

Forces for change

Three interlinked overarching external ‘forces for change’ will impact significantly on the Cotswolds AONB:

- climate change and our response to it
- the effects of globalisation on agricultural land use
- pressures from development, changing lifestyles and transportation

The AONB cannot be immune to their effects. Moreover these issues will affect the special qualities of the AONB. Therefore the Management Plan needs to set out clearly how the Board intends to address them.

Objectives

The following are the Board’s objectives regarding these issues:

CCO1: By 2010, the likely impacts of climate change on the character of the Cotswolds are understood and a strategic response has been developed.

CCO2: By 2013 a comprehensive programme of measures to mitigate the effects of and adapt to the consequences of climate change is in place and being implemented.

GLO1: By 2010 the potential adverse impacts of globalisation on agricultural land use are understood, and a strategic response is in place to secure the conservation and enhancement of landscape character.

PO1: By 2013 a robust framework of strategies and plans is in place to secure development¹ in and around the AONB, which contributes to the social and economic wellbeing of the Cotswolds whilst conserving and enhancing its distinctive character and enabling greater understanding and enjoyment of its special qualities.



¹ Development includes transport infrastructure and service provision.

Climate change/global warming: the evidence

Global warming is “*unequivocal*”. This is the finding of the latest report of the Intergovernmental Panel on Climate Change (IPCC).² The report also states 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 concentrations*”.

The role of the Cotswolds AONB

As the largest designated area in southern England, the Cotswolds AONB can play a significant part in the response to climate change. Through the Management Plan, the partnerships involved can develop a comprehensive approach to mitigate and adapt to climate change within, and to some extent around, the AONB. This is particularly the case with the provision of water supplies and control of flooding, species and habitat adaptation, tourism provision and renewable energy generation.

Future climate scenarios for the Cotswolds AONB

For the Cotswolds AONB, the likely changes in climate are, broadly, as follows:³

- The Cotswolds will continue to get warmer
- Summers will continue to get hotter and drier (with exceptions to the trend)
- Winters will continue to get milder and wetter (with exceptions to the trend)

² ‘IPCC Fourth Assessment Report: Climate Change’, (2007).

³ ‘Warming to the Idea: meeting the challenge of Climate Change in the South West, South West Region Climate Change Impacts Scoping Study’, South West Climate Change Impacts Partnership, 2003; also, the UK Climate Impacts Partnership (UKCIP) website.

- Some weather extremes will become more common, others less common:

- the number of very hot summer days is expected to increase
- the number of very cold winter days is expected to decrease
- winter storms and mild, wet and windy winter weather are expected to become more frequent

Potential impact of climate change on the Cotswolds AONB

The impact of climate change on the landscape of the Cotswolds may be considerable. An analysis of predicted trends in rainfall, temperatures and wind speeds will provide an indication of the actions that may be required to mitigate the causes of climate change, and to adapt to the changes which occur.

Climate change will potentially impact on all aspects of the Cotswolds AONB, including:^{4,5} **landscape; biodiversity; the historic environment; natural resources (rivers, wetlands, water resources and soil); rural land management (agriculture and forestry); and enjoying and exploring (tourism and access).**⁶

⁴ ‘Warming to the Idea: meeting the challenge of Climate Change in the South West, South West Region Climate Change Impacts Scoping Study’, South West Climate Change Impacts Partnership, 2003.

⁵ ‘The Potential Impacts of Climate Change on the Cotswolds Area of Outstanding Natural Beauty: Attempts Towards Determination and Recommendations for Action’, Richard Garland. Thesis submitted in partial fulfilment of the requirement for the MSc Degree in Rural Estate Management, Royal Agricultural College (2006).

⁶ More information on the likely impacts are set out in the relevant section of this plan.



The kind of consequences that may occur include the following, all of which would seriously affect the landscape of the AONB:

- A possible loss of trees, especially beech trees on the scarp.
- The impacts that come from more intensive farming and the growing of farm crops that are currently associated with southern Europe.
- Increased pressure on water resources, with more intensive droughts leading to falling water tables, and flooding leading to calls for flood protection engineering.
- The growing of biofuels to replace fossil fuels.
- The development pressures that may be created by tourism patterns, and even human population migrations, in response to less hospitable climatic conditions in southern Europe.

- Pressures on species and habitats that are adapted to today's climate. In this respect, there will be difficult choices concerning when to abandon efforts to maintain the 'status quo'.

Consequently climate change will affect the character of the area in many ways. If these changes were to become collectively very damaging, it is not unthinkable that the designation of the Cotswolds as an AONB might come into question.

It is therefore important that the Board is properly informed of the likelihood and scale of the possible changes, and takes immediate action in respect of mitigation and adaptation measures (see below). However, a more comprehensive climate change action plan for the Cotswolds AONB will need to be developed within the timescale of this Management Plan.⁷

Climate change - understanding

Policy	
CCP1: <i>That the impact of climate change on the Cotswolds AONB is understood and a strategic response is developed.</i>	
Actions	Tasks
CCA1: Encourage, support and analyse research on the impact of climate change on the Cotswolds AONB.	CCT1: Be actively involved in regional fora and other groups researching the impact of climate change.
	CCT2: Monitor and analyse climate change research findings and their implications for the special qualities of the Cotswolds AONB.
CCA2: Agree an action plan by 2010 to encourage all those involved in the management of the AONB to address climate change issues by adapting land uses and by exploiting new opportunities arising out of mitigation strategies.	CCT3: Promote agreed Climate Change Action Plan to land managers.

⁷ More information on possible management strategies and a case study is available on the Board's website www.cotswoldsaonb.org.uk

Addressing climate change in the Cotswolds AONB - mitigation

Future climate change scenarios are heavily dependent on current and future greenhouse gas emissions. Reducing the global carbon footprint by achieving reductions in greenhouse gas emissions will potentially reduce the degree and impact of climate change. To achieve this, the Climate Change Bill puts into statute the UK's targets to reduce carbon dioxide emissions through domestic and international action by at least 60% by 2050 and 26-32% by 2020, against a 1990 baseline.⁸

All organisations in the Cotswolds have their part to play in reducing their greenhouse gas emissions, for example, through:

- increasing energy efficiency
- using appropriate forms of renewable energy
- reducing car use and using public transport more

The Board will be setting an example by looking at its own carbon footprint and developing a programme to reduce it.

Climate change - mitigation

Policy	
CCP2: <i>That measures are taken to mitigate the causes of climate change.</i>	
Actions	Tasks
CCA3: Encourage and support energy conservation measures in order to help meet national and regional targets for energy consumption in order to mitigate the impact of climate change by reducing greenhouse gas emissions.	CCT4: Be active in regional and local fora involved in promoting energy conservation measures.
	CCT5: Provide and promote advice on energy conservation measures to reduce the 'carbon footprint' of the Cotswolds compatible with the character and appearance of the landscape.
CCA4: Encourage and support appropriate scale renewable energy generation in order to help meet national and regional targets for renewable energy generation to mitigate the impact of climate change by reducing greenhouse gas emissions.	CCT6: Develop and implement a carbon footprint reduction action plan in relation to the Board's own activities.
	CCT7: Be involved in regional and local fora promoting renewable energy compatible with the character and appearance of the landscape.
	CCT8: Provide and promote advice on renewable energy technologies compatible with the character and appearance of the landscape.

⁸ Climate Change Bill, published October 2007.

Addressing climate change in the Cotswolds AONB - adaptation

Although there is the potential to reduce the extent of climate change through mitigation measures, significant impacts will still occur because past greenhouse gas emissions have already raised carbon dioxide levels in the atmosphere. A further increase appears unavoidable even under the most optimistic of scenarios. For the Cotswolds AONB, this will potentially pose a threat to the natural beauty of the area and its designation as an AONB.

The Board therefore needs to consider how it and partner organisations involved in managing the AONB can help the area to adapt to the impacts of climate change in a way that helps to conserve and enhance the natural beauty of the AONB. The following table sets out the policies, actions and tasks that will help to address this issue.



Climate change - adaptation

Policy	
CCP3: <i>That measures are in place to adapt to the likely impacts of climate change.</i>	
Actions	Tasks
CCA5: Analyse published research by 2010 to better understand and disseminate the implications of climate change on the special qualities of the Cotswolds and by 2013 to agree an action plan to implement measures to adapt to these impacts, and identify the effects of these measures on existing landscape character.	CCT9: Analyse published research into the likely impacts of climate change on the Cotswolds landscapes.
	CCT10: Develop and promote adaptation policies as part of a Climate Change Action Plan (see CCA2).

Globalisation and the effects of agricultural land use

Farming in the UK is increasingly being opened up to global markets. European agricultural support mechanisms are moving away from supporting prices.

Pressures on global food supplies are arising from:

- new consumption patterns in the developing world, particularly in India and China
- the global impacts of climate change on the growing of crops and loss of agricultural land
- the growing of biofuels in place of food crops

As a result, food commodity prices are rising worldwide and there will be increasing pressure to intensify production in the UK as food surpluses become a thing of the past. This process has already begun with the removal from 2008 of the European Union requirement to 'set aside' arable land, with a potential adverse impact on landscape and biodiversity in the Cotswolds, particularly arable plants and farmland birds.

The impact of intensification on the character of the Cotswolds is likely to be negative if not managed with the conservation and enhancement of the area in mind. We have the experience of the intensification of agricultural production during and after the Second World War, which resulted in a loss of character as stone walls and hedges were removed to amalgamate fields, grassland was converted to arable land, wetlands were drained and woodland was cleared. Intensification can also lead to loss of biodiversity and historic environment features.

Such intensification of production may be inhibited by the cost of fuel which is increasing in response to rising world-wide demand. Some oil and gas analysts suggest that the production of oil and gas may have already peaked, or will peak in the next decade. If this is the

case, the demand for alternative fuels will increase the call for biofuels production at the expense of food and potentially of the landscape.

Acting alone the Board can have negligible impacts on such global forces. What it can do is try to understand the potential impacts of these forces and prepare responses to them and thereby influence the impact of national policies as they are developed. In this way, the purpose of designation can be secured. This could include examining different scenarios; for example, an industrial-scale farm economy versus a more specialised rural economy exploiting niche markets whilst conserving landscape character.

More information on the Board's policies, actions and tasks in relation to rural land management can be found in the Rural Land Management Section.



Climate change - globalisation

Policy	
GLOP1: <i>That the likely impact of globalisation on agricultural land use in the AONB is understood and a strategic response is in place.</i>	
Action	Tasks
GLOA1: To analyse published research by 2009 to better understand and disseminate the implications of globalisation on the special qualities of the Cotswolds and by 2010 agree an action plan to implement measures to adapt to these impacts, and identify the effect of these measures on existing landscape character.	GLOT1: Analyse published research into the likely impacts of globalisation on the Cotswolds landscape.
	GLOT2: Develop policy responses to mitigate and adapt to the identified impacts of globalisation on agricultural land use.

Pressures from development, changing lifestyles and transportation

By virtue of being a nationally designated landscape, the character of the Cotswolds AONB has a considerable degree of protection through national, regional and local policies. However, external pressures continue to need to be considered and addressed. Such pressures include the following:

- The UK population is projected to increase by 10% (5 million) by 2026.⁹ Of this, a 750,000 increase is expected to be in the South West Region.¹⁰ (Similar increases are expected in the South East and West Midlands.) Much of the increase in population in rural areas is the result of migration for lifestyle reasons, including retirement. The scale of development required to provide housing, employment and services to this expanding population will be considerable.



⁹ Office for National Statistics, 2001.

¹⁰ Draft South West Regional Spatial Strategy 2006.



- The towns and cities of Swindon, Bath, Keynsham, Yate, Gloucester, Cheltenham, Evesham, Banbury, Oxford and Chippenham which surround the AONB are all expected to accommodate significant housing and employment development in the next 20 years."
- Whilst housing and employment development within the villages of the AONB is likely to address only local needs, Cotswold market towns such as Chipping Norton, Broadway, Winchcombe, Bourton-on-the-Water, Burford and Tetbury, can be expected to accommodate significant new development.
- The increasing demand for more reliable journey times between employment centres will lead to pressure for road widening and other 'improvement' schemes on major roads in the AONB.

- Increased prosperity enjoyed by some of the population leads to other environmental impacts, such as more over-flights by aircraft of all kinds, the use of roads and rights of way for motorised leisure pursuits, and competition for housing.

Unless effectively managed, all of these pressures will work cumulatively to impact adversely on both the landscape character and tranquillity of the area. The Board's role is to ensure that the conservation and enhancement of the landscape is incorporated into strategies and plans produced by other agencies and bodies which address these issues.¹²

Climate change - development pressures

Policy	
PP1: <i>That the conservation and enhancement of the AONB and its special qualities is fully taken into account in strategies, plans and guidance produced to address development, transport and service provision in and around the AONB.</i>	
Action	Tasks
PPA1: Encourage and assist Government, regional agencies and local authorities when devising their policies, plans and strategies and implementing them, to understand and take properly into account the purpose of the designation of the Cotswolds AONB.	PPT1: Be actively involved in the preparation of policies, plans and strategies for planning, transport and service provision affecting the AONB.
	PPT2: Produce and promote position statements on issues affecting the AONB.
	PPT3: Respond consistently and constructively to consultations on planning and transport matters, using position statements as the basis for responses.

¹¹ Regional Spatial Strategies set out the broad location of development for 20-year periods.

¹² More information on the Board's policies, actions and tasks in relation to Development and Transport can be found on pg54.