Countryside Quality Counts
Tracking Change in the English Countryside

Constructing an Indicator of Change in Countryside Quality

Final Report

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Countryside Quality Counts

Executive Summary

Background

i. The *Rural White Paper for England*[1] emphasised the need to have good information about the state of our countryside and how it is changing. This need arises because it is essential that we base policy for people, communities, the rural environment and resources generally, on sound evidence.

ii. However, while in recent years we have assembled much new information about our rural areas, gaps in our knowledge base remain. Thus when we look to national policies for sustainable development we find them underpinned by a range of indicators or measures that can help us assess how we are progressing, but we lack any integrated measures that tell us 'how the countryside as a whole is doing'. As a result the *White Paper* went on to commit Government to publishing a measure of change in countryside quality.

iii. Although the Rural White Paper gave no details of how the indicator of quality might be constructed, it was clearly envisaged that it should be more holistic in concept than existing measures. The indicator, it was asserted, should include issues such as biodiversity, tranquillity, heritage and landscape character, and should draw up data resources such as *Countryside Survey 2000*[2] and use the Countryside Agency's Character Areas framework[3].

iv. The ***Countryside Quality Counts*** **(CQC)** Project was designed to take the commitment for an indicator of change in countryside quality forward. It was sponsored by the Countryside Agency, Defra, English Heritage and English Nature, and drew upon wider partnerships with ODPM, Forestry Commission, and the Centre for Ecology and Hydrology. The project began in May 2002, and

[1] Our Countryside: The Future: A Fair Deal for Rural England, para 9.5.2, http://www.Defra.gov.uk/wildlife-countryside/ruralwp/index.htm
[2] http://www.cs2000.org.uk
[3] http://www.countryside.gov.uk/LivingLandscapes/countryside_character/index.asp

the first stage of the work concludes with the publication of this Report in June 2004.

v. This document presents the final results of the CQC study, which are also published in headline form in the Countryside Agency's latest *State of the countryside* Report for 2004[4]. Its purpose is to explain in detail the methodology that underpins the study, the data resources that have been used in making the assessment, and the implications that arise both for the future work of both the Countryside Agency and its partners.

Conceptualising the Indicator of Change in Countryside Quality

vi. In the first part of the CQC Study we investigated the conceptual basis of an indicator of change in countryside quality. The work drew upon the results of a series of regional consultations and expert discussion groups. We concluded that:

- *A single indicator of change in countryside quality should be constructed, rather than separate measures of character and quality.*
- *The indicator should be viewed as expressing the contribution that landscape character makes to the overall quality of the countryside.*
- *The baseline for the indicator is 1998, and that an initial assessment of change should be made for the period from 1990 up to that date. Thereafter that the indicator be updated on a 5-year cycle, so that the next assessment should be published in 2006, and cover the period 1999-2003. This would ensure that the context for recent change is established, and would also give the opportunity to refine the indicator given that new datasets will come 'on-line'.*
- *The significance of change up to 1998 is assessed in the context of the Character Area Descriptions already published by the Countryside Agency, and that these should be updated ready for the next assessment of change in countryside quality.*

[4] http://www.countryside.gov.uk/EvidenceAndAnalysis/dataHub/2004_dataarea/index.asp

- *The scale of countryside change and its significance should be assessed at the Character Area level and the results aggregated to construct regional and national 'headlines'.*

Key findings

vii. An indicator of change in countryside quality was constructed on the basis of the analysis of countryside change in relation to woodland, boundary features, agriculture, settlement and development, semi-natural habitats, historic features, and river and coastal elements occurring within the Joint Character Areas of England, over the period 1990-1998. Judgements about the significance of change were made in relation to a series of Character Area Profiles, based on the Character Area descriptions already published by the Countryside Agency in the mid-1990s. A detailed account of the methodology used for the CQC Project is provided by this Report.

viii. We found that:

- *Between 1990 and 1998 about 40% of our landscapes were either stable or showed changes that were consistent with existing character area descriptions.*

- *For 23% of our landscapes the changes were marked and inconsistent with these descriptions. In the remaining 37% of our landscapes the changes were inconsistent with existing descriptions, but they were of less significance in terms of their impact on overall character.*

The National Countryside Character Areas Database and CQC Website

ix. The indicator of change in countryside quality has been underpinned by the analysis of a wide range of rural data. These are now held in map form, in a GIS that is held by the Countryside Agency and as a textural or attribute database, that can be accessed from the project website[5]. Collectively these data constitute the National Countryside Character Areas Database (NCCADB). It is recommended that this site should be

[5] http://www.countryside-quality-counts.org.uk

maintained. This Report outlines how the site can be adapted too support the continued development of the CQC Project.

x. The national headline indicator of change in countryside quality has been disaggregated to the regional and character area levels, and the results are presented on the Project website. The judgements that have made about change within and between Character Areas are summarised, alongside the supporting evidence derived from the NCCADB.

xi. The CQC website provides an important window on the results of this study. In the main body of this Report we have described the on-going management requirements of this site, and what new facilities it would need if the CQC Project is continued through to the next period of reporting. In the long term the Countryside Agency may need to consider the development of a single, integrated portal to provide access to all its Countryside Character work.

The CQC Process and Recommendations

xii. The CQC Project should be viewed as an on-going process of assessment and database development, within the more general Countryside Character Initiative championed by the Countryside Agency and its partners.

xiii. In order to provide the foundation for the next assessment of change in countryside quality we recommend that the Character Area Profiles used in the present phase of work are updated and extended through a process of consultation with regional stakeholders in 2005. Further database development is also required in order to exploit new data resources that are becoming available.

xiv. In this Report we make a series of recommendations about what further development work is required and what timetables are needed if the next assessment is to be published in 2006. Key features of the work that are required in 2004 include:

- *The updating and revision of the new landscape typology that has been created for the Countryside Agency;*
- *Integration of the Countryside Agency's Character Area descriptions with information derived from the evolving*

programme of Historic Landscape Characterisation that is being undertaken in England; and,

- *Refinement of the methods used to create the Character Area Profiles for the next period of assessment, so that they are more spatially explicit and consistently described, so that they are capable of reliably identifying the significance of change in relation to specific locations within the Character Areas.*

The Wider Implications of the CQC Project

xv. Our investigations show that the outputs from the CQC study have several important future uses, over and above the publication of an indicator. In the main body of this report we explore the use of CQC data outputs for supporting work on:

- *Targeting and monitoring within the new Environmental Stewardship Scheme;*
- *Landscape planning (including sensitivity and capacity assessment); and,*
- *Regional Spatial Planning.*

xvi. This Report suggests how work in each of these areas can be developed. It also shows how, through the CQC Process, the Countryside Agency and its partners can demonstrate the continuing relevance of the landscape character concept and the Character Areas framework to policy and decision making at national, regional, and sub-regional levels in England.

Countryside Quality Counts

xvii. In setting out the Government's commitment to develop an indicator of change in countryside quality, the *Rural White Paper for England* suggested that the aim was to ensure that the things people valued about the countryside were properly taken into account and that local communities have the opportunity to play a part in shaping the landscape around them. It was also recognised that while the landscape will continue to evolve, the underlying proposition was that change should take place in ways that strengthen character and value.

xviii. The CQC Project has developed an indicator of change in countryside quality, and in so doing it has addressed the ambitious aims set out in the *Rural White Paper*. The indicator, and the set of data resources that underpin it, will help the Countryside Agency, its partners, and all others concerned with the integrity of the rural environment, to argue not only that 'countryside quality counts', but also to show that an understanding of landscape character and the way it changes is essential. As a result, we may be better able to sustain the rich diversity and distinctiveness of the English countryside.

Part 1 Introduction and Overview

Introduction

1.1 When faced with complex environmental, social and economic issues, ***indicators*** are often used to help us capture and describe important aspects of the problem, to plan for the future and monitor the success of policy actions. Thus, when we look to national policies for sustainable development we find them underpinned by a range of indicators or measures that can help us assess how we are progressing towards this important goal[6].

1.2 Although indicators are useful tools to help us highlight, develop and evaluate policy, they are often criticised because their coverage of issues is incomplete. If we look at the measures we currently have for the countryside character[7], for example, we find that while changes in hedges and walls, or the area of access land are available, we lack any integrated measures that help understand how the countryside as a whole is changing in a local context and how we might shape change to ensure that it occurs '... in ways that strengthen character and value'.

1.3 The need to have a good understanding of the state of our countryside and the ways in which it is being transformed was emphasised in the 1999 *Rural White Paper for England*. The importance of basing policy on sound evidence was emphasised, and it was recognised that for the countryside as a whole there were major gaps in our knowledge and current coverage of indicators. As a result the *White Paper* contained a commitment to publish a measure of change in countryside quality[8].

1.4 Although the Rural White Paper gives no details of how the indicator of quality might be constructed, it was clearly envisaged that it should be more holistic in concept than existing measures, in that it should not relate to a particular sector. The indicator, it was asserted, should include issues such as biodiversity, tranquillity, heritage and landscape character, should draw upon data resources such as *Countryside Survey 2000*[9] and use the Countryside Agency's Character Areas framework

1.5 The ***Countryside Quality Counts*** **(CQC)** Project was set up to take forward the commitment for an indicator of change in countryside quality. It was sponsored by the Countryside Agency, Defra, English Heritage and English Nature, and drew upon wider partnerships with Office of the Deputy Prime Minister (ODPM), Forestry Commission, and the Centre for Ecology and Hydrology. The study was designed to investigate how, given current knowledge and data resources, we can construct indicators that can provide us with the more

[6] Quality of Life Counts, http://www.sustainable-development.gov.uk/sustainable/quality99/
[7] Countryside Agency (2002) State of the countryside Report, 2002. http://www.countryside.gov.uk/stateofthecountryside/
[8] Our Countryside: The Future Fair Deal for Rural England, para 9.5.2, http://www.Defra.gov.uk/wildlife-countryside/ruralwp/index.htm
[9] http://www.cs2000.org.uk

comprehensive coverage of issues that we need when planning for the future. It was also designed to meet the reporting requirements of the sponsors in this important policy area.

1.6 When the Countryside Agency and its partners were developing the brief for this present study, it was recognised that many different ideas were embedded in the original concept of an indicator of countryside quality. In order to disentangle some of the issues, consultants were therefore asked to consider whether the Government's commitment was best addressed by considering the development of two separate indicators, one of ***change in countryside character***, the other ***change in countryside quality***. As a result of the work undertaken we concluded that, not withstanding the brief, a ***single*** indicator of quality was appropriate. The rationale underlining the design of this indicator, and the picture it provides of change in the English countryside, forms the principle focus of the Report.

Context of the CQC Study

1.7 The CQC Project represented the second stage of work commissioned by the Countryside Agency, which has sought to develop and apply the framework of Countryside Character Areas that was created in the 1990s.

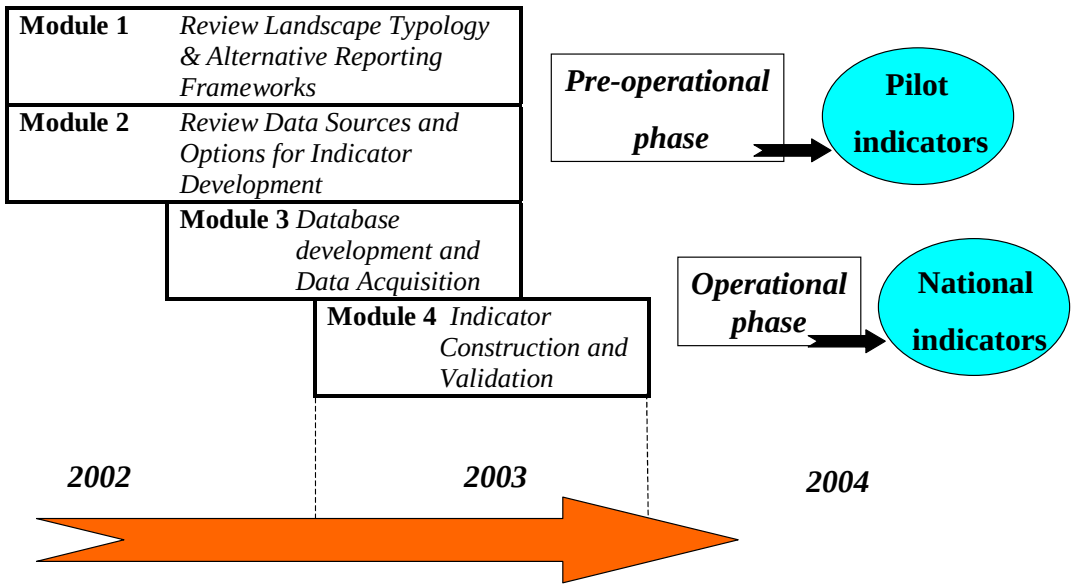
1.8 During the first phase of this developmental work, the National Countryside Character Decision Support Database (NCCD) and a 'New Landscape Typology' were created[10]. The aim of this work was to draw together and analyse the existing character and trend information for all landscape character types found within each of the 159 Countryside Character Areas in England. At the time, a stimulus for the creation of NCCD and the typology was the need to find methods for the more equable and closely targeted delivery of agri-environment schemes. Since then, a number of other strategically important applications have emerged, including landscape planning and spatial planning at regional and sub-regional scales.

1.9 The second phase of work commissioned by the Countryside Agency and its partners, which has come to be known as the CQC Project, sought both to extend and refine the NCCD, and, more importantly, to examine critically its role in the development of indicators of countryside change. At the outset of the CQC Project, it was thought that such work would enable the typology to be used more widely as a strategic planning tool. One idea was that it might be used as a framework to provide information about activities driving countryside change at a range of scales through the development of indicators of change in countryside character and quality. It was agreed, however, that the analysis of the drivers or causes of countryside change was not part of the brief for this project.

1.10 The aims set for the CQC Study were as follows:

[10]Countryside Age (2001) *National Countryside Character Decision Support Database.* Technical Report, Nov. 2001, ENTEC UK Ltd in association with Steven Warnock, Parker Diacono, University of Reading and SmartData UK Ltd.

Figure 1.1: Structure of CQC Project



(a) To determine the extent to which the landscape typology developed by the Countryside Agency is generally acceptable to the user community at national, regional and local levels, and how this work can be taken forward and used;
(b) To determine the extent to which a national indicator of change in Countryside Character could be constructed using the data resources provided by the work related to the new landscape typology, and for what geographical scales and time periods change in countryside character can be determined;
(c) To explore the conceptual relationships between an indicator of change in countryside character and one of change in countryside quality, and the extent to which a quality indicator can be derived at national scales and for what time periods.
(d) The extent to which proposals for the development of indicators of change in countryside character and quality are generally acceptable to the user community;
(e) To make recommendations for the practical implementation and management of a system for updating the indicator of character and quality for national reporting purposes.

Structure of the Project

1.11 A major deliverable required from the CQC study was to provide indicators of change in countryside character and quality for the Countryside Agency's *State of the countryside* Report for 2004. This task was completed, and 'headline'

results for a single indicator that combined the analysis of character and quality have now been published[11].

1.12 The structure of the work programme that led to the publication of the indicator of change in countryside quality is shown in Figure 1.1. The study was divided into two main phases. During the first or pre-operational stage of the Project (Modules 1 and 2), the methods and approaches that could be used for indicator construction were examined, together with the data resources that might eventually be available. The work undertaken during the pre-operational phase was described in an Interim Report that was circulated in 2003[12].

1.13 On the basis of the recommendations provided from the first stage of the Project, the second or operational phase (Modules 3 and 4) was undertaken. This consisted of a number of elements, including the preparation of all the data necessary to construct the indicator, its validation and eventual publication. In this *Final Report*, we largely focus on the work undertaken as part of Modules 3 and 4.

Relationship of the CQC Project to other work

1.14 The CQC Project has been carried out in parallel with other work undertaken by the Centre for Ecology and Hydrology (CEH) for Defra. This work has sought to develop methods for the integration of the field survey and remotely sensed components of Countryside Survey 2000 (CS2000), and to explore the feasibility of using these data sources to support and inform indicator design. Although the CEH study has its own timetable and deliverables that are separate form the CQC Project, there has been close liaison between the two streams of work. Thus the recommendations presented here take full account of the outputs of this parallel work.

Consultation and the 'user community'

1.15 In order to develop appropriate and acceptable methods for the construction of indicators of change in character and quality, it has been important to consult widely amongst those who would use or have a view about what the indicators should show. Since the Project began, this consultation process has been taken forward in various ways. Not only have those with relevant experience in the general area been contacted, but we have also held a series of regional meetings that included people from Local Authorities, Regional Agencies and other organisations.

1.16 In addition to the Project Steering Group (PSG) that was chaired by the Countryside Agency and Defra and which was responsible for the overall management and direction of the CQC Project, a Project Advisory Group was also established[13]. This group included not only the sponsoring organisations,

[11] The State of the countryside 2004; see http://www.countryside.gov.uk/EvidenceAndAnalysis/dataHub/2004_dataarea/index.asp
[12] Countryside Quality Counts Interim Report, 2003.
[13] For full list of members and acknowledgments see http://www.countryside-quality-counts.org.uk/

but also a wide range of other government departments, government agencies, NGOs and academics, whose experience was relevant to the problem of indicator development. The PAG met three times during the two years of the project, and summaries of these discussions together with other relevant documentation are available on a web-site established specifically for the CQC Project[14].

1.17 In addition to the feedback gained from the PAG, two major rounds of consultations with 'stakeholders' were undertaken. Meetings were organised in each of the English Regions.

1.18 The first series of meetings was in the autumn of 2002. These largely focused on conceptual issues and potential applications of the proposed indicators, and the outcomes of this process were published in the *Interim Report.* The second major round of consultation, which took place in the autumn of 2003, was concerned with the testing and validation of the methodology developed to construct the final indicator. Although the details of the discussions that took place during these meetings are not reported in full in this document, the experience gained during these events has done much to inform and underpin the construction of the results of this study.

Structure of the Report

1.19 Following this introduction, Part 2 focuses on the conceptual issues surrounding the development of indicators of countryside change and the methodological approaches that can be used for their construction. It therefore draws on the experience of the pre-operational phase of the study that was described in the *Interim Report.*

1.20 In Part 3 of this Report the detailed results underlying the 'headline' published in Chapter 11 of the Countryside Agency's *The State of the countryside* Report for 2004 are described. This section shows how the national headline can be disaggregated at the regional level, and provides example output that can be used to judge the robustness of the methodology underpinning the indicator.

1.21 The Countryside Agency and its partners, Defra, English Nature, and English Heritage, currently intend that the indicator of change in countryside quality should be maintained and updated. Thus it is important that the data resource and the processing that has been applied to them are fully documented. These topics form the basis of Part 4 of this Report. It describes the key features of the datasets, the assumptions that were made in using them, and the opportunities and issues for using them in the future. This material links to a 'metadatabase', available on the project website, that gives users access to this essential information. Part 4 concludes by providing a review of gaps that have been identified in the range of data that could ideally be used for the construction of an indicator of countryside quality, and what prospects there are that these deficiencies to be overcome.

[14] http://www.countryside-quality-counts.org.uk/

1.22 In Part 5 of this Report, the structure of the Project website is considered. As the work has now moved from the pre-operational to operational phases, the requirements of the website have changed. With publication of the headlines, and the need to make the methodology and detailed results available to a wider range of people and groups, a number of changes have been introduced. Part 4 of this Report describes both how the website has been updated, and what future steps are necessary to maintain and develop it.

1.23 As the project has proceeded, not only have a number of uses been identified for the indicator of change in countryside quality but also for the processing and use of some of the datasets that have been used in its construction. Some of these ideas have formed the basis of a series of case studies and these have been reported in Part 6 of this document. The key case studies considered are:

- The structure of the national landscape typology,
- The use of the outputs from Historic Landscape Character Assessments for future work in the context of the CQC Project; and
- The use of CS2000 field survey data to give more detailed local insights into changes in countryside character.

1.24 The more general uses of outputs from the CQC, for such applications as Regional Spatial Planning and the targeting and monitoring of Environmental Stewardship Schemes, is considered in the final part of the Report. This section also presents the conclusions and recommendations that have arisen out of the Study and, in particular, deals with the relationship to work that is currently using the National Landscape Typology. In Part 7, we address both the questions posed in the initial brief for this study, and the issues and problems that have arisen once work got underway. This section then provides a 'route map' for the future development of the indicator of change in countryside quality, and outlines the steps that must be considered if the commitment to maintain and update the indicator for publication in 2006 is to be fulfilled.

Part 2 Conceptualising Indicators of Change in Countryside Character and Quality

Introduction

2.1 In this section of the Final Report we explore the conceptual basis of the indicator work undertaken during the CQC study. The outcomes of the work are best summarised in relation to five issues, all implied by the project brief, namely:

- The extent to which it would be better to have separate or combined measures of change in countryside character and quality.
- What data are available for indicator development?
- The geographical scales that are appropriate for analysis and reporting.
- The base-line that is appropriate for measuring change over time, and the frequency of updating required by the user community.
- How to evaluate the importance or significance of change shown by the indicator or indicators, and the extent to which a set of appropriate targets can be developed.

These issues provide the framework for the discussion that follows.

One indicator or two?

2.2 Despite the commitment in the *Rural White Paper for England* (RWP) for a single indicator of change in countryside quality, the brief given to the project team in 2002 was to develop ***two*** indicators, one of change in countryside character and the other change in countryside quality. The assumption at the time the brief was developed was that the aims of the project (and the goals implicit in the RWP commitment) would be best fulfilled by developing two indicators

2.3 The assumption that the CQC Project would result in two indicators was retained during the first year of the project. At the end of the pre-operational phase, and in the *Interim Report*, we suggested that:

(a) The indicator of change in countryside character should aim to document the scale and location of change, that is, ***where change in the countryside is occurring***; whereas,
(b) The indicator of quality should help us to understand the significance of change, that is, ***whether change mattered***.

2.4 The need to distinguish between the tasks of identifying the location, extent and type of change and assessing its significance has been a recurring theme throughout the project. It has been useful to maintain the distinction because, on the one hand, most people felt that the task of assessing of quality, however it is defined, is inherently more 'judgemental' than that relating to the documentation of change. On the other, it was apparent early on in the project

Table 2.1: Potential indicators within the four key thematic areas defining character and quality (amended from Haines-Young et al, 2003)

a. Extent or stock of characteristic landscape elements

- Semi-natural vegetation
- Different types of woodland
- Characteristic field boundaries
- Characteristic buildings and settlements
- Characteristic land use types
- Hedgerow and field trees
- ~~Changes in distinctiveness and character~~ ***See note 11***
- Ponds

b. Characteristic features, in good condition and appropriately managed.

- Roadside verges
- Condition of linear features including stream sides, river corridors & canals
- Field margins
- Health of trees
- CS2000 vegetation condition measures
- Water quality
- Uptake of Woodland Grant Schemes
- Uptake of Countryside Stewardship or similar measures
- Uptake of ESA Schemes
- SSSI Condition
- State of repair of historic buildings
- Ancient monuments at risk

c. Extent or stock of new elements

- Development (e.g. transport or communications infrastructure, green field development)
- Agricultural buildings

d. Experiential aspects

- Tranquillity/Noise
- Levels of traffic
- Air pollution
- Light pollution
- Remoteness/rurality/wilderness
- Disturbed ground
- Access/welcoming feel
- Viable rural communities
- Appropriate management of visitor pressure
- Appropriate wildlife
- Evidence of active landscape management
- Public opinion
- ***[Local distinctiveness and traditional character] – See Note 11***

that while the construction of an indicator of change in countryside character seemed feasible, building a more wide-ranging indicator of quality was more difficult.

2.5 The position developed at the end of the pre-operational phase and therefore presented in the Interim Report, can be summarised by reference to Table 2.1. This Table documents the various categories that our preliminary work identified as capturing the most important aspects of countryside character and

quality, and suggests how they might be grouped into some kind of framework for indicator development.

2.6 In reviewing Table 2.1 it should be noted that inclusion of a category did not imply at that preliminary stage that it was feasible to measure it. Rather the Table represented more of a 'wish list', drawn up during the initial scoping phase of the study. A conclusion that became evident early on, however, was that whether one or two indicators were envisaged, they were likely to be ***hybrid*** measures, based on combining a suite of individual metrics, which separately described different aspects of character and quality.

2.7 We argued that the attributes listed in Table 2.1 could be grouped into four main themes, namely:

(a) The extent or stock of characteristic landscape elements;
(b) A measure of whether these characteristic elements are in good condition and appropriately managed;
(c) The extent and form of new elements in the countryside; and,
(d) A measure of the key factors affecting the 'countryside experience' (i.e. tranquillity/disturbance) and the benefits or services that it offers (e.g. access, experience of wildlife).

2.8 These themes offered, we suggested, the potential to be grouped together in different ways to address the desire for either a single or a combined indicator of change in countryside character or quality. Two options could be identified:

- **Option I:** That the four themes are collectively considered as a suite of indicators of change in countryside quality, as implied by the RWP, where quality is defined as an overarching concept that *includes* changes in character and condition, as well as changes in the experience of the countryside and in the benefits or services that it offers to people.
- **Option II:** That the themes could be divided into an indicator of change in character and a separate one of change in quality, as required by the Project brief. The most likely division is that a), b) and c) are reported together as an indicator of change in character, while d) is reported separately as an indicator of change in quality[15].

2.9 We considered that the first option was, despite the direction of the initial brief for the project, probably the one that was nearest to the interpretations of quality that people had given during our consultations. We also thought that it fitted best with a number of the different definitions of quality in common use. **Thus we recommended Option I as the basis for the work undertaken in the operational phase of the project. That is that the CQC project should deliver a *single* indicator of quality.** It was recognised, however, that the practical implementation of such an option depended on the availability of appropriate data resources and some framework for evaluation of the

[15] Alternatively a) and c) could be combined into the character indicator, with b) and d) combined as a measure of change in quality.

significance of change, and that the recommendation might need to be reviewed critically given time and resource constraints.

2.10 Although logistical consideration did subsequently mean that the suite of measures initially proposed had to be modified, **the concept of a single indicator of quality has been retained through to the end of the CQC project.** Our conclusion is that the RWP commitment is best addressed by developing a single indicator of change in countryside character was based on two factors.

2.11 First, our discussions had shown that while most people thought that the concept of 'countryside quality' was more wide-ranging than that of 'countryside character', it was generally accepted that the latter played an important and essential role in determining the overall quality of the rural environment. Thus while not all of the experiential aspects listed in Table 2.1 could be measured, those that were strongly dependent on character, such as 'rurality', 'wilderness', 'remoteness' and 'local distinctiveness'[16] could. This suggests that the idea of an overarching indicator of change in countryside quality should be retained.

2.12 Second, it became apparent that to align the distinction between 'factual' and 'judgemental' aspects of indicators with the notion of two indicators, one of character and the other of quality, was in fact misleading. As noted in the *Interim Report*, an assessment of change can be made for many of the elements that shape character. However, merely to map and describe document where these changes was, we concluded, inadequate in terms of meeting the RWP commitment.

2.13 Even if an indicator focused solely on character, it is apparent that the significance of the change in the elements that compose it would need some interpretation. For example, we might map the scale of woodland change alongside those of the other landscape elements that determine character, but the overall measurement would be limited as an indicator unless we could say what the ***implications*** of those changes were for the overall character of the landscape. *Thus the judgemental aspects of indicator use cannot be avoided merely by proposing an indicator of change in character.*

2.14 **As a result of these two considerations, we therefore carried forward our recommendation that a single indicator of change in countryside quality should be constructed, into the operational phase of the CQC project.** An indicator has been designed to identify *where* change in the extent or condition of attributes of the countryside is occurring, and *whether these changes matter* in terms of strengthening countryside character and condition. It is an indicator of ***quality,*** we would argue, in that it seeks to identify how change in the key elements that shape character not only relate to our current understandings of countryside character across England, but also whether these changes are sustaining that character or are transforming it.

[16] Note 'local distinctiveness was not included in the original list under the experiential aspects, but under characteristic elements. We recommend that the item is moved between groups as indicated in Table 2.1.

2.15 Landscape character is defined as a distinct and recognisable pattern of elements that occur consistently in a particular type of landscape or countryside. It is a reflection of the combinations of geology, landform, soils, vegetation, land use, field patterns and the influence of human settlement. Such a formulation is now well understood and accepted as an important part of the general framework for decision-making on environmental issues in England and elsewhere[17]. Moreover, the methodologies that underpin the description of landscape character are well documented, following the recent publication of the *Landscape Character Assessment (LCA) Guidance*[18]. The latter also proposes that landscape quality is a function of the condition of landscape features[19]. **We therefore suggest that the concept of character provides a robust foundation for the development of a more general indicator of change in countryside quality**.

What data are available for indicator development?

2.16 The construction of environmental indicators is often constrained by the availability of data, and this Project is no exception. Thus as part of the brief for this work, we were asked to evaluate a number of datasets which give national coverage of important elements of the countryside. The key datasets we were asked to consider were the National Inventory of Woodlands and Trees (NIWT), Countryside Survey 2000 (both field survey and Land Cover Map 2000), the Agricultural Census, tranquillity mapping, Land Use Change Statistics (LUCS), together with any other biodiversity or historical landscape data that were available at national scales. In addition, the possible uses of the Post Office Address File (PAF) and the census of population were considered.

2.17 The list of datasets identified in the project brief was by no means exhaustive, and so, given the indicator framework that was developed during the pre-operational phase of the study (Table 2.1) a number of additional sources of information were considered. A list of all the datasets researched by the project team is given in Table 2.2. Where data relevant to a given theme were available, the Table documents the source, and the spatial and temporal resolution of the data series.

2.18 The review of data sources and their characteristics suggested that many of the elements identified in Table 2.1 could be represented by a surrogate measure of some kind. This was particularly so for the elements relating to landscape character (i.e. groups a, b and c, in paras. 2.7). By contrast, a number of gaps existed in the availability of data covering the 'experiential' aspects of the countryside (group d). **Despite these deficiencies, however, the audit of data resources shown in Table 2.2 suggested that there was a critical mass of data available that could provide a foundation for building an indicator of change in countryside quality, that focused mainly on the measurement of change in countryside character.** The analysis also showed that even though

[17] Reference to work in Scotland, Northern Ireland and Europe (ELCAI)
[18] Swanwick, C. and Land Use Consultants (2002): *Landscape Character Assessment: Guidance for England and Scotland*, Countryside Agency and Scottish Natural Heritage.
http://www.countryside.gov.uk/LivingLandscapes/countryside_character/landscape/publication/index.asp
[19] See Chapter 7 of Assessment Guidance.

Table 2.2: Potential data sources and their spatial and temporal characteristics

Theme	Potential source	Spatial resolution	Temporal resolution
a. Extent or stock of characteristic landscape elements			
Semi-natural vegetation	•CS2000 Field Survey (CEH) •**LCM2000 (CEH)** •*Habitat inventory (EN)* •SSSI (EN)	~ regional ~ 1km ~ site ~ site	~ 6-8 yearly since 1984 ~ 1998 baseline ~ variable baseline ~ 1998 baseline?
Different types of woodland	•CS2000 Field survey (CEH) •**LCM2000 (CEH)** •**NIWT (FC)** •**Ancient Woodland Inventory** •**Community Forests**	~ regional ~ 1km ~ site ~ site ~ site	~ 6-8 yearly since 1984 ~ 1998 baseline ~ 1999 baseline ~ variable baseline ~ variable baseline
Characteristic field boundaries	•CS2000 Field Survey (CEH)	~ regional	~ 6-8 yearly since 1984 ~
Characteristic buildings and settlements	•*Farm Buildings at Risk (EH)*	~ site	~ 2004 baseline
Characteristic land use types	•CS2000 Field Survey (CEH) •**LCM2000 (CEH)** •**June Census (Defra)** •**Commons Register (Defra)** •*National Equine Database (Defra)*	~ regional ~ 1km ~ local ~ site ~ unknown	~ 6-8 yearly since 1984 ~ 1998 baseline ~ annual since 1866 ~ variable baseline ~ unknown
Hedgerow and field trees	•CS2000 Field Survey (CEH) •*Inventory of Small Woodlands and Trees (FC)*	~ regional ~ local	~ 6-8 yearly since 1984 ~ 1999 baseline
Ponds	•**Countryside Stewardship Agreement Data (Defra)** •CS2000 Field survey (CEH)	~ local ~ regional	~ annual since 1991 ~ 6-8 yearly since 1984, with interim updates
b. Characteristic features, in good condition and appropriately managed			
Roadside verges	•CS2000 Field Survey (CEH)	~ regional	~ 6-8 yearly since 1984
Condition of linear features including stream sides, river corridors & canals	•CS2000 Field Survey (CEH) •**Countryside Stewardship Agreement Data (Defra)**	~ regional ~ local	~ 6-8 yearly since 1984 ~ annual since 1991
Field margins	•CS2000 Field Survey (CEH) •**Countryside Stewardship Agreement Data (Defra)**	~ regional ~ local	~ 6-8 yearly since 1984 ~ annual since 1991
Health of trees	•*NIWT (Field Survey data)(FC)*	~ regional	~ 1999 baseline
CS2000 vegetation condition measures	•CS2000 Field Survey (CEH)	~ regional	~ 6-8 yearly since 1984
Water quality	•CS2000 Field Survey (CEH) •**National Survey of Water Quality (EA)**	~ regional ~ river reach	~ 6-8 yearly since 1984 ~ 5 yearly, since 1990
Uptake of Woodland Grant Schemes	•**WGS database (FC)**	~ site	~ annual since 1994
Uptake of Countryside Stewardship or similar measures	•**Countryside Stewardship Agreement Data (Defra)**	~ site	~ annual since 1991
Uptake of ESA Schemes	•**ESA Database (Defra)**	~ local	~ annual since 1999
SSSI Condition	•**SSSI Condition Database**	~ site	~ rolling programme of assessment started in 1997 and ending in 2003; six year reporting cycle.
State of repair of historic buildings	•*Farm Buildings at Risk (EH)*	~ site	~ 2004 baseline
Historic Monuments	•*Monuments at Risk (EH)*	~ site	~ 2003-4 baseline

Table 2.2, cont. Potential data sources and their spatial and temporal characteristics

Theme	Potential source	Spatial resolution	Temporal resolution
c. Extent or stock of new elements			
Development (e.g. transport or communications infrastructure, green field development etc)	• **Urban Boundaries (ODPM)** • **Land Use Change Statistics (ODPM and CQC Project)** • **Post Office Address File (PO & CQC)** • **Previously Developed Land (ODPM)** • **Wind Farm Development (BWEA)** • National Electricity Super-Grid	~ site ~ 100m, point and 1ha grid ~ site as point ~ site as point ~ site as point ~ site as network	~ 2001 baseline ~ annual since 1990 ~ annual since at least 1990 ~ annual since 1999 ~ annual since 1991 ~ baseline unknown
Agricultural buildings	• CS2000 Field Survey (CEH)	~ regional	~ 6-8 yearly since 1984
d. Experiential aspects			
Tranquillity/noise	• Tranquillity Mapping (CPRE)	~ national	~ imprecise '1960s to 1990s'
Noise	• No national source available		
Levels of traffic	• No national source available		
Air pollution	• Considered beyond the brief and not fully investigated		
Light pollution	• Night Sky Database (CPRE)	~ 1km grid	~ change between 1993 - 2000
Remoteness, rurality or wilderness	• **Rural-urban Definitions (ONS,CQC)**	~ ha grid	~1998 and 2001
Disturbed ground	• **Previously Developed Land (ODPM)**	~ site as point	~ annual since 1999
Access/welcoming feel	• *National Access Database (CA)*	~ site	~ unknown (database under development)
Viable rural communities	• Considered beyond the brief and not fully investigated		
Appropriate management of visitor pressure	• No national source identified		
Appropriate wildlife	• *Progress towards BAP targets (EN)* • Biological Records (CEH)	~ local ~ 10km grid	~ variable ~ variable
Evidence of active landscape management	• **Countryside Stewardship Agreement Data (Defra)** • **ESA Database (Defra)** • **WGS Database(FC)** • Organic Farming Schemes (Defra) • **Landscape Designations (CA, EN)**	~ local ~ local ~ site ~ site ~ site	~ annual since 1991 ~ annual since 1999 ~ annual since 1994 ~ annual since 2003 ~ variable baseline
Public opinion	• Public Attitude Surveys (Various)	~ national, not spatially referenced	~ annual
Local distinctiveness and traditional character	• **Countryside Character Areas (CA)** • **Natural Areas (EN)** • **National Landscape Typology (CA)**	~Local ~Local ~Local	~baseline c.1995 ~baseline c.1995 ~baseline c.2000

Notes

Data sources: Datasets whose names are in **bold** were considered the primary sources of information for the indicator of change in countryside quality. Datasets whose names are shown in *italics* are under construction and were not available to the CQC Project but are considered potentially useful for future work.

Data owners: BWEA= British Wind Energy Authority; CEH=Centre for Ecology and Hydrology; CPRE= Council for the Protection of Rural England; CQC= Countryside Quality Counts (datasets created during this work; Defra= Department of Environment, Food and Rural Affairs; EA= Environment Agency; EN= English Nature; EH English Heritage; FC=Forestry Commission; NG= National Grid; ODPM= Office of the Deputy Priminister; PO=Post Office.

Spatial Resolution: National= only statistically valid for England as a whole; Regional= data only capable of or available for making statistically valid estimates at scales above that of Counties; Local= data only capable of or available for making statistically valid estimates at scales at or above that of Countryside Character Areas or Natural Areas; Site= data available for individual land parcels, usually with a spatial accuracy of a few meters; Site as Point= data available as the centroid of individual land parcels, usually with a spatial accuracy of a few meters to a few hundred meters; 1km = data available for 1km x 1km raster grid; 1ha= data available for 1ha raster grid.

an indicator could be constructed, given the likely availability of new datasets in the near future, future work would be needed to refine and enlarge the scope of the measure. The other important conclusions that could be drawn from the audit related to the scale of analysis and reporting and update frequency for the indicator.

Geographical scales for analysis and reporting

2.19 It is generally accepted that landscape character assessment can be applied at different geographical scales. It follows, therefore, that there is probably no single scale that is appropriate for the development of indicators of change in countryside character and quality. Decisions about scale, therefore, depend more on the intended purposes to which the measures will be put.

2.20 The task set in the brief for this Project was to develop indicators that were capable of describing change in character and quality at national scales. As noted in the *Interim Report*, our consultations with the potential user community confirmed that it would be appropriate to report at these levels, but that breakdowns at regional and sub-regional scales[20] would also be valuable.

2.21 Those people consulted argued that the ability to provide breakdowns at regional and sub-regional scales would ensure the long-term relevance of the Project, given the development of regional tiers of government within England. It was also felt that any system of reporting might also attempt to provide summaries by geographical regions constructed to illustrate particular types of landscape or policy themes or issues, such as 'peri-urban landscapes', 'coastal landscapes' or 'upland landscapes'**.**

2.22 Our consultations also found that while there was support for the development of national, regional or sub-regional measures, many people felt that the data on which they were based should be capable of being disaggregated to more local scales and potentially be available to users. It was argued that only by such disaggregation could the significance of change at these finer scales be assessed, and the general indicator approach used to assist a wider range of local work than the indicators themselves would be capable of.

2.23 **As a result of these consultations, we recommended in our *Interim Report* that the CQC Project should report at regional as well as national scales. We also argued that, subject to copyright and confidentiality restrictions, the datasets on which the construction of indicators was based should also be made available to users.**

2.24 In taking our recommendations forward we have made the distinction between the geographical scales used for ***analysis*** and ***reporting***. In order to preserve information for later use we have sought to process datasets at the finest scale resolution possible. For reporting purposes, however, we have aggregated information to Countryside Character Area (CCA) level. The latter represented the best compromise between the needs of most potential users of the

[20] i.e. both by geographical region and by administrative region.

information, who required a detailed 'local view', and the requirements for a national index, in line with the RWP commitment.

2.25 The need to report at the scale of the Countryside Character Areas meant that only datasets that could be disaggregated and processed to *at least* this scale were considered as suitable for inclusion in the indicator. The main implication of this requirement was that use of a key source of landscape data, namely the field survey component of CS2000, could not be used in a straightforward manner for the construction of indicators of countryside change within the CQC Project.

2.26 The sampling design used for the CS2000 Field Survey places constraints on the scale at which estimates of stock of land cover and landscape features, and the changes associated with them, can be made. The sampling intensity used means, in fact, that reliable estimates of stock and change can only be made at national and regional levels. The implication of this constraint[21] is that if Character Areas are to be used as a reporting framework for the CQC Project, then CS2000 Field Survey data cannot be used directly to construct the required indicators. As a result these data were used operationally to provide contextual information for comparisons of the trends detected at larger scales. The way in which this has been done is described in detail in Part 3 of this Report. As part of the development work related to the CQC Project, we have also explored the use of CS2000 Field Survey data as a complementary national indicator. The results of this exploratory work are described in Part 6.

Base-line date and frequency updating for the indicator of change in countryside quality

2.27 As in the case of reporting scale, questions about temporal baselines and frequency of updating are constrained by the data available. The audit of potential data sources summarised in Table 2.2 also allowed a number of conclusions to be drawn about these issues.

2.28 First, in relation to the identification of a base-line date, it was apparent that 1998 represented something of a pivotal point in terms of the range and character of the data available. The results in Table 2.2 show that richness in content of our rural data infrastructure has improved dramatically during the 1990s, and that from about 1998 onwards a far greater range of data are available than in the earlier part of the decade. **Thus in our *Interim Report,* we recommended that 1998 should be used as the baseline against which future changes in countryside character and quality should be measured, and that in order to provide a context for this work a preliminary assessment could be made for the period 1990-98. As a result of the work we have done during the operational phase of the CQC project, we continue to support this recommendation.**

[21] Note that the constraint does not apply to the use of CS2000 data in the form of Land Cover Map 2000.

2.29 **The second conclusion that may be drawn from the audit of potential data sources is that a reporting cycle of about 5 years is probably appropriate for any indicator of countryside change.**

2.30 Our consultations with potential users suggested that while some might think it desirable to have reports on an annual basis, data constraints and the speed at which landscape change occurs probably precludes such an undertaking. Given the frequency of updating of many of the key data sources, such as the *National Inventory of Woodlands and Tree*, and the need to 'smooth' annual data, such as LUCs over longer time periods to improve its reliability, a reporting cycle of about 5 years seems more appropriate. **Thus we recommend that the next publication of the indicator of change in countryside quality be in 2006, and that it should cover the period from the beginning of 1999 through to the end of 2003.**

2.31 A 5 year reporting cycle clearly has implications for the way in which the indicators are handled in annually published documents such as the Countryside Agency's *State of the countryside* (SoC) Report. **If the latter remains the major outlet we recommend that while each *SoC* Report might contain updates for individual metrics within the suite of measures identified, the Countryside Agency makes a more episodic and detailed assessment or audit of change every 5 years or so. The assessment should be summarised in the *SoC* Report and backed-up by more extensive background documentation, analysis and data published by other means.** The approach used for the publication of the current indicator provides one model of how this can be done.

2.32 An important advantage of a 5 yearly reporting cycle is that it enables the suite of data used for the indicators to be reviewed periodically, and successive audits adjusted to take these new data into account as they become available. Such a process would not preclude more regular, interim updates for those component measures that are recorded more frequently. As will be shown below, a reporting cycle of 5 years also has advantages in terms of handling the way in which the significance of change is evaluated.

Evaluating the importance or significance of countryside change

2.33 Our consultations with potential users confirmed that many people felt that indicators have little or no purpose unless one can also say whether the changes that we see over time are in the 'right direction', or at least what the ***implications*** of those changes are. Thus much of the work undertaken during the CQC Project has focused on the issue of how to evaluate change and whether some rigorous, repeatable and defendable evaluation framework could be developed.

2.34 At the end of the pre-operational phase of the CQC Project, we noted in our *Interim Report*, that Countryside Agency's Character Area Descriptions appeared to offer one way in which the significance or implications of change could be assessed. These descriptions were published in 1996-99 alongside the

map of 'Joint Character Areas'[22], and were based on work undertaken by the Countryside Agency with a range of regional and local stakeholders. **On the basis of our review of the content of the Character Area descriptions, we observed that the sections entitled *Changing Countryside* and *Opportunities for the Future* potentially allowed us to identify aspects of change in countryside character that stakeholders in the 1990s felt were relevant or important at these local scales.**

2.35 In the work we have undertaken during the operational phase of the CQC Project, we have sought to refine the use of the Countryside Agency's Character Area descriptions as a basis for evaluating the significance of countryside change detected at the Character Area level. This has resulted in the construction of a 'Character Area Profile' for 156 of the 159 areas[23], which set out both key elements that give each their sense of local distinctiveness, and the issues identified under the *'changing countryside'* and *'opportunities'* sections.

2.36 An example of a Character Area Profile for the Leicestershire & South Derbyshire Coalfields (Character Area 71) is shown in Table 2.3. In addition to a summary in the header section of the key elements that characterise the area, the main body of the Table sets out the statements contained in the published descriptions that summarise the types of changes that might strengthen character or potentially transform it. In each case the original text from the published descriptions were used, the only modification made was to organise the material under a number of headings, namely:

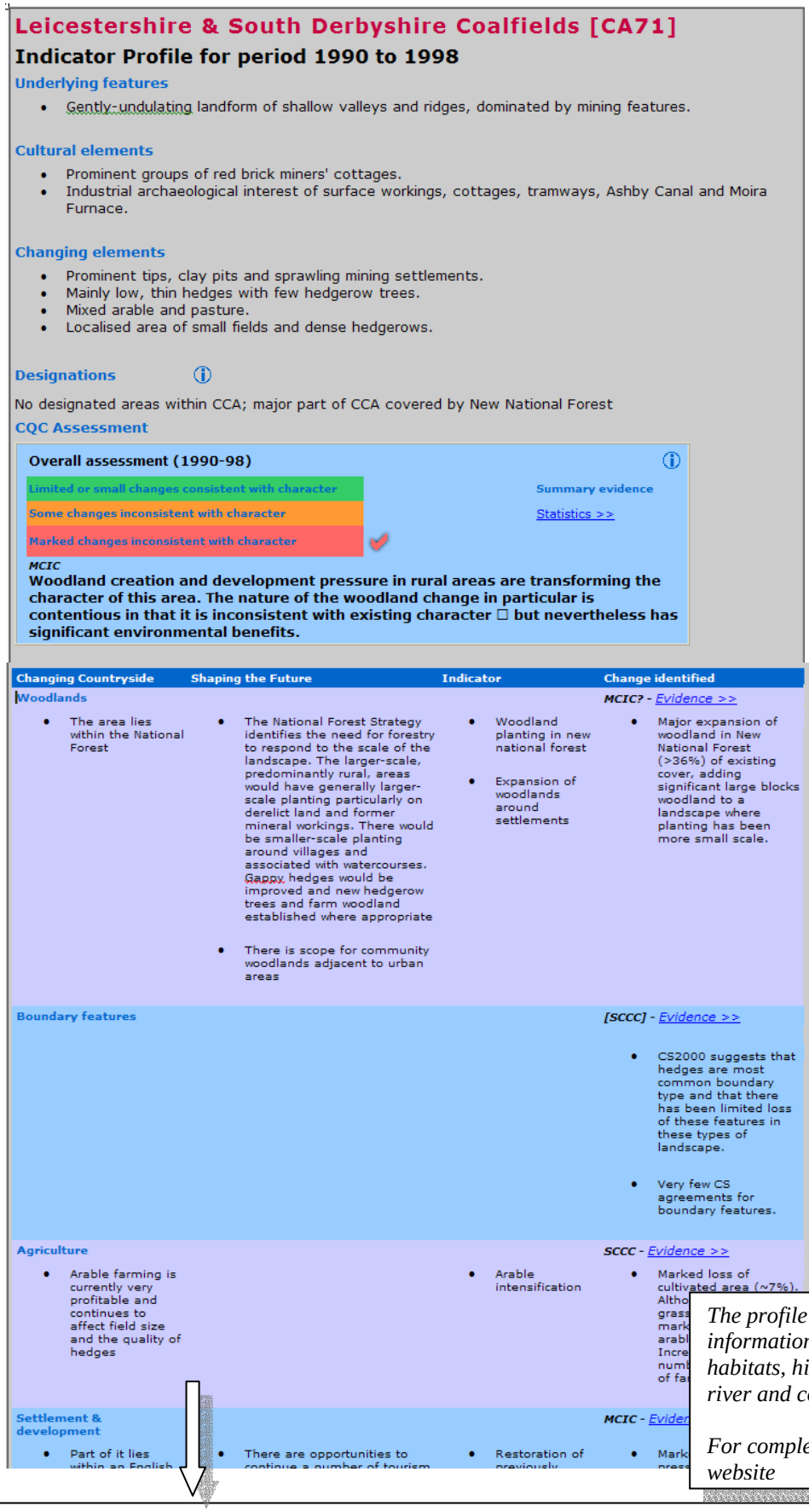
- woodland
- boundary features
- agriculture
- settlement pattern
- semi-natural habitats
- historical features
- river and coastal

Only the first three elements of the profile are shown in Table 2.3; the complete example can be found on the CQC website.

2.37 Each Character Area Profile was reviewed by the CQC Project Team, and on the basis of their knowledge of the range of data available (Table 2.2), metrics that could potentially be used to assess the scale and direction of change in each element were suggested. The exercise confirmed that while the measurement of certain elements (e.g. historic features) was problematic because of the lack of information, surrogate measures could be found for most of the issues identified in the *'changing countryside'* and *'opportunities'* sections. As a result we recommended that the Character Area Profiles be taken forward as the framework against which the significance of change in character could initially be judged.

[22] The map was developed *jointly* by the Countryside agency and English Nature, and integrates both Character Areas and Natural Areas in a common spatial framework.
[23] Some key data were unavailable for Lundy (158), and the Scilly Isles (159), and so they were excluded from the analysis. Inner London (112) was excluded because of is urban character.

Table 2.3: Example Character Area Profile



Leicestershire & South Derbyshire Coalfields [CA71]

Indicator Profile for period 1990 to 1998

Underlying features

- Gently-undulating landform of shallow valleys and ridges, dominated by mining features.

Cultural elements

- Prominent groups of red brick miners' cottages.
- Industrial archaeological interest of surface workings, cottages, tramways, Ashby Canal and Moira Furnace.

Changing elements

- Prominent tips, clay pits and sprawling mining settlements.
- Mainly low, thin hedges with few hedgerow trees.
- Mixed arable and pasture.
- Localised area of small fields and dense hedgerows.

Designations

No designated areas within CCA; major part of CCA covered by New National Forest

CQC Assessment

Overall assessment (1990-98)

Limited or small changes consistent with character

Some changes inconsistent with character

Marked changes inconsistent with character

Summary evidence

Statistics >>

MCIC

Woodland creation and development pressure in rural areas are transforming the character of this area. The nature of the woodland change in particular is contentious in that it is inconsistent with existing character □ but nevertheless has significant environmental benefits.

Changing Countryside	Shaping the Future	Indicator	Change identified
Woodlands			*MCIC?* - Evidence >>
• The area lies within the National Forest	• The National Forest Strategy identifies the need for forestry to respond to the scale of the landscape. The larger-scale, predominantly rural, areas would have generally larger-scale planting particularly on derelict land and former mineral workings. There would be smaller-scale planting around villages and associated with watercourses. Gappy hedges would be improved and new hedgerow trees and farm woodland established where appropriate • There is scope for community woodlands adjacent to urban areas	• Woodland planting in new national forest • Expansion of woodlands around settlements	• Major expansion of woodland in New National Forest (>36%) of existing cover, adding significant large blocks woodland to a landscape where planting has been more small scale.
Boundary features			*[SCCC]* - Evidence >>
			• CS2000 suggests that hedges are most common boundary type and that there has been limited loss of these features in these types of landscape. • Very few CS agreements for boundary features.
Agriculture			*SCCC* - Evidence >>
• Arable farming is currently very profitable and continues to affect field size and the quality of hedges		• Arable intensification	• Marked loss of cultivated area (~7%). Altho... grass... mark... arabl... Incre... numb... of fa...
Settlement & development			*MCIC* - Evider...
• Part of it lies within an English	• There are opportunities to continue a number of tourism	• Restoration of previously	• Mark... press...

Header section

Assessment

Main body

The profile continues with information for semi-natural habitats, historic features and river and coastal elements.

For complete example see CQC website

2.38 Part 3 of this Report provides details of the ways in which the data sources identified in Table 2.2 were used alongside the Character Area Profiles to construct an indicator of change in countryside quality. At this stage it is appropriate to conclude with some more general remarks about the use of Character Area Descriptions as the basis of the evaluation of the significance of change.

2.39 In suggesting the Character Area Profiles as a way forward for the assessment of 'whether change matters', we recognise that it was never intended that the original statements about change should be used for such a purpose as the one proposed here. Indeed, an important aspect of the way in which the original accounts of countryside character were presented was that they were 'descriptive' rather than 'evaluative'. Nevertheless these statements represent something of a marker, against which trends can be judged. We can, without implying that a given change is 'good' or 'bad', use these markers to determine whether trends in the elements that shape the landscape are consistent or compatible with countryside character as it was described in the CAPs. As a result we can also make an overall judgement about the change in character for the area as a whole.

2.40 Having made the type of analysis described above, the Character Areas of England could be grouped into three major categories:

- Group 1: Those which showed ***marked changes*** in the elements that shaped character in which trends were inconsistent with the existing published descriptions of character, that is, where landscape change is different from what we might expect, given our current understandings of what would restore, strengthen or maintain the character of that are. *For a Character Area to be assigned to this group at least two of woodland, agriculture, settlement and development, and semi-natural (if it covered more than 10% of the area) had to be assessed as showing marked changes that appeared to significantly transform or change existing character.*
- Group 2: Those which showed less marked or ***some changes*** in the elements that shape character in which trends were again inconsistent with the existing published descriptions of character. *For a Character Area to be assigned to this group one of woodland, agriculture, settlement and development, and semi-natural (if it covered more than 10% of the area) could be assessed as showing marked change, while the rest may exhibit some change. However, the majority of changes should be judged to significantly transform or modify existing character.*
- Group 3: Those which show ***change that was consistent*** with maintaining or restoring character as described in the published descriptions, or which were stable and therefore were areas in which character was being sustained. *Character Areas in this group could show marked, some or no change. The overriding judgement was made on the basis that the trends were predominantly such as either to restore or sustain existing character.*

2.41 Where there was no statement in the CAP about an individual element, this was not used in the assessment for the Character Area as a whole. However, a judgement was made if data were available, on the basis of the more general

knowledge of the expert team and the regional stakeholder panels, and this was added to the profile for future reference. These types of assessment are easily identified in the published information that underpins the indicator.

2.42 Where it was felt that the assessment of magnitude or significance of change was marginal or equivocal, then these were flagged. A 'conservative' approach was then used for the calculation of the final indicator. Thus borderline 'marked changes' were assigned to the 'some changes group', while borderline judgements of 'inconsistent change' were grouped with the consistent ones.

2.43 In order that users can inspect the evidence assembled to make the assessment of change in character, remaining sections of Part 3 show how the seven elements that were used to assess change in character were analysed. In order to make the information base upon which the indictor was constructed as widely accessible as possible, a website has also been constructed, which presents each Character Area Profile, the judgements made about the location, magnitude and significance of change in relation to character, and the evidence on which this judgement was based.

2.44 **On the basis of the work we have done in relation to countryside character during the CQC Project, we recommend that the Countryside Agency *accept* that, on the basis of its published accounts of countryside character for England, it can be evaluative. The Countryside Agency can, we suggest, assess what implications recent change has for character as it is currently described. What it must seek to avoid, however, is the impression that it is *prescribing* what change 'should' occur, or what changes are to be 'preferred'.** The purpose of work such as that undertaken in the CQC Project is to inform people about the *occurrence and scale of countryside change*, and to make them aware of the *implications that it has.* Such a position, we suggest, is wholly in keeping with the RWP commitment for an indicator of change in countryside quality, which was to help people ensure that change occurs '... in ways that strengthen character and value'[24].

2.45 Although the original Character Area Descriptions are somewhat imperfect for what we propose here, they nevertheless offer a valuable framework in which discussions about the nature and implications of countryside change can be taken forward. As part of the consultation processes that we have undertaken to construct and validate the present indicator, we asked those involved at the regional level to review the adequacy of the statements derived from the original descriptions. Where necessary, the statements were amended or added to, in order to provide as robust a framework for assessment of the current situation as possible. In undertaking this work, however, it became clear that there was considerable support for updating the Character Area Profiles to take account of the new situations that we find ourselves in. It was argued that these revised profiles could serve as a more robust framework for assessment when the indicator change in countryside quality is updated in 2006.

2.46 **We therefore recommend that the Countryside Agency build into its future work plan not only that the data required for updating the indicator of**

[24] See: www.defra.gov.uk/rural/ruralwp/whitepaper/chapter9.htm

change in countryside quality be gathered, but also that a participative process for the revision and refinement of the Character Area Profiles be initiated. Such a process, we suggest, would both ensure the continuing relevance of the Countryside Agency's published materials on the Character Areas of England, and at the same time support a range of policy applications that are relevant to the development of regional and sub-regional spatial planning, under more devolved government structures, and the targeting and monitoring of 'entry-level' schemes for countryside stewardship.

Conclusions

2.47 In this Part of the *CQC Final Report*, we have sought to describe the thinking that has carried the Project forward from the pre-operational phase, described in our *Interim* document, through to a conclusion, involving the publication of the indicator of change in countryside quality in the *State of the countryside* Report for 2004. The key conclusions that were drawn from the conceptual work on indicator development were that

(a) A *single* indicator of change in countryside quality should be constructed, rather than separate measures of character and quality.

(b) The indicator should be viewed initially as expressing the contribution that landscape character makes to the overall quality of the countryside, although it is recognised that there is scope for it to be extended.

(c) The baseline for the indicator is 1998, and that an initial assessment of change should be made for the period from 1990 up to that date. Thereafter that the indicator be updated on an 8 year cycle, so that the next assessment should be published in 2006. This would ensure that the context for recent change is established, and would also give the opportunity to refine the indicator given that new datasets will come 'on-line' in the meantime.

(d) The significance of change up to 1998 is assessed in the context of the Character Area Descriptions already published by the Countryside Agency, and that these should be updated ready for the next assessment of change in countryside quality.

(e) The scale of countryside change and its significance should be assessed at the Character Area level and the results aggregated to construct regional and national 'headlines'.

2.48 The implications of these conclusions are that, if accepted, the deliverables from the CQC Project would not only be an indicator and supporting data, but the foundation of a *process* by which thinking about countryside character and its use in assessing the significance of countryside change can be taken forward at national, regional and sub-regional scales, in ways that are consistent both with the objectives of the Countryside Agency and the commitment in the *Rural White Paper for England.*

2.49 In Part 3 of this Report we provide an account of the analysis made using the conceptual framework that we have recommended for the construction of an indicator of change in countryside quality.

Part 3 *Change in Countryside Quality 1990-98*

Introduction

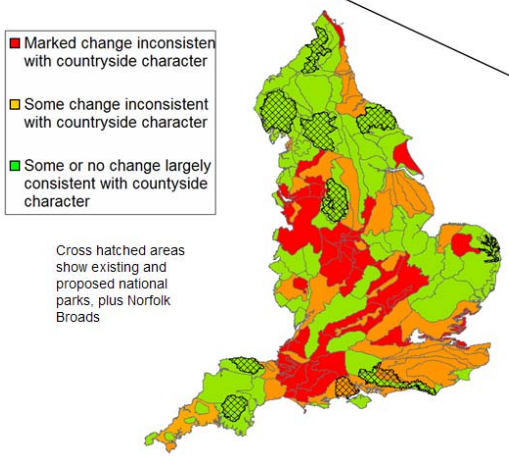
3.1 One of the major deliverables required of the CQC Project was the publication of a 'headline' indicator of change in countryside quality in the Countryside Agency's *State of the countryside* Report for 2004[25]. The indicator that we constructed showed that:

- Between 1990 and 1998 about 40% of our landscapes were either stable or showed changes these elements that were consistent with existing character area descriptions.
- For 23% of our landscapes the changes were marked and inconsistent with these descriptions.
- In the remaining 37% of our landscapes the changes were inconsistent but of less significance for overall character.

3.2 Figure 3.1 shows how the indicator was constructed. In this part of the *Final Report* we show how the analysis was made, what assumptions lay behind the calculations and what confidence users might have in the result.

Figure 3.1: Basis of the Indicator of Change in Landscape Quality in England, 1990-98.

	IC	CC	TOTAL
MC	36	5	41
SC	58	20	78
LC	0	37	37
TOTAL	94	62	156



Between 1990 and 1998:

- 23% of our landscapes the changes were marked and inconsistent with these descriptions.
- 37% of our landscapes the changes were inconsistent but of less significance for overall character.
- 40% of our landscapes were either stable or showed changes these elements that were consistent with existing character area descriptions.

[25] http://www.countryside.gov.uk/EvidenceAndAnalysis/dataHub/2004_dataarea/index.asp

Analytical Tools and Assessment Methodology

3.3 A major deliverable form the CQC Project has been the creation of the 'National Countryside Character Areas Database' (NCCAD), which brings together a range of nationally available datasets on a Character Areas basis. NCCAD consists of a series of EXCEL spreadsheets, which can be used to extract the relevant information for any Character Area via a series of macros.. These data, together with mapped information at the sub-Character Area level that were held in a GIS, allowed an assessment to be made of the changes exhibited by each element for each Character Area Profile, and ultimately its significance.

Table 3.1: Data sets used to construct the indicator of change in countryside quality, and key processing steps.

Theme	Data source	Analysis and Assumptions
Woodland	National Inventory of Woodlands and Trees (NIWT)	*Allows area of 'young trees' to be determined per Character Area and proportion of existing cover added to by planting. These are trees deemed by the air photo analysis to be less than 10 years old. Thus if the Inventory was published in 1999, this interpreted forest type gives an insight into the extent of new planting in blocks >2ha in the period 1990-98. Note – NIWT does not yet allow assessment of woodland losses*
	Ancient Woodland Inventory (AW)	*The Inventory allows AW blocks to be identified in the NIWT data.*
	Woodland Grant Scheme Data (WGS)	*The WGS database allows woodland polygons for which a WGS agreement exits to be identified, and a start year for the agreement determined. When used in conjunction with NIWT it allows a distinction to be made between agreements for new planting and those for management of existing forest blocks.*
Boundary features	Countryside Survey 2000 (CS2000)	*CS2000 data cannot be used to determine stock and change of boundary features at the scale of Countryside Character Areas (CCA), but it can be used to describe the composition of boundary types and trends 1990-98 for the general landscape types that are found in the CCA*
	Countryside Stewardship Monitoring (CS)	*Confidentiality restrictions prevented the location of individual agreements from being used, but these data could be aggregated to CCA level, and the purpose and start date of agreements for features measured in ha, m, m2 and number could be determined. Data for linear features were used to assess the uptake of agreements for boundary features.*
	ESA Monitoring	*Confidentiality restrictions prevented the location of individual agreements from being used, but these data could be aggregated to CCA level, and were made available for 1999 onwards. The 1999 data were used to determine the extent of uptake and the purpose of agreements up to the end of the CQC assessment period. Data for linear features were used to assess the uptake of agreements for boundary features.*
Agriculture	June Census	*June Census data are unreliable when used at fine scales, and also confidentiality restrictions apply. These data were therefore processed at CCA level and change in all of the main reporting categories was determined for the period 1990-98. NCCAD also provides context data for 1994 and 2001. The key variables used in the analysis were change in cover of major agricultural cover types (cultivated area, crops and fallow, temporary, permanent and rough grass, and set-aside) farm type and size, and animal numbers.*

/cont

Table 3.1, cont.: Data sets used to construct the indicator of change in countryside quality, and key processing steps.

Theme	Data source	Analysis and Assumptions
Settlement & development	Land Use Change Statistics (LUCS)	*A 1ha resolution grid was used to process LUCS point data for the period 1990-98 for England. According to the spatial reference used to store the LUCS record, the data were used to calculate for each cell the total area of land developed or redeveloped, and the proportion of that land in which the end use was residential, commercial, transport or other. In addition the area converted from undeveloped to developed uses was calculated. Where the area developed or converted exceeded 1ha, the 'surplus' area was allocated to neighbouring cells to gain some idea of the spatial extent of change.*
	2001 Urban Boundaries	*The 2001 urban boundaries were used to determine the area of open countryside within each CCA.*
	Draft Rural Urban Definitions data	*The morphological types created by the Rural-Urban definitions study were used to determine where land use change, as recorded by LUCS, was occurring.*
	Wind Farms	*These data were used to locate all wind farms notified to the British Wind Energy Association that had been established before 1998, and which exceeded 1MW capacity..*
Semi-natural habitats	LCM2000	*LCM2000 data were used to estimate the proportion of non-woodland semi-natural habitats within a CCA.*
	Countryside Stewardship & ESA agreements	*Confidentiality restrictions prevented the location of individual agreements from being used, but these data could be aggregated to CCA level, and the purpose and start date for various features could be determined. Data for the management of semi-natural habitats (including ponds) were used to assess this theme.*
	SSSI Condition	*SSSI condition data were used to determine the area of each CCA covered by terrestrial semi-natural habitats and their condition. Since the condition assessments were published in 2003 it was assumed that the changes detected mainly reflected events that occurred in the 1990s.*
Historic features	Ancient Monuments at Risk Register (East Midlands only)	*These data were only available for the East Midlands at the time of the analysis, and were used here to calculate the proportion of AM at high, medium and low risk.*
	Countryside Stewardship & ESA	*Confidentiality restrictions prevented the location of individual agreements from being used, but these data could be aggregated to CCA level, and the purpose and start date of agreements for various types of features determined. For the assessment of this theme the number and area of agreements for historic landscapes were determined.*
River and Coastal Management	Countryside Stewardship & ESA	*Confidentiality restrictions prevented the location of individual agreements from being used, but these data could be aggregated to CCA level, and the purpose and start date of agreements for various types of features determined. For the assessment of this theme the number and area of agreements for features associated with watercourses and coastal areas were determined.*
	National River Water Quality Monitoring	*These data were not available until a late stage in the analysis, and while they can be used to determine the change in chemical and biological quality of rivers within the CCA for the period 1990-2000, there were not used in the present analysis.*

3.4 The data for each Character Area were evaluated by an expert panel, with experience in landscape character assessment, and stakeholders with good local knowledge. The latter were brought together in the autumn of 2003 in a series of regional meetings. An example of the materials used by the expert panel and stakeholders for their assessments is shown in Table 2.3. For the purposes of illustration, the Leicestershire & South Derbyshire Coalfields (Character Area 71) has been selected.

3.5 The process of assessment by the expert panel and stakeholders proceeded as follows:

(a) Prior to the regional meetings with stakeholders, members of the expert panel used the statements in the sections on *'changing countryside'* and *'opportunities for the future'* of the Character Area Profiles (see Part 2), to suggest an appropriate surrogate measure for each theme so that an assessment of change could be made.

(b) At the regional meetings, the members of the expert panel sat with stakeholders to review both the adequacy of the statements about change that were contained in the Profile, and the suitability of the measures of change proposed.

(c) The expert panel members and stakeholders then made a joint assessment of the magnitude and significance of the change observed, and recorded their conclusions as a set of short notes for each element of the Character Area profile.

(d) Although one day was allocated for each of the regional meetings, time constraints often prevented all of the Character Areas in a region from being assessed. Thus following these meetings one panel member made a further, more refined assessment of *all* of the Character Areas, to ensure the consistency of the assessments, and to use the information gained during the consultations to make an assessment of those areas that had not yet been considered.

(e) Following completion of step (d), the decisions were confirmed for a 20% sample of Character Areas, by two other panel members, who did not know the outcome of the assessment process, but who were familiar with the Character Area concerned.

3.6 The assessments made during the regional consultations were essentially qualitative. By contrast, those made following these meetings, were based on a more consistent set of 'rules', to determine both the magnitude of change evident for each landscape theme, and the extent to which it was consistent with the existing character area description. The rules were derived in part from the experience gained during the regional meetings, and in part from a review of the range of measures found in the total set of change data for each thematic element.

3.7 A three-fold assessment of the magnitude of change for each element was made. The categories constructed were 'marked change', 'some change' and 'limited or no change'. In addition the changes recorded for each theme were labelled 'consistent' or 'inconsistent' according to whether they strengthened existing landscape character, or whether they appeared to transform it. The decision guidelines used to determine the magnitude and implications of change are summarised for landscape elements in Table 3.2.

Table 3.2: Decision Guidelines for Assessment of Magnitude and Significance of Change

Element	Decision Guidelines
Woodland	• Woodland is assigned 'marked change' if the woodland area increases by >~3% of original total cover as a result of 'young trees' identified on NIWT. • The change is assigned as 'consistent' if the planting strengthens existing patterns as described in the CCA Profile, and 'inconsistent' if it transforms it. • If woodland management is a key issue – rates of WGS uptake are considered. If rates >~20% then the change is considered 'consistent'. • If AW covers >~20% of woodland WGS uptake in AW considered.
Boundaries	• CS2000 used to identify major boundary features in the types of landscape that include the CCA • Countryside Stewardship/ESA data used to determine number of agreements for boundary management. • CCA assigned 'marked change' if agreement for linear features is above national average; assigned 'some change' if agreements exist by rates at or below national average; assign 'limited or no change' if agreements not evident or are rare. • CCA assigned change 'consistent with character' if profile suggests that boundaries are characteristic elements and agreements for appropriate boundary types are in 'top 10' agreement categories.
Agriculture	• Agriculture is assigned a 'marked change' if cultivated area and/or crops and fallow and/or permanent grass change by >~6% of CCA and/or original cover; assessment also based on changing proportion of farm types to determine balance between cropping and pasture. • The change is inconsistent if there is a shift away from grasslands where these are flagged as a characteristic feature of the CCA. • Change in number of livestock units used to assess grazing pressure. Assigned marked change if changes by more than 10%. Direction of change determines consistency/inconsistency.
Settlement and Development	• The national average % rural development (i.e. all conversions and redevelopment in rural areas) is 0.52% • Those CCA with average >1% are assigned 'marked change' • Those with an average between 0.52%-1.0% are assigned 'some change' • Those below the national average are assigned 'limited change' • The assignment some or limited change is over-ridden if there is clear evidence of development pressure on particular rural morphology types, with high rates of conversion of previously undeveloped land. • AND/OR Clear evidence of major route development affecting significant tracts of CCA (>~5km)
Semi-natural	• If semi-natural >10% cover use SSSI condition to determine change; assign 'inconsistent' if majority have condition 'declining' or 'unfavourable no change'; assign 'consistent' if mainly 'favourable' or 'unfavourable recovering'. • If semi-natural <10% use CS/ESA data to determine extent of management of characteristic semi-natural habitats; CCA assigned change 'consistent' with character if profile suggests that boundaries are characteristic elements and agreements for appropriate habitats are in 'top 10' agreement categories. • CCA assigned 'marked change'/'consistent' if CS agreements for semi-natural habitats are above national average.
Historic features	• Data available for Monuments at Risk only available for the East Midlands. Assign 'marked change inconsistent' if majority are at risk; assign 'some change inconsistent' if majority are at medium risk; assign 'consistent' if majority are at low risk. • Use CS agreement data to determine extent of management of historic landscapes. Assign 'marked change' if number of agreements is ranked highly and area shows agreement rates > national average; assign 'some change' if agreements exist by rates at or below national average. • Assign 'consistent' if agreements exits and management of historic features is flagged as important; assign 'inconsistent' if they are flagged and agreements are absent.
River and Coastal Management	• Only partial data available - Use CS agreement data to determine extent of management of waterside or coastal features; CCA assigned 'marked change/consistent' if CS agreements for these features are above national average.

3.8 While in the majority of cases the decisions followed the decision guidelines, assessments for individual elements could be overridden on the basis of the conclusions made in the regional meetings, or in the context of additional map-based evidence. For example, in some Character Areas new planting may have been significant in relation to existing cover, and may have been cited as something that would strengthen character, but map data might show it to be concentrated in a few locations, or in a pattern that departed from the existing one. Thus a 'consistent' assignment might be changed to an 'inconsistent'.

3.9 On the basis of the assessments made for the individual elements of character described in the Character Area Profiles an overall judgement about the change in character for the area as a whole was made (Table 3.2). The way in which the Character Areas were groups has been described in para. 2.40, above.

3.10 Where there was no statement in the CAP about an individual element, this was not used in the assessment for the Character Area as a whole. However, a judgement was made if data were available, on the basis of the more general knowledge of the expert team and the regional stakeholder panels, and this was added to the profile for future reference. These types of assessment are identified in the published information that underpins the indicator by placing the assessment in parentheses.

3.11 Where it was felt that the assessment of magnitude or significance of change was marginal or equivocal, then these were flagged. A 'conservative' approach was then used for the calculation of the final indicator. Thus borderline 'marked changes' were assigned to the 'some changes group', while borderline judgements of 'inconsistent change' were grouped with the consistent ones.

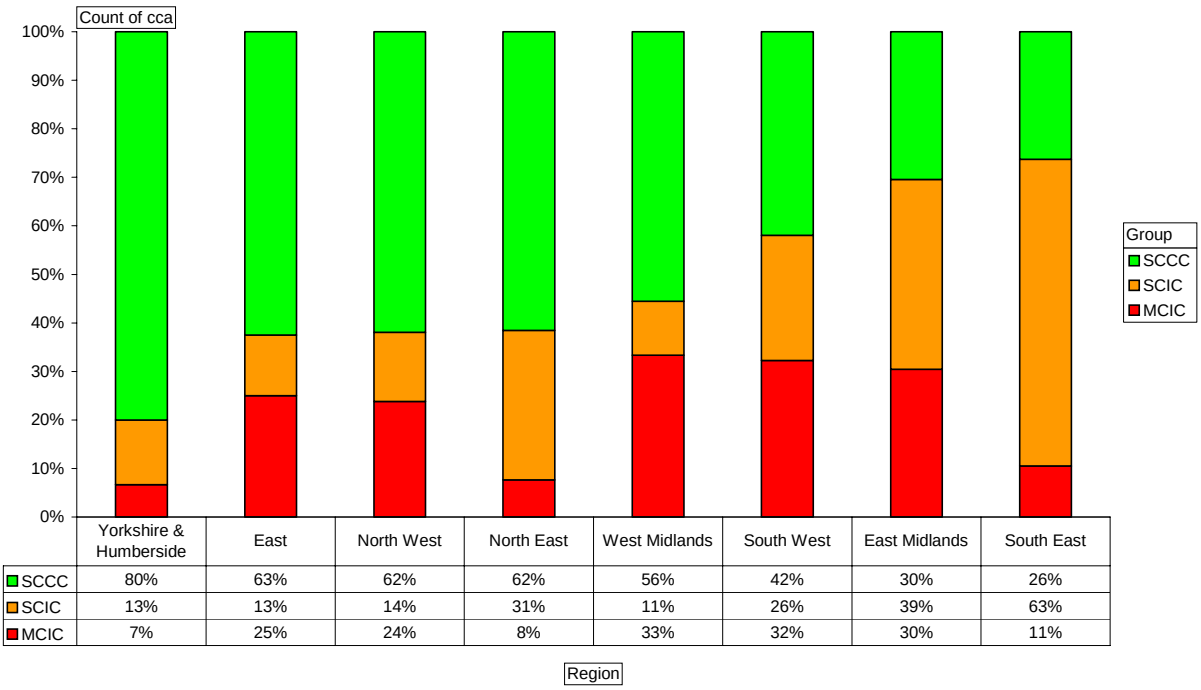
Regional and Geographical Patterns

3.12 As noted in Part 2 of this Report, many users felt that while a national indicator is useful, the ability to make regional and other geographical breakdowns was considered important, if the information generated by this study was to be widely taken up.

3.13 Figure 3.2 shows how the national headline breaks down across the English Regions. The Greater London Region has been excluded from the analysis, along with the Character Areas of the Scilly Isles and Lundy in the South West, because data were not available for all the landscape themes considered in the assessment. Character Areas have been assigned to the region in which the greater part of its area was to be found.

3.14 In Figure 3.2, the regions have been arranged from left to right in order of the decreasing proportion of the number of CCAs which showed changes however large that were 'consistent with character'. Each character area has been assigned to one region only on the basis of the region in which the larger part of its area occurs.

Figure 3.2: Breakdown of indicator of change in countryside quality, 1990-98, by Government Office Region



	Yorkshire & Humberside	East	North West	North East	West Midlands	South West	East Midlands	South East
SCCC	80%	63%	62%	62%	56%	42%	30%	26%
SCIC	13%	13%	14%	31%	11%	26%	39%	63%
MCIC	7%	25%	24%	8%	33%	32%	30%	11%

3.15 Yorkshire and Humberside, the East, the North West and the North East stand out as being the most stable, in terms of what we currently describe their character to be. By contrast, the South East, East Midlands and South West show the greatest proportion of Character Areas which exhibit changes inconsistent with existing character area descriptions.

3.16 The situation of the West Midlands is interesting, for although the data suggest that over half of the constituent Character Areas show changes consistent with character, this region shows the highest proportion of landscapes which show marked changes that are inconsistent with current character descriptions. Thus in terms of grouping the regions, the West Midlands should, perhaps, be considered alongside the South East, East Midlands and South West, as being an area where significant transformations of landscape character appear to be occurring.

Conclusions

3.17 In reviewing the national and regional 'headlines' critically, the important points to note are:

- **Although the conclusions are based on expert and stakeholder judgements about the magnitude and significance of countryside change, the grounds for those judgements are 'auditable' and supported by quantitative evidence.** The evidence is derived from an authoritative series of data resources available from central government

departments and their agencies. *The assessment methodology is based on the assumption that since it is accepted that landscape character can be described in a repeatable and robust way, changes or transformations in character can also be identified.*

- **Although the assessment embodied in the indicator of change in countryside quality is judgemental it is *not* prescriptive (see Part 2).** The terms 'consistent' and 'inconsistent' were selected following a wide range of discussions with stakeholders, to be as neutral as possible. The purpose of the CQC Project was to identify where change in the countryside is occurring and what significance this change has. *The indicator highlights where landscape change is different from what we might expect, given our current understandings about the types of transformation that would restore, strengthen or maintain the character of that area.* There is, however, no assumption that these changes are 'good' or 'bad'. Rather the purpose of the indicator is to better inform people about the nature of change so that they can take account of such trends and their impacts in decision making and planning.

3.18 Part 4 of this Report gives a detailed account of how each of the seven elements that were used to assess change in character were analysed. This was done so that users can inspect the evidence assembled for the project. In order to make the information base upon which the indictor was constructed as widely accessible as possible, a website has also been constructed, which presents each Character Area Profile, the judgements made about the location, magnitude and significance of change in relation to character, and the evidence on which this judgement was based. A detailed description of the CQC Project Website is given in Part 5 of this Report.

Part 4 *Analysis of the Elements that Shape Countryside Character*

Introduction

4.1 Having given an overview of the methodology used in the CQC Project and the headline results, this section of the Final Report provides a detailed account of how each of the seven elements that were used to assess change in character were analysed.

Woodland

4.2 Change in woodland character was assessed in relation to two attributes. These were the location and magnitude of change in woodland *cover*, and evidence of the extent of active *management* of the existing woodland stock.

Location and extent of change

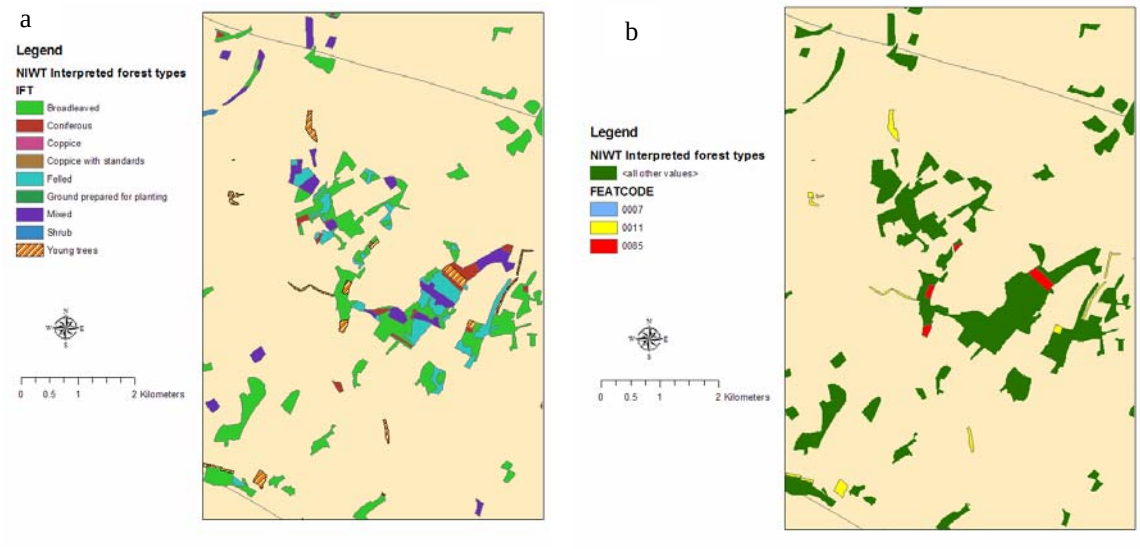
4.3 An insight into the location and magnitude of change in woodland cover at Character Area level was gained from the map of Interpreted Forest Types (IFT), which forms part of the Forestry Commissions *National Inventory of Woodlands and Trees*[26]. The map was largely based on interpretation of 1:25,000 aerial photography which was plotted against a 1:25,000 Ordnance Survey base. It shows (see Figure 4.1a for an example extract) the national distribution of woodland parcels larger than 2ha, and identifies them in terms of 9 'interpreted forest types' (IFTs).

4.4 The IFT map was published for the first time in 2000. It represents an approximate 'baseline' for this date, although it should be noted that 'the reference date' for the base information varies by OS 100x100 tiles; in general the 'reference dates' for the base mapping are earlier in the south and south west of England (between 1996 and 1998) and later in the midlands and north (1998 and 2000). Updates of the map are published by the Forestry Commission annually, and these provide additional data for some of the types recorded on the original survey. The most recent version of the IFT map that was available to the Project Team was for 2002. This version was used to look at woodland data for the period 1990-2000.

4.5 Although the IFT map is primarily a baseline survey, some information on woodland change is available both on the original version and via the updates. A key category is that shown as the 'young trees' interpreted forest type. Within the IFT map, a woodland polygon has been labelled as 'young trees' where planting as seen on the aerial photo 'was clearly visible but the where trees could not be allocated to Conifer and Broadleaved due to their immaturity'. The information derived from the original analysis of aerial photography was then supplemented in two ways:

[26] See http://www.forestry.gov.uk/forestry/hcou-54pg4d

Figure 4.1a & b. Mapping young trees using the National Inventory of Woodlands and Trees (NIWT)



(a) From additional information on Forestry Commission Planting that took place between 1992 and 1999, obtained from digitised FC paper maps covering the period 1992 and 1999, and other FC digital data, for the period 1995-2000.

(b) Information on the location of new planting related to a Woodland Grant Scheme (WGS) Agreement, obtained from digitised maps held by the Forestry Commission for the period 1995-1999, and the WGS database for the period 1995-2002.

4.6 Given the way in which the 'young trees' forest type has been constructed and updated, we can assume that mapped parcels represented an approximate picture of the location and extent of new planting or replanting that occurred during the 1990s, at least for parcels that are larger than 2ha in size.

4.7 Although 'young trees' can therefore be mapped, it is not easy to separate new planting from replanting, although a partial attempt can be made using the Feature Codes assigned to the various sub-categories of the young tree type:

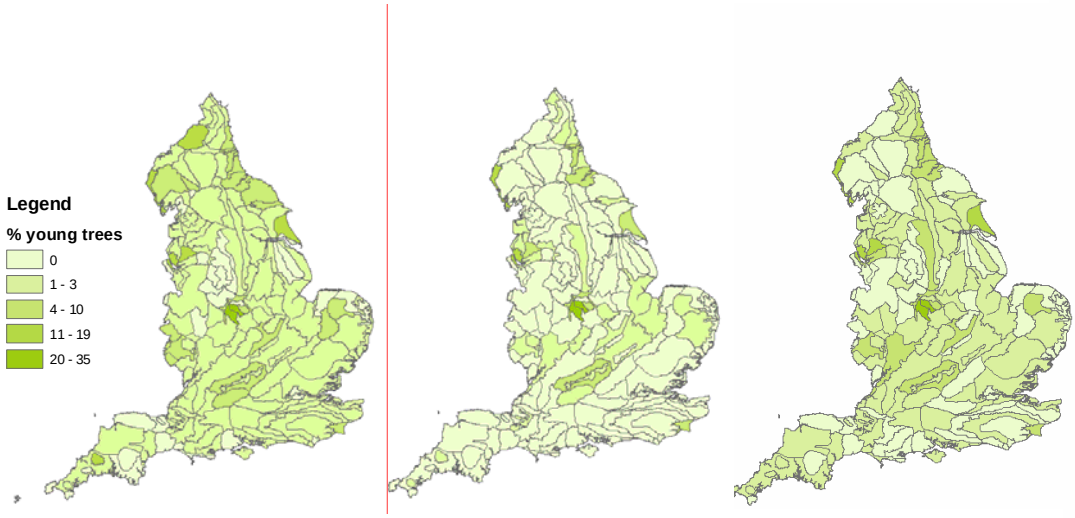
- The easiest subtypes of 'young trees' to interpret are those assigned feature codes 7 and 11. The former represents new Forestry Commission planting, while the latter, new planting arising from WGS agreements. Using the 2002 update of the IFT Map, *these data were screened and polygons with a reference year of 1999 or earlier were extracted for analysis*.
- The bulk of the parcels assigned to the 'young tree' type on the original version of the IFT map were assigned a feature code 85, which represented *either* new planting *or* replanting. The two cannot be separated as the data is presently structured

Thus if we assume that all the features labelled FC 85 represent replanting (which they do not), the stock estimates derived from the analysis of parcels with FC7 or FC11 give us a *minimum* figure for the area of new planting over the period. Alternatively if we assume that all the features labelled FC85 are new planting, the sum of the areas assigned to FC7, 11 and 85 give us a *maximum* figure. Since the features labelled FC85 are a mixture of planting and replanting, the real figure is somewhere between these extremes.

4.8 In order to aid interpretation of the 'young tree' forest type, the spatial context of parcels labelled FC85 was considered (Figure 4.1b). Parcels were separated into two groups. First, those which were located *within* or *adjacent* to a block of established woodland. Second, those which were not part of an existing block, but which were isolated features. If we assume that 'young tree' parcels within or adjacent to mature woodland are more likely to be replanting, undertaken as part of the forest management cycle, and those that are isolated are more likely to be new planting, then the proportions of the total area within a CCA that are isolated from or joined to a mature stand could be used to 'predict' the extent of new planting, that lies somewhere between the extremes noted above.

4.9 Thus for the purposes of the analysis of change in woodland character, the data derived from the NIWT IFT Map were used to estimate, for each CCA, the maximum, minimum and 'predicted' area of new planting and replanting. Since the Map does not record losses (other than by felling related to forestry operations) the estimates of the proportional increase to the existing forest cover that the new planting represents is itself a *maximum* figure. Figure 4.2 shows the location and magnitude of woodland change as deduced from the

Figure 4.2, a, b, c: the location and magnitude of woodland change as deduced from analysis of the young trees category of the NIWT IFT Map by Countryside Character Area



a. maximum % gain (FC7,11,85)

b. minimum % gain (FC7,11)

c. maximum % gain (FC7,11,85-unenclosed)

young trees category of the NIWT IFT Map by Countryside Character Area.

Evidence of positive woodland management

4.10 Although the NIWT IFT Map provides information on the location and extent of Woodland Grant Scheme Agreements associated with new planting, it does not identify which of the established woodland polygons are also covered by the Scheme. These data are, however, available for download via *MAGIC*[27] and so these were examined for the purpose of assembling evidence of 'positive' woodland management within a CCA. The need for such an assessment arose because many of the Character Area Profiles noted that better management of the established woodland cover would potentially strengthen character.

4.11 The WGS data from *MAGIC* are useful in that they give both the start and end years of agreements from 1993 onwards, and map the woodland areas covered by an agreement. A limitation of these data is that they do not differentiate between woodland types. Agreements for new planting, for example, are not separated from agreements for the management of established woodlands.

4.12 The problem of identifying different types of WGS agreement was overcome by linking these data to the parcel information held on the NIWT IFT Map. However, the process of integrating these two sources was not straightforward. The boundaries of the woodland parcels held on the two maps rarely coincided: first, because they had different origins, so that the boundaries only approximated to each other; second, because WGS agreements can extend to woodland parcels smaller than 2ha, so that there are a number of areas mapped as having an agreement that do not appear to have woodland in them according to NIWT. Thus for the purposes of the CQC Project, the analysis proceeded as follows:

(a) The *Magic* WGS data and the NIWT IFT map were intersected using a GIS, to identify the parcels and parts of parcels shown on the IFT map that were covered by a WGS agreement. The areas outside the NIWT IFT template that were covered by WGS Agreements were also identified.

(b) The linked NIWT-WGS map was then used to estimate the area of the different interpreted forest types with and without an agreement, by Countryside Character Area. Those parcels with an agreement start year before 1999 were selected, and used to assess trends against the statements in the Character Area Profiles.

4.13 The proportional area of established woodlands covered by a WGS agreement is a crude indicator of the extent of positive management, because it assumes that all wooded land in an area is eligible for the scheme. This is not the case, however, since woodland owned by public bodies is excluded from the scheme. Unfortunately there is no single comprehensive source of information

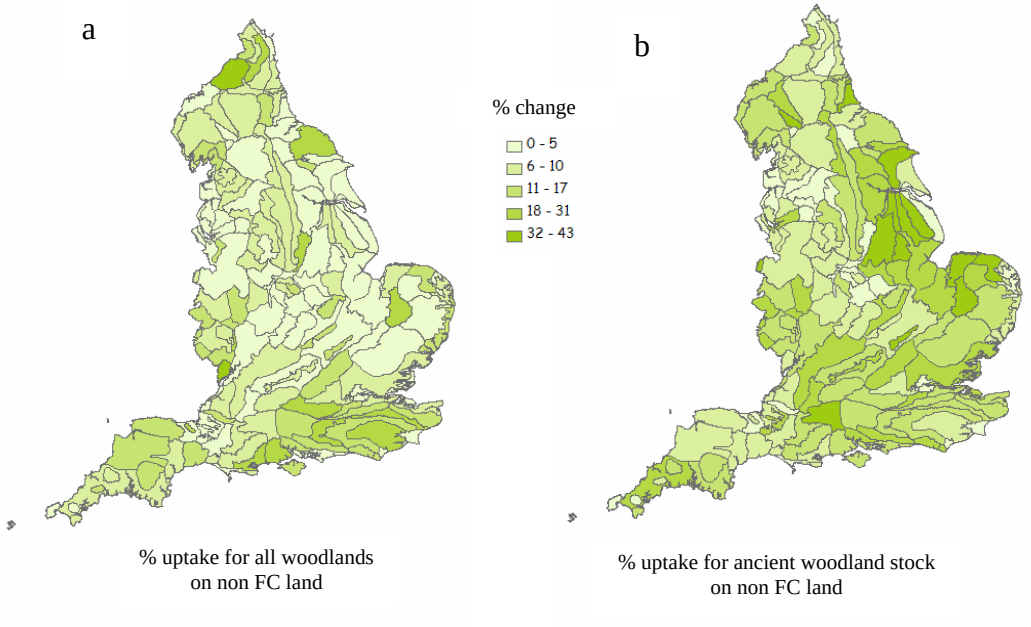
[27] http://www.magic.gov.uk/default.htm

on the extent of land holdings in public ownership that could be used to determine the area of potentially eligible woodland and so it is difficult to make a judgement about whether the uptake of WGS is high or low for a particular Countryside Character Area.

4.14 The problem of determining the extent of eligible land can partly be resolved using the Forestry Commission legal boundary data for 2001. Since the Commission represents the largest owner of woodlands in England, by identifying the parcels in FC ownership an estimate for the upper limit of the area eligible can be made for each CCA. This information was used to calculate an approximate 'distance to target' measure for the management of established woodlands, based on the proportion of such woodland eligible in a given area, and the uptake observed for the period between 1990-1998 (Figure 4.3a).

4.15 A similar type of analysis to determine the extent of WGS agreements by Character Area was undertaken for the woodland parcels shown on English Nature's Ancient Woodland Inventory (AWI). Once again the proportional area covered by a WGS Agreement was determined, together with the stock of the ancient woodland on land not owned by the Forestry Commission (Figure 4.3.b)

Figure 4.3 a & b: Uptake of Woodland Grant Scheme. Maps show area of agreements as a proportion of woodland area in 1998.



Boundaries

4.16 There is limited availability of data on change in the extent and condition of boundary features at Character Areas scale. As noted above, CS2000 field survey data is a good national source of such information, but it cannot be disaggregated to these finer geographical scales. Instead it can only be used to indicate the likely boundary types and their stock in types of landscape from which the Character Area is drawn, and how their stocks are changing over time. Partial information relating to the management of boundary features at Character Area level is, however, available from the national databases used to monitor Countryside Stewardship and ESA Agreements. These data were used to gain an insight into how the management of boundary features at these local levels related to what we might expect to be happening, given the character description for that area.

4.17 An initial source of Stewardship and ESA data was that held on *MAGIC,* which shows the boundaries of the land holdings for which an agreement exists, and an indication of the type of agreement. These data were considered inadequate in the context of the CQC project for two reasons. First, while the locational information is helpful, in terms of identifying where change is likely to be occurring, we cannot assume that it applies to all features in the polygon mapped. Second, while the parcel is labelled by agreement type, such as 'boundary features', we cannot assume the agreement for that polygon does not also cover other features also covered by the two schemes.

4.18 The CS and ESA data were therefore reprocessed by The Rural Development Service (RDS) especially for the purposes of this project, by assigning the point records held for each CS and ESA agreement to a Countryside Character Area, so that the detailed information associated with them could be inspected in a way not possible through the version of these datasets held on *Magic*.

4.19 The key constraint on the reprocessing was to preserve the confidentiality of those who had entered into the agreements. Thus breakdowns of the data were made according to the unit of measurement used for recording and monitoring purposes, namely

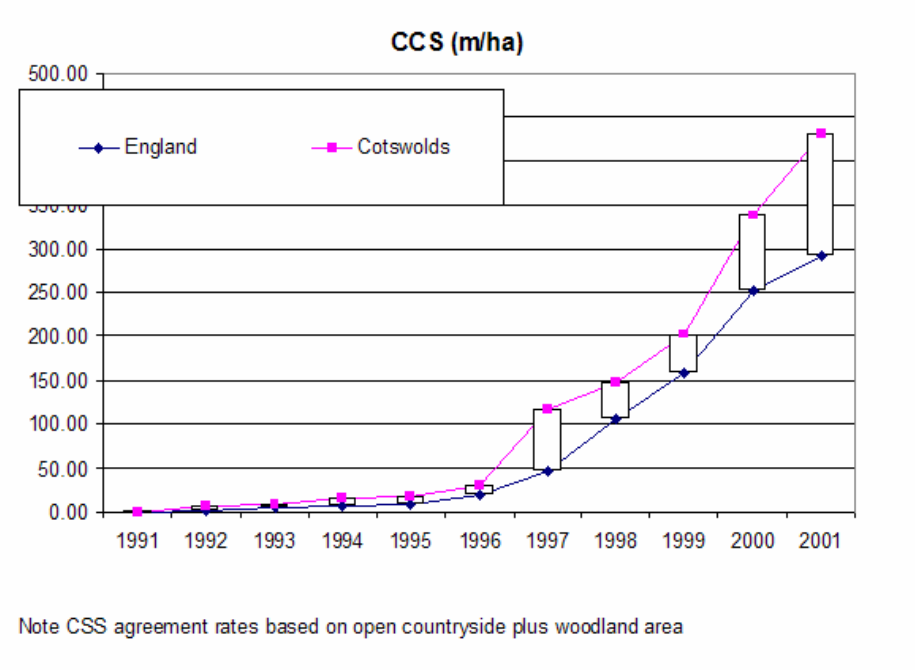
(a) Meters: used mainly for agreements relating to linear landscape features, such as hedgerows, walls and ditches.

(b) Hectares: used mainly for agreements relating to areal features such as grasslands, heathlands and other types of habitat parcels.

(c) Square meters: used mainly for agreements relating to small features such as ponds.

(d) Number: relating to 'non-measurable capital' items that can only be recorded by a count of the agreements made, such as those for access or provision of advice.

Figure 4.4 Example of analysis for the uptake of CS agreements for linear features, 1990-2001 for the Cotswold Character Area



4.20 The data were available for each of these categories, both as the number of agreements in each category, and for (a), (b) and (c), as the sum of length or area of agreements, broken down by tier code (i.e. purpose of agreement) and Character Area. Data for agreements recorded in meters were used to look at the management of boundary features.

4.21 Figure 4.4 provides an example of the way the information was presented for the purposes of assessing the impact of boundary management on countryside character. The NCCADB allows the information for the total length of features included in an agreement to be extracted for each Character Area and plotted against the agreement start year. The uptake of agreements can then be compared to the national trend. In addition the number of agreements can be tabulated by tier code for each CCA, and the position of the various boundary types in the 'top ten' within the unit, to determine what priority was being given to them.

4.22 The format of the CS agreement data enabled them to be used more flexibly than for ESAs, which were only available for 1999 onwards. For these data only the 1999 information was used; as with the CS data these were tabulated according to unit of measurement and tier code.

4.23 When using CS and ESA data to look at the management of boundary features in terms of the significance of such activities for countryside character, several problems of interpretation exist:

(a) We cannot assume that features not included in the schemes are *not* being managed appropriately. However, while not all eligible landowners may

want to enter a scheme, the rate of uptake can be used as a crude surrogate measure of activity.

(b) Even though we can measure the rate of uptake at Character Area level it is difficult to make comparisons, and say they are high or low in any particular area, because we have no estimate of the eligible stock. At present, all we can say from these data is that the uptake is above or below the national average, and what priority is being accorded to the features amongst those targeted in such schemes within that particular area.

4.24 In the absence of any firm understanding of the total eligible stock, a crude index of rate of uptake that would allow comparisons to be made has been constructed, based on the number of agreements per unit area of open countryside within the CCA. Figure 4.4 shows the national pattern for uptake for all features recorded in meters that can be compared with the average for the Character Area of interest. The database also allows the uptake rates for specific features, such as hedgerows to be extracted on this basis.

Agriculture

4.25 The major source of information on changing agricultural land cover used by the CQC project was the *June Agricultural Census*[28]. These data were processed especially for the purposes of the CQC project, to give a breakdown by Countryside Character Area. The spatial location of the farm, held as a point, was used to allocate the records to each area. The data for 1990, 1994 and 1998 were used in order to look at the implications of change for landscape character. There were no major changes in the way the June Census data were collected between these dates.

4.26 Altogether, data for 120 census variables for 1990, 1994 and 1998 are stored in the NCCCBD. However, the analysis mainly focused on changes in the extent of the total cultivated area, changes in the extent of arable, set-aside and the main grassland types and stocking density. In addition the number of farms, and their size distribution and type were considered.

4.27 As discussed in the *Interim Report* it is generally accepted that a major cause of landscape change during the 1990s was the shift from lowland mixed farming to arable cropping. Alongside this trend there was a more general intensification of agricultural production. In pasture dominated areas there was a conversion of permanent pastures to leys and a shift from cattle and dairy to sheep production. As a result, earlier work undertaken for the Countryside Agency by *ENTEC*[29], suggested three broad indicators of agricultural change would be appropriate, namely:

(a) Conversion of grass to arable

[28] http://www.defra.gov.uk/esg/work_htm/publications/cs/farmstats_web/default.htm

[29] Countryside Age (2001) *National Countryside Character Decision Support Database.* Technical Report, Nov. 2001, ENTEC UK Ltd in association with Steven Warnock, Parker Diacono, University of Reading and SmartData UK Ltd.

Table 4.1: Extract from the NCCAD for agricultural change in the Herefordshire Plateau Character Area

June Census	**1990**	**1994**	**1998**		**1990-98**	**% change**	**% cca area**	**% cult area**
Total cultivated area	29665.4	29957.8	29551.9		-113.5	0	0	0
Crops and fallow	10316.1	10369.2	11454.6		1138.5	11	3	4
Temporary grass	3790.0	4127.1	3546.1		-243.9	-6	-1	-1
Permanent grass	13509.0	11678.9	11647.6		-1861.4	-14	-5	-6
Rough grass	405.2	542.2	385.2		-20.0	-5	0	0
Set aside	60.9	1398.3	568.5		507.6	833	1	2
Woodland	1071.0	1307.4	1319.1		248.1	23	1	1
Other land	513.2	534.7	630.8		117.6	23	0	0
Top fruit	440.1	490.9	477.7		37.6	9	0	0

(b) Intensification of grassland production
(c) Change in ratio of sheep to cattle

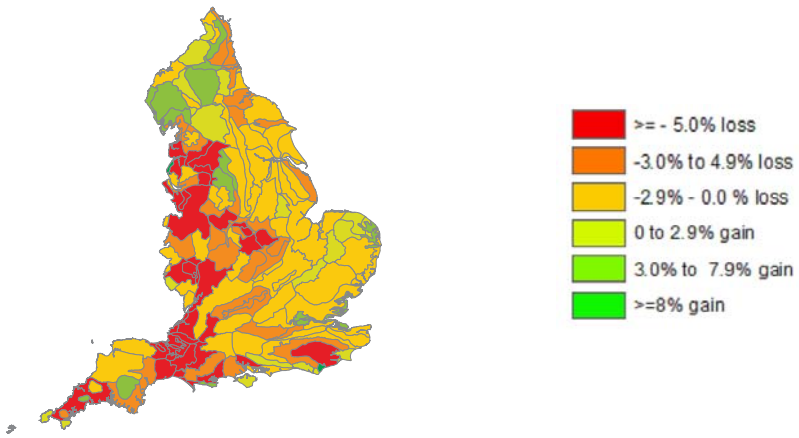
It was also suggested that these, together with a fourth, more feature-specific measure of the loss of orchard/hop yards, could be used to gauge the impacts of agricultural change on landscape character.

4.28 Although the *June Census* only records the stock of a given cover type at any one time, and not the transfers between them[30], a crude indication of the arable-grassland balance can be gained from these data by looking at the proportion that each makes to the overall composition of the total cultivated area. Table 4.1 shows an extract from the NCCADB, illustrating how these and the other data available form the June Census were displayed for the purposes of analysis.

4.29 Care should always be exercised when using *June Census* data, because the data suffer a number of limitations. For example, the quality of these data relies upon the accuracy of the persons making the return. More importantly, the returns may relate to land held in geographically dispersed blocks, so that information apparently relating to one Character Area may in fact be found in another. These issues were considered during the pre-operational phases of this project, and it was considered that the problems would be minimised to an acceptable level if a relatively large unit, such as a Character Area, were used for reporting. The issue is only a significant one for the smaller character areas. As explained in Part 3 of this Report, a series of thresholds or guide-lines were used (see Table 3.2, page 26) in order to identify the larger changes and to ensure the changes considered were more likely to be significant on the ground.

[30] Such 'flow' data are only potentially available from CS2000 at national scales

Figure 4.5 Percentage loss of permanent grass in England, 1990-98, by Character Area



4.30 Figure 4.5 shows an example of the analysis made during the CQC Project, of changes in key aspects of agricultural land cover at CCA level. It is apparent, for example, that a number of Character Areas showed a marked change in the area of permanent grass as a percentage of the cultivated area, with marked losses of grassland occurring in a broad belt running through the lowlands in the western part of England.

4.31 Assessment of the nature of agricultural change was also made by reference to the information on Stewardship and ESA agreements, because the Character Area profiles would sometimes make reference to the impact of farming on particular landscape features such as ponds or ditches. Pond creation and management is one landscape element, for example, that is clearly covered by the agreement data. Where appropriate this type of information was also used in the overall assessment of the impact of change.

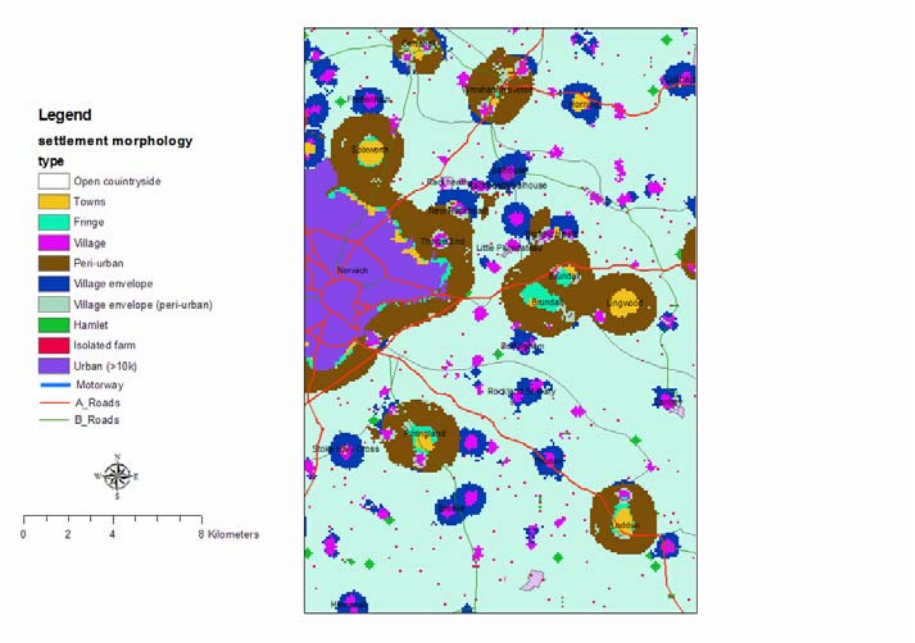
Settlement and Development

4.32 Two principal datasets were used for the purposes of analysing the location and magnitude of development at Character Area level. The first was a draft version of the map of settlement morphology created as part of the Rural-Urban Definitions study commissioned by the Office of National Statistics (ONS), ODPM, Defra, Countryside Agency and the Welsh Assembly Government[31]. The second was the Land Use Change Statistics, also held by ODMP.

4.33 The map of settlement morphology shows the dominant settlement type for the whole of England at a resolution of 1ha (Figure 4.6). Nine categories have been defined on the basis of address-point density from the *Post Office Address File* for 2001 at different spatial scales, namely:

[31] http://www.statistics.gov.uk/geography/urban_rural.asp

Figure 4.6: Example extract of the settlement morphology defined by the ONS rural-urban definitions study



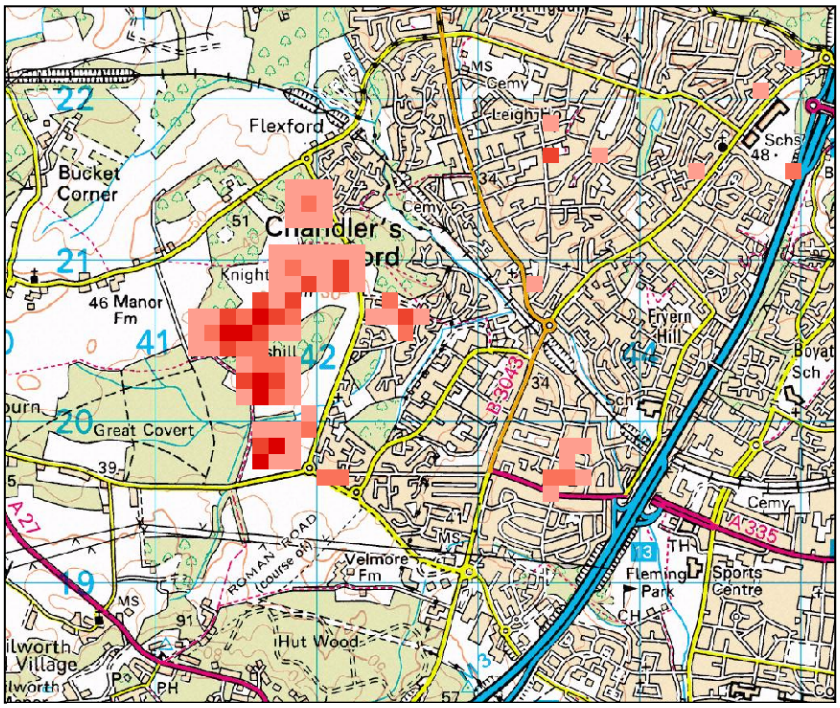
(a) open countryside
(b) isolated farm
(c) hamlet
(d) village
(e) village envelope
(f) village envelope (peri-urban)
(g) towns
(h) peri-urban
(i) fringe
(j) urban (>10,000 people)

4.34 The urban boundary on the morphological map (i.e. category j, above) has been constructed to coincide with the urban settlement boundary for 2001 held by ODPM, which was constructed using Ordnance Survey data.

4.35 The settlement morphology map was used to assess the patterns of development, as revealed from the analysis of ODPM's *Land Use Change Statistics* (LUCs), which can also be displayed on a 1ha grid for the whole of England. These data were used to calculate for the period 1990-1998 the following:

(a) All conversions from undeveloped to developed
(b) All development and redevelopment
(c) All development or redevelopment to commercial
(d) All development or redevelopment to residential
(e) All development or redevelopment to transport
(f) All development or redevelopment to other

Figure 4.7 Extract from the LUCS database showing development along an urban boundary, 1990-98.



Crown copyright acknowledged; reproduced under licence from the Ordnance Survey

Figure 4.8: Extract from the NCCADB showing display of LUCS data for South Hampshire Lowlands Character Area

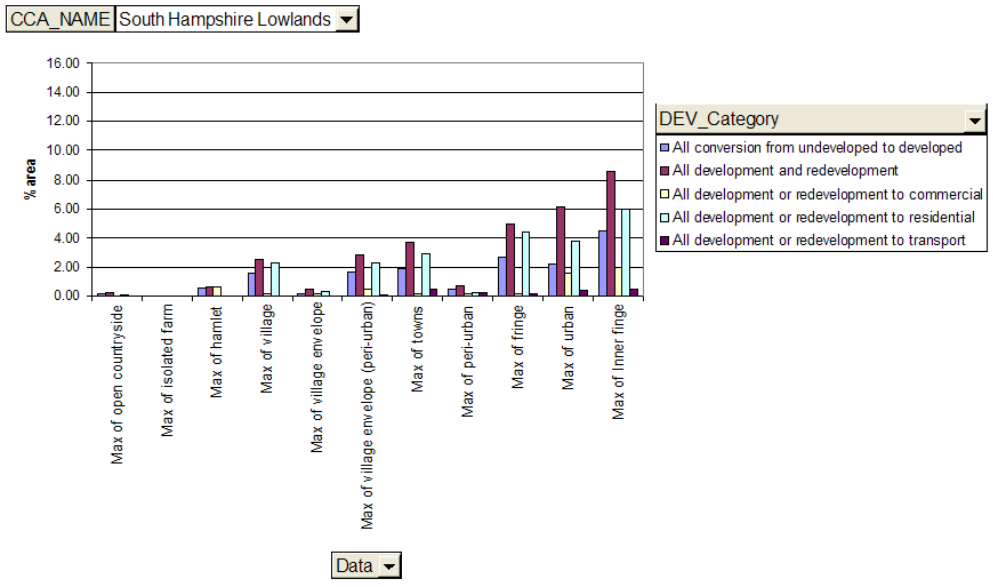
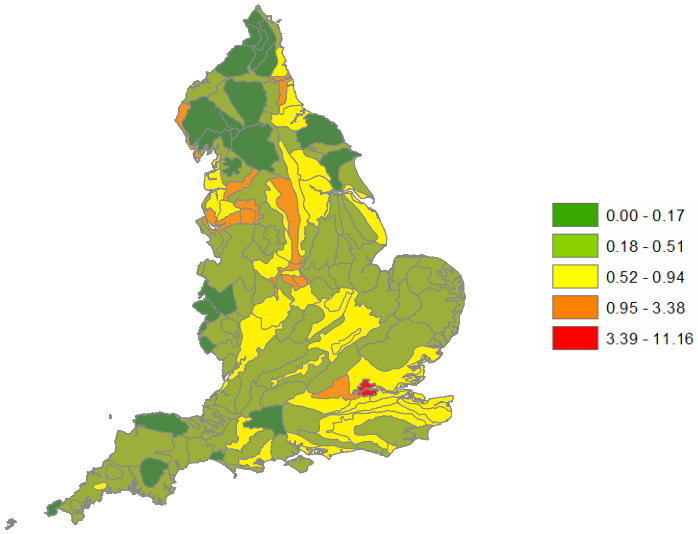


Figure 4.9 Percentage development occurring in rural areas, 1990-98, by Character Areas in England



4.36 Although a LUCS record can be assigned to a single 1ha cell on the basis of its grid reference (all data are held as point records), the area of development or redevelopment can be larger than a single cell. Thus an algorithm 'spread' the total area involved in the change proportionally to an appropriate number of neighbouring cells. In this way an indication of the intensity or scale of change at a given location can be gained. Figure 4.7 shows an extract of the LUCS data, illustrating how the information can be used to look at developments on the boundary of an urban area,

4.37 Figure 4.9 gives an extract from the NCCADB, showing how the LUCS and settlement morphology data were used for the purposes of analysing the impact of development on countryside character. In addition to these data, the proportion of development in rural areas (i.e. morphological categories (a), (b), (c), and (e), see para 4.33, above) has also been calculated and mapped (Figure 4.9).

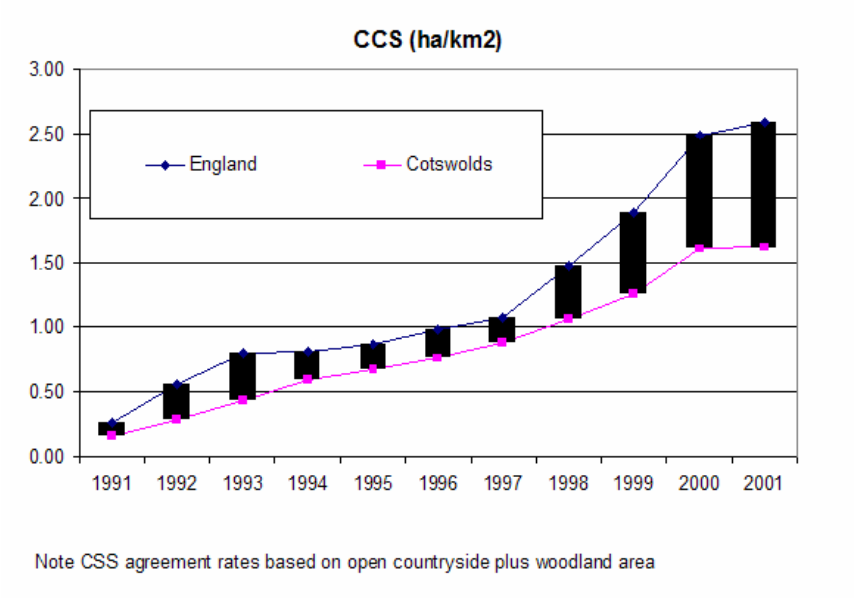
4.38 The information published by the British Wind Energy Association[32] on major wind farms was also used to look at the impacts of development. These data could be used to identify the sites in England over 1MW in capacity that had been established between 1990 and 1998. These sites were plotted so that they could be considered with the other development data at the Character Area level. The data were plotted as points.

Semi-Natural Habitats

4.39 Information on change in the extent and condition of semi-natural habitats was amongst the most difficult to assemble for the purposes of the CQC project, in that data were fragmented and incomplete. Change data for the period 1990-

[32] http://www.bwea.com/map/

Figure 4.10 Example of analysis for the uptake of CS agreements for areal features, 1990-2001 for the Cotswold Character Area



1998 were especially problematic. The two key sources used for analysis were the agreement data available from the Countryside Stewardship and ESA agreements database, and English Nature's SSSI Condition monitoring[33]. They were used in the following ways

(a) For all Countryside Character Areas, Stewardship and ESA agreement data for areal features were used to look at the extent and priority given to the management of particular named semi-natural habitats, such as heathlands or calcareous grasslands, in each area. The methodology used was the same as that described for boundary features. Data were tabulated to show the area of agreements by tier code for each CCA by start year. As with the other data arising from the CS and ESA databases, the extent of eligible stock within the CCA could not be determined. Thus a crude index, based on the number of agreements per unit area of open countryside, was used to compare uptake rates to the national average (Figure 2.12).

(b) The SSSI Condition data was used to calculate the area of SSSIs within each Countryside Character Area, and the proportions of them assigned to the different condition categories. The condition categories used by EN SSSI monitoring are as follows:

[33] See http://www.natureonthemap.org.uk/ and http://www.english-nature.org.uk/pubs/publication/PDF/SSSICondfulldoc.pdf

- favourable;
- unfavourable, declining;
- unfavourable, recovering;
- unfavourable, no change;
- destroyed; and,
- part destroyed

4.40 The data on SSSI condition, and the possible reasons for loss of condition, should be interpreted with caution, because they were collected as part of a rolling programme of assessment between 1997 and 2003. The data were published for the first time in 2003, and this date is considered as the baseline. However, since change in condition is probably slow, the areas in 'favourable', 'unfavourable recovering' and 'unfavourable no change', can probably serve as a guide to the state of these sites in the latter years of the last decade. Thus, in those Countryside Character Areas where SSSIs accounted for a significant part of the open countryside area (>10%) these data were used alongside those for woodland, agriculture and development to determine the broad impacts of landscape change. Although all SSSIs are important, condition was only considered significant in terms of countryside character if a significant proportion (~10%) of the Character Area was covered by such a designation. Elsewhere, these data were used in a more secondary role, alongside the CS and ESA data to look at the general management of small areas of semi-natural habitats in the wider farmed landscape.

Historic Features

4.41 Of the seven landscape elements used to assess the impact of changes on countryside character, the information on historic features was the most incomplete. Thus for many of the Character Area profiles, no assessment could be made. Where data did exist, reference to it was included in the Character Area Profile, but in general it was not used in the overall assessment of change in character.

4.42 The following data were used in the study:

(a) Monuments at risk: these data were only available to the project team for the East Midland Region. They can be used to show the proportion of monuments at high, medium and low risk.

(b) CS Agreement data: Tier codes exist for a number of historic features, and these were used to determine if there were any agreements for the types of feature highlighted in the historic sections of the profiles. For example, the profiles would sometimes mention the importance of old orchards, or refer to the poor management of parklands or other historic landscapes. Where agreements existed that corresponded to such issues, these were noted in the assessment made in the Character Area Profiles.

4.43 **The development of better methods for the analysis of the historic aspects of countryside character is seen as one of the most significant areas for future work, and we recommend that further exploration of the issues is**

made. The information base is likely to improve with the publication of full national coverage of data for monuments at risk, and the information from English Heritage's *Evaluation and Audit of Historic Farms and Buildings.* These data, alongside improvised spatial analytical frameworks, such as that provided by the on-going programme of Historical Landscape Character Assessment, will allow more complete assessments to be made in the future. Some ideas on the direction of future development are discussed in Part 6 of this Report.

River and Coastal Management

4.44 Many Character Area Descriptions referred to aspects of river and coastal management, and their potential impacts on the landscape. However, like the information base for historic features, the coverage of data for this element of landscape character was far from complete. A major deficiency was data on the location and extent of river and coastal engineering and its modification in the context of developing more sustainable management strategies. The acquisition and use of such data alongside that relating to the condition of river corridors and the risk of flooding are, we suggest, particularly important areas where future work is needed for the development of methodologies for assessing change in countryside character.

4.45 In the present phase of the CQC Study, analysis of the river and coastal management aspect of landscape character was based on data from the Stewardship and ESA Agreement databases. Tier codes exist for management of a range of riverside features, such as grasslands, scrub or individual trees, and coastal features such as dunes and salt marshes. While these could be treated as part of the 'semi-natural', it seemed useful to keep them separate to emphasise the importance of rivers and coasts in the overall assessment of countryside character. The CS and ESA data on these features were treated in exactly the same way as that described above and evidence of active management was set alongside any statements about such features in the Character Area Profile to determine the significance of change.

4.46 Data on change in the chemical and biological quality of rivers was made available to the project team at a late stage in the study, and so these were not used as part of the assessment of change in Countryside Character, although they have the potential to be so used. At this stage the inclusion of these data was not given a high priority, because changes in the condition of important river habitats were covered by the SSSI database. **However, in the future these biological and chemical quality data will allow the impacts of wider land and water management strategies to be assessed, and we recommend that further work is undertaken to determine how best they can be incorporated into the analysis**.

Analysis of the elements that shape countryside character

4.47 This Part of the *Final Report,* has described the processing of the various information sources used to identify the location and scale of change in the countryside over the period 1990-1998, so that assessments could be made in relation to the statements contained in the set of Character Area Profiles.

Wherever possible, the presentation of data was standardised, so that the evidence supporting the conclusions set out in the Profiles could be clearly provided to the user. The NCCADB can also be made available to users, so that the data for all the Character Areas can be inspected, providing they have access to *Microsoft Excel.*

4.48 Although the NCCADB is a useful resource arising from this work, the richness of the mapped data that underlies the various tables and graphs that can be extracted should not, however, be overlooked. These cannot be made available to users in such a flexible way.

4.49 All the key datasets from which the quantitative information held in the NCCADB were derived are also held in a spatial database held in ARC GIS 8.3©. This system was used to generate map data that was used alongside the statistical information to make judgements about the significance of change, particularly in relation to its location. Since copyright restrictions apply to many of the spatial datasets used in the CQC Project, and since not all users will have access to ARC GIS, it is not intended that the map data used for the Study are made available directly. Instead a metadatabase (i.e. a database about databases) has been constructed, and made available via the CQC website, to assist users in acquiring data. A full description of the project website is given in Part 5 of this Report.

Part 5 *The CQC Web Site*

Introduction

5.1 A website, entitled *Countryside Quality Counts*[34], has been established to support the project. Its function during the pre-operational and analytical stages of the work has mainly been to provide information about the project, facilitate the consultation process, and to support the project team and sponsors, via a 'private area'. In order to take the project forward to the reporting stage, the design and operation of the website has been changed to accommodate the needs of a wider range of users. This part of the *Final Report* describes the new structure of the site and the issues that arise in relation to its future use, management and development.

5.2 The overriding aims that have shaped the design of the new version of the CQC website are to provide users with:

(a) an account of the methodology used for the assessment of change in countryside quality, and a detailed account of the conclusions at national, regional and character area levels;

(b) access to the evidence that underpins the conclusions; and,

(c) metadata describing the data used for the analysis, and, where possible given copyright constraints, access to the data themselves.

The structure of the website is described below in relation to these themes.

Explaining the CQC methodology and key results

5.3 The methodology used in the CQC Project and the key results at national and regional scales have already been described in Part 2 of this Report. These materials have formed the basis of the explanatory material available via the web. An illustration of the way the results are summarised at character area level has also been given in Table 2.3 (page 17), which gives an example profile for the Leicestershire and South Derbyshire Coalfield (Character Area 71).

5.4 The Character Area Profiles are accessible via national and regional index maps, and listings. As Table 2.3 shows, each profile is headed by a summary of the key characteristics of the area, derived from the original character area description, and additional information concerning the extent of designated areas. The final part of the header contains a summary of the conclusions reached in relation to the extent of landscape change and its impact on overall character. Each of the Character Areas have been assigned to one of the three groups described in Part 2 of this Report (para 2.40), namely:

[34] http://www.countryside-quality-counts.org.uk

- those which showed changes consistent with maintaining or reporting existing character.
- those which showed some or no change that was inconsistent with current character area descriptions; and,
- those which showed marked change inconsistent with current character area descriptions.

5.5 The statements from the sections in the original character area descriptions on the 'changing countryside' and 'shaping the future' are represented in the main body of the Profile (see Table 2.3). They have been grouped by the key elements that shape character, and are set alongside measures that could be used to assess trends. The measures were identified by the project team with some additional input from regional consultees. A limited number of modifications and additions to the original set of statements were suggested by the consultation process; these have been distinguished by using different coloured text, but they have been treated in the same way as the original statements in the analysis that followed.

5.6 The final part of the Profile consists of a summary of the conclusions reached by the project team for each landscape element. These were based on the analysis of the location and magnitude of change observed and its implications for landscape character. The assessments made for the individual landscape elements form the basis of the conclusion about the magnitude and impacts of change for the character area as a whole (see Part 3, paras 3.7 and 3.8). This conclusion forms part of the header block of the Profile.

5.7 Links are used throughout the Profile to help the user to understand terminology, and to link to the relevant information at regional and national scales.

Access to the evidence on which the CQC assessment is made

5.8 Although quantitative data underpin the CQC assessment, it is recognised that the indicator depends on qualitative judgements made in relation to the statements contained in the Character Area Profile. In order to provide the potential user with access to the evidence on which the judgement has been made, each conclusion in the profile contains a link to an 'evidence file', which presents an extract of the relevant data from the NCCADB.

5.9 In the main, the Profile evidence files contain tabular or graphical information. Ideally this should be supplemented by access to the map-based data on which some assessments were also made (specifically where the profile identified the types of location where change would be an issue or opportunity). It has not been possible to provide access to an interactive web-based GIS, given the resources available to the Project team. However, where appropriate, map-based reports have been included in the evidence files to help the user review the judgement by the Project team.

5.10 We recognise that the lack of access to the extensive map-based data on which the CQC assessment depends is a shortcoming of the current work. While this in part reflects resource issues, it is also a consequence of the copyright and

ownership restrictions that apply to many of the datasets. The web site has been designed to provide users with access to summary, statistical data in the form of *Excel* spreadsheets, which can be downloaded and used locally. A 'metadatabase' describes the sources of the 'raw data', the way in which they were processed and information about how they can be acquired.

The CQC metadatabase

5.11 The curation of 'information about information' is an important part of any project which draws heavily on a wide range of digital data. The CQC Project is no exception. Thus the Project Team has sought to record information about how and when the various data were acquired, and how they were processed and summarised, so that users can be made aware of the assumptions made in processing and potential constraints that may apply in the use of information.

5.12 As noted above, all the spatial data used in the CQC Project are held in a GIS system, ARC GIS 8.3©, and the metadata facility provided by the ARC Catalogue module has been used as the primary store of metadata. A full copy of the data and associated metadata has been transferred to the Countryside Agency.

5.13 Since the users of the CQC website will not have access to the ARC Catalogue metedatabase, the information has been copied to a series of 'pdf' files, which are linked to a 'data index'. Broadly the index describes three classes of data:

(a) Those which require a direct approach to the owner/provided, who may agree to transfer the information to a potential user;

(b) Those which are not owned or provided by the Countryside Agency, but which are publicly available. These mostly involve data held on *MAGIC*, which can be downloaded directly by the user. In such cases a link to the relevant website is provided.

(c) Those datasets which are owned or maintained by the Countryside Agency. For these data a link to the relevant section in the Countryside Agency, from which the data can be obtained, is given. Future versions of the CQC website may allow these data to be downloaded, or a link to the relevant part of the Countryside Agency's own site could be included.

Managing and developing the CQC Website

5.14 The domain name 'countryside-quality-counts' has been acquired by the Project team, and secured until June 2006. The web site is hosted by Fasthosts Internet on an account administered by Terra Consult and is separate from the Countryside Agency's own site. **Thus if CQC is taken forward the Countryside Agency must decide whether to retain the site, or to transfer the materials to its own system.** In the long term the Countryside Agency may need to consider the development of a single, integrated portal to provide access to all its Countryside Character work.

5.15 We do not anticipate that, in the short term, maintenance of the CQC website will be demanding. The key tasks are:

- To correct any inconsistencies or errors;
- To update with any 'news' items or developments; and,
- To service enquiries relating to data acquisition or the applications of the results.

In the longer term, however, it is clear that the structure of the website must change, for if the CQC Project moves to the stage of updating the indicator, then the site will have to support the wider consultation process that this will require in order to revise and extend the Character Area Profiles.

5.16 There are a number of ways in which the web site could support wider consultation in the future. Web-based forms provide valuable tools for presenting information and collecting responses. The appropriate functionality should only be designed and developed once the scope of the exercise is agreed. Thus we recommend that the development of appropriate web-based tools is included as part of future discussions about how CQC can be taken forward. However, while the details are unclear, we can envisage that these tools will include the ability to download profile templates and guidelines on how they can be updated, together with map-based information to help users specify where, within a Character area, change might be an issue or opportunity. In addition users should have access to tools that would allow them to provide feedback on the Profiles, and that these can be collated automatically within a database of comments and contacts, for future use by the Project team.

5.17 **One of the key recommendations of this study is that the CQC Project should be seen essentially as establishing a process whereby dialogue and discussion about the nature of countryside change can be stimulated and supported. We suggest that development of the Project website to accommodate consultative processes would be a major step towards the realisation of such an aim.**

Part 6 *Case Studies*

Introduction

6.1 During the CQC Project a number of questions arose in relation to the use of various datasets, or the issues that arose in attempting to use them. These have been examined is a set of case studies, undertaken in parallel with the main processing tasks. In this section of the *Final Report* we present three of the studies whose outcomes have implications for how the CQC methodology might be developed. They concern the use of the new National Landscape Typology that has been developed for the Countryside Agency, the use of the Historic Landscape Character Assessments currently being championed by English Heritage, and the CS2000 Field Survey information provided by Defra and CEH.

Developing the National Landscape Typology

6.2 Consideration of the new national landscape typology was a specific requirement of the brief for the CQC Project. The Project team were asked to review the typology and identify how the work can be taken forward in general and how its use might support the development of indicators.

6.3 The results of our initial review of the typology following the first round of regional consultations were presented in the CQC *Interim Report.* It was concluded that:

(a) **While potential users felt that it had gone some way to mapping the contrasts within each Character Area, there was clearly a need to consult more widely on the details of the analysis.** Given that the typology was developed as a 'desk exercise'[35], some users felt that some of the boundaries of the typological units and their associated descriptions needed revising. Generally there was good agreement with the mapping where the influence of topography was marked. However, in areas with more subtle terrain, where boundaries depended more on cultural and historical factors, it was felt that interpretations sometimes conflicted with local understandings.

(b) **Over and above the need to consult and revise the typology, our consultations suggested that there was a need for a much better set of documentation describing the aims of the work and methodologies underpinning it.** Although many users agreed with the recently published *Landscape Character Assessment Guidance*[36], that landscape characterisation could be undertaken at a range of spatial scales, they sometimes felt that the typology conflicted with the more detailed, local characterisations that they had, or were undertaking. It was argued that the typology was not sufficiently detailed or robust to replace the local assessments and could not easily be used as a framework in which more

[35] ENTEC (2001) *National Countryside Character Decision Support Database.* Technical Report
[36] *Landscape Character Assessment Guidance*. The Countryside Agency and Scottish Natural Heritage, 2002, CAX84; http://www.countryside.gov.uk/cci/guidance/index.htm

local units could be nested. These discussions have been made more complex by the subsequent development of the National Typology at a finer scale resolution (LDU Level 2), which has been taken up in some areas[37]. The National Typology maps broad scale Landscape Descriptor Units at Level 1 in terms of a set of four definitive attributes, while Level 2 provides a finer grained mapping in terms of eight attributes. If the Countryside Agency is to take forward its work with the National Typology, then not only must the methods used to generate it be described succinctly, but also the context in which it is set and the intended uses must be more fully described.

6.4 **On the basis of these general findings and the additional issues that were identified through the work on indicators during the pre-operational phase of the CQC Project, we argued in our *Interim Report* that use of the New Typology as the main reporting framework for the indicators of change in countryside character and quality was premature. We recommended that instead the Joint Character Areas be used as the primary analytical and reporting framework.**

6.5 In addition to the need for a period of consultation and revision the key technical limitations of the New Typology for indicator development were that:

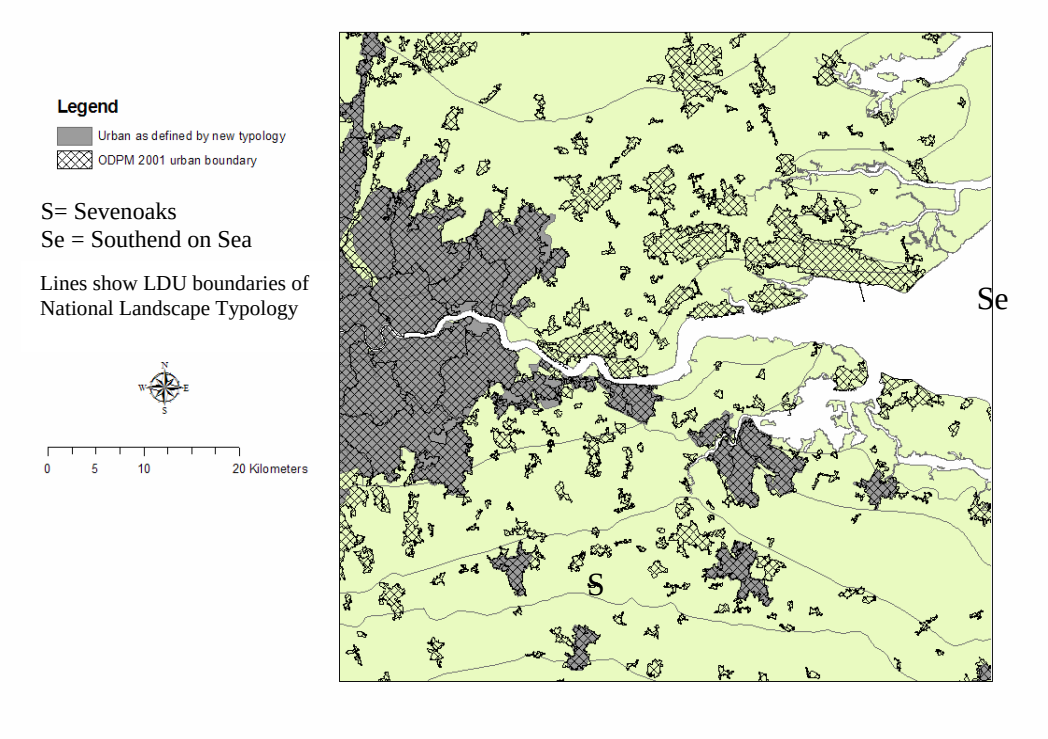
(a) The small size of the tracts of land assigned to the different Landscape Character Types (LCTs) means that some datasets, such as the *June Census,* are unreliable when reported at such fine geographical scales.

(b) Even if the issues of geographical disaggregation and accuracy could be overcome, the large number of spatial units imposed a significant processing overhead upon the work, which would jeopardise completion within the timetable set down for the Project.

(c) Finally, it was apparent that there were significant inconsistencies within the typology in relation to the way in which urban areas are mapped, to make it difficult to integration the information with other datasets, such as the settlement morphology arising from the ONS rural-urban definitions work.

[37] The National Typology maps broad scale Landscape Descriptor Units at Level 1 in terms of a set of four definitive attributes, while Level 2 provides a finer grained mapping in terms of eight attributes.

Figure 6.1 The Definition of Urban LCTs within the New Landscape Typology (Level 1 units)



6.6 **Point (c) is especially important in the context of promoting the use of the typology, for it implies significant revision even before it is taken out to the user community.** The nature of the problem is illustrated by Figure 6.1, which shows the units designated as 'urban' by the typology, compared to the ODPM 2001 urban boundaries for an area on either side of the Thames Estuary. The extract shows that the typology treats urban areas inconsistently, in that while it appears to map only the significant centres of population, it omits a number of large urban areas. Thus while Sevenoaks (S) is mapped as an 'urban' LCT, Southend-on-Sea (Se) is not. A consequence of such an omission is that any statistical estimates made for rural features in an LDU which contained a significant urban area, like the LDU in which Southend occurs, would obscure the fact that the area of 'open countryside' was much smaller than the area of the mapped LDU would suggest.

6.7 Given the inconsistent way in which the New Typology treats urban areas, we therefore recommend that the typology is revised by intersecting the 2001 ODPM urban boundaries with those of the LDUs, and that the attributes describing the features on the original map are reassigned. Such re-engineering would also make these data compatible with the data from ONS rural-urban definitions study.

6.8 Despite the problems that we have identified with the New Landscape Typology, it offers considerable scope for helping future assessments of change in countryside quality because it can potentially help identify more clearly where change is desirable or should be avoided for the purposes of

building more robust Character Area Profiles, or to map clearly the locations of actual change within a Character Area when making future assessments.

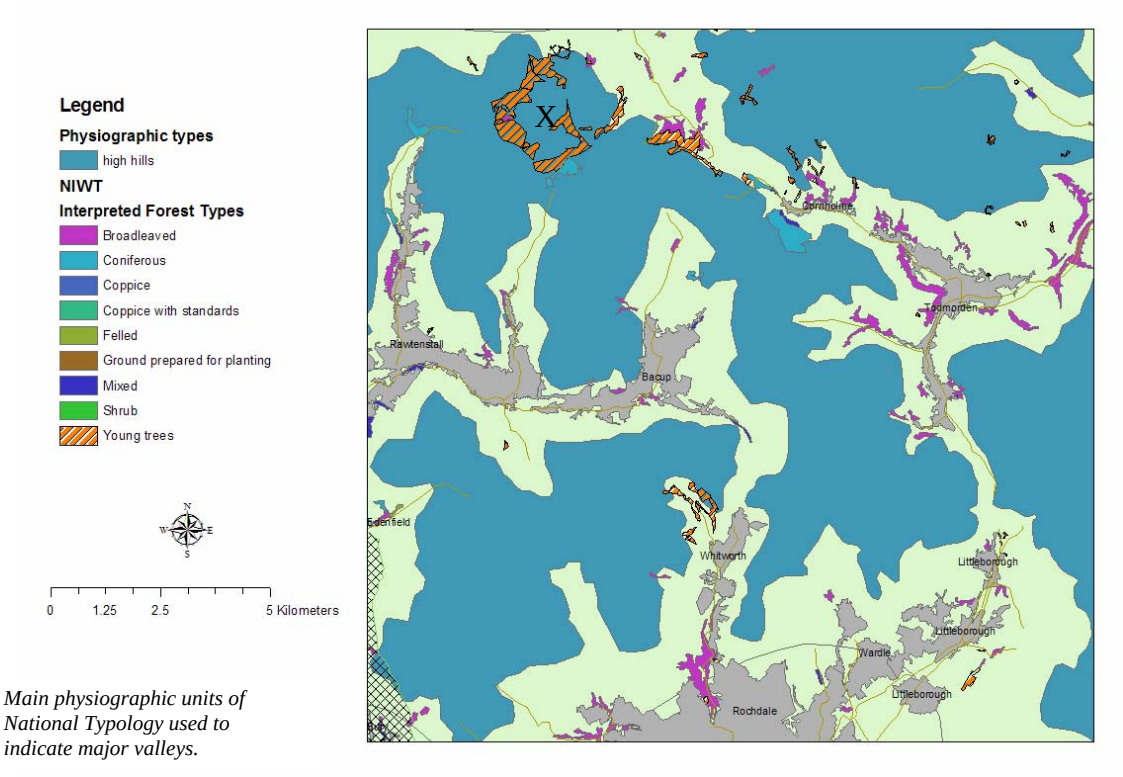
6.9 For example, some of the existing Character Area profiles mention certain types of location within the Character Area where change should be encouraged or where it might represent a threat. If in future these could be more closely referenced to an LDU within the Character Area then the data can be examined to determine whether the changes highlighted had occurred.

6.10 The potential use of the typology to investigate the location of change is illustrated in Figure 6.2, which shows the distribution of 'young trees' in part of the Southern Pennines. The Character Area Profile (see Table 5.1) cites 'woodland creation, particularly new broadleaved woodland on valley sides' as a development that would strengthen character.

6.11 Overall the assessment for the Southern Pennines showed that there was only limited new planting in the Character Area, and the judgement was made that the change was small in extent. By virtue of the substantial uptake of Woodland Grant Scheme Agreements for existing woodlands, the overall assessment was that the area therefore exhibited *some change consistent with character*.

6.12 Figure 6.2 shows the distribution of 'young trees' on the 2002 release of the NIWT IFT map, and also plots them in relation to the physiographic types recorded by the New Landscape Typology. Although there was some planting

Figure 6.2: Distribution of 'young trees' recorded by the National Inventory of Woodlands and Trees in part of the Southern Pennines Character Area



Main physiographic units of National Typology used to indicate major valleys.

along valley sides north of Whitworth and north west of Todmorden in the period up to 1999, a substantial block of new woodland has been agreed via a WGS scheme at higher elevations (see location X).

6.13 While the examples is mainly of local interest, they illustrate that the typology can be used on a much broader scale to determine the locations of change, and to make statistical disaggregations to support the judgements made by looking at the mapped patterns. We therefore recommend that if the consistency and accuracy issues associated with the new typology can be overcome, then it should be used as part of future work to refine the way the Character Area Profiles are constructed, so that more spatially explicit statements about the location and nature of change can be made.

Historic Landscape Character Assessment

6.14 Historic Landscape Character Assessments are now being undertaken widely in England. Indeed over half of the English counties are covered. The initiative has a number of purposes, not least of which is to ensure that proper account is taken of the historic resource by the policy and planning communities.

6.15 Although complete national coverage is not yet available, we have been asked to consider how HLC data might be used on the context of the CQC Project, and as a result have looked at examples of data from Derbyshire, Kent and Somerset. Although the thematic structure of these sets of data were found to be quite different, it is clear that by using such information one may develop a set of spatially explicit analyses at the character area level that would help in making judgements about the location and magnitude of change in the rural landscape.

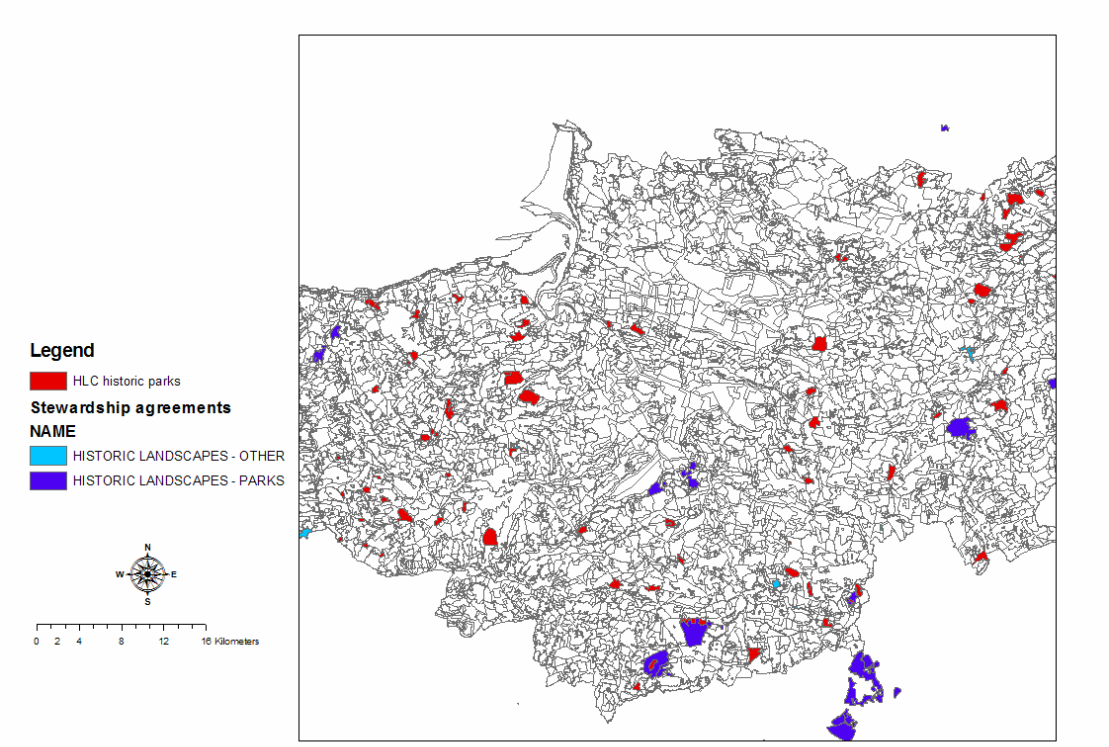
6.16 An illustration of what might be attempted is shown in Figure 6.3. This is an extract of the HLC for Somerset. The latter provides the base mapping, from which all the areas recorded as ‘historic landscape park’ have been identified. These are shown as red on the map. The areas shown in blue are those for which a Countryside Stewardship Agreement exists for ‘historic landscapes – and ‘parks’, according to the spatial CS data that can be downloaded from *MAGIC.*

6.17 As noted in Part 3 of this Report, a key problem associated with using the CS agreement data as the basis of an indicator, is that the extent of the stock total stock of a resource is unclear. Thus it is often difficult to make a judgement about the adequacy of the rate of uptake or extent of coverage. However, the availability of HLC data, such as that for Somerset, may help to overcome this problem.

6.18 Such mapping can be used to assign historic elements to Character Areas units, and their number or aggregate extent used to determine the size of the resource that might be the target of a management scheme.

6.19 Figure 6.4 shows how the HLC from Somerset can be used to identify locations where management may be required to restore or maintain boundaries. The HLC records the extent of boundary loss during different

Figure 6.3: Historic Parks as defined by the Somerset Historic Landscape Characterisation and distribution of Countryside Stewardship Agreements for historic landscapes

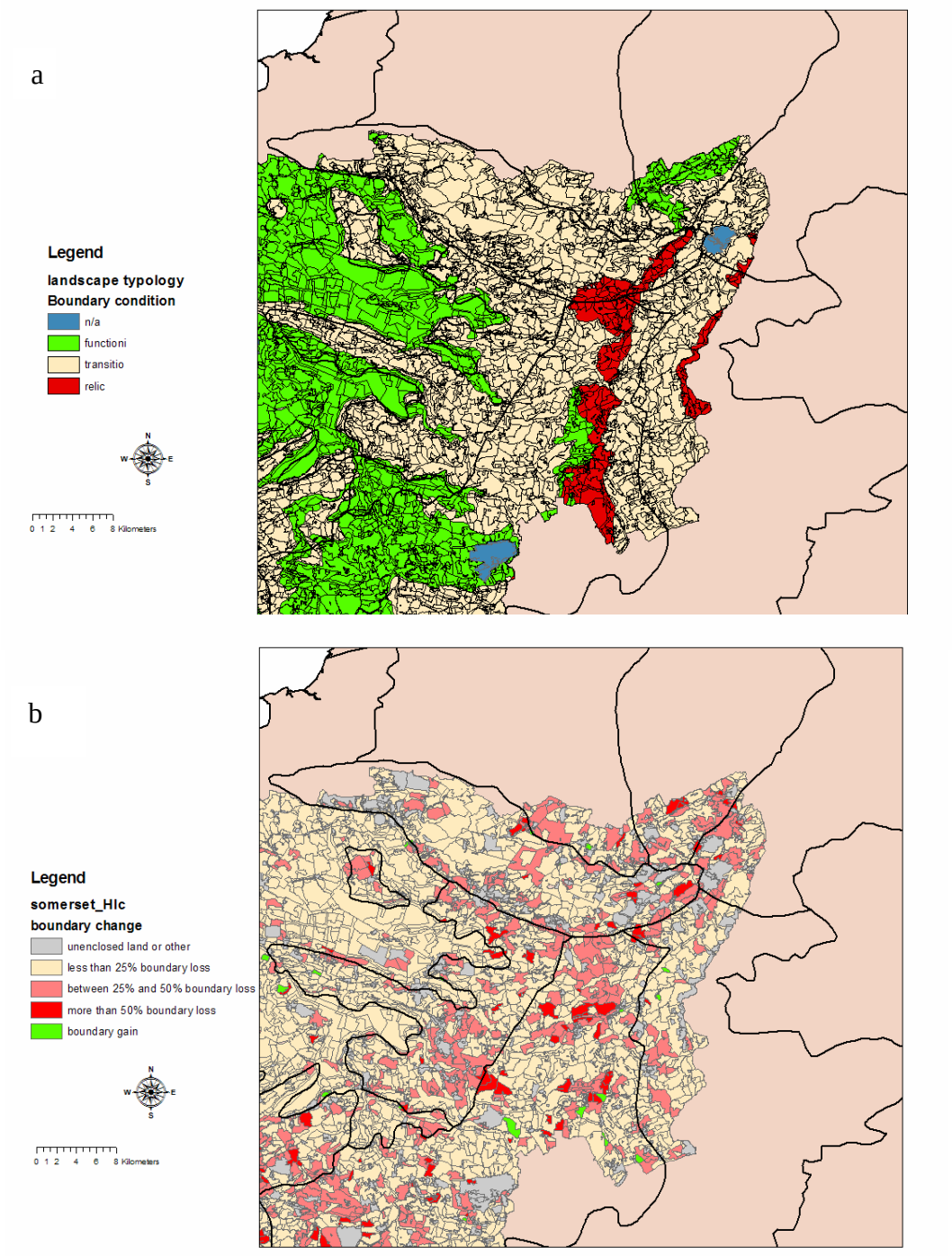


periods. For the purposes of illustration the time periods have been aggregated, and only the total extent of losses or gains have been shown. It is evident that these data can be used to identify where historic boundary features are intact, and where management of the existing stock is appropriate, and also areas of marked loss, where some policy of restoration might be required. The map shows a particularly marked concentration of losses in the Yeoville Scarplands.

6.20 A final example of the use of data from HLC is provided by Figures 6.5 a & b, which show the historic landscape context for areas of planting and replanting recorded on NIWT in Kent. The bar chart presents data for the HLC units that have a proportionally larger concentration of young trees than would be expected on the basis of their overall area in the County. Much of the planting (see Figure 6.5a) is concentrated in three HLC types: Pre-19th century Coppices, replanted assarted pre-1810 woodland, and replanted other pre-1810 Woodland.

6.21 Figure 6.5b shows the distribution of Coppice types for part of the area, and the associated planting and replanting identified on the NIWT IFT map. HLC data can be used to quantify the total stock of the Coppice resource, and pick out those areas which appear to be managed actively. Although the differences between the mapping of Coppice in NIWT and the HLC may partly reflect differences in interpretation, they may also highlight those areas where

Figure 6.4 a &b Analysis of boundary condition from the New Landscape Typology and the Somerset HLC



encouragement for reintroduction of coppicing would be beneficial in terms of maintaining and restoring the historic resource.

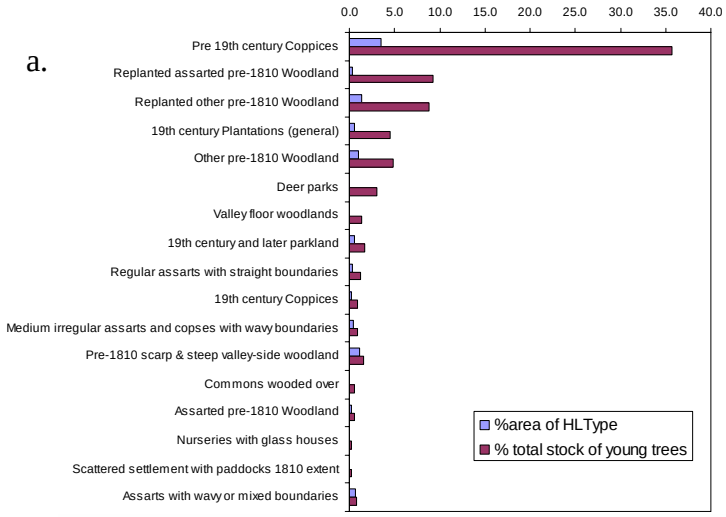
6.22 Historic Landscape Characterisation clearly offers a number of opportunities for identifying both the location of landscape change and its wider significance. It also begins to provide some understanding of the extent of the

available resource, and permits assessment of the proportion that is already subject to a scheme that promotes appropriate management. **We therefore recommend that if the CQC Project is taken forward, then to more extensive use should be made of HCL data to help ensure that statements in the Character Area Profiles are spatially specific and more easily evaluated against some set of targets.**

6.23 The major difficulty in taking this forward is, potentially, the lack of standardisation in approach used for HLC assessment. The three case study areas reviewed all differ substantially in the mapping classification, so that consistency may be an issue at national and regional scales, and more locally, where a Character Area straddles two county level assessments. However, opportunities exist to use such data as a basis for revising the Character Area Profiles so that they have a more detailed and complete historic dimension than at present.

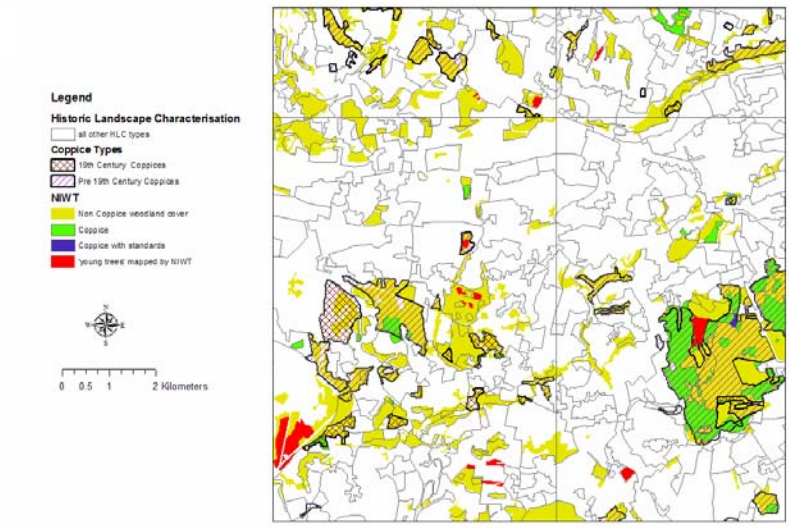
Figure 6.5 a&b Coppice woodlands in Kent

a.



The bar chart shows the proportional cover of the HLC units (blue) in which 'young trees' identified on the NIWT IFT Map are mainly to be found for Kent The proportion of the new planting that are found in each of the units is shown in red. The chart illustrates the concentration of new planting in a subset of HLC units, mainly in 'Pre 19th Century Coppices'.

b.



The map shows part of the Kent HLC, overlain by the NIWT IFT Map. The block of woodland in the south east corner is identified as Coppice on both data sources, and the presence of young trees suggests active management. In the south west and north west, the HLC identifies Pre 19th Century Coppice which are mapped as one of the other woodland types on NIWT. There is no recent planting or replanting in these areas.

6.24 The recent exploratory work undertaken by English Heritage and Hampshire County Council to examine how Character Area Profiles can be modified to include more detailed historic information suggests that it would be feasible to undertake such work as part of any updating process. While local HLC may differ in detail across the country, providing they can be used to identify the potential location and type of changes that are significant in the context of the historic landscape, then it is clear that they represent an important resource for future work.

Use of CS2000 Field Survey Information

6.25 A recurring theme throughout the CQC Project has been the exploration of different ideas for including CS2000 Field Survey data in the assessment. At national and regional scales, the latter provides a rich source of information on land cover and landscape features, and in particular gives some insight into the types of transition between the different surveyed elements. As has been demonstrated elsewhere, Countryside Survey (CS) data can be used to construct sets of 'flow' or 'change accounts' for land cover and landscape features that allow the turnover of land between uses to be described.

6.26 In Part 3 it was noted that, for some purposes, the use of CS data was limited, because it is essentially national, sample-based data which cannot be used to make statistically robust estimates at fine geographical scales, such as that of the Character Areas of England[38]. Since it was decided that for the Operational Phase of the CQC Project, the Character Areas would be the primary analytical and reporting units, it was agreed that CS Field Survey data would only be used to provide national and regional contextual information, to assist in the identification of broad landscape trends. However, in order to explore as fully as possible, what potential the 1km x 1km CS Field Survey data had for indicator development, a case study was undertaken to see if the information could be used to develop an alternative approach to the assessment of change in countryside quality.

6.27 The case study was based on the proposition that the 1km x 1km Field Survey squares are a nationally representative sample of the landscapes across the country, so that if the requirement to report at local (ie. Character Area) scales were dropped, the data set could be used to construct national or regional indicators directly, based on an assessment of the impact of change on character and quality in each sample locality.

6.28 Information for the 262 CS sample squares in England that had been recorded in 1990 and 1998 were made available to the project team by CEH. The land cover information provided was for the BAP Broad Habitats, while that for boundary features was available in the form of three successively more detailed reporting classes. An example of the way in which these data were processed for the purposes of the CQC Project is shown in Figure 6.6. a & b. The data were displayed in both map and tabular form. The former (see Figure 6.6 a), showed the spatial patterns of change for land cover and boundary

[38] This restriction does not apply to stock estimates derived from LCM2000, although the latter is only a base-line survey for 1998, and cannot be used to assess change at local scales.

features between 1990 and 1998, while the latter (see Figure 6.6 b) provided a set of 'change matrices' which quantified the transfer of land between different cover or boundary types for each sample square.

6.29 Although it cannot be assumed that the CS sample squares are representative of the Countryside Character Areas from which they are drawn[39], the associated Character Area Descriptions can be used to identify the types of change that are 'consistent' or 'inconsistent' with the general character of the area, and thus provide a basis for assessing the implications of change observed within the sample square. To test this idea the case study focused on a single region, Yorkshire and Humberside, and all the 40 CS Field Survey squares that fell within it were analysed.

6.30 In line with the Character Area analysis described in Parts 3 and 4 of this Report, change was assessed in relation to the seven elements that shape character. To assist in the process, the ancillary information on woodland, development, stewardship and ESA agreements, and SSSI condition were overlain onto the squares.

6.31 The results of the analysis for the CS Field Survey squares in the Yorkshire and Humberside Region are shown in Table 6.1, which sets out the results in broadly the same way as for the national headline based on the analysis of character areas. Examples of the map data for two of the squares is shown in Figure 6.6 and 6.7.

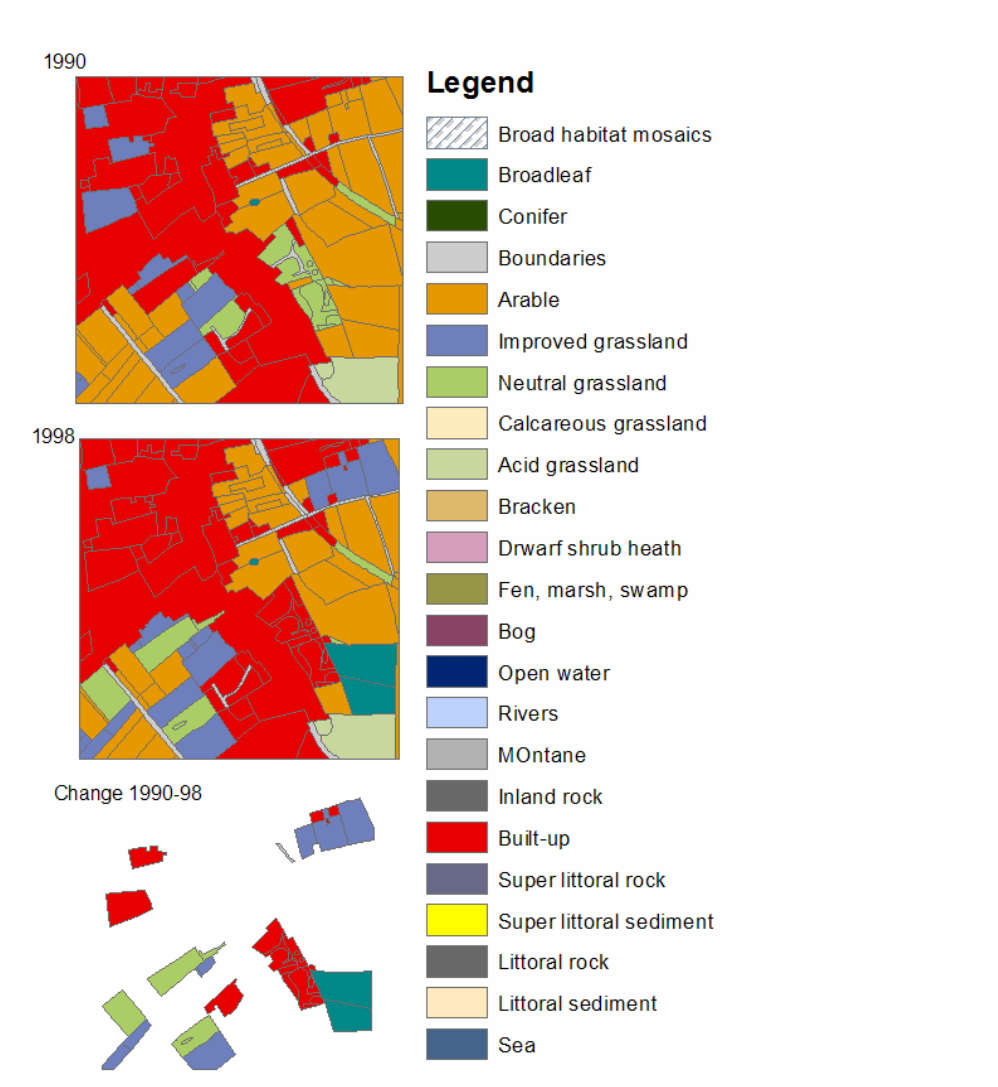
6.32 Data were available for all 41 CS sample squares that fell within the region. The analysis suggests that about 27% of them showed significant changes in land cover (at Broad Habitat level) or the stock of boundary features that appeared to be inconsistent with current character descriptions, and about 63% were largely stable. Approximately 10% showed changes that were judged marginally inconsistent with existing character (Table 6.1).

Table 6.1: Analysis of change in character for Countryside Survey sample squares in the Yorkshire and Humberside Region.

Category	Assessment	number of squares	%
Marked or some change consistent with character	M/SCC	5	12
Limited change consistent with character	LCCC	21	51
Limited chage inconsistent with character	LCIC?	4	10
Limited chage marginally inconsistent with character	LCIC	6	15
Some change inconsistgent with character	SCIC	5	12
	total	41	100

[39] 117 Countryside Character Areas have at least one CS Field Survey square within it.

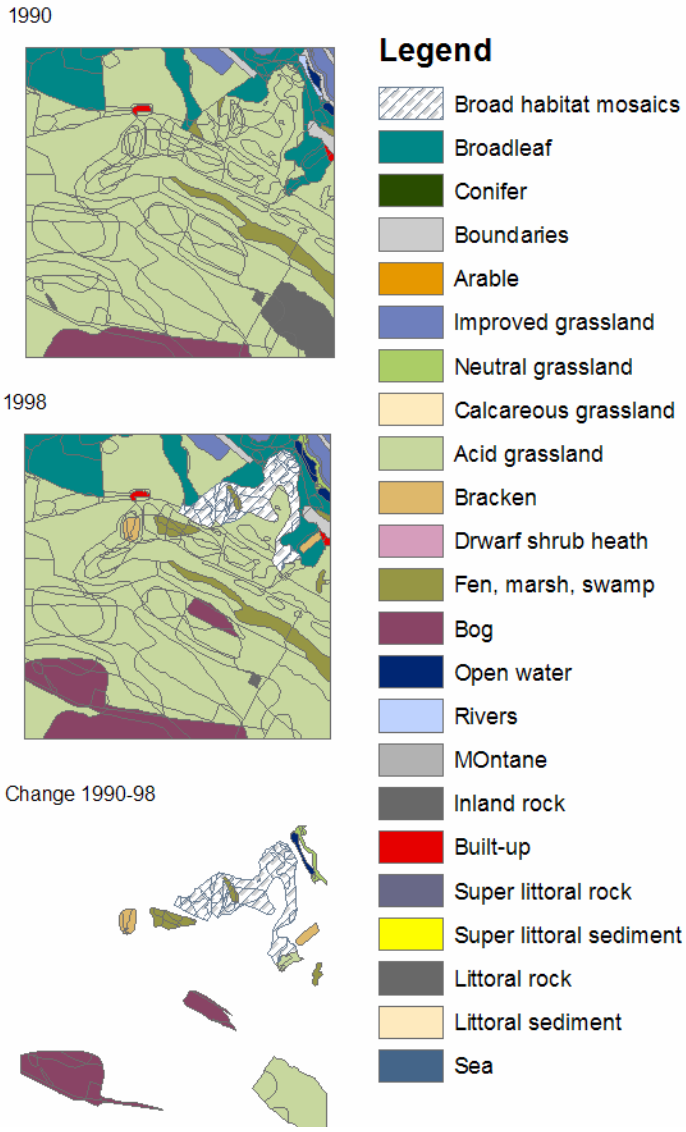
Figure 6.6 Change recorded between 1990 and 1998 for a CS field square in a lowland landscape in the Yorkshire and Humberside Region.



6.33 Figure 6.6 shows the data for one of them, a square at the margin of an urban area in the Humberhead levels Character Area (Character Area 39). Between 1990 and 1998 there was both infill development and the expansion of the built-up at the fringes of the urban area. This resulted in the loss of neutral grassland. A large block of broadleaf was added in the south east corner of the square and there was a shift from arable to grassland (both improved and neutral).

6.34 The Character Area Profile for the Humberhead Levels suggests that woodland development would be positive, as would a reduction in arable intensity and a shift to pasture. Thus the agricultural and woodland change recorded in the square would seem to strengthen the local character in ways that would be consistent with character more generally. Development pressure is, however, and issue that is also noted in the Profile, and this seems also to be significant

Figure 6.7 Change recorded between 1990 and 1998 for a CS field square in a upland landscape in the Yorkshire and Humberside Region.



locally, in the context of the sample square. The overall assessment made for the square was that, although the changes are mixed in terms of their impact on character, on balance they transforming it in ways that are inconsistent with existing character, by virtue of the loss of countryside at the urban fringe.

6.35 A second example of a CS sample square from the Yorkshire and Humberside Region is shown in Figure 6.7. This one is drawn from the Southern Pennines Character Area (Character Area 36), an upland landscape. Here the changes are less marked and appear to be related to shifts between various semi-natural Broad Habitat categories (mainly acid grasslands and bog). The assessment made for this square is that it shows limited change and that this is consistent with sustaining existing character.

6.36 From the analysis of the field survey squares in the Yorkshire and Humberside Region, it is apparent that the proportion of squares (27%) that show significant change inconsistent with current understandings of character is between the estimate made at the national level for Character Areas showing marked change inconsistent with existing character descriptions (23%), and the estimate for the region (20%) (see Part 3, Figure 3.1, page 22, and Figure 3.2, page 28). **This suggests that there may be some agreement between the two methodologies, although this conclusion would need to be checked by the analysis of squares in other regions. We recommend that the approach is considered further.**

Conclusion

6.37 In this part of the *Final Report* we have considered three aspects of the CQC project, and suggested that in each case there is scope for further development work. In the next section this recommendation is developed further in the context of the more general programme of work that would be required in order to update and publish the indicator of change in countryside quality in 2006.

Part 7 *Conclusions and Recommendations*

Introduction

7.1 In this final part of our Report, we bring together the conclusions and recommendations that we have made in relation to the different tasks set by the Project brief. In the main body of the Report, the aim has been to describe the key outputs from the study, namely an indicator of countryside quality and the methodology used in its construction. We now set this work in a broader context and will examine the wider implications of the study. The material is structured around the 6 areas of work that have been used as the structure of the earlier part of this Report.

Conceptualising and developing indicators of character and quality

7.2 **Our review of the different approaches to constructing indicators of change in countryside character and quality, and the conceptual relationships between them, led us to recommend that, notwithstanding the brief for the study, a *single* indicator of quality should be developed.** The assumptions on which this recommendation are based are that:

(a) Countryside character is an important and essential factor affecting what people mean when they speak of the quality of the countryside; and,

(b) While there are, in addition to character, other aspects or themes such as 'tranquillity' or 'accessibility' that many felt should be part of an indicator of change in countryside quality, at present it was premature to include them. This was because either appropriate data were not available, or conceptual approaches for measuring and assessing such themes were poorly developed.

7.3 **Given our recommendation and the assumptions on which it is based, an implication is that further work is required to refine the indicator of quality.** Important next steps would be:

(a) ***To develop more robust ways of mapping changes in tranquillity at character area level:*** The CPRE[40] and others have emphasised the importance of a tranquil countryside. Our consultations have confirmed that lack of disturbance in its broadest sense is for many people a key issue in shaping their view about countryside quality. The problem with current approaches to mapping tranquillity and its changes is that it is highly algorithmic and the extent to which the various measures reflect conditions on the ground is unclear. For example, tranquillity mapping largely depends on building spatial buffers around potential sources of audible or visual disturbance, (e.g. roads, settlement, electricity transmission lines). Tranquillity is assumed simply to depend on

[40] http://www.cpre.org.uk/

distance from such sources. In the real world, however, the level of disturbance would also be a function, amongst other things, of the landscape and land cover features that intervene. There is, as yet, no methodology to take such factors into account. Thus further work is required to develop and calibrate the approach.

A similar problem exists in relation to the impact of lighting on the night sky. Although maps of change in illumination intensity across England as observed from space have recently been published[41], disturbance from sky glow is something experienced 'on the ground'. Its impact also depends on the nature of the landscape in which the observer is located, the extent to which horizons can be observed and atmospheric conditions. As with tranquillity, judgements about the significance of such effects on countryside quality will, we suggest, require the development of more sophisticated methods of assessment.

(b) ***To develop consistent summary measures of 'accessibility' in the countryside**:* As noted in Part 2, many people identified 'an accessible, welcoming feel' as a key component of countryside quality. Change in accessibility was not, however, included as a factor in the present assessment. Several factors shaped this decision:

- The designation of 'access land' as a result of the *Countryside Rights of Way (CRoW)* Act[42] is part of an on-going initiative being led by the Countryside Agency, but national map coverage is not yet available. Thus use of these data would be premature. In the future, however, such information might form a base line against which change in access could be assessed.

- Data on the extent and condition of footpaths and other rights of way are difficult to assemble at national scales. The information is held at local authority level, there is often a lack of consistency between areas and no single source of collective data available.

In terms of reporting, access also posed a problem, because the issue is presently covered by another separate section of the Countryside Agency's *State of the countryside* Reports, and it was difficult to combine them before the analysis of the impact of character on quality had fully been resolved. **For the future, however, we recommend that consideration is given to the analysis of access in an expanded indicator of countryside quality.**

(c) ***To explore the use of attitudinal data in the analysis of change in countryside quality:*** The use of 'public opinion' as a means of gauging change in countryside quality was examined during the CQC Project. Our key conclusion was that it would be difficult, both now and in the future, to include attitudinal data in the indicator of change in countryside quality.

[41] http://www.cpre.org.uk/
[42] http://www.countryside.gov.uk/access/mapping/

Attitudinal information is, nevertheless, essential in terms of justifying what elements or themes are included in the indicator of change in countryside quality. Indeed, we used the results of surveys such as *Public Attitudes to the Countryside*[43], to make the case that landscape character is a key component of any quality measure. **To ensure the indicator of change in countryside quality continues to have resonance with current views about the countryside, we recommend that the Countryside Agency includes questions about people's perceptions of quality and the ways it is changing in any future attitudinal surveys that it sponsors. Similar questions might be included in the 2005 Government Survey on Quality of Life[44].**

Assessment and reporting cycles

7.4 Arguments can certainly be presented about the need to broaden the scope of the indicator presented here. 'Quality' does, without doubt, mean different things to different people in different places. However, we would suggest that the strong focus on countryside character that we have given to the indicator presented here is justified, given what people currently say they value about the countryside. Thus even if quality is interpreted in this somewhat narrow way, as mainly dependent on character, the measure offers a good basis for measuring important aspects of countryside change. **It is recommended therefore, that, notwithstanding any further work concerning the conceptual framework used to assess quality, the indicator is maintained on a 5-yearly reporting cycle. The next assessment should cover the period from January 1999 through to December 2003.**

7.5 The basis of our recommendation that the Countryside Agency and its sponsors adopt a 5-yearly reporting cycle is that while many of the key datasets can be updated on a yearly basis, others, such as the *Land Use Change Statistics* are best considered over a longer temporal span, given the time lags involved in their collection. A five-year period probably represents the minimum for such data to be used to identify trends reliably.

7.6 A 5 year cycle, with a lag of about one year between the end of the period covered by the data and reporting, also represents a timescale that is appropriate in the context of wider issues of policy development and appraisal. It is certainly in line with the other indicators of landscape change published by Government, such as those based on the results of Countryside Survey. A 5 year assessment and reporting cycle does not preclude updating some of the individual components that make up the indicator on a more frequent basis, to track the direction of change since the last assessment. The interim analyses could, for example, be published through, the Countryside Agency's annual *State of the countryside* Report. However, we suggest that the integrated assessment of change of countryside quality be made on a less frequent basis.

[43] Annual Report of the British Social Attitudes Survey for the Countryside Commission, 1996; Sustainability and the Countryside, HPI Research Group, 1994; Public Attitudes to the Countryside, Countryside Commission, 1997; Public Perceptions of the Countryside, Centre for Agricultural Strategy, University of Reading 1988.

[44] http://www.defra.gov.uk/environment/statistics/pubatt/index.htm

Developing the Assessment Framework

7.7 **If it is accepted that the next assessment period should be 1999-2003, then it would be feasible to publish the updated indicator at the end of 2005 or early in 2006. In order to accomplish this we recommend that a number of key steps are taken:**

(a) ***The Character Area Profiles that form the basis of the current assessment are updated:*** The importance of the Character Area descriptions as a framework for evaluating the significance of countryside change has been emphasised by our work. It must be emphasised however, that these materials were never designed to be used in the way they have been during the CQC Study. **Thus we recommend that as a basis for any further assessment of change in countryside quality, they are revised and updated by a process of consultation conducted on a regional basis.** Key aspects of the work should include:

- **The revision and expansion of the statements in the sections on 'the changing countryside' and 'shaping the future' to reflect the changed circumstances that have come about since the original descriptions were developed in the mid- to late-1990s.**. The experience that we gained during the second round of consultation during the CQC Project, suggested that there is a good deal of local support for such a process of revision. If such a consultative process was initiated, then this would help achieve to one of the major goals envisaged when the indicator of quality was proposed in the *Rural While Paper for England*, namely to stimulate debate about what people value about the countryside, and to ensure that change takes place in ways that strengthen character and value.

- **Refinement of the methods used to create the profiles so that the statement made within them are spatially specific and therefore more easily assessed.** For example, the revised National Landscape Typology or HLC could be used to help people identify *where* change within a character might be significant. Thus map information, describing the vision for the area, or places of particular sensitivity or concern, could form part of the Profiles.

We recommend that methods used to update the Profiles are developed and piloted during 2004, so that a full revision can be undertaken in 2005. The revised Profiles can then be used as the basis of the assessment reported in 2006. The importance of the revision process should not be underestimated, because it will assist in developing the wider use of the outputs of this study. The issue will be discussed below, in the context of our recommendations for applying the results of the CQC Study to other policy areas (see para 7.12).

(b) ***The range of data resources used to make the assessment should be extended:*** During our review of data that could potentially form part of the CQC assessment it became clear that from about 1998 onwards, a number of new sources were available that could be used to inform

future assessments. The opportunities offered by these data, and the revisions of those sources already used in the CQC Study, have been summarised in Table 7.1. Key features of this evolving data infrastructure are the availability of data on previously developed land from 1999 onwards, which can be used to look at aspects of brownfield development and remediation, and availability of the national equine database in 2004/5, which might help us understand the impact of 'horsiculture' in rural areas.

In Chapter 6 we also made a number of other specific suggestions in relation to the use of information from the new landscape typology and HLC, and in paragraph 7.3, above, we considered the potential inclusion of tranquillity and access data for future CQC work. **We recommend therefore, that the use of these additional sources is reviewed during 2004, so that the case for including them in the assessment of 2005 can be considered.**

Making the results of the CQC Project Available

7.8 Although the basic requirement of the brief for this study was to develop a national indicator, our work has shown that for the user community the ability to disaggregate such a measure to the local level, and access to the raw data upon which the assessment was based, is a key requirement of the work. **Through the development of the CQC website, we have sought to put in place mechanisms whereby this wider dissemination of the materials generated by the Project can be made available.**

7.9 **In Chapter 5 we made a number of recommendations about the way in which the website could be managed and developed. For the short term, we recommend:**

(a) That since the results of the current phase of the CQC Study are presently held on a site created specifically for the purposes of the study, an immediate decision must be made either to maintain this site or transfer these materials to the Countryside Agency's own home pages (see par 5.14). The present hosting agreement for the CQC site will expire at the end of June 2006.

(b) That some on-going management of the website will be required, to maintain its functionality and handle any questions or requests for data from users (see para. 5.15)

7.10 If the Countryside Agency and its partners decide to take the CQC Process further, and to report again in 2006 along the lines we have suggested, this has a number of more significant implications for the management of the website. These implications have been described in detail in Part 5 of this report (para **5.15 - 5.17**). **The key recommendation that we have made in relation to these issues is that functionality of the CQC website is extended to support the consultative processes that are required to revise and validate the Character Area Profiles and the eventual re-assessment of change in countryside quality.**

7.11 **Given the other developmental work suggested for the next Phase of the CQC study, it would be appropriate to pilot the development of the website alongside the investigation of the best ways to revise the Character Area Profiles during 2004, as part of an on-going, consultative process.** This would enable a new version of the website to be 'rolled out' in early 2005, ready to support the next, full CQC assessment.

Realising the wider value of the CQC Project

7.12 Publication of the indicator of change in countryside quality is not an end in itself. As suggested in the *Rural White Paper for England*, the reason for developing the indicator was to help ensure that the things people value about the countryside are properly taken into account in planning and similar decisions, and that local communities have the opportunity to play a part in shaping the landscape around them. Thus it would not be appropriate to end this Report on the progress made, without considering these wider issues.

Environmental Stewardship

7.13 Our discussion on the potential uses of the outputs from the CQC Study suggest that the work could make a significant contribution to in the context of the design and monitoring of the next generation of Environmental Stewardship (ES) schemes[45]. The conservation of landscape is a key feature of the new schemes, whose objectives include not only the conservation and enhancement of individual features, but also the need to maintain, enhance and restore 'local distinctiveness'.

7.14 The notion of 'local distinctiveness' is a core component of the concept of countryside character, and to a large extent is what is being expressed through the Character Area Profiles that form the basis of the CQC work. Preliminary discussions with Defra and its partners suggest that the Profiles we have developed and the refined versions (based on the LDUs of the National Typology) that we propose for the next phase of the CQC study can be used both to help *target* the types of feature that should be included in the various agreement tiers, and to *monitor* the overall success of such schemes at the landscape scale.

7.15 The GENESIS system that is being established by RDS to record information about and to monitor the outcomes of the new Environmental Stewardship schemes, will generate a range of new information about agreements and their location. These data will provide an important resource for the next CQC assessment, since it will enable a more refined analysis of the location of management activities in relation to the wider characteristics of the countryside. Since the outcomes of the ES schemes will only be monitored at holding level, only an aggregate assessment such as that made by CQC, made at the level of the Character Area will enable the landscape implications of the scheme to be judged. **We therefore recommend that during 2004, further work is undertaken to refine the outputs of the CQC Project to make**

[45] http://www.defra.gov.uk/erdp/reviews/agrienv/entrylevel.htm

them available for the design and monitoring of the new ES schemes, and to explore the use of data from the new ES scheme in future assessments of change in countryside quality.

Regional Spatial Planning

7.16 The evolution of the regional tier of government in England has formed an important part of the backdrop for the CQC project. Our consultations suggest that the outputs from CQC can support the new approaches to regional spatial planning that are required by this central Government initiative.

7.17 An underlying goal of the Countryside Agency's whole Character Area Initiative, has been to ensure that landscape character is properly taken into account in planning decisions. If the Character Area Profiles are developed along the lines suggested in this study, we suggest that the Countryside Agency:

(a) Ensures that ideas about landscape character continue to be relevant in the context of contemporary debates about development in the countryside; and,

(b) Creates a process by which it can engage with a range of regional stakeholders to help shape their decision making.

7.18 It is likely that the new forms of regional governance will need to rely on establishing a wide range of partnerships to achieve sustainability at the local scale. Indeed, one view that we have heard expressed is that increasingly central Government will be far less prescriptive, and essentially seek to facilitate or 'buy sustainable solutions' from those regional consortia that are considered best placed to identify the issues and deliver appropriate outcomes.

7.19 In this more consultative and fluid decision making environment, the ability to create and develop 'change scenarios', and to provide robust monitoring information on the way in which the countryside is changing, will be essential for any strategic organisation such as the Countryside Agency, English Nature or the new integrated agency. We therefore recommend that as part of the on-going development work for the next phase of the CQC Project, an investigation is also made of the use of these data to support the new approaches to regional spatial planning that are now emerging, and better national resource planning. This could be achieved most easily by:

(a) Holding a series of regional workshops designed to disseminate the results of CQC with the strategic planning community. One advantage of such a series of meetings would be that the outputs could inform the development of the Character Area Profiles for the next phase of the CQC study.

(b) Working with a specific set of regional partners, to develop case study materials that can be used to illustrate the potential value of the CQC approach. Our preliminary discussions suggest that the Countryside Agency could make rapid progress in the South West, for example, by

working with the Regional Assembly Futures Group and organisations such as *Forum for the Future*, the S*outh West Regional Affairs Forum*, *Sustainability South West*, the *Regional Spatial Strategy Planning Group*, and the *Regional Environmental Network*, to look at sustainable land management in four specific geographical areas, namely:

- The Parrett Catchment;
- The Ruby Country;
- The Dorset Heaths; and,
- Purbeck.

In each case the outcomes would help us to understand and illustrate the value of the CQC Profile approach, and the strategic regional view that can be developed by the CQC analysis.

7.20 An investigation of the ways in which the outcomes of the CQC Project can support the needs of regional spatial planning is as important as the work we proposed concerning the more specific topic of the targeting and monitoring Environmental Stewardship schemes. Both address a similar set of generic issues related to how we can inform policy judgements by better understanding of *where* change in the countryside is occurring and *whether these changes matter*. If the user community is to be engaged with the outputs of the CQC study, then both these topic areas should be a focus of concern. **We therefore recommend that the Countryside Agency and its partners consider how, through their future work programmes, they can may demonstrate, strengthen and further develop the context and applications for the outputs from CQC.**

Countryside Quality Counts

7.21 In setting out the Government's commitment to develop an indicator of change in countryside quality, the *Rural White Paper for England* suggested that the aim was to ensure that the things people valued about the countryside were properly taken into account and that local communities have the opportunity to play a part in shaping the landscape around them. It was also recognised that while the landscape will continue to evolve, the underlying proposition was that change should take place in ways that may improve, strengthen and develop countryside character and condition.

7.22 The CQC Project has, we suggest, developed an indicator that has addressed the ambitious aims set down by the *Rural White Paper*. The indicator, and the set of data resources that underpin it, will help the Countryside Agency, and all its other partners who are concerned with the integrity of the rural environment, to argue that 'countryside quality counts'. The CQC project shows that by understanding landscape character and the ways it is changing at national and regional scales, we can make the kinds of decisions necessary to help us sustain the diversity and distinctiveness of the English countryside.