

Countryside Quality Counts : An indicator for Monitoring Change in the Character of the English Landscape 1990 – 2003

Summary

The Countryside Quality Counts (CQC) project provides evidence about the ways the character of the English landscape is changing and what implications this might have for achieving sustainable development.

The UK government has long recognized the importance of understanding the nature of countryside change, and the *2000 The Rural White Paper for England* [DETR (Department of the Environment and Transport and the Regions), 2000] recognized that more needed to be done. This need still exists and will become increasingly important, as policies are developed and implemented to cope with the impacts of climate change and its possible effects on the ecosystem goods and services on which we all depend.

In order to understand countryside change we need to know **where change is occurring** and **whether those changes matter** to people in terms of the way change affects the things about the landscape that they value. *The Rural White Paper* stressed the importance of future monitoring and made a commitment to publish an indicator of change in countryside quality that would take account of aspects such as biodiversity, heritage, tranquillity and the overall character of the landscape. The case for such an indicator is based on the belief that the link between people and their environment needs to be more clearly identified, so that future social, economic and environmental goals become more closely aligned.

Landscape character therefore can be seen as an important aspect of the overall quality of the countryside. Local distinctiveness reflects the rich historical and cultural diversity of the English landscape and with increasing globalization of economies, constitutes a resource that can contribute to directly improving peoples well-being. This might be through the provision of local goods, such as foods or the provision of high quality services such as opportunities for recreation.

In the long term, a deeper understanding of the relationship between landscape character and cultural and economic values will enable us to address the consequences of the long term environmental change. The European Landscape

Convention recognizes the importance of this link; in the future CQC could play a role in the monitoring of landscape change, which is a key requirement of the convention.

The CQC study has made an assessment of countryside change for two periods, 1990-1998 and 1999-2003. This article describes the more recent assessment although reference will be made to the first. The assessment for 1999-2003 has shown that existing landscape character is being maintained in 51% of England's landscapes, while in a further 10% existing landscape character is being enhanced. However 20% of our landscapes are showing signs of neglect, in the sense that previous loss of valued character has not been reversed, while in further 19% new characteristics are emerging.

Compared to the first assessment, these results suggest that the erosion of valued landscape character has been arrested in the some places and has slowed in others. There is also evidence that in many key areas, the existing valued landscape character has been sustained or strengthened.

For further information about the Countryside Quality Counts Project please visit, *Tracking Change in the English Landscape* [online]. www.cqc.org.uk/

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1. Introduction

The Countryside Quality Counts [CQC] project provides evidence about the ways the character of the English landscape is changing.

We are particularly fortunate in England that our landscapes are so rich and varied. The English landscape is a record of the nation's cultural and historical heritage. It is also an important asset on which we depend for the production of a wide range of goods and services such as food and recreation opportunities. The distinctiveness and quality of our landscapes will continue to be an important resource as we face the twin challenges of globalization and climate change, as we seek for example to maintain and develop new opportunities for local tourism and recreation. In the longer term, an understanding of the way landscapes are likely to respond to climate change will be essential to inform the development of strategies for future management of the countryside and its natural resources.

The differences in landscape character that we see across England are the result of many factors. Important influences are the variations in geology, relief, local climates and the cover of semi-natural habitats, such as upland blanket bog. The way people have used and settled the land over time is also significant. The nation's history also demonstrates the landscapes have never been static. Centuries of economic and social interaction have also left their mark, particularly in former coal mining areas of the North.

Change is a constant theme in England's landscape. During the last 50 years the pace of this change has quickened. This has resulted in both a rapid and in certain places dramatic transformation of the landscape. It is now clear that we need to understand where change is occurring, and the significance of this change, if we are to cope with the consequences of change in order to ensure that long-term development is sustainable. We need to **know where change is occurring and whether those changes matter to people and the natural environment**. CQC was developed to provide a systematic way of assessing the significance of landscape change.

2. The Aim

The overall aim of CQC was to develop the method and describe how and where there is change in the countryside quality. An exploration of why change is occurring, and the social, economic and environmental factors driving this change, is outside of the project's scope; but CQC provides a breadth and depth of information for others investigating these drivers of change to draw upon. The more detailed aims were;

- To develop a systematic and robust method of assessing landscape change
- To assemble datasets for use in the assessment
- To report on the results of the assessment, including a headline indicator
- To make recommendations for future application of the methods

In operational terms the aim of the CQC project was to make an evidence based judgment about the implications of countryside change for the landscape character of each JCA in England. To do this the following needed to be achieved;

- To bring together a body of information that was relevant to the problem identifying where change is occurring **[the data]**
- Develop an understanding of the characteristics and trends that people thought were important each of these areas **[the context]**.

3. The Origins

The UK government has long acknowledged the importance of understanding the nature of countryside change. The *Rural White Paper for England* [DETR (Department of the Environment, Transport and the Regions), 2000] recognized the importance of future monitoring, and made a commitment to publish an indicator of change in countryside quality that would take account of aspects such as biodiversity, heritage, tranquillity and landscape character. The case for such an indicator was that the link between people and their environment needed to be more clearly identified, so that future of social, economic and environmental goals become more closely aligned. The CQC project was initiated by The Countryside Agency and partners in 2002 in response to this commitment.

4. The Challenges

The concept of an indication of change in countryside quality was new to the UK, so the first phase of work was exploratory. The project lead to an assessment of

changing countryside quality for period 1990 to 1998 that was published in 2004 [*The State of the Countryside Report 2004 p141*, The Countryside Agency, 2004]. This assessment was judged have been sufficiently successful to merit a further period of analysis for the period 1999 to 2003

For the second assessment period the methodology was refined and the range of data used extended to enable a more robust assessment to be undertaken, but which was also consistent with the first. As with the first assessment, it was not possible to incorporate all of the aspects listed in the *Rural White Paper*. Although data on heritage and biodiversity had improved it was still be too limited. These aspects were however included as they related to landscape character. Once more it was not possible to incorporate the aspect of tranquillity, as robust information and data only became available as the project was nearing completion in late 2006. Therefore CQC concentrates on assessing changes in landscape character, which we believe lies at the heart of countryside quality.

5. Policy Contexts

Although the outputs of the current work met the requirements set out in the *Rural White Paper*, the policy context for CQC has evolved at an increasing rate since the project's inception in 2002. Here I describe 2 key policy contexts.

Firstly, *Securing the Future* [Defra, (Department of Environment, Food and Rural Affairs) 2005], is the UK Government strategy for achieving sustainable development. It identifies natural resource protection and environmental enhancement as 1 of the 4 priority areas for action. Natural resources encompass biodiversity, air, land, water, soils and access to the countryside. Defra recognizes the environmental, social and economic value of the natural environment. [*A New Vision for Natural Environment*, Defra, 2005]. Specifically Defra indicates that the natural environment;

- Provides resources needed for basic survival [air, water, soils and food]
- Contributes to our good physical and mental health
- Provides natural process is such as climate regulation, flood and control, pollination of crops and control of diseases and pests
- Supports a strong and healthy economy
- Has social, cultural and educational benefits

- Has intrinsic value, in that it's beauty and unique character are valuable in their own right now

Sustainable development requires an integrated approach [*Securing a Healthy Natural Environment : An action plan for embedding an ecosystems approach*, http://www.defra.gov.uk/wildlife-countryside/natres/pdf/eco_actionplan.pdf, Defra, 2006]. This Project will help provide an integrated framework for looking at for ecosystems in policy making, to ensure the continued supply of ecosystems services vital to our health, economy and well-being are maintained. CQC could provide an important contribution to structuring this approach.

Secondly, the UK government ratified the Council of Europe's *Landscape Convention* (*The European Landscape Convention*, Council of Europe, 2000) in November 2006 and this became binding on the UK from 1st March 2007. This convention aims to formally recognize the importance of landscape in a whole territory, rather than a special area. It is the first international agreement specifically addressing landscape issues and applies equally to urban, peri-urban and rural landscapes. Under the terms of the convention Natural England is committed to monitoring its implementation. CQC provides the most robust means currently available of reporting on the landscape change across England at the regional scale, and it could also serve as an example for other countries to consider.

6. The Challenge

To identify where landscape **change is occurring** and **whether these changes matter** the CQC Project set out to accomplish 5 key tasks;

- the construction of a **data base** that can be used to analyse and describe changes in the features that shape landscape character (**the data**);
- the creation of a set of **profiles** for the Joint Character Areas (JCAs) that described their important characteristics and the changes that could affect them, that can be used as assessment **criteria** in the subsequent analysis (**the context**);
- a set of **protocols** that could be used to judge the significance of the changes that the analysis revealed;

- an assessment of the **magnitude** and **direction** of change in landscape character for each JCA in order that a systematic assessment of the significance of could be made for each JCA; and,
- a **review** of the results by people to assure the quality of the assessment.

Secondly in order to monitor landscape change a geographical framework is required. The geographical framework used by CQC to describe both the variation and change in landscape character in England is the system of the Joint Character Areas. This framework was defined in the 1990s by the then Countryside Commission, English Nature and English Heritage. At that time it was agreed that the geographical, ecological and historical variations in landscape character within England could best be described in terms of a set of discrete character areas. For the purposes of developing a national overview, this could have been done at a range of spatial scales. The JCAs, which were defined at a scale of 1:250,000, were thought to represent units of an appropriate size that could be used to describe the differences in landscape character in ways that people could understand.

The Joint Character Areas are not formally designated areas for administrative or conservation purposes, like English Counties or National Parks. Rather they were promoted in the 1990s to emphasise that the 'everyday' landscapes outside our national network of protected areas are also important. This initiative aimed to describe what made each JCA distinctive, and what gave them their 'sense of place' (*Landscape Character Assessment – Guidance for England and Scotland CAX84*, the Countryside Agency and Scottish Natural Heritage, Swanwick and Land Use Consultants, 2002). This resulted in the publication of a set of descriptions for each of the Character Areas, and a summary of the recent changes that had affected them and what pressures might affect them in the future (*Countryside Character Volumes 1 to 8*, Countryside Commission, 1999).

7. Findings

Insert Figure 1 here : title CQC Headline Indicator

The key concept that underpins CQC is that if landscape character can be described consistently at different points in time, then judgements about the significance of change can be made. The study has determined whether the scale and direction of

change suggests that landscape character has been maintained, or enhanced, or alternatively, if character had been eroded or modified in the past, whether current changes suggest that an area remains neglected or is continuing to transform.

Figure 2 shows the evaluation matrix used for the CQC analysis.

Insert Figure 2 here : title CQC Evaluation Matrix

The overall assessment was built up in a stepwise fashion by first considering the **magnitude of change** and then its **direction** for each of the main elements or themes that determine landscape character. The themes considered were;

- woodlands and trees
- boundary features
- agricultural land cover
- settlement and development patterns
- semi-natural habitats
- historic features
- river and coastal features

The judgements about each theme were weighted in terms of their contribution to overall character, so that an integrated assessment about the nature of landscape change could be made for each JCA. On the basis of the changes observed between 1999 and 2003, each of the JCAs was assigned to one of the categories described in the evaluation matrix.

The evaluation matrix shows the **magnitude** of change along the **vertical axis**. JCAs were assessed as either stable or changing. The assessment of the **direction** of change is shown along the **horizontal axis**, which classifies JCAs according to whether the direction is consistent or inconsistent with our understanding of what makes them distinctive and which are most valued by people.

Within the matrix, the contrast between the 'maintained' and 'neglected' categories emphasises that lack of change can be a problem if the aspiration for an area includes the desire that the past erosion of character should be restored. Similarly, as the contrast between the enhancing and diverging categories highlights that change *per se* is not undesirable, providing that the direction of change serves to enhance or strengthen valued landscape character. The creation of this two way matrix has

allowed the project to account for a wide variety of different types of change, both positive and negative in nature

7.1 The results of the assessment of the magnitude of change showed that 71% of our landscapes were stable between 1999 and 2003, while 29% were changing in relation to the key elements that shape their character.

Figure 3 summarises the results for the assessment of the magnitude of change at the JCA level. The map suggests that while many parts of England appear to be stable or showing only low rates of change in relation to landscape character, there are concentrations of more marked change, particularly along an axis running from the Severn and Avon Vales through the West Midlands to the Humberside. There is also a concentration of more marked change in the North West England, associated with the Manchester and Liverpool urban conurbations and the Lancashire valleys.

Insert Figure 3 here title : Magnitude of landscape change

7.2 The results for the assessment of the 'direction' of change, showed that for about 62% of our landscapes change is consistent with character, while for the remaining 38% change is inconsistent.

Figure 4 summarises the results for the assessment of the direction of change; the map divides the JCAs into two groups: one where the nature of change is largely consistent with existing character and the other where it is not. While there are marked similarities with the patterns shown in Figures 3 and 4, there are also important differences. The lack of change could be an issue in those JCAs where valued character had been eroded in the past, and where restoration or mitigation was suggested as desirable by those consulted. Character Areas in the South West and around London fall into this category, along with a block of areas extending from the Trent Valley northwards through to the Tyne and Wear lowlands in the North East of England.

Insert Figure 4 here title : Direction of landscape change

The results on the magnitude and direction of change have been presented separately in order to provide as simple a explanation as possible. A fuller interpretation can be made when both are considered together.

7.3 The overall results of considering both the magnitude and direction of change, between 1999 and 2003 showed:

- **existing landscape character was maintained in 51% of England's landscapes; while,**
- **in a further 10% existing landscape character was enhanced.**
- **20% of our landscapes showed signs of neglect, given the loss of character suffered in the past; while,**
- **in 19% new landscape characteristics are emerged.**

Figure 1 shows the overall assessment, and is the basis of the 'headline result'.

The grouping of areas where the assessment indicated that landscape character was being maintained or enhanced, demonstrates that large parts of rural England are retaining the important, valued qualities that make them distinctive. Many of our protected areas are in these categories. Character Areas which were assessed as neglected or diverging are generally associated with the areas around the major centres of population and the major route corridors.

The results show clusters of JCAs with similar linked assessments (maintained – neglected or enhancing – diverging) into larger blocks, which suggest reliability of the individual assessments.

8. Methodology

Figure 5 provides an overview of the four stages of work that lead up to the production of the finalised profile for each JCA. These key stages were;

- Stage 1 : Drafting the JCA Profile
- Stage 2 : Reviewing the draft profile
- Stage 3 : Making the analysis
- Stage 4 : Testing the results

Insert Figure 5 here title : The CQC analytical approach

In order to deliver the best possible result these tasks were divided between 2 independent consultancies who were contracted by The Countryside Agency to undertake the project. The stages 1, 2 and 3 were undertaken by a consortium of consultants led by the University of Nottingham. Stage 4 was undertaken by Countryside, an independent environmental and communication consultancy based in Manchester. Countryside also contribute to elements of stage 2.

8.1 Stage 1 : Drafting the JCA Profile

Each JCA profile is built around a set of criteria expressed as statements about what makes each area distinctive, what types of change that would sustain or strengthen their character or alternatively what types of change might erode or transform it.

The statements making up each profile were derived from several independent sources. The published character area descriptions formed the basis of each profile. These were useful because they described the key features of each area and highlighted the impacts of recent change (up to 1995) in each JCA, and identified most of the threats and opportunities for the future. Since the original character areas descriptions were published in the late 1990s, the insights they provided needed to be updated and where necessary extended.

The statements derived from the original character area descriptions were augmented with materials from:

- Guidance notes developed by Defra for the Environmental Stewardship Scheme;
- 'Fine grained' landscape descriptions created by the Countryside Agency to inform targeting of Environmental Stewardship Schemes ; and,
- Descriptions of the historic features of each JCA created specifically for CQC by English Heritage.

The complete set of statements making up each draft profile were initially edited and refined by the project team and then reviewed by a programme of web-based consultation with landscape professionals who had good, evidence based, knowledge of each JCA.

8.2 Stage 2 : Reviewing the draft JCA Profile

The first round of consultation on the draft profiles ran from September to December 2005. It aimed to check that the statements making up the profile were up-to-date, valid and comprehensive. The consultation process informed people about the development of JCA profiles and how they were to be used to make an assessment of change. The consultees were invited to review and modify the content so that a robust set of assessment *criteria* could be developed and agreed upon. A web based tool was employed to achieve this.

The consultation materials organised the statements about the distinctive characteristics of each area around the seven landscape themes that were to be used for the analysis. During the drafting process, the statements were phrased to highlight either the potential threats to existing character or the opportunities that existed for restoring or strengthening landscape character. Under each theme, the statements were grouped according to whether they mainly referred to past or future change. The first group of statements were listed under 'changing landscapes' while the second were referred to 'landscape visions'. This treatment was necessary given the different sources for the initial set of statements. Some statements referred to recent change and the implications for character that have arisen. It was important to check with consultees that these issues remained relevant. Other statements were more aspirational referring to need to restore or strengthen character through some future type of intervention. The current relevance for these statements was again checked through the consultation process.

The final section of the consultation concluded with a section to capture ideas about future landscapes. Consultees were invited to consider the key drivers of change and to describe 'best case' and 'worst case' scenarios for each JCA in 2025. This information was collected together and is now available via the CQC website, but it has not been used as part of the CQC analysis that is presented here.

8.3 Stage 3 : Making the Analysis

An extensive review of existing data sources was made to determine their suitability for assessing change. The work focused on the extent to which data sources could be used to track change over time for each of the landscape themes, and whether these data could be disaggregated to at least JCA level.

The review showed that while no single dataset supplied all the information needed to make an assessment for each theme, different combinations of datasets could be used to explore different aspects of landscape character so that an overall assessment might be made.

The data are mainly available on an annual basis, and so the trends can be monitored periodically. For the purposes of assessing the significance of change in terms of existing landscape character, it was decided that CQC should look initially at the period 1990-98, mainly to test concepts and approaches, and then subsequently consider the period 1999-2003. It was decided to use 2003 as the cut-off, because there is a lag in the publication of some of the datasets and this year represented the latest point in time when all the data were available. It was also considered important to assess the period up to 2003 because the information could be used as a base-line against which the landscape outcomes of the new Environmental Stewardship Scheme, which began in 2005, could be judged. For more information about the source data used see the CQC website. http://www.cqc.org.uk/about_sources.html

Using the criteria in the JCA profiles as a guide, **tabular and spatial data** were prepared by extracting data for the different landscape themes, to determine whether the changes observed were consistent or inconsistent with the overall vision for the JCA captured in the various statements.

The finalised profiles for each JCA contain a summary of the results of the analysis made against each statement, and linked the materials to an underlying 'evidence file' for each JCA that gives a more complete view of the data. These are available from the CQC website; following the links from the CQC results tab.

<http://www.cqc.org.uk/jca/>

Once the analytical material had been assembled against each statement in the profile, an overall assessment was made of the changes exhibited. Firstly each of the seven landscape themes was assessed and classified as either 'Maintained', 'Enhancing', 'Neglected' or 'Diverging'. In a number of instances it was not possible to make an assessment; in these circumstances the theme was left as 'Unclassified'.

The assessment process was initially guided by a set of decision *protocols*. These were developed for each landscape theme and applied universally to all JCAs. They took the form of a set of threshold values, which when used in conjunction with the *criteria* allowed for an initial classification of the landscape theme. So using the agriculture landscape theme as an example. The JCA was deemed to be 'neglected' if trends (as illustrated by the data) since 1990 had not reversed past losses of land cover (e.g. more than 5% decline of grassland cover between 1990 and 1998), and the JCA remained in a condition that was at variance with the desired character of the area. In this way it was possible to assess all 7 landscape themes and assign an initial classification to each.

Following on from the theme classification, a initial classification was made for the JCA as a whole. For each JCA the 'default' position was that the overall assessment was mainly based on three 'key' landscape themes: trees and woodland, agriculture land cover and settlement and development patterns. This was because these themes are spatially most extensive, and are therefore most likely to contribute the most to the character of a JCA. However, where semi-natural cover was extensive (>10% of the JCA area) this was also treated as a 'key', and where local feedback suggested that one of the other themes ought to be given greater weight, such as river and coastal features in an estuarine JCA, this was also considered.

Insert Figure 6 here title : illustration of how final assessments were made

When assigning a JCA to an assessment classification, the approach was to use a 'majority rule' (JCAs 90, 5 and 32, Figure 6), or if the themes were spread across the classes, to choose the 'mid-point'. For example, where there were three key themes, and they were enhancing, maintained and diverging, the judgement would go with 'maintained'. Similarly, if the three were 'maintained', 'neglected' and 'diverging', then the JCA would be classified as 'neglected' (e.g. JCA 76, Figure 6).

8.4 Stage 4 : Testing the Results

The second round of consultation ran from August to October 2006. The initial classification and associated evidence files were made available, via the CQC website and consultees invited to comment in the light of their local knowledge and evidence. These people were drawn from a number of different groups such local and regional levels of government, university department, land managers and independent consultancies. People were asked to consider the significance of any

measured change in relation to the evidence provided, and to confirm or suggest amendments to, the draft assessments as made by the Project Team.

The consultation was carried out via a purposely structured web-based tool that guided the user through the decision making process. The tool allowed each landscape theme to be reviewed separately. A graphical decision matrix was devised to allow consultees to confirm or amend the draft assessment of each theme using the categories: 'Maintained', 'Enhancing', 'Neglected' or 'Diverging'. In addition, consultees were invited to consider the weighting of the themes and to highlight those themes that they considered key. The final screen of the assessment presented two summary grids of the theme assessments, both highlighting key themes. One contained the draft assessment the other the assessment made by the consultee. At this stage consultees were asked to make an overall assessment for the Joint Character Area.

The feedback obtained during the second round of consultation was important to judge the reliability or confidence of the final headline result. A detailed breakdown of the level of support obtained for the final JCA assessments is provided in Figure 7
The details of this consultation can be summarised as follows:

- The draft assessment for each JCA was in agreement with local feedback in about 81% (108) of the 133 JCAs for which feedback was available.
- For a further 7% (9 JCAs out of 133) there was some disagreement about the assessment, but consensus on the direction of change. It was agreed that the area was either 'maintained' or 'enhancing' and that character was broadly sustained, or in contrast it was agreed that the character of the area remained neglected or was continuing to transform in some way.
- Only in about 12% (16 out of 133) of the JCAs was there any marked difference between the final assessment made by the project team and the local feedback obtained.
- No feedback was available for roughly 15% (i.e. 23 out of 156) of the JCAs.

Insert Figure 7 here title : Level of support for final assessment obtained through second round of consultation

The geographical pattern of feedback and support is shown in Figure 8. In general terms there was a fairly even spread of interest across the regions, although it is

apparent that the level of consultation achieved in the North East and South West was lower than that achieved elsewhere.

Insert Figure 8 here title : Number of consultees active in each JCA

The comments received were screened to eliminate any factual or logical errors in the draft results and associated evidence, before the team assessment was reconsidered. On the basis of the feedback the team assessment was retained or revised. The assessments for 24 of the JCAs (15%) were changed as a result of the consultation process. As Figure 8 shows, for some JCAs more than one person provided feedback. In some cases local opinion about the final assessment was split, and so a change in the team's assessment could still be supported by local feedback or conflict with it. The comparison provided in Figure 7 gives the match between the final revised assessments and the level of support they had from local feedback.

From the outset of the Project, it was recognised that although the CQC assessment method was based on the analysis of quantitative data, the final judgements about the magnitude and direction of change were qualitative. Since it is possible that other people may interpret the underlying evidence differently, it was important that the analysis undertaken by the CQC team was tested, so that the overall agreement with the headline result could be determined. Thus the two phases of consultation described here, to review the landscape profiles and to test agreement with the results of the applied CQC assessment method are the core elements of the Project's methodology.

Although each stage of consultation was open to all, effort was concentrated in targeting those involved in countryside planning and landscape management. Letters of invitation were therefore sent out to the following groups:

- Local authority planners and countryside officers
- National Park and AONB officers
- Government agency specialists
- Landscape Character Network (www.landscapecharacter.org.uk/)
- National Heritage Landowners Group

The consultation was also widely publicised in landscape and environmental publications, newsletters and networks so that the circle of consultees could be

expanded. Telephone contact was made with local stakeholders in an effort to stimulate interest in areas where less response to invitations was forthcoming.

In total 434 consultees (both individuals and organisations) registered for the two rounds of consultation, with 169 joining after August 2006, and thereby participating only in the second round. Figure 9 provides a breakdown of the different groups of people who participated in both phases.

In the first round of consultation comments were received on the statements describing the character of the thematic elements for 140 (90%) of the JCAs. In the second round of consultation comments were received on the final assessment for 133 (85%) of the JCAs. Within the group of 23 for which no feedback on the final assessment was available, only 5 JCAs were not examined by consultees. The other 18 had been examined at the theme level, but the consultation contribution had not been finalized in terms of making the overall judgment for the JCA.

Insert Figure 9 here title : Consultee responses by sector

9. Perspectives

The CQC Project was undertaken because we need evidence and information to understand and manage change in the countryside and to plan strategies to ensure that long term development is sustainable. We need to know **where change is occurring** and **whether those changes matter** to people in terms of the way change affects the things about landscape that they value.

The CQC Project has sought to move beyond the assembling data about landscape, or environmental change, and gone on to show how, through consultation, the values that people hold about the landscapes can be represented systematically, and used as a template for making judgements about the implications of change. The project has demonstrated how in general terms, such assessment frameworks can be developed and used to describe to people the significance of landscape change.

The project has:

- developed a systematic, robust method of assessment of landscape change

- assembled data sets for use in the assessment and provided these for others to use on the CQC website
- shown how internet-based consultation tools can be used to develop an assessment framework and test the results of the analysis of change in landscape character

On the basis of the work undertaken, recommendations have been made for:

- improving the evidence base that can be used for the analysis of landscape change, which would increase their value and enhance the robustness of the assessment; and
- developing the internet-based consultation tools so that a more comprehensive vision for the character of each JCA could be established.

In addition to fulfilling the commitment to produce an indicator of landscape change in the 2000 Rural White Paper, the future applications could meet our increasing needs to understand changes in the landscape, especially to plan and adapt to climate change and to maintain ecosystem goods and services to provide for a sustainable future.

10. Biography

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