel	Businesses, local authorities
GEC2	Ensure that rural businesses become more energy efficient	Businesses, energy companies, energy agencies
GEC3	Roll-out high speed rural broadband and promote the benefits of its use to business and those working from home.	Local authorities, internet service providers
GEC4	Invest in renewable energy in ways that are consistent with AONB and Board objectives	Local authorities, renewable energy companies , businesses, Energy Agencies
GEC5	Encourage business diversification in ways that are consistent with AONB and Board objectives	Local authorities, businesses
GEC6	Promote sustainable tourism and implement the Board's Sustainable Tourism Strategy.	Local authorities, VisitEngland, CCB
GEC 7	Make appropriate skills and training available to enable business to mitigate and adapt to climate change	Local authorities, LEPs
GEC8	Ensure the provision of affordable housing to reduce the need to commute into the Cotswolds for work	Local authorities CCB

2e Health and Wellbeing

The health of people living in the Cotswolds is generally better than the national average with a higher life expectancy and higher percentages of healthy eating and physical activity. The Cotswolds have lower rates of early death from coronary heart disease, cancer, stroke and respiratory disease and a lower rate of diabetes and anxiety and depression.

The trend in the Cotswolds is towards an increasingly ageing population. Representation of all age groups over 45 is significantly greater than the national average whilst children up to 5 years old and adults between 15 and 29 years old are significantly below the national average. 20% of the resident population is aged 65+ years. There is a higher rate in the Cotswolds of hospital admissions due to falls and a higher rate of excess winter deaths.

Predicted impacts on health and wellbeing

Human health is affected by climate and weather. Though the health effects of predicted climate changes may not be dramatic, they could be significant, especially to those already in poor health. So while milder winters are likely to see a reduction in cold related death and illness, warmer summers are projected to see an increase in heat related death and illness. Respiratory illness and related deaths are likely to increase due to air pollution caused by a rise in ground level ozone. Heat and air quality are likely to become particular issues for outdoor workers along with an increased risk of skin cancer.

Although the numbers of people affected will be small, an increase of extreme weather events, particularly heavy rainfall leading to flooding may lead to increased casualties and with more victims suffering from anxiety, depression and other mental health problems.

Milder winters and to a greater extent warmer summers will provide greater encouragement for people to access the high quality landscape, rights of way and quieter lanes network of the Cotswolds for 'Active Travel' and generally adopt a more active lifestyle leading to benefits of better physical and mental health and wellbeing. Green space with shade in towns and villages and shade along popular recreational routes will become increasingly important.

Strategy

	Strategy	Stakeholders
HW1	Promote the value and availability of access to the Cotswolds for health and wellbeing	CCB, NHS, Health and Wellbeing Boards, NE
HW2	Engage with communities within and adjacent to the AONB to help them overcome the barriers preventing them from receiving	CCB, NE, community leaders, disability groups, local authorities

	the health benefits of the Cotswolds	
HW3	Develop and promote the Guided walks and activities programme to encourage new, non-traditional users.	CCB
HW4	Provide guidance for planting trees for shade in green spaces, along recreational routes and for outdoor workers.	CCB
HW5	Promote 'Active Travel' as an alternative to the car.	CCB, NHS, Health and Wellbeing Boards, NE

3. CLIMATE CHANGE AND OUR UNDERSTANDING AND ENJOYMENT OF THE COTSWOLDS

3a. Enjoying and Exploring

The high quality landscape, wildlife, vernacular buildings, towns and villages have made the Cotswolds a popular and well established destination for visitors from the UK and overseas. An estimated 23 million day visitors a year come to the Cotswolds, making tourism the most economically important sector in the AONB (CCB 2010). This in turn has led to the establishment of a wide range of attractions from parks, gardens and historic buildings to craft centres, museums and historical sites.

As a result of the good accessibility of the Cotswolds and the well maintained and comprehensive public rights of way network, the AONB is popular for walking, cycling and horse riding. The area contains or is crossed by 20 named recreational routes including the Cotswold Way National Trail.

Predicted impacts on Enjoying and Exploring.

Climate influences where tourists come from, where they go and what they do, which has led to the development of a Tourist Comfort Index (TCI) to assist in the tourism assessment of geographic areas. Such analysis shows that up until now the Mediterranean has had the most desirable climate for tourism. However, as a result of climate change, north-west Europe is now seeing an extension of the season when the TCI is more favourable. As a result, an increase in domestic and international tourism activity in the UK is expected.

This is likely to be predominantly focussed around the coastal zone, but the Cotswolds too are likely to experience a longer tourism season and an increase in visitor numbers on the shoulders of the traditional summer peak (i.e. spring/early summer and late summer/early autumn). The peak season itself, however, of June, July and August, could see a slight decline in numbers, as many may come to find it too hot for traditional activities such as walking, cycling, and visiting towns, villages and attractions.

A longer season and increasing visitor numbers are likely to lead to an increase in traffic, litter and noise, and to erosion of infrastructure such as public rights of way and features at popular countryside destinations. A parched landscape may also be less attractive and at a higher risk of wild fire. Demand for new and improved infrastructure is expected to increase, as is demand for water and additional power for accommodation and attractions (e.g. for air conditioning).

Increased numbers of visitors to the Cotswolds would provide economic diversification opportunities for farmers and woodland owners, and could increase the profile of and demand for products from the area.

Aim

Tourism should remain a major part of the Cotswold economy and increase its profile in the off-season and aim to become carbon neutral by adopting appropriate mitigation and adaptation measures whilst ensuring that the Cotswold landscape continues to provide a quality experience.

Strategy

	Strategy	Stakeholders
EE1	Help visitors to the Cotswolds to understand their carbon footprint and how they can reduce it	Accommodation providers, attractions, local authorities
EE2	Develop the tourism industry so that it mitigates and adapts to climate change in ways that are consistent with AONB and Board objectives	Accommodation providers, attractions, local authorities, local tourism bodies, GTBS, DMOs, VisitEngland
EE3	Offer electric car and cycle hire.	Accommodation providers, car companies
EE4	Ensure that new or improved tourism infrastructure is compatible with the character and special qualities of the Cotswolds AONB	Local authorities, HA
EE5	Manage historical and natural features of interest to take account of the impacts of climate change and the potential increased pressure from visitors	NE, EH, local authorities, landowners/managers, wildlife trusts, National Trust
EE6	Demonstrate leadership to other protected landscapes in defining strategies to mitigate and adapt to climate change.	Government, Local Authorities, general public
EE7	Raise awareness of the need for better biosecurity to prevent the spread of disease and problem species.	Local authorities, VisitEngland
EE8	Develop a robust access network which is resilient to the impacts of climate change, including increased usage and demand for new activities	Local authorities
EE9	Take advantage of increased tourism activity and promote	Tourism and rural businesses, local authorities

	business diversification consistent with AONB and Board objectives	
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3c. Awareness and Appreciation

Good quality information, guidance and clear communication are essential to the delivery of the Cotswolds Climate Change Strategy. The audience is diverse and often requiring different styles of approach, ranging as it does from landowners, land managers, businesses, residents and visitors to corporate business, agencies, local authorities and government.

There are two particular challenges in getting the messages out:

- To compete with the current economic and financial situation, and to overcome the attitude that climate change has been exaggerated or can be ignored.
- To overcome reluctance to behavioural change, and in particular the tendency, especially in times of austerity, to feel that it is premature to take action before a problem is actually apparent: it is vital that policy makers, businesses and individuals make plans in good time, including plans for investment and resourcing, to take mitigation measures and to adapt to the impacts of climate change.

An important message is that, regardless of climate change and its predicted impacts, many of the strategies in this document would be worth undertaking in any event, as they will conserve and enhance the special qualities of the AONB and make good business sense.

Aim

Those that live, work or visit the Cotswolds AONB, should be better informed about climate change and its likely impacts on the special features of the Cotswolds, and the measures they can take to mitigate its effects and adapt to a changing climate.

Strategy

		Stakeholders
AA1	Ensure that education and public awareness strategies, plans etc impacting on the Cotswolds AONB encompass climate change mitigation and adaptation measures appropriate to the AONB	Local authorities, agencies, Government departments
AA2	Disseminate widely information about the predicted changes to landscape and the adaptations likely to result from climate change	Local authorities, tourism bodies and businesses, NE, FC, EA, residents and visitors
AA3	Advise those who live, work or visit the Cotswolds AONB about	Residents, visitors and businesses

	their carbon footprint and what they can do to reduce it.	
AA4	Facilitate joined up climate change action across the AONB	Local authorities, agencies
AA5	Ensure the Cotswolds Conservation Board demonstrates and leads on climate change mitigation and adaptation through its policies and practices	CCB
AA6	Adopt CCB policies and guidance that recognise and take account of climate change mitigation and adaptation	
AA7	Identify and reduce the Board's Carbon Footprint.	CCB
AA8	Make available Board research and information on the impacts of climate change and the range of measures to mitigate and adapt.	CCB

Review

The Cotswolds AONB Climate Change Strategy is based on the UKCIP 2009 Climate Change projections. Climate Change science and research is continuing and new projections may well be published sometime in the future. The Cotswolds Climate Change Strategy will need to be reviewed when new projections are published.

Progress made against the strategies will be monitored and reviewed principally by the Board's business planning process using Board actions drawn from the strategy. Linked to the management plan the Board will also be undertaking longer term monitoring of change across the AONB.

Appendix 1

Climate and climate change.

Climate is the average weather experienced over a long time, typically 30 years. The Earth's climate has constantly fluctuated over millennia as a result of natural causes such as changes in orbit, volcanic activity and changes in the sun's activity. However, there is clear evidence that current climate change is not solely the product of natural causes. In 2007 the IPCC concluded that most of the observed increase in global average temperature since the mid 20th century is very likely due to man-made greenhouse gas emissions arising largely from the burning of fossil fuels.

Greenhouse gases such as carbon dioxide, methane and nitrous oxide absorb energy radiated from the Earth's surface, acting like a blanket and artificially warming the atmosphere, increasing global temperatures and changing traditional weather patterns due to increased atmospheric energy. Deforestation is also a major contributor to global climate change, as it leaves fewer trees to absorb carbon dioxide, and the resulting new land uses such as industry and farming are net emitters of greenhouse gases. Since about 1900, the Earth's average near-surface temperature has increased by 0.75 degrees Celsius, and the UK's sea level has risen by about 10 centimetres. Further global rises are expected, as well as more extreme weather events like flooding and drought.

While individual extreme weather events cannot readily be attributed to climate change, the risk of some kinds of event may have increased. Climate change is 'loading the dice', with heatwaves, droughts and heavy rainfall events likely, globally, to occur with increasing frequency. For example, there is evidence that heavy rainfall events are becoming even heavier, and heatwaves are becoming more frequent.

A local example of an extreme weather event is the record breaking rainfall of 20th July 2007, which led to flooding in parts of the Cotswolds and surrounding area. The highest amounts of rainfall were in the north Cotswolds, with Sudeley Lodge recording 147.0mm, followed by Pershore College (120.8mm), Chastleton (115.4 mm), Langley (115.2mm) and Winchcombe(107.7mm); this led to the wettest July on record.

What does this mean for the Cotswolds AONB?

The United Kingdom Climate Impacts Programme (UKCIP) figures show that since the 1960s the Cotswolds AONB has been getting warmer, with average temperatures increasing by 1.4-1.8°C in summer and by 1.8-2.2°C in winter. Temperature increases in the Cotswolds have been less extreme than those observed in South East England, but greater than those experienced in most of Wales, Scotland and the far South West of England.

The Cotswolds AONB has become drier in the summer, with a decline in precipitation of 10-25%, and wetter in the winter with an increase of 10-25% since the 1960s. The decreasing summer rainfall in the Cotswolds has been on a par with that experienced in most of southern England, but greater than that seen in central and eastern England and across most of Scotland. Increases in winter precipitation in the Cotswolds have

been less extreme than that seen across most of the western and south eastern UK, but greater than across central and eastern England.

Using the UKCP09 central estimate for regional projections under the medium emissions scenario, it is projected that by the 2020s temperatures in the Cotswolds are expected to be 1.6°C higher in summer and 1.3°C higher in winter. By the 2080s, summer temperatures are likely to be 3.9°C higher in summer and 2.8°C higher in winter (again compared to 1961-1990 averages). Rainfall in the 2020s is expected to be up to 7% lower in summer and 6% higher in winter and by 2080 is projected to be down by 22% in the summer and up by 22% in winter.

In essence the Cotswolds are experiencing increasingly warmer, drier summers and milder, wetter winters; and also an increase in extreme weather events.

Appendix 2 – Strategies and potential Board actions.

Landscape

	Strategy	Potential Board actions
L1	Ensure that Board policies and guidance recognise and take account of climate change and the need for mitigation and adaptation.	<ul style="list-style-type: none"> • Ensure the Cotswolds AONB Management Plan addresses climate change impacts, mitigation and adaptation. • Instigate a rolling programme to revise the Landscape Strategy and Guidelines, position statements and guidance to ensure they are proofed for climate change
L2	Promote understanding of the landscape changes and adaptations likely to result from climate change	<ul style="list-style-type: none"> • Consult on the Management Plan. • Consult LAs etc on the Climate Change Strategy • Include articles on climate change issues in the Cotswold Lion and on the website • Display material in ‘Escape’ • Brief guided walks leaders

Soil and Water

	Strategy	Potential Board actions
SW1	Manage soils to increase organic content and resilience to drought and erosion	<ul style="list-style-type: none"> • Consider publishing specific guidance for thin, brashy soils. • Promote the use of rotational leys particularly where arable reversion has been unsuccessful in delivering biodiversity and heritage benefits
SW2	Protect water courses from siltation and nutrient enrichment from run-off	<ul style="list-style-type: none"> • Engage with the WFD Catchment Plans and their implementation. • Engage with the CSF project
SW3	Avoid low flows due to water abstraction.	
SW4	Encourage rainwater harvesting and storage	<ul style="list-style-type: none"> • Produce fact sheet on rainwater harvesting and sustainable irrigation
SW5	Provide information and guidance on rainwater harvesting and sustainable irrigation systems that are consistent with AONB and Board objectives	<ul style="list-style-type: none"> • Produce fact sheet on rainwater harvesting and sustainable irrigation

Biodiversity

	Strategy	Potential Board Actions
B1	Prevent any further loss of priority habitats (as identified in the Cotswolds AONB Management Plan)	<ul style="list-style-type: none"> • Develop and promote large habitat areas and improved habitat connectivity and the proposals for Nature Improvement Areas • Ensure Agri-environment schemes offer appropriate options to retain existing habitats and are available to all land managers
B2	Ensure priority species (as identified in the Cotswolds AONB Management Plan) have 'climate space' to move in to by linking, extending and connecting priority habitats, and in particular develop two major Nature Improvement Areas (on the Cotswold Scarp and along the Cotswold River Valleys) to increase resilience to the effects of climate change	<ul style="list-style-type: none"> • Include appropriate strategies in the LS&G • Develop and promote the Cotswolds Ecological network and the proposals for Nature Improvement Areas • Commission a study into the feasibility of co-operative 'ranching' on the scarp
B3	Ensure land management schemes include options and prescriptions to suit changing species and habitat needs and trends	<ul style="list-style-type: none"> • Engage in NCA objective setting • Ensure land management scheme options and prescriptions deliver for Cotswold habitats and species
B4	Monitor the impact of climate change on priority habitats and species within the AONB	<ul style="list-style-type: none"> • Collate AONB wide monitoring data
B5	Monitor the impact of pests and diseases and promote management to minimise negative effects	<ul style="list-style-type: none"> • Monitor Defra, FC and AHVLA websites

Historic Environment

	Strategy	Potential Board actions
H1	Reduce carbon emissions from traditional Cotswold buildings and adapt them to a changing climate whilst retaining their special characteristics	<ul style="list-style-type: none"> • Produce Cotswold specific guidance for home owners
H2	Clarify the thermal efficiency of traditional Cotswold buildings and promulgate the findings	<ul style="list-style-type: none"> • Include in guidance above
H2	Manage the historic environment to prevent or minimise damage or loss due to the impacts of climate change	<ul style="list-style-type: none"> • Ensure Agri-environment schemes offer appropriate options
H4	Encourage appropriate design of new energy efficient buildings. New build can incorporate modern techniques as well as old traditional methods re-invented.	
H3	Minimise the visual and physical	<ul style="list-style-type: none"> • Comment on proposals for flood defence and

	impact on the historic environment of mitigation schemes such as flood defences and renewable energy infrastructure	alleviation and renewable energy projects as appropriate
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Farming and Forestry

	Strategy	Potential Board actions
FF1	Adopt land management practices that encompass climate change mitigation and adaptation measures appropriate to the AONB	<ul style="list-style-type: none"> • Produce guidance for land managers as necessary • Ensure NE, EA and FC are aware of LS&G and inform of any updates
FF2	Adopt land management schemes that deliver climate change mitigation and adaptation measures	<ul style="list-style-type: none"> • Ensure land management schemes contain options to deliver mitigation and adaptation measures appropriate to the Cotswolds
FF3	Localise food production and supply. Promote Community Farming initiatives	<ul style="list-style-type: none"> • Revise 'Cotswold Choice' and seek funding to establish the brand.
FF4	Monitor the impact of pests and diseases and promote management to minimise effects	<ul style="list-style-type: none"> • Monitor Defra, FC and AHVLA websites • Ensure any resulting action is appropriate to the Cotswolds AONB
FF5	Monitor populations of introduced and problem species such as deer and grey squirrel, and promote control measures as necessary	<ul style="list-style-type: none"> • Monitor Defra, FC and DI websites and raise awareness with partners as to the issues and actions needed • Promote co-operative management of deer and grey squirrel
FF5	Promote energy conservation in agriculture and forestry particularly the reduction in fossil fuel use	<ul style="list-style-type: none"> • Include in Climate Change Advisory Service
FF6	Promote forms of farming and forestry business diversification that deliver local energy production appropriate to the AONB	<ul style="list-style-type: none"> • Produce fact sheets on small scale energy production

Energy

	Strategy	Potential Board actions
E1	Promote energy conservation in stone-built structures in ways that do not affect architectural quality	<ul style="list-style-type: none"> • Promote guidance as necessary
E2	Promote forms of renewable energy that are consistent with AONB and Board objectives	<ul style="list-style-type: none"> • Review if necessary the Board's position statement and guidance on renewable energy and promote widely • Support planning applications for renewable energy schemes appropriate for the Cotswolds AONB

E3	Promote localised (district) heating networks	<ul style="list-style-type: none"> • As above
E4	Promote increased biomass production consistent with AONB and Board objectives. Priority should be given to biomass from existing woodlands.	<ul style="list-style-type: none"> • Revise Biomass Fact Sheet • Revise Miscanthus Position Statement

Development and Transport

	Strategy	Potential Board actions
DT1	Ensure that all new development is energy and water efficient. Housing should aim towards the Zero Carbon Home Standard	<ul style="list-style-type: none"> • Review the Board's Position Statements covering development on
DT2	Promote forms of renewable energy that are consistent with AONB and Board objectives	<ul style="list-style-type: none"> • Review if necessary the Board's position statement and guidance and promote widely • Support planning applications for renewable energy schemes appropriate for the Cotswolds AONB
DT3	Ensure that Local Transport Plans contribute to climate change mitigation and adaptation measures	<ul style="list-style-type: none"> • Comment on LTPs as appropriate
DT4	Protect transport infrastructure from extreme weather events in ways that are consistent with AONB and Board objectives	<ul style="list-style-type: none"> • Monitor proposals to upgrade infrastructure
DT5	Ensure that all new and retrofit development recognises the need to compensate for hotter, intense summers and extreme weather events	<ul style="list-style-type: none"> • Review the Board's Development Position Statements
DT6	Provide charging points for electric vehicles	<ul style="list-style-type: none"> • Install charging point at Board's offices. • Pilot with accommodation providers via the Board's Climate Change Adviser
DT7	Ensure increased opportunities for 'Active Travel'. Cycle lanes, well maintained rights of way network etc	<ul style="list-style-type: none"> • Include in responses to LTPs • Continue RoW improvements with Wardens
DT8	Promote the use of public transport and reduced use of the private cars	<ul style="list-style-type: none"> • Explore the Cotswolds By Public Transport
DT9	Lobby public transport providers to make sure public transport is an attractive option by providing clean trains and buses with air-conditioning and heating for the comfort of passengers	

The Cotswold Economy

	Strategy	Potential Board actions
GEC1	Reduce the need for business travel	

GEC2	Ensure that rural businesses become more energy efficient	<ul style="list-style-type: none"> • Offer guidance and assistance through the Board's Climate Change Adviser
GEC3	Roll-out high speed rural broadband and promote the benefits of its use to business	<ul style="list-style-type: none"> • Support roll-out of high speed broadband
GEC4	Invest in renewable energy in ways which are consistent with AONB and Board objectives	<ul style="list-style-type: none"> • Offer guidance and assistance through the Board's Climate Change Adviser
GEC5	Encourage business diversification in ways which are consistent with AONB and Board objectives	<ul style="list-style-type: none"> • Monitor planning applications
GEC6	Promote sustainable tourism and implement the Board's Sustainable Tourism Strategy.	<ul style="list-style-type: none"> • Implement the Board's Sustainable Tourism Strategy
GEC 7	Make appropriate skills and training available to enable business to mitigate and adapt to climate change	<ul style="list-style-type: none"> • Offer guidance and assistance through the Board's Climate Change Adviser
GEC8	Ensure the provision of affordable housing to reduce the need to commute into the Cotswolds for work	

Health and Wellbeing

	Strategy	Potential Board Actions
HW1	Promote the value and availability of access to the Cotswolds for health and wellbeing	<ul style="list-style-type: none"> • Develop and promote the Guided Walks programme. • Promote the Escape website
HW2	Engage with communities within and adjacent to the AONB to help them overcome the barriers preventing them from receiving the health benefits of the Cotswolds	<ul style="list-style-type: none"> • Seek opportunities for funding the 'My Country Countryside' package
HW3	Develop and promote the Guided walks and activities programme to encourage new, non-traditional users.	<ul style="list-style-type: none"> • Develop and promote the Guided Walks programme. • Promote the Escape website
HW4	Provide guidance for planting trees for shade in green spaces, along recreational routes and for outdoor workers.	<ul style="list-style-type: none"> • Review of Landscape Strategies and Guidelines • Review of Cotswold Way National Trail Strategy
HW5	Promote 'Active Travel' as an alternative to the car.	

Enjoying and Exploring

	Strategy	Potential Board actions
EE1	Help visitors to the Cotswolds to understand their carbon footprint and how they can reduce it	<ul style="list-style-type: none"> • Promote Green Tourism and Green Tourism businesses. • Include articles on climate change issues in the Cotswold Lion and on the website

EE2	Develop the tourism industry so that it mitigates and adapts to climate change in ways that are consistent with AONB and Board objectives	<ul style="list-style-type: none"> • Offer guidance and assistance through the Board's Climate Change Adviser
EE3	Offer electric car and cycle hire.	<ul style="list-style-type: none"> • Seek support for a pilot project
EE4	Ensure that new or improved tourism infrastructure is compatible with the character and special qualities of the Cotswolds AONB	<ul style="list-style-type: none"> • Monitor planning applications
EE5	Manage historical and natural features to take account of the impacts of climate change and the potential increased pressure from visitors	<ul style="list-style-type: none"> • Engage with land managers to identify problem locations • Identify and promote best practice
EE6	Demonstrate leadership to other protected landscapes in defining strategies to mitigate and adapt to climate change.	<ul style="list-style-type: none"> • Circulate Climate Change Strategy to other protected landscapes, government departments and agencies
EE7	Raise awareness of the need for better biosecurity to prevent the spread of disease and problem species	<ul style="list-style-type: none"> • Produce guidance note
EE8	Develop a robust access network which is resilient to the impacts of climate change, including increased usage and demand for new activities	<ul style="list-style-type: none"> • Comment on ROWIPs/LTPs • Engage with land managers to identify problem locations • Identify and promote best practice
EE9	Take advantage of increased tourism activity and promote business diversification consistent with AONB and Board objectives	<ul style="list-style-type: none"> • Produce position statement/guidance

Awareness and Appreciation

	Strategy	Potential Board actions
AA1	Ensure that education and public awareness strategies, plans etc impacting on the Cotswolds AONB encompass climate change mitigation and adaptation measures appropriate to the AONB	Engage with consultations
AA2	Disseminate widely information about the predicted changes to landscape and the adaptations likely to result from climate change	<ul style="list-style-type: none"> • Consult on the Management Plan • Consult LAs etc on the Climate Change Strategy • Promote the Climate Change Strategy • Include articles on climate change issues in the

		<p>Cotswold Lion and on the website</p> <ul style="list-style-type: none"> • Display material in 'Escape' • Brief guided walks leaders
AA3	Advise those who live, work or visit the Cotswolds AONB about their carbon footprint and what they can do to reduce it.	<ul style="list-style-type: none"> • Promote Green Tourism and Green Tourism businesses. • Include articles on climate change issues in the Cotswold Lion and on the website
AA4	Facilitate joined up climate change action across the AONB	<ul style="list-style-type: none"> • Engage with LA and agency consultations with a consistent message. • Ensure the Cotswolds AONB Management Plan addresses climate change impacts, mitigation and adaptation. • Circulate Climate Change Strategy
AA5	Ensure the Cotswolds Conservation Board demonstrates and leads on climate change mitigation and adaptation through its policies and practices	
AA6	Adopt CCB policies and guidance that recognise and take account of climate change mitigation and adaptation	<ul style="list-style-type: none"> • Ensure the Cotswolds AONB Management Plan addresses climate change impacts, mitigation and adaptation. • Instigate a rolling programme to revise the Landscape Strategy and Guidelines, position statements and guidance to ensure they are 'climate change proof'
AA7	Identify and reduce the Board's Carbon Footprint.	<ul style="list-style-type: none"> • Calculate Board's carbon footprint • Produce an action plan to reduce the carbon footprint and monitor progress
AA8	Make available Board research and information on the impacts of climate change and the range of measures to mitigate and adapt.	Publish research and information on the Board's website

Appendix 3

Acronyms.

AHVLA	Animal Health and Veterinary Laboratories Agency
AONB	Area of Outstanding Natural Beauty
ATOC	Association of Train Operating Companies
CCB	Cotswolds Conservation Board
CLA	Country Land and Business Association
Defra	Department for the Environment, Farming and Rural Affairs
DI	Deer Initiative
DMO	Destination Management Organisation
EA	Environment Agency
EH	English Heritage
FC	Forestry Commission
GTBS	Green Tourism Business Scheme
HA	Highways Agency
IPCC	Inter-governmental Panel on Climate Change
LA	Local Authorities
LCA	Landscape Character Assessment
LEP	Local Economic Partnership
LNP	Local Nature Partnership
LS&G	Landscape Strategy and Guidelines
LTP	Local Transport Plan
NE	Natural England
NFU	National Farmers Union
NHS	National Health Service
RAC	Royal Agricultural College
ROWIP	Rights of Way Improvement Plan
SAC	Special Area of Conservation
UKCP	United Kingdom Climate Change Projections

Appendix 4

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