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Monitoring the contribution that Environmental Stewardship is making to the maintenance and enhancement of landscape character and quality

Report of the Rapid Survey (2014-2016)

Final Report

Prepared by LUC in association with Rural Focus Ltd

December 2016



Department
for Environment
Food & Rural Affairs

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Executive Summary

Since their inception in the 1980s, agri-environment schemes in England have had a primary objective of maintaining and enhancing landscape character, alongside other complementary objectives.

Environmental Stewardship (ES) includes the objective to “maintain and enhance landscape quality and character” and its successor, Countryside Stewardship (CS) also includes landscape character as one of its broad objectives.

An earlier research project into the cumulative impact of Environmental Stewardship (ES) on landscape character (BD5303¹) developed and piloted a methodology for monitoring how these schemes are delivering this objective. This formed the basis for this larger scale survey of the range of England’s agricultural landscapes undertaken between 2014-2016 in order to provide a robust assessment of the impacts of ES on landscape character and quality. The survey method developed benefited from advances in computer tablet technology to allow for a much more rapid approach to gathering and analysing field survey data. Therefore, the approach is referred to as the ‘Rapid Survey’.

Policy context

Defra’s Agri-Environment Monitoring and Evaluation Strategy for the England Rural Development Programme 2014-20² seeks to review and assess the success of the Programme in delivering its stated objectives and in providing value for money. This project supports this work, focussing on the outcomes of Environmental Stewardship for landscape.

The baseline data obtained by this project should also contribute to long term monitoring of changes in landscape character consistent with the aims of the European Landscape Convention, 2000.

Objectives of the Survey

The Rapid Survey project had the following objectives:

- To utilise the field monitoring techniques developed in ‘BD5303: Cumulative impact of Environmental Stewardship on landscape character’ to undertake a field survey assessment applicable at the national scale;
- To assess the impact of ES on landscape character and quality in selected areas;
- To develop a baseline to underpin the future monitoring of landscape outcomes of both the final years of ES agreements and of new Countryside Stewardship agreements;
- To allow potential comparative research into environmental change over time where agri-environment agreements cease; and
- To assess the effectiveness of the Rapid Survey methodology and provide any recommendations for improvements to future fieldwork undertaken in terms of logistics, potential for co-ordination with other survey teams, recording and reporting mechanisms.

The Rapid Survey sought to deliver an efficient approach to collecting data in the field, using tablet computers to record:

- The scheme options that contribute most to landscape character and quality; and
- The landscape types which receive most benefit from the scheme.



Figure 1: Field margin buffer strip judged to be enhancing landscape quality. (Source: LUC, 2014)

¹ Cumulative impact of Environmental Stewardship on landscape character (2013). Accessible here:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=17454>

² Accessible here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/404607/rdpe-england-2014-2020.pdf

Results and findings of the Survey

Based on a sample of 596 survey sites (comprising one kilometre squares) across three years of survey, representative of the six different Agricultural Landscape Types (ALTs) of England, this project has shown that, overall, Environmental Stewardship is meeting the objective of maintaining and enhancing landscape character. This was the case across all landscape types and themes.

The Report analyses the main effects of the most commonly occurring ES options, recognising that a relatively small number of options account for a large proportion of total uptake. It also explores how the findings of the Rapid Survey can be extrapolated nationally using uptake data for selected ES options.

The results of the Rapid Survey suggest that Environmental Stewardship **conserves landscape character** (defined as supporting traditional features that have witnessed decline nationally) in the majority (67.1%) of areas surveyed. This is achieved most commonly through the management and restoration of hedgerows and through the retention of permanent grassland with low or very low levels of agricultural inputs.

The scheme **enhances landscape character** (defined as restoring or adding new features that strengthen landscape character) in 20.8% of the areas surveyed. The most frequent form of enhancement occurs from the creation of appropriately sited field margin buffer strips on cultivated land and through the creation or restoration of semi-natural grassland. For some other forms of landscape enhancement, such as the creation or restoration of woodland and traditional orchards, greatest benefit occurs in areas where these features are considered to be characteristic of the local landscape but where their stock in the landscape is low.

The scheme also **maintains landscape character** (providing little added value) in 10.9% of survey squares. This frequently involved retaining the mixed or pastoral character of livestock farming areas. **Neutral or detracting** effects were found in less than 2% of the survey squares. These were largely found to be a result of poor management or the option's effects not being visible in the landscape, rather than the inappropriate siting of features. This illustrates that advice on the implementation of options is working well, but that ongoing management is an issue that needs to be addressed in some cases.

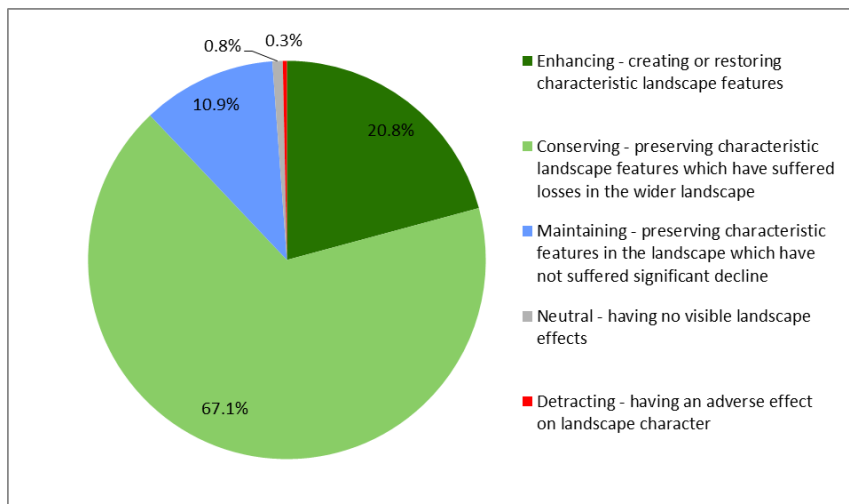


Figure 2: Overall impact of Environmental Stewardship on landscape character in the survey squares

The survey also investigated how the scheme contributes to **landscape quality** (as defined by the condition of landscape features surveyed). The survey found that most scheme options that were assessed as enhancing landscape character create or restore features in good condition, whereas features under option assessed as maintaining landscape character were often found to be in fair or poor condition. A causal link between the options and the condition of both new and existing landscape features could not be proved but there is some evidence of a positive effect.

The Rapid Survey also reveals differences between features managed within ELS (82% assessed as conserving landscape character) and HLS (an even split of 46% enhancing; 46% conserving) is of timely interest as the replacement CS scheme is more focused on higher tier options. Ensuring that the Rapid Survey monitoring methodology is able to be adapted to the new scheme will allow future monitoring of any differences in delivery against the landscape character objective.

The survey method has been reviewed and adjusted throughout the course of the three-year project to improve the quality of the information collected – whilst ensuring overall consistency, maximising the sample size and expanding the survey's representation of England's varied agricultural landscapes.

1 Introduction

- 1.1 This document presents the methodology, results and findings from a contract to develop and gather data from a 'Rapid Survey' of Environmental Stewardship (ES). Taking place over a three-year period from 2014 to 2016, the overall aim of the research project is to assess the contribution that ES is making to the maintenance and enhancement of landscape character and quality in England. In addition, the intention is to provide a robust methodology and baseline to inform subsequent work to monitor the landscape impacts of successor agri-environment schemes in England, specifically Countryside Stewardship (which opened to new applicants in 2015).
- 1.2 This contract forms part of a wider programme of landscape surveillance and change monitoring led by Natural England to inform their statutory remit for landscape conservation under Conservation 21 (Natural England's Conservation Strategy for the 21st century, published October 2016) – as well as a number of other policy areas.
- 1.3 The outputs of this three year contract comprise:
 - This Report, which brings together the results of three years of survey;
 - A geodatabase containing all of the survey results for the three years, along with an accompanying User Guide. The geodatabase is viewable via Microsoft Access or accessible in GIS.

Previous work exploring the landscape impacts of Environmental Stewardship

- 1.4 This contract builds on earlier work for Defra and Natural England which sought to define and monitor the success of ES in meeting its landscape objective. The following two research projects are most relevant.
 - **The cumulative impact of Environmental Stewardship on landscape character (LUC, 2010-13).** *Contract number BD5303*³. This project developed and tested a robust, repeatable and comprehensive evaluation framework for reporting and monitoring the direct and cumulative impacts of ES on the maintenance and enhancement of landscape character and quality at a variety of scales. It used a series of quantitative and qualitative techniques that assessed counterfactuals that compared landscape effects with and without ES and the landscape effects of ES compared to the classic agri-environment schemes. It evaluated the cumulative impact of ES on landscape character and quality, and defined lessons learned from the targeting and operation of ES that can be applied in future agri-environment programmes. The research recommended that future landscape monitoring follows a 'broad and shallow' Rapid Survey approach, allowing a larger amount of data to be collected in a more streamlined manner. This recommendation is the subject of this Report. For the purposes of simplicity, this previous work is referred to as 'BD5303' in the remainder of this Report.
 - **Developing Indicators and Thresholds for Monitoring the Landscape Impacts of Environmental Stewardship at the National Character Area Scale (LUC, 2012-14).** *Contract number LMO429*⁴: This project developed and piloted a robust method and relevant tools to provide and support a consistent approach for identifying landscape impact indicators

³ Project summary and links to project outputs available here:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=17454&FromSearch=Y&Publisher=1&SearchText=Landscape%20character&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description>

⁴ LUC. *Developing Indicators and Thresholds for Monitoring the Landscape Impacts of Environmental Stewardship at the National Character Area Scale* (November 2013). Project summary and links to project outputs available here:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18840#Description>

and thresholds across all National Character Areas⁵ (NCA) in England – with a clear link to identified landscape characteristics. It involved developing a database that records the indicators and thresholds across all NCAs, building on the methodology developed under the BD5303 project. It piloted the approach across an appropriate number of NCAs to ensure that it worked consistently, and then rolled it out across all of the NCAs in England. For the purposes of simplicity, this project is referred to as ‘NCA Indicators and Thresholds’ in the remainder of this Report.

- 1.5 In combination with these previous research studies, the Rapid Survey should allow Defra and Natural England to monitor and facilitate improved future agri-environment delivery that will secure landscape benefits through the targeting of appropriate land management options (both to particular places, and in the quantity needed to have a significant overall impact).

The landscape objectives of Environmental Stewardship

- 1.6 The importance of landscape in providing *‘an essential component of people’s surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity’*⁶ is recognised in the European Landscape Convention of 2000. The UK has taken a leading international role in defining and developing policies for the recognition and protection of landscapes⁷. Since their inception in the 1980s, agri-environment schemes in England have had a primary objective of maintaining and enhancing landscape character, alongside other complementary objectives such as conserving biodiversity and protecting the historic environment. This is true of ES which has provided ten year management agreements (with five year breaks) to farmers and land managers in England since 2005 through two principal tiers: Entry Level Stewardship (ELS) open to all farmers and land managers in England and Higher Level Stewardship (HLS) which is competitive and targeted to specific areas of the land. Both tiers include the objective to *‘maintain and enhance landscape quality and character’* as one of the five primary objectives of ES. The new scheme, Countryside Stewardship (CS), includes *‘keeping the character of the countryside’* as one of its broad objectives.
- 1.7 The above ES objective is delivered through a range of different land management options and capital payments. Although both tiers of the scheme contain groups of options that refer specifically to landscape (for instance the Fourth Edition of the ELS handbook lists 22 options as being particularly relevant to landscape, relating to traditional boundaries, woodlands and trees⁸), almost all of the options can have an impact on landscape character and quality. The full list of options available under both the ELS and HLS is included at Appendix 5 of this Report.

Defining ‘landscape character’ and ‘landscape quality’

- 1.8 The distinction between landscape character and quality contained in the ES objective is an important one which is addressed in this Report. **Landscape character** can be defined as the natural, cultural, perceptual and aesthetic elements and features of an area that combine to make it distinctive and different from other areas. **Landscape quality**, for the purposes of this Report, is defined as the condition of the landscape in relation to perceptions or expectations of what the typical or ideal characteristics of a given area should be. In addition, landscape quality – in this context - makes a judgement about the condition of component landscape features. It is important to stress that both landscape character and quality apply to all landscapes in England, not only those areas that have been given special recognition such as Areas of Outstanding Natural Beauty (AONBs) and National Parks. It is a key tenet of the European Landscape Convention that ‘all landscapes matter’.

⁵ National Character Areas overview and profiles available here: <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making>

⁶ European Landscape Convention, 2000. Article 5 – General Measures.

⁷ See for instance The Landscape Character Assessment Guidance for England and Scotland published by the Countryside Agency and Scottish Natural Heritage in 2002.

⁸ Defra (2013) Entry Level Stewardship Handbook – Fourth Edition January 2013. Page 25.

The need to monitor the landscape impacts of Environmental Stewardship

- 1.9 Defra's Agri-Environment Monitoring and Evaluation Strategy for the England Rural Development Programme 2014-20 (RDPE) seeks to review and assess the success of the Programme in delivering its stated objectives and in providing value for the public money expended. This project supports this work, focussing on the outcomes of ES for landscape. Although ES is closed to new entrants it will continue as a 'legacy' scheme while existing agreements remain in force (potentially until 2024). New agreements under Countryside Stewardship, which retain maintenance and enhancement of landscape character as a scheme outcome, started in 2016 and will run for five years. Some capital grants were available through the new scheme from 2015.
- 1.10 This project establishes a robust framework for monitoring the impact of ES, and subsequently Countryside Stewardship, on landscape character and quality. Its overall aims are as follows:
- To identify the land management options that contribute most to maintaining landscape character and do most to conserve and enhance landscape quality;
 - To demonstrate, based on the uptake of different land management options, which landscape types receive most benefit from the impacts of the scheme;
 - To develop a baseline to underpin the future monitoring of the landscape outcomes of both the final years of ES agreements and of the Countryside Stewardship agreements; and
 - To allow potential comparative research into environmental change on holdings that are not managed under agri-environment schemes.
- 1.11 The specific objectives from Natural England's brief for this project are shown in **Box 1.1**.

Box 1.1: Objectives for the Rapid Survey

- To utilise field monitoring techniques developed in 'BD5303: Cumulative impact of Environmental Stewardship on landscape character' to undertake rapid field survey assessment;
- To assess the impact of Environmental Stewardship on landscape character and quality in selected areas;
- To develop a baseline to underpin the future monitoring of the landscape outcomes of both the final years of ES agreements and of the new Countryside Stewardship scheme agreements;
- To allow potential comparative research into environmental change over time on holdings where agri-environment agreements cease; and
- To assess the effectiveness of the rapid assessment methodology and provide any recommendations for improvements to future field work undertaken in terms of logistics, potential for co-ordination with other survey teams, recording and reporting mechanisms.

Definition of judgement terms used to assess the impact of ES on landscape character and quality

- 1.12 The survey methodology, described in detail in Chapter 4, describes the process of applying different judgements concerning the **type** of landscape effect and the resulting **condition** of the landscape feature under ES option being assessed in the field. These judgements form the basis for the main analyses included in this chapter.

- 1.13 For the **type** of effect, each feature under option was judged to have one of the following landscape impacts: Enhancing, Conserving, Maintaining, Neutral or Detracting⁹:
- **Enhancing (landscape character)**: by adding new features / land cover that are characteristic of the landscape and / or enhance local distinctiveness. This might include re-introducing features traditionally associated with the landscape that have previously been lost (e.g. traditional orchards) or creating new, valued landscape features in appropriate locations.
 - **Conserving (landscape character)**: conserving important traditional landscape features and / or landcover that are characteristic of the landscape and valued because they have suffered from significant loss / decline in the wider landscape of the NCA, or nationally. They are elements that are difficult and /or time consuming to recreate / re-establish (taking a number of years). In terms of landscape effects these are options of equal importance to those assessed as 'enhancing' landscape character (as they are focused on existing features of importance in the landscape). Species-rich semi-natural grasslands and heathlands are examples of land uses likely to be in this category (if being appropriately conserved through ES).
 - **Maintaining (landscape character)**: maintaining landscape features / land cover that are characteristic of the landscape but distinguished from the above in that they have not suffered from significant decline in the wider landscape (e.g. permanent [improved] grassland in pastoral landscapes) - and are easy to restore / re-create if lost.
 - **Neutral (no change)**: having no visible landscape effects at the time of field survey.
 - **Detracting (from landscape character)**: having an adverse effect on landscape character - either because the option itself is introducing uncharacteristic / intrusive features (e.g. new fence lines), or due to the option being poorly located or managed in the landscape.
- 1.14 In order to evaluate **landscape quality, the condition** of the feature under option, this was judged as '**Good**', '**Fair**' or '**Poor**'. These categories are described in **Appendix 3**, in the context of a selection of the most common landscape features targeted by ES.

Structure of this Report

- 1.15 The remainder of this Report is structured as follows:
- **Chapter 2** sets out the overall findings of the study and a critique of the approach, drawing attention both to the conclusions arising from the survey results and recommendations for future work; and
 - **Chapter 3** provides detailed analysis of the results of the Rapid Survey and the impact of ES on landscape character and quality;
 - **Chapters 4 and 5** describe the methodology adopted for the Rapid Survey (with minor changes/additions from the 2015 survey onwards explained), with Chapter 4 describing the process of selecting the survey areas and Chapter 5 describing the approach taken to the collection of data during the field survey.
- 1.16 A series of appendices are found at the back of the Report, as follows:
- Appendix 1 provides summary descriptions of the Agricultural Landscape Types (ALTs) found across England – used as a spatial scale for reporting some of the Rapid Survey results.
 - Appendix 2 outlines the content of the Rapid Survey field survey database;
 - Appendix 3 sets out the guidelines used for scoring landscape condition;
 - Appendix 4 provides an overview of the Landscape Themes and Objectives from the NCA Indicators and Thresholds study (see footnote 7 above) – used to help structure the analysis and reporting of Rapid Survey.

⁹ These definitions were originally developed and applied by the field surveys undertaken under contract BD5303.

- Appendix 5 is a summary list of current ES options;
- Appendix 6 includes the original specification for the Rapid Survey approach, included in contract BD5303 (see footnote 6 above); and
- Appendix 7 contains a glossary of specific terms and acronyms used in this Report.

2 Headline conclusions, critique of the approach and recommendations

- 2.1 This chapter brings together the overall findings of the three years of Rapid Survey based on the full analysis of results provided in the next chapter (Chapter 3). It goes on to recommend how these results could inform current and future research, policies and programmes.
- 2.2 The chapter is split into four main sections.
- The first section provides headline conclusions from the Rapid Survey relating primarily to **landscape character**.
 - The second section looks at how ES is conserving and enhancing the **landscape quality** overall based upon the resultant condition of component landscape features.
 - The third section provides a **critique on the Rapid Survey method**, including a summary of changes implemented after the first year (2014) which were taken forward in both 2015 and 2016.
 - The final section sets out a series of **recommendations for using and building on the Rapid Survey results**.

The impacts of Environmental Stewardship on landscape character

- 2.3 The following section provides a summary of the headline conclusions arising from the three years of Rapid Survey, relating to the impact of ES on landscape character:
- **Overall, ES is observed to be generally 'conserving' landscape character** (67% of survey squares), with the scheme 'enhancing' or 'maintaining' landscape character in a smaller proportion of survey squares (21% and 11%). The scheme is found to be having 'neutral' or 'detracting' effects in less than 2% of survey squares. See **Figure 3.1** (page 19).
 - **Differences between Agricultural Landscape Types:** Variations between ALTs in terms of the impact of ES on landscape character are relatively minor, with ES found to be 'conserving' landscape character across the majority of survey squares in all ALTs (para. 3.16). The proportion of squares where the scheme is 'enhancing' landscape character is greatest in ALT 2: Eastern Arable and ALT 3: South East Mixed (Wooded) (para. 3.17). See **Figure 3.2** (page 20).
 - **Differences between the Landscape Themes:** Individual features under option are classified into six different Landscape Themes (para. 3.22), based on a classification developed by the NCA Indicators and Thresholds study. ES is found to be 'conserving' landscape character across all the Landscape Themes, particularly features in the 'woodland and tree cover', 'historic environment' and 'field patterns and boundary types' themes. The greatest proportion of features under option classed as having an 'enhancing' effect occur within the 'field patterns and boundary types' and the 'semi-natural habitats' themes. The very small number of features where ES is assessed as having a 'detracting' effect on landscape character are found within the 'field patterns and boundary types' and 'agricultural land use' themes. See **Figure 3.3** (page 22).
 - **Differences between the Landscape Objectives of options:** Also defined by the NCA Indicators and Thresholds study, Landscape Objectives sit below the Landscape Themes to allow a finer grain of analysis. Scheme options that tend to be 'enhancing' landscape character include those related to objectives for woodland or semi-natural habitat restoration/creation; reinforcing field patterns in both arable and grassland landscapes; and creating appropriately sited blocks and seed mixes in arable fields. The small number of 'detracting' options tended to be those observed as being badly sited or poor quality examples of those that would otherwise be expected to be 'enhancing' (such as Objective B6: Reinforcement of field

patterns in arable areas). Options found to bring little added value to landscape character ('maintaining' or 'neutral') include those applied to semi-improved or improved pasture fields. Archaeological features managed under options within Objective E4 (Removal of archaeological features from cultivation) were often assessed as having a 'neutral' effect on landscape character due to their presence below ground or beneath crops/vegetation. See from para. 3.41.

- **Scaling up the Rapid Survey results using national ES uptake data: Maps 3.3 and 3.4** (page 22 and 26) provide examples of how the detailed results of the Rapid Survey can be 'scaled up' to help support the findings of other Natural England research (the BD5303 and NCA Indicators and Thresholds projects) into the landscape effects of Environmental Stewardship at the national scale. It is difficult to draw absolute conclusions from these comparisons due to the significant difference in the scale of the studies, but it does help reinforce some general patterns.
- **Differences between the tiers of ES:** Features under ELS and UELS options are primarily having a 'conserving' effect, whilst features under HLS options are more evenly spread between having 'conserving' or 'enhancing' effects on landscape character. See **Figure 3.6** (page 35).
- **The effect of the most commonly occurring option groups:** Those options that are introducing buffer strips and seed mixes/ plots onto cultivated land tend to have an 'enhancing' effect due to adding new features that help strengthen landscape character; while field boundary options are having a widespread 'conserving' effect. See from para 3.59 and **Maps 3.5 and 3.6** (pages 39 and 40).
- **Additional effects from co-located or adjacent options:** The data sample on co-located options is not large enough to report any definitive conclusions, although some evidence suggests that some grassland options are more likely to have a 'conserving' effect when co-located with complementary options. A number of examples of options located adjacent to each other in the landscape reported additional (positive) landscape effects, such as buffer strips placed alongside hedgerows to further enhance a naturalistic field edge. See from para. 3.86.

The impacts of Environmental Stewardship on landscape quality

2.4 This study defines 'landscape quality' as *'the condition of the landscape in relation to perceptions or expectations of what the typical or ideal characteristics of a given area should be'* (para. 1.8). The following statements summarise the findings of the Rapid Survey relating to landscape quality (condition).

- **The Rapid Survey results show the close relationship between the way that ES affects landscape character and the condition of the features under option** (para. 3.75 and **Figure 3.7**). Features in good condition are most likely to be subject to ES options that are judged to be 'enhancing' or 'conserving' landscape character. Conversely, features in poor condition are most likely to be subject to ES options that are judged to be having a 'neutral' or 'detrimental' impact on landscape character (although the number of occurrences (44) for this latter relationship is relatively small). This relationship is true across all ALTs and Landscape Themes.
- **Care has to be taken in implying a causal relationship** – i.e. that features under ES that are assessed as 'enhancing' and 'conserving' landscape character are always in better condition than those judged as 'maintaining' (para. 3.76). The Rapid Survey approach is not able to assess the condition of features before the ES options took effect. However, it can be said that options found to be 'enhancing' or 'conserving' landscape character generally do not result in features being in poor condition (i.e. at the very least the options have contributed to continuing good condition), compared to a counterfactual position where features outside the scheme might have been removed or declined in condition.
- **For ES options that involve the creation of new features** such as the establishment of field margin buffer strips, the planting of new in-field trees or the sowing of grassland on

previously arable land, the scoring of these features as being generally in good condition suggests that ES has positively contributed to landscape quality.

- **It is difficult to conclude from the survey results whether the poor condition of some features assessed as 'maintaining' landscape character is the result of the option or is a reflection of the prior condition of the feature when it came into the scheme.** Both circumstances may be evident based upon the surveyors' observations – i.e. in some survey squares poor compliance of the ES prescriptions by the agreement holder was the likely reason for a score of poor condition (for instance grassland infested with seeding thistles) but in other survey squares the poor condition appeared to be of longer standing (for instance a particularly 'gappy' hedgerow or derelict stone wall).
- **The findings of the Rapid Survey suggest that ES adds value to landscape** by improving its quality. This is found to be when ES options result in the creation of new landscape features ('enhancing' landscape character) or where they are 'conserving' existing features, both of which then tend to be in good condition. However, the assessment of the effect of ES on the condition of pre-existing poor quality features is beyond the scope of the Rapid Survey.

Overall critique of the Rapid Survey approach

Strengths and limitations of the approach

- 2.5 The need for a relatively quick and simple means of surveying the landscape impacts of ES was identified in the BD5303 research project, which set out an indicative methodology for the Rapid Survey approach (included at **Appendix 6**). This approach was used for the first time in 2014, and repeated again in 2015 and 2016; resulting in a much larger sample of ES agreements over a larger area of England than had been possible in BD5303. The following points provide a summary of the pros and cons of the approach:

Strengths

- **The Rapid Survey approach has enabled a comprehensive evaluation** of the impact of ES on landscape character and quality at the national level.
- Although focussed primarily on monitoring the impact of ES, the **large sample contributes a significant baseline of data** for future analysis of changes in landscape character and condition in the farmed environment of England. This may be of relevance to other policy areas within the framework provided by the European Landscape Convention.
- **The Rapid Survey focuses on assigning relatively simple quantitative 'score' judgements rather than requiring more subjective qualitative descriptions** of landscape character and the impact of ES in each survey square. This reduces the time taken to survey each square (hence the name 'Rapid Survey'), allowing a team of two surveyors to survey at least four squares a day.
- **The reliance on 'score' based assessments reduces the risk of surveyor bias** (or different interpretations of the impact of ES between surveyors), improving the future application of the methodology including by non-landscape specialists.
- **The Rapid Survey approach, designed around the use of computer tablets, brings significant efficiencies throughout the data collation, collection and analysis stages** – storing mapped and text based information on ES options to be surveyed, allowing site observations to be recorded directly and in electronic format, reducing the need for surveyors to carry multiple paper maps/proformas (enhancing data security), and greatly increasing the speed of data analysis. Chapter 5 of the 2014 Report discussed the advantages and disadvantages of using tablets in more detail.

Limitations

- **The quicker and simpler 'Rapid' Survey approach means that there is an absence of some of the contextual detail provided in BD5303** For example, a detailed description of landscape character in each square is not provided through Rapid Survey (unlike in BD5303). Instead, key characteristics are recorded using pre-populated drop-down menus. Whilst the

key characteristics information thus recorded has not generated analytical benefits for this particular research, the baseline information on landscape character across the survey sample may prove useful for other future work.

- **The Rapid Survey limits the assessment that can be made of the landscape impacts of ES options to the 1km survey square.** This is because longer-distance effects are not observed (where options are viewed in the context of a large scale vista). The cumulative effects of ES options, where they occur frequently across landscapes, are also not assessed.
- **The Rapid Survey methodology does not involve any counterfactual investigation** (i.e. surveying landscapes not under ES). It has, however, attempted to compare the condition of features under option with others not under option within the same square. These findings do need to be treated with caution however, as they are comparing features on the same ES agreement holding, and therefore the farmer is unlikely to significantly change his/her management practices (e.g. all hedgerows are likely to be managed using the same techniques and on the same cutting cycle regardless of whether they are under option).
- **The identification and transfer of the ES agreement documentation from Natural England to the survey team involves a significant commitment of staff resources.** At present spatial information on ES options is not available in digital (GIS) format – requiring the contractor to create spatial data themselves prior to field survey.
- **The Rapid Survey method has a limited ability to assess options relating to buried archaeological features in the landscape.** This is because they are often not visible from ground level or obscured by land cover such as crops. Although the Rapid Survey could not provide conclusive results for these types of feature, it should be recognised that they form an integral part of landscape character – particularly in relation to time depth.

2.6 On balance, owing to the nationally significant sample size, consistency in survey approach, efficient use of technology to streamline the processes of field survey and data analysis (hence the name 'Rapid'), and range of analyses able to be drawn from the large data sample – the strengths do outweigh the limitations of the Rapid Survey approach.

Recommendations on the approach taken forward from the first (2014) survey

2.7 The Report of the first Rapid Survey in 2014 (LUC, June 2015) included a series of recommendations for improving and further streamlining the approach, whilst maintaining the overall method to ensure consistency. The following were implemented for the 2015 and 2016 surveys:

- **New fields added for contextual information** to help explain the reasons behind the scoring of the effect of ES options on landscape character and the condition of landscape features.
- **Greater use of geo-referenced photographs** both to provide a visual record of particularly good or poor examples of the landscape effects of ES options and, potentially, to provide a long term reference for future monitoring of landscape change (through the collection of photographs representing the overall character of each square). The Rapid Survey database includes a search function for all photographs taken in 2015 and 2016, which is explained in the accompanying User Guide.
- **Applying the findings of the Rapid Survey to data on national ES option uptake,** Spatial mapping of headline Rapid Survey results against ES uptake data and key findings from the desk-based findings NCA Indicators and Thresholds study is now included in Chapter 3 of this Report.
- **Undertaking refresher training of surveyors and ongoing moderation:** the same small team of three landscape professionals at LUC has undertaken all of the surveys, with refresher training days held at the start of the 2015 and 2016 survey seasons. Opportunities for surveyors to 'team up' on surveys were also taken frequently, again maximising consistency in judgements and ensuring the scoring principles on landscape effect (Table 3.1) and condition (Appendix 3) are aligned to observations on the ground.

Recommendations for using and building on the Rapid Survey results

Links to existing projects/research

- 2.8 The results of the Rapid Survey are able to be used to:
- **Feed into high- level analyses exploring the landscape effects of agri-environment schemes**, particularly the NCA Indicators and Thresholds work. Examples of how the Rapid Survey's findings can be explored in parallel through mapping are shown at Maps 3.3 to 3.7 pages (33 to 42)
 - **Support the broader, qualitative findings of the BD5303 study**, which included detailed surveys of landscape features under agri-environment scheme options (also at a one-kilometre sample square level, following the same scoring principles). As a successor project arising from BD5303 recommendations, the Rapid Survey provides 'broad and shallow' data that increases the robustness of the original project's more qualitative findings.
 - **The findings at the NCA scale could provide very relevant context for local studies**, for example Natural England's local landscape monitoring partnership projects that are engaging with local communities at locations in the Humberhead Levels, Arnsdale and Silverdale and the Churnet Valley.
- 2.9 Collectively, these strands of evidence can provide useful insights at different scales and locations to build a bigger picture of landscape change trends.

Application of the Rapid Survey approach to Countryside Stewardship

- 2.10 As noted at the start of this Report, Defra is committed to a continuing process of review and evaluation, taking forward the Agri-Environment Monitoring and Evaluation Strategy for the England Rural Development Programme 2014-20 (RDPE). The successor scheme to ES, Countryside Stewardship, retains the maintenance of landscape character as one of its broad objectives ("keeping the character of the countryside"¹⁰). It will therefore be important for Defra and Natural England to be able to assess how well the scheme is achieving this objective.
- 2.11 The Rapid Survey approach, built around a GIS-linked geodatabase (see Chapter 5), means that it can easily be applied to an equivalent survey of Countryside Stewardship if this is proposed in the future. This is because the database is populated with information taken directly from spatially mapped options in the chosen survey squares. Should new survey squares be selected which contain features under Countryside Stewardship options, these can be easily added into the existing database (assuming that Natural England holds equivalent spatial information on features under option).
- 2.12 A new Rapid Survey for Countryside Stewardship could also re-visit the same features that were under Environmental Stewardship options (and assessed in the 2014-16 Rapid Survey) to evaluate the impact of any changes in management on landscape character and quality. This would contribute significantly to monitoring the effectiveness of the CS scheme.
- 2.13 Other practical recommendations for future surveys (e.g. of Countryside Stewardship) include Natural England investing in the digital recording of agri-environment scheme information, particularly the location of options using GIS. This would save the time consuming process of NE collating separate agreement maps for many hundreds of holdings and consultancy time/funding in undertaking the digitising of the option information prior to survey. A spatial digital record of option uptake could also prove beneficial for other monitoring or analysis activity that may take place in future.
- 2.14 The importance of seasonality must also be emphasised for future surveys to avoid any minor discrepancies resulting from differences of survey period between years. Although the impacts of a later survey period in 2015 were not as significant as initial concerns suggested, the 2016 Rapid

¹⁰ See <https://www.gov.uk/government/collections/countryside-stewardship-get-paid-for-environmental-land-management>

Survey season again took place in the summer season (June to July) to ensure all options were seen at their 'full potential' – i.e. before cutting or flowering plants die in the autumn.

Future developments/applications of the Rapid Survey approach

- 2.15 Looking further ahead and particularly beyond the current RDPE and Britain's membership of the European Union, effective new tools and mechanisms can be expected, tailored to the country's future needs. More specifically it can be assumed that replacement schemes of agri-environment support will be developed and administered by the UK government.
- 2.16 The Rapid Survey approach provides an effective way to monitoring any such new delivery tools and the results of the 2014-2016 Rapid Survey project, and those of any successor landscape monitoring initiatives, provide important evidence to help inform the design, targeting and implementation of such future schemes in order to achieve significant outcomes for the UK's landscape. The 2014-2016 Rapid Survey has produced a nationally significant suite of data on the landscape impacts of Environmental Stewardship, covering 596 survey squares and some 5,654 individual landscape features spread across different English landscapes. It therefore provides a valuable baseline of information that both complements other projects and initiatives, and forms the basis for future work.
- 2.17 It is noted that Natural England's recent Conservation Strategy for the 21st century¹¹, published in October 2016, sets out how the organisation will work to protect England's nature and landscapes for people to enjoy and the ecosystem services they provide – in support of Defra's ambitions for the environment. The strategy is underpinned by three guiding principles, one of which is 'creating resilient landscapes and seas'. Clearly the agriculture sector is expected to continue to play a huge part in putting this principle into practice. Comprehensive evidence such as that produced by the Rapid Survey will help shape Natural England's understanding of how best to ensure that it is effective in delivering against this guiding principle. It is also likely that other research, projects and initiatives emerge over the coming years that could also benefit from the Rapid Survey results and approach.

Specific recommendations for future uses and developments

- 2.18 In terms of building on the 2014-16 Rapid Survey results, Defra and Natural England should consider:
- **Applying the same Rapid Survey approach to a future monitoring programme of Countryside Stewardship** (as above) – surveying a combination of the same survey squares, for comparison, and new ones.
 - **Adapting the approach to understand the 'counterfactual' situation** – i.e. surveying landscape features not under agri-environment option to research the 'added value' (or otherwise) of being under a scheme. This was explored using a small sample of survey squares during the BD5303 contract – therefore further work could build up this sample.
 - **Targeting particular types of landscape feature/ types** (e.g. field boundaries, arable landscapes, uplands) to help inform particular research or policy.
 - **Post-Brexit, using the Rapid Survey results to help evaluate the landscape benefits of agri-environment schemes.** The current RDPE programme runs until 2020, by which time it is likely that Britain will have left the EU and agricultural production will no longer be governed by the Common Agricultural Policy (CAP). Continuing to monitor the landscape impacts of agri-environment schemes, including Countryside Stewardship, will help shape future policy and target incentives such as grant schemes in the post-CAP situation.
 - **Using the baseline information on landscape character** recorded for each survey square (see para 3.85) to feed into more general monitoring projects exploring landscape change in particular locations.
 - **Promoting the use of the Rapid Survey results alongside information from the NCA Indicators and Thresholds study both internally and to a range of project partners,** including protected landscapes (National Parks and AONBs) and local environmental partnerships (e.g. Local Nature Partnerships).
 - **Incorporating the Rapid Survey approach into future research undertaken for the New Agricultural Landscapes (NAL) programme,** which has been monitoring landscape change in a selection of study areas at 11-year intervals since 1972. The BD5303 and Rapid

¹¹ See <https://www.gov.uk/government/publications/conservation-21-natural-englands-conservation-strategy-for-the-21st-century>

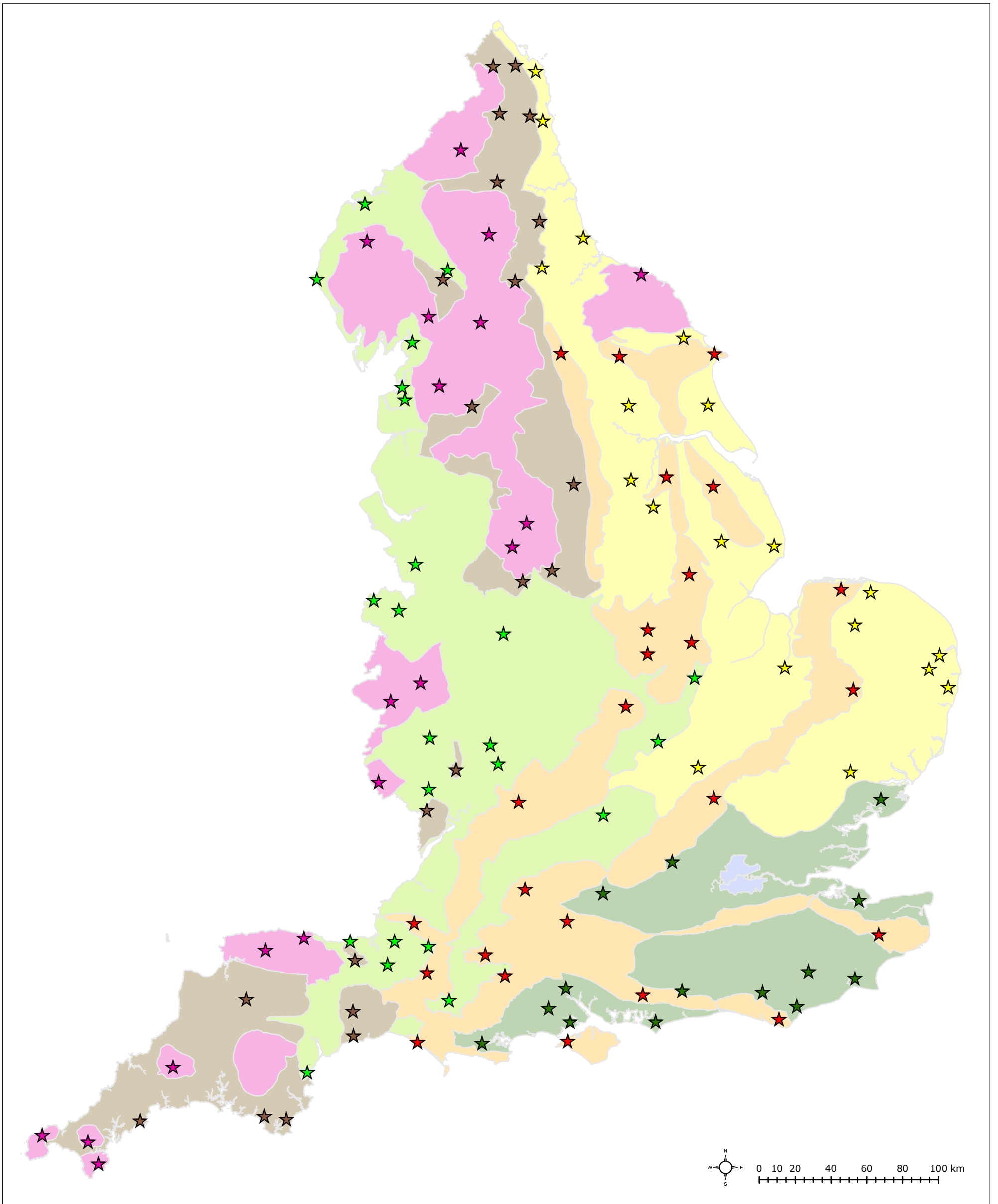
Survey projects both included survey squares in the NAL study areas which could be considered as part of the NAL evidence base for future monitoring in the next 11-year cycle (2027).

3 Analysis of Rapid Survey results from 2014 to 2016

- 3.1 The Rapid Survey results from 2014 to 2016 derive from a combined sample of 596 survey squares (297 in 2014, 249 in 2015 and 50 in 2016), which have assessed the impact of ES on 5,654 individual landscape features within them. This chapter provides a review of the results for all three years combined.
- 3.2 **Map 3.1** shows the location of the survey clusters for each year of survey – more information on their selection is provided in Chapter 4: Survey Sampling Methodology.

Content of the Chapter

- 3.3 These results are analysed under the following themes and questions:
- **The overall effect of ES on the landscape of the survey squares** (see paras [3.13 - 3.14](#)).
 - **Analysis of the overall landscape effects of ES at the ALT level** (see paras [3.15 - 3.21](#))
 - **Exploring the landscape effects of ES by Landscape Theme** (see paras [3.22 - 3.40](#))
 - **Exploring the landscape effects of ES by Objective** (see paras [3.41 - 3.49](#))
 - **Exploring the spatial delivery of Landscape Objectives against national uptake data** (see paras [3.50 - 3.52](#))
 - **Analysis against the different tiers of ES** (see paras [3.53 - 3.58](#))
 - **The effect of the most commonly occurring options** (see paras [3.59 - 3.73](#))
 - **How does the landscape effect of ES relate to the condition of features under option?** (see paras [3.74 - 3.82](#))
 - **Analysis by the key landscape characteristics of the survey squares** (see paras [3.83 - 3.85](#))
 - **Exploring any additional landscape effects delivered through co-located and adjacent options** (see paras [3.86 - 3.91](#))
 - **How do features/landscapes managed under ES compare to those outside of the scheme?** (see paras [3.92 - 3.98](#))
- 3.4 When interpreting this chapter, it is important to refer to the guiding principles set out in **Table 3.2** on page 18 – in particular when understanding how the different scoring categories were applied during the survey.



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LUC LDN 6537-01_002_Square_clusters_detail_RevB_2016 21/11/2016

**Agricultural Landscape Types
(Stars show locations of square clusters)**

- ★ 1: Chalk and Limestone Mixed
- ★ 2: Eastern Arable
- ★ 3: SE Mixed (Wooded)
- ★ 4: Western Mixed
- ★ 5: Upland Fringe
- ★ 6: Upland
- ★ 7: Unclassified

Rapid Survey of Environmental Stewardship

**Map 3.1
Location of survey clusters**

Map Scale @ A3: 1:2,100,000



Source: Natural England and LUC

Guiding principles

- 3.5 **Table 3.2** overleaf summarises the principles (or assumptions) that were used to assign the types of landscape effect and condition scores to example option groupings. See from previous paragraph **1.13** for the definition of the ‘scores’ or judgements used in the Rapid Survey.

Means of analysis

- 3.6 Following the completion of the final Rapid Survey fieldwork in the summer of 2016, the data was collated and merged into one database comprising the full three years’ of survey data. In all years, the data held was quality checked against the guiding principles set out in **Table 3.2**. This ensured that decisions made by individual surveyors were moderated against the principles, to result in a fully quality-checked set of data.
- 3.7 As set out in the brief for this contract, the analysis of the survey results presented in this chapter examines the data both nationally and by Agricultural Landscape Type (ALT). Rural landscapes in England are classified into one of six Agricultural Landscape Types (ALTs) – which are shown spatially on **Map 3.1** above, listed in **Table 3.1** below and described in **Appendix 1**.

Table 3.1: The six Agricultural Landscape Types

1. Chalk & Limestone Mixed	3. SE Mixed (Wooded)	5. Upland Fringe
2. Eastern Arable	4. Western mixed	6. Upland

- 3.8 This chapter couples the spatial analysis by ALT with assessment against the following strands of evidence:
- Landscape Theme (taken from the Indicators and Thresholds study, see **Appendix 4**)
 - Objectives (taken from the Indicators and Thresholds study, see **Appendix 4**)
 - With reference to specific ES options (e.g. those most commonly implemented and/or greatest landscape effect) – see the full list in **Appendix 5**.
- 3.9 In addition, the data was also analysed against the different tiers of ES (ELS, UELS and HLS) to draw out any trends or notable observations. Please note that capital items were not included in the analysis, and any assessed options within Organic agreements were included as part of the overall sample (i.e. results merged with the equivalent standard option).
- 3.10 The sampling approaches outlined in Chapter 4 should be borne in mind when interpreting the results, as the targeting of certain landscape features and option groups means that the data cannot be assumed to be a full representation of the country as a whole, but can be utilised as a proxy. Removing the non-target areas from the 2015/2016 sampling methodology, as detailed in para 4.41, has widened the scope of the survey in terms of the breadth of landscape and option types surveyed and strengthened the representativeness and robustness of the data due to an additional increase in sample size and spatial coverage.
- 3.11 The survey methodology makes separate assessments of how ES is influencing landscape character (‘what is there’) and quality (‘the condition of what is there’), as detailed in paragraph 1.8. In each survey square, **landscape character** is assessed by categorising whether the ES options present are enhancing, conserving or maintaining the distinctive landscape features present in the square or whether they are having a neutral or detracting effect on these features – as per the definitions at the start of this chapter. The results of the survey in relation to landscape character are analysed in the sections headed ‘Exploring the landscape effects of ES by Landscape Theme’, ‘Exploring the landscape effects of ES by Objective’ and ‘Analysis against the different tiers of ES’.
- 3.12 The effect of the scheme on **landscape quality** is assessed by categorising whether these features are in a good, fair or poor condition. These results are analysed in the sections headed ‘How does the landscape effect of ES options relate to the condition of features under option?’ and ‘Exploring any additional landscape effects delivered through co-located and adjacent options’.

Table 3.2: Guiding principles applied to the assessment of some options in the field

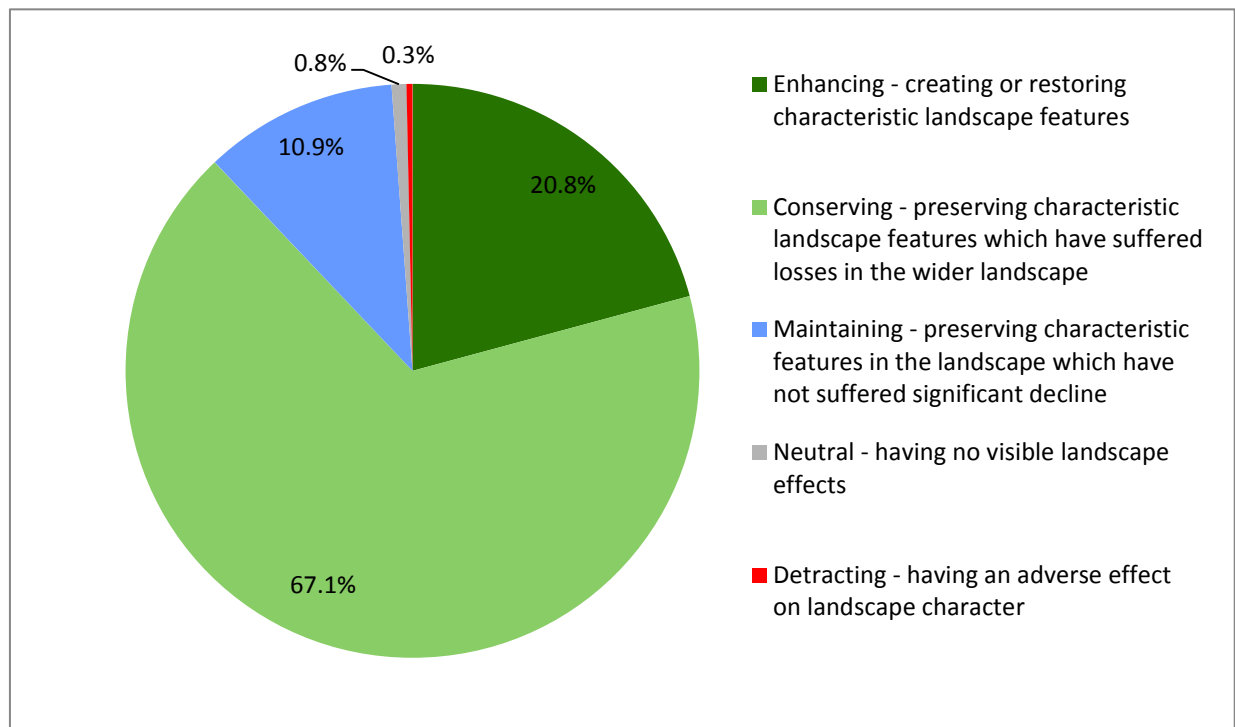
Option grouping	Guiding principles
Boundaries (e.g. hedgerows, stone walls)	<ul style="list-style-type: none"> • If boundary is in good or fair condition, the overall effect will always be 'conserving'. • If the feature is not present (e.g. large gaps in a hedge) or no evidence of management through the option, then the effect will be 'neutral'.
Protection of in-field tree options	<ul style="list-style-type: none"> • Generally all trees under this option will be classed as 'conserving', with differences in condition brought out in the condition categories. • There may be instances of 'Neutral' where you can confidently say the option is having no effect – e.g. if the tree is dead or heavily diseased.
Low input grassland options (e.g. EK/OK2, EL3, EK5)	<p><i>Conserving</i></p> <ul style="list-style-type: none"> • If the grassland appears un- or semi-improved, it will always be classed as 'conserving'. • If the semi or unimproved grassland being conserved is affected by some limited patches of nettles, thistles, docks, poaching or overgrazing, or is not very species-rich, the condition will be 'fair' (but still 'conserving'). <p><i>Maintaining</i></p> <ul style="list-style-type: none"> • If the field appears to be improved grassland or horse grazed, the effect will be 'maintaining'. • The condition will be either good or fair – considering the field in its wider landscape context. <p><i>Neutral</i></p> <ul style="list-style-type: none"> • If the condition is judged as 'poor' due to lack of management, the field appears neglected (e.g. completely overgrown or overgrazed), used for other uses (e.g. fly tipping or for machinery), we can safely say the option is having no – i.e. a neutral – landscape effect.
Wet grassland options (e.g. EK4, EL4, HK9, HK10, HK11, HK12, HK13, HK14)	<p><i>Conserving</i></p> <ul style="list-style-type: none"> • If the grassland is unimproved or semi-improved wet grassland, the effect will be 'conserving', with condition assessed as either 'good' or 'fair'. <p><i>Maintaining</i></p> <ul style="list-style-type: none"> • If the field is semi-improved pasture (i.e. little evidence of semi-natural wet grassland vegetation) but in a 'good' or 'fair' condition as a pasture field, the effect will be 'maintaining' (see example at Figure 5.3). <p><i>Neutral</i></p> <ul style="list-style-type: none"> • If the field is improved and fertilised, or semi-improved with issues such as weed encroachment or poaching, the effect will be 'neutral'.
Restoration and creation options – so any with the words 'Restoration' or 'Creation' in the title e.g. HC8, HK7 and HK8	<ul style="list-style-type: none"> • These will always be classed as 'enhancing' as they are <i>putting something valuable back</i>. If the feature is present, and is under a restoration option, we have to assume it was either missing previously, or being restored from a poor state. • The condition categories are used to provide extra distinction between 'good' and 'fair' • Same as above with regard to the use of 'Neutral' in instances where the condition of the feature is classed as poor (i.e. where evidence of neglect, inappropriate management or abandonment/no evidence of management under option). • If the feature being created is out of place in the landscape, it may be classed as 'detracting' (see also arable below).
Arable and grassland options (where something 'new' is being added into the landscape) e.g. buffer strips, field corners, field margins	<ul style="list-style-type: none"> • If located in the 'right' place and in 'good' or 'fair' condition, these options will be classed as 'enhancing' landscape character • If the feature created by the option (e.g. buffer strip) is in poor condition and/ or is negatively affecting a valued traditional landscape feature, it will be classed as 'detracting' to landscape character • Examples of the latter above could be an overgrown weed-infested buffer strip masking a ditch in an open fen landscape or a stone wall being obscured by an overgrown buffer strip • If the feature is present but has recently been cut/mown, record as 'Enhancing' but 'unable to comment' on condition. Mowing is an essential part of the maintenance regime for these types of features (see Figure 5.4 for an example). • In theory, a feature created by ES could be located in a place that is 'detracting' to local landscape character (e.g. a 6m buffer strip located in a small-scale landscape), but the feature itself could be in 'good' condition

The overall effect of Environmental Stewardship on the landscape of the survey squares

Results from across the combined sample

- 3.13 The chart at **Figure 3.1** depicts the overall landscape effect of ES observed across the total sample of 596 survey squares. In over two thirds (400 or 67.1%) of the squares, ES was found to be having a 'conserving' effect by preserving characteristic landscape features, including those known to have suffered historic loss in the wider landscape. ES was having an overall 'enhancing' effect in 20.8% of the squares, by creating or restoring characteristic landscape features. In 10.9% of the squares, ES had an overall 'maintaining' effect by supporting the continuation of characteristic landscape features that have not suffered significant losses in the wider landscape.
- 3.14 Conversely, squares where ES was assessed as having a 'neutral' or 'detracting' effect on the landscape each made up less than 1% of the total. Out of the sample, there were five squares where ES was having an overall 'neutral' effect, and only two squares where ES was found to be having a 'detracting' effect.

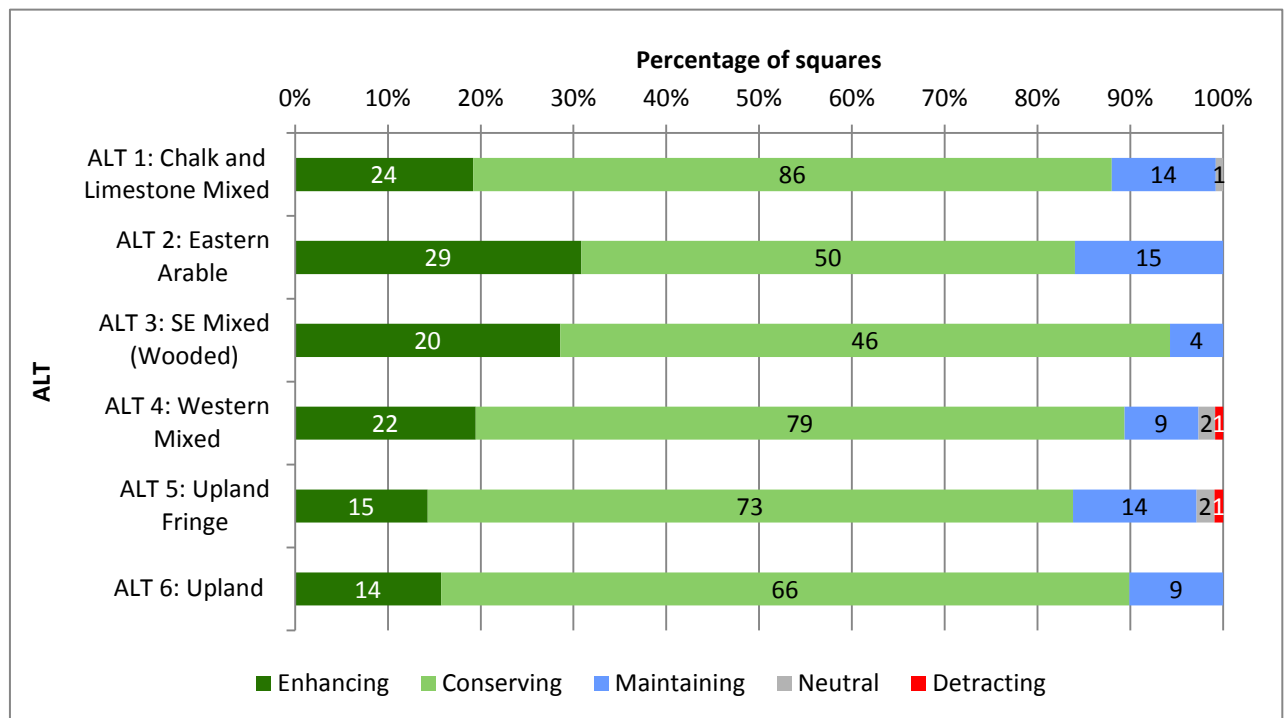
Figure 3.1: Overall effect of Environmental Stewardship in the survey squares



Analysis of the overall landscape effects of Environmental Stewardship at the Agricultural Landscape Type level

- 3.15 This section presents an analysis of the overall assessment by ALT (see **Table 3.2** and the ALT descriptions provided in Appendix 1). As there are variations in the number of squares surveyed in each ALT, following the approaches taken to sampling over the survey years (as set out in Chapter 4), the proportion of squares having each overall landscape effect was taken into account, as well as the raw numerical data illustrated in the graph at **Figure 3.2**.
- 3.16 Across all ALTs, survey squares where ES was observed as having an overall 'conserving' effect make up the largest proportion (between 53.2% and 69.9%), indicating that the effects of ES generally mirror the overall effects at a national level across the various types of landscape.

Figure 3.2: Overall effect of Environmental Stewardship by ALT (number of squares/percentage by ALT)



- 3.17 The data shows the largest percentages of squares where ES was observed as having an ‘enhancing’ effect was found in ALT 2: Eastern Arable and ALT 3: South East Mixed (Wooded) (30.9% and 28.6% respectively). This is explained by the presence of land with a dominating arable character, resulting in a larger number of options introducing new landscape features such as buffer strips or seed plots – which would be assessed as ‘enhancing’ landscape character if they are applied appropriately to the landscape.
- 3.18 There are a lower proportion of squares with an overall ‘enhancing’ effect in ALT 5: Upland Fringe and ALT 6: Upland (14.3% and 15.7% of squares respectively). This is because, in general, the upland and upland fringe landscapes have suffered fewer losses of characteristic landscape features than arable landscapes; therefore ES is more likely to conserve important existing landscape features (rather than re-create lost ones). This trend is reinforced in the more detailed analysis relating to Landscape Themes and ALTs, as detailed in paragraph 3.34.
- 3.19 Squares surveyed in ALT 2: Eastern Arable were found to contain a larger proportion of features under option having a ‘maintaining’ landscape effect. This is due to a high take-up of low or very low input grassland options, which are often found to be having this effect, as discussed later in this chapter (see para 3.28).
- 3.20 Survey squares found with options having overall ‘neutral’ and ‘detracting’ landscape effects were largely found in ALT 1: Chalk and Limestone Mixed, ALT 4: Western Mixed and ALT 5: Upland Fringe; comprising a very small proportion of the total survey sample for each ALT (less than 2%). It is unlikely that these results are linked to the characteristics of the ALT that the survey squares are found in, it is more likely that these are isolated incidences of survey squares where ES options have been poorly sited or implemented. Examples are given at para 3.49 and para 3.73.
- 3.21 **Map 3.2** shows, spatially, the distribution of survey squares with an overall ‘conserving’ or ‘enhancing’ effect, with reference to underlying ALTs.

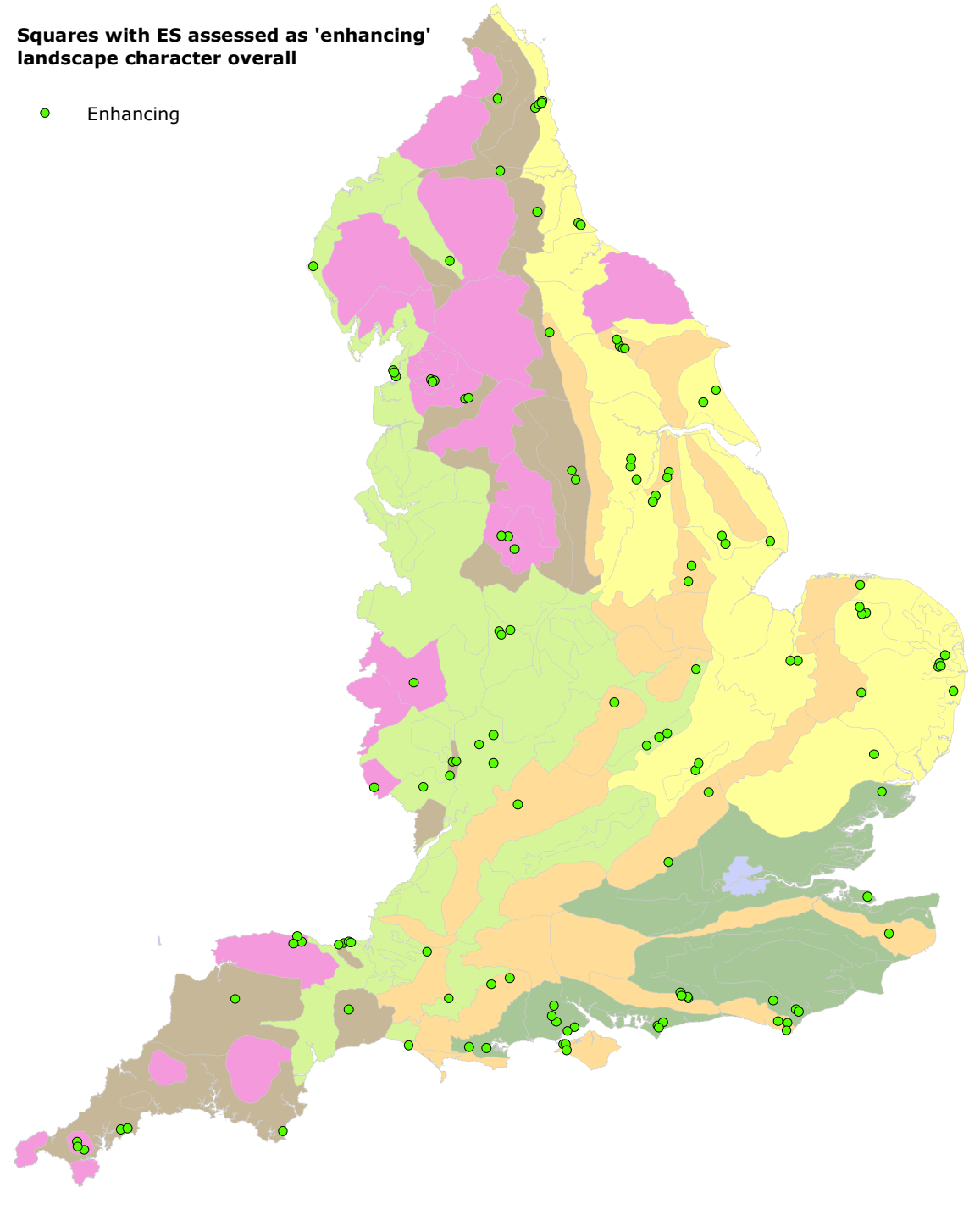


Rapid Survey of Environmental Stewardship

Map 3.2: Location of survey squares with overall 'enhancing' or 'conserving' effect

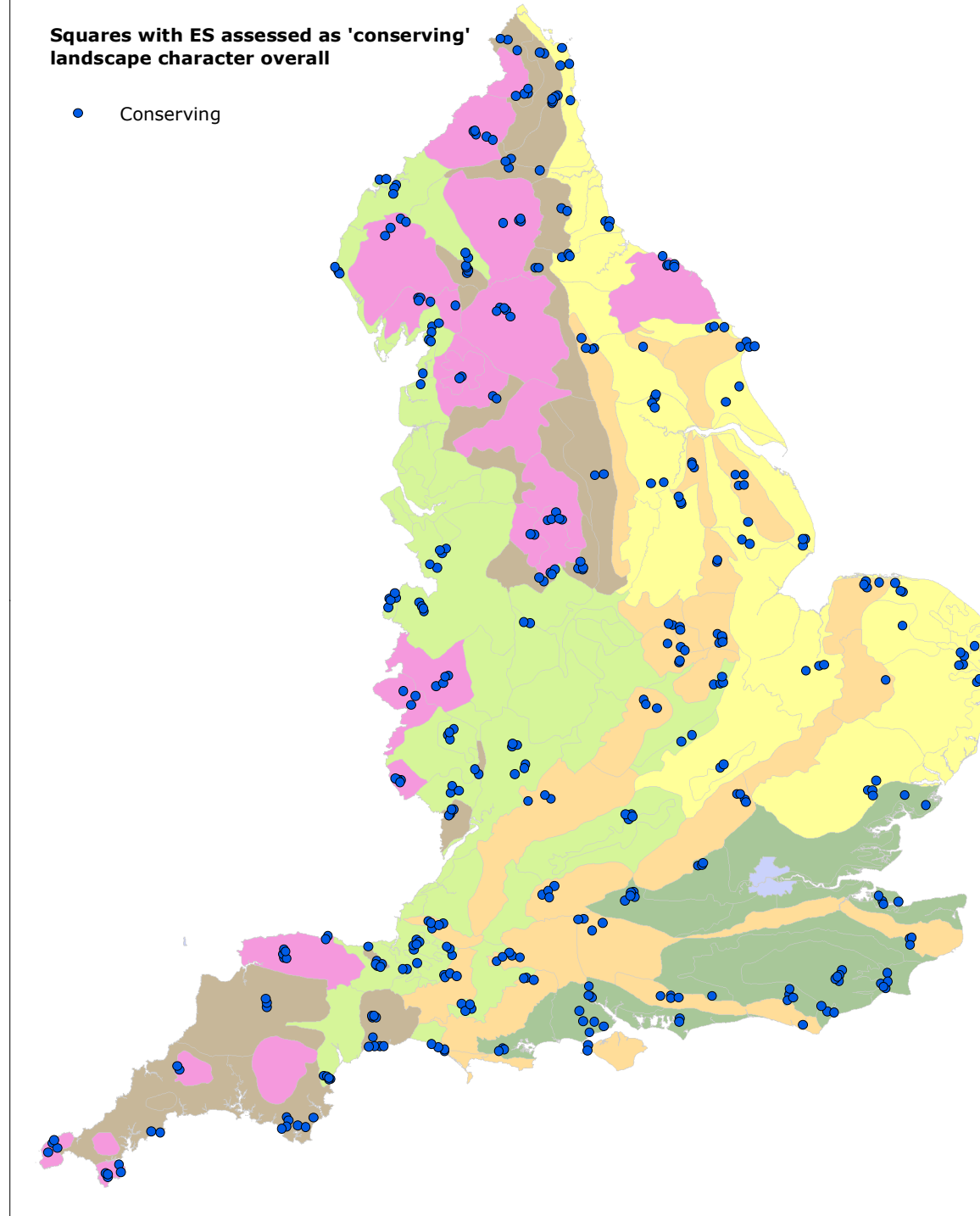
Squares with ES assessed as 'enhancing' landscape character overall

● Enhancing



Squares with ES assessed as 'conserving' landscape character overall

● Conserving



Agricultural Landscape Types

- 1: Chalk and Limestone Mixed
- 2: Eastern Arable
- 3: SE Mixed (Wooded)
- 4: Western Mixed
- 5: Upland Fringe
- 6: Upland
- Unclassified



Map Scale @ A3: 1:3,500,000



Exploring the landscape effects of Environmental Stewardship by Landscape Theme

3.22 The following section presents the results of the survey relating to the particular Landscape Theme which the features under option fall into. This highlights the types of landscape feature where ES is most beneficial. The Landscape Themes (and Objectives explored under the next section) were defined for the NCA Indicators and Thresholds study¹², and are used again for this study to allow for a further grain of comparable data analysis. The themes are listed below and detailed further in **Appendix 4**:

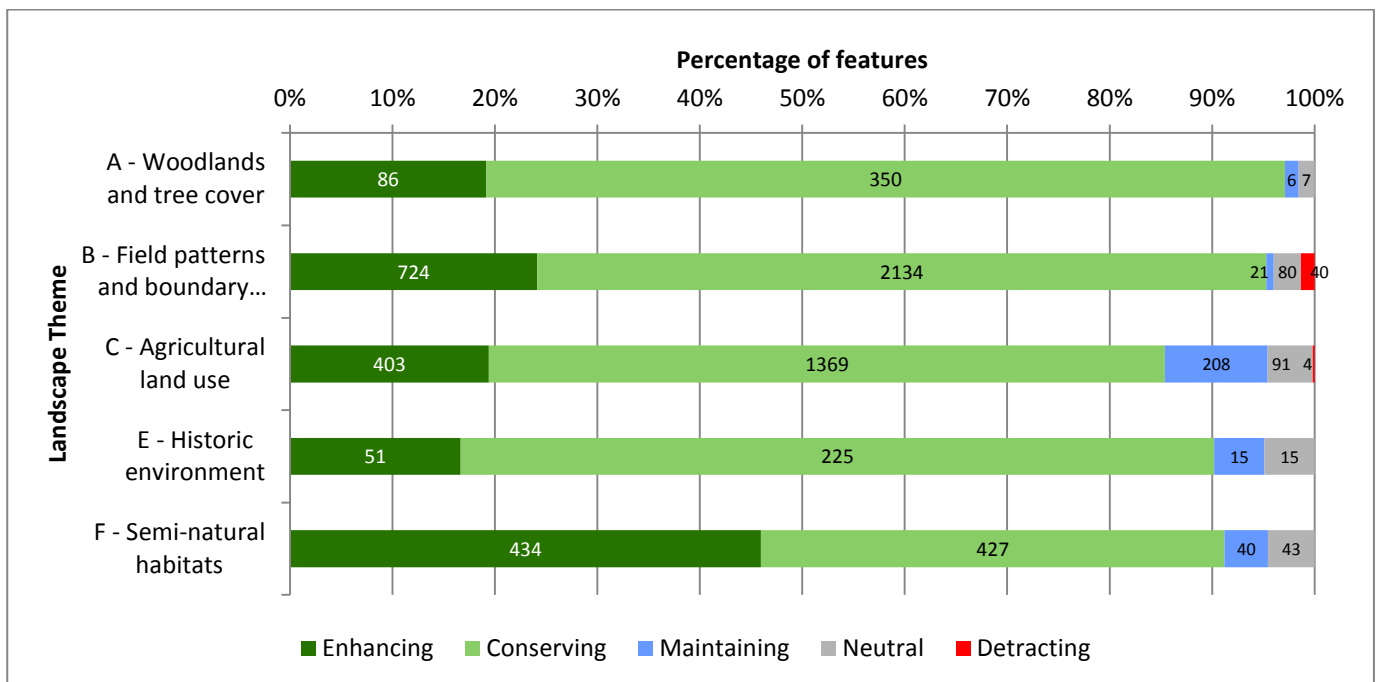
- Landscape Theme A – Woodlands and tree cover (including traditional orchards)
- Landscape Theme B – Field patterns and boundary types
- Landscape Theme C – Agricultural land use
- Landscape Theme D – Traditional farm buildings
- Landscape Theme E – Historic environment (including parkland)
- Landscape Theme F – Semi-natural habitats
- Landscape Theme G – Coast

3.23 Features under option which do not fall into any of the above Landscape Themes have been excluded from the analysis.

3.24 **Figure 3.3** shows the number of surveyed features under option found within each Landscape Theme, broken down by their assessed effect on landscape character. The chart omits Landscape Theme D (Traditional Farm Buildings) and Landscape Theme G (Coast) because of the small sample size (eight features under option in Landscape Theme D and three in Landscape Theme G) – these are discussed in the text below at paragraphs 3.29 and 3.32.

3.25 It is important to note that some landscape features under option may fall into more than one Landscape Theme if they are managed under co-located options¹³ (which themselves may be allocated to different themes).

Figure 3.3: Effect of ES on landscape features by Landscape Theme (with the number of features under option/percentage by Landscape Theme)



¹² ES options selected as falling under each of the Landscape Themes are listed in Appendix 2 of the NCA Indicators and Thresholds methodology report (LUC, November 2013).

¹³ Co-located options are those that apply to the same landscape feature (e.g. the same field or field boundary).

3.26 Figure 3.3 shows that **Landscape Theme A (Woodlands and tree cover)** has the highest proportion of features where ES was assessed as having a 'conserving' effect (78%). This is because this theme includes options relating to the stewardship of woodland and tree cover,

Photo 1: Example of land with features managed under ES options within Landscape Theme A



This photo shows the management of woodland under ES option HC7: Maintenance of woodland. This example was assessed as having a 'conserving' effect on landscape character.

conserving these valued landscape features that are already present in the landscape. An example of a woodland managed under ES is shown in **Photo 1**.

3.27 **Landscape Theme B (Field patterns and boundary types)** has the highest number of 'enhancing' features (724) of all the themes. This amounts to 24.1% of options assessed under this Theme. This Landscape Theme includes options designed to create or restore valued features, or introduce new ones to 'enhance' landscape character– such as buffer strips and field corners in arable landscapes. It also has a significant proportion of features (71.2%) classed as 'conserving' character (particularly traditional field boundaries)

3.28 **Landscape Theme C (Agricultural land use)** has the

highest proportion of features under option judged as 'maintaining' across all the themes, although this only accounted for 10% of the total. Options within this theme are often applied to certain types of conventionally managed and nationally widespread agricultural land, such as fields of improved pasture (with little diversity) managed under options including EK2: Permanent grassland with low inputs. It is, however, important to note that options within this theme are still primarily assessed as having a 'conserving' effect at 66%. Some habitat restoration and creation options (including HK12 and HK13) are also included within this theme, assessed as having an 'enhancing' effect on landscape character. Examples from this theme are shown in **Photos 2 and 3** below.

Photos 2 and 3: Examples of land with features managed under ES options under Landscape Theme C: Agricultural land use



In the picture on the left, a field under option OK2 (low input grassland) is assessed as having a 'maintaining' effect owing to its appearance as improved pasture. On the right, the management of upland grassland under Higher Level option HL3 was judged as 'conserving' landscape character due to its semi-improved appearance and diverse sward.

Photo 4: Example of a traditional building under option within Landscape Theme D



This photo shows the maintenance of weatherproof traditional farm buildings under option ED1. This feature was assessed as having a 'conserving' effect on landscape.

Photo 5: Example of a feature managed under option within Landscape Theme F



This photo shows an orchid within a field of restored semi-natural grassland under option HK7. This feature was assessed as having an 'enhancing' effect on local landscape character.

3.32 Options within **Landscape Theme G (Coast)** have not occurred very frequently in the Rapid Survey, with only three features under option within this theme surveyed (HP5: Maintenance of coastal saltmarsh and HP6: Restoration of coastal saltmarsh), so it is not possible to draw solid conclusions for the theme as a whole due to the small sample size. All areas surveyed under option were assessed as having a positive effect on the landscape ('enhancing' or 'conserving'). An example of one of these features is pictured in **Photo 6**.

3.29 All of the features under options within **Landscape Theme D (Traditional Farm Buildings)** are assessed as having a 'conserving' effect, although the small sample size of this data should be noted (eight features under option). An example of a feature within this Theme can be seen at **Photo 4**.

3.30 Features under options within **Landscape Theme E (Historic Environment)** are very often judged as 'conserving' landscape character (73.5%), although this theme also has the highest proportion of options having a 'neutral' effect (4.9%). This is due to the occurrence of options which conserve archaeology that are not visible within the landscape from ground level, and therefore the surveyors were not be able to make an informed judgement on the landscape effect (i.e. buried archaeology or earthworks). It is important to emphasise that whilst such features were scored 'neutral' in terms of their visual landscape impact (and in the context of the Rapid Survey approach), there are clearly benefits arising from the cultural associations and values associated with them.

3.31 **Landscape Theme F (Semi-natural habitats)** has the highest proportion of features under ES option judged as having an 'enhancing' effect (46%) across all the themes, due to the numerous habitat restoration and creation options that fall into this Theme. Equally, 45.2% of features under option in this theme were judged as 'conserving'.

Photo 6: Example of a feature managed under option within Landscape Theme G



This photo shows restoration of coastal saltmarsh under option HP6. This feature was assessed as having an 'enhancing' effect on local landscape character.

- 3.33 Features under option, where the option was assessed as having a 'detracting' effect, were only present under Landscape Themes B (Field patterns and boundary types) and C (Agricultural land use) – although the latter incidences were fewer in number. Within Landscape Theme B, this is primarily due to the inappropriate introduction of new features in the landscape or the inappropriate siting/management of introduced features, which would otherwise be assessed to be having an 'enhancing' effect as per the guiding principles in Table 3.1. An example of this is illustrated in **Photos 7 and 8**, where two options which both introduce 6 metre buffer strips into the landscape are having differing landscape effects. This can also be seen in the field corner option examples shown later in the chapter at **Photos 21 and 22 (page 38)**.

Photos 7 and 8: Examples of buffer strip introduced under ES having a 'detracting' impact on landscape (left) and an 'enhancing' effect on the landscape (right)



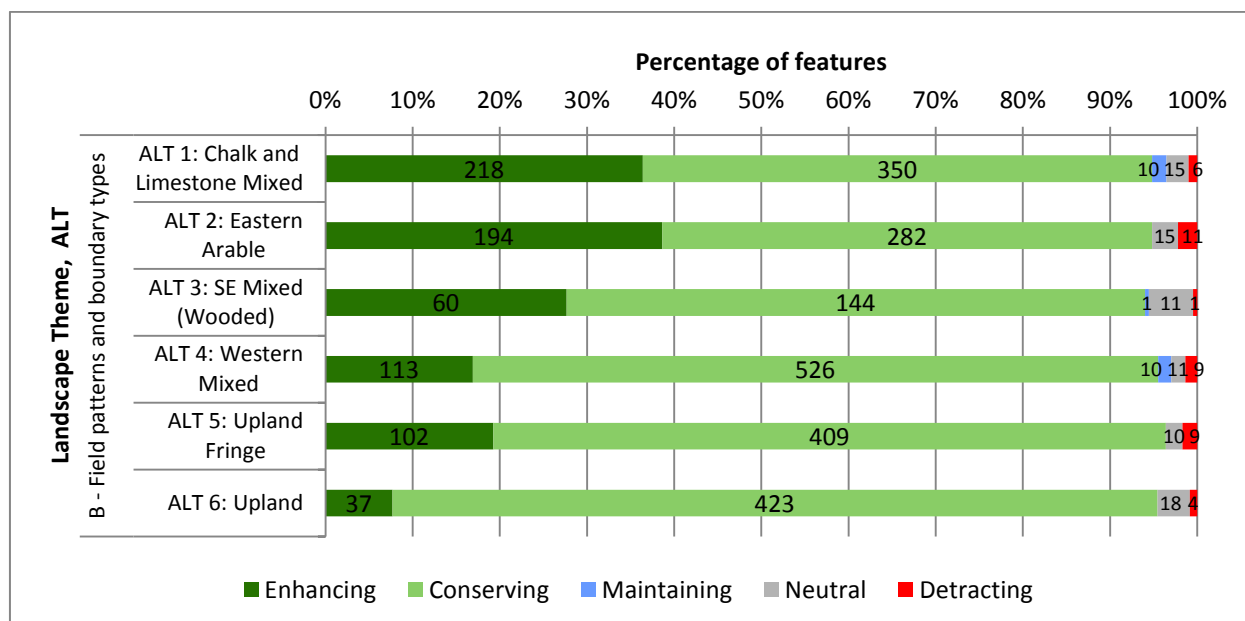
Photo 7 shows an unmanaged area of land infested with nettles and thistles, under EE9: 6m buffer strips, fenced off from the adjacent field. This was assessed as having a 'detracting' impact on the landscape. In contrast the surveyor noted the 'enhancing' effect the HE3 6m buffer strip was having in Photo 8; extending the naturalistic field edge next to the traditional hedgerow field boundary (itself managed under option EB3).

Analysis for each of the Landscape Themes by Agricultural Landscape Type

- 3.34 This section provides a further level of analysis to the above, by examining differences in the effect of ES options by Landscape Theme between the six ALTs (see **Table 3.1** on page 19 and Appendix 1).
- 3.35 As discussed in the previous section, options within **Landscape Theme A (Woodlands and tree cover)** are mainly having a conserving effect, although in ALT 2: Eastern Arable and ALT 6: Upland there is a greater proportion of 'enhancing' options than elsewhere. This reflects the different influences that woodlands and trees have on landscape character. Where woodland and trees already have a relatively strong influence on landscape character, including through the presence of shelterbelts and hedgerow or field trees, the woodland and tree options in ES tend to reinforce and conserve this character. Conversely, in the Eastern Arable ALT, field sizes are generally large, field and hedgerow trees tend to be scarce and woodland is frequently present in isolated blocks or strips. Under these circumstances, woodland and tree cover options in ES were more frequently (compared to other ALTs) judged to have an 'enhancing' effect on landscape character by restoring and adding to the wooded nature of the landscape (see also para. 3.44 below). In the Upland ALT, woodland cover is frequently present as large blocks of conifer plantation which can often detract from traditional landscape character. In these circumstances, the ES woodland and tree options were more frequently judged to be putting back the more characteristic strips and small areas of broadleaved planting, often along valley sides, beside watercourses or close to farmsteads.
- 3.36 Landscape effects arising from features under option within **Landscape Theme B (Field patterns and boundary types)** are mostly having a 'conserving' effect on the landscape in ALTs 3, 4, 5, and 6. In ALTs 1 and 2 there is a more even split between those options having a 'conserving' and 'enhancing' effect. This can be seen in **Figure 3.4** below. Two very common types of option are contained within Landscape Theme B; hedgerow management options (which are predominantly assessed as having a 'conserving' effect) and options introducing buffer strips (which, unless poorly managed or inappropriately sited in the landscape, would always be assessed as 'enhancing'). The more frequent assessment of 'enhancing' effects for field pattern

and boundary options in ALTs 1 (Chalk and Limestone Mixed) and 2 (Eastern Arable) is likely to be due to the more frequent occurrence of buffer strips beside arable fields in these ALTs.

Figure 3.4: Effect of ES options within Landscape Theme B (Field patterns and boundary types) by ALT



3.37 **Landscape Theme C (Agricultural land use)** has a relatively high proportion of features where options are deemed as having a ‘maintaining’ and ‘neutral’ effect across all ALTs, excepting ALT 3: SE Mixed (Wooded). As noted in para 3.28 many of the options in this Theme support the characteristics of conventionally managed and nationally widespread agricultural land, such as fields of improved pasture, and so do little to conserve or enhance locally distinctive landscape character. Nevertheless, some habitat restoration and enhancement options are included within this Landscape Theme (such as wet grassland rough pasture) and these tend to have an ‘enhancing’ effect by increasing the presence and visual impact of locally distinctive (often semi-natural) land cover. Examples of this effect within the wider landscape are illustrated in the aerial imagery shown at **Photo 9** below.

3.38 Features under option within **Landscape Theme D (Traditional Farm Buildings)** were present in ALTs 1, 2 3 and 6 and are consistently having a ‘conserving’ effect. It is difficult to draw precise conclusions from this information however due to the very limited sample size (eight surveyed features). It is likely that due to the nature of these buildings correctly implemented ES on these features should always result in a ‘conserving’ effect, as traditional farm buildings in any area are characteristic features that cannot be easily replaced if lost.

Photo 9: Aerial photography showing habitat creation within a wider landscape context



The aerial photos above show the enhancing effect that habitat creation options can have upon landscape character. The top picture (taken in 2008) shows a homogenous arable landscape within NCA 45: Northern Lincolnshire Edge with Coversands. In the bottom photo (taken in 2011), the implementation of ES option HK13 (Creation of wet grassland for breeding waders) can clearly be seen in the wider landscape, having an ‘enhancing’ effect by recreating valued wetland habitat within an otherwise intensively farmed area.

- 3.39 Options within **Landscape Theme E (Historic Environment)** are mostly having a ‘conserving’ effect across all ALTs – as would be expected of options which are directed at protecting historic and archaeological features in the landscape, although there is also a higher proportion of ‘maintaining’ and ‘neutral’ effects in squares assessed in ALT 4: Western Mixed. This is explained by many such features under option not being visible to the surveyor (e.g. below-ground archaeological features or earthworks).
- 3.40 Features under option within **Landscape Theme F (Semi-natural habitats)** were mostly ‘enhancing’ in ALTs 1, 3 and 4; however these features were more often assessed as having a ‘conserving’ or ‘maintaining’ effect in ALTs 5 and 6 as shown in **Figure 3.5**. ALT 6 also has more features under option in Landscape Theme F than the other ALTs (an example is shown in **Photo 10**). This is because the Upland Fringe and Upland ALTs are more likely to have intact semi-natural habitats that are conserved through ES. Options relating to semi-natural habitats in ALTs 1, 2, 3 and 4 are more likely to be creating or restoring an area of habitat that has been previously lost. These options are relatively infrequent within ALT 2: Eastern Arable; indicating that opportunities to restore or create semi-natural habitats are more limited in the often intensively cultivated arable landscapes that characterise this ALT.

Figure 3.5: Effect of ES options on landscape character within Landscape Theme F by ALT

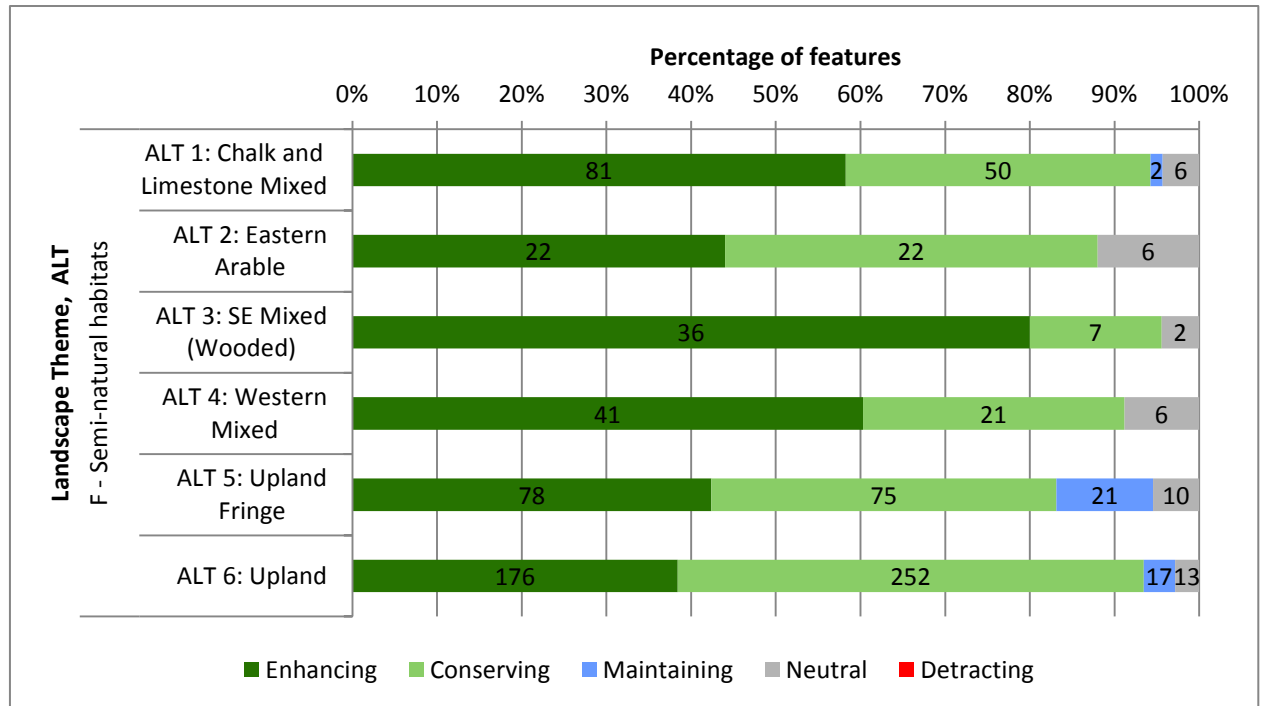


Photo 10: Moorland habitats managed under co-located options HL10: Restoration of moorland and EL6: Unenclosed moorland rough grazing within ALT 6



Exploring the landscape effects of Environmental Stewardship by Objective

- 3.41 This section presents the results of the Rapid Survey against the Objectives defined for the NCA Indicators and Thresholds work. Each Objective groups a set of similar options together, sitting beneath a Landscape Theme; allowing for a further depth of analysis to be made. A full list of Objectives, showing how they relate to the Landscape Themes, is included at **Appendix 4**.
- 3.42 It should be noted that there may be double counting of some options that fall into more than one Objective. Examples where this is the case include Objectives F1 and F2 (covering lowland and upland species-rich grassland) and Objectives E1 and E4 (covering archaeological features on arable and the cessation of cultivation over archaeological features).
- 3.43 As there is a total of 51 Objectives, this section only highlights areas where ES is having a particularly strong effect on specific Objectives, especially those which contain the most commonly found options (detailed in **Tables 3.2 and 3.3** on page 36).

Where Environmental Stewardship is having a primarily 'enhancing' effect on Landscape Objectives

- 3.44 The Rapid Survey found that ES is **primarily having an 'enhancing' effect** on the following Landscape Objectives:
- **Woodland creation** (Objective A3, particularly delivered by option HC9: creation of woodland in Severely Disadvantaged Areas and HC10: creation of woodland outside Severely Disadvantaged Areas) and the restoration and creation of traditional orchards (Objective A9, delivered by options HC20: Restoration of traditional orchards and HC21: Creation of traditional orchards).
 - **Reinforcement of field patterns in arable areas** (Objective B6 – includes buffer strip options EE2, EE3 and EE9) and the provision of field corners (Objective B10 – delivered by options EF1 and HF1).
 - **Blocks and strips of seed mixes in arable** (Objective C8 – includes options HF4: Nectar flower mixture and HF12: Enhanced wild bird seed mix plots). Although often not assessed to be particularly characteristic landscape features, they were generally considered to be adding appropriate colour and texture to arable landscapes and thus enhancing landscape character. Objectives C7 (Fallow plots) and C9 (Arable land) also had a primarily 'enhancing' effect although were less frequent than Objective C8. Examples of 'enhancing' features under option within Objective C8 are illustrated below in **Photos 11 and 12** below.

Photos 11 and 12: Examples of features under option assessed as having an 'enhancing' landscape effect within Objective C8: Blocks & Strips of seed mixes in arable



The photos above show the enhancing effect that features within Objective C8 are having on the landscape. On the left, nectar flower mixture introduced under option HF4 is adding texture and colour to the landscape, as does the enhanced wild bird seed mix plot (introduced under option HF12) on the right. Both of these features were deemed to be in good condition.

- **Reinforcement of field patterns in grassland areas** (Objective B9 – which includes 4 metre and 6 metre field margin strips on intensive grassland)
- **Management/restoration/creation of lowland or upland species rich grassland** (Objectives F1/F2 – includes options HK6, HK7 and HK8) – see example at **Photo 13** below.
- **The management/restoration/creation of lowland heathland (Objective F5) and moorland (Objective F7)** are also primarily having an ‘enhancing effect on landscape – see example at **Photo 14** below.

Photos 13 and 14: Examples of features under option assessed as having an ‘enhancing’ effect within Objectives F1 (left) and F7 (right).



The photo on the left illustrates option HK7: Restoration of species-rich, semi-natural grassland, which was assessed as in good condition and having an ‘enhancing’ effect on the landscape. The photo on the right is of option HL10: Restoration of moorland (co-located with EL6: Unenclosed moorland rough grazing), which also achieved the same scores. Both of these features are restoring semi-natural habitats which are highly characteristic features within their respective landscapes.

Where Environmental Stewardship is having a primarily ‘conserving’ effect on Landscape Objectives

3.45 Rapid Survey has also found that ES is **primarily having a ‘conserving’ effect** on the following Landscape Objectives:

- **Protection of in field trees** (Objective A5 – includes options H/EC1 and H/EC2) – see example at **Photo 15**.
- Objectives relating to the **management and restoration of traditional field boundaries**, including:
 - Management and restoration of hedgerows (Objective B1 – includes options EB1, EB2, EB3, HB11 and HB12 which cover hedgerow management)
 - Management and restoration of ditches/dykes (Objective B3 – includes options EB6/EB7)
 - Management and restoration of stone walls (Objective B4 – includes option EB11)
 - Management and restoration of banks (Objective B5 – includes options EB12)
- **Retention of mixed/pastoral character** (Objective C2 - includes options H/EK2 and H/EK3 which cover permanent grassland with low or very low inputs)
- **Retention and management of wet grasslands** (Objective C3 – includes options HK9 and HK10, covering the maintenance of wet grassland for wintering or breeding wading birds). See example at **Photo 16**.
- **Retention and management of archaeology on grassland** (Objective E3 – H/ED4 and H/ED5)
- **Cattle grazing on moorland** (Objective F9 – UL18)

- 3.46 Many of the options within the Objectives listed above are among the most common options (in terms of national uptake) within the Environmental Stewardship scheme as detailed at **Table 3.2** on page 36.

Photos 15 and 16: Examples of features under option assessed as having a ‘conserving’ effect within Objectives A5 (left) and C3 (right).



The photo on the left shows Option EC2: Protection of in field trees on grassland (Objective A5), with the trees under option judged to be in good condition and having a ‘conserving’ effect on landscape character. On the right is an example of option HK9: maintenance of wet grassland for breeding waders (Objective C3), which was also assessed as in good condition and having a ‘conserving’ effect on the landscape.

Where Environmental Stewardship is having a primarily ‘maintaining’ effect on Landscape Objectives

- 3.47 Options within **Objective C2: Retention of mixed/pastoral character** were also observed as having a ‘maintaining’ effect on the landscape. This Objective includes the low input grassland options H/EK2 and H/EK3, which as discussed previously in paragraph 3.28, are often assessed as having a ‘maintaining’ landscape effect where they have been applied to improved or semi-improved fields. Options within Objectives C4 (Retention/management of rough pasture) and C5 (Retention/management of traditional mixed stock grazing) also have a number of options having a ‘maintaining’ effect on the landscape. It should however be noted that the majority of surveyed features under all of these objectives are still primarily having a ‘conserving’ effect on the landscape. See examples of both in **Photos 17 and 18**.

Photos 17 and 18: Examples of landscape features within Objective C2 (left) and Objective C4 (right) having a ‘maintaining’ and ‘conserving’ effect respectively



The photo on the left shows a field under option EK3 (grassland with very low inputs) which is assessed as being in fair condition and having a maintaining effect on the landscape due to weed encroachment and extensive horse grazing. The photo on the right shows an area of grassland under option HL7 (maintenance of rough grazing for birds) which is assessed as being in good condition and having a ‘conserving’ effect on landscape.

Where Environmental Stewardship is having a 'neutral' or 'detracting' effect on Landscape Objectives

- 3.48 Features under option assessed to be having a 'neutral' effect were often within Objective E4 (Removal of archaeological features from cultivation) and Objective B3 (Management and restoration of ditches/dykes). Archaeological features within Objective E4 are often underground or obscured by ground level vegetation, and therefore not able to be confidentially assessed in terms of their landscape effects using the Rapid Survey approach. A number of ditches under Objective B3 options were assessed as having 'neutral' landscape effect where they appeared unmanaged with extensive weed growth –indicating a lack of active management despite the presence of the option (see previous example at Photo 6). Another example of a 'neutral' landscape effect commonly observed is pastoral fields under option subject to poaching, erosion or the spread of injurious weeds such as thistle or nettles –indicating no positive benefits of management under ES. See example at **Photo 19** below.
- 3.49 The incidences of features under option classed as having a 'detracting' effect were generally observed as being degraded/unmanaged examples of those that would be expected to be 'enhancing' (such as Objective B6: Reinforcement of field patterns in arable areas or B9: Reinforcement of field patterns in grassland areas). The inappropriate introduction of new features (such as buffers or blocks of seed mix of unsuitable scale or location) was occasionally the reason given for a 'detracting' score. This is considered further at para. 3.57, with an example shown at **Photo 20** below.

Photos 19 and 20: Two landscape features deemed to be having a neutral (left) and detracting (right) effect on landscape character.

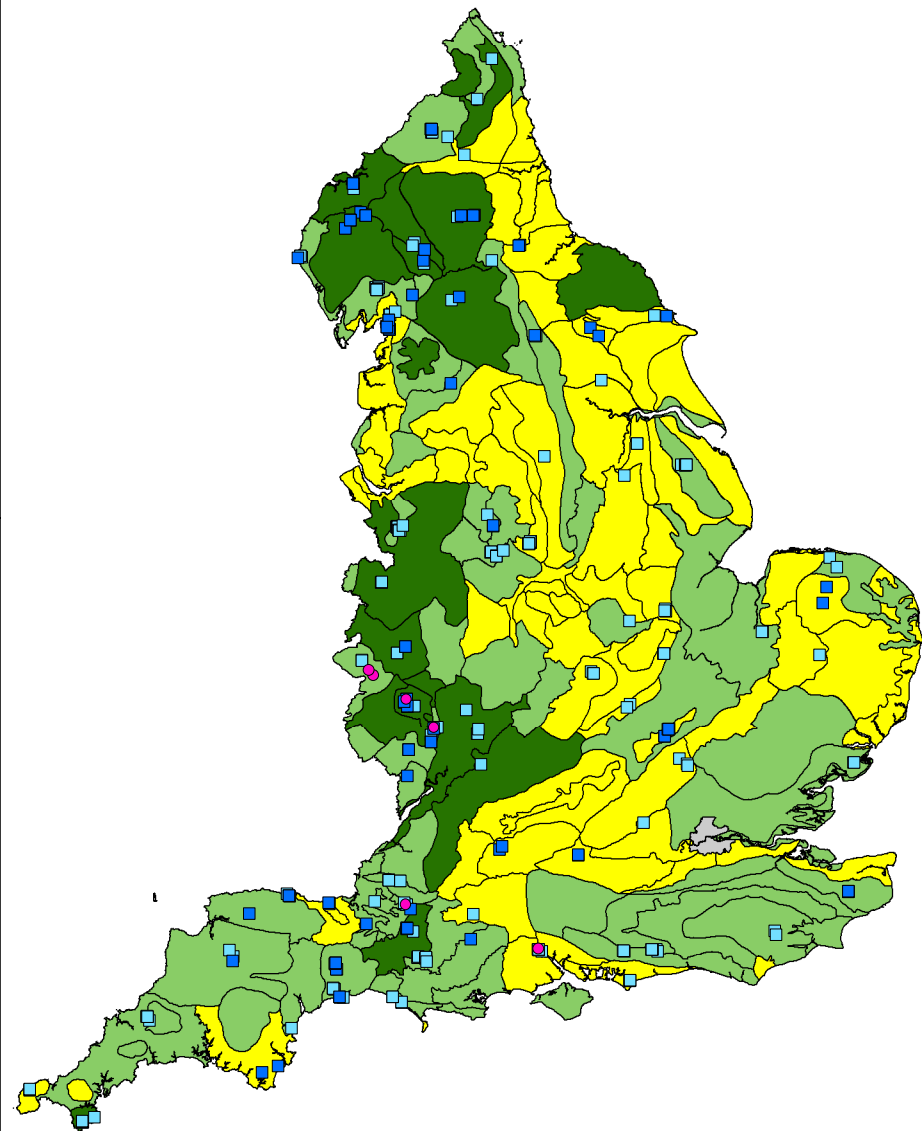


Left shows a low input grassland field (EK2) that was judged by the surveyor as having a 'neutral' effect on the landscape, due to extensive coverage of thistles and vehicle erosion. Right shows a buffer strip which appeared unmanaged with extensive nettle and docks (scoring guidance states that injurious weeds should be controlled; nettle coverage indicates high phosphate and nitrate content). This results in the feature having a 'detracting' impact on landscape character. Both of these features were assessed as being in poor condition.

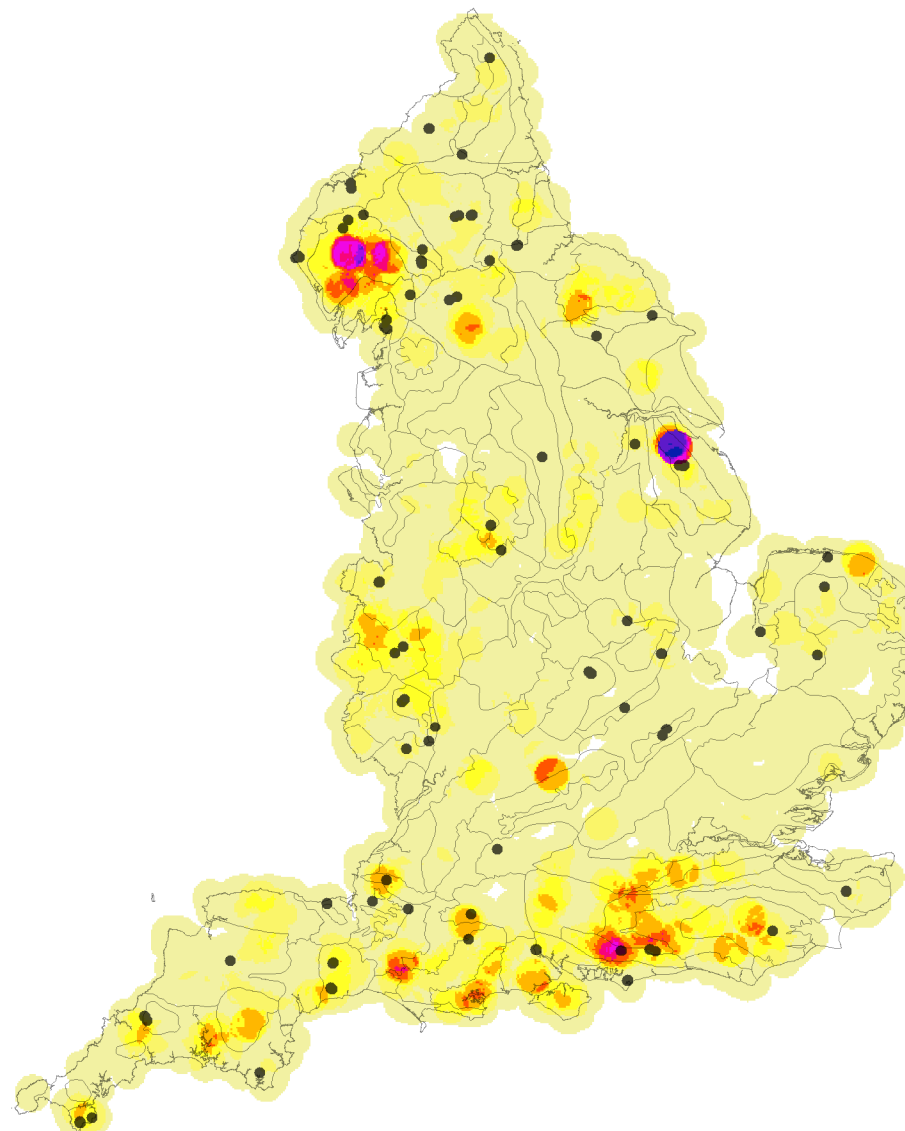
Exploring the spatial delivery of landscape objectives against national uptake data

- 3.50 **Maps 3.3 and 3.4** provide examples of how the detailed results of the Rapid Survey can be 'scaled up' to help support the findings of other Natural England research into the landscape effects of ES at the national scale (as outlined in para 1.4). Map 3.3 considers two Landscape Objectives within Landscape Theme A: Woodland/tree cover, whilst Map 3.4 illustrates examples from Landscape Theme C: Agricultural land use.
- 3.51 The left map panel in both Map 3.3 and Map 3.4 compares the broad desk-based judgements of the relevant Landscape Theme's landscape effects at the NCA scale (based on key characteristics, stock and uptake data) from the NCA Indicators and Thresholds study, with the feature-specific field survey results from both years of Rapid Survey. It is difficult to draw absolute conclusions from this comparison due to the significant difference in the scale of the studies, but it does help reinforce some general patterns.
- 3.52 The map panels for the individual landscape objectives show the relationships between the density of national option uptake versus the location of surveyed features managed under the relevant ES option(s). In all cases, only instances where features under option were observed through Rapid Survey as 'conserving' or 'enhancing' landscape character are mapped.

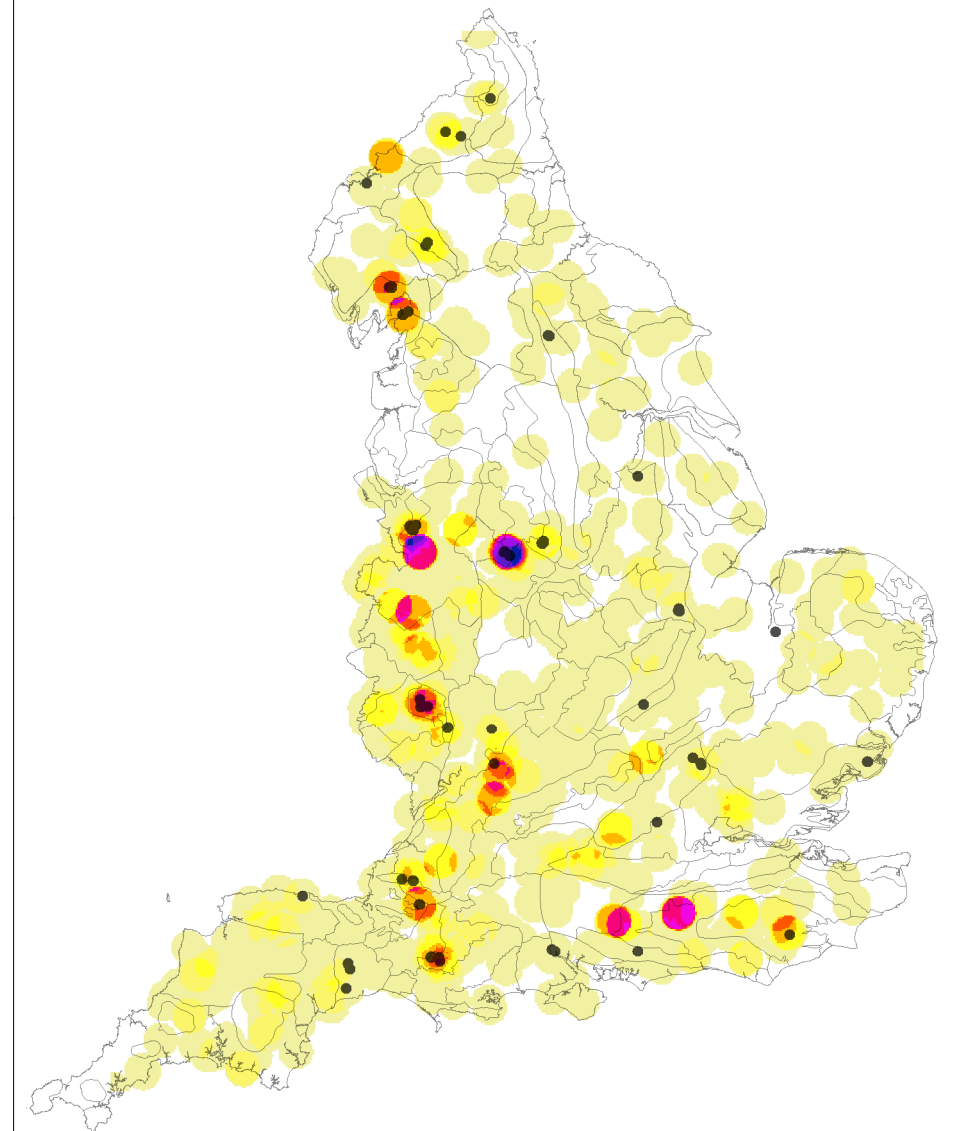
Landscape Theme A - Woodland/tree cover



Objective A1 - Active woodland management



Objective A5 - Protection of in-field trees



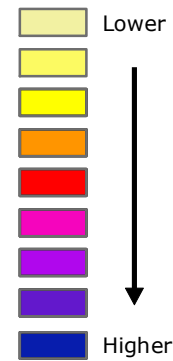
Overall effect of surveyed options (from the 2014 and 2015 Rapid Surveys)

- Enhancing
- Conserving
- Neutral

Theme A Woodland and tree cover - overall effect (from contract LM0429 NCA Indicators and Thresholds)

- Strongly positive
- Positive
- Neutral
- N/A

Density of option uptake



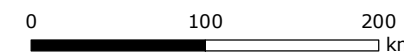
□ NCAs

- Surveyed options under this objective with a 'conserving' or 'enhancing' effect

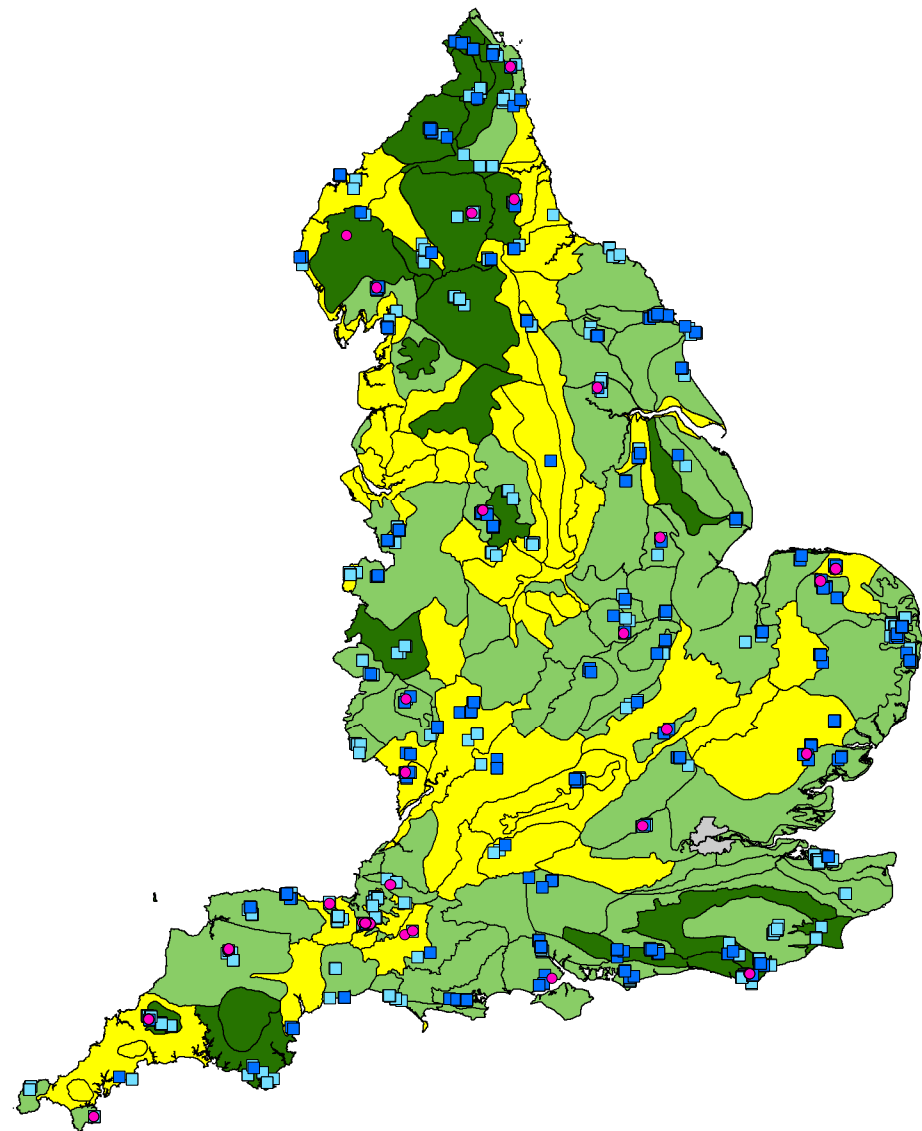
Rapid Survey of Environmental Stewardship

Map 3.3: Correlation between surveyed options under Rapid Survey and overall effects of ES on Landscape Theme A at NCA level (from NCA Indicators and Thresholds)

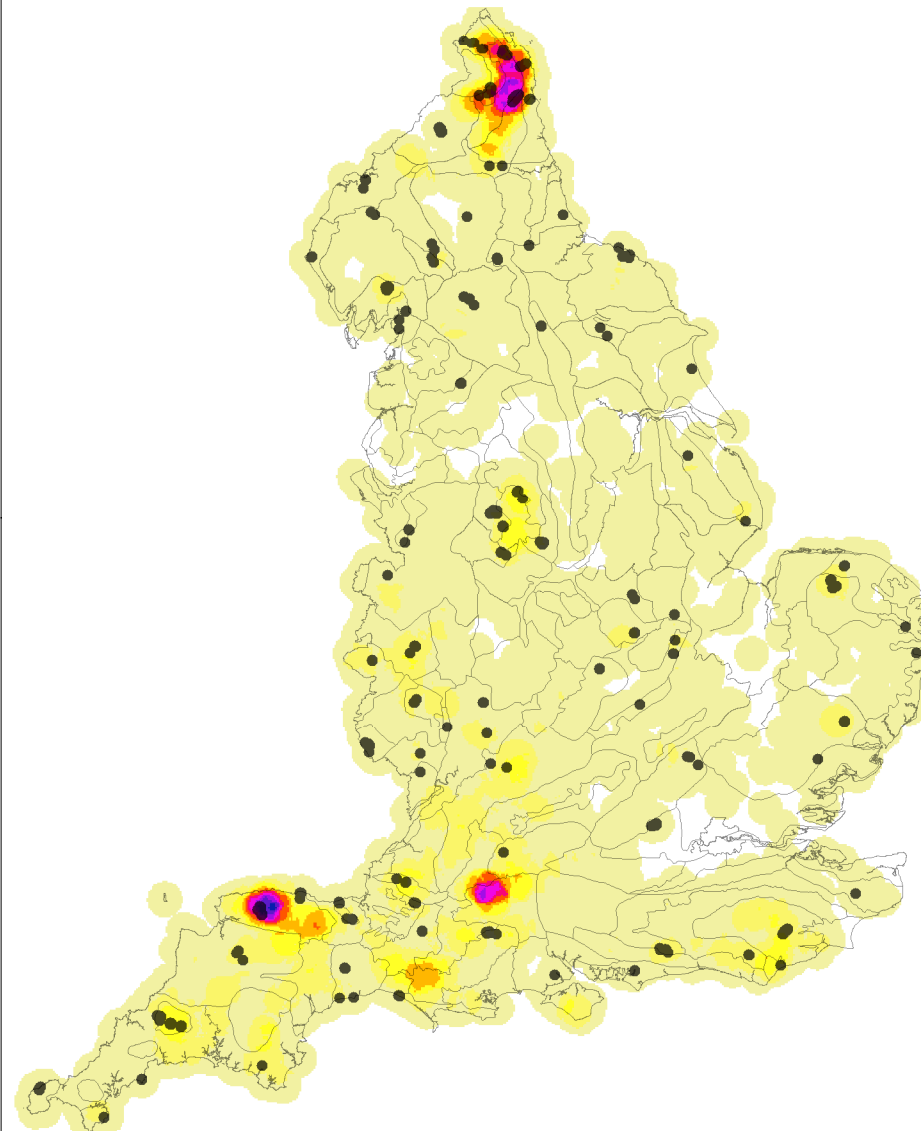
LUC



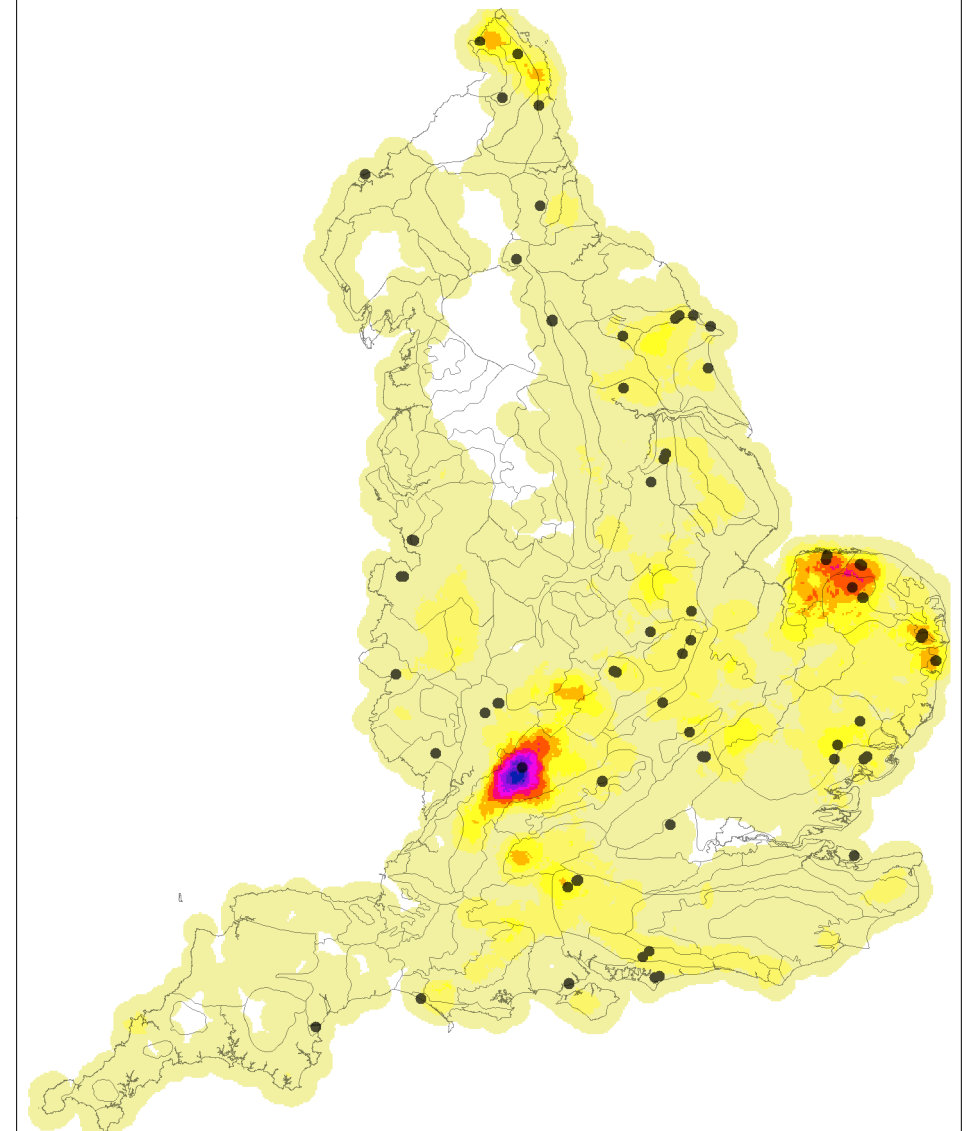
Landscape Theme C - Agricultural land use



Objective C2 - Retention of mixed/pastoral character



Objective C8 - Blocks and strips of seed mixes in arable



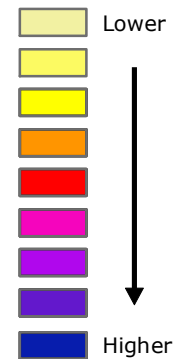
Overall effect of surveyed options (from the 2014 and 2015 Rapid Surveys)

- Enhancing
- Conserving
- Neutral

Theme C Agricultural land use - overall effect (from contract LM0429 NCA Indicators and Thresholds)

- Strongly positive
- Positive
- Neutral
- N/A

Density of option uptake

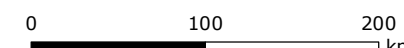


□ NCAs

- Surveyed options under this objective with a 'conserving' or 'enhancing' effect

Rapid Survey of Environmental Stewardship

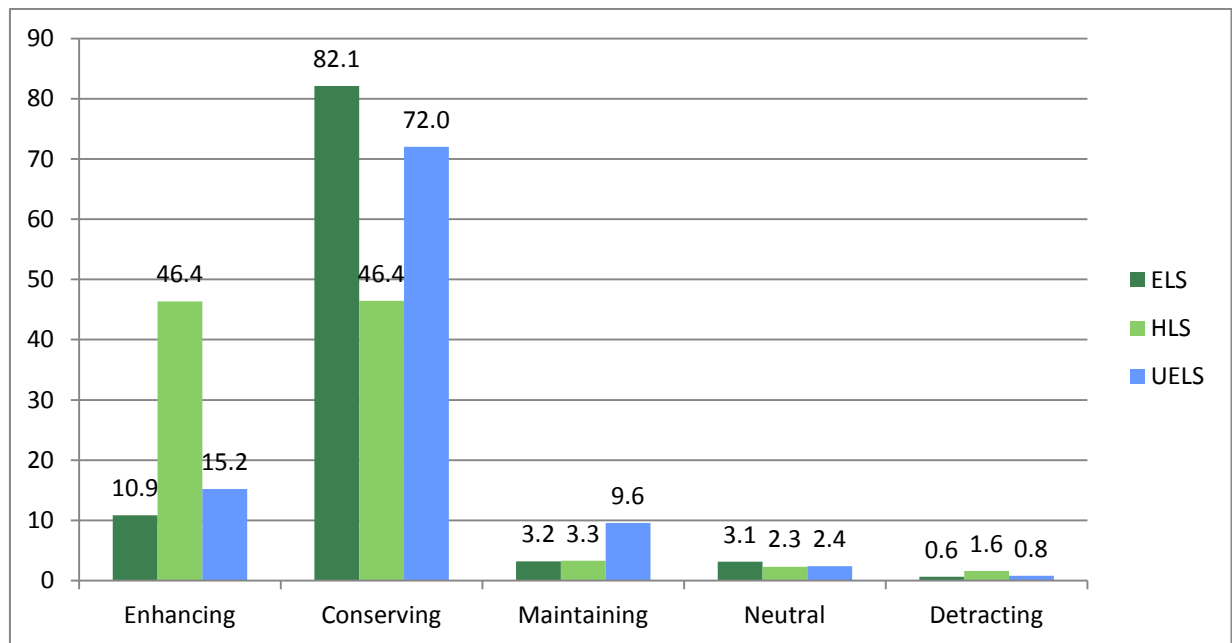
Map 3.4: Correlation between surveyed options under Rapid Survey and overall effects of ES on Landscape Theme C at NCA level (from NCA Indicators and Thresholds)



Analysis against the different tiers of Environmental Stewardship

- 3.53 This section examines whether there are notable differences in landscape effects between the different tiers of ES (ELS, HLS and UELS).
- 3.54 Of the surveyed features under option, 2,642 were under ELS, 1,641 were in the HLS scheme and 125 were under UELS, across the Rapid Survey. A chart showing the effects of these options on assessed features is displayed at **Figure 3.6**. Please note that this section only examines the effects of features under a single option; co-located features are omitted as they may include options from more than one scheme tier. The effects of co-located features are analysed separately later in the chapter at para 3.86.

Figure 3.6: The landscape effects of options in the ELS, HLS and UELS schemes



Total may not add up to 100% due to rounding.

- 3.55 Nearly 83% of features under ELS options were assessed as having a 'conserving' effect on the landscape, whilst around 11% were having an 'enhancing' effect.
- 3.56 Options within the HLS scheme are more evenly split between having an 'enhancing' effect and a 'conserving' effect on the landscape. As shown in **Figure 3.6** above, 46.1% of surveyed HLS options were having an 'enhancing' effect, whilst 47.2% were 'conserving'. All of the options for the creation of habitat and landscape features are in the HLS scheme, which is likely to explain the greater balance of HLS towards 'enhancing' effect on landscape compared to the ELS and UELS schemes.
- 3.57 Interestingly, options within the HLS tier also have a slightly higher proportion of 'detracting' landscape effects, although it should be noted this is still low at 1.6%. Reasons for this may be related to the fact that many HLS options tend to have an 'enhancing' effect (due to more focus on the introduction of 'new' features or the restoration of valued landscape features); they are therefore also more likely to be assessed as being 'detracting' if such new features are in poor condition or are inappropriately placed (following the guiding principles in **Table 3.2**– although the latter incidences were less commonly seen during the Rapid Survey).
- 3.58 The Upland ELS options were considered to be having a predominantly 'conserving' effect on landscape character (72.6%), producing a similar overall effect to other ELS options. In the 2015 survey, the sampling bias away from the uplands was eliminated, increasing the number of features under UELS that were surveyed. However, the smaller overall sample size (only 125 features under UELS option – equating to around 5% of the total sample of ELS features surveyed) should be borne in mind when interpreting the results. This includes the apparently

larger proportion of features under option assessed as ‘maintaining’ landscape character – which is based on a survey of only 12 features (the majority being under grassland management options).

The effect of the most commonly occurring options

- 3.59 This section focuses on the individual options that have the highest uptake levels in ES agreements and examines which of these options stand out as being particularly effective and/or consistently having the same effect on landscape character. The analysis targets the top options for uptake (top 20 by area and top 10 by length), to see what affect these most common options are having. The NCA Indicators and Thresholds study found that a relatively small ‘palette’ of options makes up a large proportion of the total ES uptake.
- 3.60 It is noted in the NCA Indicators and Thresholds study that typically, the top five options by area make up over 50% of all ES uptake by area in each ALT. **Table 3.3** shows the Top 20 spatial options for each ALT from the ES uptake data, while **Table 3.4** shows the top 10 linear ES options by uptake length for each ALT. All individual option codes are set out in **Appendix 5**.

Table 3.3 Top 20 spatial options by uptake area in each ALT¹⁴

ALTs	Area of top 20 options as % of total uptake	Scheme	Options ¹⁵	% of total uptake
1: Chalk and Limestone Mixed	78%	ELS	EK2, EK3, EF6, ED5, EK5, ED3, EF1, EE3	48%
		HLS	HK7, HK15, HK6, HR2, HR1, HD3, HK16, HF6, HD5, HR7, HF12, HC7	31%
2: Eastern Arable	70%	ELS	EK2, EK3, EF6, EF1, ED5, EE3, EK5, EE2, EE9	44%
		HLS	HK15, HK10, HK9, HR2, HR1, HF6, HK17, HF12, HC12, HK7, HK13	27%
3: South East Mixed (Woodland)	82%	ELS	EK2, EK3, EK5, EF6, EE3, ED5	26%
		HLS	HO2, HR1, HK15, HC13, HK10, HR2, HK7, HK9, HR7, HC7, HK16, HO1, HK6, HC12	56%
4: Western Mixed	74%	ELS	EK2, EK5, EK3, EF6, ED5, EL2	47%
		UELS	UL18	2%
		HLS	HR1, HK15, HK7, HP5, HK16, HD5, HR2, HK6, HK10, HF6, HK9, HK18, HR7	25%
5: Upland Fringe	83%	ELS	EK2, EK5, EL2, EL6, ED5, EK3, EL3, EF6	51%
		UELS	UL18, UL17	11%
		HLS	HL10, HR1, HL9, HK7, HK15, HL12, HR2, HL16, HR7, HK6	21%
6: Upland	93%	ELS	EL6, EL2, EL3, EK5, EK2, ED5, EL5	32%
		UELS	UL18, UL17, UL20	13%
		HLS	HL10, HL15, HL12, HL16, HL9, HR1, HR2, HL7, HL8, HK16	47%

¹⁴ Based on uptake data downloaded from the Environment Agency GeoStore in August 2015 (Environmental Stewardship Live Option Points derived from Genesis tables).

¹⁵ The number of options may not add up to 20 as OELS options have not been identified separately

Table 3.4: Top 10 linear options by uptake length in each ALT in 2016

ALTs	Length of top 10 options as % of total uptake	Scheme	Options	% of total uptake
1: Chalk and Limestone Mixed	97%	ELS	EB2, EB1, EB3, EB6, EC3, EB8, EB7, EB10, EB9, EB11	97%
		HLS	-	-
2: Eastern Arable	98%	ELS	EB2, EB1, EB3, EB6, EB7, EB8, EB10, EB9	96%
		HLS	HN4, HN3	2%
3: South East Mixed (Woodland)	96%	ELS	EB2, EB1, EB6, EB3, EC3, EB7, EB8, EB9, EB10, EJ11	96%
		HLS	-	-
4: Western Mixed	94%	ELS	EB2, EB1, EB3, EB6, EB8, EB11, EC3, EB9, EB7, EB10	94%
		UELS	-	-
		HLS	-	-
5: Upland Fringe	93%	ELS	EB2, EB1, EB12, EB13, EB11, EB3, EC3, EB4, EB5, EB6	93%
		UELS	-	-
		HLS	-	-
6: Uplands	94%	ELS	EB11, EB2, EB1, EB3, EC3, EB12, EB4, EB5, EB13	83%
		UELS	UB11	10%
		HLS	-	-

3.61 The following four sections examine the results of the Rapid Survey in the light of these earlier findings on the most frequent ES options. Each section identifies which of these ES options were found to be primarily producing an ‘enhancing’, ‘conserving’, ‘maintaining’, ‘neutral’ or ‘detracting’ effect on landscape character.

Most common features under options assessed as having an ‘enhancing’ landscape effect

3.62 Options introducing buffer strips and seed mixes or plots onto cultivated land (include H/EE2, H/EE3, H/EF1, HE10 and HF12) were the most common incidences of the ‘enhancing’ score due to their addition of new features that are judged as enhancing local landscape character. As discussed previously, careful targeting of these options in terms of their location in the landscape (and relationship with other landscape features), and their ongoing appropriate management, are key in influencing their overall landscape effects. However, the Rapid Survey has identified some situations where these same options were assessed as having a ‘detracting’ landscape effect, so uptake figures alone should be treated with caution without complementary survey data.

3.63 Examples of a field corner option having differing effects in the landscape are shown in **Photos 21 and 22**.

Photos 21 and 22: Field corner options (EF1/HF1) with differing landscape effects



Photo 21 illustrates a field corner introduced by option EF1 having a 'detracting' impact on the landscape due to an extensive encroachment of weeds, vehicle erosion and tipping of building waste. In Photo 22, the surveyor observed the field corner (HF1) having an 'enhancing' effect on the landscape by creating a semi-natural tussocky grass edge to the adjacent arable field. This feature was judged as being in good condition.

- 3.64 **Map 3.5** provides a mapped overview of two 'enhancing' arable options (buffer strips and field corners) in terms of their surveyed location (through the Rapid Surveys), against national option uptake. This gives a theoretical indication of the potential landscape effects of these ES options if the results are extrapolated across England (based on the location and amount of uptake for these specific options).
- 3.65 Any options relating to the creation of a habitat are always assessed as having an 'enhancing' effect (provided that the option has been implemented correctly). Several of the most common ES options fall into this group of options, including restoration of species rich, semi-natural grassland (HK7) and the restoration or creation of grassland for target features (HK16/17). An 'enhancing' effect is also seen in options relating to restoration of valued landscape features which were previously degraded, such as the restoration of woodland (HC8) or the restoration of wood pasture and parkland (HC13). Examples of some of these options are illustrated in **Photos 23 and 24**.

Photos 23 and 24: Features under options for the restoration of habitat assessed as having an 'enhancing' effect on landscape character



Photo 23 (left) shows young trees planted as part of option HC13: restoration of wood pasture and parkland. Photo 24 shows a landscape under option HK7: restoration of species rich, semi-natural grassland. Both of were assessed as having an 'enhancing' effect on landscape character and judged as being in good condition.

- 3.66 **Map 3.6** provides a national overview of 'conserving' and 'enhancing' grassland options in terms of their surveyed location (through the Rapid Surveys), against national option uptake. Like for Map 3.5, this gives a theoretical indication of the potential landscape effects of these ES options if the results are extrapolated across England (based on the location and amount of uptake for these specific options).

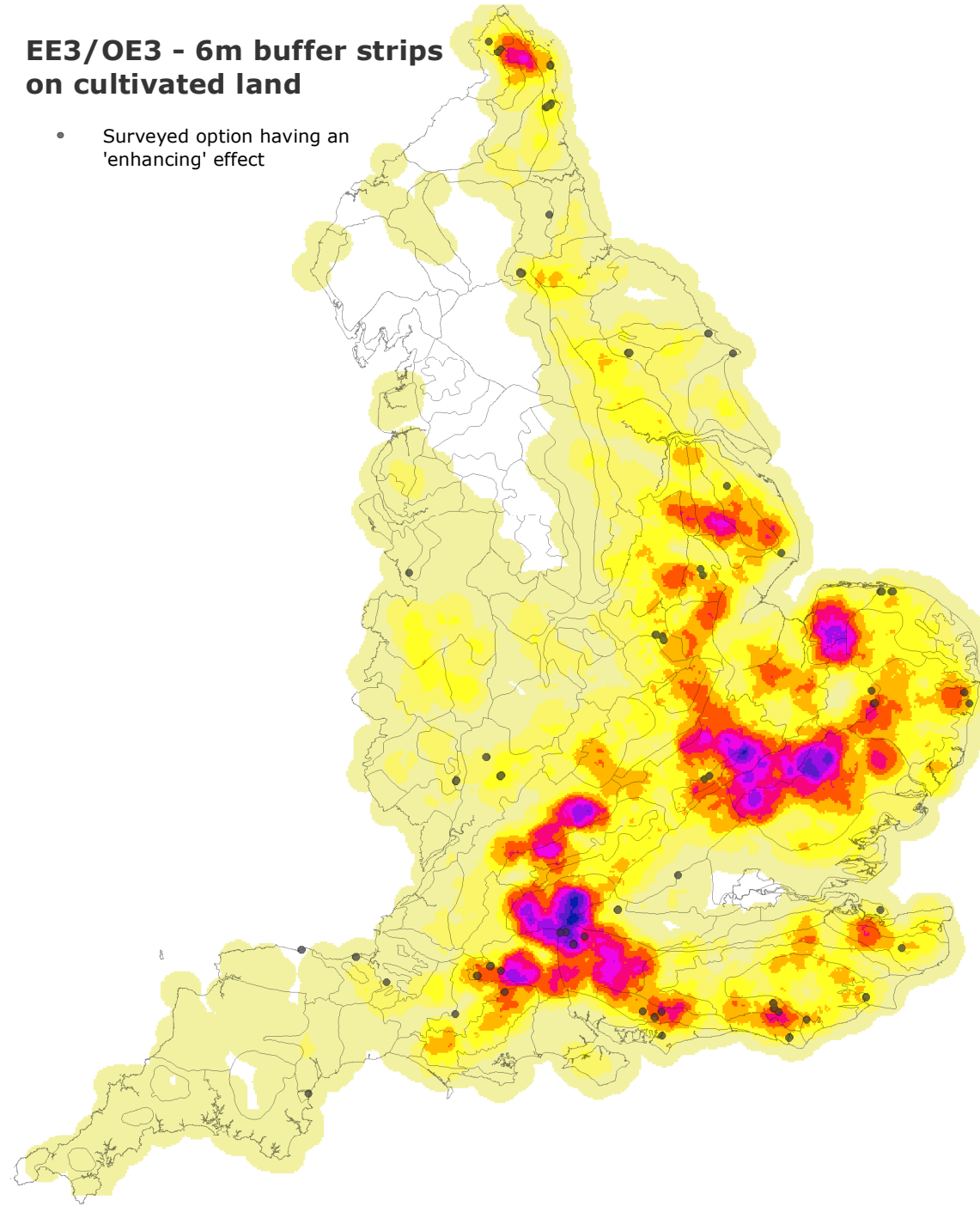


Rapid Survey of Environmental Stewardship

Map 3.5: Examples of surveyed options with a predominantly 'enhancing' effect against national uptake

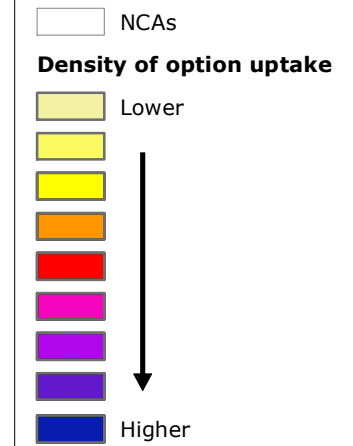
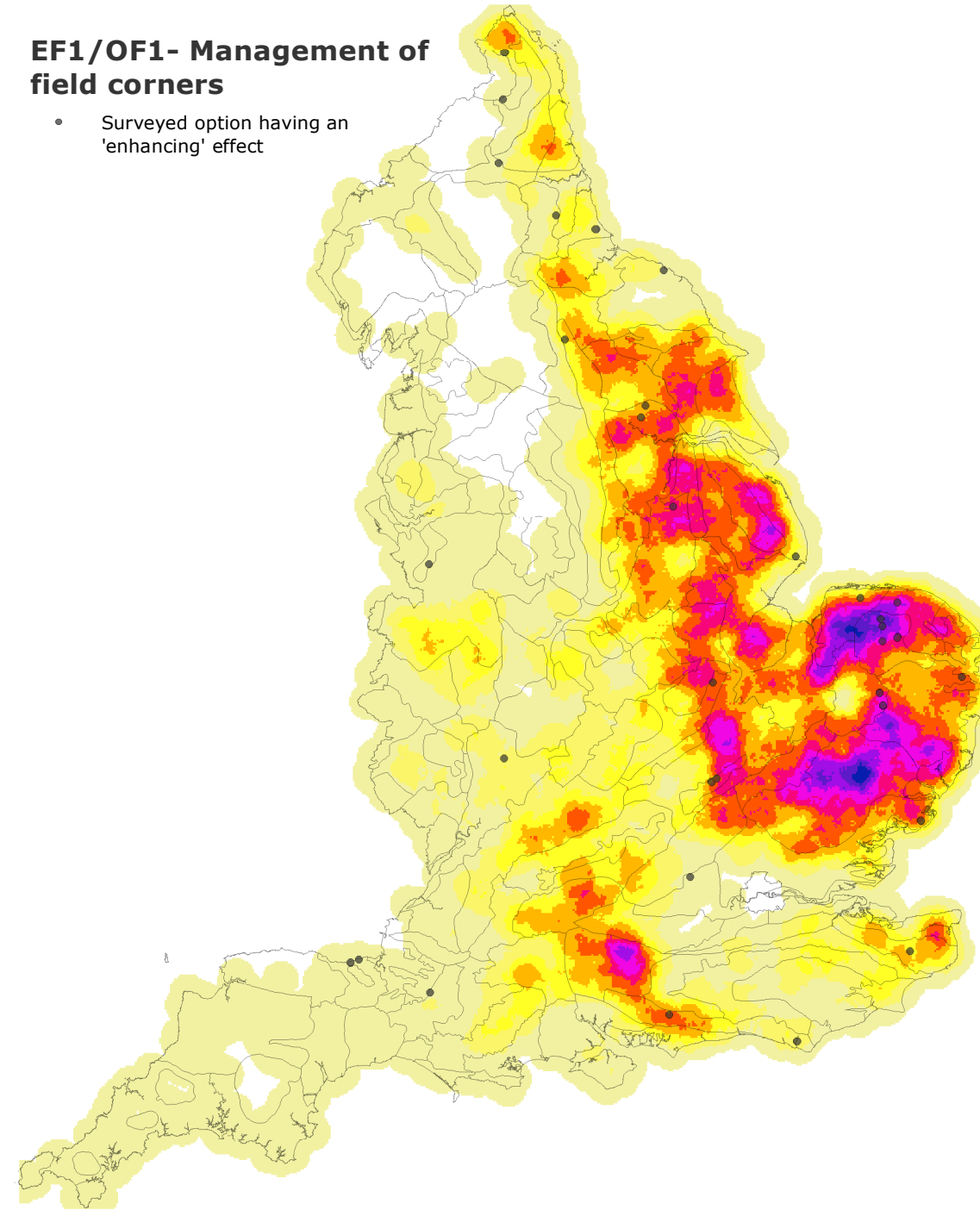
EE3/OE3 - 6m buffer strips on cultivated land

- Surveyed option having an 'enhancing' effect



EF1/OF1- Management of field corners

- Surveyed option having an 'enhancing' effect



Map Scale @ A3: 1:3,500,000



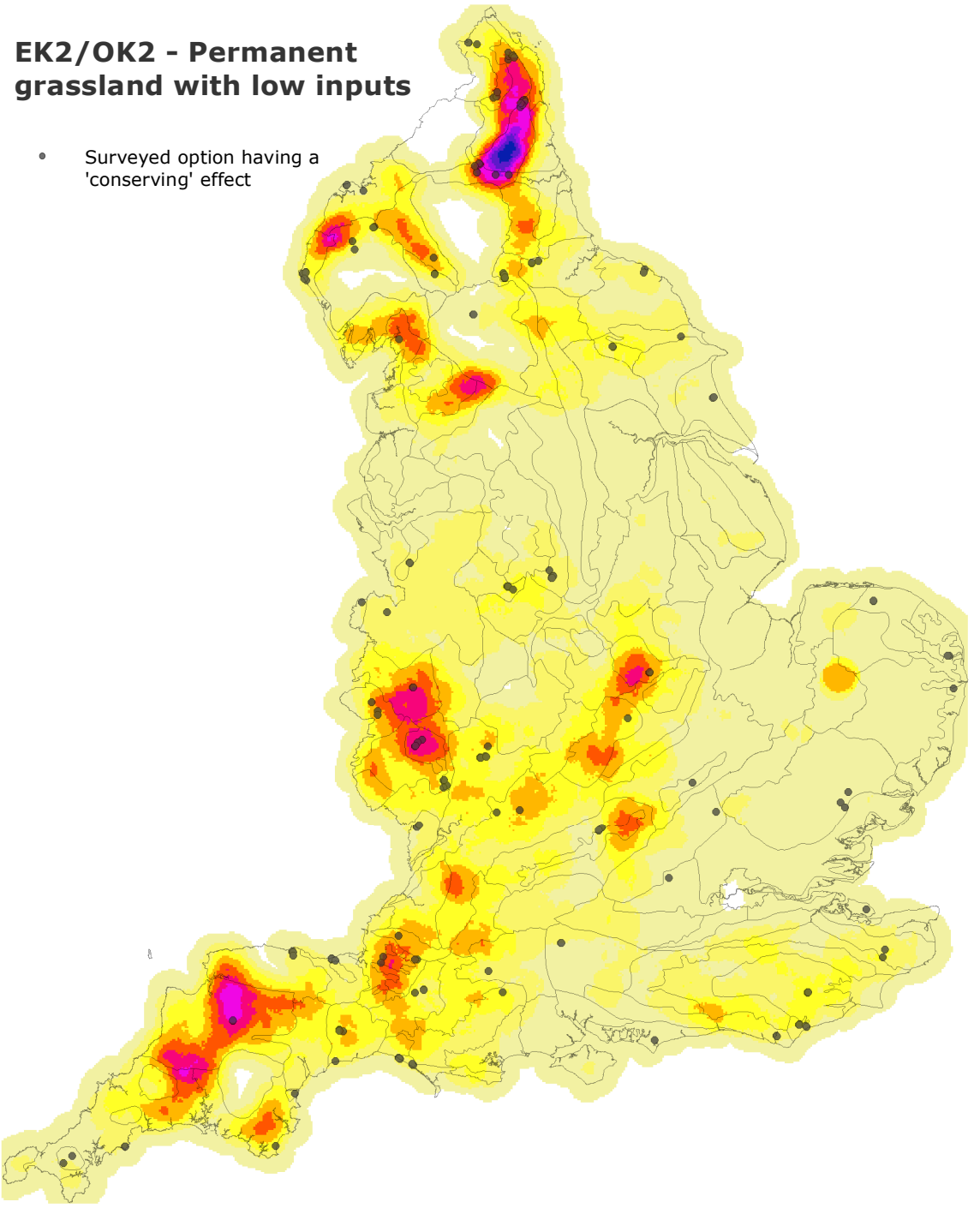


Rapid Survey of Environmental Stewardship

Map 3.6: Examples of surveyed options (EK2/OK2) with a predominantly 'conserving' effect, and option (HK7) with a predominantly 'enhancing' effect against national uptake

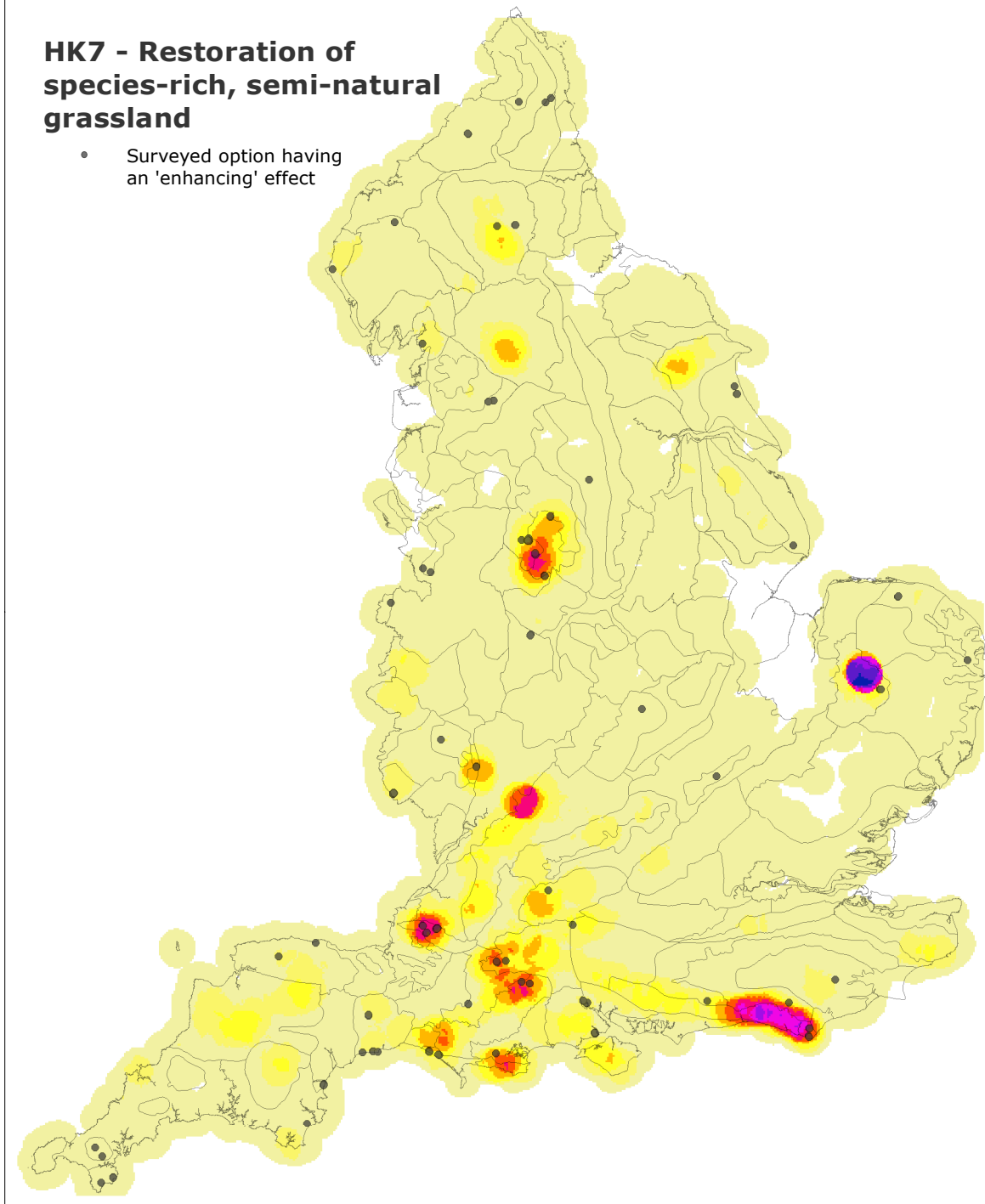
EK2/OK2 - Permanent grassland with low inputs

- Surveyed option having a 'conserving' effect



HK7 - Restoration of species-rich, semi-natural grassland

- Surveyed option having an 'enhancing' effect

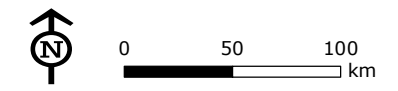
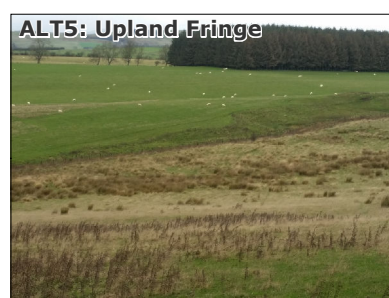


□ NCAs

Density of option uptake

Lower

Higher



Map Scale @ A3: 1:3,500,000



Most common features under options assessed as having a 'conserving' landscape effect

- 3.67 Hedgerow management options such as EB1, EB2 and EB3 (these options are in the 'Top 5' in length across all ALTs) are found to be effective in 'conserving' landscape character, as they maintain traditional field boundary patterns and reinforce the scale and pattern of the landscape. Hedgerows are a quintessential feature of the English countryside and due to the reduction in hedgerow cover in the post-war years, lengths under option are almost always assessed as 'conserving' an important landscape feature. As explained in **Table 3.1** (page 17), exceptions to this general score occur where the hedgerow is in very poor condition and there is no evidence of recent effective management. Other options relating to retention of traditional field boundaries, commonly observed as 'conserving' landscape character, include stone wall protection and maintenance (EB11) and combined hedge and ditch management (EB10). Examples are shown at **Photos 25 and 26**.

Photos 25 and 26: Field boundaries under ES option with differing landscape effects



Photo 25 (left) shows stone walls under option EB11, which are judged as 'conserving' a characteristic landscape feature. Photo 26 shows a hedgerow under option EB2 (maintenance on one side of a hedge) which is assessed as having a 'neutral' landscape effect and in poor condition due to extensive gaps in the boundary.

- 3.68 **Map 3.7** provides a mapped overview of two 'conserving' field boundary options (hedgerows and stone walls) in terms of their surveyed location against national option uptake. This gives a theoretical indication of the potential landscape effects of these ES options if the results are extrapolated across England (based on the location and amount of uptake for these options).
- 3.69 Areas of woodland under maintenance and protection options are also most often assessed as having a 'conserving' landscape effect – for the same reason as traditional field boundaries. Of particular interest is HC7 – Maintenance of woodland, which is a top 20 option in ALTs 1 and 3. Features assessed under options for the protection of in-field trees in arable (EC1/OC1) and on grassland (EC2/OC2), and the retention of ancient trees in fields (HC4/5) were also always assessed as having a conserving effect on landscape character providing that the feature was not in poor condition.

Most common features under options assessed as having a 'maintaining' or 'neutral' landscape effect

- 3.70 The most commonly occurring 'maintaining' landscape features observed through the Rapid Survey are existing pastoral fields under grassland options. Although primarily having a 'conserving' effect, options for permanent grassland with very low inputs (including EK3, HK3 and OK3) also saw a significant number of instances where the effect on the grassland concerned was assessed as 'maintaining' landscape character. As already noted in paragraph 3.47, this was observed where the options were applied to semi-improved or improved grassland fields – rather than semi-natural grasslands or meadows that are usually assessed as 'conserving' character.
- 3.71 Options relating to archaeological features in cultivated landscapes (OD2, OHD2, OHD3 and OHD5) were often judged as having a 'neutral' effect on landscape character, as these were generally not visible to the surveyor (i.e. located beneath the ground or obscured by land cover). These options were rare in the survey, so it is not possible to draw out any further trends relating to these options.

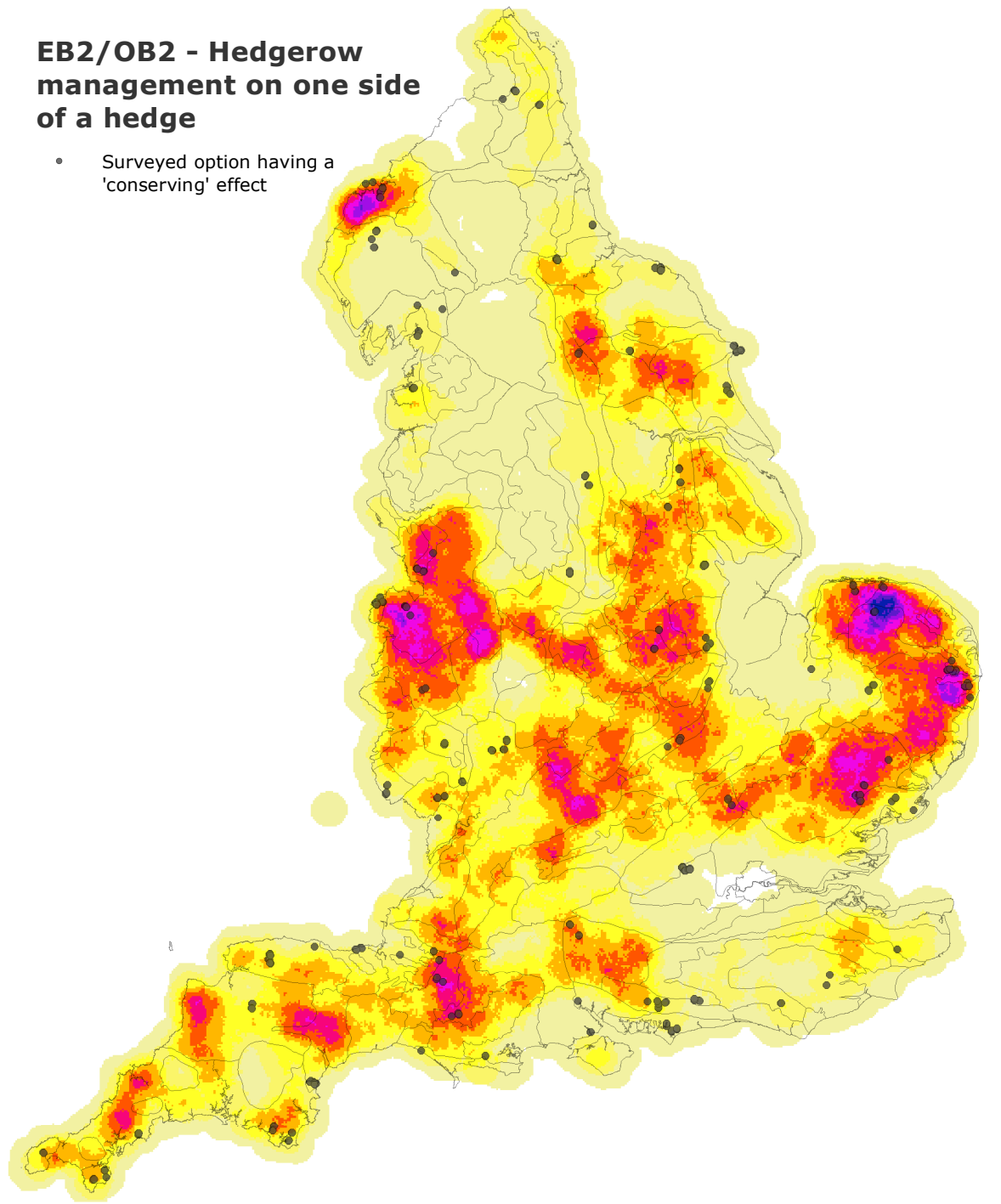


Rapid Survey of Environmental Stewardship

Map 3.7: Examples of surveyed options with a predominantly 'conserving' effect against national uptake

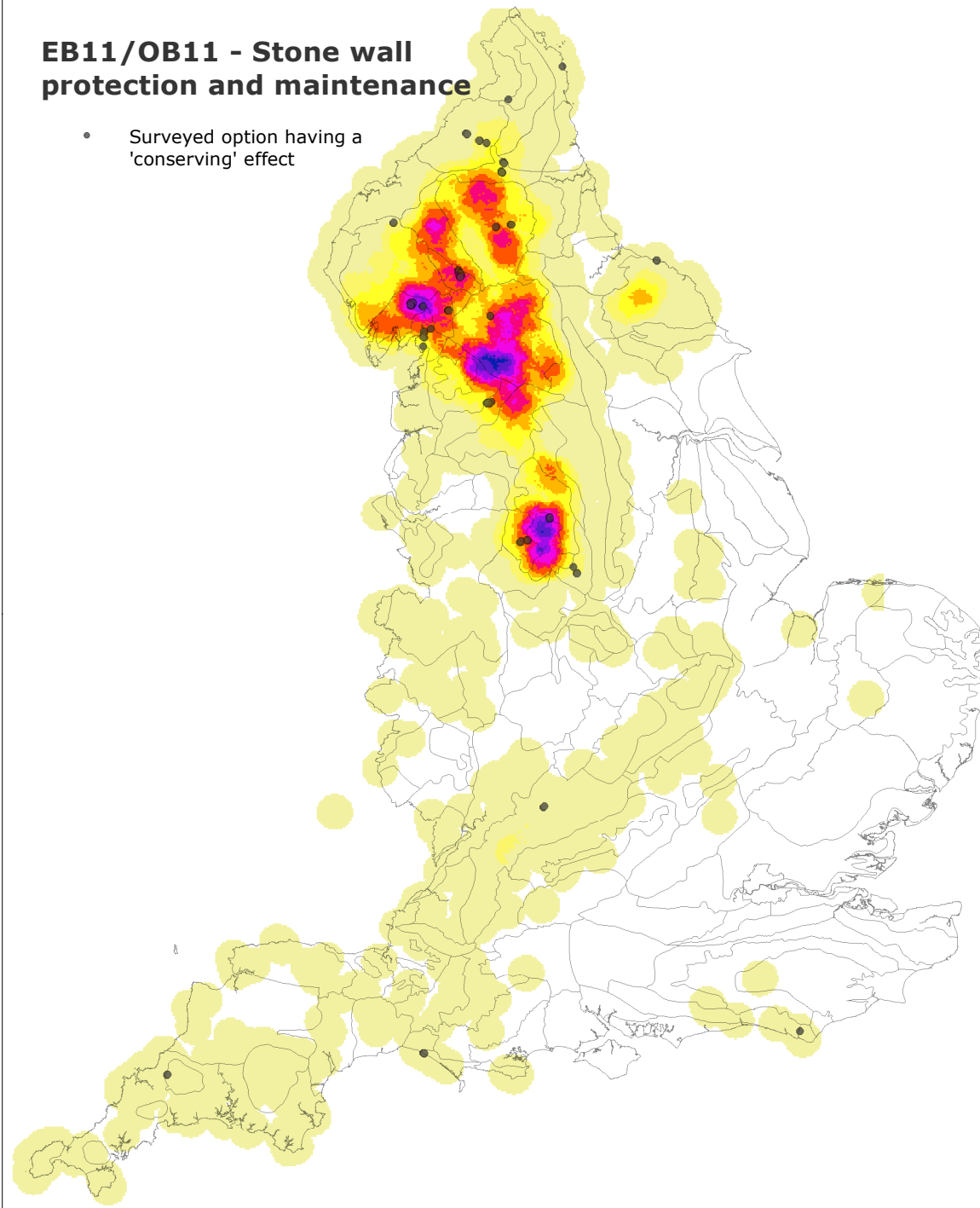
EB2/OB2 - Hedgerow management on one side of a hedge

- Surveyed option having a 'conserving' effect



EB11/OB11 - Stone wall protection and maintenance

- Surveyed option having a 'conserving' effect



□ NCAs

Density of option uptake

□ Lower

□

□

□

□

□

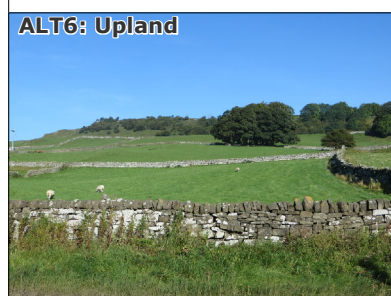
□

□ Higher



0 50 100 km

Map Scale @ A3: 1:3,500,000



- 3.72 Other landscape features where the option being applied is having a 'neutral' landscape effect relate to instances where management required by ES is not perceived to be taking place. **Photo 27** shows a derelict stone wall in an upland landscape under option EB11: Stone wall protection and maintenance – the surveyor noticed its poor condition despite its inclusion in the scheme.

Photo 27: Stone wall under option EB11, where the option is assessed as having a 'neutral' landscape effect



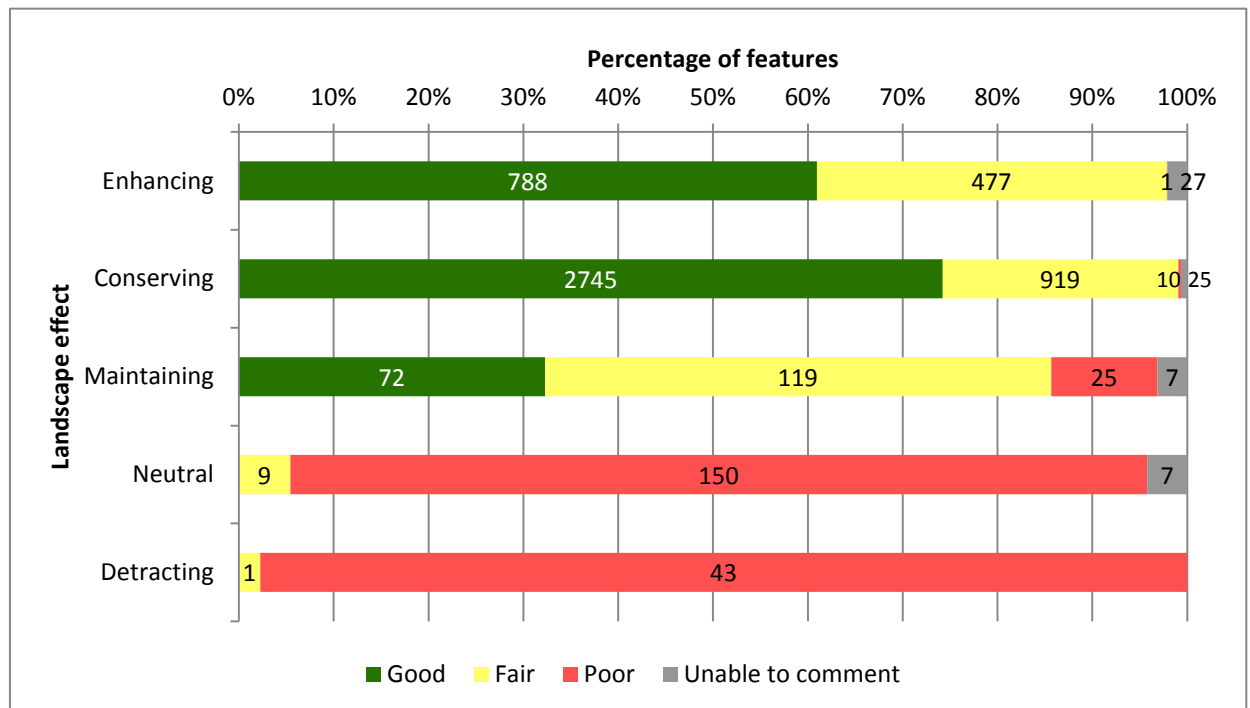
Most common features under options assessed as having a 'detracting' landscape effect

- 3.73 Only 13 options have any occurrence of a surveyed example having a 'detracting' effect on landscape character (when combining the equivalent options in the ELS and HLS schemes i.e. EF1/HF1). As stated previously at para 3.49, generally these are options which would normally be expected to have an 'enhancing' effect on the landscape, but are poorly placed, in a degraded condition or detract from other established characteristic landscape features. Several of the options surveyed to be having negative effects during the Rapid Survey are also within the Top 20 options in terms of uptake at **Table 3.2** (including EE3: 6 metre buffer strips on cultivated land and EF1: management of field corners), however proportionally, these options are very rarely surveyed as having a negative effect. In these generally isolated cases, it is the lack of management of the features or its unsuitability, that caused the detracting effect on landscape character rather than the option prescription *per se* or the choice of location of the option.

How does the landscape effect of Environmental Stewardship relate to the condition of the features under option?

- 3.74 This section considers how the results of the Rapid Survey can aid understanding of ES's contribution to landscape quality, as measured through the condition of the landscape features under option (the guidelines used for scoring condition are included in **Appendix 3**).
- 3.75 As illustrated in **Figure 3.7**, the results show a consistent relationship between the condition of features under option and the effect of ES on their contribution to landscape character. Thus, features in good condition are most likely to be subject to ES options that were judged to be 'enhancing' or 'conserving' landscape character. Conversely, features in 'poor' condition are most likely to be subject to ES options that were observed as having a 'neutral' or 'detracting' impact on landscape character (although it should be acknowledged that the size of the sample for this latter relationship is relatively small). The results can be summarised as follows:
- 61% of features under option found to be having an overall 'Enhancing' effect on the landscape were also assessed as being in 'good' condition.
 - 74% of features under option found to be having an overall 'Conserving' effect on the landscape were also assessed as being in 'good' condition.
 - Of the features under option found to be having a 'maintaining' effect on landscape character, 53% were assessed as being in 'fair' condition and 32% were in 'good' condition.
 - 90% of features under option having a 'neutral' effect were assessed as being in a 'poor' condition.
 - Almost all features which were assessed as having a 'detracting' effect on landscape (43 out of 44 surveyed) were assessed as being in 'poor' condition.

Figure 3.7: Number/percentage of features under option within each effect category and their condition



- 3.76 The reasons for this consistent relationship need to be carefully considered. There is the obvious conclusion that features in poor condition are less likely to be considered to be contributing positively to landscape character than those in good condition, but this does not necessarily imply a causal relationship, such that the ES option is leading to poor condition. It may also be that the

feature was in poor condition prior to entry to ES or that the land manager had inadequately followed the option prescription.

- 3.77 The fact that the proportion of 'enhancing' options in good condition is slightly less than those assessed as 'conserving' is explained by the distinction made in the survey approach between landscape effect and condition (see para. 5.23 and **Appendix 3**). Examples include the introduction of enhanced buffers or plots (scored as 'enhancing' landscape character), but where – at the time of survey – the condition of the feature itself might be classed as 'fair' rather than always 'good'. This might be due to the time of year the survey took place (i.e. after flowering), or the management of the feature under option. The Rapid Survey approach allows this important and helpful distinction to be made. See **Photos 28 and 29** below.

Photos 28 and 29: HE10 option in 'fair' condition (L) and HE10 option in 'good' condition (R)



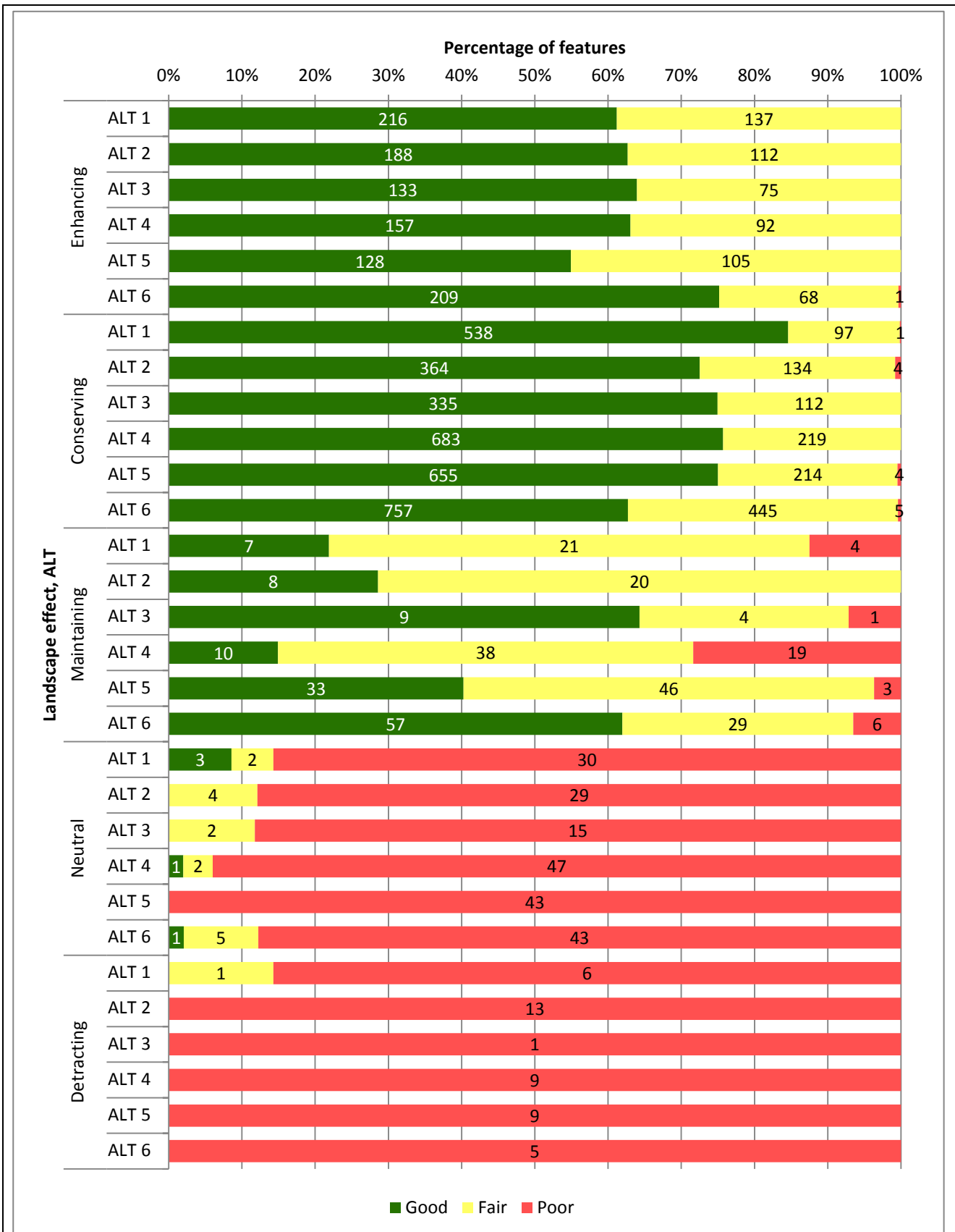
In Photo 28 (left), although the HE10 option has been implemented and is visible within the landscape, the did not appear to be 'floristically enhanced' at the time of survey, resulting in its condition being judged as 'fair'. Photo 29 illustrates the same HE10 feature deemed to be in 'good' condition as a result of the diverse species range and various colours and textures resulting from this in the buffer strip. Despite the differences in condition, both of these features were assessed as 'enhancing' landscape character.

- 3.78 Other examples of features under option deemed as 'enhancing' landscape character, but in fair condition, may have been those implemented recently and thus insufficient time has passed for the option to reach its maximum potential in the landscape (e.g. HJ3 - arable reversion – which will take several years to become established, see contrasting examples at Photos 30 and 31 below). It is likely in many scenarios that once the option has become established there will be a greater improvement and change in landscape condition for 'enhancing' options compared to options 'conserving' an existing feature.

Photos 30 and 31: Fields under HJ3: Arable reversion to unfertilised grassland (the example on the left was assessed as in good condition, the one on the right, in fair condition)



Figure 3.8: Condition of features under option within each scoring category, by ALT



Key to ALTs

1	Chalk & Limestone Mixed	3	SE Mixed (Wooded)	5	Upland Fringe
2	Eastern Arable	4	Western mixed	6	Upland

- 3.79 As noted in **Figure 3.8** above, most (90%) of features under option having a 'neutral' effect on landscape character were also assessed as being in a poor condition – as often the 'neutral' score related to the poorly managed condition of the feature under option (i.e. providing no evidence of option implementation). An example of this is shown in Photo 19 on page 32. Surveyors were also unable to assess the condition of around 4% of the options with a neutral effect, including those relating to below-ground archaeological features that were not visible at ground level. As explained earlier, it is important to emphasise that whilst some archaeological features were scored 'neutral' in terms of their visual landscape impact (and in the context of Rapid Survey), there are clearly benefits arising from the cultural associations and values associated with them.
- 3.80 All features under option that were assessed as having a 'detracting' effect on landscape were also in a poor condition (there was one exception to this – a four-metre buffer strip (EE4) which was assessed as in 'fair' condition). Again, this is likely to be due to inadequate implementation and management of options that should, in theory, be having an 'enhancing' or 'conserving' effect on landscape character (such as the EE9 buffer option illustrated at previously in Photo 6).

Analysis of landscape condition, by Agricultural Landscape Type

- 3.81 **Figure 3.8** illustrates a breakdown of the condition data by ALT. Across all ALTs, 'enhancing' and 'conserving' features under option are mostly assessed as being in good condition, whilst in all ALTs the vast majority of the features having a 'neutral' or 'detracting' effect on landscape were also in poor condition. This mirrors the trend seen across all features as detailed in the section above. ALT 6: Upland has the highest proportion of 'enhancing' features under option in good condition. Within ALT 3: South-East Mixed (Wooded) and ALT 6: Upland, most of the options which are assessed as having a 'maintaining' effect on landscape are also in good condition, although the sample sizes are small and the reasons for this trend are not clear. For the other four ALTs, most features classed as 'maintaining' landscape character were in 'fair' condition. It is interesting to observe that the middle category of 'maintaining' sees the greatest variance in the condition of features within it and does not follow the clear trends between condition and landscape effect seen in the other effect categories.

Analysis of landscape condition, by Landscape Theme

- 3.82 The overall relationship between the enhancing or conserving effect of ES and the good condition of features (and the opposite situations) is also evident when the results of the Rapid Survey are analysed by the Landscape Themes and Objectives (see **Appendix 4**). As noted earlier, segmenting the results into small categories tends to reduce the sample size and care must be taken when drawing conclusions from these data. However, the following points are evident when the data on the condition of landscape features is compared between the Landscape Themes:
- Features in **Theme A: Woodland and tree cover** tended to be classified as in good condition whether ES was 'enhancing', 'conserving', 'maintaining' or having a 'neutral' effect on landscape character. Analysis of the data for the Objectives that sit under Theme A suggests that this holds true for all the Objective types.
 - A higher than expected proportion of features in **Theme B: Field patterns and boundary types** where ES is judged to be 'enhancing' landscape character are in fair as opposed to good condition. Examination of the Objectives under this Theme shows that the features in 'fair' condition often relate to buffer strips and grass margins, probably reflecting the neglected state of vegetation and weed coverage on these features observed during the survey.
 - For features in **Themes C: Agricultural land use, D Traditional farm buildings, E Historic environment and F Semi-natural habitats**, the general relationship noted above between 'enhancing' and 'conserving' options and features in good condition, on the one hand, and 'neutral' and 'detracting' options and features in fair or poor condition, also tends to hold true.

Analysis by the key landscape characteristics of the survey squares

- 3.83 During the Rapid Survey, the surveyor noted the key landscape characteristics of the survey square. These relate to the categories of field boundaries, field scale, land cover, semi-natural habitats and the historic environment. The surveyor could select two options for each of the above categories from a choice of responses (see **Appendix 2**).
- 3.84 As part of the analysis of the results, we examined whether the presence of certain key landscape characteristics within a survey square could have an influence on the effect of ES on landscape character and quality. The data collected did not however result in any notable relationship although it could prove useful contextual information.
- 3.85 Whilst the information collected during this part of the survey does not contribute directly to the Rapid Survey analysis, it provides baseline information on landscape character which could potentially be used to inform future studies exploring landscape change within the squares (see further under Recommendations from para 2.8)

Exploring any additional landscape effects delivered through co-located and adjacent options

- 3.86 This part of the analysis examines whether implementing options together on the same landscape feature or field ('co-located'), or adjacent to each other, results in an increased landscape effect – as opposed to options applied on their own. Examples are shown at **Photos 31, 32 and 33**.

Co-located options

- 3.87 The survey data showed that a small set of ES options were more likely to be co-located with others. These were:
- Mixed stocking (H/E/OK5)
 - Maintenance/restoration of species-rich, semi-natural grassland (HK6/HK7)
 - Management of archaeological features on grassland (ED5/HD5)
 - Permanent grassland with low/very low inputs (H/E/OK2, H/E/OK3, E/OL2 and E/OL3)
 - Maintenance/restoration/creation of wet grassland for wintering waders and wildfowl (HK10/HK12/HK13)
 - Maintenance/restoration of rough grazing for birds (HL7/HL8)
 - Cattle grazing on upland grassland and moorland (UL18/UOL18)
- 3.88 An analysis of the data found that the samples size of co-located options was generally too small to draw any firm conclusions. Several options did show differences in their effects on the landscape whether they were co-located or implemented individually, however this may be dependent on which other option(s) they were co-located with and the condition of the underlying landscape feature.
- 3.89 The Rapid Survey found that options were more likely to have a 'conserving' effect (and less likely to have a 'maintaining' effect) when co-located than when applied on their own. For example, option EK2: Permanent grassland with low inputs was having a 'conserving' effect on landscape character 76% of the time when implemented on its own; increasing to 89% when co-located. A similar pattern was seen for another grassland option (HK6: Maintenance of species-rich semi-natural grassland), which was judged as having a 'conserving' effect 69% of the time when implemented a single option, rising to 86% when co-located. Option HK10: Maintenance of wet grassland for wintering waders and wildfowl was often co-located with creation/restoration options (e.g. HK17: Creation of grassland for target features), resulting in an 'enhancing' landscape effect, rather than the 'conserving' or 'maintaining' effect observed when it was applied as a single option.
- 3.90 This trend is not reflected across all options, however. Option HK3: Permanent grassland with very low inputs (which is similar to EK2 mentioned in the paragraph above) was found more likely

to be 'conserving' landscape character when located on its own (83%) than when co-located (64%). The exact reasons for these trends are not apparent, however, as the sample size does not result in strong enough patterns to allow definitive conclusions to be reached. Therefore these results need to be treated with caution.

Adjacent options

- 3.91 For each survey square, the surveyor had an opportunity to record any good examples of options located adjacent to each other that were having a combined effect on landscape character. This combined effect could be classified as either positive or negative. An example of this observed during the Rapid Survey are hedgerows under option adjacent to buffer strips, collectively creating a naturalistic edge to a field, reinforcing field patterns in the wider landscape, and enhancing the longevity of the traditional boundary feature (i.e. from the buffer strip protecting the hedge from field management operations). Stone walls found adjacent to upland moorland habitats also combined to create a characteristic upland landscape. Over the three years, a total of 129 squares were highlighted as having good examples of adjacent options producing a combined landscape effect. **Photos 31, 32 and 33** illustrate some positive incidences.

Photos 31 and 32: Examples of adjacent and co-located options working together to strengthen landscape character



Photo 31 shows a floristically enhanced grass buffer strip (option HE10) located adjacent to a hedge managed under option EB2 – collectively helping to reinforce field patterns and create a naturalistic edge to an improved pastoral landscape. Photo 32 shows a ditch under option EB6, located adjacent to wet grassland habitats re-created under co-located options HQ8: Creation of fen, HQ12: Wetland grazing supplement, HK19: Raised water levels supplement and HR6: Supplement for small fields. The surveyor observed that this combination of co-located and adjacent options was 'enhancing' the traditional wetland character of the Somerset Levels landscape.

Photo 33: Example of adjacent options within ALT 5: Upland Fringe

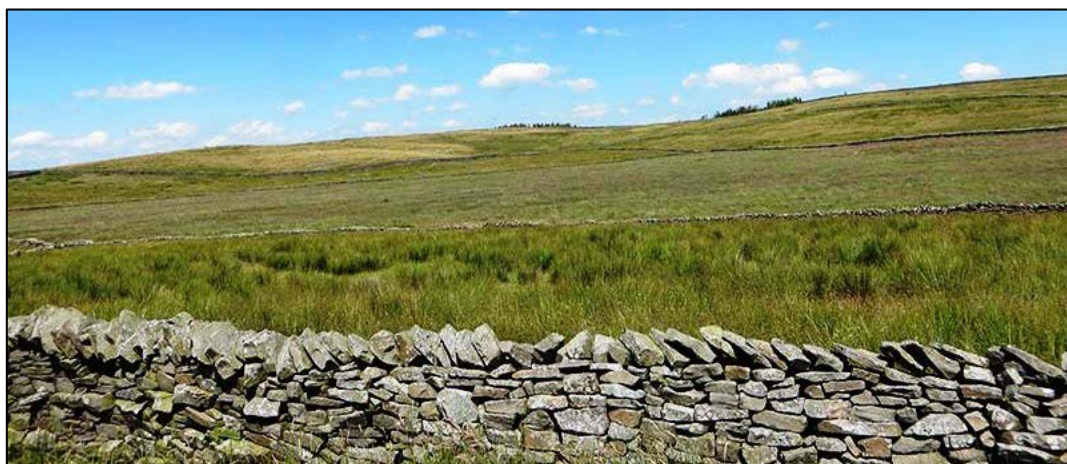


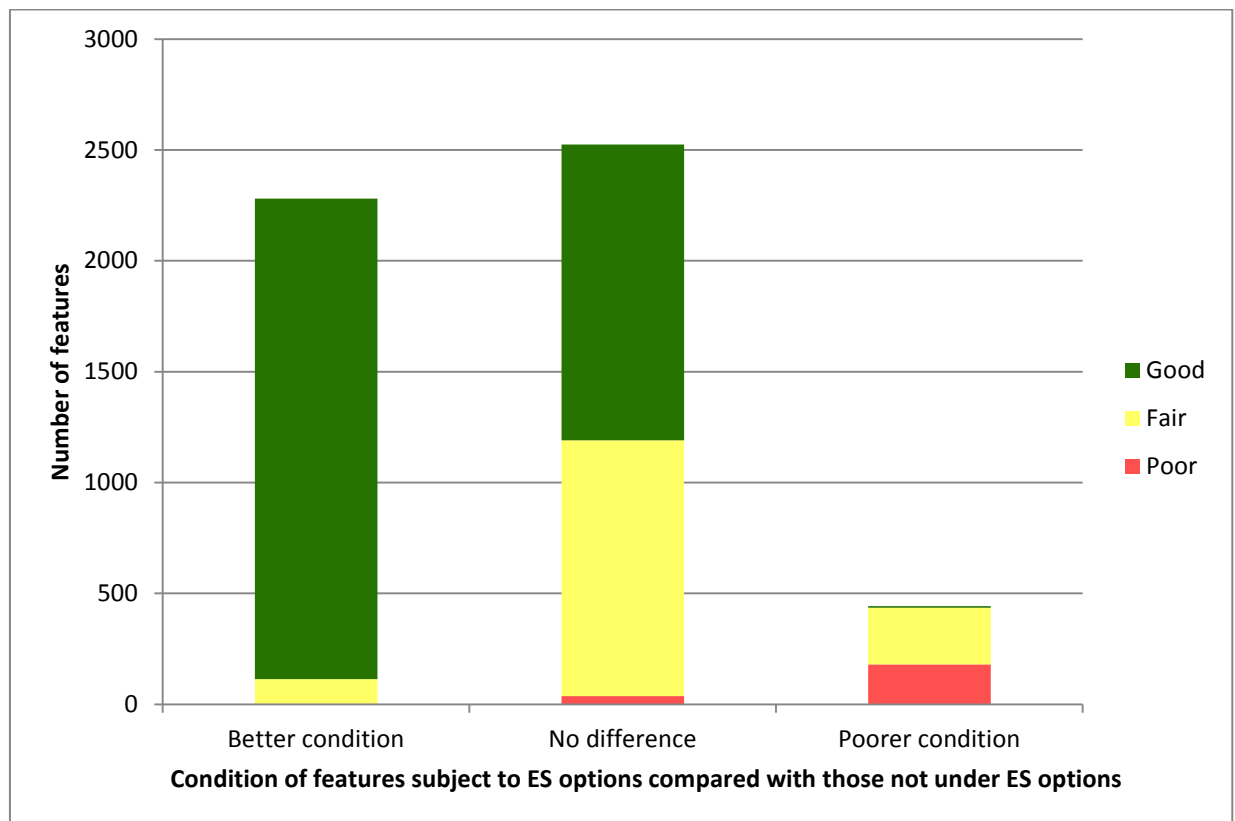
Photo 33 illustrates the adjacent options EB11: Stone wall protection and maintenance and HL7: Maintenance of rough grazing for birds which were noted as 'conserving' the distinctive upland landscape character.

How do features/landscapes managed under Environmental Stewardship compare to those outside of the scheme?

Features under option versus equivalent features outside Environmental Stewardship

- 3.92 During the field survey, the surveyor was required to answer the question: *'What is the condition of the feature compared with similar features not under ES?'* for each of the individual features under option.
- 3.93 This part of the analysis was conducted on 5,247 features in the landscape. However as the surveyors were only able to answer this question if they could see similar features within the survey square which were not under ES, this often resulted in 'unable to comment' responses, which have therefore been excluded from the analysis shown in **Figure 3.9**.

Figure 3.9: The condition of features under ES and how they compare to similar features not under option



- 3.94 **Figure 3.9** shows that for 49% of the features assessed there was no discernible difference between the condition of those under an ES option and those not under option. However, 43% of features were found to be in better condition whilst only 8% were in poorer condition. These findings do need to be treated with caution however, as they are comparing features on the same ES agreement holding, and therefore the farmer is unlikely to significantly change his/her management practices (e.g. all hedgerows are likely to be managed using the same techniques and on the same cutting cycle regardless of whether they are – individually - under option).
- 3.95 The results also show that the majority of features assessed as in good condition were also considered to be in better condition than similar features in the survey square (whilst the surveys also revealed that a significant number of 'good' ES features were no different in terms of their condition to equivalent features not under option).
- 3.96 Where features under option were assessed as being in poorer condition than similar features outside of ES, they were nearly always assessed as being in fair or poor condition themselves.

- 3.97 These results provide good evidence that ES is having a positive effect on the condition of landscape features, reinforcing the earlier findings on landscape quality (para. 3.75). The nature of this relationship is discussed in the conclusions in Chapter 2.

The landscape condition of the survey square (under ES) relative to the surrounding landscape

- 3.98 The Rapid Survey also included a question on comparing the condition of the landscape within the survey square to that of the surrounding landscape – again to explore how the landscape quality and condition of ES-managed landscapes compares to those outside the scheme. However, in most instances it was not possible for the surveyors to make a reliable judgement as the ES holding data for the landscapes surrounding the survey squares was not available at the time of survey.

4 Survey sampling methodology

- 4.1 This is the first of two chapters describing the methodology adopted for the Rapid Survey. It focuses on the selection of the survey areas, while Chapter 5 describes how data was collected during the field survey. The method remained largely unchanged over the three year survey period, but where updates were made in 2015, these are explained under separate headings. No changes were made for the 2016 survey season.
- 4.2 As noted earlier (para 1.4), one of the recommendations of the earlier contract BD5303, which surveyed a relatively small sample of 75 survey squares in 18 National Character Areas (NCAs), was that a simplified or “Rapid Survey” should be undertaken so that a larger sample of areas could be monitored, providing more geographically representative results across the majority of NCAs. The BD5303 report proposed a methodology for this approach, a copy of which is provided in **Appendix 6**.
- 4.3 This chapter describes the steps that were followed to implement this methodology in the 2014 and 2015 Rapid Survey years. In 2014, a total of 300 individual sites (each being a one kilometre square), grouped in 60 clusters were selected for survey. In 2015, 250 squares were selected (grouped into 50 clusters). Fifty squares were surveyed in 2016, bringing the total sample size over three years to 120 clusters and 600 survey squares (although as noted in the results, the grand total was 596 squares due to access restrictions affecting four squares).

2014 sampling methodology

- 4.4 The sampling approach developed in BD5303 relied on a nested hierarchy of landscape areas starting with Agricultural Landscape Types (ALTs)¹⁶, National Character Areas (NCAs), the survey clusters (termed ‘study areas’ in BD5303) and the individual 1km² survey squares.
- 4.5 A sequential approach involving four main Stages was followed, with the Stages being broken down in to a number of Steps (**Table 4.1**). These Stages and Steps were agreed with the Natural England Steering Group at a meeting on 17 January 2014. The key aim was to ensure that a balanced survey sample was achieved, considering in particular how the uptake of ES is distributed across the different Agricultural Landscape Types (ALTs). The six ALTs found in England are described in **Appendix 1** for context.

Table 4.1: Summary of sampling methodology to define survey squares in 2014

A. Apportionment of square clusters by ALT	1: Apportionment based on ES uptake by ALT 2: Apportionment based on ES uptake in ALTs with reduced uptake in the Uplands (as explained at para. 4.9) 3: Fixed apportionment of 10% for Uplands and proportional representation of other ALTs based on uptake 4: Fixed apportionment of 4 clusters for Uplands and proportional representation of other ALTs based on uptake with an extra two allocated to ALT 3
B. Selecting specific square clusters	1: Selecting an ALT 2: Removing non-target areas 3: Highlighting target areas 4: Focusing in on Target Landscape Feature Groups
C. Selecting survey	1: Selecting an ALT 2: Square cluster selection within one part of the ALT

¹⁶ The Agricultural Landscape Types (ALTs) are made of groupings of NCAs that share similar patterns of agricultural land use and management. They were defined in research for Defra by Swanwick C, Hanley N and Termansen M (2007) *Scoping Study on Agricultural Landscape Valuation* and have contributed to the sampling approach for a variety of environmental monitoring studies in England.

squares	3: Placing the survey squares within the square cluster 4: Refining individual square locations based on target ES options 5: Correlation with ES agreements and potential survey transects
D. Obtaining ES agreement documentation	1: Liaison with Natural England over the ES agreement documents available for each square

4.6 These Stages and Steps form the structure of headings in the remainder of this chapter.

Stage A: Apportionment of square clusters by ALT

Step 1: Apportionment based on ES uptake by ALT

4.7 This step considered both area and length-based ES uptake in all Agricultural Landscape Types (ALTs). 'Option uptake' for the purposes of this study is considered to be all uptake that was considered under the 46 objectives identified through the NCA Indicators and Thresholds contract undertaken for Natural England in 2013. **Table 4.2** sets out the proportion of uptake per ALT and the resulting apportionment of survey square clusters.

Table 4.2: Cluster apportionment based on ES uptake in all ALTs

ALT No.	ALT Name	Area option uptake (ha)	Linear option uptake (km)	Proportion of area uptake ha	Proportion of linear uptake km	Average % (ha/km)	No. of square clusters
1	Chalk and Limestone Mixed	363,800	41,410	13%	20%	16%	10
2	Eastern Arable	177,105	49,136	6%	24%	15%	9
3	SE Mixed (Wooded)	145,225	9,670	5%	5%	5%	3
4	Western mixed	321,573	46,728	11%	22%	17%	10
5	Upland Fringe	365,601	30,178	13%	14%	14%	8
6	Upland	1,431,069	31,269	51%	15%	33%	20
	Total	2,804,374	208,390	100%	100%	100%	60

4.8 As can be seen in Table 4.2 above, the amount of uptake in the Uplands ALT is resulting in a high apportionment of square clusters to ALT 6: Upland.

Step 2: Apportionment based on ES uptake in ALTs with reduced uptake in the Uplands

4.9 As much of the Upland ALT is assumed to be actively managed or is designated as SSSI, Step 2 considered an alternative method of apportionment where the Uplands uptake was reduced by excluding all ES options that are targeting unenclosed upland landscapes.

4.10 The ES options selected are set out in **Table 4.3**. These are all area-based options.

Table 4.3: Options considered for exclusion from ALT 6 uptake

Scheme	Option code	Option name	Category	Sub category
HLS	HL7	Maintenance of rough grazing for birds	Grassland	Upland semi-natural/rough pasture management or restoration
HLS	HL8	Restoration of rough grazing for birds	Grassland	Upland semi-natural/rough pasture management or restoration
UHLS	UHL23	Management of upland grassland for birds	Grassland	Upland semi-natural/rough pasture management or restoration
UELS	UL23	Management of upland grassland for birds	Grassland	Upland semi-natural/rough pasture management or restoration
UOHLs	UOHL23	Management of upland grassland for birds	Grassland	Upland semi-natural/rough pasture management or restoration

Scheme	Option code	Option name	Category	Sub category
UOELS	UOL23	Management of upland grassland for birds	Grassland	Upland semi-natural/rough pasture management or restoration
UOELS	UOL17	No supplementary feeding on moorland	Moorland	Maintenance & Restoration of moorland
HLS	HL10	Restoration of moorland	Moorland	Maintenance & Restoration of moorland
HLS	HL11	Creation of upland heathland	Moorland	Creation of upland heathland
HLS	HL13	Moorland re-wetting supplement	Supplements	L13. Moorland re-wetting supplement
EHLS	HL6	Unenclosed moorland rough grazing	Moorland	Maintenance & Restoration of moorland
HLS	HL9	Maintenance of moorland	Moorland	Maintenance & Restoration of moorland
ELS	EL6	Unenclosed moorland rough grazing	Moorland	Maintenance & Restoration of moorland
UHLS	UHL17	No supplementary feeding on moorland	Moorland	Maintenance & Restoration of moorland
UHLS	UHL18	Cattle grazing on upland grassland and moorland	Moorland	Cattle grazing on moorland
UELS	UL17	No supplementary feeding on moorland	Moorland	Maintenance & Restoration of moorland
UELS	UL18	Cattle grazing on upland grassland and moorland	Moorland	Cattle grazing on moorland
UOHLs	UOHL17	No supplementary feeding on moorland	Moorland	Maintenance & Restoration of moorland
UOHLs	UOHL18	Cattle grazing on upland grassland and moorland	Moorland	Cattle grazing on moorland
UOELS	UOL18	Cattle grazing on upland grassland and moorland	Moorland	Cattle grazing on moorland

4.11 The total uptake for ALT 6 (Upland) is reduced by 1,016,429 ha if all of the above options are excluded leaving a total of 414,640 ha in ALT 6. **Table 4.4** shows the proportional uptake of ES by ALT if the uptake figure for ALT 6 is reduced to the lower figure of 414,640ha. The number of square clusters is still proportionally higher at this stage.

Table 4.4: Cluster apportionment based on revised uptake in ALT 6

ALT ID	ALT Name	Revised uptake ha	All uptake km	Revised proportion of overall uptake ha	Proportion of overall uptake km	Average % (ha/km)	Number of square clusters
1	Chalk and Limestone Mixed	363,800	41,410	20%	20%	20%	12
2	Eastern Arable	177,105	49,136	10%	24%	17%	10
3	SE Mixed (Wooded)	145,225	9,670	8%	5%	6%	4
4	Western mixed	321,573	46,728	18%	22%	20%	12
5	Upland Fringe	365,601	30,178	20%	14%	17%	10
6	Upland	414,640	31,269	23%	15%	19%	11
	Total	1,787,945	208,390	100%	100%	100%	60

Step 3: Fixed apportionment of 10% for Uplands and proportional representation of other ALTs based on uptake

- 4.12 Steps 1 and 2 do not steer the clusters away from the Upland ALT sufficiently, and therefore Step 3 considered a fixed apportionment of 10% of clusters to ALT 6 (6 clusters) with proportional representation across the other ALTs based on the total ES uptake in ALTs 1-5. **Table 4.5** shows the apportionment of square clusters using this method of apportionment.

Table 4.5: Apportionment of clusters with fixed apportionment of 10% to the Uplands

ALT ID	ALT Name	All uptake ha	All uptake km	Proportion of ALT 1-5 uptake ha	Proportion of ALT 1-5 uptake km	Average % (ha/km)	Number of square clusters
1	Chalk and Limestone Mixed	363,800	41,410	26%	23%	25%	14
2	Eastern Arable	177,105	49,136	13%	28%	20%	11
3	SE Mixed (Wooded)	145,225	9,670	11%	5%	8%	4
4	Western Mixed	321,573	46,728	23%	26%	25%	13
5	Upland Fringe	365,601	30,178	27%	17%	22%	12
6	Upland	N/A	N/A	N/A	N/A	N/A	6
Total ALTs 1-5		1,373,304	177,121			100%	60

Step 4: Fixed apportionment of 4 clusters for Uplands and proportional representation of other ALTs based on uptake with an extra two allocated to ALT 3

- 4.13 Under all steps set out above, the low levels of uptake in ALT 3: SE Mixed (Wooded) meant that very few square clusters were being apportioned to this ALT. Under this next step, we considered using Step 3 to generate the basic apportionment and then manually reallocating two survey clusters from the Upland to ALT 3. The resultant apportionment is shown in **Table 4.6**. In contrast, the distribution clusters in the BD5303 survey had been equal across all ALTs, with three clusters in each of the six ALTs.

Table 4.6: Step 3 apportionment following adjustment in ALT 3

ALT ID	ALT Name	Number of square clusters
1	Chalk and Limestone Mixed	14
2	Eastern Arable	11
3	SE Mixed (Wooded)	6
4	Western mixed	13
5	Upland Fringe	12
6	Upland	4
TOTAL		60

Conclusion on agreed sampling approach

- 4.14 After sharing these methodological steps with the Steering Group, it was agreed collectively that the square selection produced by Step 3 (and set out in Table 4.6 above) provided a fair means of apportioning survey clusters across all ALTs whilst ensuring that the survey is not overly focussed on the Uplands ALT. It was also agreed that the four square clusters allocated to ALT 3 (SE Mixed (Wooded)) would be sufficient to reflect both ES uptake levels, and accounting for previous survey effort through the BD5303 contract which obtained a significant amount of information for this ALT.

Stage B: Selecting specific square clusters

- 4.15 The identification of square clusters, following the Step 3 approach described above, was undertaken in GIS. A number of contextual data layers were collated into a single map package in order to support the selection process. A summary of the four key steps undertaken through GIS analysis is provided below. These steps will assist in repeating the process for future survey years.

Step 1: Selecting an ALT

- 4.16 The assessor turns on the ALT boundaries and filters out all ALTs with the exception of the ALT of interest. All other ALTs will appear to be greyed out. NCA boundaries should be turned on for reference purposes.

Step 2: Removing non-target areas

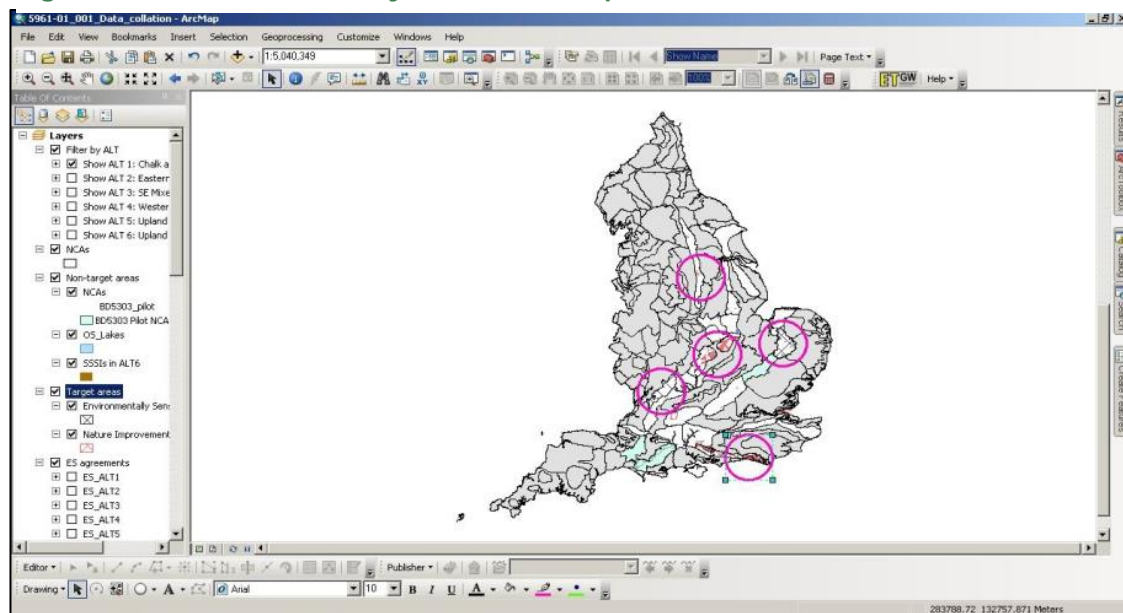
- 4.17 For the 2014 survey, a number of locations were able to be immediately excluded from the areas of search based on the key parameters agreed with the Steering Group at the outset of the contract. The following layers were able to be turned on in GIS in order to filter these areas out:

- BD5303 pilot NCAs
- Ordnance Survey Lakes (eliminating large waterbodies)
- Sites of Special Scientific Interest in the Uplands ALT (recognising that these locations are assumed to be carefully managed to meet statutory requirements, and therefore were less of a priority for this study).

Step 3: Highlighting target areas

- 4.18 The following types of locations were identified with the Steering Group as areas of interest to guide the selection of survey square clusters (rather than as a criteria for subsequent data analysis):
- River valleys – no GIS layer available, but OS basemapping can be turned on to identify these
 - Coast – no specific GIS layer, but areas on the coast are easily identifiable
 - Former Environmentally Sensitive Areas (ESA)
 - Nature Improvement Areas (NIA)
- 4.19 **Figure 4.1** shows the GIS project after undertaking Steps 1-3 as described above. The pink circles show areas within former ESAs or NIAs that were considered when identifying the square clusters¹⁷.

Figure 4.1: Screenshot of layers used in Steps 1-3



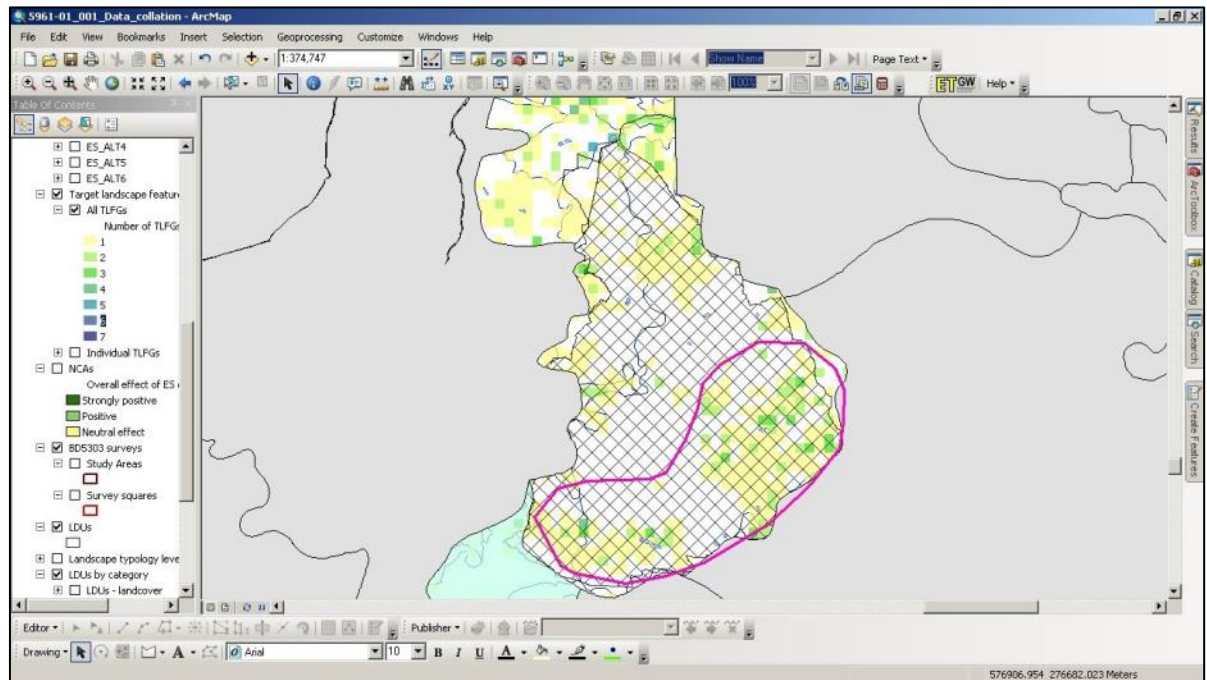
¹⁷ The areas circled in pink on Figure 2.2 are only examples used to demonstrate the approach.

Step 4: Focusing in on Target Landscape Feature Groups

- 4.20 As set out in the key parameters agreed with the Steering Group, seven Target Landscape Feature Groups (TLFGs) were identified as being of particular interest for selecting areas for the 2014 survey (again rather than as criteria for subsequent data analysis). These were:
- 1 Single trees (options identified under Objectives A5-8 inclusive in the NCA Indicators and Thresholds database)
 - 2 Boundaries (options identified under Objectives B1-5 inclusive in the NCA Indicators and Thresholds database)
 - 3 Buffer strips and blocks (options identified under Objective B6 in the NCA Indicators and Thresholds database). In addition, the following option bundles are included:
 - Narrow buffer strips in grassland
 - Wider buffer strips in grassland
 - Conservation headlands
 - Bird seed mixes
 - Nectar sources
 - Fallow plots and margins
- Permanent pasture (options identified under Objectives C2 and C5 in the NCA Indicators and Thresholds database)
 - Wet grassland (including rush pasture) (options identified under Objective C3 in the NCA Indicators and Thresholds database)
 - Archaeology on pasture (options identified under Objective E3 in the NCA Indicators and Thresholds database)
 - Archaeology on arable (options identified under Objective E1 in the NCA Indicators and Thresholds database)
- 4.21 A GIS point dataset of option uptake was downloaded from the Environment Agency Geostore website. This dataset maps all option uptake as at 1 December 2013 as point locations. Data for each TLFG was collected as a point layer and converted to a 1km grid showing presence or absence in each grid cell¹⁸. This made the data more manageable in terms of loading times and easier to visually assess.
- 4.22 A layer for each TLFG was included in the GIS project. In order to identify 'hotspots' of ES option uptake related to more than one of the TLFGs, all seven GIS layers were combined in GIS in order to create a composite layer showing, for each 1km grid cell, how many TLFGs are found there. The resultant layer shows grid cells with scores from 1 to 7, where a score of 1 means that uptake from one of the TLFGs only is found in that cell and a score of 7 means that all 7 TLFGs are found in that cell.
- 4.23 **Figure 4.2** shows a screenshot of the GIS project with the TLFG data turned on. Darker blues and greens mean a higher TLFG score. The area highlighted in pink will be of interest as it has a number of 1km grid cells within it that have a score greater than 1, meaning a likelihood of meeting more than one of the TLFG criteria.

¹⁸ The 1km grid cells are not intended to be used to identify the survey squares; they are merely a sensible unit for the purposes of converting point data to a grid.

Figure 4.2: Scored Target Landscape Feature Group (TLFG) layer

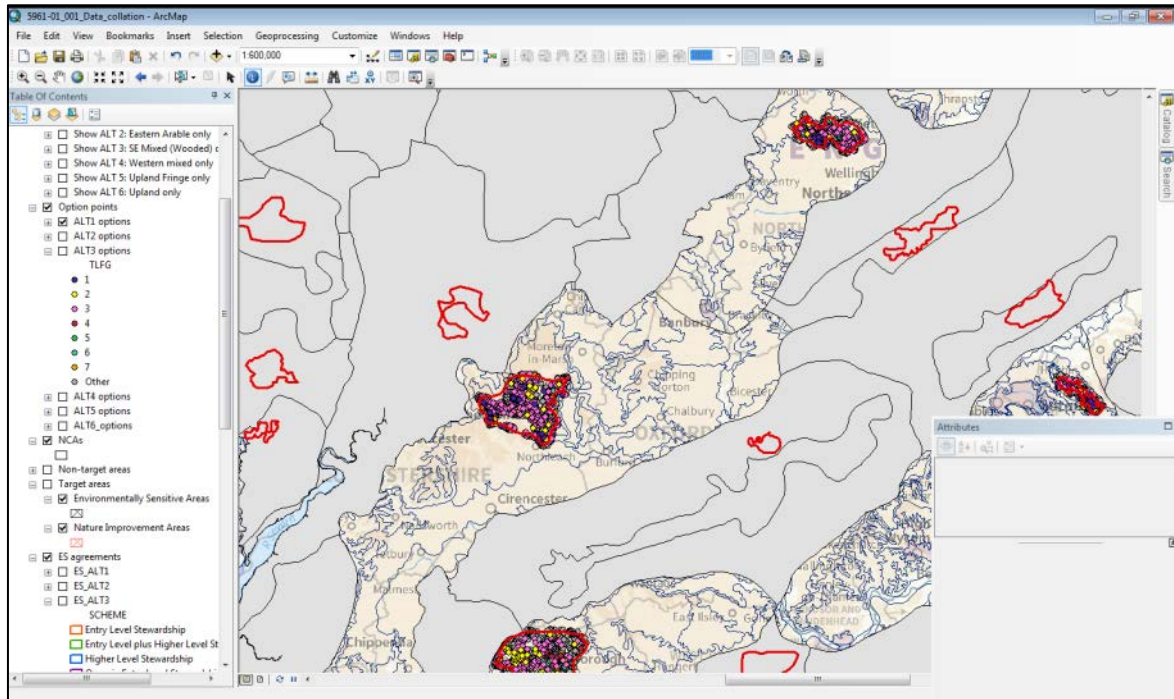


- 4.24 Landscape Description Units (LDUs) have been switched on in the example above as ideally a square cluster would fall within the boundary of one LDU where possible.
- 4.25 By using the information and approaches described in Steps 1-5 above, the selection of square clusters was achieved. Base mapping and other contextual layers such as NCA boundaries and ES agreement boundaries were also made available within the GIS project for context.

Stage C: Selecting survey squares

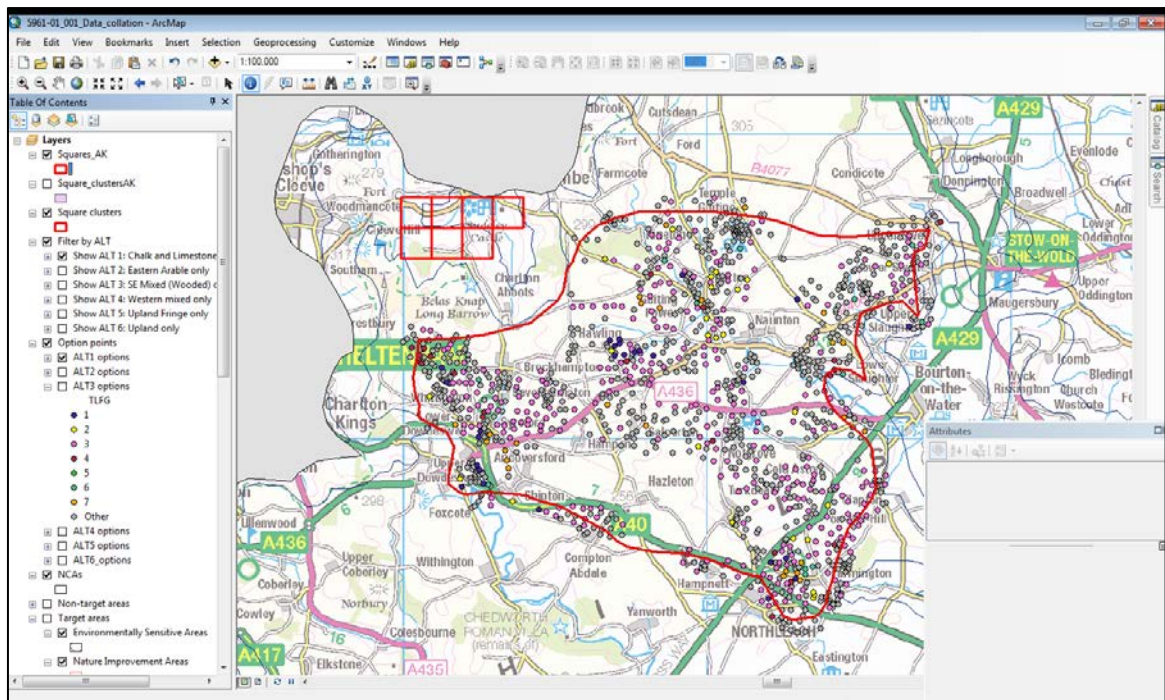
- 4.26 Following the identification of the square clusters described above, the layers of spatial information available in the GIS project were again queried to identify individual 1km survey squares.
- 4.27 A total of 420 squares were selected for the 2014 Survey at this stage – more than the 300 sample size needed to account for incomplete agreement documentation (following experience from the BD5303 contract). The three key criteria used to inform square selection were:
 - Presence within one ES agreement holding (a maximum of two, if the other criteria are met).
 - Good coverage of target ES options/landscape features (as discussed in paragraph 4.17).
 - Square crossed by a public right of way, minor public highway or within land defined as Open Access – from which a sensible survey transect was able to be pre-defined.
- 4.28 Following an initial phase of square selection, it was apparent that in order to achieve the agreed targeting of options/landscape features a greater bias towards HLS agreements emerged. This issue was raised with Natural England and discussed via teleconference with members of the Steering Group. It was agreed that due to the focus on target landscape features/options in the sampling methodology that this would not be a major issue. Nevertheless, to create a more appropriate sample it was agreed that two squares covering ELS agreements per square cluster were to be identified, where possible.
- 4.29 The key steps followed in identifying 2014 survey squares are set out below (the coloured dots on each screen-shot represent the presence of target ES options):

Step 1: ALT selection (example showing is for ALT 1: Chalk and Limestone Mixed)



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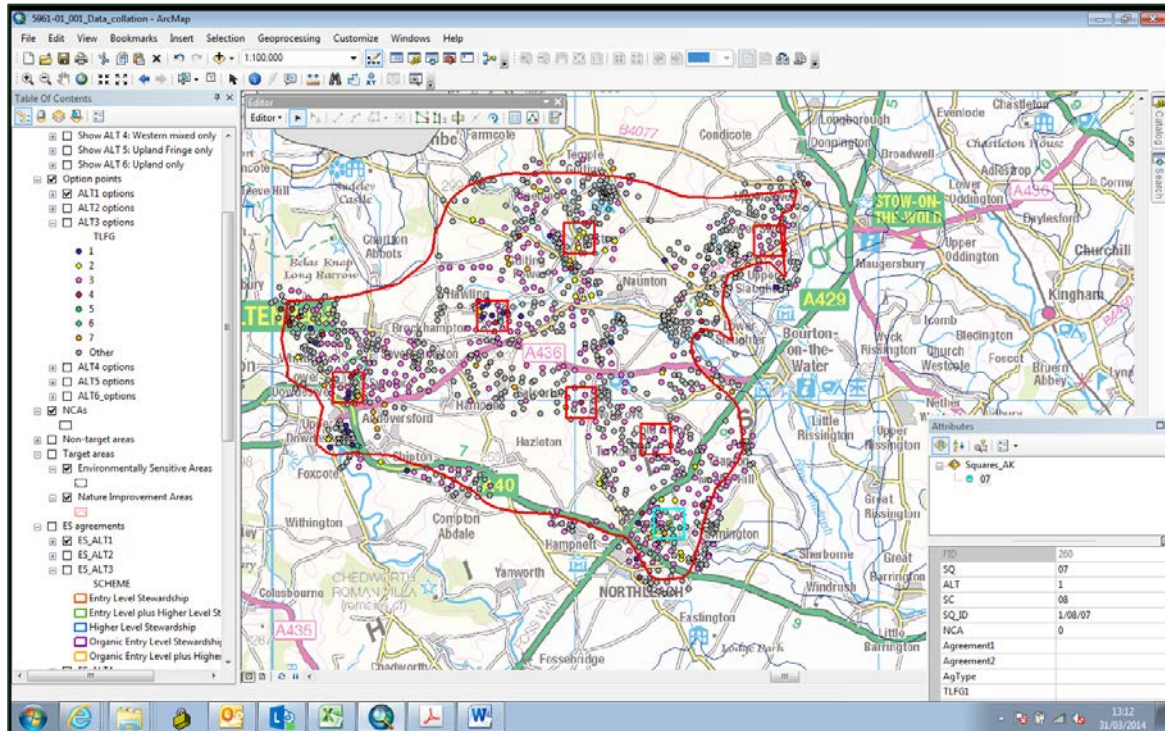
Step 2: Square cluster selection within one part of the ALT



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4.30 The screen shot above shows the red 1km survey squares ready to be placed into their chosen locations within the square cluster.

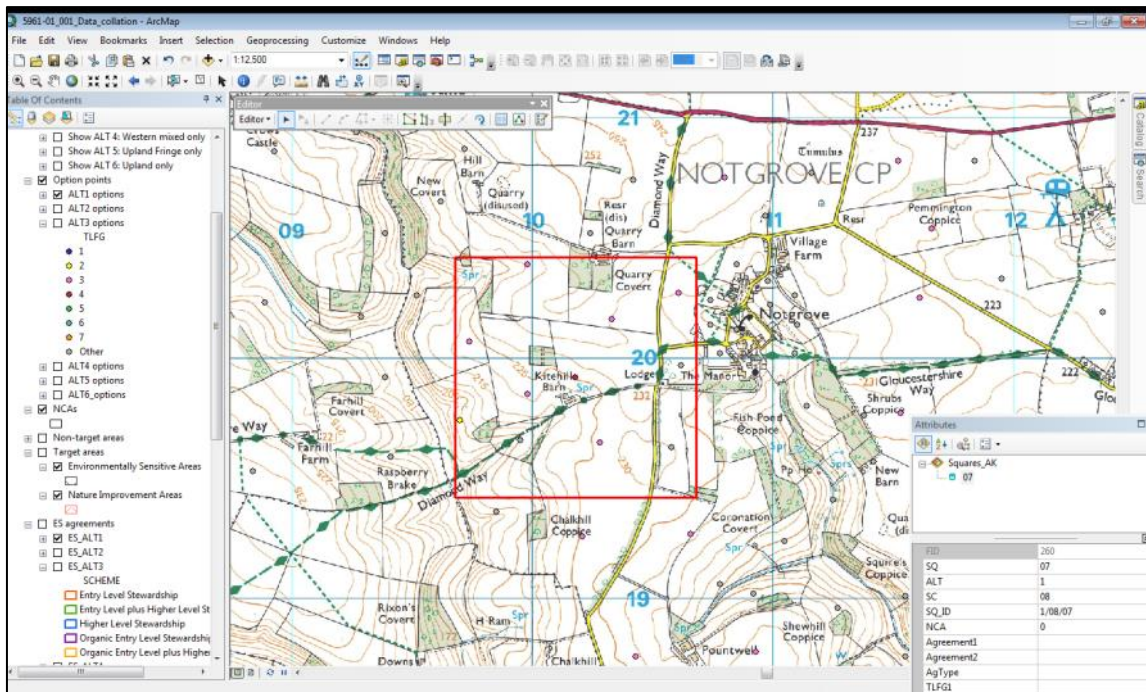
Step 3: Placing the survey squares within the square cluster



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- 4.31 The survey squares were moved to get a good geographical spread within the square clusters, avoiding main roads and built up areas.

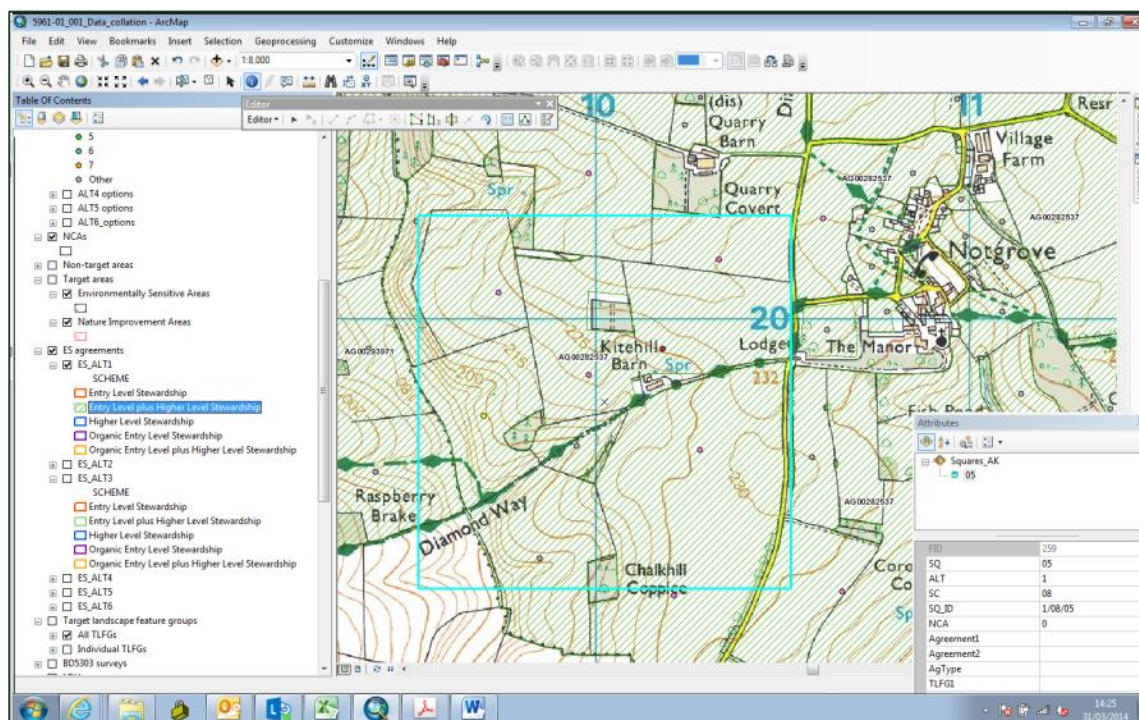
Step 4: Refining individual square locations based on target ES options



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- 4.32 Where possible, the survey squares were placed in locations where there was a concentration ES options relevant to the target landscape features established for this study.

Step 5: Correlation with ES agreements and potential survey transects



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4.33 The square locations were then further ‘tweaked’ to cover one ES agreement (where possible) and include a public right of way or minor public highway that could be used as the survey transect. Squares covering open access land were given a pre-defined survey transect identified prior to field survey.

Stage D: Obtaining relevant ES agreement documentation

4.34 As the survey squares (by ALT) were identified, a spreadsheet record was kept, assigning a unique reference code to each square to be used throughout the study. For each square, the reference number of the ES agreement holding was noted in the spreadsheet and sent to Natural England. Natural England then located the relevant ES agreement documentation and sent this to LUC via ‘Huddle’ (a file sharing website).

4.35 A breakdown of the number of survey squares selected by ALT in 2014 is included in **Table 4.7** below:

Table 4.7: Number of square clusters and survey squares by ALT

ALT	Number of square clusters	Total number of survey squares
1: Chalk and Limestone Mixed	14	98
2: Eastern Arable	11	77
3: SE Mixed (Wooded)	4	28
4: Western Mixed	13	91
5: Upland Fringe	12	84
6: Upland	6	42
TOTAL	60	420 (including ‘back up’ squares)

4.36 The final squares selected for the 2014 survey were prioritised as follows (in order of priority):

- Presence of complete and up-to-date ES agreement information (the key reason for selecting 420 squares to choose from).
- Squares with ELS agreements (to address the bias towards HLS in the sample, as explained in paragraph 4.28).
- Squares including potential transects formed from public rights of way or across Open Access Land, as opposed to minor roads (for safety reasons, and to avoid views into the square potentially being blocked by high hedges enclosing roads).
- Where collectively, squares selected to form a cluster are sited as close to each other as possible, to allow for efficiency in the survey process (i.e. avoiding the need to drive between squares wherever possible).

2015 sampling methodology

4.37 The 2015 Rapid Survey followed the same key steps developed for the first survey in 2014, with key differences outlined below.

Stage A: Apportionment of square clusters by ALT

- 4.38 The 2015 survey was based on a total of 50 square clusters, comprising 250 individual survey squares. A more pragmatic approach was used when deciding the square cluster apportionment for the 2015 survey, both to take account of a later field survey season than 2014 (September to November, rather than May to September), and to target landscapes with lesser coverage than in the previous year. It also took account of recommendations for future survey that were put forward following the 2014 work (see para 2.13).
- 4.39 This resulted in an increased targeting of ALT 3: SE Mixed (Wooded) and ALT 6: Upland in order to account for the smaller sample sizes collected from these ALTs in the 2014 survey. Sampling was also steered away from ALT 2: Eastern Arable, as it was anticipated that landscape features under ES within this ALT would be most likely to be affected by the change in survey season for 2015 (e.g. arable-related features, such as buffer strips or crops to encourage farmland birds, which might not be present after harvesting, or flowering plants no longer visible).
- 4.40 The final apportionment of square clusters by ALT is presented in **Table 4.8** below, showing a more even spread across ALTs and reduced sampling in ALT 2: Eastern Arable.

Table 4.8: Square cluster apportionment for 2015

ALT ID	ALT Name	Number of square clusters
1	Chalk and Limestone Mixed	9
2	Eastern Arable	6
3	SE Mixed (Wooded)	9
4	Western mixed	8
5	Upland Fringe	8
6	Upland	10
TOTAL		50

Stage B: Selecting specific square clusters for 2015

- 4.41 The following sampling principles for identifying specific square clusters for 2015 were agreed with Natural England:
- The removal of the non-target area of SSSI land within ALT 6: Upland, to free up more areas of this ALT for survey.

- The removal of Environmentally Sensitive Areas (ESA) from target areas – both because a significant time has elapsed since land was managed under the ESA scheme, and to free up more areas of ALT 6: Upland for survey.
- Continued bias towards agreements including HLS options, as these are the agreement types the new Countryside Stewardship scheme will be targeting.
- Increased sampling along the coast, ideally using Long Distance Paths as transects (which will become the All England Coast Path) as survey transects.
- Inclusion of clusters within the NALs (New Agricultural Landscapes)¹⁹ to contribute to the long term monitoring of landscape change of these seven landscapes, which have been surveyed periodically since 1972 (and which were part of the survey design in the BD5303 study).
- Increased sampling in river valleys.
- A steer away from TLFG 3 (Buffer strips and blocks) as it was thought that features within this TLFG are more likely to be affected by the late survey season of 2015.
- Inclusion of at least one cluster within the following Nature Improvement Areas (NIAs):
 - Morecambe Bay Limestones and Wetlands: both due to its floodplain/coastal nature and to provide potential links to other Natural England research on local landscape values²⁰ (one cluster was surveyed in 2015).
 - Birmingham and the Black Country – as an example of an urban edge landscape. Unfortunately an absence of suitable land under ES meant that it was not possible to place a survey cluster within this NIA.

4.42 The location of square clusters selected for the Rapid Surveys is shown in **Map 3.1 (page 16)**

Stage C: Selecting survey squares

4.43 The method of selecting survey squares remained largely unchanged for 2015, with the primary difference being the number of squares selected (250 as opposed to 300). A total of 350 squares were selected, the extra 100 being two additional ‘back-up’ squares for each cluster to account for the potential for missing ES documentation or the square/transect being inaccessible at the point of field survey.

Stage D: Obtaining relevant ES agreement documentation

4.44 The methodology for obtaining of the relevant ES documentation was unchanged from 2014, with the documents exchanged between LUC and Natural England using ‘Huddle’.

4.45 A breakdown of the number of survey squares selected by ALT in 2015 is included in **Table 4.9** below:

Table 4.9: Number of square clusters and survey squares by ALT for 2015

ALT	Number of square clusters	Total number of survey squares
1: Chalk and Limestone Mixed	9	63
2: Eastern Arable	6	42
3: SE Mixed (Wooded)	9	63
4: Western Mixed	8	56
5: Upland Fringe	8	56

¹⁹ The New Agricultural Landscapes project has provided a unique insight into the impacts of farming methods and agricultural policies on England’s lowland landscapes over a third of a century. Seven study areas have been revisited at 11-year intervals since it was initiated by the Countryside Commission in 1972, most recently in 2005. The most recent project report, published in 2006, is available at <http://publications.naturalengland.org.uk/publication/51008>

²⁰ *Mapping Your Special Places* – see <http://web1.adas.co.uk/pgis/>

6: Upland	10	70
TOTAL	50	350 (including 'back-up' squares)

2016 sampling methodology

- 4.46 The sampling methodology for 2016 remained much the same as that of 2015, although the number of survey squares was considerably smaller at 50 squares. This decision was made to bring the total three-year sample up to a target of 600 squares (felt to be a nationally significant sample size) and to enable resources to be reallocated to surveys to feed into the long-running New Agricultural Landscapes (NAL) programme – see further below.
- 4.47 The sampling methodology for the 50 target squares in 2016 focused on NCAs which had not been surveyed during the 2014 and 2015 Rapid Surveys, as well as areas of unenclosed landscape – i.e. upland moorlands and lowland / coastal heathlands – landscapes that were less well represented in the two previous survey years.

Table 4.10: Number of square clusters and survey squares by ALT for 2016

ALT	Number of square clusters	Total number of survey squares
1: Chalk and Limestone Mixed	2	14
2: Eastern Arable	2	14
3: SE Mixed (Wooded)	1	7
4: Western Mixed	2	14
5: Upland Fringe	1	7
6: Upland	2	14
TOTAL	10	70 (including 'back-up' squares)

- 4.48 Over the 3 years, the Rapid Survey has included at least one survey cluster in 110 of the 159 National Character Areas (NCAs) of England.

The New Agricultural Landscapes (NAL) programme

- 4.49 2016 marked the latest 11-year cycle in the NAL programme which has been monitoring landscape change in agricultural landscapes since 1972. It was therefore felt that complementary surveys and analyses in the NALs would make a valued contribution to the wider suite of work on landscape monitoring provided by the Rapid Survey and its linked research projects (NALs, BD5303 and NCA Indicators and Thresholds). The results of the 2016 NAL surveys will be presented in a report in 2017.

5 The Rapid Survey methodology

- 5.1 This chapter sets out the methodology developed for the 2014 Rapid Survey, which was repeated (with some minor amendments/additions) for the 2015 and 2016 surveys. These changes are summarised at the end of this chapter.

2014 survey methodology

- 5.2 This section sets out the fieldwork methodology that was developed, tested and implemented in the summer of 2014. It is split into the following sections:

- Development of the GIS-based survey database
- Rapid field survey using GPS-enabled tablets
- Database back-up protocol and quality control
- Overall principles of ES option scoring

Development of the GIS-based survey database

- 5.3 Following receipt of all available ES documentation from Natural England and the prioritisation of squares for survey, a GIS-based survey platform was populated prior to survey. This comprised a GIS map platform with linked database, enabling rapid collection of data on site using GPS-enabled tablets.
- 5.4 ES options maps were geo-referenced in GIS and all option information captured as a point file. The individual points represent the landscape features under ES option(s). It is worth reiterating that all features (linear (e.g. hedgerows) /areas (e.g. whole fields)/points (e.g. trees)) were captured by LUC as points in GIS.
- 5.5 Against each feature point, all option information contained on the ES maps was captured as attributes in the GIS data. A series of blank attribute fields were added to the point file awaiting data entry in the field. In addition, each digital survey square had a series of attribute fields to be completed in the field – as described later in this chapter and set out in **Appendix 2**.
- 5.6 Once the point data for the ES options was captured in GIS, a GIS field survey project was created. This project included the following layers:
- OS base mapping at 1:25 000 scale
 - Survey squares
 - Survey transects
 - Feature points (for the ES options)
 - ES Agreement boundaries
- 5.7 The database lying behind the GIS project was carefully designed to allow targeted analysis of the information gathered for the 300 squares. Responding to the large sample size, the use of closed questions and pre-defined fields allowed for streamlined and targeted sets of analysis to take place following the completion of the survey. Therefore the use of open-ended questions and qualitative information was kept to a minimum. **Appendix 2** sets out the content of the field survey database held within the GIS project (including 2015 updates).

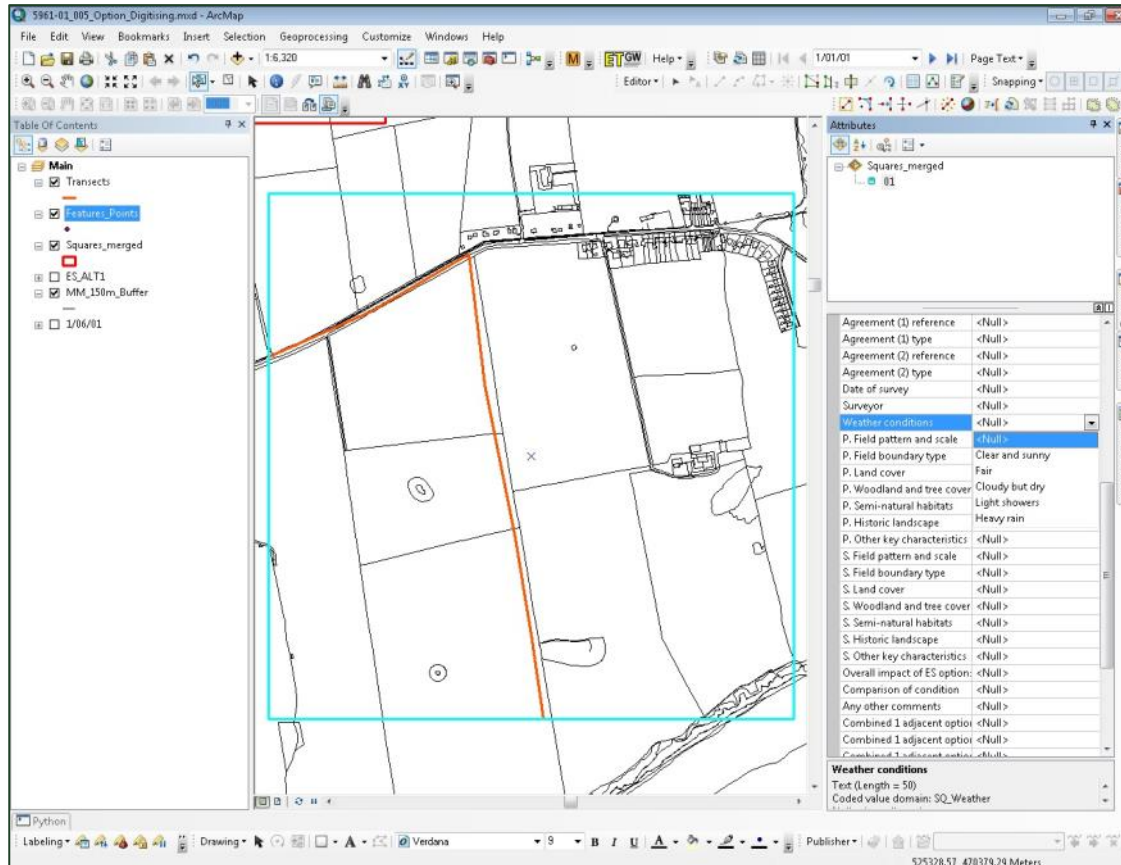
Rapid field survey using GPS-enabled tablets

- 5.8 The GIS project was loaded onto GPS-enabled tablets that were used by the surveyors in the field. The use of tablets to collect field survey data is the main element of the 'Rapid Survey' approach – removing the need for resource-intensive preparation of paper maps and the completion (and later input) of hand-written survey forms.
- 5.9 A key feature of the GIS project on the tablets is its map interface – allowing surveyors to both navigate from the tablet when on site, and fill in information by clicking on the square being surveyed, and the individual mapped features under option.
- 5.10 LUC's surveyors undertook an internal training day, visiting a cluster of five squares together in Devon on 23 May 2014. This enabled the team to test tablet functionality and apply a consistent approach to the 'scoring' of ES options observed in the survey squares. Key principles established to assure a consistent approach to option scoring are set out at the end of this chapter.
- 5.11 Following the training day, tweaks were made to the survey capture fields held in the GIS project. To further ensure consistency of the approach, the team's surveyors continued to visit survey squares together at the beginning/end of each survey week throughout the programme of fieldwork during the summer of 2014.
- 5.12 A further opportunity to fine-tune the survey capture approach was enabled through a day spent with Natural England in the Cotswolds (11 June 2014). Again, discussions to further improve the survey approach were taken on board and addressed in the design and content of the survey capture fields for future surveys. The approach was also demonstrated in the field to NE's contract manager – David Vose – on 12 August 2014 in Cumbria.
- 5.13 The following section sets out how the tablets were used in the field – both at the survey square level (1) and individual feature under option level (2).

1: Survey capture of information for the whole survey square

- 5.14 For each square, basic information was collected by surveyors and entered into the database held on the tablet. This was done by clicking on the square in GIS and bringing up an attribute table as a side panel. Here, basic details about the weather conditions, their name, date etc were entered using a series of dropdown lists and free text boxes. An example screenshot is shown at **Figure 5.1** below.
- 5.15 The surveyor walked along the survey transect and recorded further information about the landscape character of the square in the attribute table using drop-down menus. The content of the pre-defined drop-down menus for the square-level survey capture form is included in **Appendix 2**.

Figure 5.1: Screenshot of square-level survey capture form (recording weather conditions from a drop-down menu)

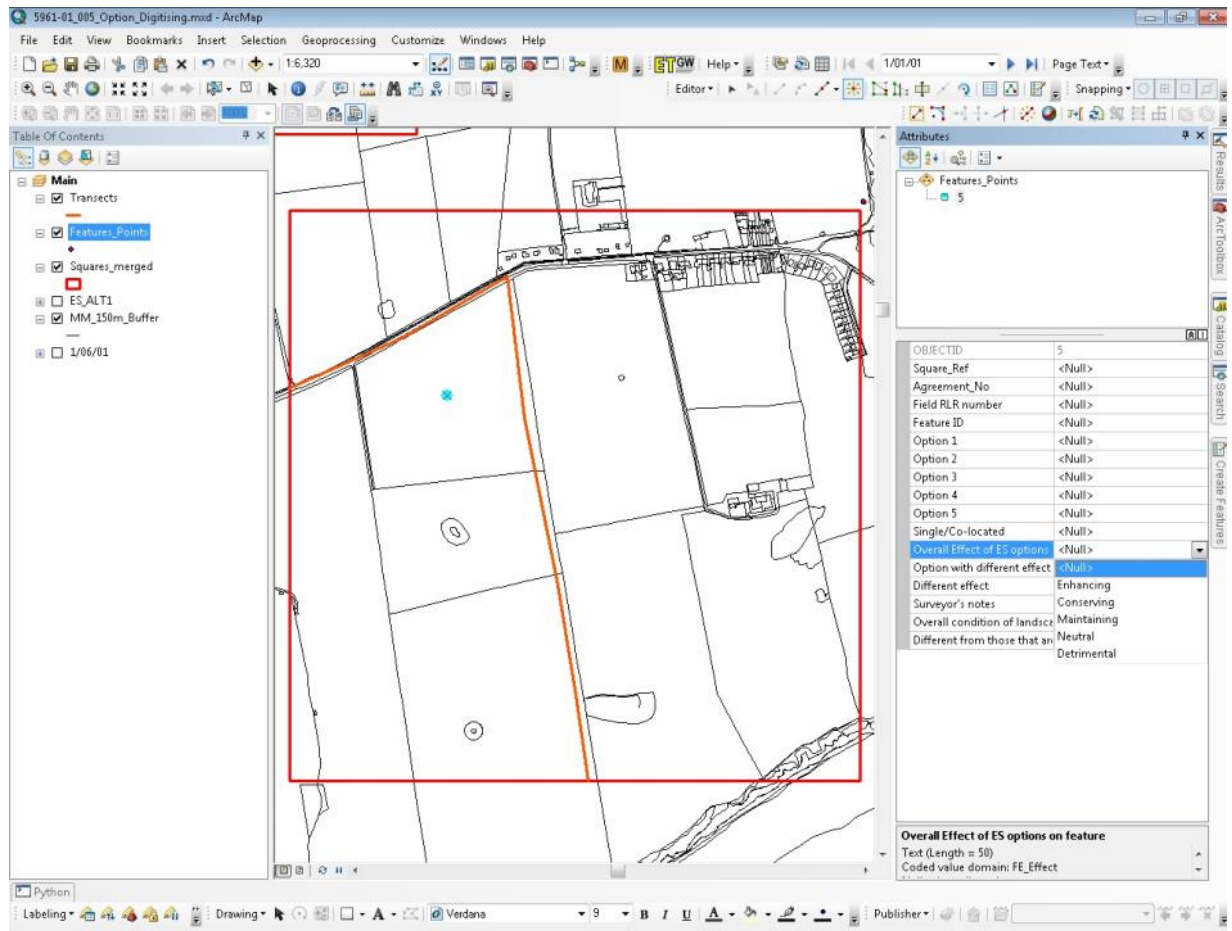


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2: Survey capture of information for features under ES option(s)

- 5.16 Once each surveyor completed the first panel of questions about overall square characteristics, they began the assessment of features under ES found within the square (and visible from the transect).
- 5.17 The tablet's GPS function enabled the surveyor to locate their exact point within the square, then allowing them to select features under ES options to survey by clicking on the relevant point showing on the map. This opened a new attribute table for completion (see example at **Figure 5.2**). Again, using drop down lists where possible and free text where relevant, they populated the table for each feature under option within the square and visible from the transect.
- 5.18 The questions answered for each feature under ES option(s) are shown in **Appendix 2**, agreed with the Steering Group prior to starting the programme of fieldwork in April 2014. The mapped points which represent features under option changed colour once the assessment had been completed. This ensured that the surveyor could easily see which features under option remained to be surveyed in the square.

Figure 5.2: Screenshot showing assessment of a feature under option (assessing the overall landscape effect using a drop-down menu)



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- 5.19 Once the assessment of individual features under ES option(s) was complete, the surveyor clicked in the square again to finish the assessment of the square as a whole. This involved them drawing some overall conclusions, where they were able to, on the combined effect of ES on the landscape of the survey square.

Database back-up protocol and quality control

- 5.20 Up to three surveyors, each with their own tablet and versions of the GIS survey database, were undertaking the fieldwork at any one time during the summer 2014. This presented the challenge of ensuring that data collected was safely backed up after every survey day (while in the field), and the databases were uploaded to a central network at the end of each working week. The following protocol was therefore established to ensure the safe storage of data:
- Databases held on the tablet were saved onto both a memory stick and the C: drive of the surveyors' separate laptops, after each fieldwork day (the data was therefore held in three different locations).
 - The latest versions of the databases were saved onto LUC's server-based network at the end of every field survey week.
 - Finally, a merge was made to create one 'master' database from the separate server-based versions, to assist with version control.
- 5.21 For further quality control, LUC's GIS specialist undertook a review of the data held in the databases each week to ensure all information was present and correctly held. This ensured that any inconsistencies or missing data was flagged up at the earliest opportunity.

Overall principles of ES option scoring

- 5.22 The survey methodology described above involved different judgements being made of the **type** of effect and the resulting **condition** of the feature of each ES option viewed in the field.
- 5.23 For the **type** of effect, each feature under option is judged to have one of the following landscape impacts: Enhancing, Conserving, Maintaining, Neutral or Detracting²¹:
- **Enhancing (landscape character)**: by adding new features / land cover that are characteristic of the landscape and / or enhance local distinctiveness. This might include re-introducing features traditionally associated with the landscape that have previously been lost (e.g. traditional orchards).
 - **Conserving (landscape character)**: conserving important traditional landscape features and / or landcover that are characteristic of the landscape and valued because they have suffered from significant loss / decline in the wider landscape of the NCA, or nationally. They are elements that are difficult and /or time consuming to recreate / re-establish (taking a number to many years). In terms of landscape effects these are options of equal importance to those assessed as 'enhancing' landscape character (as they are focused on existing features of importance in the landscape). Species-rich semi-natural grasslands and heathlands are examples of land uses likely to be in this category (if being appropriately conserved through ES).
 - **Maintaining (landscape character)**: maintaining landscape features / land cover that are characteristic of the landscape but distinguished from the above in that they have not suffered from significant decline in the wider landscape (e.g. permanent [improved] grassland in pastoral landscapes) - and are easy to restore / re-create if lost.
 - **Neutral (no change)**: having no visible landscape effects at the time of field survey.
 - **Detracting (from landscape character)**: having an adverse effect on landscape character - either because the option itself is uncharacteristic / intrusive (e.g. new fence lines), or more often due to the option being poorly located in the landscape.
- 5.24 For the resulting **condition** of the feature under option, this is judged to be one of the following: Good, Fair or Poor. These categories were also applied from those developed by broad landscape feature for BD5303 (see **Appendix 3**).
- 5.25 The following **Table 5.1** summarises the principles (assumptions) that have been used to assign the above landscape effect and condition criteria to example landscape feature groupings. It is important for future monitoring that guiding principles to reflect the nuances of the scheme are included in the report findings. This will allow for a consistent approach to be applied in any future survey years.
- 5.26 These key principles were shared with the Steering Group prior to the analysis of the completed field survey data in October 2014. This table has been updated following the 2015 Rapid Survey.

²¹ Using the definitions that were developed for the field surveys undertaken under contract BD5303

Table 5.1: Guiding principles applied to the assessment of some options in the field

Option grouping	Guiding principles
Boundaries (e.g. hedgerows, stone walls)	<ul style="list-style-type: none"> • If boundary is in good or fair condition, the overall effect will always be 'conserving'. • If the feature is not present (e.g. large gaps in a hedge) or no evidence of management through the option, then the effect will be 'neutral'.
Protection of in-field tree options	<ul style="list-style-type: none"> • Generally all trees under this option will be classed as 'conserving', with differences in condition brought out in the condition categories. • There may be instances of 'Neutral' where you can confidently say the option is having no effect – e.g. if the tree is dead or heavily diseased.
Low input grassland options (e.g. EK/OK2, EL3, EK5)	<p><i>Conserving</i></p> <ul style="list-style-type: none"> • If the grassland appears un- or semi-improved, it will always be classed as 'conserving'. • If the semi or unimproved grassland being conserved is affected by some limited patches of nettles, thistles, docks, poaching or overgrazing, or is not very species-rich, the condition will be 'fair' (but still 'conserving'). <p><i>Maintaining</i></p> <ul style="list-style-type: none"> • If the field appears to be improved grassland or horse grazed, the effect will be 'maintaining'. • The condition will be either good or fair – considering the field in its wider landscape context. <p><i>Neutral</i></p> <ul style="list-style-type: none"> • If the condition is judged as 'poor' due to lack of management, the field appears neglected (e.g. completely overgrown or overgrazed), used for other uses (e.g. fly tipping or for machinery), we can safely say the option is having no – i.e. a neutral – landscape effect.
Wet grassland options (e.g. EK4, EL4, HK9, HK10, HK11, HK12, HK13, HK14)	<p><i>Conserving</i></p> <ul style="list-style-type: none"> • If the grassland is unimproved or semi-improved wet grassland, the effect will be 'conserving', with condition assessed as either 'good' or 'fair'. <p><i>Maintaining</i></p> <ul style="list-style-type: none"> • If the field is semi-improved pasture (i.e. little evidence of semi-natural wet grassland vegetation) but in a 'good' or 'fair' condition as a pasture field, the effect will be 'maintaining' (see example at Figure 5.3). <p><i>Neutral</i></p> <ul style="list-style-type: none"> • If the field is improved and fertilised, or semi-improved with issues such as weed encroachment or poaching, the effect will be 'neutral'.
Restoration and creation options – so any with the words 'Restoration' or 'Creation' in the title e.g. HC8, HK7 and HK8	<ul style="list-style-type: none"> • These will always be classed as 'enhancing' as they are <i>putting something valuable back</i>. If the feature is present, and is under a restoration option, we have to assume it was either missing previously, or being restored from a poor state. • The condition categories are used to provide extra distinction between 'good' and 'fair' • Same as above with regard to the use of 'Neutral' in instances where the condition of the feature is classed as poor (i.e. where evidence of neglect, inappropriate management or abandonment/no evidence of management under option). • If the feature being created is out of place in the landscape, it may be classed as 'detracting' (see also arable below).
Arable and grassland options (where something 'new' is being added into the landscape) e.g. buffer strips, field corners, field margins	<ul style="list-style-type: none"> • If located in the 'right' place and in 'good' or 'fair' condition, these options will be classed as 'enhancing' landscape character • If the feature created by the option (e.g. buffer strip) is in poor condition and/ or is negatively affecting a valued traditional landscape feature, it will be classed as 'detracting' to landscape character • Examples of the latter above could be an overgrown weed-infested buffer strip masking a ditch in an open fen landscape or a stone wall being obscured by an overgrown buffer strip • If the feature is present but has recently been cut/mown, record as 'Enhancing' but 'unable to comment' on condition. Mowing is an essential part of the maintenance regime for these types of features (see Figure 5.4 for an example below). • In theory, a feature created by ES could be located in a place that is 'detracting' to local landscape character (e.g. a 6m buffer strip located in a small-scale landscape), but the feature itself could be in 'good' condition

Figure 5.3: Semi-improved pasture field on the Somerset Levels



This picture shows a field of semi-improved pasture under ES for the maintenance of wet grassland for wintering waders and wildfowl (HK10). Since there is little evidence of semi-natural wet grassland vegetation, this field was assessed to be 'maintaining' landscape character. The photo was taken in September 2015 and was located in NCA 142 (ALT 4).

Figure 5.4: Tractor cutting a floristically enhanced buffer strip under option HE10 as part of a management regime



The photograph above illustrates management of a floristically enhanced buffer strip (HE10) in line with the guidelines detailed in the Higher Level Stewardship handbook. This essential management can result in the surveyor being unable to make an assessment on the condition of the feature. The photo was taken in September 2015 and was located in NCA 83 (ALT 2).

2015 and 2016 survey methodology - additions

- 5.27 The fieldwork methodology implemented by the 2015 (and 2016) Rapid Survey remained largely unchanged from 2014, both to ensure consistency in approach and comparable data for analysis. Minor changes/ additions drew on the experience of the 2014 survey. Potential issues regarding the impacts of a later survey season were also considered in a review of the fieldwork methodology for 2015. The key changes/additions are summarised as follows:
- **Additional note fields** for the surveyors to more consistently record the reasoning for their judgements – providing more qualitative data to draw on for analysis.
 - **The use of GPS enabled cameras** to capture geo-tagged photographs of 'good' and 'poor' examples of landscape features under ES option – again to complement more qualitative analyses of the results. A photograph illustrating the overall character of each survey square's landscape was another addition to 2015 – with potential use for future long-term monitoring of landscape change. New fields for recording photo numbers and captions were added to the survey capture form, along with a search function within the database for future analysis (e.g. allowing the user to search for photographs according to square reference or option code). This function also allowed for photographs to support particular findings in Chapter 3 to be easily extracted.
 - **An additional field for grassland options** to record the current management status of the field being surveyed. This was added to account for seasonality issues – i.e. if a grassland field under option had recently been cut, a judgement on the landscape effects of ES is more difficult to make. The new field included options to record if the grassland had been cut and whether or not bales were present.
- 5.28 A refresher training day was undertaken by LUC field surveyors and the GIS team on the Somerset Levels in early September 2015, to test the amended approach prior to rolling out to all survey squares. Another training day was undertaken by the field surveyors in June 2016 at the beginning of the 2016 survey season.
- 5.29 Although the impacts of a later survey season in 2015 were not as significant as initial concerns suggested, the 2016 Rapid Survey season again took place in the summer season (June to July) to ensure all options were seen at their 'full potential' – i.e. before cutting or flowering plants die in the autumn. This was also intended to iron out any minor discrepancies resulting from the later 2015 survey period.

Appendix 1

Description of Agricultural Landscape Types found across England

Descriptions of Agricultural Landscape Types (ALTs) found in England

(Summaries taken from LUC (November 2013) NELMS Opportunity Assessment. Report to Defra and Natural England)

ALT 1: Chalk and Limestone Mixed

This type of landscape covers the chalklands and Oolitic and Jurassic limestones of England, which characteristically form dominant ridgelines across the South East, Dorset and Gloucestershire and spread north-eastward into Lincolnshire and Yorkshire. The ridgelines typically have a steep scarp slope largely under permanent grass or woodland cover and a gentler dip slope under arable production, as in the North Downs, South Downs, Chilterns and Cotswolds. In some areas the ridgelines give way to rolling chalk plateaux and hills, as in the Hampshire Downs, Salisbury Plain and Lincolnshire Wolds, again largely under arable production – primarily wheat and oilseed rape, although these areas were traditionally also associated with the production of malting barley. Salisbury Plain stands apart, providing one of the largest areas of calcareous grassland in lowland England retained on the military training grounds managed by the MOD. Where the underlying chalk and limestones are capped by deep clay soils, woodland cover may be extensive, often of ancient origin. Land ownership is characterised by large estates with smaller mixed farms characteristic of the valley landscapes. Much of this type has been designated as National Park or Area of Outstanding Natural Beauty (AONBs), such as the South Downs, Lincolnshire Wolds, Kent Downs, North Wessex Downs, Cotswolds and Chilterns. Habitats of particular importance within these landscapes are ancient woodland, semi-natural calcareous grassland, the floodplain water meadows and marshes that may also include significant reed beds as in the Pang and Test Valleys, and calcareous rivers of the main river valleys that cut through the underlying bedrock.

ALT 2: Eastern Arable

This landscape type is concentrated in the East of England, East Midlands, Yorkshire and Humber and along the North East coastal plain. It is bisected by the Chalk and Limestone Mixed agricultural landscape type where this is dictated by the underlying geology. This landscape type occurs at a low altitude (and includes the Fens and Humberhead Levels) although there are also some gently rolling areas and incised valleys. In these lower lying areas and in other areas of floodplain pump drainage schemes drain the land. General cropping (arable farming) is the dominant enterprise in all areas except the Fens and Breckland where large scale horticultural production predominates. This is very largely an enclosure landscape where the majority of field boundaries were established during the 18th and 19th century parliamentary enclosures and create a rectilinear pattern, with the majority of lower lying areas bounded by rectilinear patterns of ditches and dykes. Field sizes are often large, though not as large as those in the Chalk and Limestone Mixed landscapes. Some earlier enclosures survive around villages. Woodland is relatively sparse but on the heaviest clay soils there are sometimes extensive areas of ancient woodland and/or conifer plantations. Pasture is a minor component of land use and is limited to small fields in the valley floors. There are long stretches of coastline; and coastal marshes, peaty fenland and carrs survive in some areas, notably in the protected landscape of the Broads. The type includes part or all of the Suffolk Coast and Heaths, Norfolk Coast and Northumberland Coast Areas of Outstanding Natural Beauty (AONBs).

ALT 3: South East Mixed (Wooded)

The South East Mixed (Wooded) landscapes spread across the High and Low Weald of Kent, Sussex and Surrey and parts of the Hampshire coast, also taking in parts of Berkshire, Dorset and Hertfordshire and Essex. This is a diverse collection of areas but all are characterised by having poor agricultural soils, mainly sands (Greensand) and clays; hence these areas lie at the margins of modern intensive agriculture. They are generally heavily wooded with up to 20% woodland cover (compared to 8% average for England), much of it ancient, with iconic woodlands including Epping and Hainault Forests and Burnham Beeches. This type also includes the largest concentration of lowland heathland in England, much of it common land, including the Thames Basin Heaths, the Surrey and Dorset Heaths, the New Forest and Ashdown Forest. ES has done much to bring these heathlands under conservation management, although areas of smaller heathland commons may be birch dominated and largely unmanaged. Since the turn of the last century large tracts were converted to extensive conifer plantations. Much of the farmed landscape is derived from the medieval period, with small irregularly-shaped fields originating from clearance of the wildwood by individual farmers. Farms are typically small

and pastoral in character, traditionally a mix of beef and sheep with small dairy herds. But as all these areas lie close to centres of population, farming has given way in many areas to hobby farming, horse keeping and other amenity uses. Key habitats of this landscape type are lowland heathland and acidic and neutral grassland. The type includes the New Forest National Park, and all or part of the Chichester Harbour, High Weald and Surrey Hills AONBs.

ALT 4: Western Mixed

The western mixed agricultural landscape type lies in the central western part of England mostly over rich and well-drained clay and silt soils in river valleys and rolling hills. It occupies a large swathe of the West Midlands, extending north to Cheshire and the Lancashire coast and south through the Severn Vale and Somerset Levels to the Devon Redlands. As the name implies, dairy farming is a common and often predominant land use, but beef and sheep farming and mixed arable cropping, including root crops such as potatoes and stubble turnips, are also common along with the increasing growth of fodder maize. Woodland cover is lower than in most of the other landscape types although shelterbelts and small farm woodlands tend to be frequent. Impeded drainage often gives rise to meres and mosses, which may be distinctive landscape features, for example on the Staffordshire Plain, and there is a legacy of wetland reclamation in areas such as Morecambe Bay and the Somerset Levels. Some areas in the Midlands and North West have a coalfield industrial heritage and strong urban fringe influences. Building materials and types vary but are often very distinctive, for example half-timber in the Midlands. Relatively little of the area is protected under SSSI designation and individual sites tend to be small. Few Areas of Outstanding Natural Beauty occur in this landscape type (the relatively small Solway Coast, Arnside and Silverdale and Cannock Chase AONBs being exceptions).

ALT 5: Upland Fringe

This agricultural landscape type is located in the foothills of the Pennine spine in northern England, from the Scottish border to the fringes of the Peak District, and also in Devon and Cornwall. Most of this type is classified as Disadvantaged Area under the EU Less Favoured Area Directive. All of these areas (except the Blackdowns and Quantock Hills in the South West) border the upland agricultural landscape type, sometimes with a gradual change of character and sometimes with a much sharper demarcation. Dairy farming is the main farm enterprise on the more free-draining and flatter land, with stock-rearing (suckler beef and sheep production) on the less productive land. A high proportion of the land use is improved permanent pasture, with most of the remainder being grass leys (i.e. long-term grassland which is periodically ploughed and reseeded). Arable cropping is less common although forage crops such as stubble turnips are grown in place. Improved grassland gives way to unimproved acid grassland, valley mires and heathland on poorer soils. Woodland (dominated by oak, ash and hazel) occurs on steeper ground and the poorest soils. Field sizes are generally small with a strong network of large hedgerows which are ancient in origin and stone walls and hedgebanks on higher ground. Relatively little of the area is covered by protected landscape designations with the exception of the Blackdown Hills, the Quantocks and the coasts of Devon and Cornwall.

ALT 6: Upland

This agricultural landscape type occurs in the higher regions of England (above 400m in the north but at a lower altitude in the South West). The largest area runs along the Pennine spine from the Scottish borders to the Peak District and includes the Cumbrian Fells, the Bowland Fells and the outlier of the North York Moors. The Cambrian massif crosses the border from Wales in western Shropshire and Herefordshire. In the South West, this landscape type occurs on Dartmoor, Exmoor, Bodmin Moor and Carnmenellis. In almost all areas, this landscape type gives way at lower altitudes to the upland fringe dairying and stock-rearing agricultural landscape type. High rainfall, thin and steep soils and low annual average temperatures mean that agricultural productivity is relatively low and is reliant on grazing livestock. Whereas low lying land is parcelled into fields (mostly permanent grassland and often bordered by stone walls) the highest and least productive land is unenclosed moorland and usually registered common land. All of the landscape type lies within the Less Favoured Area, most of it being classified as 'Severely Disadvantaged'. A significant proportion of this landscape type is designated as SSSI (particularly the heather moorlands) and the large majority lies within National Parks and Areas of Outstanding Natural Beauty (AONBs). This is the landscape type that has benefited from very high levels of targeting under ES.

Appendix 2

Structure of the survey database

Data collection fields for whole square assessment (red text indicates modifications made for 2015 onwards)

Data field	Options for selection (where appropriate)
Square reference	Pre-populated <i>Unique number generated for the survey square</i>
Priority	Pre-populated <i>Each square given a priority rating from '1' to '3' based on levels of accessibility and the presence of target landscape features.</i>
NCA	Pre-populated <i>NCA number provided</i>
Intersect AONB/NP	Pre-populated <i>Detailed whether the square is within an Area of Outstanding Natural Beauty/National Park</i>
Agreement 1	Pre-populated <i>Number for ES agreement found in the square</i>
Agreement 2	Pre-populated <i>Number for second ES agreement found in the square</i>
Ag type (Agreement Type)	Pre-populated <i>Name of ES agreement type</i>
Notes	Pre-populated <i>Notes on recommended access point to the start of the survey transect</i>
Date of survey	Completed on-site <i>Use of-built-in calendar feature</i>
Surveyor	Completed on-site <i>Selected from a drop-down menu of surveyor names</i>
Weather conditions	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> • Clear and sunny • Fair • Cloudy but dry • Light showers • Heavy Rain

Data field	Options for selection (where appropriate)
Field scale (P) <i>Where P = primary landscape characteristic of the survey square</i>	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> • Expansive • Large • Medium • Small • Very small/tiny • Unenclosed/open
Field scale (S) <i>Where S = secondary landscape characteristic of the survey square</i>	<i>As above</i>
Field pattern (P) <i>Where P = primary landscape characteristic of the survey square</i>	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> • Regular (straight boundaries) • Irregular (curving boundaries) • Mixed • N/A
Field pattern (S) <i>Where S = secondary landscape characteristic of the survey square</i>	<i>As above</i>
Field boundary type (P) <i>Where P = primary landscape characteristic of the survey square</i>	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> • Hedges (less than 2m high) • Hedges (more than 2m high) • Lines of trees • Hedgebanks • Stonewalls • Wire fencing only • Ditches/dykes • N/A
Field boundary type (S) <i>Where S = secondary landscape characteristic of the survey square</i>	<i>As above</i>

Data field	Options for selection (where appropriate)
Land cover (P) <i>Where P = primary landscape characteristic of the survey square</i>	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> • Pasture • Arable • Orchards • Mixed • Horticulture • Equestrian • Industrial • Designed parkland • Woodland/plantation • Semi-natural
Land cover (S) <i>Where S = secondary landscape characteristic of the survey square</i>	<i>As above</i>
Woodland and tree cover (P) <i>Where P = primary landscape characteristic of the survey square</i>	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> • Hedgerow trees • In-field/isolated trees • Shelterbelts • Clumps/copses • Broadleaved woods • Mixed woods • Conifer plantations • Young woodland/new planting • Orchards • Avenues • N/A
Woodland and tree cover (S) <i>Where S = secondary landscape characteristic of the survey square</i>	<i>As above</i>

Data field	Options for selection (where appropriate)
Semi-natural habitats (P) <i>Where P = primary landscape characteristic of the survey square</i>	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> • Upland moorland • Lowland heathland • Wetlands • Wood pasture • Semi-natural grassland • Scrub • Coastal saltmarsh • Intertidal sand/mudflats • Sand dunes • Coastal cliffs /slopes • N/A
Semi-natural habitats (S) <i>Where S = secondary landscape characteristic of the survey square</i>	<i>As above</i>
Historic landscape (P) <i>Where P = primary landscape characteristic of the survey square</i>	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> • Vernacular buildings • Estate house/buildings • Field systems • Buried archaeology with surface evidence • Other historic structures • Designed parkland • N/A
Historic landscape (S) <i>Where S = secondary landscape characteristic of the survey square</i>	<i>As above</i>
Other key characteristics	Completed on-site <i>Open text field – surveyor to note any key landscape characteristics important to the square not covered by the previous drop-down menus</i>

Data field	Options for selection (where appropriate)
Overall impact of ES options [on the landscape of the survey square]	<p>Completed on-site <i>Selected from a drop-down menu of the following options:</i></p> <ul style="list-style-type: none"> • Enhancing • Conserving • Maintaining • Neutral • Detracting
Comparison of condition [with the surrounding landscape] <i>Completed if the surveyor is able to make an informed judgement</i>	<p>Completed on-site <i>Selected from a drop-down menu of the following options:</i></p> <ul style="list-style-type: none"> • Better condition • Poorer condition • No difference • Unable to comment
Any other comments	<p>Completed on-site <i>Open text field for the surveyor to note information in support of the above question</i></p>
Overall square photo	<p>Completed on-site <i>Reference number of a photograph providing representation of the landscape of the survey square.</i></p>
Combined 1 adjacent option 1	<p>Completed on-site <i>Open text field for the surveyor to enter the option code for the first option (of a combination) of adjacent options observed as having an enhanced landscape effect</i></p>
Combined 1 adjacent option 2	<p>Completed on-site <i>Open text field for the surveyor to enter the second code for the option found adjacent to the above – which in combination are having an enhanced landscape effect -</i></p>
Combined 1 adjacent option 3	<p>Completed on-site <i>Open text field for the surveyor to enter the third code (if relevant) for the option found adjacent to the above – which in combination are having an enhanced landscape effect -</i></p>
Combined 1 effect	<p>Completed on-site <i>Selected from a drop-down menu of the following options:</i></p> <ul style="list-style-type: none"> • Enhancing • Conserving • Maintaining • Neutral • Detracting

Data field	Options for selection (where appropriate)
Combined 2 adjacent option 1	<p>Completed on-site</p> <p><i>Open text field for the surveyor to enter the option code for the first option (of a combination) of adjacent options observed as having an enhanced landscape effect</i></p>
Combined 2 adjacent option 2	<p>Completed on-site</p> <p><i>Open text field for the surveyor to enter the second code for the option found adjacent to the above – which in combination are having an enhanced landscape effect -</i></p>
Combined 2 adjacent option 3	<p>Completed on-site</p> <p><i>Open text field for the surveyor to enter the third code (if relevant) for the option found adjacent to the above – which in combination are having an enhanced landscape effect -</i></p>
Combined 2 effect	<p>Completed on-site</p> <p><i>Selected from a drop-down menu of the following options:</i></p> <ul style="list-style-type: none"> • Enhancing • Conserving • Maintaining • Neutral • Detracting

Data collection fields for features under ES option(s) (red text indicates modifications made for 2015 onwards)

Data field	Options for selection (where appropriate)
Symbology	Pre-populated <i>Information on the location of the feature under option, as represented by the shape/colour of the point symbol:</i> <ul style="list-style-type: none"> Exact location (yellow triangle) Field (green square) Note exact location (orange circle)
Square_Ref	Pre-populated <i>Unique number generated for the survey square</i>
Agreement_No	Pre-populated <i>Number for the ES agreement to which the feature under option relates</i>
RLR_Ref	Pre-populated <i>Rural Land Register number for the parcel of land in which the feature under option sits.</i>
Single/co-located	Pre-populated <i>Indicates whether the feature is under a single ES option ('single'), or is under more than one ES option ('co-located')</i>
Option 1	Pre-populated <i>ES option code</i>
Option 1_name	Pre-populated <i>ES option name</i>
Option 2	Pre-populated (if feature is also covered by a 2nd option) <i>ES option code</i>
Option 2_name	Pre-populated (if feature is also covered by a 2nd option) <i>ES option name</i>
Option 3	Pre-populated (if feature is also covered by a 3rd option) <i>ES option code</i>
Option 3_name	Pre-populated (if feature is also covered by a 3rd option) <i>ES option name</i>
Option 4	Pre-populated (if feature is also covered by a 4th option) <i>ES option code</i>

Data field	Options for selection (where appropriate)
Option 4_name	Pre-populated (if feature is also covered by a 4th option) <i>ES option name</i>
Option 5	Pre-populated (if feature is also covered by a 5th option) <i>ES option code</i>
Option 5_name	Pre-populated (if feature is also covered by a 5th option) <i>ES option name</i>
If grassland cutting are the following apparent	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> Recent grass cutting (no bales) Recent grass cutting (including bales)
Visible from transect	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> Yes No (if this option is selected, the rest of the survey for the feature is not completed) Not present at time of survey (if this option is selected, the rest of the survey for the feature is not completed)
Overall effects of ES option(s) on feature	Completed on-site <i>Selected from a drop-down menu of the following options:</i> <ul style="list-style-type: none"> Enhancing Conserving Maintaining Neutral Detracting
Overall effect notes	Completed on-site <i>Open text field for the surveyor to note information in support of the above question</i>
Option with different effect	Completed on-site <i>If the feature being surveyed is under co-located options, and one is having a different effect to the overall score selected above, the surveyor notes the option code in a text box.</i>
Different effect	Completed on-site <i>Different effect selected from a drop-down menu for the option noted in the previous question:</i> <ul style="list-style-type: none"> Enhancing Conserving Maintaining

Data field	Options for selection (where appropriate)
	<ul style="list-style-type: none"> • Neutral • Detracting
Different effect notes	<p>Completed on-site <i>Open text field for the surveyor to note information in support of the above question</i></p>
Overall condition	<p>Completed on-site <i>Selected from a drop-down menu of the following options:</i></p> <ul style="list-style-type: none"> • Good • Fair • Poor • Unable to comment <p>For examples of applying the above scoring to key landscape features, see Appendix 3.</p>
Overall condition notes	<p>Completed on-site <i>Open text field for the surveyor to note information in support of the above question</i></p>
<p>Different from those that are not under option <i>Completed if the surveyor is able to make an informed judgement from observing other equivalent features visible from the transect</i></p>	<p>Completed on-site <i>Selected from a drop-down menu of the following options:</i></p> <ul style="list-style-type: none"> • Better condition • Poorer condition • No difference • Unable to comment
Photo number/name	<p>Completed on-site <i>Record of photo number corresponding to the landscape feature</i></p>
Photo caption	<p>Completed on-site <i>Open text field for the surveyor to record photo caption</i></p>

Appendix 3

Guidelines for scoring landscape condition

Land Use / Feature Group	Sub-categories	CONDITION INDICATORS		
		Good	Fair	Poor
Woodland / trees	<ul style="list-style-type: none"> Broadleaved / semi-natural woodland Ornamental woodland Landmark woodland 	<ul style="list-style-type: none"> Diversity of ages and species of tree Open understorey with ground flora (e.g. bluebells, wild garlic, lichens and mosses) Deadwood retained as valued habitat Evidence of recent management (e.g. coppicing, tree pruning) 	<ul style="list-style-type: none"> Some variety of age structure and species range, but balance towards one age range and/or a few species. Majority of the woodland understorey is open; may be patches of bracken or brambles in parts Some signs of woodland management, but other areas left unmanaged 	<ul style="list-style-type: none"> Dominance of one tree species Even age structure (no young trees) Significant number of standing dead/dying / diseased trees Bracken / brambles / nettles covering much of the understorey or bare ground No sign of woodland management
	Wood pasture and parkland	<ul style="list-style-type: none"> Varied age range of trees Evidence of tree management (e.g. pruning, pollarding, felling with dead wood retained, tree guards) New / recent tree planting No / very little evidence of livestock damage to trees Evidence of appropriate grazing of pasture No areas of poached/eroded pasture No/few thistles or other rank vegetation within pasture 	<ul style="list-style-type: none"> Some evidence of tree management (e.g. pruning, pollarding, felling with dead wood retained, tree guards) Some trees affected by livestock damage Majority of trees mature or ancient, with a few new or recently planted trees Some areas of poached ground Some thistles/rank vegetation within pasture but majority is grassland with evidence of livestock grazing 	<ul style="list-style-type: none"> Significant number of standing dead/dying / diseased trees Many trees affected by livestock damage No recent/new tree planting (all mature /ancient) No evidence of tree management Poaching and/or erosion of pasture Significant areas of rank vegetation (e.g. thistles, nettles) within pasture indicating inappropriate grazing management
	<ul style="list-style-type: none"> Orchards: relict Orchards: traditional 	<ul style="list-style-type: none"> Regular distribution of orchard trees Evidence of tree management (e.g. pruning, felling with dead wood retained, tree guards) No / very little evidence of livestock damage to trees Evidence of appropriate grazing or mowing of grassland underneath trees No areas of poached/eroded grassland No/few thistles, scrub or rank vegetation underneath trees 	<ul style="list-style-type: none"> Some gaps in the distribution of trees Some evidence of tree management (e.g. pruning, felling with dead wood retained, tree guards) Some dead/dying or diseased trees, but majority in good condition Some trees affected by livestock damage Some areas of poached ground beneath the trees Some thistles/rank vegetation or scrub within grassland underneath trees but majority appropriately grazed/mown 	<ul style="list-style-type: none"> Infrequent orchard trees Significant number of standing dead/dying / diseased trees Many trees affected by livestock damage No evidence of tree management or recent fruit harvesting Poaching and/or erosion of pasture Significant areas of rank vegetation (e.g. thistles, nettles) and/or scrub underneath trees
	<ul style="list-style-type: none"> Isolated/in-field trees Tree avenue Single tree line shelterbelts 	<ul style="list-style-type: none"> Mature / ancient trees in good condition Evidence of tree management (e.g. pollarding, pruning, tree guards) Evidence of appropriate grazing or 	<ul style="list-style-type: none"> Some limited examples of diseased trees but mostly in good condition Some evidence of tree management (e.g. pruning, pollarding, tree guards) Some trees affected by livestock / 	<ul style="list-style-type: none"> Trees that are dead/dying / diseased Trees displaying significant damage by livestock or other damage from farm operations No evidence of tree management

Land Use /	Sub-categories	CONDITION INDICATORS		
Woodland / trees	<ul style="list-style-type: none"> Riverside / riparian trees 	<ul style="list-style-type: none"> mowing of grassland underneath trees No evidence of livestock or mechanical damage to trees or ground beneath them. For tree avenues and shelterbelts: no gaps – or new tree planting present to fill previous gaps 	<ul style="list-style-type: none"> mechanical damage (but most unaffected) Some areas of poached ground underneath trees Some gaps in tree avenues Some scrub encroachment around avenues but line of trees still discernible in landscape 	<ul style="list-style-type: none"> Poaching and/or erosion of pasture underneath trees Large gaps in tree avenues Scrub encroachment masking the line of tree avenues
Heathland / wetlands	<ul style="list-style-type: none"> Lowland heath Coastal heath Upland heath 	<ul style="list-style-type: none"> Range of ages of heather present Low cover of 'undesirable' species (bracken, weeds, invasive non-native plants) – typically less than 10% cover Tree /scrub cover limited (typically less than 15%) retaining open heathland character Evidence of appropriate management e.g. livestock grazing, controlled burning 	<ul style="list-style-type: none"> Significant areas of heather of different ages, but a few locations characterised by old and 'leggy' stands Areas of 'undesirable' species (bracken, weeds, invasive non-native plants) present in some parts of the landscape but majority dominated by heather/ dwarf shrubs (e.g. up to 20% composed of 'undesirable' species) Tree/ scrub cover affecting the open character of the landscape in some locations (but open habitats typically cover >75% of the landscape) 	<ul style="list-style-type: none"> The majority of heather is old and 'leggy' Significant areas of 'undesirable' species (bracken, weeds invasive non-native plants). Large areas dominated by scrub and/or trees Evidence of inappropriate management – e.g. under/ over-grazing, large areas of burnt ground, erosion
Heathland / wetlands	<ul style="list-style-type: none"> Upland grass moorland and rough grazing Purple moor grass/rush pasture / Culm grassland 	<ul style="list-style-type: none"> Evidence of appropriate management through livestock grazing Occasional areas of large tussock grasses and reeds Low cover of 'undesirable' species (e.g. thistle, ragwort, nettles) – typically less than 10% Tree /scrub cover limited (typically less than 5%) 	<ul style="list-style-type: none"> A few areas of poached ground / erosion but majority appropriately managed through livestock grazing. Some areas of large tussock grasses and reeds (typically less than 50%) Some cover (e.g. up to 20%) of 'undesirable' species, e.g. thistle, ragwort, nettles, but majority comprised of grassland Some areas of scrub/trees but the vast majority (>80%) of the landscape is open grassland 	<ul style="list-style-type: none"> Large areas of the sward dominated by large tussock grasses and reeds Significant cover of 'undesirable' species e.g. thistle, ragwort and nettles Large areas dominated by scrub and/or trees Large areas displaying evidence of inappropriate management – e.g. under/ over-grazing, poached ground, erosion
	<ul style="list-style-type: none"> Bog / mire Fen / marsh / swamp 	<ul style="list-style-type: none"> Few (less than 5%) 'undesirable' species e.g. docks, thistles, ragworts Little or no scrub Bog/mire: Frequent flowering heather and cotton grass plants 	<ul style="list-style-type: none"> Some cover (e.g. up to 20%) of 'undesirable' species, e.g. thistle, ragwort, docks Some patches of scrub (e.g. up to 20%) but majority clear Bog/mire: Some damaged areas of 	<ul style="list-style-type: none"> Significant cover of 'undesirable' species e.g. thistle, ragwort and nettles Large areas dominated by scrub. Bog/mire: Few or no flowering heather or cotton grass plants

Land Use /	Sub-categories	CONDITION INDICATORS		
Heathland / wetlands		<ul style="list-style-type: none"> - Bog/mire: Frequent coverage of bog mosses (e.g. Sphagnum) - Fen/marsh/swamp: Vegetation (on average) less than knee height 	<ul style="list-style-type: none"> - bog mosses (e.g. dead/bleached or crushed/broken/pulled) but most intact - Bog/mire: Patches of flowering heather and cotton grass plants - Fen/marsh/swamp: Some areas include vegetation of above knee height 	<ul style="list-style-type: none"> - Bog/mire: Evidence of inappropriate management – e.g. significant areas of erosion, burnt ground - Fen/marsh/swamp: Some areas include vegetation of above knee height
	<ul style="list-style-type: none"> • Reedbeds 	<ul style="list-style-type: none"> - Scrub cover less than 10% - Reeds cover most of area - Surface water present across much of the reedbed 	<ul style="list-style-type: none"> - Scrub cover 10% - 30% - Reeds cover roughly 50% of area - Up to 40% of area devoid of surface water 	<ul style="list-style-type: none"> - Scrub cover over 50% - Reeds < 50% of area - Over 50% of area without surface water
	<ul style="list-style-type: none"> • Coastal / floodplain grazing marsh • Saltmarsh • Sand dunes 	<ul style="list-style-type: none"> - Few (less than 5%) 'undesirable' species e.g. docks, thistles, ragworts - Marshes: No scrub - Grazing marsh: Evidence of current livestock grazing - Sand dunes: Little or no scrub cover (less than 5%) - Saltmarsh: A variety of physical features present e.g. saline pools, creeks, salt pans and freshwater intrusions 	<ul style="list-style-type: none"> - Some cover (e.g. up to 20%) of 'undesirable' species, e.g. thistle, ragwort, docks, nettles - Some small patches of scrub (e.g. up to 5% for marshes; up to 10% for sand dunes) - Limited areas suffering from inappropriate management (e.g. over-grazing, erosion, poaching) - Saltmarsh: Some areas lacking variety in physical features (e.g. pools, creeks, freshwater intrusions), but these present elsewhere 	<ul style="list-style-type: none"> - Significant cover of 'undesirable' species e.g. thistle, ragwort, docks and nettles. - Large areas dominated by scrub. - Significant areas suffering from inappropriate management (e.g. over-grazing, erosion, poaching) - Saltmarsh: 'Uniform' landscape lacking features such as pools, creeks and freshwater intrusions
Water features	<ul style="list-style-type: none"> • Ponds • Water-filled ditches / rhynes • Water meadows • Bankside vegetation 	<ul style="list-style-type: none"> - Little coverage of algal blooms (e.g. < 30%) - Few (less than 5%) or no 'undesirable' or alien species e.g. docks, thistles, ragworts, nettles, giant hogweed, Japanese knotweed, Himalayan Balsam - Sluices or other man-made features in a good state of repair - Ponds /ditches / rhynes: Complete cover of water (i.e. not isolated puddles of water) - Ponds / ditches / rhynes: Intact banks with no erosion or poaching - Ponds / ditches / rhynes: Coverage of bankside vegetation does not 'choke' pond /ditch - retaining their visibility as a landscape feature - Bankside vegetation: No evidence of excessive grazing or poaching 	<ul style="list-style-type: none"> - Some coverage of algal blooms (but still <50%) - Small areas (less than 20%) 'undesirable' or alien species e.g. docks, thistles, ragworts, nettles, giant hogweed, Japanese knotweed, Himalayan Balsam - Sluices or other man-made features generally in a good state of repair - Ponds / ditches / rhynes: Majority of ponds /ditches have complete cover of water (i.e. not isolated puddles of water) - Ponds / ditches / rhynes: The majority of banks intact with only occasional locations of erosion or poaching - Ponds / ditches / rhynes: Most not 'choked' by bankside vegetation - Bankside vegetation: Little evidence of excessive grazing or poaching 	<ul style="list-style-type: none"> - Significant (>50%) coverage of algal blooms - Large areas of 'undesirable' or alien species e.g. docks, thistles, ragworts, nettles, giant hogweed, Japanese knotweed, Himalayan Balsam - Sluices or other man-made features in a derelict or poor state of repair. - Ponds / ditches / rhynes: Dry ponds /ditches with little evidence of recent water - Ponds /ditches / rhynes: Significant lengths of eroded and/or poached banks. - Ponds / ditches / rhynes: Significant areas 'choked' by vegetation, meaning that they are difficult to pick out in the landscape. - Bankside vegetation: Evidence of excessive grazing or poaching
	<ul style="list-style-type: none"> • Unimproved / 	<ul style="list-style-type: none"> - A strong variety of grasses and 	<ul style="list-style-type: none"> - Some variety in grasses and flowers 	<ul style="list-style-type: none"> - Invasion by brambles, thistles, scrub,

Land Use /	Sub-categories	CONDITION INDICATORS		
	<ul style="list-style-type: none"> semi-improved 	<ul style="list-style-type: none"> flowers No evidence of overgrazing (e.g. poaching or erosion) Very limited areas of scrub, thistles, brambles, rank vegetation Evidence of recent management (grazing, hay making) 	<ul style="list-style-type: none"> Small areas of scrub encroachment Some limited occurrence of thistles, weeds, brambles rank vegetation Small areas of poaching / erosion 	<ul style="list-style-type: none"> young trees and/or other rank vegetation across large areas Significant areas of overgrazing affecting sward diversity (e.g. where used as pony paddocks) Evidence of poaching in significant areas
	<ul style="list-style-type: none"> Improved 	<ul style="list-style-type: none"> No evidence of overgrazing (e.g. poaching or erosion) No areas of scrub, thistles, brambles, rank vegetation Evidence of recent management (grazing, hay making or as standing crop ready for hay making) 	<ul style="list-style-type: none"> Small areas of scrub encroachment Some limited occurrence of thistles, weeds, brambles rank vegetation Small areas of poaching / erosion 	<ul style="list-style-type: none"> Significant areas of scrub and young trees Areas of rank vegetation including thistles and brambles across large areas Significant areas of overgrazing affecting sward diversity (e.g. where used as pony paddocks) Evidence of poaching in significant areas
Horticulture	<ul style="list-style-type: none"> Watercress beds 	<ul style="list-style-type: none"> Little coverage of algal blooms (e.g. < 10%) Sluices or other man-made features in a good state of repair Water cress beds clear of encroaching vegetation (other than watercress, particularly alien species (e.g. giant hogweed, Japanese knotweed, Himalayan Balsam) 	<ul style="list-style-type: none"> Some coverage of algal blooms (but still < 30%) Small areas (less than 20%) encroached by vegetation other than watercress including alien species e.g. giant hogweed, Japanese knotweed, Himalayan Balsam Sluices or other man-made features generally in a good state of repair 	<ul style="list-style-type: none"> Significant (>50%) coverage of algal blooms Significant encroachment of vegetation including alien species like giant hogweed, Japanese knotweed and Himalayan Balsam Sluices or other man-made features in a derelict or poor state of repair. Water no longer evident in all the beds
Field boundaries	<ul style="list-style-type: none"> Line of trees 	<ul style="list-style-type: none"> Mature / ancient trees in good condition Evidence of tree management (e.g. pollarding, pruning, tree guards) No evidence of livestock or mechanical damage to trees or ground beneath them. Where previous gaps in the line, these have been planted with new trees. 	<ul style="list-style-type: none"> Some limited examples of diseased trees but mostly in good condition Some evidence of tree management (e.g. pruning, pollarding, tree guards) Some trees affected by livestock / mechanical damage (but most unaffected) Some areas of poached ground underneath trees Some gaps in the tree line 	<ul style="list-style-type: none"> Trees that are dead/dying / diseased Trees displaying significant damage by livestock or other damage from farm operations No evidence of tree management Poaching and/or erosion of ground underneath trees Large gaps in tree lines, gapped up inappropriately (e.g. with fencing) or not at all
Historic features	<ul style="list-style-type: none"> Traditional roofed farm buildings/ 	<ul style="list-style-type: none"> Buildings intact and in a good state of repair (any additions or repairs respect local building styles and traditions) Very little intrusion by damaging vegetation, such as ivy or trees. 	<ul style="list-style-type: none"> Some signs of dereliction /disrepair Some unsympathetic repairs/ additions Some intrusion by damaging vegetation (e.g. ivy or trees) but little damage noted 	<ul style="list-style-type: none"> Major signs of damage or dereliction Buildings vacant with no signs of current use Large parts of the building encroached by vegetation (e.g. ivy or trees) causing noticeable damage to the built fabric.
	<ul style="list-style-type: none"> Above-ground historic features 	<ul style="list-style-type: none"> Built feature(s) intact and in a good (stable) condition 	<ul style="list-style-type: none"> Some signs of dereliction or disrepair but built features generally intact 	<ul style="list-style-type: none"> Built features displaying significant signs of dereliction or disrepair

Land Use /	Sub-categories	CONDITION INDICATORS		
		<ul style="list-style-type: none"> - No or very little scrub, bracken or other vegetation growth - No visible signs of damage or erosion by livestock, other wildlife (e.g. rabbit burrows), agricultural operations or people / vehicles - Evidence of appropriate management (e.g. grazing) 	<ul style="list-style-type: none"> - Scrub, bracken or other vegetation masking parts of the feature(s), but still discernible in the landscape - Some limited signs of damage or erosion by livestock, other wildlife (e.g. rabbit burrows), agricultural operations or people / vehicles, but generally feature(s) in fair condition. 	<ul style="list-style-type: none"> - Scrub, bracken or tree growth masking feature(s) in the landscape - Significant areas of damage or erosion by livestock, other wildlife (e.g. rabbit burrows), agricultural operations or people / vehicles

Source: LUC et al (2011) BD5303: *Monitoring the Effects of Environmental Stewardship on Landscape Character and Quality*. Prepared for Natural England and Defra.

Appendix 4

Landscape Themes and Objectives

(Taken from the NCA Indicators and Thresholds Methodology report, November 2013)

Table setting out Objectives by Landscape Theme

Objective Code	Key word	Objective
Landscape Theme A: Woodland/tree cover		
A1	Woodland	Active woodland management
A2	Woodland	Woodland protection
A3	Woodland	Woodland creation
A4	Woodland	Semi-natural woodland regeneration
A5	In-field trees	Protection of in-field trees
A6	Hedgerow trees	Protection of hedgerow trees
A7	Hedgerow trees	Renewal of hedgerow trees
A8	Riparian trees	Management of riverside / bankside trees
A9	Orchards	Management and extension of traditional orchards
A10	Woodland	Strengthening of woodland edges
Landscape Theme B: Field patterns and boundary types		
B1	Hedgerows	Management and restoration of hedgerows
B2	Hedgerows	Creation of new hedgerow lengths
B3	Ditches	Management and restoration of ditches / dykes
B4	Stone walls	Management and restoration of stone walls
B5	Earth banks/stone-faced hedgebanks	Management and restoration of banks
B6	Wider buffer strips	Reinforcement of field patterns in arable areas
B7	Deer fencing	Minimal negative landscape impact from deer fencing
B8	Fencing along watercourses	Minimal negative landscape impact from fencing along watercourses
B9	Buffer strips	Reinforcement of field pattern in grassland areas
B10	Field corner management	Provision of field corners
Landscape Theme C: Agricultural land use		
C1	Arable land	Diversity of winter arable landscape
C2	Permanent grasslands	Retention of mixed/pastoral character
C3	Wet grasslands	Retention and management of wet grasslands
C4	Rough pasture	Retention and management of rough pasture
C5	Mixed stocking	Retention/restoration of traditional mixed stock grazing
C6	Water meadows	Retention and management of traditional water meadows
C7	Fallow plots	Minimal negative landscape impact from fallow plots
C8	Seed plots	Blocks and strips of seed mixes in arable
C9	Arable land	Retention/creation of arable mosaics

Objective Code	Key word	Objective
Landscape Theme D: Building materials/design		
D1	Traditional farm buildings	Retention of historic farm buildings
D2	Traditional farm buildings	Restoration of historic farm buildings
Landscape Theme E: Historic environment		
E1	Archaeological features	Retention and management of archaeology on arable
E2	Archaeological features	Retention and management of archaeology on arable as part of wider conservation objectives
E3	Archaeological features	Retention and management of archaeology on grass
E4	Archaeological features	Removal of archaeological features from cultivation
E5	Archaeological features	Retention and increased visibility of archaeology on moorland
E6	Parkland	Retention and management of parkland/wood pasture
E7	Water features	Retention and management of larger water features
E8	Small ponds (under 100m ²)	Retention and management of small ponds
Landscape Theme F: Semi-natural habitats		
F1	Species-rich grassland (lowland)	Management/restoration/creation of lowland species-rich grassland
F2	Species-rich grassland (upland)	Management/restoration/creation of upland species-rich grassland
F3	Upland hay meadows	Management/restoration of upland hay meadows
F4	Lowland hay meadows	Management of lowland hay meadows
F5	Lowland heathland	Management/restoration/creation of lowland heathland
F6	Wetland	Management/restoration/creation of fen, lowland raised bog and reedbed
F7	Moorland	Maintenance and restoration of moorland
F8	Upland blanket bog	Rewetting of areas of blanket bog, mires and flushes
F9	Cattle grazing on moorland	Retention/restoration of traditional cattle grazing on moorland commons
Landscape Theme G: Coast		
G1	Saltmarsh	Conservation and management of salt marsh
G2	Sand dunes	Conservation and management of sand dunes
G3	New coastal habitat	Creation of new coastal habitats

Appendix 5

Summary list of ES options

Codes prefixed with the letter E are options in the Entry Level tier, those prefixed with the letter H are in the Higher Level tier, those with the letter O are in the Organic Tier and those with the letter U are in the Upland Tier.

Option Code – Description

EA1 - Farm Environment Record (FER)	EF10 - Unharvested cereal headlands for birds and rare arable plants
EB1 - Hedgerow management (on both sides of hedge)	EF11 - Uncropped, cultivated margins for rare plants on arable land
EB2 - Hedgerow management (on one side of hedge)	EF13 - Uncropped cultivated areas for ground-nesting birds - arable
EB3 - Hedgerow management for landscape and wildlife	EF15 - Reduced herbicide cereal crop followed by over-wintered stubble
EB4 - Stone faced hedge bank management on both sides	EF22 - Extended overwintered stubbles
EB5 - Stone faced hedge bank management on one side	EF23 - Supplementary feeding in winter for farmland birds
EB6 - Ditch management	EG1 - Under sown spring cereals
EB7 - Half ditch management	EG2 - ASD to Jan 2010 Wild bird seed mixture in grassland areas
EB8 - Combined hedge and ditch management (incorporating EB1)	EG2NR - ASD to Jan 2010 Wild bird seed mixture in grassland areas
EB9 - Combined hedge and ditch management (incorporating EB2)	EG3 - ASD to Jan 2010 Nectar flower mixture in grassland areas
EB10 - Combined hedge and ditch management (incorporating EB3)	EG4 - Cereals for whole crop silage followed by over-wintered stubbles
EB11 - Stone wall protection and maintenance	EG5 - Brassica fodder crops followed by over-wintered stubbles
EB12 - Earth bank management (on both sides)	EJ1 - Management of high erosion risk cultivated land
EB13 - Earth bank management (on one side)	EJ2 - Management of maize crops to reduce soil erosion
EB14 - Hedgerow restoration	EJ5 - In-field grass areas
EC1 - Protection of in-field trees (arable)	EJ9 - 12m buffer strips for watercourses on cultivated land
EC2 - Protection of in-field trees (grassland)	EJ10 - Enhanced management of maize crops to reduce erosion and run-off
EC3 - Maintenance of woodland fences	EJ11 - Maintenance of watercourse fencing
EC4 - Management of woodland edges	EJ13 - Winter cover crops
EC23 - Establishment of hedgerow trees by tagging	EK1 - Take field corners out of management: outside SDA & ML
EC24 - Hedgerow tree buffer strips on cultivated land	EK2 - Permanent grassland with low inputs: outside SDA & ML
EC25 - Hedgerow tree buffer strips on grassland	EK3 - Permanent grassland with very low inputs: outside SDA & ML
ED1 - Maintenance of traditional farm buildings	EK4 - Manage rush pastures: outside SDA & ML
ED2 - Take archaeological features out of cultivation	EK5 - Mixed stocking
ED3 - Low depth, non-inversion cultivation on archaeological features	EK20 - Ryegrass seed-set as winter/spring food for birds
ED4 - Management of scrub on archaeological features	EK21 - Legume- and herb-rich swards
ED5 - Management of archaeological features on grassland	EL1 - Field corner management: SDA land
EE1 - 2m buffer strips on cultivated land	EL2 - Permanent in-bye grassland with low inputs: SDA land
EE2 - 4m buffer strips on cultivated land	EL3 - In-bye pasture & meadows with very low inputs: SDA land
EE3 - 6m buffer strips on cultivated land	EL4 - Manage rush pastures: SDA land & ML parcels under 15ha
EE4 - 2m buffer strips on intensive grassland	EL5 - Enclosed rough grazing: SDA land & ML parcels under 15ha
EE5 - 4m buffer strips on intensive grassland	EL6 - Moorland and rough grazing: ML land only
EE6 - 6m buffer strips on intensive grassland	EM1 - Soil management plan (pre-RDPE)
EE7 - Buffering in-field ponds in improved grassland	EM2 - Nutrient management plan (pre-RDPE)
EE8 - Buffering in-field ponds in arable land	EM3 - Manure management plan (pre-RDPE)
EE9 - 6m buffer strips on cultivated land next to a watercourse	EM4 - Crop protection management plan (pre-RDPE)
EE10 - 6m buffer strips on intensive grassland next to a watercourse	HB11 - Maintenance of hedges of very high environmental value (2 sides)
EE12 - Supplement to add wildflowers to field corners and buffer strips on cultivated land	HB12 - Maintenance of hedges of very high environmental value (1 side)
EF1 - Field corner management	
EF2 - Wild bird seed mixture	
EF2NR - Wild bird seed mixture	
EF3 - ASD to Dec 2008 Wild bird seed mixture on set-aside land	
EF4 - Nectar Flower mixture	
EF5 - ASD to Dec 2008 Pollen + nectar flower mixture on set-aside land	
EF6 - Over-wintered stubbles	
EF7 - Beetle banks	
EF8 - Skylark plots	
EF9 - Cereal headlands for birds	

- HB14 - Management of ditches of very high environmental value
- HC1 - Protection of in-field trees on arable land
- HC2 - Protection of in-field trees on grassland
- HC4 - Management of woodland edges
- HC5 - Ancient trees in arable fields
- HC6 - Ancient trees in intensively-managed grass fields
- HC7 - Maintenance of woodland
- HC8 - Restoration of woodland
- HC9 - Creation of woodland in the SDA
- HC10 - Creation of woodland outside of the SDA & ML
- HC11 - Woodland livestock exclusion supplement
- HC12 - Maintenance of wood pasture and parkland
- HC13 - Restoration of wood pasture and parkland
- HC14 - Creation of wood pasture
- HC15 - Maintenance of successional areas and scrub
- HC16 - Restoration of successional areas and scrub
- HC17 - Creation of successional areas and scrub
- HC18 - Maintenance of high value traditional orchards
- HC19 - Maintenance of traditional orchards in production
- HC20 - Restoration of traditional orchards
- HC21 - Creation of traditional orchards
- HC24 - Hedgerow tree buffer strips on cultivated land
- HC25 - Hedgerow tree buffer strips on grassland
- HD1 - Maintenance of weatherproof traditional farm buildings
- HD2 - Take archaeological features out of cultivation
- HD3 - Low depth, non-inversion cultivation on archaeological features
- HD4 - Management of scrub on archaeological features
- HD5 - Management of archaeological features on grassland
- HD6 - Crop establishment by direct drilling (non-rotational)
- HD7 - Arable reversion by natural regeneration
- HD8 - Maintaining high water levels to protect archaeology
- HD9 - Maintenance of designed/engineered water bodies
- HD10 - Maintenance of traditional water meadows
- HD11 - Restoration of traditional water meadows
- HE1 - 2 m buffer strips on cultivated land
- HE2 - 4 m buffer strips on cultivated land
- HE3 - 6 m buffer strips on cultivated land
- HE4 - 2 m buffer strips on intensive grassland
- HE5 - 4 m buffer strips on intensive grassland
- HE6 - 6 m buffer strips on intensive grassland
- HE7 - Buffering in-field ponds in improved permanent grassland
- HE8 - Buffering in-field ponds in arable land
- HE10 - Floristically enhanced grass margin
- HE11 - Enhanced strips for target species on intensive grassland
- HF1 - Management of field corners
- HF2 - Wild bird seed mixture
- HF3 - ASD to Dec 2008 Wild bird seed mixture on set-aside land
- HF4 - Nectar flower mixture
- HF5 - ASD to Dec 2008 Pollen & nectar flower mixture on set-aside land
- HF6 - Overwintered stubble
- HF7 - Beetle banks
- HF8 - Skylark plots
- HF9 - Unfertilised cereal headlands
- HF9NR - Unfertilised cereal headlands
- HF10 - Unharvested cereal headlands
- HF10NR - Unharvested cereal headlands
- HF11 - Uncropped, cultivated margins for rare plants
- HF12 - Enhanced wild bird seed mix plots
- HF12NR - Enhanced wild bird seed mix plots
- HF13 - Uncropped cultivated areas for ground-nesting birds - arable
- HF13NR - Uncropped cultivated areas for ground-nesting birds - arable
- HF14 - Unharvested, fertiliser-free conservation headland
- HF14NR - Unharvested, fertiliser-free conservation headland
- HF15 - Reduced herbicide cereal crops followed by overwintered stubble
- HF15NR - Reduced herbicide cereal crops following overwintered stubble
- HF16 - ASD to Dec 2008 Cultivated area for arable flora on setaside
- HF17 - ASD to Dec 2008 Fallow plots for ground-nesting birds (setaside)
- HF18 - ASD to Dec 2008 Reduced herbicide cereal crop preceding setaside
- HF19 - ASD to Dec 2008 Unharvested conservation headland with setaside
- HF20 - Cultivated fallow plots or margins for arable plants
- HF20NR - Cultivated fallow plots or margins for arable plants
- HF2NR - Wild bird seed mixture
- HG1 - Undersown spring cereals
- HG2 - ASD to Jan 2010 Wild bird seed mixture
- HG2NR - ASD to Jan 2010 Wild bird seed mixture
- HG3 - ASD to Jan 2010 Nectar flower mixture in grassland areas
- HG4 - Cereals for whole-crop silage followed by overwintered stubble
- HG5 - Brassica fodder crops followed by over-wintered stubbles
- HG6 - Fodder crop management to retain or re-create an arable mosaic
- HG6NR - Fodder crop management to retain or re-create an arable mosaic
- HG7 - Low input spring cereal to retain or re-create an arable mosaic
- HG7NR - Low input spring cereal to retain or re-create an arable mosaic
- HJ1 - Cropping restrictions on high erosion risk fields
- HJ2 - Management of maize crops to reduce soil erosion
- HJ3 - Reversion to unfertilised grassland to prevent erosion/run-off
- HJ4 - Reversion to low input grassland to prevent erosion/run-off
- HJ5 - In-field grass areas to prevent erosion or run-off
- HJ6 - Preventing erosion or run-off from intensively managed grassland
- HJ7 - Seasonal livestock removal from intensively managed grassland
- HJ8 - Nil fertiliser supplement
- HJ9 - 12 m buffer strips for watercourses on cultivated land
- HJ10 - Enhanced management of maize crops to reduce erosion and run-off
- HJ11 - Maintenance of watercourse fencing
- HJ13 - Winter cover crops
- HJ13NR - Winter cover crops
- HK1 - Take field corners out of management
- HK2 - Permanent grassland with low inputs
- HK3 - Permanent grassland with very low inputs
- HK4 - Management of rush pastures
- HK5 - Mixed stocking
- HK6 - Maintenance of species-rich, semi-natural grassland
- HK7 - Restoration of species-rich, semi-natural grassland
- HK8 - Creation of species-rich, semi-natural grassland

HK9 - Maintenance of wet grassland for breeding waders
 HK10 - Maintenance of wet grassland for wintering waders and wildfowl
 HK11 - Restoration of wet grassland for breeding waders.
 HK12 - Restoration of wet grassland for wintering waders and wildfowl
 HK13 - Creation of wet grassland for breeding waders
 HK14 - Creation of wet grassland for wintering waders and wildfowl
 HK15 - Maintenance of grassland for target features
 HK16 - Restoration of grassland for target features
 HK17 - Creation of grassland for target features
 HK18 - Supplement for haymaking
 HK19 - Raised water levels supplement
 HL1 - Take field corners out of management in SDAs
 HL2 - Permanent grassland with low inputs in SDAs
 HL3 - Permanent grassland with very low inputs in SDAs
 HL4 - Management of rush pastures in SDAs
 HL5 - Enclosed rough grazing
 HL6 - Unenclosed moorland rough grazing
 HL7 - Maintenance of rough grazing for birds
 HL8 - Restoration of rough grazing for birds
 HL9 - Maintenance of moorland
 HL10 - Restoration of moorland
 HL11 - Creation of upland heathland
 HL12 - Management of heather, gorse and grass
 HL13 - Moorland re-wetting supplement
 HL15 - Seasonal livestock exclusion supplement
 HL16 - Shepherding supplement
 HM1 - Soil management (pre-RDPE)
 HM2 - Nutrient management (pre-RDPE)
 HM3 - Manure management (pre-RDPE)
 HM4 - Crop protection management (pre-RDPE)
 HN1 - Linear and open access base payment
 HN2 - Permissive open access
 HN3 - Permissive footpath access
 HN4 - Permissive bridleway / cycle path access
 HN5 - Access for people with reduced mobility
 HN6 - Upgrading access for cyclists/horses
 HN7 - Upgrading access for people with reduced mobility
 HN8 - Educational access - base payment
 HN9 - Educational access - payment per visit
 HO1 - Maintenance of lowland heathland
 HO2 - Restoration of lowland heath
 HO3 - Restoration of forestry areas to lowland heathland
 HO4 - Creation of lowland heathland from arable or improved grassland
 HO5 - Creation of lowland heathland on worked mineral sites
 HP1 - Maintenance of sand dunes
 HP2 - Restoration of sand dune systems
 HP4 - Creation of vegetated shingle and sand dune on grassland
 HP5 - Maintenance of coastal saltmarsh
 HP6 - Restoration of coastal saltmarsh
 HP7 - Creation of inter-tidal and saline habitat on arable land
 HP8 - Creation of inter-tidal and saline habitat on grassland
 HP9 - Creation of inter-tidal and saline habitat by non-intervention
 HP10 - Supplement for extensive grazing on saltmarsh
 HP11 - Saltmarsh livestock exclusion supplement
 HQ1 - Maintenance of ponds of high wildlife value < 100 sq m
 HQ2 - Maintenance of ponds of high wildlife value > 100 sq m
 HQ3 - Maintenance of reedbeds

HQ4 - Restoration of reedbeds
 HQ5 - Creation of reedbeds
 HQ6 - Maintenance of fen
 HQ7 - Restoration of fen
 HQ8 - Creation of fen
 HQ9 - Maintenance of lowland raised bog
 HQ10 - Restoration of lowland raised bog
 HQ11 - Wetland cutting supplement
 HQ12 - Wetland grazing supplement
 HQ13 - Inundation grassland supplement
 HR1 - Supplement for cattle grazing
 HR2 - Supplement for native breeds at risk
 HR4 - Supplement for control of invasive plant species
 HR5 - Bracken control supplement
 HR6 - Supplement for small fields
 HR7 - Supplement for difficult sites
 HR8 - Supplement for group applications
 HR8WF - Supplement for group applications
 OA1 - Farm Environment Record (FER)
 OB1 - Hedgerow management on both sides of hedge
 OB2 - Hedgerow management on one side of hedge
 OB3 - Enhanced Hedgerow management
 OB4 - Stone faced Hedge bank management on both sides
 OB5 - Stone faced Hedge bank management on one side
 OB6 - Ditch management
 OB7 - Half ditch management
 OB8 - Combined hedge and ditch management (incorporating OB1)
 OB9 - Combined hedge and ditch management (incorporating OB2)
 OB10 - Combined hedge and ditch management (incorporating OB3)
 OB11 - Stonewall protection and maintenance
 OB12 - Earth bank management (on both sides)
 OB13 - Earth bank management (on one side)
 OC1 - Protection of in field trees - rotational land
 OC2 - Protection of in field trees - grassland
 OC3 - Maintenance of woodland fences
 OC4 - Management of wood edges
 OC23 - Establishment of hedgerow trees by tagging
 OC24 - Hedgerow tree buffer strips on rotational land
 OC25 - Hedgerow tree buffer strips on organic grassland
 OD1 - Maintenance of traditional farm buildings
 OD2 - Take archaeological features out of cultivation
 OD3 - Low depth, non-inversion cultivation on archaeological features
 OD4 - Management of scrub on archaeological features
 OD5 - Management of archaeological features on grassland
 OE1 - 2m buffer strips on rotational land
 OE2 - 4m buffer strips on rotational land
 OE3 - 6m buffer strips on rotational land
 OE4 - 2m buffer strip on organic grassland
 OE5 - 4m buffer strip on organic grassland
 OE6 - 6m buffer strip on organic grassland
 OE7 - Buffering in-field ponds in organic grassland
 OE8 - Buffering in-field ponds in rotational land
 OE9 - 6m buffer strips on rotational land next to a watercourse
 OE10 - 6m buffer strip on organic grassland next to a watercourse
 OF1 - Field corner management
 OF2 - Wild bird seed mixture
 OF2NR - Wild bird seed mixture
 OF4 - Nectar Flower mixture
 OF6 - Over-wintered stubbles
 OF7 - Beetle banks
 OF8 - Skylark plots
 OF13 - Uncropped cultivated areas for ground-nesting birds - rotational

OG1 - Under sown spring cereals
 OG2 - ASD to Jan 2010 Wild bird seed mixture in grassland areas
 OG2NR - ASD to Jan 2010 Wild bird seed mixture in grassland areas
 OG3 - ASD to Jan 2010 Nectar flower mixture in grassland areas
 OG4 - Cereals for whole crop silage followed by over-wintered stubbles
 OG5 - Brassica fodder crops followed by over-wintered stubbles
 OHC1 - Protection of in-field trees on rotational land
 OHC2 - Protection of in-field trees on organic grassland
 OHC4 - Management of woodland edges
 OHD1 - Maintenance of weatherproof traditional farm buildings
 OHD2 - Take archaeological features out of cultivation (Org)
 OHD3 - Low depth, non-inversion cultivation on archaeological features
 OHD4 - Management of scrub on archaeological features
 OHD5 - Management of archaeological features on grassland
 OHE1 - 2 m buffer strips on rotational land
 OHE2 - 4 m buffer strips on rotational land
 OHE3 - 6 m buffer strips on rotational land
 OHE4 - 2 m buffer strips on organic grassland
 OHE5 - 4 m buffer strips on organic grassland
 OHE6 - 6 m buffer strips on organic grassland
 OHE7 - Buffering in-field ponds in organic grassland
 OHE8 - Buffering in-field ponds in rotational land
 OHF1 - Management of field corners
 OHF11 - Uncropped, cultivated margins for rare plants
 OHF13 - Uncropped, cultivated areas for ground-nesting birds
 OHF13NR - Uncropped, cultivated areas for ground-nesting birds
 OHF2 - Wild bird seed mixture
 OHF2NR - Wild bird seed mixture
 OHF4 - Nectar flower mixture
 OHF6 - Overwintered stubble
 OHF7 - Beetle banks
 OHF8 - Skylark plots
 OHG1 - Undersown spring cereals
 OHG2 - ASD to Jan 2010 Wild bird seed mix in grassland areas (organic)
 OHG2NR - ASD to Jan 2010 Wild bird seed mix in grassland areas (organic)
 OHG3 - ASD to Jan 2010 Nectar flower mixture in grassland areas
 OHG4 - Cereals for whole-crop silage followed by overwintered stubble
 OHG5 - Brassica fodder crops followed by over-wintered stubbles (org)
 OHJ11 - Maintenance of watercourse fencing
 OHJ13 - Winter cover crops
 OHJ2 - Management of maize crops to reduce soil erosion
 OHJ5 - In-field grass areas to prevent erosion and run-off
 OHJ9 - 12 m buffer strips for watercourses on rotational land
 OHK1 - Take field corners out of management
 OHK2 - Permanent grassland with low inputs
 OHK3 - Permanent grassland with very low inputs
 OHK4 - Management of rush pastures
 OHK5 - Mixed stocking
 OHL1 - Take field corners out of management in SDAs
 OHL2 - Permanent grassland with low inputs in SDAs
 OHL3 - Permanent grassland with very low inputs in SDAs

OHL4 - Management of rush pastures in SDAs
 OHL5 - Enclosed rough grazing
 OHM1 - Soil management plan (organic) (pre-RDPE)
 OHM2 - Nutrient management plan (organic) (pre-RDPE)
 OHM3 - Manure management plan (organic) (pre-RDPE)
 OJ1 - Management of high erosion risk cultivated land
 OJ11 - Maintenance of watercourse fencing
 OJ13 - Winter cover crops
 OJ2 - Management of maize crops to reduce soil erosion
 OJ5 - In-field grass areas to prevent erosion or run-off
 OJ9 - 12m buffer strips for watercourses on cultivated land
 OK1 - Take field corners out of management: outside SDA & ML(organic)
 OK2 - Permanent grassland with low inputs: outside SDA & ML(organic)
 OK3 - Permanent grassland with very low inputs: outside SDA&ML(organic)
 OK4 - Manage rush pastures: outside SDA & ML(organic)
 OK5 - Mixed stocking
 OL1 - Field corner management: SDA land(organic)
 OL2 - Permanent in-bye grassland with low inputs: SDA land(organic)
 OL3 - In-bye pasture & meadows with very low inputs: SDA land(organic)
 OL4 - Manage rush pastures: SDA land & ML parcels under 15ha(organic)
 OL5 - Enclosed rough grazing: SDA land & ML parcels under 15ha(organic)
 OM1 - Soil management plan (pre-RDPE)
 OM2 - Nutrient management plan (pre-RDPE)
 OM3 - Manure management plan (pre-RDPE)
 OU1 - Organic Management
 TFC - Top fruit orchards conversion payment
 UB4 - Stone-faced hedgebank management (both sides) on/above ML
 UB5 - Stone-faced hedgebank management (one side) on/above ML
 UB11 - Stone wall protection and maintenance on/above the moorland line
 UB12 - Earth bank management (both sides) on/above the moorland line
 UB13 - Earth bank management (one side) on/above the moorland line
 UB14 - Hedgerow restoration
 UB15 - Stone-faced hedgebank restoration
 UB16 - Earth bank restoration
 UB17 - Stone wall restoration
 UC5 - Sheep fencing around small woodlands
 UC5 - Sheep fencing around small woodlands
 UC22 - Woodland livestock exclusion
 UD12 - Maintenance of weatherproof traditional farm buildings in remote locations
 UD13 - Maintaining visibility of archaeological features on moorland
 UHC22 - Woodland livestock exclusion
 UHD12 - Maintenance of remote weatherproof traditional farm buildings
 UHD13 - Maintaining visibility of archaeological features on moorland
 UHL18 - Cattle grazing on upland grassland and moorland
 UHL20 - Haymaking
 UHL21 - No cutting strip within meadows
 UHL23 - Management of upland grassland for birds
 UJ3 - Post and wire fencing along watercourses
 UJ12 - Winter livestock removal next to streams, rivers and lakes
 UL17 - No supplementary feeding on moorland

UL18 - Cattle grazing on upland grassland and moorland
UL20 - Haymaking
UL21 - No cutting strip within meadows
UL22 - Management of enclosed rough grazing for birds
UL23 - Management of upland grassland for birds
UOB11 - Stone wall protection and maintenance on/above the moorland line
UOB12 - Earth bank management (both sides) on/above the moorland line
UOB14 - Hedgerow restoration
UOB15 - Stone-faced hedgebank restoration
UOB16 - Earth bank restoration
UOB17 - Stone wall restoration
UOB4 - Stone-faced hedgebank management (both sides) on/above ML
UOB5 - Stone-faced hedgebank management (one side) on/above ML

UOC22 - Woodland livestock exclusion
UOD13 - Maintaining visibility of archaeological features on moorland
UOHL20 - Haymaking
UOJ12 - Winter livestock removal next to streams, rivers and lakes
UOL17 - No supplementary feeding on moorland
UOL18 - Cattle grazing on upland grassland and moorland
UOL20 - Haymaking
UOL21 - No cutting strip within meadows
UOL22 - Management of enclosed rough grazing for birds
UOL23 - Management of upland grassland for birds
UOX2 - Grassland and arable
UOX3 - Moorland
UX1 - Commons and shared grazing
UX2 - Grassland and arable
UX3 - Moorland

Appendix 6

Description of the Rapid Survey Method from contract BD5303

INTRODUCTION AND BACKGROUND

The rapid field survey approach

- 1 A rapid field survey approach has been developed as an outcome from the BD5303 field survey method²².
- 2 This rapid field survey approach picks up from the experiences of BD5303. It aims to maximise the number of 1km squares surveyed by adopting a largely 'tick box' approach to recording the survey results. In this way it offers a comprehensive 'broad and shallow' survey approach that collects a large amount of relatively simple data over a large area (many sample 1km survey squares) which can be calibrated by the 'narrow and deep' survey findings from BD5303.

The BD5303 field survey

- 3 This field survey method for BD5303 was developed to monitor and assess the effects of Environmental Stewardship on landscape character and quality at the scale of individual **Study Areas**.
- 4 The key purposes of this field survey method were:
 - To assess the landscape effects of individual and co-located ES options in the field – to understand their landscape effect in different types of landscape and in specific types of location.
 - To see how the extent of individual ES options influences their landscape effect.
 - To understand how the interaction between different ES options located in close proximity affects their overall impact on landscape character.
 - To compare the landscape effects of ES options with those of the classic schemes.
 - To compare the landscape effects of ES options with no past history of agri-environment intervention with ES options that follow on from a classic agri-environment scheme option.
- 5 In short, the field survey provided the essential base evidence on the landscape effects of individual ES options for the BD5303 study. To achieve this, it relied on a field survey pro-forma that collected information through the scoring of options and through text boxes that explored the overall effects of ES options, through qualitative descriptions, answering a series of questions.
- 6 The BD5303 field survey methodology was developed (a) to answer the range of questions raised by the BD5303 brief (para 4); and (b) to explore the core questions that need to be asked in any ES monitoring survey that seeks to assess the landscape effects of individual ES options. The Rapid Survey approach therefore closely reflects what has been learnt from the field experience gained through BD5303.
- 7 This BD5303 field survey method is fully described in the separate BD5303 Reports

Common aspects shared between the BD5303 Field Survey and the Rapid Field Survey approach

- 8 Both approaches have the following similar characteristics:
 - They are based on the survey of 1km squares selected because of the range of ES options that they support
 - These 1 km survey squares fall within a series of Study Areas (BD5303) / Square Clusters (Rapid Survey approach) that encompass an area of similar landscape character found within an NCA

²² It is expected that the BD5303 Reports will be placed on the Defra website in the near future.

and sampled to give an equal number of Study Areas / Square Clusters per Agricultural Landscape Type (ALT).

- The field survey is conducted along a transect that crosses the 1km survey square and follows a route with public access, such as a combination of minor lanes and rights of way (plus other short deviations from the transect as opportunities arise to look at other options).
- The field survey relates to those ES options that can be viewed from the transect.
- The assessment of options in all cases considers whether they are a key landscape characteristic of the local landscape.
- The 'scoring' of options is based on a five point categorisation:
 - Enhancing landscape character and quality
 - Conserving landscape character and quality
 - Maintaining landscape character and quality
 - Neutral effect on landscape character and quality
 - Detracting to landscape character and quality
- The scoring takes account of whether the option is co-located with other option(s) i.e. whether other options are also being applied to the same area of land / length of feature.
- The assessment also takes account of whether the landscape effect of an ES option is enhanced or reduced (in landscape terms) by being located directly adjacent or close to other ES options (proximity effect).
- A photographic record (georeferenced and dated) is kept of each option in each survey square.

9 By sharing these common characteristics, the BD5303 field survey results and those from the Rapid Survey approach can be directly compared.

The rapid

10 As in the BD5303 Field Survey approach it is anticipated that the Rapid Survey approach would have three phases:

- Planning and preparation
- Field Survey
- Reporting

11 The main tasks that need to be undertaken in this phase are:

- Identification of the Square Clusters
- Identification of the location of individual survey squares within each of the Clusters
- Identification of the key landscape characteristics relating to each survey square
- Preparation of maps to be taken into the field as part of the field survey
- Any finalisation of the field survey spreadsheet.

Identifying the Square Clusters

12 As part of BD5303 a broad range of criteria were developed to aid the selection of the Study Areas. In the case of the Rapid Survey approach, as a very much larger number of squares will be identified and all classic schemes will have ended, it is recommended that the Square Clusters are selected against four main criteria:

- Ensuring an equal split across the six ALTs with individual Square Clusters lying clearly within one National Character Area (NCA)
- Stratified by Broad Habitat Type (with reference to the stratification of Countryside Survey Squares)

- Ensuring that each Square Cluster has a significant number of ES agreements and that across the whole sample there is a good split between ELS and HLS agreements
 - Ensuring that each Square Cluster lies within a single local landscape type (LCT) or area (LCA) as defined in the relevant District / Borough Landscape Character Assessment.
- 13 In selecting the Square Clusters, information on the **spatial extent and nature of agreements** can be taken from Natural England's GIS data download site http://www.gis.naturalengland.org.uk/pubs/gis/gis_register.asp²³ and compared with the boundary of NCAs and ALTs, while **stratification by Broad Habitat Type** can be referenced to the stratification of the Countryside Survey Squares.
- 14 Ensuring that each Square Cluster lies within a single **local landscape type or area** is important both logistically and to create a strong landscape framework to the overall monitoring programme. In the final analysis it will allow assessment of the variation of ES outcomes within areas of common landscape character.
- 15 From the experience of BD5303, it is essential that the field surveys are guided by information on the **key landscape characteristics** of the area. It is against these key characteristics that the landscape assessment of ES options is made, as described further below. These are best taken from the local Borough/ District Landscape Character Assessment where specific key characteristics will have been identified for each local Landscape Character Type / Area. The NCA key characteristics are at too strategic a scale to inform field work relating to individual ES options.
- 16 Most Local Landscape Character Assessments are only available on line as pdfs. The boundaries of local Landscape Character Areas / Types therefore have to be judged by eye rather than through the use of GIS.

Identifying the location of individual survey squares within each Cluster

- 17 It is assumed that five survey squares will be identified per Square Cluster. The location of survey squares will be determined primarily by four factors, namely, that :
- the combination of squares within a cluster covers a range of ES options that are typical of the type of landscape under consideration.
 - a survey square typically covers one or two holdings (although in areas of small-holdings / small farms) there may be more. This is simply to keep the number of FERs and FEPs that need to be reviewed within reasonable limits.
 - each survey square has a significant area under ES option.
 - a right of way or minor road provides a transect across the survey square allowing the majority of ES options within that square to be viewed close at hand.
 - the travel distance between squares is manageable, allowing five squares to be surveyed in one day.

Identifying the key landscape characteristics of each survey square

- 18 As noted previously, key landscape characteristics are central to the Rapid Survey methodology. These will be identified for the Square Cluster (para 15) and thus for each survey square from the relevant local landscape character assessment.

Preparation of maps to be taken into the field as part of the field survey

²³ The GIS data comes in 100km² tiles (i.e. 28 separate tiles for the whole of England). The data includes the following fields:

- AGREF - The agreement number, allowing mapping of the extent of individual agreements
- SCHEME – identifying the nature of the scheme - ELS, ELS with HLS, OELS, OELS with HLS and HLS only, allowing mapping in the different tiers
- UELSFLG - A 'flag' identifying agreements that also include UELS
- CUSTNAME - The name of the agreement holder (withheld in some cases) allowing identification of land in charitable or institutional ownership

- 19 Three maps are needed to inform the field survey:
- Overview map of the Square Cluster showing the location of the 5 survey squares overlaid on OS 1:25,000 (for general navigation)
 - Map 1: Map of the active ES options within each survey square (one map per square). These will need to be checked against the relevant FEP/FER information to ensure that all information on ES options is correct.
 - Map 2: Aerial photo of each survey square with overlay of Mastermap, contours and the survey transect to provide detailed context
 - FER & FEP Maps (baseline features and the most recent options map) for each sample holding covered by each square. The holding numbers for each survey square will need to be noted and passed to Natural England to allow the identification of the relevant FERs and FEPs.
- 20 **Map 1** should be extracted from a new England-wide map showing the accurate spatial distribution of all ES options. This will need to be developed by Natural England by applying the point data on ES option location held by NE to the Rural Land Registry Land Parcels Data. This ensures that each field will have its own unique (ID) land parcel reference number. However, the spatial option data held by NE only covers area options and not linear or point options which, for the selected squares, will need to be digitised or marked on printed maps by hand using the relevant information on the FERs / FEPs option maps.
- 21 There will be considerable economies of scale if all of this preparatory work can be undertaken as one phase, allowing all maps to be prepared as a single exercise.

Field survey

Field survey preparation

- 22 **Supporting references:** the following supporting references need to be available to surveyors in the field:
- Entry Level Stewardship: Environmental Stewardship Handbook. Fourth Edition January 2013 (Chapter 3 describes the individual options)
 - Higher Level Stewardship: Environmental Stewardship Handbook. Fourth Edition January 2013 (Chapter 2 describes the individual options)
 - Condition scoring protocol (developed by LUC as part of BD5303).
- 23 **Survey documents and equipment** also needed in the field include:
- Ordnance Survey Explorer (orange) maps covering the Square Cluster
 - SLR digital camera
 - Tablet with survey spreadsheet and linked GPS
 - Compass
 - Binoculars
 - Clipboard (with waterproof cover) for maps

Field survey conducted within each of the survey squares

- 24 The field survey approach and results will be collected using a spreadsheet, ideally loaded onto a Tablet allowing direct entry of results in the field. Maps can also be held in digital form but from the experience of BD5303 may be better in paper form so that they can be referred to at the same time as the survey results are being entered.
- 25 The purpose of the fields survey will be to:
- Verify the key landscape characteristics of each survey square
 - Assess the landscape impact of each ES option in turn and relate the identified effects to the relevant key characteristics.

The Excel spreadsheet

- 26 The Excel spreadsheet is shown in at the end of this Annex. This is a much condensed version of the BD5303 field survey pro-formas. It focuses on the most important aspects of the landscape effects of individual ES options.
- 27 The Excel spreadsheet assumes that the user is familiar with landscape characterisation and landscape monitoring but minimises the amount of text responses required.
- 28 The main elements of the spreadsheet are as follows:

General information

- Survey square number
- Grid reference
- Cluster name
- NCA: (in which the cluster lies)
- ALT:(in which the cluster lies)
- Number of ES agreements in the square
- Reference number of each agreement
- Nature of the agreement: (selected from a drop down menu: ELS; UELS;(0); HLS; HLS only)
- Surveyors name
- Date
- Weather (selected from a drop down menu)

Key characteristics of the landscape of the survey square

- 29 These key characteristics will be taken from the relevant local Landscape Character Assessment , with the spreadsheet pre-populated with this information before going out into the field (para 18). As a first task in the field, from a vantage point where the majority of the square can be seen, the key characteristics are reviewed, with:
- The existing key characteristic phrases edited if required to reflect the local circumstance
 - Additional key characteristics added if they are present in the square but are not present in the wider area or have previously been missed
 - Key characteristics deleted if they are not present in the square.

- 30 This revised list of key characteristics will then set the template for the assessment of the effects of ES options on the local landscape.

Assessment of the landscape effects of individual ES options

- 31 Only those options that can be viewed from the transect will be assessed. The spreadsheet is designed such that each separate parcel or length of an option is assessed separately i.e. if there are three separate land parcels under the same option (e.g. EK2) the option will be assessed three times, once for each land parcel. In the case of linear features a single length will be identified as a continuous length of, for example, hedgerow where there is no substantial break and where the hedgerow is of common character and under a single ES options. It will become a separate length if there is a gap or 5m or more, the hedgerow changes in character, or where it is under a different ES option.
- 32 The separate cells of the spreadsheet, moving from left to right are:

- a) Option: (enter option code)
- b) Is the landscape feature under option a key characteristic? Answer Yes or No. The key characteristics will have been defined as described in para 29. Key characteristics are typically features such as hedgerows, field walls, field trees, farm woodlands, semi-natural grasslands. Conversely features created by ES that are not traditionally found in the landscape such as field buffer strips and bird plots, for example, are not traditional features of the landscape and therefore will not be identified as key characteristics.

- c) Map ID: Enter the unique ID number by which the option can be identified, in the case of area options this will be the land parcel number of the field.
- d) Co-located with...? This requires that any other ES options that relate to exactly the same parcel of land / length as the primary option are entered here. This may include supplements. Under ELS, up to two options²⁴ can be co-located under HLS a wider range of options can be co-located²⁵.

The only exception to this will be when separate options with entirely different landscape effects are co-located on the same parcel of land. Examples of this are new fence lines to facilitate grazing or a new access route across a field. In these cases, while these options may form an integral part of the overall plan for the land parcel in question, such as enabling the reintroduction of grazing as part of a scheme to restore a flower-rich meadow, their landscape impact will be different to that of the associated grassland options. In these cases therefore, the fence line or access track should be scored separately from the co-located grassland options, being added as a new line to the spreadsheet.

- e) Landscape impact: This cell scores the landscape impact of the option (or co-located options) in question. One of five scores can be selected. If the option is co-located with other options then the score will be for the main option and the co-located options in combination. The five alternative scores are:
- Enhancing (landscape character): by adding new features / land cover that are characteristic of the landscape and/or enhance local distinctiveness. This might include re-introducing features traditionally associated with the landscape that have previously been lost (e.g. traditional orchards).
 - Conserving (landscape character): conserving important traditional landscape features / landcover that are characteristic of the landscape and valued because they have suffered from significant loss / decline in the wider landscape of the NCA, or nationally (even if common in the sample square). They are also aspects which are difficult and / or time consuming (taking a number to many years) to recreate / re-establish. In terms of the landscape effects of options assessed under this category, they are judged as being of equal importance to those options that are 'enhancing' landscape character (as they are focused on existing features of importance in the landscape). Species-rich semi-natural grasslands and heathlands are examples of land uses likely to be in this category (if being appropriately conserved through ES).
 - Maintaining (landscape character): maintaining landscape features / land cover that are characteristic of the landscape but distinguished from the above in that they have not suffered from significant decline in the wider landscape (e.g. permanent [improved] grassland in pastoral landscapes) – and are easy to restore/re-create if lost.
 - Neutral (no change): having no visible landscape effects at the time of field survey.
 - Detracting (from landscape character): having an adverse effect on landscape character – either because the option itself is uncharacteristic / intrusive (e.g. new fence lines); or more often due to the option being poorly located in the landscape.
- f) Adjacent to... (name option): This cell identifies any other ES option that lies close to the option being assessed, allowing consideration of whether this proximity has an additional landscape effect (either positive or negative) that is greater than the score given to the options in isolation.
- g) Proximity score: This cell records the proximity score for (f) i.e the combined landscape effect of the two options seen together. The purpose of this score is to understand the potential landscape benefits or disbenefits of locating certain ES options directly adjacent or in close proximity to each other. One of three scores can be selected:
- P – the two options in close proximity brings greater landscape benefit than the two options considered separately.

²⁴ There are a number of specific exceptions to this. See page 118 of the Environmental Stewardship Entry Level Handbook 4th Edition January 2013

²⁵ The potential for co-location of options is set out in the Environmental Stewardship Higher Level Handbook 4th Edition January 2013 starting on page 57

- 0 – there is no additional landscape benefit from the two options being in close proximity.
 - D – the two options in close proximity has a more strongly detracting effect than the two options considered separately.
- h) Condition of feature under option (or options if they are co-located): Using the condition classes developed under BD5303 this cell records the condition of the feature under option according to one of three classes:
- POOR - the landcover / feature shows little evidence of current management, is derelict or poorly managed. For example, this may include a collapsed stone wall network or an abandoned field.
 - FAIR - if the landcover / feature shows some evidence of recent but not necessarily regular management and / or is reasonably intact and could be brought back into good condition through the reintroduction of appropriate management.
 - GOOD - if the landcover / feature shows evidence of appropriate management and is intact and in a good state of repair.

The full description of these classes and how they relate to different types of feature is described in The BD5303 reports.

- i) Is the landscape feature under option noticeably different to those that are not? Answer Yes or No. This will require the surveyor to identify the same feature in other locations in the survey square that are known not to be under option and to consider whether there are any noticeable differences in the state / management of the feature between those that are and are not under ES option.

Summary of landscape effects

- 33 The spreadsheet ends with a number of overview questions relating to the survey square as a whole, as follows:
- What is the overall impact of ES options on the landscape of the survey square? This follows the same gradation as under 'Landscape Impact' of the individual options, with the score identified numerically as follows:
 - Enhancing = +2
 - Conserving = +2
 - Maintaining = +1
 - Neutral = 0
 - Detracting = -1 or -2 (depending on severity)
 - Does the survey square appear to be in noticeably better condition than the surrounding landscape (not under ES options)?
 - Comments: Opportunity to make any particular comments relating the survey square. Particular aspects that will be worth a comment are:
 - Options that are having a particularly beneficial or detracting impact on the landscape either singly or in combination and the reasons why
 - The reasons why the square appears better or worse than the surrounding landscape, relating answers to the role of ES.

Reporting

- 34 Analysis of the spreadsheets from a large number of Square Clusters will allow assessment of the landscape impact resulting from particular ES options, especially those with the highest level of uptake and which are geographically most widespread.

35 Amalgamation of this data by ALT will allow analysis of the landscape implications of ES in different types of landscape.

Figure 1

Survey Square details:							Date						
Cluster Name:							Surveyors Names						
Related Squares							Weather						
NCA													
ALT													
Grid Co-ordinates													
No. of agreements in square													
Agreement number and type													
Line No	Options	Is the landscape feature under option a key characteristic?	Map ID	Co-location with	Landscape Impact					Adjacent to	Proximity Score	Condition of the feature under agreement	Are landscapes features under agreement noticeably different from those which are not?
	Enhancing				Conserved	Maintained	Neutral	Detrimental					
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
Overall Impact of ES options on the landscape character of the survey square													
Does this square appear to be in better condition to the surrounding landscape													
Comments													

Appendix 7

Glossary of terms /acronyms

Adjacent options	Two or more landscape features under ES option which lie adjacent to each other (e.g. a hedge under option next to a field also under option)
ALT	Agricultural Landscape Type – a national agricultural landscape classification. The six ALTs found in England are made up of groupings of National Character Areas (NCAs). Source: Defra (2007) <i>Scoping Study on Agricultural Landscape Valuation</i> , report by Swanwick et al.
BD5303	Defra contract BD5303: <i>Cumulative Impact of Environmental Stewardship</i> (2013), undertaken by LUC. For more information and to access the project reports please see http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=17454
Co-located options	ES options applied to the same landscape feature/area of land – generally designed to deliver the same outcomes (e.g. an area of moorland under several ES options aiming to conserve and manage characteristic habitats)
Conserving (landscape character)	Conserving important traditional landscape features and / or landcover that are characteristic of the landscape and valued because they have suffered from significant loss / decline in the wider landscape of the NCA, or nationally. They are elements that are difficult and /or time consuming to recreate / re-establish (taking a number of years). In terms of landscape effects these are options of equal importance to those assessed as 'enhancing' landscape character (as they are focused on existing features of importance in the landscape). Species-rich semi-natural grasslands and heathlands are examples of land uses likely to be in this category (if being appropriately conserved).
Detracting	Having an adverse effect on landscape character - either because the option itself is introducing uncharacteristic / intrusive features (e.g. new fence lines), or due to the option being poorly located or managed in the landscape.
ELS	Entry Level Stewardship
Enhancing (landscape character)	Adding new features / land cover that are characteristic of the landscape and / or enhance local distinctiveness. This might include re-introducing features traditionally associated with the landscape that have previously been lost (e.g. traditional orchards) or creating new, valued landscape features in appropriate locations.
ES	Environmental Stewardship -for further information on the scheme please see: https://www.gov.uk/government/collections/environmental-stewardship-guidance-and-forms-for-existing-agreement-holders
HLS	Higher Level Stewardship

Landscape character	(for the purposes of this study): the natural, cultural, perceptual and aesthetic elements and features of an area that combine to make it distinctive and different from other areas.
Landscape quality	(for the purposes of this study): the condition of the landscape in relation to perceptions or expectations of what the typical or ideal characteristics of a given area should be. In addition, landscape quality makes a judgement about the condition of component landscape features.
Maintaining (landscape character)	Maintaining landscape features / land cover that are characteristic of the landscape but distinguished from the above in that they have not suffered from significant decline in the wider landscape (e.g. permanent [improved] grassland in pastoral landscapes) - and are easy to restore / re-create if lost.
NCA Indicators and Thresholds	Defra contract LM0429: <i>Developing Indicators and Thresholds for Monitoring the Landscape Impacts of Environmental Stewardship at the National Character Area Scale</i> (2014), undertaken by LUC. For more information and to access the project reports please see: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18840#Description
NCA	National Character Area (for further information on the National Character Areas, including individual NCA profiles, please see: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making)
Neutral (no change)	Having no visible landscape effects at the time of field survey.
OELS	Organic Entry Level Stewardship
UELS	Uplands Entry Level Stewardship

