



CAMPAIGN FOR THE FARMED ENVIRONMENT: FIELD VERIFICATION OF CAMPAIGN UPTAKE AND DELIVERY OF ENVIRONMENTAL BENEFITS

VERIFICATION MONITORING

FINAL REPORT, JANUARY 2013

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EXECUTIVE SUMMARY

Introduction

The Campaign for the Farmed Environment was a three year industry led scheme which aimed to mitigate the loss of set-aside for farmland birds, wider biodiversity and resource protection through participation in Environmental Stewardship (ES), uptake of in-field options in ES, implementation of voluntary measures and retention of other uncropped land. Fifteen voluntary measures aimed to maximise the environmental benefits of uncropped and cropped arable land. Recommended management included 'essential' 'red box' requirements (RBR) and additional 'green box' considerations.

In February of each year, Defra conducted a postal survey to ascertain how much voluntary management was being undertaken as part of the CFE. In 2011 and 2012, this included land under voluntary management that was similar to CFE measures, but was not considered by the farmer to be part of the Campaign.

Monitoring and evaluation of voluntary measures and farmers' attitudes to the Campaign were carried out on a sample of farms who responded to the Defra survey. Spring interview and field visits were undertaken to verify if measures were implemented as the farmer had declared on the Defra return and according to management requirements. A range of condition assessments were carried out in the summer, autumn and winter depending on the target benefits of the measures. Additional funding in 2012 allowed an increase in sample size for this year to include field visits of voluntary management outside the Campaign. This report contains the results of the spring monitoring for 2012, and also details the results of the full three years of spring verification monitoring. Condition monitoring will be reported separately once complete.

Methods

In each year, a sample of 100 farms (75 in 2012) who indicated that they were undertaking voluntary management as part of the Campaign was selected from the Defra returns. In 2012, a sample of 75 farmers undertaking voluntary management outside the Campaign was also selected. In previous years, assessment of attitudes and verification of voluntary management for those undertaking voluntary management outside the Campaign was restricted to telephone interviews which were not comparable with 2012. Farms with less common measures were targeted for assessment, with the aim of achieving a sample of at least 12 farms for each measure, however very uncommon measures were excluded.

Interviews assessed farmers' attitudes to the Campaign and discussed the management applied to the voluntary measures on the farm. This information was combined with field survey data to assess whether features had been put in place correctly, particularly against the red box requirements. This report compares data on voluntary management in (VM-CFE) and out (VM-Non CFE) of the Campaign in 2012, then compares those farms with voluntary Campaign management over the three years of the study.

Results

Comparison of 2012 farms with voluntary management in and out of the Campaign

Most (84%), but not all, of those selected because they said in the Defra survey that they were implementing voluntary measures as part of the Campaign, still considered that they were participating in the Campaign when interviewed. One third of those who said in the Defra survey that they had voluntary measures outside the Campaign considered that they were participating (half through voluntary management). Implementation of voluntary management and an ES agreement were the most common methods of participation in the Campaign.

Most farmers were supportive of both the aims and approach of the Campaign. However, support for the approach was lower, with 20% fewer farmers in both groups supporting the approach

compared to the aims of the Campaign. Those undertaking voluntary management outside the Campaign were slightly less supportive overall. Some farmers were undecided about their support for the Campaign, however around 10% of both groups did not support the approach.

Only a small proportion of farmers detailed aspects of the Campaign that they particularly liked or disliked. Both groups liked the voluntary nature of the Campaign and the environmental benefits. VM-CFE farmers also liked the flexibility. However, there were concerns amongst VM-CFE farmers that some would not contribute to the Campaign and that voluntary measures were taking land out of production. VM-Non CFE farmers thought that the measures were too restrictive and around a quarter of responses from both groups were critical of the dissemination of information.

Awareness of the three themes and types of participation was high, although lower for the VM-Non CFE group. However, knowledge of sources of advice was much lower. Farmers in both groups had received information from similar sources, most commonly the CFE booklet and the farming press. VM-CFE farmers were much more likely to have received information from partner organisations. Few farmers had received direct advice on choosing measures

Comparison of information obtained directly from farmers with their Defra returns revealed a considerable number of discrepancies. A number of farms were lost from the sample because they had no voluntary management (farmers had either erroneously recorded management under ES as voluntary or had not implemented measures that they had intended to when they completed the Defra questionnaire). There were also discrepancies in the designation of measures and in the areas attributed. Overall, this survey found 30% less area than expected on those farms undertaking management as part of the Campaign. C5 (Fallow plots for ground-nesting birds), C8 (Uncropped, cultivated margins) and C13 (Sown wildflower headlands) were often not found, generally because the farmer had misunderstood the requirements. Areas claimed to be C8 were often simply uncropped areas (not cultivated) and several C13 areas were found to be permanent grassland. Areas of C5 were particularly overemphasised in Defra returns.

Features found on the ground during the field visit were assessed against the red box requirements. There was considerable variability in the extent to which features under the different measures met the RBRs, however differences between features in and out of the Campaign were small. The highest proportion of features (and area) met the RBR for scrub management (C3b). Lowest proportions of features meeting RBR tended to be recorded for rotational measures such as skylark plots (C4), lapwing plots (C5), uncropped cultivated margins (C8) and selective herbicide use (C14). It was notable that none of the C4 and C5 features assessed in 2012, either in or out of the Campaign met all the RBR for these measures.

Overall, 36% of VM-CFE features and 31% of the area met all the RBRs. For VM-Non-CFE management, 38% of features and 40% of area fully met RBRs. Some features would have met the RBR of an alternative measure to those attributed by the farmer. For some other areas under voluntary management, only minor issues prevented the feature meeting the RBR. If VM-CFE features are recategorised and features with minor issues deemed to meet the RBR, a total of 51% of features and 41% of the area could be described as meeting RBR.

Comparison of those undertaking voluntary management across three years

Most (87% across all three years) of those in the VM-CFE group (according to Defra survey returns) still considered that they were participating in the Campaign when interviewed. An increase in 2011 was followed by a decrease in 2012, although most of the remaining farmers were unsure whether they were participating (only 4% across all years considered that they were not participating when interviewed). Similar proportions were participating through agri-environment agreements in each year. In 2010, a slightly higher proportion of farmers were participating by voluntary management.

Support for the *aims* of the Campaign remained high for the farms in this study in all three years, however there was a small but steady decline in the support for the *approach* (87% in 2010

compared to 70% in 2012). Similar proportions of farmers in target counties and non-target counties were supportive of both the aims and approach.

The voluntary nature of the Campaign and the environmental benefits were aspects that were consistently liked. There was a small increase over time in the number of farmers who liked the flexibility of the scheme. Aspects disliked were less consistent over time. Between 2010 and 2011 there was an increase in those concerned that some would do nothing, criticism of the provision of information and concern that the voluntary measures duplicated ES. Between 2011 and 2012 there was an increase in concern about taking land out of production, but fewer farmers than in previous years felt the Campaign was too restrictive.

Relative awareness of the themes, types of participation, advice and targeting was similar, however awareness of the different aspects was slightly greater in 2011 compared to other years.

For most measures there was a consistent over-recording of both frequency and area on the Defra returns. The most notable exception was C3a which was found on a greater number of farms than expected, partly because other measures were reassigned to C3a if they had been recorded as something completely inappropriate, but also because at interview, farmers remembered about additional pieces of uncropped land that had not been recorded on the Defra returns.

Relatively few farmers were undertaking management in response to the Campaign that would not have been done in the absence of the Campaign. This included new features that had been established in response to the Campaign and existing features that had not been removed as a result of the Campaign. The proportion of farms undertaking management specifically as a result of the Campaign was higher in 2011 (39%) than in 2010 and 2012 (14% and 23% respectively).

The overall proportion of area meeting the red box requirements was highest in 2011 (50%) compared to 2010 (43%) and 2012 (39%), based on areas assessed as part of this study and measures assessed in all three years. Equivalent information scaled by Defra survey areas indicated a greater proportion of area met the RBR in 2011 (54%) compared to 2010 (36%) and 2012 (37%). Reasons for not meeting the red box requirements were consistent across years for some measures. Skylark plots were not established at a sufficient density, stubbles received pre-harvest desiccants and post-harvest herbicides, and maize was sown in game covers.

Table 1 **Characteristics of VM-CFE and VM-Non CFE farms in the sample in 2012.**

Characteristic	VM-CFE	VM-Non CFE
Lost from original sample – no relevant management (Table 4)	10%	12%
Definitely participating in the Campaign (in any way) (3.1.1.1)	84%	35%
Definitely supportive of aims (Figure 2)	91%	84%
Definitely supportive of approach (Figure 2)	70%	62%
Aspects of the Campaign liked (Table 6)	Voluntary nature, environmental benefits, flexibility	Voluntary nature
Aspects of the Campaign disliked (Table 7)	Poor dissemination of information, some farmers will do nothing.	Poor dissemination of information, too restrictive.
Awareness (Table 8)	Good awareness of themes and types of participation	Slightly less aware of most aspects of the Campaign
Agri-environment scheme membership (Figure 6)	81%	61%
Proportion of features meeting all red box requirements (Table 11, Table 12)	Varied across measures, but similar between VM-CFE and VM-Non CFE. Overall 36%	Varied across measures, but similar between VM-CFE and VM-Non CFE. Overall 38%
Overall proportion of area meeting all red box requirements (Table 11, Table 12)	31%	40%
Likelihood of not meeting an individual RBR (Table 13)	Varied across measures, but similar between VM-CFE and VM-Non CFE for most measures	Varied across measures, but similar between VM-CFE and VM-Non CFE for most measures
Overall proportion of features and area that met or nearly met RBRs (Table 16, Table 17)	51% of features 41% of area	54% of features 55% of area

Table 2 Characteristics of farmers with land in voluntary measures as part of the Campaign across all three years.

Characteristic	2010	2011	2012
Definitely participating in the Campaign (in any way) (Table 19)	79%	96%	84%
Definitely supportive of aims (Table 20)	92%	92%	91%
Definitely supportive of approach (Table 20)	87%	74%	70%
Aspects particularly liked (>25% of respondents) (Table 21)	Voluntary nature	Voluntary nature	Voluntary nature, environmentally beneficial
Aspects particularly disliked (Table 22)	Too restrictive/inflexible, some will do nothing	Some will do nothing, poor dissemination of information	Poor dissemination of information, some will do nothing
Awareness (Table 23) All years - high level of awareness of themes and types of participation. Less awareness of sources of advice and targeting		Highest awareness of most aspects when prompted	
Proportion of area meeting red box requirements (based on features assessed in all three years) (Table 26)	43%	50%	39%
Proportion of area meeting red box requirements – scaled to Defra survey figures (Table 26)	36%	54%	37%
Proportion of farms visited undertaking some management that would not have been done in the absence of the Campaign (Table 28)	14%	39%	23%

Table of Contents

Acknowledgements.....	3
EXECUTIVE SUMMARY	5
1. INTRODUCTION	15
1.1 Background.....	15
1.2 Monitoring of voluntary measures.....	16
1.2.1 The Field Monitoring Programme.....	16
2. METHODS.....	17
2.1 Selection of farms:.....	17
2.2 Assessments.....	19
2.3 Statistical Analysis.....	20
3. RESULTS	21
3.1 Comparison of farmers with voluntary environmental management in and out of the Campaign, 2012.....	21
3.1.1 Overview and engagement with the Campaign.....	21
3.1.2 Implementation of measures.....	29
3.1.3 Meeting the red box requirements	33
3.2 Comparison of those undertaking voluntary management as part of the campaign 2010-2012.....	50
3.2.1 Overview and engagement with the Campaign.....	50
3.2.2 Implementation of measures.....	60
4. DISCUSSION.....	67
Annex 1 Defra survey form for 2011/2012 cropping year.....	70
Annex 2 General questions	76
Annex 3 Interview questions and field observations relating to 'red box' requirements and 'green box' guidelines for individual measures in spring management assessment	78

List of Tables

Table 1	Characteristics of VM-CFE and VM-Non CFE farms in the sample in 2012.....	8
Table 2	Characteristics of farmers with land in voluntary measures as part of the Campaign across all three years.....	9
Table 3	List of CFE Voluntary Measures.....	16
Table 4	Number of farms in samples each year and reasons for exclusion from the sample....	19
Table 5	Number of farmers considering that they were participating in the Campaign when interviewed.....	21
Table 6	Aspects of the Campaign particularly liked by VM-CFE and VM-Non CFE farmers (% of total responses to this question).....	23
Table 7	Aspects of the Campaign particularly disliked by VM-CFE and non VM-CFE farmers (% of total responses to this question).....	24
Table 8	Percentage of farmers who were aware of different aspects of the Campaign in 2012. Differences between VM-CFE and VM-Non CFE groups were not significant where no p value is presented.	25
Table 9	Number of farms and area of measures expected from Defra February questionnaire compared to measures on the ground on VM-CFE farms including those removed after only telephone contact.....	31
Table 10	Number of farms and area of measures expected from Defra February questionnaire compared to measures on the ground on VM-CFE farms that were visited.....	32
Table 11	Number of VM-CFE farms, areas and number of features meeting Red Box Requirements (RBR) based on all available information.	35
Table 12	Number of VM-Non CFE farms (including VM-CFE farms with VM-Non CFE features), areas and number of features meeting Red Box Requirements (RBR) based on all available information.....	36
Table 13	Number of farms and features meeting individual RBR for both 'VM-other' and 'VM-CFE' farms. Numbers in parentheses represent number of individual features. Requirements in italics are those assessed through visit interview.	39
Table 14	Importance of not meeting RBRs and potential for meeting RBR of other measures on VM-CFE farms. Number of farms* with number of features in parentheses.....	44
Table 15	Importance of not meeting RBRs and potential for meeting RBR of other measures for VM-Non CFE features. Number of farms* with number of features in parentheses.	45
Table 16	Number and area of VM-CFE features assessed, fully meeting Red Box Requirements (RBR) and those with minor issues or which would fulfil the requirements of an alternative measure.	47
Table 17	Number and area of VM-Non CFE features assessed, fully meeting Red Box Requirements (RBR) and those with minor issues or which would fulfil the requirements of an alternative measure.	48
Table 18	Measures undertaken specifically in response to the Campaign and assessed in field.	49

Table 19	Proportion of farmers that considered they were participating in the Campaign (%). ...	50
Table 20	Support for the aims and approach of the Campaign in each year and for target and non-target counties pooled across years (%).	52
Table 21	Aspects of the Campaign particularly liked by farmers undertaking voluntary measures as part of the Campaign (% of respondents who expressed an opinion ¹⁵).	53
Table 22	Aspects of the Campaign particularly disliked by farmers undertaking voluntary measures as part of the Campaign (% of respondents who expressed an opinion).	53
Table 23	Percentage* of farmers who were aware of different aspects of the Campaign with significance levels from statistical analysis.	55
Table 24	Percentage* of farmers in target and non-target counties who were aware of different aspects of the Campaign with significance levels from statistical analysis.	57
Table 25	Number of farms expected to have each measure compared to the measures recorded at visit.	61
Table 26	Areas (ha) and proportion of VM-CFE areas meeting red box requirements for each measure in each year and scaled by Defra survey figures, with overall means.	63
Table 27	Main reasons for not meeting RBR over 3 years. Based on the number of measures not meeting each RBR.	64
Table 28	Number of farms undertaking measures directly as a result of the Campaign	66

List of Figures

Figure 1	Methods of participation for those who considered that they were participating in the Campaign.	22
Figure 2	Support for the aims and approach of the Campaign (%). NK = not known.	23
Figure 3	Mean awareness after prompting of different aspects of the Campaign for VM-CFE and VM-Non CFE in 2012.....	26
Figure 4	Source of information on the Campaign for both groups of farmers.	27
Figure 5	Reasons for implementation of voluntary measures (VM-CFE) or similar management (VM-Non CFE).	28
Figure 6	Presence of agri-environment schemes on farms visited for this study and the full Defra survey results.....	29
Figure 7	Percentage of features on VM-CFE farms meeting red box requirements in 2011 and 2012 for measures sampled in both years	33
Figure 8	Percentage of CFE voluntary measures and comparable features managed outside the CFE meeting red box requirements.	37
Figure 9	Probability of not meeting individual RBRs with 95% confidence intervals for 2012 VM-CFE and VM-Non CFE	42
Figure 10	Methods of participation for those who considered that they were participating in the Campaign	51
Figure 11	Overall awareness after prompting of different aspects of the Campaign.....	56
Figure 12	Regional variation in overall awareness after prompting of different Campaign aspects for VM-CFE farms (3 years combined).....	58
Figure 13	Sources of information on the Campaign.	59
Figure 14	Awareness of Campaign and sources of information about CFE over three years...	60
Figure 15	Percentage of features meeting the red-box requirements in each of the three years of the Campaign.	62
Figure 16	Probability of not meeting an individual RBR with 95% confidence intervals for VM-CFE across all 3 years (* p<0.05; ** p<0.01; *** p<0.001).....	65

1. INTRODUCTION

1.1 BACKGROUND

The Campaign for the Farmed Environment (CFE) is a three year industry-led scheme to offset the environmental impacts of the abolition of set-aside, which was launched in November 2009. It has three themes: farmland birds, wider biodiversity and resource protection. The Campaign aims to mitigate the loss of set-aside through participation in Environmental Stewardship (ES), uptake of more in-field ES options, maintaining uncropped land and uptake of a range of voluntary measures.

The Food and Environment Research Agency (Fera) was commissioned by Defra to undertake a monitoring and evaluation study of voluntary measures implemented as part of the Campaign. The study does not assess participation in the Campaign through ELS uptake, ES in-field options or by maintaining uncropped land other than under voluntary measures. The work was divided into two parts: verification monitoring, designed to determine how well farmers were following the management guidelines for the measures concerned, and condition assessment, designed to measure the condition of various attributes linked to potential environmental outcomes under the three themes. Verification monitoring was carried out between April and June each year, and condition assessment between June and the following February (divided into summer: July-September, autumn: October-November, and winter: December-February). This report presents the results of the spring verification monitoring carried out in 2012, and also an overview of the verification work carried out over the three year life of the CFE. Condition assessment monitoring during the first two years (2010 and 2011) was described in a previous report prepared in March 2012¹, but key messages are summarised in the executive summary of the current report. The final year of condition monitoring is being carried out under a separate contract funded by the Defra Strategic Evidence and Partnerships Fund (SEPF)², and a full comparison across all three years will be reported under this contract in March 2013, when all the survey work has been completed.

Fifteen voluntary measures (some with variants) aim to maximise environmental benefits of uncropped and arable land (Table 3), with guidance on how they should be managed. Management guidance is split into 'essential' management requirements ('red box') and additional considerations ('green box'). The primary purpose of the verification work was to monitor the uptake and implementation of these voluntary measures, but it also included some assessment of attitudes and awareness of the Campaign among those implementing voluntary measures as part of the Campaign and those with similar voluntary management that farmers did not consider to be part of the Campaign. Farmers in the latter group were monitored in order to establish, as far as possible, what proportion of land recorded as being outside the Campaign actually fulfilled the red box requirements and could therefore be considered as contributing to the Campaign targets. Assessment of voluntary environmental management involved investigation of management policy through interviews with farmers and field survey of implementation.

This is the final report of the spring verification monitoring. It provides an assessment of the degree to which the essential management requirements had been implemented by farmers undertaking voluntary management both in and out of the Campaign that were visited in 2012. Although part of this work was funded by the SEPF, allowing a more detailed assessment of those

¹ Laybourn, R; Jones, N; Boatman, N. (2012) Campaign for the Farmed Environment. Annual report – quality assessments and verification monitoring, Report to Defra and the CFE Evidence and Monitoring Group, March 2012, Food & Environment Research Agency.

² Assessing the environmental outcomes of the Campaign for the Farmed Environment. Project code IF0212

undertaking management outside the Campaign in 2012, this additional work is reported here in order to directly compare land considered to be in and out of the Campaign. In addition, attitudes and the quality of management are compared across all three years of the study for those farmers undertaking voluntary management as part of the Campaign. Analysis of those undertaking voluntary management outside of the Campaign is not made across the three years of the study because populations and/or monitoring methods were not comparable in each year.

Table 3 List of CFE Voluntary Measures

Code	Measure	Target benefits		
		Farmland birds	Wider biodiversity	Resource protection
C1	Grass buffers alongside temporary and permanent watercourses		√	√
C2	Grass areas to prevent erosion and run-off			√
C3a	Reverted arable areas		√	√
C3b	Optional scrub management		√	√
C4	Skylark plots	√		
C5	Fallow plots for ground-nesting birds on arable land	√	√	
C6	Overwinter stubble followed by spring/summer fallow	√	√	
C7a	Overwintered stubble	√	√	
C7b	Optional measure for vulnerable soil – cover crop/ green manure		√	√
C8	Uncropped cultivated margins	√	√	
C9	Wild bird seed mixture – arable/grassland areas	√		
C10	Game strips	√		
C11	GWCT unharvested cereal headlands	√	√	
C12a	Pollen & nectar mixtures for arable or grassland areas	√	√	
C12b	Optional flower mix for use with horticultural crops	√	√	
C13	Sown wildflower headlands	√	√	√
C14	Selective use of spring herbicides	√	√	
C15	Enhanced management of Short Rotation Coppice		√	

1.2 MONITORING OF VOLUNTARY MEASURES

Monitoring of voluntary measures within this project was based on a small sample of around 100 returns from the annual Defra postal survey of 5500 farmers with 10 ha or more of cultivated land, carried out each February (2010 to 2012). The Defra survey³ gathered information on farmers' attitudes to the Campaign and assessed the uptake of voluntary measures that were undertaken both as part of the Campaign (all years), and similar voluntary management undertaken outside the Campaign (in 2011 and 2012). The 2012 survey form is appended as Annex 1.

1.2.1 The Field Monitoring Programme

The objectives of the field monitoring programme are as follows:

³ The Defra survey results can be found at <http://www.defra.gov.uk/statistics/foodfarm/enviro/landenvmanage/>

- To assess farmer attitudes and awareness of the Campaign, including monitoring farmer intentions for subsequent years to assess future potential of the Campaign;
- To verify that farmers have put in place the voluntary measures they claim they have,
- As far as possible, to assess the quality of the environmental management and resulting habitats and features, for measures implemented as part of the Campaign, or outside the Campaign in 2011 & 2012.
- To estimate the extent of delivery of environmental benefits from measures, both those already put in place and those intended, based on literature review and expert opinion.

This report presents the results of the April-July 2012 monitoring, which assessed the first three objectives and compared voluntary management that farmers considered to be in and outside the Campaign. Data on farmer attitudes and voluntary management considered to be part of the Campaign is then considered for all three years.

2. METHODS

2.1 SELECTION OF FARMS:

Farms were selected for monitoring from among those responding to the postal questionnaire sent out by Defra each February 2010-2012, who indicated that they were undertaking voluntary environmental management as part of the Campaign (and outside the Campaign in 2011 and 2012) and would be willing to take part in further research. In each year, around a third of respondents to the Defra survey declined to be contacted further. Throughout this report the term **'VM-CFE'** is used to describe those that indicated that they were implementing voluntary measures as part of the Campaign. **'VM-Non CFE'** refers to those respondents who indicated that they had uncropped land similar to voluntary measures but did not consider it to be part of the Campaign. On some farms, both VM-CFE and VM-Non CFE management was present. These farms were classed as VM-CFE farms to assess the farmers' general attitudes to the Campaign, whereas information specific to the management of individual measures was classed as VM-CFE or VM-Non CFE depending on which category the measure had been attributed to on the Defra survey.

'VM-Non CFE' farmers were selected for monitoring on a different basis in 2011⁴ and 2012 compared to 2010 because of changes in the Defra questionnaire. In 2010, farmers were not specifically asked about voluntary measures being undertaken outside the Campaign as part of the Defra survey. Farmers were selected from those that had not recorded land within voluntary measures and referred to as "non-participants" for 2010. In 2011 and 2012, farmers were asked within the Defra survey to detail voluntary management similar to CFE measures, but considered, for whatever reason to be outside the Campaign (VM-Non CFE). The change in emphasis resulted from a particular policy interest in understanding what this management involved and whether this land actually met red box requirements. Additional funding from the SEPF allowed a full survey of VM-Non CFE land to be undertaken in 2012, but in previous years only a subset of the data was collected for land outside the Campaign, therefore data are not comparable across all years. 57 farms were surveyed in 2010, 56 in 2011 and 74 in 2012.

In each year, the sample of 'VM-CFE' farms was selected from those that responded to Defra's postal questionnaire, who were implementing voluntary measures as part of the Campaign and indicated that they would be willing to be contacted about further survey work.

⁴ Referred to as 'VM-other' farms within the March 2012 annual monitoring report.

In 2010 and 2011, a sample of 100 farms was selected, of which 50% were selected at random and 50% targeted to include less common measures. The same number of reserve farms was also selected. Targeted farms were sampled at random from those entering each of the less common measures. In 2010 all measures were included, however in 2011 and 2012 some measures were excluded because returns from the postal survey indicated that these measures were implemented on only a very small proportion of farms, therefore sample size, even of a targeted sample, would be insufficient to make robust assessments of these measures (2011: C7b C12b, C13, C14 and C15 and 2012: C7b, C11, C12b, C15). In 2011 & 2012, measures with intermediate levels of uptake (C2, C3b, C4, C5, C6, C8, C12a plus C11 in 2011 and C13, C14 in 2012) were included in the sample until a target of twelve farms was reached for each. In 2010 all less common measures were targeted until a target of 8 was reached unless the total sample included less than eight farms for the measure. However, difficulties in contacting farmers and differences between measures implemented on farms and those declared in the Defra postal questionnaire meant that the minimum number of farms was not always achieved.

In 2012, the intention was to sample a total of 150 farms, 75 from the VM-CFE population and 75 from the VM-Non CFE population. However, some farms were found not to have the expected voluntary measures present when visited. When this happened, reserves were substituted as far as possible. In the end, 155 farms were visited, but only 146 had voluntary management present (Table 4). Because the VM-CFE sample was smaller than in previous years, all farms were sampled on a targeted basis to ensure sufficient sample size of as many measures as possible⁵. VM-Non CFE farms were sampled in the same way.

Farms were not visited when telephone conversations revealed that they were not undertaking voluntary measures. This was usually because farmers had misunderstood the Defra questionnaire and had declared features in Environmental Stewardship (ES) or the farm had no voluntary management at the time they were contacted. These farms, and those that declined to participate further, were replaced from the Defra questionnaire responses, as far as possible matching measures that had been targeted or sampled at random, depending on the original selection criteria for the farms that had been removed from the sample. On a small number of farms, the absence of relevant voluntary management only became clear at interview. These farms were in AE schemes, had declared measures on permanent grassland or had not implemented measures this year. These farmers were asked about their general attitudes to the CFE and these data have been included in the analysis, but no detailed monitoring of features was undertaken. Where possible, these farms were replaced with farms that did have voluntary management, therefore in each year of the survey, a greater number of farms were visited than had voluntary measures present.

⁵ This approach was discussed with, and approved by, the Evidence and Monitoring Group as the most effective way to use the resources available.

Table 4 **Number of farms in samples each year and reasons for exclusion from the sample.**

Year Defra return ¹	Farmers contacted	Willing to be interviewed	Lost ELS/ HLS	No VM this year	Visits	Reason for loss at interview	Farms with voluntary management
2010 – VM- CFE 468	219	109	10	2	97	3 AE Scheme 8 No measures	86
2011 – VM- CFE 676	178	113	7	2	104	5 AE Scheme 2 Grassland	97
2012 – VM- CFE 789	111	83	2	1	80	4 AE Scheme 1 No measures	75
2012 – VM- Non CFE 556	126	81	6	1	74	2 Grassland 1 No measures	71

¹ returned by a specific date and willing to participate in further research.

2.2 ASSESSMENTS

Visit interviews assessed farmers' awareness of, and attitudes to, the Campaign plus details of participation in agri-environment schemes and advice received on implementing measures. Questions were a combination of tick box categories and free text responses, although not all farmers answered all questions (free text responses in particular). Data analysis categorised free text into groupings which are reported with some farmer quotes (presented in *italics*) presented to provide a better understanding of the responses. Results are presented as percentage data except where sample sizes are very small. Where percentage results are reported, figures represent the percentage of those that responded to each individual question and have not been scaled to reflect the background population. As the samples were small, responses have not been reported on a regional basis for individual years. However, where the data allow robust comparison, an assessment has been made of any differences in response between target and non-target counties.

Details of management implemented as part of the Campaign were recorded on 'VM-CFE' farms and, in 2012, on VM-Non CFE farms and management of these features was assessed. Full details of the general questionnaires can be found in Annex 2, attached separately. Individual measures were assessed against red box requirements through both interview questions and field surveys⁶.

⁶ Field assessments of the participants measures were made on up to five areas, chosen at random on farm (some farms had more than 5 replicates of certain measures).

Field work was carried out to assess the extent to which measures had been correctly put in place and to assess the quality of management. In particular, measures were assessed against “red box requirements” (RBR). In 2011 and 2012, measures were generally assessed against the requirements of the measure that the farmer considered they were implementing even if they had misunderstood the requirements. For example most fallow plots for ground nesting birds (C5) were located at the field margin, but those that had been cultivated in the last year were still recorded as C5. Where a more appropriate measure could be identified, features were recorded against an additional, more suitable measure. Measures that were reclassified in this way were: C1 (buffers along watercourses), C2 (grass areas to prevent erosion) and C12a (pollen and nectar mixtures) reclassified as C3a (reverted arable areas), C5 reclassified as rotational C3a and C9 (wild bird seed mix) reassessed against C10 (game strips). However, where the habitat was very different to what was expected (usually a long term uncultivated area recorded as a feature that should be cultivated annually), features were assessed against a more suitable measure. For example, a number of farmers recorded uncultivated field margins on their farm as ‘uncropped cultivated margins’ (C8). Many assessments for C8 were not relevant, therefore these features were recorded under C3a or C1. A slightly different approach was used in 2010, because many features monitored were already being managed prior to the start of the Campaign and farmers were often not clear which voluntary measure they corresponded with. Therefore surveyors selected the appropriate voluntary measure on the basis of information provided at interview and collected during the field survey.

Timing of implementation was noted to allow distinction between baseline (i.e. measures implemented before the farmer was aware of the Campaign, or for rotational measures, those that would have been undertaken as part of the usual farm management) and subsequent delivery (i.e. measures established in response to the Campaign). Details of interview and field assessments are presented in Annex 3.

2.3 STATISTICAL ANALYSIS

Comparisons of responses to answer-defined (e.g. yes/no) questions between various groupings were made. Analysis of 2012 data compared VM-CFE and VM-Non CFE farms. Data for VM-CFE farms were compared across the three years of the study and, as a separate analysis, between Target and Non-target counties. The proportion of respondents (out of the total number of respondents, ignoring the “unknown/missing”) who were aware of various aspects of the Campaign were compared between groups using a Generalized Linear Model, assuming a Bernoulli distribution and using a logit link function.

Data on support for and participation in the Campaign were analysed using chi-square tests to look at whether the distribution (multinomial distribution) of “yes”, “no” and “Don’t know” differed between groups. Because counts in an individual category were sometimes low, two p-values are presented to assess the significance of the homogeneity (or lack of it) between the groups. The first is calculated using the usual chi-square distribution, the second is based on a non-parametric (permutation) test.

The data collected for this study provide useful insights about the attitudes of respondents to the Campaign. However, some care does need to be taken in interpretation and attribution to the full population of farms. The self selecting nature of the sample may itself have inadvertently led to some bias. For instance it is known from the full Defra 2012 survey data that those that agreed to further survey work were significantly more likely to report a “good understanding” of the Campaign and to support the Campaign aims and approach than those that did not agree.

3. RESULTS

3.1 COMPARISON OF FARMERS WITH VOLUNTARY ENVIRONMENTAL MANAGEMENT IN AND OUT OF THE CAMPAIGN, 2012

3.1.1 Overview and engagement with the Campaign

3.1.1.1 Participation

Farmers were initially asked about their participation in the Campaign in general terms, rather than explicitly through implementation of voluntary measures. In total 80 farmers were interviewed who had indicated on the Defra survey in February 2012 that they were participating in the Campaign through voluntary measures (VM-CFE) or a combination of voluntary measures in and out of the Campaign. Of these, 67 (84%) still considered themselves to be participating in the Campaign at the time of interview (Table 5). A further 11 (14%) were unsure as to their participation. Of the 74 farmers interviewed, who were undertaking voluntary management but outside the Campaign (VM-Non CFE) according to their response to the Defra survey, 26 (35%) did consider themselves to be participating in the Campaign in some way. A further 11 (15%) were unsure.

Table 5 Number of farmers considering that they were participating in the Campaign when interviewed.

	VM-CFE (n=80)		VM-Non CFE (n=74)	
	No.	%	No.	%
Yes	67	84	26	35
No	2	3	37	50
Don't know	11	14	11	15

Those farmers in both VM-CFE and VM-Non CFE groups that did consider themselves to be participating in the Campaign were questioned as to how they considered they were contributing. The responses for both of the groups are shown in Figure 1. Implementing voluntary measures and participation in ES schemes were most commonly mentioned by both groups, despite the fact that VM-Non CFE farmers had indicated that they were undertaking voluntary management exclusively outside the Campaign on the Defra survey. This suggests that some farmers had changed their mind about whether their voluntary management contributed to the Campaign between the Defra survey and the interviews conducted for this study. No recategorisation of farmers in the two groups was made. A small proportion of farmers indicated that they were part of the Campaign through other uncropped land, ex-set-aside land and by exceeding their ES points target.

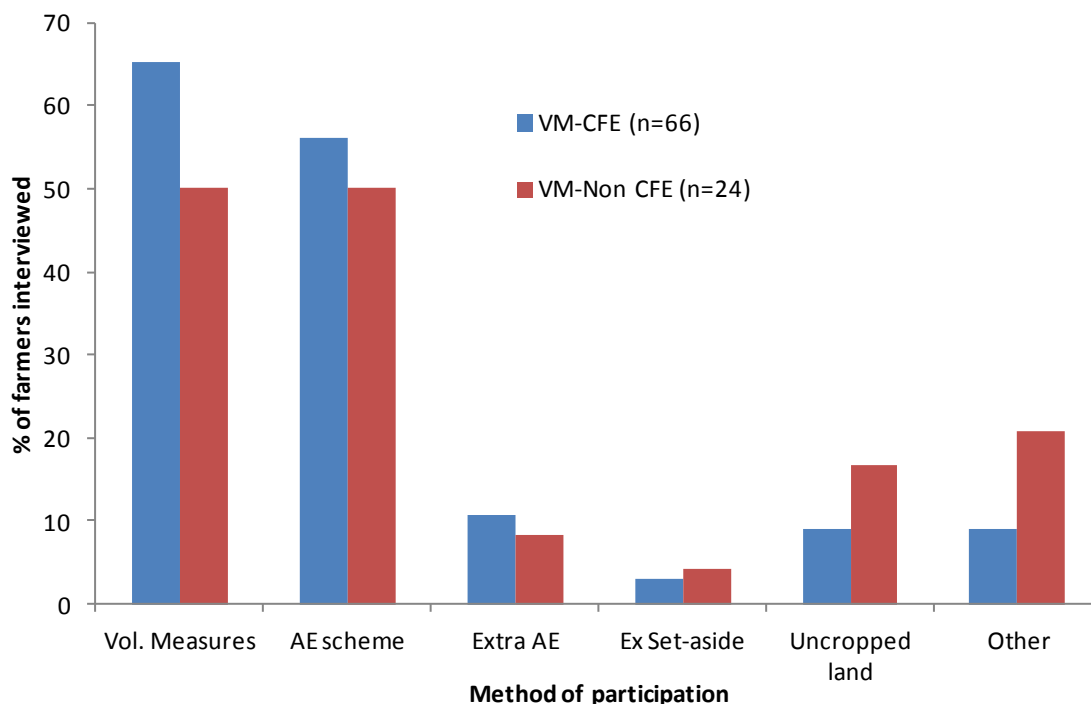


Figure 1 Methods of participation for those who considered that they were participating in the Campaign.

3.1.1.2 Attitudes

There was a high level of support for the aims and, to a lesser extent, the approach of the Campaign (Figure 2) amongst this sample of farms⁷. Those undertaking voluntary management as part of the Campaign were apparently slightly more supportive of both the aims and approach. Overall, a smaller proportion of both groups indicated that they did not support the Campaign compared to those who were undecided. However, there were no significant differences between VM-CFE and VM-Non CFE farmers. A range of comments were made, but they centred around the voluntary nature of the Campaign, the fact that many felt they valued the environment and were already doing voluntary management (under ES) and the availability of information.

Many commented on the voluntary nature of the Campaign from both a positive and negative perspective [*‘As soon as things become compulsory it becomes more difficult’*; VM-CFE farmer supportive of the aims and approach; *‘Don’t believe it’s really effective or that people will replace set-aside on a voluntary basis’*; VM-CFE farmer not supportive of the approach]. Similarly, there were very different views about the provision of information [*‘CFE poorly communicated. He had to go and search for it. Didn’t believe information for the campaign was readily available.’*]; [*‘Well structured, well advertised, well promoted. Good ambassadors’*]. Both of these comments were made by VM-CFE farmers who were supportive of the aims and approach.

⁷ A small number of farmers in this sample were found not to be undertaking any relevant voluntary management (see Table 4) but were visited and interviewed about their general attitudes to the Campaign. These responses have been included in this analysis of attitudes.

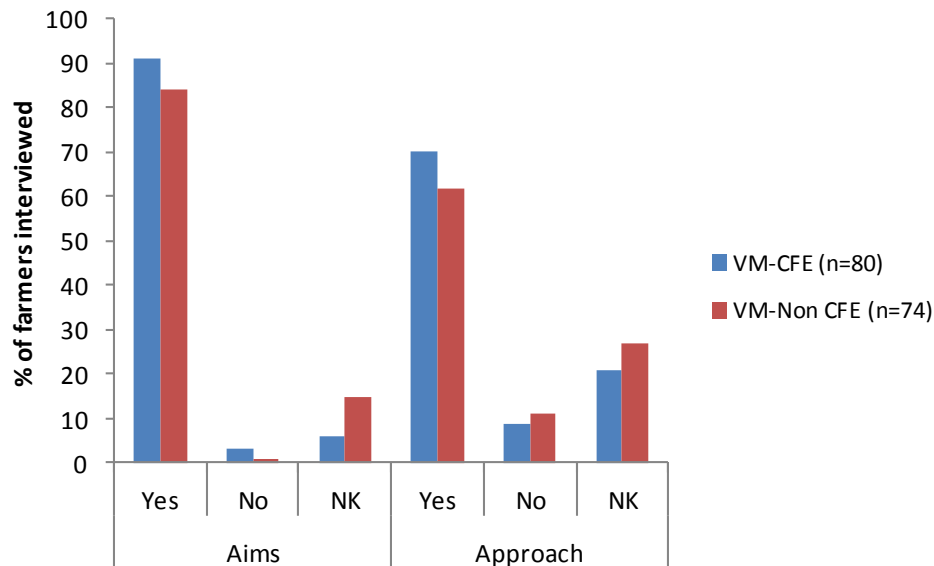


Figure 2 Support for the aims and approach of the Campaign (%). NK = not known.

Less than half of those interviewed detailed aspects of the Campaign that they particularly liked (Table 6) or disliked (Table 7). Many did not express particular likes or dislikes, but made more general comments about the Campaign. Both those with voluntary management in and out of the Campaign liked the fact that it was voluntary: [*'If people do it voluntarily it will have a better impact'*; *'don't like compulsory schemes because too inflexible'*] and because it is environmentally beneficial: [*'advocate of wildlife - so likes the idea that it adds something extra'*; *'tend to do close to water to prevent pollution'*]. Those who considered their voluntary management to be part of the Campaign liked the flexibility and the fact that it fitted in with farming practice [*'good that you can choose things that work for your farm'*]. Four farmers with land outside the Campaign indicated that they didn't know enough about the Campaign to comment further.

Table 6 Aspects of the Campaign particularly liked by VM-CFE and VM-Non CFE farmers (% of total responses to this question⁸).

	VM-CFE	VM-Non CFE
Aspect liked	% (n=36)	% (n=24)
Voluntary	28	25
Environmentally beneficial	28	17
Generally positive	22	21
Flexible	22	0
Public relations	6	8
Other	6	17
Not enough information to comment	0	17

⁸ Many of the farmers interviewed did not indicate particular 'likes' or 'dislikes'. Some respondents gave more than one response so percentage total exceeds 100%.

Those with voluntary measures in the Campaign disliked a range of factors including: ineffective publicity [*'not being pushed enough - have to look up info yourself'*], the fact that some will do nothing [*'concerned they're the only ones doing it. Wants to know that all the big conglomerates are doing it' 'already doing it a lot - should target people doing nothing'*] and that it was taking productive land out of cultivation [*'we're in an era of food shortage, so hard to justify'*]. Those with land outside the Campaign most disliked the perceived lack of information, the restricted scope of the measures [*'too narrow - would like to include other areas, e.g. trees, grassland'*] and financial loss.

Table 7 Aspects of the Campaign particularly disliked by VM-CFE and non VM-CFE farmers (% of total responses to this question⁹).

Aspect disliked	VM-CFE	VM-Non CFE
	% (n=26)	% (n=18)
Some will do nothing	19	0
Not suitable for all farms	8	0
Taking productive land out of production	15	0
Too restrictive	4	22
Poor dissemination of info/badly publicised	23	28
Duplicates AE schemes	12	6
Potential for enforced alternative	12	6
Financial cost/income loss	0	17
Other	31	22

3.1.1.3 Awareness

Farmers were asked about their awareness of the Campaign in terms of the themes, methods of participation, availability of advice and regional issues. Responses are presented for individual questions in Table 8. Means of responses after prompting under the four different headings, plus individual questions on awareness of specific targets for the methods of participation and location of their nearest Beacon farm are presented in Figure 3.

In order to gain some understanding of the level of awareness, farmers were initially asked what they knew about the Campaign under four headings (themes, types of participation, advice, targeting) (Table 8) without further prompting. Unsurprisingly, farmers were much less likely to volunteer information than indicating that they were aware when prompted. For example only 51% of VM-CFE farmers mentioned that farmland birds was one of the themes, however, when asked if they understood that this was a theme of the Campaign, 94% indicated that they did. Farmers with voluntary measures in the Campaign were consistently more aware of the various aspects of the Campaign than VM-Non CFE farmers. Although differences were small for some aspects (Table 8; Figure 3) there were significant differences in awareness between the two groups for volunteered

⁹ Many of the farmers interviewed did not indicate particular 'likes' or 'dislikes'. Some respondents gave more than one response so percentage total exceeds 100%.

responses for four aspects and after prompting for six aspects. Generally there was a high level of awareness of the three themes, although a smaller proportion of farmers were aware that resource protection was part of the Campaign than farmland birds and wildlife. Over 90% of both VM-CFE and VM-Non CFE farmers were aware of the voluntary measures, whereas fewer VM-Non CFE farmers were aware of other methods of participation than VM-CFE farmers; after prompting, awareness of ES renewal and maintaining other uncropped land were significantly higher for VM-CFE compared to VM-Non CFE farmers. Less than half of VM-CFE farmers were aware of local liaison groups, beacon farms and county coordinators. VM-Non CFE farmers were less aware than VM-CFE farmers of the various sources of advice and support (significant differences for all sources of advice after prompting). Very few of either group knew where their nearest beacon farm was (Table 8, Figure 3).

Table 8 Percentage of farmers who were aware of different aspects of the Campaign in 2012. Differences between VM-CFE and VM-Non CFE groups were not significant where no p value is presented.

	Volunteered			Total after prompting		
	VM-CFE (n=80)	VM-Non CFE (n=74)	p	VM-CFE (n=80)	VM-Non CFE (n=74)	p
Purpose/theme						
Resource protection	22	13		80	68	
Farmland birds	51	30	0.01	94	85	
Farmland wildlife	47	26	0.009	94	85	
Types of participation						
ELS renewal	21	18		76	59	0.021
ELS in-field options	19	14		80	68	
Uncropped land	22	18		85	66	0.007
Voluntary measures	57	48		92	89	
Nutrient management	9	8		68	64	
Area targets				69	54	
Advice & support						
Local liaison groups	19	7	0.025	45	22	0.002
Beacon farms	13	5		42	19	0.002
Theme leaflets	25	19		70	52	0.022
County coordinator	14	3	0.009	39	15	<0.001
Nearest Beacon farm				15	9	
Targeting						
Target counties	7	3		25	18	
Regional priorities	7	3		29	24	

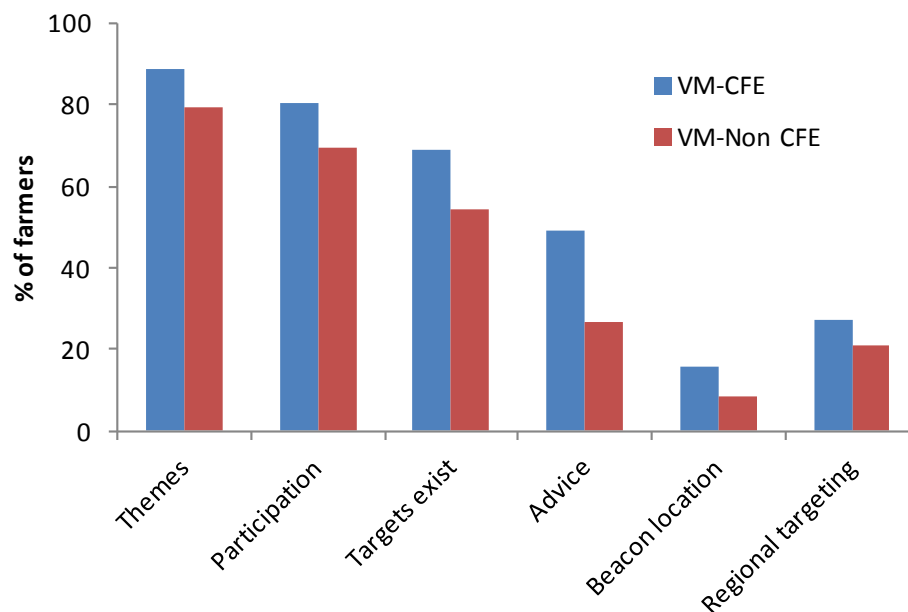


Figure 3 Mean awareness after prompting of different aspects of the Campaign for VM-CFE and VM-Non CFE in 2012.

3.1.1.4 Information

Farmers were asked about sources of information on the Campaign. Generally farmers with voluntary management in or out of the Campaign had received information from similar sources, most commonly the CFE booklet and the farming press (Figure 4). The findings are similar to the results of the Defra survey (Defra, 2012) although the Defra questionnaire asked about ‘useful sources of information’. A greater proportion of VM-CFE farmers mentioned partner organisations, whereas a slightly higher proportion of VM-Non CFE farmers mentioned farm events or shows. The quality or value of the information provided was not considered.

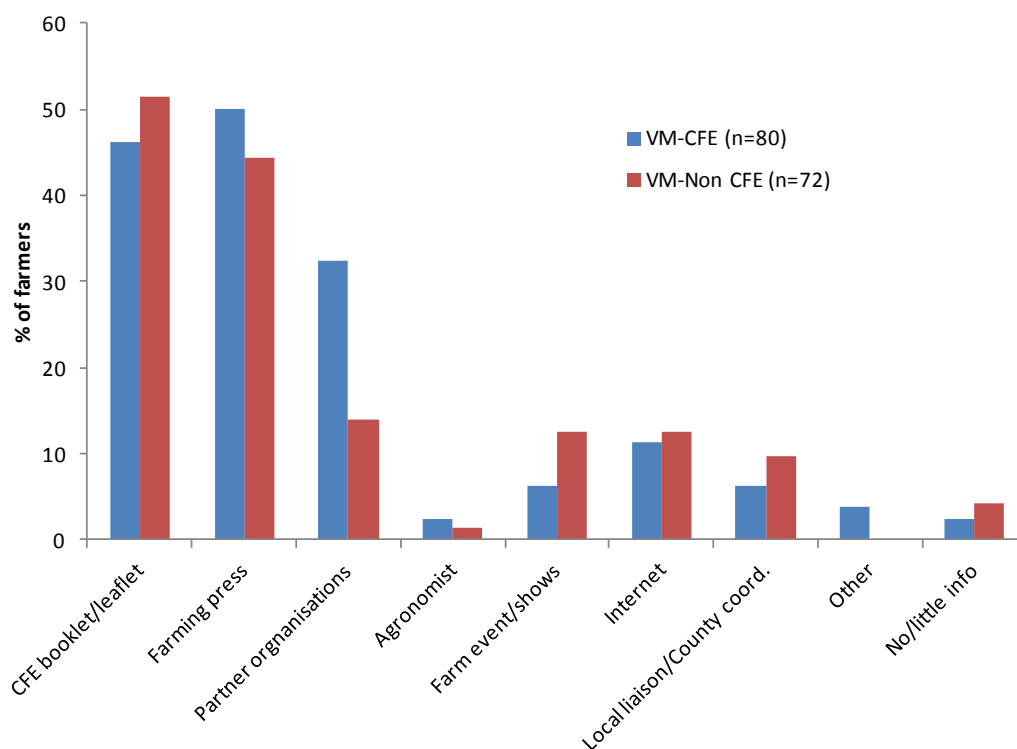


Figure 4 Source of information on the Campaign for both groups of farmers.

Only 15 (19%) of the VM-CFE farmers had received direct advice on choosing or implementing measures. Advice originated from a range of sources including: agronomists (2) RSPB (2) Natural England (2), County Coordinator (2). Other sources of advice were only mentioned by one individual. Almost all (13) found the advice met their requirements with the remaining two saying that the advice partially met their needs.

3.1.1.5 Implementation of voluntary management

A total of 80 VM-CFE farmers were interviewed who had indicated in the February survey that they would be implementing measures to contribute towards the Campaign within this cropping year (2012-2013). However during the interviews, it transpired that five of the interviewees (6%) were not implementing measures for the Campaign. Four, had misunderstood the questionnaire and had included land on their Defra survey return that was currently under an existing agri-environment scheme (a mix of ES and CSS) and one had indicated voluntary management on their Defra survey return by mistake.

Of the 74 VM-Non CFE farmers interviewed, who had indicated in the February survey that they had voluntary management similar to Campaign measures, three did not have any voluntary management. Two had included land that was under permanent grassland and was therefore not relevant to the Campaign and another had made a mistake completing the Defra survey.

The main reasons given by both VM-CFE (38%) and VM-Non CFE (37%) farmers for implementing voluntary measures or similar management outside the Campaign were to benefit the environment or wildlife (Figure 5). Unsurprisingly a much higher proportion of VM-CFE farmers (22%) than VM-Non CFE farmers (2%) were implementing voluntary management to support the Campaign. VM-Non CFE farmers were more likely to have voluntary environmental management because: the area was in excess of their ES target, the land was poor or difficult to manage or because they had an interest in game birds. In addition, 31% of VM-CFE farmers and 22% of VM-Non CFE farmers simply stated that they were implementing voluntary management that was already present

(although most voluntary management was also already present when other reasons were given). The most common measures, or similar management, implemented on both VM-CFE and VM-Non CFE farms were; C1 (grass buffers next to watercourse), C2 (grass areas to prevent erosion), C3a (reverted arable areas), C7a (overwinter stubble), C10 (game cover) and C9 (wild bird seed mix).

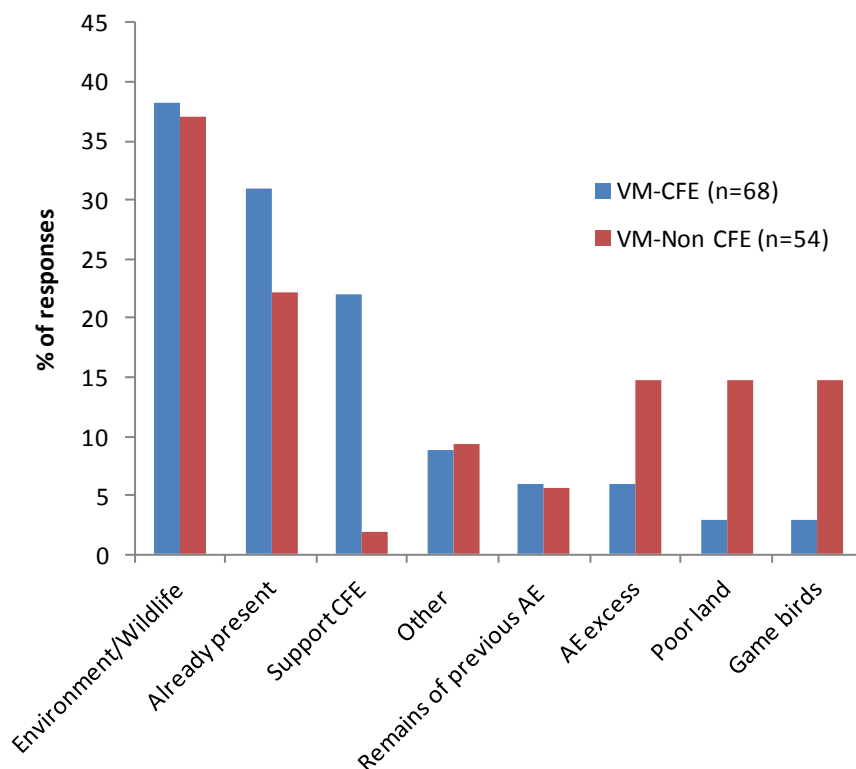


Figure 5 Reasons for implementation of voluntary measures (VM-CFE) or similar management (VM-Non CFE).

3.1.1.6 Agri-environment schemes.

In total, 61% of VM-Non CFE and 81% of VM-CFE farms had an existing agri-environment agreement. These results are very similar to the full Defra survey results, where 63% of VM-Non CFE farms and 81% of VM-CFE farms had an agri-environment agreement. Entry Level Stewardship (ELS) was the most common scheme in this sample and similar numbers of farms had a Higher Level Scheme (HLS) agreement or were in older Countryside Stewardship (CSS) or Environmentally Sensitive Area (ESA) schemes. The proportions of farms in each scheme was very similar to results from the full Defra survey (Figure 6) although a slightly greater proportion of farms in this survey were in Classic schemes compared to the full Defra survey results for both VM-CFE and VM-Non CFE groups. A total of 17% of VM-CFE farms had more than one AE scheme on their holding, whilst the comparative number on VM-Non CFE farms was 12%.

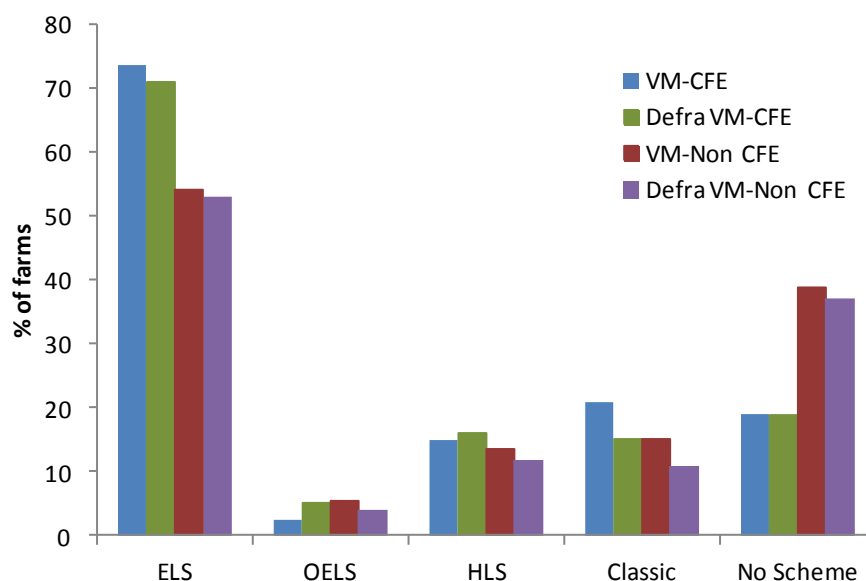


Figure 6 Presence of agri-environment schemes on farms visited for this study and the full Defra survey results¹⁰.

A number of farmers (both VM-CFE and VM-Non CFE) considered that, because they had an ELS points total in excess of their target, the additional management was voluntary and should therefore contribute to the Campaign targets. This land was not assessed in this study of voluntary measures. Only 23 of the VM-CFE farmers with an (O)ELS agreement (38%) could recall sufficient detail about their points target and total to allow analysis of the proportion of points in excess of their target. The average excess points on these farms was 9% (± 1) in excess of their points target and nine were at least 10% in excess of their points target. Some of those from both groups that could not recall their points target and total simply indicated what percentage of points were in excess. Estimates ranged from 0 to 20%, with an average of 7% (± 1).

In the VM-Non CFE category, only 10 farmers (23% of 43 farmers with an (O)ELS agreement) were able to provide accurate information on their points within ELS for analysis of proportion of points in excess of their target. These farms were on also on average 9% (± 2) in excess of their points target. A further ten indicated the proportion by which they were over their points target; this was on average 6% (± 1).

3.1.2 Implementation of measures

Information on which measures farms had in place was recorded by farmers in their Defra survey return in February 2012 (Annex 1). Within this survey farmers were asked to record measures that they considered to be part of the Campaign as well as any other unpaid environmental management that was similar to the Campaign measures but that they did not consider to be part of the Campaign. The information provided was verified as part of this project during interviews and field visits for the samples selected.

¹⁰ L. Clothier, pers. comm...

3.1.2.1 Accuracy of information recorded by farmers on the Defra February questionnaire 2012, on farms implementing voluntary management as part of the Campaign

All Farmers Contacted

A comparison between the measures that were expected (based on returns of the Defra postal questionnaire) on 'VM-CFE' farms (including area) and those that were subsequently found to be present is shown in Table 9. These data include the three farms that were removed from the sample after telephone contact because it became clear that the features declared on the Defra questionnaire would not contribute to the Campaign. This was because features were part of an AES agreement (two farms) or because features that farmers had planned to establish when they completed the Defra questionnaire in February, had not in fact been established this year (one farm) (Table 4).

For almost all measures, fewer features were found during this exercise than had been recorded on the Defra postal questionnaire. Greatest change in terms of numbers of farms where measures were present was recorded for C8 (uncropped, cultivated margins) and C13 (sown wildflower headlands) which were recorded on the ground on only 33% and 50% respectively of farms that had declared these measures on the Defra questionnaire. A larger number of farms had C3a (reverted arable areas) than recorded on the Defra survey because of reclassification of some measures and occasionally farmers mentioning additional voluntary management at interview that had not been included in their response to Defra. Despite this, overall areas recorded in this survey were unchanged or lower than expected for all measures assessed, including C3a. Greatest discrepancy in areas occurred for C5 (uncropped, cultivated areas for ground-nesting birds) (87%) although less than half of the expected area was found for: C2 (grass areas to prevent erosion), C4 (skylark plots), C8, C12a (pollen and nectar mixes) and C13. Overall, measures recorded at interview, represented 30% less area than expected from the farmers' responses to the Defra survey.

Only Farmers Visited

Analysis of changes in expected numbers and area of features for only those farms visited is presented in Table 10. Results are similar to those discussed above for all farmers contacted because only three VM-CFE farmers were excluded at the telephone stage because features were not present or did not contribute to the Campaign. Twelve measures were found on fewer farms than expected from the Defra returns.

Similarly, the area of each measure recorded on the Defra questionnaires was higher than the area recorded at visits for 12 of the measures. Larger areas than expected from the Defra returns were recorded only for C3a (reverted arable areas) and C7a (overwintered stubble). For C3a the increase was partly due to some measures being reclassified as C3a because farmers had misunderstood the requirements of other measures. Thus, the responses to the Defra questionnaire consistently overestimated the number of farms where voluntary measures were present. Similar to results for the full sample, discrepancies in area were greatest for C5. Overall, measures recorded at interview represented 18% less area under voluntary measures, than indicated by farmers' responses to the Defra questionnaire. Further analysis of the condition of voluntary management is based on features that were recorded on the ground rather than areas declared on the Defra returns. It is worth noting that, although the general trend was for both numbers and areas of each measure to be lower than what was expected, in most cases there were both losses and gains for each measure.

Table 9 Number of farms and area of measures expected from Defra February questionnaire compared to measures on the ground on VM-CFE farms including those removed after only telephone contact¹¹.

Measure	Number of farms						Area of measures ha					
	Expected	Lost	Gained	Actual	Change	% Change	Expected	Lost	Gained	Actual	Change	% Change
C1	35	11	1	25	-10	-28.6	66.7	19.8	0.4	46.5	-20.2	-30.2
C2	16	3	3	16	0	0.0	30.3	19.9	1.9	12.3	-18.1	-59.6
C3a	17	4	7	20	3	17.6	91.1	29.4	15.4	77.0	-14.1	-15.4
C3b	14	5	0	9	-5	-35.7	34.2	15.9	0.0	18.3	-15.9	-46.5
C4 ¹²	14	7	1	8	-6	-42.9	41.5	25.0	1.0	17.5	-24.0	-57.8
C5	13	6	0	7	-6	-46.2	27.6	24.4	0.5	3.7	-23.9	-86.6
C6	15	2	0	13	-2	-13.3	73.9	35.0	0.0	38.9	-35.0	-47.4
C7a	27	3	0	24	-3	-11.1	425.8	62.6	27.0	390.3	-35.6	-8.4
C7b	1	0	0	1	0	0.0	19.6	0.0	0.0	19.6	0.0	0.0
C8	12	8	0	4	-8	-66.7	23.1	13.2	0.0	9.9	-13.2	-57.1
C9	23	9	1	15	-8	-34.8	30.3	18.1	3.3	15.5	-14.8	-48.8
C10	27	6	0	21	-6	-22.2	80.7	12.38	7.3	75.6	-5.1	-6.4
C11	5	0	0	5	0	0.0	3.2	0.0	0.0	3.2	0.0	0.0
C12a	15	6	5	14	-1	-6.7	21.7	14.5	2.8	10.1	-11.6	-53.4
C12b	0	-	0	0	0	0.0	0.0	-	0.0	0.0	0.0	0.0
C13	12	6	0	6	-6	-50.0	7.8	5.2	0.8	3.4	-4.4	-56.1
C14	13	3	0	10	-3	-23.1	1277.3	442.8	9.0	843.5	-433.8	-34.0
C15	0	-	0	0	0	0.0	0.0	-	0.0	0.0	0.0	0.0
Mean (%)							125.3	40.3	3.8	88.1		(-29.7*)

*=((\sum Actual- \sum Expected)/ \sum Expected)*100

¹¹ Farms were not visited if telephone conversations indicated that measures were: in ES, on grassland or not currently in place (some farmers had recorded measures on the Defra survey that they had intended to implement, but which were not in place when they were contacted).

¹² For C4 (skylark plots), each plot has been assumed to be equivalent to 0.5 ha (recommended density 2/ha).

Table 10 Number of farms and area of measures expected from Defra February questionnaire compared to measures on the ground on VM-CFE farms that were visited.

Measure	Number of farms						Area of measures ha					
	Expected	Lost	Gained	Actual	Change	% Change	Expected	Lost	Gained	Actual	Change	% Change
C1	33	9	1	25	-8	-24.2	62.2	15.3	0.4	46.5	-15.7	-25.2
C2	15	2	3	16	1	6.7	14.3	3.9	1.9	12.3	-2.1	-14.4
C3a	15	2	7	20	5	33.3	69.8	8.2	15.4	77.0	7.2	10.3
C3b	14	5	0	9	-5	-35.7	34.2	15.9	0.0	18.3	-15.9	-46.5
C4 ¹³	13	6	1	8	-5	-38.5	39.5	23.0	1.0	17.5	-22.0	-55.7
C5	13	6	0	7	-6	-46.2	27.1	24.4	0.5	3.1	-24.0	-88.6
C6	14	1	0	13	-1	-7.1	61.9	23.0	0.0	38.9	-23.0	-37.2
C7a	25	1	0	24	-1	-4.0	381.8	18.6	27.0	390.3	8.4	2.2
C7b	1	0	0	1	0	0.0	19.6	0.0	0.0	19.6	0.0	0.0
C8	12	8	0	4	-8	-66.7	23.1	13.2	0.0	9.9	-13.2	-57.1
C9	21	7	1	15	-6	-28.6	23.8	11.5	3.3	15.5	-8.3	-34.9
C10	26	5	0	21	-5	-19.2	77.0	8.7	7.3	75.6	-1.5	-1.9
C11	5	0	0	5	0	0.0	3.2	0.0	0.0	3.2	0.0	0.0
C12a	13	4	3	12	-1	-7.7	16.7	9.4	2.8	10.1	-6.6	-39.3
C12b	0	-	0	0	0	0.0	0.0	-	0.0	0.0	0.0	0.0
C13	12	6	0	6	-6	-50.0	7.8	5.2	0.8	3.4	-4.4	-56.1
C14	12	2	0	10	-2	-16.7	1077.3	242.8	9.0	843.5	-233.8	-21.7
C15	0	-	0	0	0	0.0	0.0	-	0.0	0.0	0.0	0.0
Mean (%)							107.7	23.5	3.8	88.0		(-18.3*)

*=((\sum Actual- \sum Expected)/ \sum Expected)*100

¹³ For C4 (skylark plots), each plot has been assumed to be equivalent to 0.5 ha (recommended density 2/ha).

3.1.3 Meeting the red box requirements

The extent to which measures assessed on 'VM-CFE' farms met the 'essential management' (red box) guidelines is recorded in Table 11.

Overall, fewer features met the red box requirements (RBR) in 2012 compared to previous years when measures assessed in all three years were considered. In 2012, 38% of assessed features fully met RBR (based on measures assessed in all three years), whereas in 2010 and 2011 the proportion of features meeting RBR was 44% and 49% respectively. Care needs to be taken in interpreting these data in view of the small sample sizes, differences in numbers of each measure assessed each year and the fact that the requirements for some measures were changed between 2010 and 2011. However when 2011 and 2012 are compared, there is a high level of consistency in terms of the percentage of different measures meeting the red box requirements (Figure 7). Trends over the three years of the Campaign are considered further below.

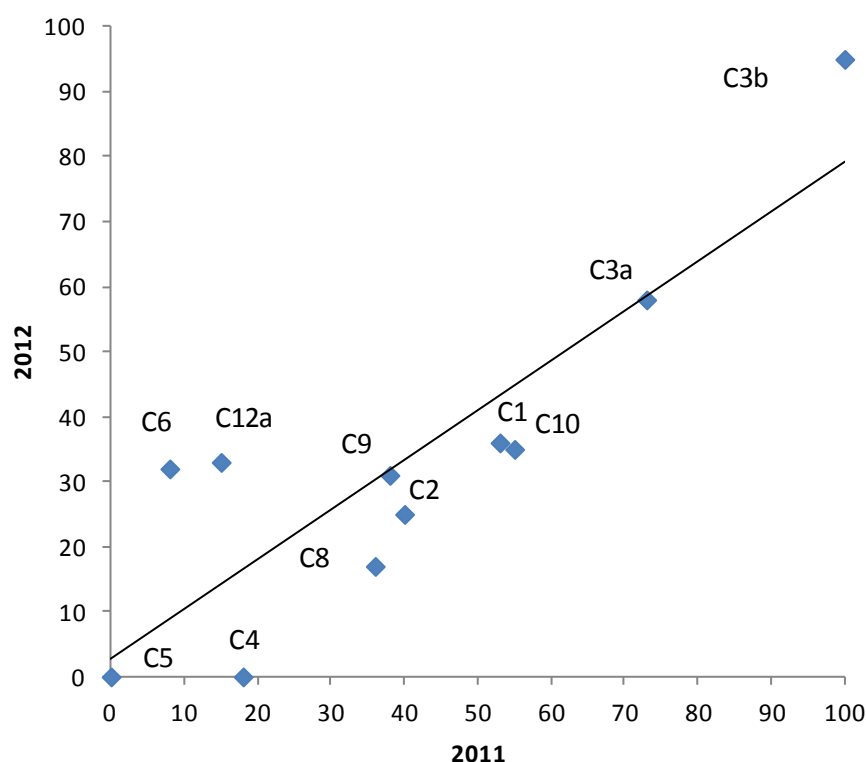


Figure 7 Percentage of features on VM-CFE farms meeting red box requirements in 2011 and 2012 for measures sampled in both years

It is also interesting to note that the areas estimated by farmers to be in the different options at interview do not necessarily correspond to those measured in the field. While they were generally lower when measured in the field, this was not always the case (e.g. C3b (scrub management), C6 (overwintered stubble followed by spring/summer fallow)). What is clear is that farmers' estimates of areas are not always reliable when discussing voluntary management, presumably because there is no requirement to measure the areas accurately as would be the case for Environmental Stewardship or Single Payment Scheme returns.

Previously, features managed outside the CFE in a similar manner to voluntary measures have not been assessed in the field in the same way as those within the CFE. However, according to the Defra survey returns, a large amount of land was managed in similar ways to voluntary measures, but not considered by those responding to be part of the CFE for various reasons. It is therefore of considerable interest to know if land managed within and outside the CFE is comparable; if so, the land managed outside the CFE could be considered to be contributing to the objectives of the Campaign even if not formally recognised as being part of it.

Table 12 shows the levels of correspondence of 'VM-Non CFE voluntary measures' (i.e. management similar to CFE voluntary measures on farms where the management was considered to be outside the Campaign), while Figure 8 gives a direct comparison of the numbers of features that met the red box requirements. Interestingly, the overall average percentages of features and area meeting red box requirements was slightly higher for VM-Non CFE farms than for VM-CFE farms, although the difference was small.

Table 11 **Number of VM-CFE farms, areas and number of features meeting Red Box Requirements (RBR) based on all available information.**

Measure	No. farms where measure assessed	Total no. features present	Features assessed	Area assessed (ha) (measured in field)	Farms meeting RBR	Area meeting RBR	Features meeting RBR	% farms meeting RBR	% area meeting RBR	% features meeting RBR
C1	24	108	75	13.5	2	4.3	27	8	32	36
C2	16	58	32	11.1	4	2.6	8	25	23	25
C3a	18	53	43	41.2	11	31.0	25	61	75	58
C3b	8	21	19	28.0	7	28.0	18	88	100 ¹⁴	95
C4	7	30	15	17.0	0	0	0	0	0	0
C5	5	9	6	1.7	0	0	0	0	0	0
C6	11	25	19	93.7	5	30.1	6	45	32	32
C7a	22	na	na	319.5	11	111.2	na	50	35	na
C8	4	42	6	1.2	1	0.2	1	25	17	17
C9	14	41	29	13.5	4	4.9	9	29	36	31
C10	20	105	58	23.2	8	8.6	20	40	37	34
C12a	14	26	24	8.6	5	3.3	8	36	38	33
C13	6	12	11	2.7	2	1.6	5	33	59	45
C14	6	44	19	149.0	1	0	0	17	0	0
Total (mean %)		574	356	723.9		225.8	127		(31.2*)	(35.7*)

*= $(\sum \text{Area meeting RBR} / \sum \text{Area assessed}) * 100$ or $= (\sum \text{Features meeting RBR} / \sum \text{Features assessed}) * 100$

¹ For C4 (skylark plots), each plot has been assumed to be equivalent to 0.5 ha (recommended density 2/ha).

² C7a was not assessed in the field at the spring assessment, therefore this data is based on interview data alone from 22 of the 24 farms with this feature.

¹⁴ 99.6%

Table 12 Number of VM-Non CFE farms (including VM-CFE farms with VM-Non CFE features), areas and number of features meeting Red Box Requirements (RBR) based on all available information.

Measure	No. farms where measure assessed	Total no. features present	Features assessed	Area assessed (ha) (measured in field)	Farms meeting RBR	Area meeting RBR	Features meeting RBR	% farms meeting RBR	% area meeting RBR	% features meeting RBR
C1	26	197	86	35.8	4	16.6	25	15	46	29
C2	8	26	18	6.2	1	2.7	7	13	44	39
C3a	34	108	82	124.0	18	91.4	50	53	74	61
C3b	9	19	19	26.6	9	26.6	19	100	100	100
C4	7	18	18	48.0	0	0	0	0	0	0
C5	4	8	8	4.8	0	0	0	0	0	0
C6	8	9	9	68.4	6	38.4	6	75	56	67
C7a	23	na	na	224.7	8	64.9	na-	35	29	na
C8	3	7	5	1.1	0	0	0	0	0	0
C9	12	40	29	11.6	3	3.2	6	25	28	21
C10	11	44	31	18.1	3	4.2	7	27	23	23
C12a	12	23	22	23.1	1	0.8	5	8	3	23
C13	2	3	2	0.2	1	0.1	1	50	50	50
C14	5	33	19	101.2	2	31.2	6	40	31	32
Total (mean %)		535	348	693.8		280	132		(40.4*)	(37.9*)

*= $(\sum \text{Area meeting RBR} / \sum \text{Area assessed}) * 100$ or $= (\sum \text{Features meeting RBR} / \sum \text{Features assessed}) * 100$

¹ For C4 (skylark plots), each plot has been assumed to be equivalent to 0.5 ha (recommended density 2/ha).

² C7a was not assessed in the field at the spring assessment, therefore this data is based on interview data alone.

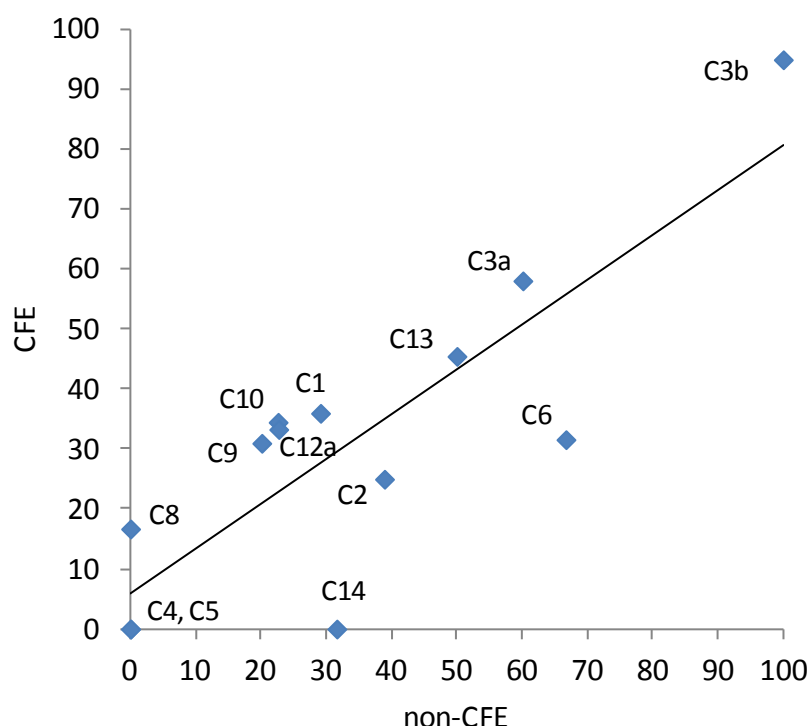


Figure 8 Percentage of CFE voluntary measures and comparable features managed outside the CFE meeting red box requirements.

Table 13 shows the number of farms and features where individual RBRs were met. There was considerable similarity between VM-CFE and VM-Non CFE farms in the factors that were most likely to meet the RBR.

For C1 (grass buffers along watercourses), most features met the requirements to apply no fertiliser etc., and to leave the area uncultivated. VM-CFE features were almost all situated adjacent to a watercourse, however a number of VM-Non CFE features were not. RBRs were most commonly not met because buffer strips were insufficiently wide or used for regular vehicle access. Almost all C2 (grass areas to prevent erosion) features met the requirements to leave the area ungrazed and to not apply fertiliser etc.. However, nearly half of the features were not the specified width and one third of VM-CFE features had been used for regular access. For C3a (reverted arable areas), RBRs to not apply fertiliser etc. and to remove existing compaction were usually met. However a small proportion of both VM-CFE and VM-Non CFE features were not sufficiently wide (24 features overall; 19%). Cutting management was not appropriate on 18% (22 features). Requirements for C3b (scrub management on reverted areas) were almost all met. However, for most measures where a minimum width is prescribed, this is consistently not followed by a significant proportion of those implementing the measure.

Most skylark plots (C4) were created appropriately, were in winter cereal crops and most VM-CFE plots were of sufficient size. However, ten fields with skylark plots (33%) were less than 5 ha and in 12 fields (36%) plots were located on tramlines or too close to the field boundary (less than 50 m from field boundaries, or less than 100 m from trees or woodland). Plots were implemented at the correct density on only one farm and in most fields there were only one or two per field.

All C5 (fallow plots for birds) features were placed in fields larger than 2 ha that were not at risk of generating soil erosion. However, only two of the eight VM-Non CFE features had created a fallow in late winter. Nine features (64%) were located too close to woodland or trees and only three features (21%) were of sufficient size to meet this RBR. In several instances the areas were actually strips at the field margin.

Overall the red box requirements of C6 (stubble plus fallow) were generally met although a greater proportion of VM-Non CFE features were managed according to the guidelines than VM-CFE features. However, seven features (25%) had applied pre-harvest desiccants or post-harvest herbicides and nine features (32%) had been cultivated before the end of July.

It was not possible to assess C7a (stubble) in the field during spring visits, therefore assessments against RBRs presented here are based on interviews only. Almost all features were left ungrazed/untopped and were not cultivated before the end of March. However, 15 farms (33%) applied fertiliser/manure or lime and pre-harvest desiccants or post-harvest herbicides were applied on 21 farms (47%).

Few C8 (uncropped cultivated margins) features received fertiliser/manure or pesticide inputs, but a relatively high proportion of farmers did not meet other RBRs, although sample numbers for this measure were small. In particular, four features (36%) were placed in areas at risk of soil erosion and five were in areas prone to pernicious weeds, however these features were predominantly on VM-Non CFE farms. Seven features (64%) were not cultivated.

Most areas of C9 (wild bird seed mix) were at least 6 m wide, but 28 features (48%) did not meet the overall size threshold of 0.4 ha. The requirement to exclude maize from the mixture had not been met on 14 features assessed (24%). Eleven features (19%) all under VM-Non CFE management were not retained until 1st March. All C10 (game strips) assessed met the requirements to retain the area until mid February and none were grazed. However, 62 features (70%) had maize included in the seed mix.

Most C12a (pollen and nectar mixtures) features (all features under VM-CFE management) received no pesticide, fertiliser or manure and were not grazed in the spring or summer. However, on twelve features (26%) which were predominantly on VM-Non CFE farms, the seed mix did not contain at least four nectar rich plants. Overall, 19 features (41%) were not cut at an appropriate time of year (between 15 September and 31 October). Only a small number of C13 (sown wildflower headland) features were assessed, largely under VM-CFE management. Three of the thirteen features were less than 6 m wide and three were not cut annually.

Half of the C14 (selective use of spring herbicides) features assessed were prone to problem grass weeds. All of the VM-CFE features had received either an autumn herbicide or an inappropriate spring herbicide application, with eight features receiving both. No VM-Non CFE features had received autumn herbicides, however only six features had not received inappropriate spring herbicide application. These results highlight the lack of understanding of the requirements of this measure.

Table 13 Number of farms and features meeting individual RBR for both ‘VM-other’ and ‘VM-CFE’ farms. Numbers in parentheses represent number of individual features. Requirements in italics are those assessed through visit interview.

Requirement	VM-CFE			VM-Non CFE		
	No. of farms		No. of measures	No. of farms		No. of measures
	Part	Full		Part	Full	
C1	n=24		n=75	n=26		n=86
Width	10	11	(55)	8	14	(48)
<i>Fertiliser</i>	1	23	(74)	1	25	(85)
<i>Remove compaction</i>	0	22	(70)	0	23	(81)
Access	11	7	(41)	6	13	(54)
Cultivation	1	23	(74)	1	25	(85)
Next to watercourse	1	23	(74)	4	21	(76)
Total	2		(27)	4		(25)
C2	n=16		n=32	n=8		n=18
Width	6	8	(19)	3	4	(10)
<i>Fertiliser</i>	0	15	(31)	0	7	(17)
Access	3	11	(20)	2	5	(15)
<i>Grazed</i>	0	14	(29)	0	8	(18)
Total	4		(8)	1		(7)
C3a	n=18		n=43	n=34		n=82
Width	2	14	(35)	1	28	(66)
<i>Fertiliser</i>	1	17	(41)	2	31	(78)
Compaction	1	16	(41)	4	30	(78)
<i>Cutting/date</i>	0	15	(34)	0	27	(69)
Total	11		(25)	18		(50)
C3b	n=8		n=19	n=9		n=19
<i>Remove compaction</i>	0	7	(18)	0	9	(19)
<i>6m width</i>	0	8	(19)	0	9	(19)
<i>Fertiliser</i>	0	8	(19)	0	9	(19)
Total	7		(18)	9		(19)
C4	n=7		n=15	n=7		n=18
<i>Density</i>	0	0	(0)	0	1	(1)
<i>Field size</i>	4	3	(11)	1	5	(12)
<i>Creation method</i>	0	6	(13)	0	6	(17)
<i>Crop type</i>	1	5	(13)	1	5	(16)
Plot size	0	6	(13)	3	4	(14)
Location	1	4	(11)	2	3	(10)
Total	0		(0)	0		(0)

Requirement	VM-CFE			VM-Non CFE		
	No. of farms		No. of measures	No. of farms		No. of measures
	Part	Full		Part	Full	
C5	n=5		n=6	n=4		n=8
Woodland/trees	0	3	(3)	1	0	(2)
Plot Size	1	0	(1)	0	1	(2)
Field size	0	5	(6)	0	4	(8)
Soil erosion	0	5	(6)	0	4	(8)
Fallow creation	0	4	(5)	0	1	(2)
Total	0		(0)	0		(0)
C6	n=11		n=19	n=8		n=9
Previous crop	0	10	(16)	0	8	(9)
Cultivation date	0	7	(10)	0	8	(9)
Fertiliser/manure	0	10	(18)	0	8	(9)
Herbicide date	0	10	(16)	0	7	(7)
Pr- harvest desiccant or post-harvest herbicide	0	9	(13)	0	7	(8)
Total	5		(6)	6		(6)
C7a*	n=22			n=23		
Plough date	21			23		
Pre-harvest desiccant or post-harvest herbicide	13			11		
Top or graze	21			23		
Manure/fertiliser	16			14		
Total	11			8		
C8	n=4		n=6	n=3		n=5
6 m from a watercourse	1	2	(3)	0	2	(4)
Minimum 3 m width	0	3	(3)	1	2	(4)
Cultivation date	0	1	(1)	0	1	(3)
Pernicious weeds	0	3	(5)	0	1	(1)
Fertiliser/manure	0	3	(5)	0	3	(5)
Pesticides	0	3	(3)	0	3	(5)
Soil erosion risk	0	4	(6)	0	1	(1)
Total	1		(1)	0		(0)
C9	n=14		n=29	n=12		n=29
Maize	0	9	(20)	0	10	(22)
Size	4	8	(17)	5	3	(13)
Width	1	12	(27)	2	10	(27)
Date destroyed	0	14	(29)	0	9	(18)
Total	5		(9)	3		(6)

Requirement	VM-CFE			VM-Non CFE		
	No. of farms		No. of measures	No. of farms		No. of measures
	Part	Full		Part	Full	
C10	n=20		n=58	n=11		n=31
<i>Maize</i>	0	8	(20)	0	3	(7)
<i>Retain until February</i>	0	20	(58)	0	11	(31)
<i>Do not graze</i>	0	20	(58)	0	11	(31)
Total	8		(20)	3		(7)
C12a	n=14		n=24	n=12		n= 22
<i>Cut date</i>	0	9	(14)	0	7	(13)
<i>Cuttings removed</i>	0	10	(19)	0	11	(20)
<i>Seed mix</i>	0	10	(21)	0	7	(13)
<i>Width</i>	1	10	(18)	0	11	(21)
<i>Grazed</i>	0	14	(24)	0	10	(20)
<i>Remove compaction</i>	0	14	(24)	0	11	(20)
<i>Fertiliser/pesticides</i>	0	14	(24)	0	9	(18)
Total	5		(8)	1		(5)
C13	n=6		n=11	n=2		n=2
<i>Width 6 m</i>	2	3	(8)	0	2	(2)
<i>Cut annually</i>	0	5	(9)	0	1	(1)
<i>Cuttings removed</i>	0	6	(9)	0	2	(2)
<i>Application of fertiliser, pesticide, manure etc</i>	0	5	(9)		2	(2)
Total	2		(5)	1		(1)
C14	n=6		n=19	n=5		n=19
<i>Autumn herbicide</i>	0	3	(9)	0	5	(19)
<i>Spring herbicide type</i>	0	1	(2)	0	2	(6)
<i>Problem grasses</i>	0	3	(9)	0	3	(10)
<i>Herbicide resistant weed species</i>	0	4	(12)	0	4	(15)
Total	0		(0)	2		(6)

*based on interview only as stubbles not present at time of assessment

The probability that an individual RBR would not be met by the feature assessed was calculated for each of the measures with 95% confidence intervals (Figure 9). This takes into account the number of features assessed and the number of RBR criteria associated with each measure and the number of RBR that each of the features assessed did not meet. It assumes that all RBRs have an equal likelihood of not being met. For most individual measures, the probability of not meeting a RBR was similar for VM-CFE and VM-Non CFE features. C6 and C8 VM-Non CFE features were apparently less likely not to meet RBRs than VM-CFE features, although confidence intervals were relatively large and differences were only statistically significant for C6 ($p=0.024$). Generally, requirements of the more commonly implemented measures were least likely not to be met (e.g. C3a), whereas the requirements of C4 and C8 were most likely not to be met.

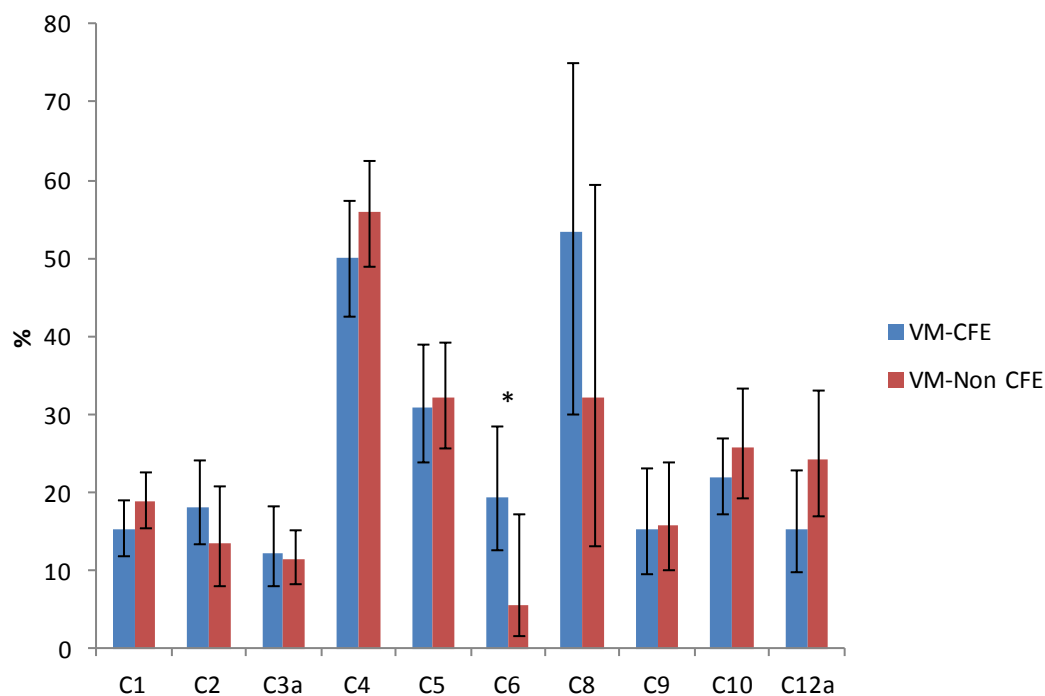


Figure 9 Probability of not meeting individual RBRs with 95% confidence intervals for 2012 VM-CFE and VM-Non CFE

3.1.3.1 Major vs minor issues with meeting red box requirements

RBR that were not met by each measure are discussed below in an attempt to assess whether the issue should be regarded as a major or minor issue. Some RBR should always be treated as major problems. An example would be the application of fertilisers, organic manures or waste materials on a C1 grass buffer designed to prevent pollutant entering the adjacent watercourse. However, in some cases the reason for not meeting the RBR could be regarded as a minor issue. An obvious example would be where the feature in question does not quite meet the minimum size specified, but meets all the other RBR. For instance, a 5 m wide C3a (reverted arable areas) measure would not meet the specified 6 m width requirement. A C9 (wild bird seed mix) will not meet the requirements if maize or giant sorghum are included in the mix, however it may be possible to classify the severity of the issue dependent upon the proportion of the C9 that is sown with maize or giant sorghum. Where minimum measurements are stated in the RBR, for the purpose of this report a minor issue has been classified as one that does not meet the size requirements by no more than 20%. Features that do not fully meet the RBR on the 'VM-CFE'

farms are considered below in terms of major or minor issues as defined, although what constitutes a minor issue could be debated further. Numbers of farms and features that would be considered minor issues are presented in Table 14 (VM-CFE) and Table 15 (VM-Non CFE).

The minimum required width of 6 m along the full length of the feature (including the 1 m cross compliance strip) was one of the main criteria not met for C1 features. If this minimum width is reduced by 20% to 4.8 m, one additional VM-CFE feature and four VM-Non CFE features (on 3 farms) would meet the RBR for width. Caution needs to be taken here as this is the average width - we do not know how variable the width was along the length of the measure. Two of these features also met all other RBR. One VM-CFE feature and 10 VM-Non CFE features (five farms) were not located next to a watercourse, however all other RBR were met for the VM-CFE features and four VM-Non CFE features. These clearly do not meet the specification for a 'C1: Grass buffers alongside temporary and permanent watercourses' (aimed at resource protection).

Features recorded as C2 that were only 20% narrower than the recommended 6 m width were considered minor issues. This occurred on 3 VM-CFE farms (4 features) and one VM-Non CFE farm (1 feature). All the VM-CFE features met all the other RBRs, however the VM-Non CFE feature did not.

C3a features were most likely not to meet the RBR because they were not 6 m wide along the full length or because they were not cut or grazed. One VM-CFE feature and two VM-Non CFE features were within 20% of the 6 m target (taking the average width). Two of these met all other RBRs, thus the width could be considered a minor issue. Lack of annual cutting or grazing annually could be regarded as a minor issue. This occurred on nine VM-CFE features (three farms) and 13 VM-Non CFE features (seven farms). Seven VM-CFE features and ten VM-Non CFE features that were not cut or grazed met all other RBRs.

Only one C3b feature did not fully meet the RBRs for this measure. Compaction was not removed, which could be considered a minor issue.

The incorrect density of skylark plots within a field is considered to be a major problem. All but two farms (one VM-CFE and one VM-Non CFE) had plots at insufficient density, but both of these did not meet other RBRs. Two VM-CFE features (2 farms) and three VM-Non CFE features (2 farms) were placed in fields that were slightly smaller (20%) than recommendations. Where trees or other high features represented less than 50% of the boundary and field size was significantly larger than 5 ha, this was considered a minor issue. Three features on one VM-CFE farm and 4 features on different VM-Non CFE farms did not quite meet the RBR in this way.

Most C5 features (five VM-CFE and six VM-Non CFE) had not been cultivated in late winter to create a fallow, which could be considered a minor issue if vegetation growth is limited and the area remains open. However no C5 features met the requirements of plot size and the proximity of trees.

Eight C6 features (on three VM-CFE farms) were cultivated in July and another had applied fertiliser. Both could be considered minor issues, although only three of these features met all other RBRs for C6.

The application of fertiliser, manure or lime to a C7a feature is considered to be a minor issue. Six VM-CFE farms and nine VM-Non CFE farms had applied fertiliser, manure or lime, but only five farms overall met all other RBR. The application of desiccants and herbicides is considered a major RBR problem.

Presence of problem pernicious weeds and width within 80% of the recommendation could be considered minor issues for C8. Only one VM-CFE feature had weed issues, but four VM-Non CFE features on two farms were concerned about pernicious weeds. However, none of these features met all other RBRs. No features that did not meet the 3 m width requirement were within the tolerance specified.

The minimum size specified as a RBR for C9 is 0.4 ha. If this was reduced by 20% to specify a minimum of 0.32 ha three additional C9 features would meet this RBR (this will be considered a minor issue) and two VM-Non CFE features met all other RBRs. Similarly one VM-CFE feature was within 20% of the specified width, but this feature did not meet the overall size requirement. A number of farms did not meet the RBR to exclude maize from the mixture. However, six features (three farms) and seven VM-Non CFE features (two farms) included maize with at least four other seed bearing crops which would be a useful resource to farmland birds. This has been included as a minor issue although for most farms there was insufficient information available to establish the proportion of maize in the mixture. Five of the VM-CFE features met all other RBRs.

C10 features most commonly did not meet the RBR to exclude maize from the sown mixture. Three VM-CFE features (one farm) and five VM-Non CFE features (one farm) included at least four other seed bearing crops, although again there was insufficient information on seed rates. All these features met the other RBRs for C10.

Two C12a features (one VM-CFE and one VM-Non CFE) features were within 20% of the minimum width of 6 m. The latter feature met all other RBRs.

Two C13 features were not sufficiently wide to meet the RBR, but were within 80% of the recommendation. One of these met all other RBRs.

Table 14 Importance of not meeting RBRs and potential for meeting RBR of other measures on VM-CFE farms. Number of farms* with number of features in parentheses.

Measure	n	Total not meeting at least one RBR	Minor issue only	Met RBR of another measure
C1	24 (75)	22 (48)	1 (1)	0
C2	16 (32)	12 (24)	3 (4)	6 (10)
C3a	18 (43)	7 (18)	4 (8)	0
C3b	8 (19)	1 (1)	1 (1)	0
C4	7 (15)	7 (15)	0	0
C5	5 (6)	5 (6)	0	0
C6	11 (19)	6 (13)	2 (3)	1 (3)
C7a	22	11	2	0
C8	4 (6)	3 (5)	0	0
C9	14 (29)	9 (20)	3 (5)	5 (10)
C10	20 (58)	12 (38)	1 (3)	0
C12a	14 (24)	9 (16)	0	3 (4)
C13	6 (11)	4 (6)	1 (1)	1 (1)
C14	6 (19)	6 (19)	0	0

*maximum number of farms that did not meet all RBR. Features under a measure could both meet and not meet RBRs on the same farm.

Table 15 Importance of not meeting RBRs and potential for meeting RBR of other measures for VM-Non CFE features. Number of farms* with number of features in parentheses.

Measure	n	Total not meeting at least one RBR	Minor issue only	Met RBR of another measure
C1	26 (86)	22 (61)	1 (1)	4 (4)
C2	8 (18)	7 (11)	0	2 (2)
C3a	34 (82)	16 (32)	7 (11)	0
C3b	9 (19)	0	0	0
C4	7 (18)	7 (18)	1 (1)	0
C5	4 (8)	4 (8)	0	0
C6	8 (9)	2 (3)	0	2 (3)
C7a	23	15	3	0
C8	3 (5)	3 (5)	0	0
C9	12 (29)	9 (23)	2 (2)	6 (14)
C10	11 (31)	8 (24)	1 (5)	0
C12a	12 (22)	11 (17)	1 (1)	4 (6)
C13	2 (2)	1 (1)	0	0
C14	5 (19)	3 (13)	0	0

*maximum number of farms that did not meet all RBR. Features under a measure could both meet and not meet RBRs on the same farm.

3.1.3.2 Likelihood of meeting RBR for an alternative measure

In 2011 and 2012, features were assessed against the RBR for the measure that the farmer considered it to be. This was in contrast to 2010, when, because of the level of confusion amongst farmers at the beginning of the Campaign, surveyors matched the features to the most appropriate measure as far as possible. In order to assess the maximum level of compliance with RBRs in 2011, those features that did not meet RBRs based on the measure indicated by the farmer, were assessed against the requirements for other measures Table 14 (VM-CFE) and Table 15 (VM-Non CFE). However, it should be noted that full details of management appropriate for 'alternative' measures were not always collected. Not all measures have potential alternatives. C1, C2, C12a and C13 could be reclassified as C3a. In addition, C5 and C6 could be reclassified as rotational C3a. C9 features were reassessed against the requirements of C10.

Four C1 features on four farms were not next to a watercourse, but would have met the requirements for C3a. Ten C2 features on six VM-CFE farms and two features on two VM-Non CFE farms did not meet the requirements only for access, grazing or other livestock access, but would again have met the requirements for C3a.

C5 features that did not meet the requirements of plot size, tree proximity and fallow establishment in late winter could be considered as rotational C3a, although these features would have been rotated annually and there would have been no attempt to 'establish a grassy sward' required by

C3a. This represented all features described as C5 on both VM-CFE and VM-Non CFE management.

Six C6 features (on one VM-CFE and two VM-Non CFE farms) did not meet the requirements for crop type or herbicide/desiccant application, but would probably have met the requirements for rotational C3a, although again a grassy sward would not necessarily have been established.

Many C9 features that did not meet the requirements for this measure, did not meet the minimum area, but would meet the requirements for C10 because no minimum area is specified. This applied to 11 VM-CFE features (five farms) and 12 VM-Non CFE features (six farms) which met all other RBRs. A further three VM-Non CFE features (one farm) were retained sufficiently long in spring (mid February) to meet C10 RBRs, but not C9 (1 March).

C12a features that did not meet the nectar plant, cutting time, removal of shreddings and grazing requirements of this measure could be reclassified as C3a. This applied to four VM-CFE features (three farms) and six VM-Non CFE features (four farms).

One C13 feature where cuttings were not removed would have met the requirements for C3a.

Overall, 8.4% of all features assessed (13.6% of features that did not meet the RBR for the measure they were declared as) met the RBR for an alternative measure. Proportions were the same for VM-CFE and VM-Non CFE features.

The proportions of features and area that met RBR, met RBR of an alternative measure or nearly met the RBR are presented in Table 16 and Table 17. A significantly greater proportion of the area of a number of measures would have been met if minor issues with RBR were excluded or if features had been attributed to a more appropriate measure for both VM-CFE and VM-Non CFE features. The proportion of areas that would have passed or nearly passed RBR increased particularly for C2, C3a, C6, C9, C12a and C13 for VM-CFE features and for C1, C2, C3a, C6, C7a, C8, C9, C10, C12a VM-Non CFE features. However, even if minor issues or alternative RBR are considered there was no significant increase in the area of C4, C5, C8, C14 that would have 'met' RBRs for VM-CFE or VM-Non CFE features. Overall, 10% of the VM-CFE area and 15% of the VM-Non CFE area would have met RBR of alternative measures or only had minor issues.

Table 16 Number and area of VM-CFE features assessed, fully meeting Red Box Requirements (RBR) and those with minor issues or which would fulfil the requirements of an alternative measure.

Measure	Features assessed	Area assessed (ha) (measured in field)	Features meeting RBR	Area meeting RBR	No. features 'minor issue' or meet other RBR	Area 'minor issue' or meet other RBR	% features meeting RBR	% area meeting RBR	% features meeting RBR or 'minor issue'	% area meeting RBR or 'minor issue'
C1	75	13.5	27	4.3	1	0.04	36	32	37	32
C2	32	11.1	8	2.6	14	7.1	25	23	69	87
C3a	43	41.2	25	31.0	8	6.8	58	75	77	92
C3b	19	28.0	18	28.0	1	0.1	95	100	100	100
C4	15	17.0	0	0	0	0	0	0	0	0
C5	6	1.7	0	0	0	0	0	0	0	0
C6	19	93.7	6	30.1	6	28.7	32	32	63	63
C7a		319.5		111.2		20		35		41
C8	6	1.2	1	0.2	0	0	17	17	17	17
C9	29	13.5	9	4.9	17	6.6	31	36	90	85
C10	58	23.2	20	8.6	3	1.6	34	37	40	44
C12a	24	8.6	8	3.3	4	2.5	33	38	50	67
C13	11	2.7	5	1.6	2	0.7	45	59	64	85
C14	19	149.0	0	0	0	0	0	0	0	0
Total (mean %)	356	723.9	127	225.8	56	74.1	(35.7*)	(31.2*)	(51.4*)	(41.4*)

*=($\sum(\text{quantity meeting RBR})/\sum(\text{quantity assessed})$)*100

Table 17 Number and area of VM-Non CFE features assessed, fully meeting Red Box Requirements (RBR) and those with minor issues or which would fulfil the requirements of an alternative measure.

Measure	Features assessed	Area assessed (ha) (measured in field)	Features meeting RBR	Area meeting RBR	No. features 'minor issue' or meet other RBR	Area 'minor issue' or meet other RBR	% features meeting RBR	% area meeting RBR	% features meeting RBR or 'minor issue'	% area meeting RBR or 'minor issue'
C1	86	35.8	25	16.6	5	4.1	29	46	35	58
C2	18	6.2	7	2.7	2	1.3	39	44	50	65
C3a	82	124.0	50	91.4	11	17.0	61	74	74	87
C3b	19	26.6	19	26.6	0	0	100	100	100	100
C4	18	48.0	0	0	1	2.5	0	0	6	5
C5	8	4.8	0	0	0	0	0	0	0	0
C6	9	68.4	6	38.4	3	30.0	67	56	100	100
C7a		224.7		64.9		26.5		29		41
C8	5	1.1	0	0	0	0	0	0	0	0
C9	29	11.6	6	3.2	23	8.4	21	28	100	100
C10	31	18.1	7	4.2	5	2.7	23	23	39	38
C12a	22	23.1	5	0.8	7	5.4	23	3	55	27
C13	2	0.2	1	0.1	0	0	50	50	50	50
C14	19	101.2	6	31.2	0	0	32	31	32	31
Total (mean %)	348	694	132	280	57	98	(37.9*)	(40.4*)	(54.3*)	(54.5*)

*=($\sum(\text{quantity meeting RBR})/\sum(\text{quantity assessed})$)*100

3.1.3.3 Measures undertaken specifically in response to the Campaign

For each measure present, VM-CFE farmers were asked: “would you have done this in the absence of the Campaign?” Where the answer was “no”, the management was considered to have been undertaken directly in response to the Campaign. Only 17 farms were found to have measures implemented directly as a result of the Campaign. The measures most commonly undertaken were C9 wild bird seed mixtures (five farms) and C13 sown wildflower headlands (four farms; see Table 28).

The number of features assessed in the field that met the red box requirements are shown in Table 18. Seven out of 15 farms met the red box requirements in full.

Table 18 Measures undertaken specifically in response to the Campaign and assessed in field.

Measure	No. of farms	Meets red box requirements	Red box requirements not met
C1	3	1	Width Access
C2	2	1	Width Access
C3b	1	1	
C5	1	0	Plot size No fallow creation
C7a	1	1	
C9	3	1	Maize Size
C10	2	1	Maize
C12	1	1	
C13	4	1	Width No annual cut Herbicides applied

3.2 COMPARISON OF THOSE UNDERTAKING VOLUNTARY MANAGEMENT AS PART OF THE CAMPAIGN 2010-2012

In each year of this study, a sample of farmers who indicated that they were participating in the Campaign through voluntary measures were visited to ask more detail about their attitudes to the Campaign and to assess the implementation of voluntary measures on the ground. Comparisons of responses for each of the three years are presented here. However when making comparisons between the years it must be remembered that in 2010 the sample was selected from a slightly different group as the Defra survey was worded slightly differently to subsequent years. Also, the sample sizes are relatively small. Analysis of free text responses has been based on 2011 categories. A small number of 2010 responses were recategorised against 2011 groupings, therefore there are some differences between results reported here and the 2010 annual report.

3.2.1 Overview and engagement with the Campaign

3.2.1.1 Participation

A high proportion, but not all farmers considered that they were participating in the Campaign when asked at interview, despite being selected from those who indicated that they had voluntary measures in the Defra survey. The proportion of farmers who definitely considered that they were participating was highest in 2011 and lowest in 2010 (Table 19). There were significant between year differences in responses to participation ($p=0.003$; Pearson $p=0.001$) with greatest differences from expected values in those that responded 'don't know' in 2011.

Similar proportions of farmers in target (87%; $n=240$) and non-target (85%; $n=41$) counties (pooled across all three years) considered that they were participating in the Campaign and there were no significant differences in participation between target and non-target counties. Most of those who were not positive about participation were simply unsure (14% in 2010 and 2012). The differences between the Defra postal survey and the visit interviews are probably due to a number of factors. Farmers may have a different approach to responding to the different methodologies adopted, may have interpreted participation in the Campaign differently based on the level of background information provided, may be concerned about giving an inappropriate answer at interview, or they may have completed the form incorrectly.

Table 19 Proportion of farmers that considered they were participating in the Campaign (%).

	2010 n=97	2011 n=104	2012 n=80
Yes	79	96	84
Don't know	14	2	14
No	6	2	2

Implementing voluntary measures and having an agri-environment scheme were the most common ways that farmers considered they were participating in the Campaign (Figure 10) in each year. Participation through voluntary measures decreased from 2010 (78%) to 63-65% in subsequent years, whereas participation through an AE scheme remained the same. Only a small proportion of farmers mentioned other methods of participation in any year.

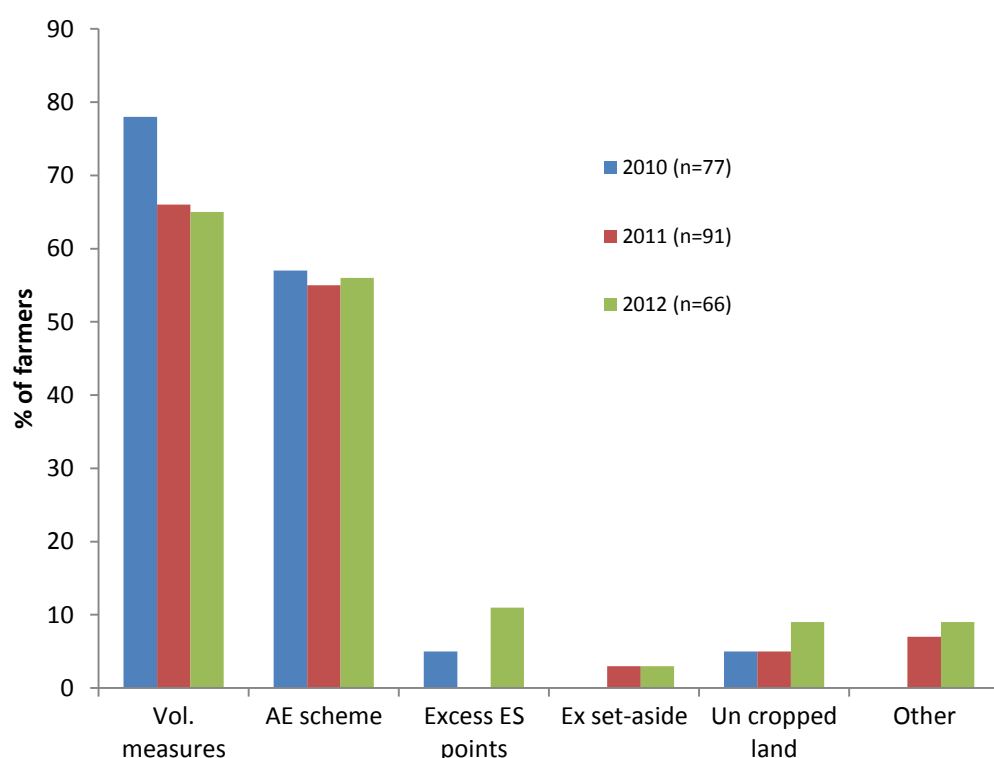


Figure 10 Methods of participation for those who considered that they were participating in the Campaign

Support for the aims of the Campaign remained high in all three years and there was no significant difference in the proportion of farmers that were supportive. In 2011 and 2012 a small number of individuals indicated that they did not support the aims (Table 20) or were unsure. These results are in contrast to those from the Defra survey which reported lower overall support for the Campaign and an increase in support for the aims of the Campaign over the three years. It is known from analysis of the Defra survey data that the wider group of VM-CFE farmers agreeing to further research were significantly more likely to support the Campaign aims (and approach) (Defra, 2012).

Although support for the approach was high, it declined over the three years. Changes in support were particularly apparent between 2010 and 2011, perhaps suggesting that in 2010, farmers did not sufficiently understand the approach of the Campaign. Increasing proportions of farmers were unsure whether they supported the approach. Statistical analysis of these responses indicated differences of marginal significance ($p=0.052$; Pearson $p=0.056$). These results again contrast with results from the Defra survey (see above for potential bias in the group agreeing to further research), in which support for the approach was lower overall and increased over the three years (with a corresponding decrease in the proportion that neither agreed nor disagreed with the approach). The interviews conducted here show an increase in the proportion of farmers who did not support the approach in 2011, which was maintained in 2012. Whereas the Defra survey results indicate a small and possibly declining proportion of farmers were not supportive of the approach (Defra, 2012).

Comparison of those in target and non-target counties (pooled for all three years) revealed very similar levels of support for the aims of the Campaign (Table 20). Support for the approach was also similar. A slightly greater proportion of those in non-target counties did not support the

Campaign and slightly more of those in target counties were unsure of their support, however these differences were not significant.

Table 20 Support for the aims and approach of the Campaign in each year and for target and non-target counties pooled across years (%).

	2010 n=97	2011 n=104	2012 n=80	Target counties n=240	Non-target counties n=41
Aims					
Yes	92	92	91	92	90
Don't know	8	4	6	6	5
No	0	4	3	2	5
Approach					
Yes	87	74	70	77	78
Don't know	11	16	21	17	12
No	2	10	9	6	10

Farmers were asked to indicate any aspects of the Campaign that they particularly liked or disliked (Table 21 & Table 22) although many did not express particular likes or dislikes, but made more general comments about the Campaign.

The voluntary nature of the Campaign was the most common aspect liked in all three years (by at least one quarter of those who responded). Environmental benefits were mentioned by a significant proportion each year, however a smaller proportion of farmers cited environmental benefits in 2011 compared to other years. There were few apparent trends over time, however the flexible nature of the Campaign was mentioned by an increasing proportion of farmers each year.

Table 21 Aspects of the Campaign particularly liked by farmers undertaking voluntary measures as part of the Campaign (% of respondents who expressed an opinion¹⁵).

Aspect liked	2010 (n=60)	2011 (n=64)	2012 (n=36)
Voluntary	35	33	28
Environmentally beneficial	23	11	28
Generally positive	7	28	22
Flexible	8	17	22
Public relations	5	5	6
Other	25	14	6
Not enough information to comment	5	3	0

Farmers quoted a wide range of aspects of the Campaign that they disliked (Table 22). In all three years, 16-21% of farmers were concerned that some farmers will do nothing. Other particular concerns were a lack of information or that there was too much overlap with ES schemes. Both of these issues were mentioned by a greater proportion of farmers in 2012 than in 2010. In 2012, 15% were concerned that the Campaign was taking land out of production, whereas this had been mentioned by very few farmers in previous years. However, in 2012 a smaller proportion of farmers were concerned that the Campaign was restrictive compared to previous years.

Table 22 Aspects of the Campaign particularly disliked by farmers undertaking voluntary measures as part of the Campaign (% of respondents who expressed an opinion¹⁵).

Aspect disliked	2010 (n=50)	2011 (n=53)	2012 (n=26)
Some will do nothing	16	21	19
Poor dissemination of info/badly publicised	6	15	23
Duplicates AE schemes	2	13	12
Taking productive land out of production	4	2	15
Too restrictive	18	13	4
Potential for enforced alternative	12	4	12
Financial cost/income loss	6	4	0
Not suitable for all farms	4	0	8
Other	38	32	31

¹⁵ Figures for 2010 and 2011 are slightly different to the annual reports because the 'nothing' response was removed (not necessarily distinct from those that made no comment) and in 2010 some responses were reallocated to new categories.

3.2.1.2 Awareness

Farmers were asked about their awareness of the Campaign in terms of the themes, methods of participation, availability of advice and regional issues. In order to gain some understanding of the level of awareness, farmers were initially asked what they knew about the Campaign under four headings (themes, types of participation, advice, targeting) without further prompting. Unsurprisingly, farmers were much less likely to volunteer information than indicating that they were aware when prompted.

Awareness of the three themes has changed little over the three years, although farmland birds and farmland wildlife were more likely to be volunteered in 2012 (significant difference for farmland birds). Knowledge of the voluntary measures was consistently high in all years, whereas awareness of other types of participation appeared to increase a little in 2011, but decrease in 2012 (Table 23). Data for themes, types of participation, advice and regional targeting are summarised in Figure 11 which presents awareness figures meaned across the individual issues under each broad heading. There were significant differences between years after prompting for ES renewal (2012 less so than 2010/2011), promotion of in-field options (2011 more than 2010) and nutrient management plans (2011 more so than 2010/2012).

Awareness of available advice and targeting measures was lower than for themes and types of participation in all years. Although there was increasing awareness of theme leaflets and the county coordinators across the three years of the Campaign, knowledge of local liaison groups, beacon farms, and targeting increased in 2011 but decreased in 2012 although there were few significant differences.

Table 23 Percentage* of farmers who were aware of different aspects of the Campaign with significance levels from statistical analysis.

	Volunteered				Prompted			
	2010 (n=97)	2011 (n=104)	2012 (n=80)	p	2010 (n=97)	2011 (n=104)	2012 (n=80)	p
Purpose/theme								
Resource protection	16	22	22	0.044	73	81	80	
Farmland birds	34	35	51		93	92	94	
Farmland wildlife	34	35	47		92	92	94	
Types of participation								
ELS renewal	26	16	21	<0.001	89	95	76	<0.001
ELS in-field options	15	11	19		72	89	80	0.007
Uncropped land	20	15	22		84	91	85	0.003
Voluntary measures	34	27	57		93	92	92	
Nutrient management	10	10	9		70	86	68	
Area targets					52	63	69	
Advice & support								
Local liaison groups	10	10	19	0.026	37	52	45	
Beacon farms	5	8	13		42	56	42	
Theme leaflets	13	11	25		56	67	70	
County coordinator	8	9	14		27	35	39	
Nearest Beacon farm					20	22	15	
Targeting								
Target counties	2	8	7		18	37	25	0.01
Regional priorities	3	6	7		26	41	29	

* n numbers indicate the total population. A small number of missing data excluded from the analysis. This accounts for small differences in % totals between this report and previous annual reports.

Farmers were also asked if they knew that there were targets for participation in the Campaign under the various types of participation. Awareness of these targets increased over time (Figure 11). Although nearly half of all farmers were aware that Beacon farms existed (Table 23), only around 20% knew the location of the nearest Beacon farm (Figure 11).

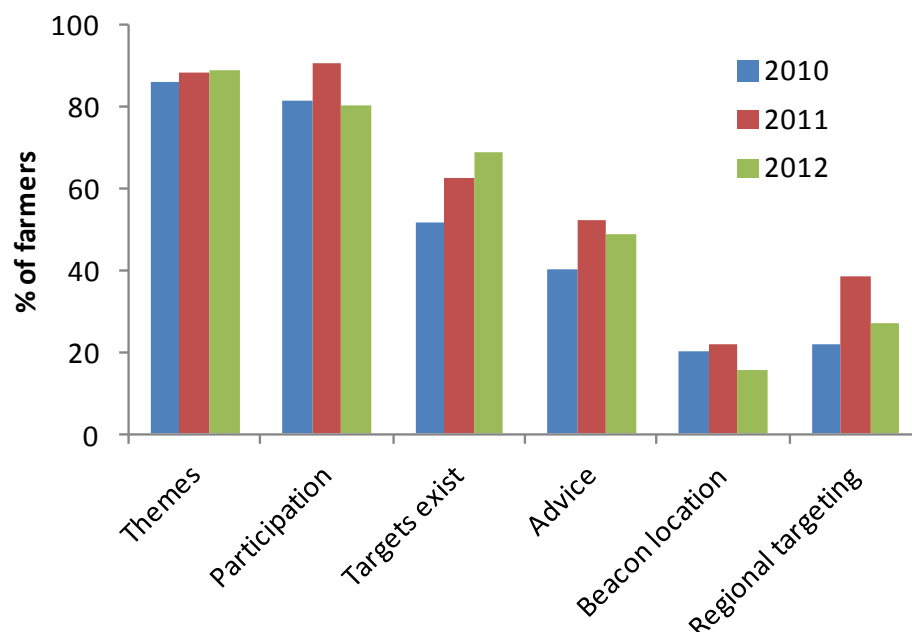


Figure 11 Overall awareness after prompting of different aspects of the Campaign.

3.2.1.2.1 Regional variation in awareness

In general there was a greater awareness when unprompted about individual aspects of Campaign amongst farmers in target compared to non-target counties, although differences were significant for less than half of the individual aspects. This was apparent in relation to the three themes of the Campaign, sources of advice and support and targeting, although differences for individual aspects were not always significant. However, when prompted, these differences were less pronounced (Table 24, Figure 12).

Table 24 **Percentage* of farmers in target and non-target counties who were aware of different aspects of the Campaign with significance levels from statistical analysis.**

	Volunteered			Prompted		
	Target counties (n=240)	Non- target counties (n=41)	p	Target counties (n=240)	Non- target counties (n=41)	p
Purpose/theme						
Resource protection	22	10	0.049	80	66	
Farmland birds	40	32		94	85	
Farmland wildlife	39	29		94	83	0.024
Types of participation						
ELS renewal	23	10	0.038	87	90	
ELS in-field options	16	5	0.033	81	78	
Uncropped land	20	10		86	90	
Voluntary measures	41	20	0.006	93	88	
Nutrient management	11	5		75	78	
Area targets				61	59	
Advice & support						
Local liaison groups	13	7		48	24	0.003
Beacon farms	9	2		49	34	
Theme leaflets	16	12		62	61	
County coordinator	11	2	0.044	36	15	0.004
Nearest Beacon farm				20	17	
Targeting						
Target counties	6	0	0.025	30	12	0.013
Regional priorities	6	0	0.030	36	12	0.001

* n numbers indicate the total sample size. A small number of missing data excluded from the analysis.

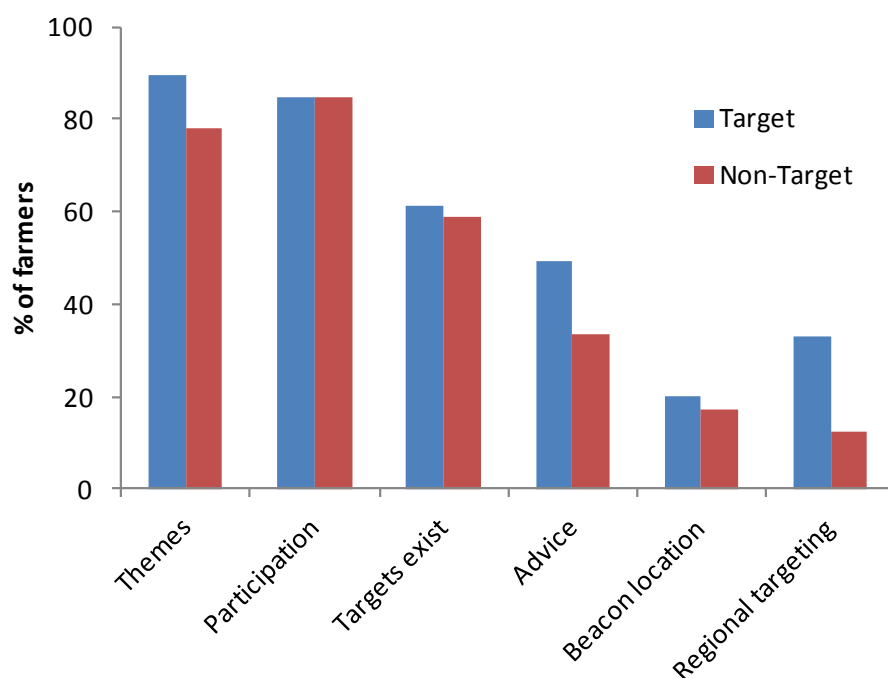


Figure 12 Regional variation in overall awareness after prompting of different Campaign aspects for VM-CFE farms (3 years combined).

3.2.1.3 Information

The most common sources of information about the Campaign were the CFE booklet or theme leaflets, farming press and partner organisations (not specifically categorised in 2010), although fewer farmers recorded information from partner organisations in 2012 compared to the previous year (Figure 13). Farm events/shows were particularly important in the first year. Although a relatively small proportion of farmers had received information from internet and county coordinators, there was an increase over the three years of the Campaign.

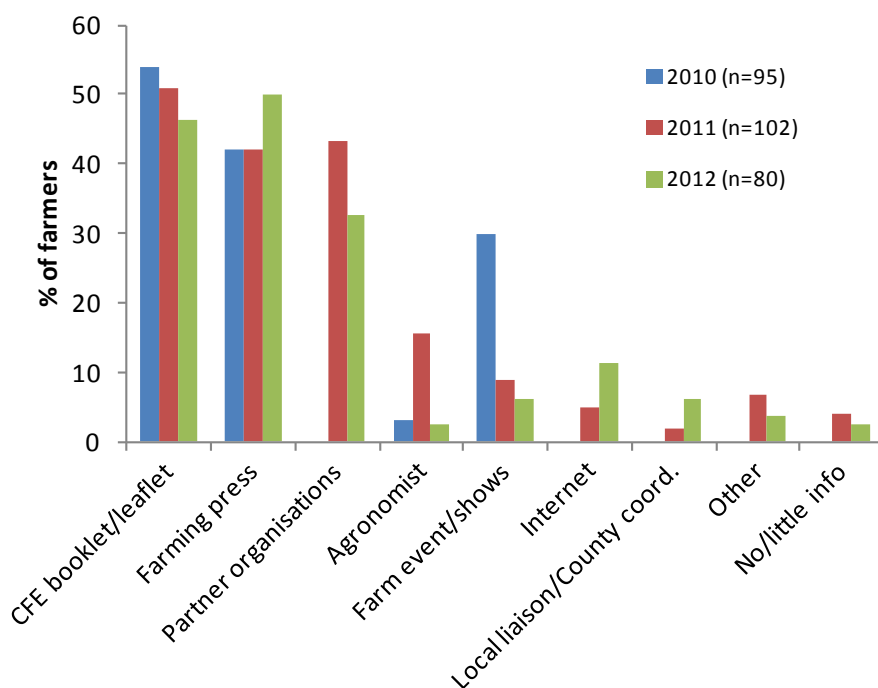


Figure 13 Sources of information on the Campaign.

In order to assess the value of different sources of advice, overall awareness scores were calculated for each farmer as the number of individual issues they were aware of (after prompting) as a proportion of the 16 issues they were asked about (Table 24). Mean overall awareness scores were calculated for farmers who indicated that they had received information from each of the sources of advice listed in Figure 13. Although the most commonly accessed sources of advice were widely disseminated written material, there was a slightly greater overall level of awareness of the various elements of the Campaign amongst those that had received more one-to-one advice (Figure 14). Those that had received information from a local liaison group or county coordinator were apparently best informed about the Campaign (these farmers were aware of 75% of the individual aspects), although differences were small and some farmers would have received information from multiple sources.

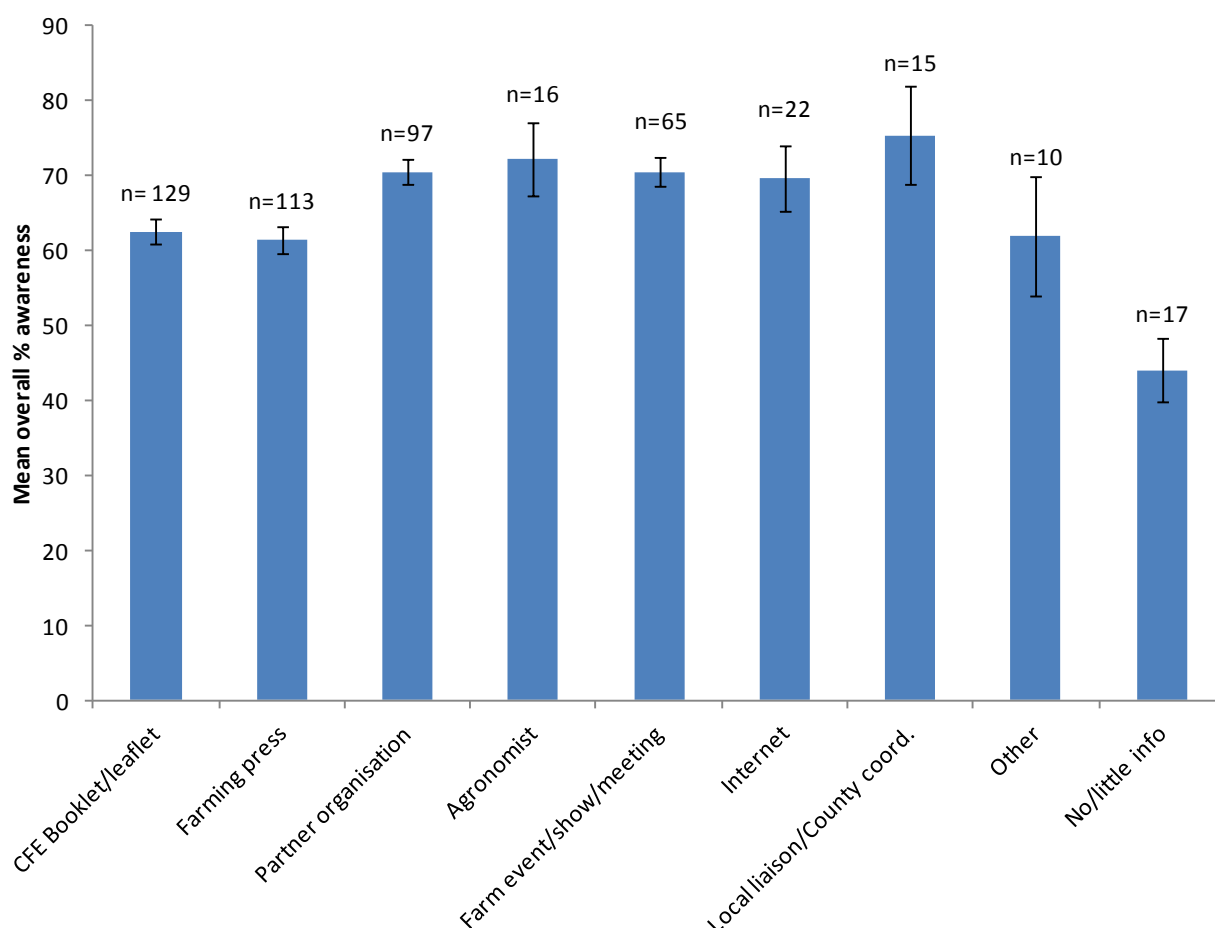


Figure 14 Awareness of Campaign and sources of information about CFE over three years.

3.2.2 Implementation of measures

3.2.2.1 Accuracy of information recorded by farmers on Defra postal survey

For most measures in each year the number of farms where the measure was recorded at visit was smaller than the Defra questionnaire indicated (Table 25). No assessment of quality is included here. The reasons for the disparities were varied, but included simple mistakes. The more complex, usually arable, measures were often misunderstood and some have been reallocated to more appropriate measures within this report. Uncropped cultivated margins (C8) were often understood simply as uncropped margins. On some farms, measures which had been expected to be established in the spring and were therefore recorded on the Defra returns, had not been put in place.

The large increase in the number of farms with C3a (reverted arable areas) and C9 (wild bird seed mixes) in 2010 are a reflection of the methods used in 2010, when the limited understanding of the measures at this stage of the Campaign, meant that some measures were reassigned by the surveyors (Section 2.2). One notable misrecording of measures by landowners lies in their understanding of what constitutes a C9 and a C10 (game cover) (sometimes even a C12a; pollen and nectar mix) with many not discriminating between these measures. In 2010 a high proportion of C9 and C12a appear to meet the RBRs, but this may be, in part, the result of re-allocation between measures.

In all three years more farms than expected had C3a (reverted arable land). A proportion of the increase can be attributed to re-allocation from inappropriate measures (e.g. C8). However, in all three years of the survey, some landowners had additional areas of uncropped land that had not been recorded on the Defra return. These areas were generally best categorised as C3a.

Table 25 Number of farms expected to have each measure compared to the measures recorded at visit.

	2010			2011			2012		
	Expected	Actual	% Change	Expected	Actual	% Change	Expected	Actual	% Change
C1	32	32	0.0	30	26	-13.3	33	25	-24.2
C2	13	5	-61.5	14	11	-21.4	15	16	6.7
C3a	34	52	52.9	32	37	15.6	15	20	33.3
C3b	6	3	-50.0	17	13	-23.5	14	9	-35.7
C4	6	2	-66.7	18	10	-44.4	13	8	-38.5
C5	7	3	-57.1	14	6	-57.1	13	7	-46.2
C6	9	8	-11.1	19	15	-21.1	14	13	-7.1
C7a	26	20	-23.1	24	21	-12.5	25	24	-4.0
C7b	3	1	-66.7	1	0	-100.0	1	1	0.0
C8	9	5	-44.4	9	5	-44.4	12	4	-66.7
C9	10	17	70.0	27	22	-18.5	21	15	-28.6
C10	25	17	-32.0	24	21	-12.5	26	21	-19.2
C11	4	1	-75.0	7	3	-57.1	5	5	0.0
C12a	5	13	160.0	14	16	14.3	13	12	-7.7
C13	0	5		2	1	-50.0	12	6	-50.0
C14	4	2	-50.0	1	1	0.0	12	10	-16.7
C15	2	0	-100.0	0	1	100.0	0	0	

3.2.2.2 Proportion of features and area meeting the red box requirements for individual measures

For individual measures, the proportion of features meeting red box requirements varied over the three years (Figure 15). A small number of measures were much more likely to meet RBR in 2010 compared to other years. However, for many measures the greatest proportion of features met the RBR in 2011. The proportion of features meeting RBR was greater in 2011 compared to 2012 for all measures except C6 and C12a.

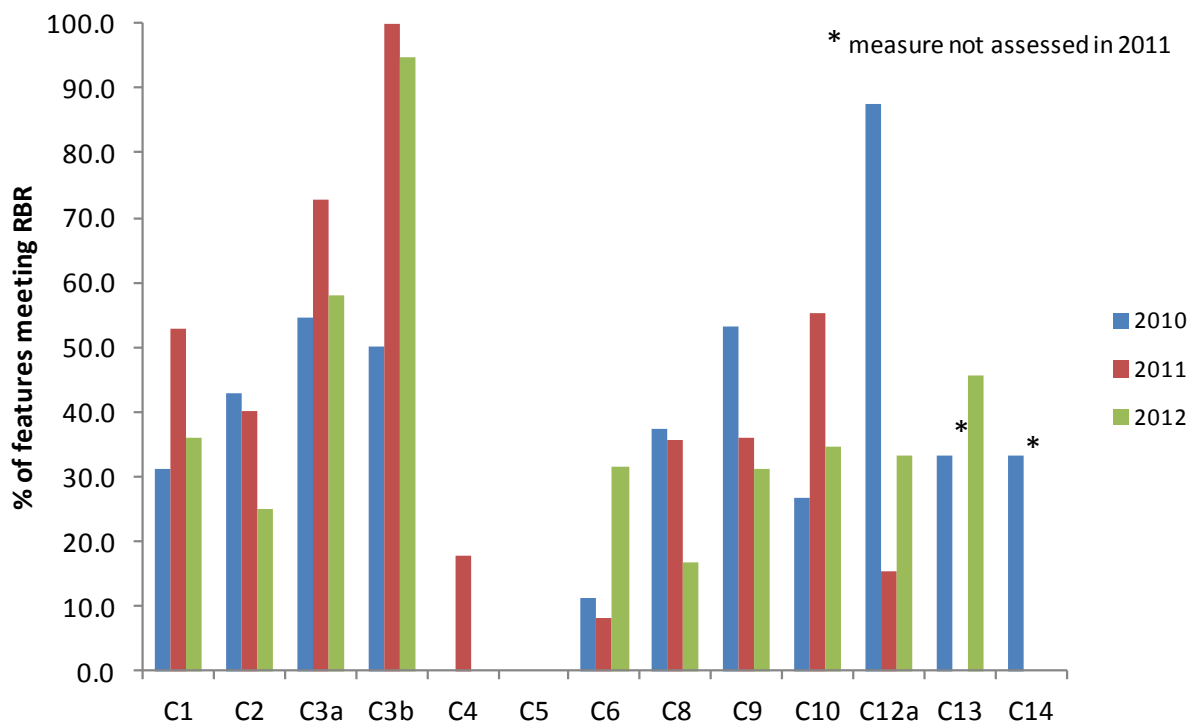


Figure 15 Percentage of features meeting the red-box requirements in each of the three years of the Campaign.

Data for C3b, C4, C5, C13 and C14 in 2010 based on 3 or fewer features assessed.

Because of the varying sampling rates for measures between years, the overall proportion of the area meeting RBR has been assessed in two ways; firstly by weighting simply by the assessed feature area, and secondly by weighting using the overall calculated population area for each measure from the Defra survey. Furthermore, because a slightly different selection of measures was assessed each year, mean data are presented for all measures assessed and for only measures assessed in each year (Table 26). The mean proportion of area of measures meeting RBR using both methods was highest in 2011 (50% and 54% respectively for measures assessed in all three years) compared to 2010 (43% and 36%) and 2012 (39% and 37%). It should however be noted that 2010 data are based on average areas of features assessed as opposed to actual areas of features assessed in 2011 and 2012.

Table 26 Areas (ha) and proportion of VM-CFE areas meeting red box requirements for each measure in each year and scaled by Defra survey figures, with overall means.

	2010					2011					2012				
	Area assessed	Area meeting red box	% area meeting RBR	Defra survey areas	Scaled area meeting RBR	Area assessed	Area meeting RBR	% area meeting RBR	Defra survey areas	Scaled area meeting RBR	Area assessed	Area meeting RBR	% area meeting RBR	Defra survey areas	Scaled area meeting RBR
C1	17.3	6.8	39.1	12073	4716	14.1	8.9	63.3	5408	3421	13.5	4.3	31.9	7624	2428
C2	2.4	1.0	42.9	2252	965	11.3	6.8	60.2	2842	1711	11.1	2.6	23.4	3157	739
C3a	244.0	151.7	62.2	18270	11361	118.7	86.5	72.9	7677	5594	41.2	31.0	75.2	6926	5211
C3b	2.9	2.9	100.0	3503	3503	17.9	17.9	100.0	1146	1146	28.0	28.0	100.0	1516	1516
C4	5.0	0.0	0.0	1417	0	126.5	90.0	71.1	1306	930	17.0	0.0	0.0	2546	0
C5	8.8	0.0	0.0	2867	0	11.6	0.0	0.0	940	0	1.7	0.0	0.0	1790	0
C6	56.9	0.0	0.0	14001	0	173.5	10.3	5.9	3897	232	93.7	30.1	32.1	3420	1099
C7a	173.7	48.3	27.8	60647	16846	410.4	219.1	53.4	38901	20768	319.5	111.2	34.8	46740	16268
C7b	9.1	9.1	100.0	2897	2897	-	-				-	-			
C8	7.2	2.7	37.5	613	230	2.5	0.7	29.1	758	221	1.2	0.2	16.7	655	109
C9	8.6	8.6	100.0	1518	1518	18.9	14.5	76.7	1952	1498	13.5	4.9	36.3	2453	890
C10	12.0	8.8	73.3	7373	5407	26.9	13.4	49.9	4200	2098	23.2	8.6	37.1	6584	2441
C12a	6.2	5.5	87.5	345	302	8.4	2.6	31.3	733	229	8.6	3.3	38.4	1055	405
C13	3.6	1.2	33.3	80	27	-	-				2.7	1.6	59.3	na	-
C14	11.9	4.0	33.3	7937	2646	-	-				149.0	0.0	0.0	9392	0
Total – all measures	569	250		135793	50418	941	471		69761	37847	724	226		93858	31106
Mean*			44.0		37.1			50.0		54.3			31.2		33.1
Total – measures assessed in all years	545	236		124879	44848	941	471		69761	37847	572	224		84466	31106
Mean*			43.3		35.9			50.0		54.3			39.2		36.8

*=(\sum Area meeting RBR/ \sum Area assessed)*100.

Figures in bold represent mean % meeting RBR based on Fera data alone. Figures in italics represent mean % meeting RBR scaled by Defra survey figures.

3.2.2.3 Reasons for not meeting red box requirements

The main reasons for measures not meeting the red box requirements were consistent across the three years for some measures (Table 27). Grass areas to prevent erosion (C2) features did not meet requirements consistently because they were too narrow. Skylark plots (C4) were usually implemented at insufficient density and indeed were frequently accidental drill misses. In 2010 and 2011, many overwintered stubble followed by spring and summer fallow (C6) areas had received post-harvest herbicide application. Overwinter stubbles (C7a) in 2011 and 2012 did not meet the requirement to exclude the application of pre-harvest desiccants and post-harvest herbicides. Wild bird mixes (C9) were often not of sufficient size, whereas game covers (C10) usually included maize. Pollen and nectar mixes (C12a) most frequently did not meet the cutting regime requirements.

Table 27 Main reasons for not meeting RBR over 3 years. Based on the number of measures not meeting each RBR

Measure	Main reasons for not meeting RBRs		
	2010	2011	2012
C1	Width	Width	Used for access
C2	Width	Width	Width
C3a	Compaction and width	Width	Not cut/date cut
C3b	Compaction and width		Compaction not removed
C4	Plot density	Plot density	Plot density
C5	Cultivation date	Plot size	Size and fallow not created
C6	Post harvest herbicide	Post harvest herbicide	Cultivation date
C7a	Application of manure	Pre harvest desiccant and post harvest herbicide	Pre harvest desiccant and post harvest herbicide
C7b	Fully met	No measures	No measures
C8	Fertiliser applied	Erosion risk	Cultivation date
C9	Maize	Size	Size
C10	Maize	Maize	Maize
C11	None present	Fertiliser applied	None assessed
C12a	Cutting regime	Cutting regime	Cutting regime (date)
C13	Cutting regime	None present	Width
C14	Autumn herbicide applied	None present	Spring herbicide type
C15	None present	None present	None present

The probability that an individual RBR would not be met by the feature assessed was calculated for each of the measures with 95% confidence intervals (Figure 16). This takes into account the number of features assessed and the number of RBR criteria associated with each measure and the number of RBR not met for each of the features assessed. It assumes that all RBR have an equal likelihood of not being met. Overall the rotational measures (C4, C5, C6 and C8) tended to meet RBRs less frequently than other measures. Although there was considerable variability in the likelihood of features meeting RBRs, there were between year differences for some measures, however there was no consistent trend between years and across measures. Skylark plots (C4) and uncropped cultivated margins (C8) were less likely not to meet an individual RBR in 2011 compared to 2012. Scrub management (C3b) features were more likely not to meet an individual RBR in 2010 compared to other years. Grass buffers along watercourses (C1) and reverted arable areas (C3a) were more likely not to meet an RBR in 2010 compared to 2011, whereas pollen and nectar mixtures (C12a) were less likely not to meet a RBR in 2010 compared to later years.

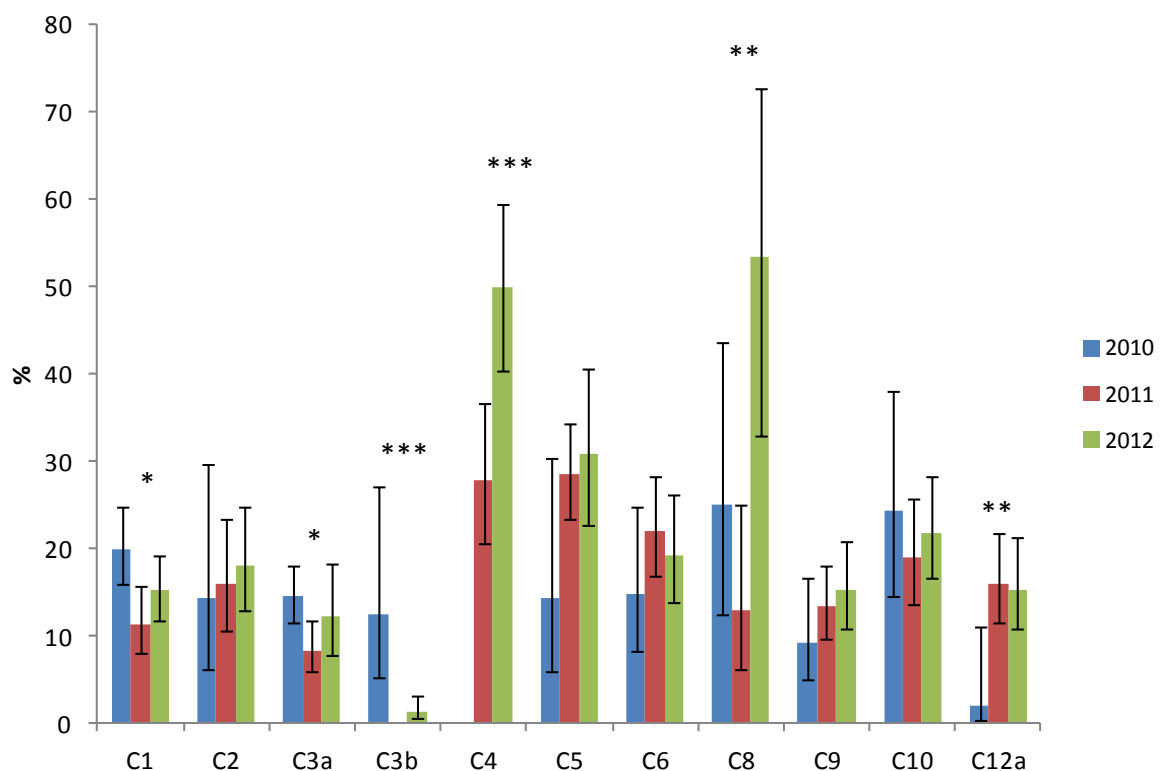


Figure 16 Probability of not meeting an individual RBR with 95% confidence intervals for VM-CFE across all 3 years¹⁶ (* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$).

3.2.2.4 Measures that would not have been present in the absence of the Campaign

For each measure implemented on a farm, the farmer was asked if they would have undertaken the management in the absence of the Campaign. This included new features that had been implemented as part of the Campaign and existing features that the farmer indicated they would

¹⁶ No standard error or confidence intervals were produced for C3b in 2011 using this Generalized Linear Model as all observations were 0/1. Insufficient data to analyse C4 in 2010.

have removed in the absence of the Campaign. In each year only a small proportion of measures would not have been in place in the absence of the Campaign. Most features recorded were simply existing uncropped land that would have remained in the absence of the Campaign, or management that was part of the usual farm rotation. The proportion of farms with measures existing specifically as a result of the Campaign was highest in 2011 (39%) compared to 2010 (14%) and 2012 (23%) (Table 28). However, a farm might be undertaking management specifically in response to the Campaign only on a small proportion of features declared to be part of the Campaign. C12a (pollen and nectar mix), C9 (wild bird cover) and C4 (skylark plots) were most commonly implemented specifically in response to the Campaign.

Table 28 **Number of farms undertaking measures directly as a result of the Campaign**

	Number of farms		
	2010 (n=86)	2011 (n=97)	2012 (n=75)
C1	2	2	3
C2	1	0	3
C3a	5	6	0
C3b	0	2	1
C4	1	8	2
C5	0	2	1
C6	1	4	2
C7a	3	5	1
C7b	1	0	0
C8	1	2	1
C9	3	11	5
C10	1	4	2
C12a	0	12	1
C13	0	0	4
Total no. of farms	12	38	17
% of farms	14	39	23

4. DISCUSSION

Support for both the aims and, to a slightly lesser degree, approach was high amongst farmers with voluntary management both in and out of the Campaign (VM-CFE and VM-Non CFE) and in all three years of this survey. In 2012 there were no significant differences in levels of support between those with voluntary management in and out of the Campaign. However, there was a decreasing trend over time in support for the approach of the Campaign, with a small number of farmers expressing concerns that some would contribute nothing.

Differences in support overall between this work and the Defra survey may be a function of the different survey methods as well as the different populations that were sampled. For instance, farmers may respond more positively in a face to face interview than when completing a postal questionnaire. This work was undertaken on a subset of farms that had responded to the Defra survey reporting voluntary management (in or out of the Campaign) and indicated that they would be willing to take part in further research. These farmers might be expected to be more positive about the Campaign than the overall population and analysis¹⁷ of the full Defra survey responses for 2012 does indicate that those with voluntary management in the Campaign were significantly more supportive of both the aims and approach than other arable farms. Also, those with land in Campaign measures who were willing to take part in further research were significantly more likely to support both the aims and approach of the Campaign than those that did not want to participate in further research. However, for those with voluntary management outside the Campaign, there were no significant differences in levels of support between the groups willing and unwilling to participate in further research.

For many of the attributes assessed during this study there was a tendency for 2011 data to be most positive in relation to the Campaign. Although awareness of the three themes of the Campaign remained fairly constant over the three years of the study, awareness of other aspects tended to be greatest in 2011. Similarly, the proportion of features or area meeting red box requirements was greater in 2011 than other years and the proportion of farmers undertaking voluntary measures specifically in response to the Campaign was highest in 2011.

Records for all three years indicated discrepancies between the data recorded by farmers on the Defra postal questionnaire and measures recorded during visits. In all three years, most measures were recorded on fewer farms and over smaller areas than expected, although changes included additional areas that farmers had not recorded on the Defra survey. Areas were lost for a variety of reasons, usually because of a lack of understanding about the requirements, recording on the Defra survey of anticipated management that was not put in place and a simple overestimate of the areas on the ground.

It is clear that many farmers implementing voluntary measures are not following the 'red box' requirements (RBR) fully, and indeed most farmers had not read the guidance and were not fully aware of the requirements. Habitat condition monitoring is being carried out between May 2012 and February 2013 to evaluate the environmental benefits of the various measures by assessing a range of attributes that are important for the achievement of these benefits. The results of this work will be reported separately once these assessments are complete. Here we make a provisional evaluation of the likely degree of environmental benefits arising from the various measures based on the assessments made to record how well they were meeting the red box requirements (RBRs).

¹⁷ L. Clothier pers. comm..

Areas sown or naturally regenerated, simply to create uncropped habitat are generally likely to have provided much of the type of environmental benefit intended. Where they did not meet the RBRs, C1 (grass buffers along watercourses) and C2 (grass areas to prevent erosion) most often did not meet the RBR for width and access. Although only a small number of features were close to, but not sufficiently wide to meet the requirements, all but the narrowest would have provided some environmental benefits. The degree of damage to the features as a result of access was hugely variable. In terms of resource protection, swards should be dense and cover complete, however some disturbance and compaction may be beneficial for biodiversity. For example, some compaction would create shorter swards where birds can gain access to the feature or temporary standing water that invertebrates may exploit for reproduction. In general, a degree of habitat heterogeneity created by limited access would benefit biodiversity by creating a greater range of niches.

Only a relatively small proportion of C3a (reverted arable areas) features did not fully meet the RBRs and usually because of minor issues. The environmental benefits associated with this measure are likely to be similar to those arising from the former non-rotational set-aside, and it is likely that these would be realised to a large extent for the majority of examples of C3. However, lack of annual cutting/grazing was common. Cutting will increase the diversity of the sward and diversity of higher trophic groups, however in highly fertile areas usually associated with farmland, even regular cutting and removal of cuttings will usually result in limited botanical diversity.

Although C3b (scrub management) usually met the RBR, the value for the communities that this measure is intended to support was in most cases limited because of the small proportion of scrub often present. However, it is difficult to assess this measure, because the potential benefits are very context-dependent, with location, surrounding habitats and species present all having an impact on the outcomes.

The quality of management and therefore the potential environmental benefits arising from sown areas were rather variable. Wild bird mixes (C9) were often smaller than the area stipulated, but unless very small, plots would still provide some benefits. Maize should be excluded from the seed mix because it provides no food source, however it is often included because it provides shelter. If the maize is not dominant and a range of suitable seeding species are included then these areas will still benefit farmland birds. Features outside the Campaign were often destroyed earlier than the guidelines indicate. However, research has shown that sown species rarely retain any seed into late spring; where this is the case, therefore destruction of these areas from late January will not have reduced the benefits accruing. Game strips (C10) usually did not exclude maize, and often had few if any other species sown. Benefits to farmland birds would therefore be limited.

Pollen and nectar mixes (C12a) most commonly did not meet the requirements for sowing a range of species and the cutting management. If few species are sown the range of species that may benefit and the period that resources are available will be limited. Autumn cutting should help to maintain flowering over a period of years. The absence of cutting may result in rapid reversion to grassy swards which will still have benefits for wider biodiversity, but not for the pollinating species at which the measure is targeted.

Overwintered stubbles (C7a) and, to a lesser extent, those followed by spring/summer fallow (C6) often received application of pre-harvest desiccant or post-harvest herbicides. Where this occurs, very little environmental benefit, in terms of over-winter food supply for granivorous birds, will result. The environmental benefits of these features will relate to a short term potential from spilt grain and the value of the following spring crops for breeding birds.

Many of the rotational 'arable' measures (C4, skylark plots; C5, fallow plots; C8, uncropped cultivated margins; C14, selective use of spring herbicides) were particularly poorly understood by farmers and very few features attributed to these measures met (or nearly met) RBR. The management of these features was generally so different from what was intended that they would have little of the intended environmental value. Skylark plots were almost always implemented at such low densities (often only one per field) that there would have been minimal impact on the

skylark breeding population. Fallow plots targeted at ground nesting birds should be one ha plots placed in large fields, well away from trees and hedgerows. Almost all features were narrow margin strips, often too close to trees and woodland. Although any uncropped areas in the landscape will have some biodiversity benefits, these features would not provide suitable nesting habitat for ground-nesting bird species such as lapwing, that they were intended to provide.

Uncropped cultivated margins are intended to benefit arable weeds, by cultivating either in autumn or spring to encourage germination. Features attributed to this measure tended to be part of the farm management (strips left between different crops) and little or no account was taken of the cultivation requirements, therefore the benefits to the arable flora would be limited by poor timing of management. Inappropriate location of these features could simply allow the proliferation of pernicious weeds.

Very few farmers understood the requirements of C14. Many considered a selective herbicide to be one that did not kill the crop, i.e. anything other than glyphosate, and almost all features were a usual part of the farm rotation. The only features that were close to meeting RBR were spring crops that did not receive significant herbicide inputs. Almost all C14 features assessed would have absolutely no benefits for arable weed populations or associated species.

It is apparent that, particularly for a voluntary scheme, most farmers were unable or not prepared to invest time in understanding unfamiliar or complex prescriptions presented in printed form. Greater engagement and better environmental management is likely to result from more one to one advice which can be better targeted and more clearly explained. Certainly more complex or unfamiliar management, such as is required for the rotational measures highlighted, is unlikely to be delivered to a satisfactory standard when relying simply on printed material. Greater value is likely to be achieved from types of management with which farmers are already familiar, such as 'set-aside', wild bird seed mixtures etc.. Encouraging simple changes to increase environmental benefits from such management may be more productive than trying to introduce more demanding measures which are arguably more appropriate within an agri-environment scheme.

The discrepancies in recording on the different questionnaires and the relatively small proportion of features or area that met the requirements of the measures indicate that any scheme, whether voluntary or not, should be monitored on the ground to ensure a proper understanding of the scale and quality of management implemented. Compliance with prescriptions cannot be assumed on the basis of postal questionnaire returns. On farm monitoring is crucial if the impact of the scheme and benefits arising are to be accurately assessed.

ANNEX 1 DEFRA SURVEY FORM FOR 2011/2012 CROPPING YEAR.



Restricted Commercial



If there are any amendments or corrections to details opposite, please write them in this box

Name:

Address:

Postcode:

Tel. no. (incl.

Nat. dialling code)

Survey of Land Managed under the Campaign For The Farmed Environment Current 2011/12 Crop Year

About this survey

This survey is part of the formal monitoring programme for the Campaign for the Farmed Environment ("The Campaign"). We are interested in any land under unpaid environmental management in the current (2011/12) crop year including any actions you have taken as part of the Campaign.

Even if you do not consider that you are participating in the Campaign, we would still ask you to complete the survey. This survey does not include land that is unsuitable for cultivation such as woodland, tracks, yards etc.

Please complete the paper form and return it to us in the pre-paid envelope provided within two weeks of receipt. High response rates and accurate returns will help us continue our work in reducing the frequency with which we have to contact you.

Any information you provide to us is treated in confidence. Defra is the Data Controller in respect of the Data Protection Act 1998. The purposes for which it is used are set out in full in a data protection statement which can be found at www.defra.gov.uk/statistics/national-statistics/confidentiality. Alternatively we can send you a copy if you call 01904 455284 or email surveys@defra.gsi.gov.uk

About the Campaign

The Campaign aims to retain and exceed the environmental benefits formerly provided by set-aside via a combination of voluntary and Environmental Stewardship-funded activities.

Over the past 2 years farmers and land managers across England have supported the Campaign by voluntarily adopting important land practices that replicate the environmental benefits formerly provided by set-aside. As a farmer or land owner you are asked to do the following:

1. Choose some key target options when you renew or join the Entry Level Stewardship (ELS) Scheme
2. Retain your former set-aside and any other areas of uncropped land
3. Most importantly, put areas outside of ELS into a Campaign voluntary measure

For further information about the Campaign and its aims please see www.cfeonline.org.uk or telephone: 0247 685 8536. You may find it helpful to refer to "A Farmer's Guide to Voluntary Measures". You were sent a copy of this in January 2010 and it is available online at <http://www.cfeonline.org.uk/About-us/Guide-to-Voluntary-Measures>

Further information on the formal agri-environment schemes can be obtained by contacting Natural England Enquiry Service: 0845 600 3078 or see www.naturalengland.org.uk

Results will be available from May 2012 and can be accessed via the following website:

<http://www.defra.gov.uk/evidence/statistics/foodfarm/notices/index.htm>

Official Use Only

Name/Address	
Comments in box	
Comments elsewhere	

CFE328 (rev 01/12)

**If you require a large
print form please
contact us on
01904 455284**

For help with completion of the form contact us at:
Department for Environment, Food and Rural Affairs
Economics and Statistics Programme,
Room 311, Foss House, Kings Pool,
1-2 Peasholme Green, York YO1 7PX
Helpline: 01904 455284 Mon-Fri 8.30am to 4.30pm
Email: surveys@defra.gsi.gov.uk
Web: www.defra.gov.uk

Please answer all questions with respect to the current crop year (2011/12)

Q2. Which of these have been a useful source of information about the campaign?

tick **all** that apply

- | | | |
|---|--------------------------|-----|
| Campaign leaflet | <input type="checkbox"/> | A8 |
| Campaign website | <input type="checkbox"/> | A10 |
| Campaign event | <input type="checkbox"/> | A82 |
| Farming press (e.g. Farmers Weekly, Farmers Guardian) | <input type="checkbox"/> | A9 |
| Adviser/agronomist | <input type="checkbox"/> | A91 |
| Other (give details) | <input type="text"/> | A11 |

Your awareness of and attitudes to the Campaign

Q1. How well-informed do you feel about the Campaign and its aims?

tick **one** box only

- | | | | |
|---|--------------------------|---|-----|
| Have a good understanding of the Campaign | <input type="checkbox"/> | 1 | A12 |
| Have some understanding of the Campaign | <input type="checkbox"/> | 2 | |
| Have limited understanding of the Campaign | <input type="checkbox"/> | 3 | |
| Little or no idea of what the Campaign is about | <input type="checkbox"/> | 4 | |

Q3. Based on the aims and approach (given below), which of these best describes your attitude to (a) the aims and (b) the approach of the Campaign?

Aims: The Campaign encourages farmers and land managers to voluntarily adopt important land management practices that will benefit the environment, along three key themes of (i) resource protection (ii) farmland birds and (iii) farm wildlife.

Approach: Farmers' participation in the Campaign is voluntary (i.e. there is no compulsory or legal requirement to participate), but all farmers are encouraged to do as much as they can to support the Campaign and its aims.

- | | Agree | Neither agree
nor disagree | Disagree | |
|--|----------------------------|-------------------------------|----------------------------|-----|
| Q3a. I support the <u>aims</u> of the Campaign | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | A17 |
| Q3b. I support the <u>approach</u> of the Campaign | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | A19 |

Q4. Are you currently in an agri-environment scheme?

- | | | | | |
|--|----------------------------|----|----------------------------|----|
| Yes | <input type="checkbox"/> 1 | No | <input type="checkbox"/> 2 | B6 |
| Entry Level Stewardship (ELS) | <input type="checkbox"/> | | | B1 |
| Organic Entry Level Stewardship (OELS) | <input type="checkbox"/> | | | B2 |
| Higher Level Stewardship (HLS) | <input type="checkbox"/> | | | B3 |
| Classic scheme (ESA or CSS) | <input type="checkbox"/> | | | B7 |

Please answer all questions with respect to the current crop year (2011/12)

Q5. If you are in ELS did you join or renew in response to the Campaign?

*tick **one** box only*

- I joined ELS in response to the Campaign ☐ 1 B8
- I renewed my ELS agreement in response to the Campaign ☐ 2
- Not applicable ☐ 3

For questions 6 to 9 please do not include land which is paid for in a formal agri-environmental scheme. However, if you have a whole farm agreement please include any action that you are taking beyond this agreement for which you are not receiving payment.

Q6. Have you retained any uncropped land or left cultivatable land out of production?

Do not include land which is paid for in a formal agri-environmental scheme.
Include bare fallow and land similar to former set-aside.

Yes ☐ 1 No ☐ 2 C1

If yes, approximately what area of land did you leave out of production? ha C2

Q7. Have you put land into some form of unpaid environmental management by choosing at least one of the Campaign voluntary measures?

Do not include land which is paid for in a formal agri-environmental scheme.

Yes ☐ 1 No ☐ 2 B9

If yes, please give details in column Q3 of Table 1, of the area of land under each type of Campaign voluntary measure.

Q8. Do you have land under some form of unpaid environmental management outside the campaign that fully meets or closely resembles the essential management requirements*?

Do not include land which is paid for in a formal agri-environmental scheme.

Yes ☐ 1 No ☐ 2 B10

If yes, please give details in column Q4 of Table 1, of the area of land comparable to each type of Campaign voluntary measure. It would improve our understanding if you could explain why you consider this land to be outside the Campaign. Please enter comments in the box below.

B101

***Essential management requirements**

A full description of all the essential requirements is provided in the enclosed sheet. It gives details of the management protocols for each of the Campaign's voluntary measures. Please refer to this when completing the table.

More information on the measures is available on the Campaign website www.cfeonline.org.uk or can be found in the booklet "A farmer's guide to voluntary measures"
<http://www.cfeonline.org.uk/About-us/Guide-to-Voluntary-Measures>.

Table 1 - Area of land under unpaid environmental management, including within the Campaign, in the current crop year (2011/12)

Only include in this table land under unpaid environmental management outside of any agri-environmental scheme. Even if you have an agri-environmental agreement which covers your whole farm, we are still interested in any action that you are taking beyond this agreement for which you are not receiving payment.

Code	Form of unpaid environmental management including Campaign voluntary measures	(Q7) Part of the Campaign Fully meeting essential management requirements*		(Q8) Outside the Campaign Fully meeting or closely resembling essential management requirements*	
		(hectares)		(hectares)	
C1	Grass buffers alongside temporary and permanent water courses	•	D1	•	D2
C2	Grass areas to prevent erosion and run-off	•	D3	•	D4
C3a	Reverted arable areas	•	D5	•	D6
C3b	Reverted arable areas with scrub management	•	D7	•	D8
C4	Skylark plots	<u>No. of plots</u>	D9	<u>No. of plots</u>	D10
C5	Fallow plots/Uncropped, cultivated areas for ground nesting birds on arable land	•	D11	•	D12
C6	Overwinter stubble followed by spring/summer fallow	•	D13	•	D14
C7a	Overwintered stubble	•	D15	•	D16
C7b	Overwintered stubble on vulnerable soils	•	D17	•	D18
C8	Uncropped, cultivated margins	•	D19	•	D20
C9	Wild bird seed mixture (arable/grassland areas)	•	D21	•	D22
C10	Game strips	•	D23	•	D24
C11	Unharvested cereal headlands	•	D25	•	D26
C12a	Pollen & nectar mixtures (arable/grassland areas)	•	D27	•	D28
C12b	Pollen & nectar mixtures for horticultural crops	•	D29	•	D30
C13	Sown wildflower headlands	•	D31	•	D32
C14	Selective use of spring herbicides	•	D33	•	D34
C15	Enhanced management of Short Rotation Coppice (SRC) (willow or poplar only)	•	D37	•	D38
* A full description of all the essential management requirements is provided in the enclosed sheet. It gives details of the management protocols for each of the Campaign's voluntary measures. Please refer to this when completing the table.					

Q9. Do you have land under any other form of environmental management that is not comparable to any of the Campaign voluntary measures in Table 1?

Do not include land which is paid for in a formal agri-environmental scheme.

Yes ☐ 1 No ☐ 2 B11

If yes, approximately what was the area of land?

ha B12

Q10. If you have taken no action in response to the Campaign do you intend to do so?

Yes ☐ 1 No ☐ 2 A25

Q11. If you have taken no action, what is your one main reason?

tick one box only

- It is not clear what I am expected to do ☐ 1 A26
- I consider I am already doing enough for the environment ☐ 2
- I am not willing to take action on a voluntary basis ☐ 3
- Any actions will have a negative impact on my profitability ☐ 4
- None of the Campaign actions are appropriate for my farm ☐ 5
- Other (give details) A81

General Comments

Please include any comments you may have on the details provided. This may remove the need for us to contact you.

V4

Follow up survey work

Defra intends to follow up this survey with further research projects to find out more about farmers' attitudes to environmental management, how the Campaign is working on the ground and whether the right advice and support is available. This work will be contracted out to other organisations and may involve contacting you to arrange a farm visit or a further short survey. If you are selected for this we will pass the information you have given in this questionnaire to the contractors so they do not need to collect it again.

Please tick if you would not be willing to be contacted about further survey work or a farm visit.

☐

V4

Please sign

Name Signature V3

Telephone number Date

E-mail Address V5

We would like to share your e-mail address with other members of the DEFRA family (including the RPA) to update our customer registers. Please tick this box if you **do not** want us to do this. ☐ V6

Time taken to complete the form minutes

Please now return this form in the pre-paid envelope addressed to Office for National Statistics, Government Buildings, Cardiff Road Newport, NP10 8XG

Thank you for taking the time to complete this survey

You can also provide details of what actions you have taken as part of the Campaign in the on-line record

<http://www.cfeonline.org.uk/Online-record/Online-Record/>

ANNEX 2 GENERAL QUESTIONS

Attitudes

- Do you consider yourself to be participating in the Campaign?
 - If yes, in what way?
- Do you support the aims of the Campaign?
- Do you support the approach of the Campaign?
- Are there any aspects of the Campaign that you particularly like or dislike?

Awareness

- Which aspects of the Campaign are you aware of:
 - Purpose/themes: farmland birds, farmland wildlife, resource protection
 - Types of participation: ES renewal, ES in-field options, uncropped land, voluntary measures, nutrient management and area targets
 - Advice and support: local liaison groups, Beacon farms, theme leaflets, county coordinator, location of Beacon farms
 - Targeting: target counties, regional priorities

Advice

- Where have you received information on the Campaign from?
- Did you receive any advice on choosing or implementing measures?
 - Where did you receive advice from?
 - What level/type of advice was received?
 - Did the advice meet your needs?
- Have groups of measures been chosen with the aim of enhancing any particular environmental attribute?
 - If yes, which attribute and in what way?

Voluntary measures and other uncropped land

- Are you implementing or intending to implement any measures as part of the Campaign?
 - What are your reasons for implementing voluntary management?
 - Which measures are you/will you be implementing?
- If voluntary management is outside the Campaign, why do you think it is not part of the Campaign?
- Is there any other uncropped land or land similar to Campaign measures which is not in an AES and is not considered to be part of the Campaign?
 - How is this land managed?

- Has/will the management of the land change as a result of the Campaign?

Agri-environment scheme agreements

- Do you have an agri-environment agreement on the farm (specify)?
- Farm size, ELS area, ELS points target, ELS points total.
- Which options are you undertaking in this agreement?
- When does the agreement end?
- Do you intend to renew your agreement?
- Will you enter the same options and the same amounts of each?
- If no, what changes will you make?
- If no, what will influence your decision to change?
- Will the measures you are undertaking as part of the Campaign influence your decision to change?
- If yes, in what way?
- Did your AE agreement affect your choice of measures for the Campaign?
- If yes, in what way?

ANNEX 3 INTERVIEW QUESTIONS AND FIELD OBSERVATIONS RELATING TO 'RED BOX' REQUIREMENTS AND 'GREEN BOX' GUIDELINES FOR INDIVIDUAL MEASURES IN SPRING MANAGEMENT ASSESSMENT

The following are the questions that need to be answered by surveyors either during the interview with the farmer or in the field. In all cases, location, dimensions and area of measure are to be recorded. Locations of all examples of each type of measure should be recorded as accurately as possible on farm map during interview, even if not visited. Locations of those visited in field can then be recorded more accurately using GPS. Dimensions should be recorded using tape measure or GPS as appropriate (e.g. tape for width of buffer strips etc. where dimensions are small in relation to resolution of GOS, GPS for large areas that are impractical for measurement by tape).

NB: Surveyors are referred to the diagram on page 3 of the CFE Farmer's Guide for clarification in relation to required margin widths.

Red or green box requirements that can't be checked (e.g. because the farmer doesn't have the necessary information, or signs cannot be discerned in the field) should be noted.

C1: Grass buffers alongside temporary and permanent watercourses

Interview questions

Red box (requirements)

- Did you remove compaction before establishing the strip?

Green box (additional considerations)

- Was the strip already present before 2010? If so, roughly how long for (estimate in years)?
- If it was established after the beginning of 2010, was it sown or established by natural regeneration?
- If sown, please provide details of the seed mixture if possible.
- How often do you intend to/did you cut the strip in the year following establishment? Or (established strips only) how often to you cut the strip? Do you treat the outer 3m or so differently? If so, how often do you cut the outer 3 m?
- Do you intend to/did you remove the cuttings?

Field observations

Red box (requirements)

- Is the strip next to a watercourse?
- Is strip at least 6m wide along its full length (measured from the top of the ditch/watercourse)? If not, estimate average width (to nearest metre) and % that is 6m or more (to nearest 10%).
- Are there any signs of soil compaction?
- Are there any signs of cultivation (other than to establish seeds)?
- Are there any signs of fertiliser, manure or waste materials being applied to the strip?
- Are there any signs of vehicle access, turning or storage? (tracks, wheel ruts, etc.).

Green box (additional considerations)

- (Established swards only) Record main grass and wildflower species present as far as possible for the time of year. Estimate proportion of bare ground.

C2: Grass areas to prevent erosion and run-off

Interview questions

Red box (requirements)

- Have you grazed the area or allowed access by any livestock to it (including pigs or chickens) since it was established?

Green box (additional considerations)

- Was the strip already present before 2010? If so, roughly how long for (estimate in years)?
- If it was established after the beginning of 2010, was it sown or established by natural regeneration?
- If sown, please provide details of the seed mixture if possible.
- Did you remove compaction before establishing the strip?
- How often do you intend to/did you cut the strip in the year following establishment? Or (established strips only) how often to you cut the strip? Do you treat the outer 3m or so differently? If so, how often do you cut the outer 3 m?
- Do you intend to/did you remove the cuttings?

Field observations

Red box (requirements)

- Is strip at least 10m wide along its full length (measured from the top of the ditch/watercourse)? If not, estimate average width (to nearest metre) and % that is 10m or more (to nearest 10%).
- Are there any signs of fertiliser, manure or waste materials being applied to the strip?
- Are there any signs of vehicle access, turning or storage? (tracks, wheel ruts, soil compaction etc.).
- Is there any sign of livestock having had access to the area? If so, record type of livestock.

Green box (additional considerations)

- (Established swards only) Record main grass and wildflower species present as far as possible for the time of year. Estimate proportion of bare ground.

C3a Reverted arable areas

Interview questions

Red box (requirements)

- Do you intend to/did you cut the area? If so, when?
- Have you grazed the area? If so, what type of livestock was used?
- Did you remove compaction before establishing the strip?

Green box (additional considerations)

- Do you use the area for storage of manure, machinery or bales?
- Was the strip already present before 2010? If so, roughly how long for (estimate in years)?
- If it was established after the beginning of 2010, was it sown or established by natural regeneration?
- If sown, please provide details of the seed mixture if possible.
- How often do you intend to/did you cut the strip in the year following establishment? Or (established strips only) do you/ do you intend to cut the strip? If so, how often?
- If you cut/ intend to cut the strip, do you leave any uncut (a) near the boundary; (b) elsewhere?
- Do you intend to/did you remove the cuttings?
- Do you/ do you intend to cultivate the area?
- Do you/ do you intend to rotate the area around the farm?

Field observations

Red box (requirements)

- Is the strip next to a hedge, watercourse or other boundary type (specify)?
- Is strip at least 6m wide along its full length in addition to the cross-compliance strip if next to a hedge or watercourse? If not, estimate average width (to nearest metre) and % that is 6m or more (to nearest 10%).
- Is there any evidence of grazing (if so, record type of stock).
- Are there any signs of soil compaction?
- Are there any signs of cultivation (other than to establish seeds)?
- Are there any signs of fertiliser, manure or waste materials being applied to the strip?

Green box (additional considerations)

- Are manure, machinery and/or bales being stored on the area?
- Are there any tracks, wheel ruts, compacted or poached areas that could cause runoff, for example, out of gateways onto roads, into road drains and watercourses?
- (Established swards only) Record main grass and wildflower species present as far as possible for the time of year. Estimate proportion of bare ground.

C3b Optional management for small areas of scrub

Interview questions

- How long has the area been out of cultivation?
- Has the area been cut or grazed? If cut, record date and whether cuttings were removed.
- Have any areas of scrub been cut? If so, when?
- Do you mow or flail to maintain or create rides etc.? If so, when?
- Have any trees been removed?

Field observations

- Has any of the area been cut recently (i.e. since previous autumn)? If so, record percentage of scrub area cut and approximate height of cut.
- Are large trees present (more than 15 years old)?
- Is there any evidence of tree removal (cut stumps)? If so, is there any regrowth from the stumps?
- Is there any evidence of archaeological remains?

C4 Skylark plots

Interview questions

Red box (requirements)

- Has any weeding of plots been carried out other than through applications of herbicide over the whole field? If yes give details.

Green box (additional considerations)

- Have herbicides been applied to plots as well as the rest of the field?

Field observations

Red box (requirements)

- Check field is larger than 5 ha (from farm map).
- Record approx proportion of field boundary consisting of by hedgerow taller than 2m or belts of trees/woodland. Record number of single trees in boundary.
- Record density of plots and check that dimensions are $\geq 16\text{m}^2$ for a subsample of 5 per field.
- Are plots situated away from tramlines?
- Are they at least 50m from the field boundaries? If not, estimate the proportion that are at least 50m from the boundary as far as possible.

Green box (additional considerations)

Estimate percentage vegetation cover.

C5 Fallow plots for ground-nesting birds on arable land

Interview questions

Red box (requirements)

- When was the ground cultivated to produce the fallow? (obtain date if possible, if not determine whether done after 1 February and before 20 March).

Green box (additional considerations)

- To the farmer's knowledge, have lapwings or stone curlews nested in the field containing the plot before? (NB stone curlews breeding is confined to Breckland and Hampshire/Wiltshire, so are unlikely to occur outside these areas. Consult Bird Atlas for distribution).

- Were any areas of severe compaction present? If so, was the field subsoiled?
- Was the plot sprayed with herbicide before cultivation to create the rough fallow?
- Has the plot been spot-treated to control thistles or other weeds?

Field observations

Red box (requirements)

- Are there mature trees or woodland at the edges of the field? If so, what is the minimum distance of the plot from the nearest woodland/mature trees?
- Is the field containing the fallow plot larger than 2 ha (from map)?
- Is there any evidence of soil erosion from the plot?
- Is there any evidence of archaeological features beneath the field with the plot in?
- Check dimensions - is the plot:
 - larger than 1 ha?
 - smaller than 2.5 ha?
 - at least 100 m wide?
- Are there any signs of fertiliser, manure or waste materials being applied to the plot?

Green box (additional considerations)

- Are pernicious weeds present in the plot? (black-grass, wild oats, barren brome, cleavers, couch, creeping or spear thistle, broadleaved or curled dock, ragwort). If yes, note species.
- Is there any sign of waterlogging?
- Is the field with the plot adjacent to a grazed grass field?
- If there are tree lines or woods adjacent at the edge of the field, is the field larger than 10ha?
- Measure vegetation height and estimate ground cover.
- Record whether lapwings present within field containing plot.

C6 Overwintered stubble followed by spring/summer fallow

Interview questions

Red box (requirements)

- Note preceding crop.
- Record type of cultivation used to create the fallow and date of cultivation.
- Were tramlines subsoiled after harvest? If not was this because of:
 - Not required (no areas of compaction);
 - Soil too wet;
 - Archaeological features present;
 - Other reason.
- Do you intend to apply/have you applied herbicides to the plot in spring/summer? If so, note type of herbicide, target weed species and date (or estimate intended date).

- Were any pre-harvest desiccants applied to the preceding crop or post-harvest herbicides applied to the stubble? If so, record details.
- (later assessments – record time of cutting &/or cultivating – are they before/after 31 July?)

Green box (additional considerations)

- Is the field organic? If so, will the land be cultivated before the end of July, and when?
- If a herbicide was used (or will be used) on the area in spring or summer, was the herbicide/will the herbicide be applied to the whole field or only part?
- Have any other operations been carried out on the area? If so, record details and timing.

Field observations

Red box (requirements)

- Is the field on a slope? (record angle of slope).
- Are there any signs of fertiliser, manure or waste materials being applied to the strip?
- (later assessments – record time of cutting &/or cultivating – are they before/after 31 July?)
- Note any evidence of herbicide use.

Green box (additional considerations)

- Is organic manure, machinery or bales being stored on the field?
- Are there any tracks, compacted or poached areas?

C7a Overwintered stubble

Interview questions

Red box (requirements)

- Were any pre-harvest desiccants applied to the preceding crop or post-harvest herbicides applied to the stubble? If so, record details.
- Were tramlines subsoiled after harvest? If not was this because:
 - Not required (no areas of compaction);
 - Soil too wet;
 - Archaeological features present;
 - Other reason.
- Have any pesticides (including herbicides), fertilisers, manure or lime been applied to the stubble?
- Has the stubble been topped or grazed?
- When do you intend to/did you plough or cultivate the stubble?

Green box (additional considerations)

- Was any cultivation carried out in autumn? If so, record details of type of cultivation machinery used (e.g. discs, chain harrow, power harrow etc.) and date.

Field observations

Red box (requirements)

- Is the field on a slope? (record angle of slope).
- Is there any evidence of soil erosion/run-off?
- Is there any evidence of pesticides (including herbicides), fertilisers, manure or lime having been applied to the stubble?

Green box (additional considerations)

- Are black-grass, wild oats or barren brome present in the stubble? If so, note extent of infestation on DAFOR scale.

C7b

Interview questions

- When was cover crop sown? (record date).
- Was the cover crop drilled or broadcast?
- Record details of seed mixture – species and amount sown in kg/hectare.
- Record date of ploughing or cultivating (or intended date).
- Was soil loosened to remove surface compaction before drilling?

C8 Uncropped, cultivated margins

Interview questions

Red box (requirements)

- Record date of cultivation.
- Have any fertilisers, organic manures or waste materials (including sewage sludge) been applied to the strip?
- Have any pesticides (including herbicides) been applied to the strip? If so, record type and date.

Green box (additional considerations)

- Do you/will you vary the timing and date of cultivation or do the same every year?
- Do you leave the margins in the same place over winter?
- Do you leave the margins in the same place all the time or relocate the margins? If relocated, is this within the same field or to a different field?
- Have you had any problems with pernicious weeds? If so, have you taken any measures to control them? (please specify, including type and date of any herbicide applications).

Field observations

Red box (requirements)

- Is the margin within 6m of a watercourse or a road?

- Is it on land at moderate or high risk of erosion? (as indicated by Soil Protection Review Risk matrix)?
- Are pernicious weeds present in the plot? (black-grass, wild oats, barren brome, cleavers, couch, creeping or spear thistle, broadleaved or curled dock, ragwort). If yes, note species.
- Record width of margin (additional to cross-compliance strip next to a hedgerow).
- Are there any signs of fertiliser, manure or waste materials being applied to the plot?
- Is there any evidence of pesticides (including herbicides) being used on the strip?

Green box (additional considerations)

- (None)

C9 Wild bird seed mixture

Interview questions

Red box (requirements)

- Record details of seed mixture (crop species/variety, seed rate kg/ha for each crop included).
- When will the wild bird seed mixture be destroyed/replaced?
- Was the seed treated with an insecticide against pest attack?
- Were insecticides applied during establishment? If so, record details of type and when applied. Was advice taken from a BASIS professional?
- Has the crop been/will the crop be grazed?

Green box (additional considerations)

- Are blocks sown as mixtures or with a single crop? If mixtures, are the crops mixed in the drill or sown in separate drill widths?
- Was advice received on choice of seed mix? If so, who from?
- When were the crop mixtures sown? Are they all sown at the same time or at different times (record details)?
- Were measures taken (e.g. subsoiling) to remove soil compaction? If not, was this because:
 - Not required (no areas of compaction);
 - Soil too wet;
 - Archaeological features present;
 - Other reason.
- Is/will the mixtures (be) sown every year, every other year or at some other time interval (please specify)?
- Were herbicides applied prior to sowing? If so, what type?
- Were fertilisers or manures applied to aid establishment? If so, record details of type and timing.

Field observations

Red box (requirements)

- Record location, dimensions and area of plots. Record width additional to cross-compliance protection zone next to hedge or watercourse.
- If crops emerged, check if possible whether blocks sown as mixtures or with a single crop, and if mixtures, whether the crops are mixed in the drill or sown in separate drill widths.

Green box (additional considerations)

- (None)

C10 Game Strips

Interview questions

Red box (requirements)

- Record details of seed mixture (crop species/variety, seed rate kg/ha for each crop included).
- When will the wild bird seed mixtures be destroyed/replaced?
- Has the crop been/will the crop be grazed?

Green box (additional considerations)

- Is the mixture intended to be annual (kept for one year) or biennial (kept for two years)?
- Were measures taken (e.g. subsoiling) to remove soil compaction? If not, was this because:
 - Not required (no areas of compaction);
 - Soil too wet;
 - Archaeological features present;
 - Other reason.
- Were fertilisers, manures or seed treatments applied to aid establishment? If so, record details of type and timing.
- Were herbicides applied prior to sowing? If so, what type?
- When were the crop mixtures sown? Are they all sown at the same time or at different times (record details)?
- Would you consider leaving the crop later than mid-February if seed was still present?

Field observations

Red box (requirements)

- (None)

Green box (additional considerations)

- Record location, dimensions and area of plots.

C11 GWCT unharvested cereal headlands

Interview questions

Red box (requirements)

- Will any insecticides be applied to the headland? (yes/no/maybe/don't know).
- Have any herbicides been applied/will any be applied to the headland? If so, record details of type and timing.
- Record month of sowing.
- Have any fertilisers, organic manures or waste materials (including sewage sludge) been applied to the strip?

Green box (additional considerations)

- Was the headland sown by drilling or broadcasting?

Field observations

Red box (requirements)

- Record width of headland.
- Are there any signs of fertiliser, manure or waste materials being applied to the plot?
- Is there any evidence of pesticides (including herbicides) being used on the strip?

Green box (additional considerations)

- Note whether establishment appears to be good, average or poor.

C12a Pollen and nectar mixtures

Interview questions

Red box (requirements)

- Record details of seed mixture (crop species/variety, seed rate kg/ha for each crop included).
- Were measures taken (e.g. subsoiling) to remove soil compaction? If not, was this because:
 - Not required (no areas of compaction);
 - Soil too wet;
 - Archaeological features present;
 - Other reason.
- Was the area cut/will it be cut? If so, when? Were cuttings/will cuttings be removed, shredded or left as cut? Was the whole area (or will the whole area be) cut? If not, what proportion?
- Has the area been/will it be grazed? If so, when?
- Have any fertilisers, organic manures or waste materials (including sewage sludge) been applied to the strip?

Green box (additional considerations)

- Has lime been/will lime be applied to the strip?

Field observations

Red box (requirements)

- Record location, dimensions and area of plots. Record width additional to cross-compliance protection zone next to hedge or watercourse.
- Are there any signs of fertiliser, manure or waste materials being applied to the plot?

Green box (additional considerations)

- Has the mixture been re-established? If so, how long after the original sowing (years)?
- (Summer assessment – check whether some or all area has been cut as suggested in guidelines)

C12b?

Interview questions

- Record details of seed mixture (crop species/variety, seed rate kg/ha for each crop included).

C13 Sown wildflower headlands

Interview questions

Red box (requirements)

- Record location, dimensions and area of plots. Record width additional to cross-compliance protection zone next to hedge or watercourse. Is strip at least 6m wide along its full length (measured from the top of the ditch/watercourse)? If not, estimate average width (to nearest metre) and % that is 6m or more (to nearest 10%).
- Were measures taken (e.g. subsoiling) to remove soil compaction? If not, was this because:
 - Not required (no areas of compaction);
 - Soil too wet;
 - Archaeological features present;
 - Other reason.
- Once established, has the area been cut/will it be cut? If so, when? Were cuttings/will cuttings be removed, or left as cut?
- Have any fertilisers, organic manures or waste materials (including sewage sludge) been applied to the strip?
- Record details of seed mixture (crop species/variety, seed rate kg/ha for each crop included).

Green box (additional considerations)

- Was advice received on choice of seed mix? If so, who from?
- Was the area cut/will it be cut during the first 12 months after sowing? If so, how often? Were cuttings/will cuttings be removed or left? Was any/will any vegetation be left uncut at the edge? If so, what width?

Field observations

Red box (requirements)

- Are there any signs of fertiliser, manure or waste materials being applied to the plot?

Green box (additional considerations)

- Note whether margin cut, and if so whether a strip has been left uncut at next to the hedge or other boundary, and how wide (from the hedge trim line or other boundary).

C14 Selective use of spring herbicides

Interview questions

Red box (requirements)

- Were any herbicides applied in the autumn? If so, record type of herbicide.
- Were any herbicides applied in the spring? If so, record type and timing.
- Are there any problem grass weeds in the field?
- Are there known to be any herbicide resistant weeds in the field or on the farm? If so, what species?

Green box (additional considerations)

- Have you or do you intend to repeat this measure within the same field in a subsequent year?

Field observations

Red box (requirements)

- Are any problem grass weeds present? (black-grass, wild oats, barren brome, couch). If yes, note species.

Green box (additional considerations)

- (None)

C15 Enhanced management of short rotation coppice

Interview questions

Red box (requirements)

- What was the area used for prior to being planted with SRC?
- Was any landscape design guidance when deciding on location of the plot? If so, record details.
- Were any herbicides used after planting? If so, record details (type, when applied).
- Are any insecticides used? If so, record details (type, when applied).
- Are fertilisers and/or manures applied? If so, record details of types, amounts and timing. Were any guidelines consulted or advice obtained before deciding on fertilisation/manuring policy? If so, record details.
- How often and when are rides cut? Is any vegetation left uncut next to the boundary? If so, how wide is the uncut strip?
- Are all blocks harvested in the same year or in different years?
- Do you avoid harvesting in wet conditions?

- Do you use low ground pressure tyres during harvesting?

Green box (additional considerations)

- Is the SRC all one variety? If not how many varieties are present? If possible, obtain details of varieties planted.
- Have any areas of open ground been left in addition to any rides and margins?
- Have any grasses and/or wildflowers been sown in the margins or rides? If so, record details of seed mixture and seed rates.
- Have any wild flowers been sown into the crop itself? If so, record details of seed mixture and seed rates.
- Has advice been received on wildflower mixtures to sow in the crop, rides or margins? If so, who from?

Field observations

Red box (requirements)

- Record crop type (willow, poplar, Miscanthus etc.)
- Is there damp grassland adjacent to the SRC?
- Record size of individual blocks of SRC between rides or other open areas.
- Record size of whole plots (including rides and open areas).
- Record presence and width of margins around plantations.
- Record width of uncut strip of vegetation next to boundary, if present.

Green box (additional considerations)

- Is the SRC adjacent to a woodland, wooded field margin or hedgerow?
- Record presence of additional open areas as well as rides and margins, such as scalloping along rides, open patches or unplanted field corners.
- Are there additional rides along power lines, over pipelines etc.?