Natural England Research Report NERR061

Integrated Site Assessments 2013/14

A report on Natural England's assessments of Sites of Special Scientific Interest and Higher Level Stewardship agreement

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Executive Summary

Summary

- Integrated Site Assessments (ISAs) are Natural England's site surveys and assessments that examine the condition of Sites of Special Scientific Interest (SSSIs) and the effectiveness of Higher Level Stewardship (HLS) agreements.
- The Integrated Site Assessment Tool (ISAT) was introduced in April 2013 as a tool to plan, record, monitor and report on ISA surveys. This report provides a summary of the ISA programme in 2013/14, using the data stored in ISAT.

Delivery

- 2,187 ISAs were recorded as completed on ISAT, representing 87% of those planned at the beginning of 2013/14. Of those completed, 64% were SSSI only assessments, 30% were joint assessments, and 6% HLS only. 74% of completed ISAs were Rapid Site Assessments.
- There were a total of 3,797 feature assessments across 53 broad habitat types and 103 detailed features. 84% of all assessments were carried out on just 15 broad feature types.

Describing condition

- All variables were passed in 39% of feature assessments, which would be the equivalent of a SSSI feature being in favourable condition. An additional 39% of assessments (i.e. a total of almost 80% of assessments) passed more than 75% of variables and only 2% had more than 75% of all variables failing.

Assessing the effectiveness of HLS

- 57% of Joint and HLS only assessments were assigned a Green outlook for the likelihood of achieving the Indicators of Success. Moorland options had the highest proportion of red and amber outlooks.
- 48% of the assessments recommended that further advice is provided to land owners/ occupiers, 22% recommended amending the Favourable Condition Table (FCT) and 16% of assessments recommended a change in prescription or capital works in the HLS agreement.

Further analysis

- Further analysis will focus on the reasons behind the patterns above, including analysis to look for patterns (across both habitats and areas) for variables which are consistently failing (or passing), completion rates by habitats and the reasons for Red and Amber assessments.

Contents

1 Introduction

Integrated Site Assessments (ISAs) are Natural England's site surveys and assessments that examine the condition of Sites of Special Scientific Interest (SSSIs) and the effectiveness of Higher Level Stewardship (HLS) agreements.

These surveys are mostly done 'in-house' by our own advisers in the Area Teams. The assessment of SSSI features may also use additional data. This comes from external contracts, Memoranda of Understanding with partners, or by using data collected by volunteers. Data collected through volunteers is critical to monitoring some features, e.g. caves.

This report presents an analysis of ISA data collected by in-house surveys.

Objectives

The objectives of the ISA programme are:

- To ensure that management on SSSIs and HLS agreements is appropriate and will deliver defined environmental outcomes.
- To improve the quality of our delivery of environmental outcomes through improved feedback, guidance and training.
- To contribute to evaluating and improving the effectiveness of our intervention activities and schemes.
- To contribute to meeting our statutory and non-statutory reporting responsibilities.
- To contribute to our wider understanding of the condition of the natural environment and long-term change.

Natural England's delivery priorities that are particularly relevant to ISAs are:

- *Achieving favourable condition on SSSIs* – ISAs are used to verify that a feature or unit has moved from one condition category (unfavourable/favourable) to another. They provide evidence for Favourable Condition Tables (FCTs), regulatory casework and our provision of statutory conservation advice under the Habitats Regulations.
- *Delivering environmental outcomes through Environmental Land Management agreements* – ISAs are used to assess whether an agreement's Indicators of Success have been (or will be) achieved for features and options in HLS and, in the future, Countryside Stewardship. This provides evidence to amend existing agreements or inform new ones.
- *Delivering environmental outcomes and improvements through local and landscape scale initiatives* – the evidence from ISAs, on both SSSIs and HLS agreements, contributes to the monitoring of environmental outcomes by local partnerships and initiatives, e.g. Nature Improvement Areas.

Natural England's statutory and reporting requirements include:

- *Habitats Directive reporting* – ISAs collect data on the condition and extent of habitats including those listed in Annex 1 of the Habitats Directive.
- *Monitoring and evaluation of the Rural Development Programme* – data from ISAs will complement the monitoring and evaluation programme and commissioned surveys.
- *Biodiversity 2020 strategy* – the ISA programme is essential to our reporting on SSSI condition and contributes to our evidence on the condition of priority habitats.

- *Marine monitoring and reporting requirements* – data collected on inter-tidal SSSI features will be used for a range of marine reporting.

The Natural Environment and Rural Communicates Act (2006) requires Natural England to carry out monitoring 'with regard to common standards'. ISA methods are consistent with the Commons Standards Monitoring guidance published by the Joint Nature Conservation Committee.

ISAs are an important part of Natural England's Evidence Programme and meet the requirements and principles of our Evidence Strategy and Standard.

Methods

Advisers collected data on a number of variables (or attributes) relating to specific environmental features. This was usually done for a feature in an SSSI unit or an HLS option. The data collected are compared to targets or thresholds which are set down in the FCTs for SSSIs or the Indicators of Success (IoS) for HLS.

This comparison allows the adviser to assess the overall condition of the features and judge the effectiveness of management. For SSSIs the adviser will classify a unit into one of the following categories based on the condition of all reportable features: Favourable, Unfavourable Recovering, Unfavourable No Change, Unfavourable Declining, Partially Destroyed or Destroyed.

On HLS agreements advisers record their judgement of the likelihood of the option's Indicators of Success being met. There are 3 categories:

- Red – high risk or likelihood that IoS will not be met (by due date).
- Amber – significant risk of IoS not being met or uncertainty about meeting targets.
- Green – Indicators are appropriate and comprehensive. Targets already met and/or confidence that targets will be met (by due date).

Data are collected in the field using two approaches; Rapid or Detailed:

- Rapid Site Assessments (RSA) record summary information on feature condition and management at the feature scale. RSAs do not have a minimum number of stops and rely on the professional judgement of advisers to a greater extent.
- Detailed Site Assessments (DSA) use more quantitative methods with a minimum requirement of 20 stops per feature assessment.

An ISA may gather data on the condition of an SSSI alone (SSSI only), HLS features and options alone (HLS only) or both of these (Joint survey). If a SSSI and HLS agreement overlap then a Joint ISA should be carried out.

Data management

Natural England uses the Integrated Site Assessment Tool (ISAT) to store and manage data collected through ISAs. This tool was introduced in April 2013 and also supports the management of the work programme and the preparation of survey forms.

ISAT uses the terms Broad and Detailed Features to categorise the features being assessed, and these terms are used in this report. SSSI Reportable Features and HLS FEP (Farm Environment Plan) Features are generally equivalent to ISATs 'Detailed Features'. These are then grouped into Broad Features. For habitats these are generally equivalent to Broad Habitat types.

2 Data analysis

This report summarises the findings from the ISA programme in 2013/14, using the data stored in ISAT. The analysis in this report is based on data downloaded from ISAT in the week beginning 26th May 2014.

Data were analysed to provide summaries of:

- the number of ISA surveys planned and completed at national and regional levels;
- the type of ISA carried out (DSA or RSA; SSSI only, HLS only or Joint);
- the number of surveys completed for each broad and detailed feature type and the pass/fail rate for variables within each feature type;
- Advisers' judgements on the likelihood of HLS agreements reaching their Indicators of Success (IoS); and
- the follow-up actions identified during the ISA.

Some ISAs surveyed more than one feature and so the total number of features assessed is higher than the total number of ISAs.

The geographical breakdown presented in Section 3 is based on Natural England's organisational structure in 2013/14 in which land management work was organised into 6 regions. In April 2014 this structure was replaced with 14 integrated Area Teams.

It is important to note that the site selection of ISAs in 2013/14 was driven by a risk analysis and local delivery needs. Sites were not selected to provide a random or representative sample of SSSI's and/ or HLS agreements, and these findings should, therefore, be treated with caution when extrapolating to the whole population of SSSIs or HLS agreements.

3 Delivery of the ISA programme

A total of 2,187 ISAs were recorded as completed when the data were extracted from ISAT. This was 87% of the number planned at the beginning of 2013/14. The average number of surveys planned by each of the 38 local teams was 66, ranging from a maximum of 277 in one team (11% of the national total) to a minimum of 11. Table 1 shows the breakdown of the completed ISA total by the six regions into which land management teams were organised in 2013/14.

Table 1 ISAs completed on ISAT by region and type (percentages show the splits by DSA vs RSA and by HLS only, SSSI only and Joint)

Region	DSA	RSA	HLS only	SSSI only	Joint	Total
East	22 (15%)	122 (85%)	0 (0%)	111 (77%)	33 (23%)	144
London and South East	96 (18%)	425 (82%)	20 (4%)	287 (55%)	214 (41%)	521
North East and Yorkshire and the Humber	175 (47%)	194 (53%)	46 (12%)	176 (48%)	147 (40%)	369
North West and East Midlands	115 (23%)	390 (72%)	29 (6%)	429 (85%)	47 (9%)	505
South West	133 (19%)	348 (81%)	23 (5%)	305 (63%)	153 (28%)	481
West Midlands	32 (19%)	135 (81%)	14 (8%)	82 (49%)	71 (42%)	167
Total	**573 (26%)**	**1614 (74%)**	**132 (6%)**	**1390 (64%)**	**665 (30%)**	**2187**

Most completed ISAs were RSAs although this varied between regions. It should be noted that some of the ISAs in North East and Yorkshire and the Humber were carried out by a contractor and most of those were DSAs. When ISAs were developed the original assumption was that roughly 50% would be DSAs, but in 2013/14 this was only 26%. Local advisers normally decide which type of assessment to conduct, informed by ISA guidance. The variation between regions may reflect the types of sites and features assessed, e.g. with a greater likelihood of using the DSA approach on larger and more complex sites such as upland SSSIs. Some variation may reflect differences in the interpretation and application of guidance.

SSSI only assessments made up over half the total number of completed ISAs (64%), with only 6% being HLS only. There was also variation in the proportion of Joint and HLS only assessments undertaken, with the West Midlands completing the highest proportion of Joint assessments (42%). The HLS elements provide valuable information on the delivery of HLS and the likelihood of the SSSI retaining or reaching favourable condition. It is possible that some regional variation resulted from local decisions to only assess SSSI features, even if there was also an HLS agreement.

4 Broad and detailed feature types assessed and their condition

Number of broad and detailed features assessed

ISAs were carried out on 53 broad feature types, which can be subdivided into 103 detailed features. Annexes 1, 2 and 3 show the numbers of ISA completed on different features. In total, 3,797 individual features were assessed. Annex 1 lists the broad habitat types and the number of assessments completed for each. Table 1 shows the 15 broad feature types with the most completed assessments. These made up 84% of all assessments.

Table 2 15 most surveyed broad features

Rank	Broad feature	Number of features assessed
1	Broadleaved, mixed & yew woodland	580
2	Lowland heathland	336
3	Lowland fens/ Lowland raised bog/ Reedbeds	314
4	Lowland calcareous grassland	310
5	Lowland meadows	293
6	Upland blanket bog & valley bog	238
7	Upland heath	225
8	Purple moor grass & rush pasture	157
9	Lowland dry acid grassland	144
10	Wet ditches	142
11	Habitat for breeding waders (lowland) /Habitat for wintering waders & wildfowl	125
12	Coastal saltmarsh	89
13	Non-priority grassland /target features	88
14	Upland flushes fens & swamps/Upland valley mire springs & flushes M08	83
15	Non-ISAT feature[1]	76

[1] To note: 'Non-ISAT feature' includes features such as Bird Assemblage, Lichen Assemblage, Invertebrate Assemblage and Vascular Plant Assemblage - these features were not yet supported in detail on ISAT but form part of some SSSI and/ or HLS agreements.

Overall condition of all features assessed

The condition of each feature is assessed by comparing the recorded value for a set of variables with the related targets or thresholds from the FCTs and/or the Indicators of Success. Following an ISA, each of those variables will either be 'passed' or 'failed'.

Of the 3,797 feature assessments, 39% passed all variables (see Figure 1), 6% of assessments failed more than half of the variables, and 1% failed all variables.

Passing all variables would be equivalent to an SSSI feature being in favourable condition. Although this analysis is based on numbers of assessments and for all features (not just SSSIs), the proportion of assessments with all variables passed is similar to the proportion of SSSI in favourable condition by area (37.5% on 2 December 2014).

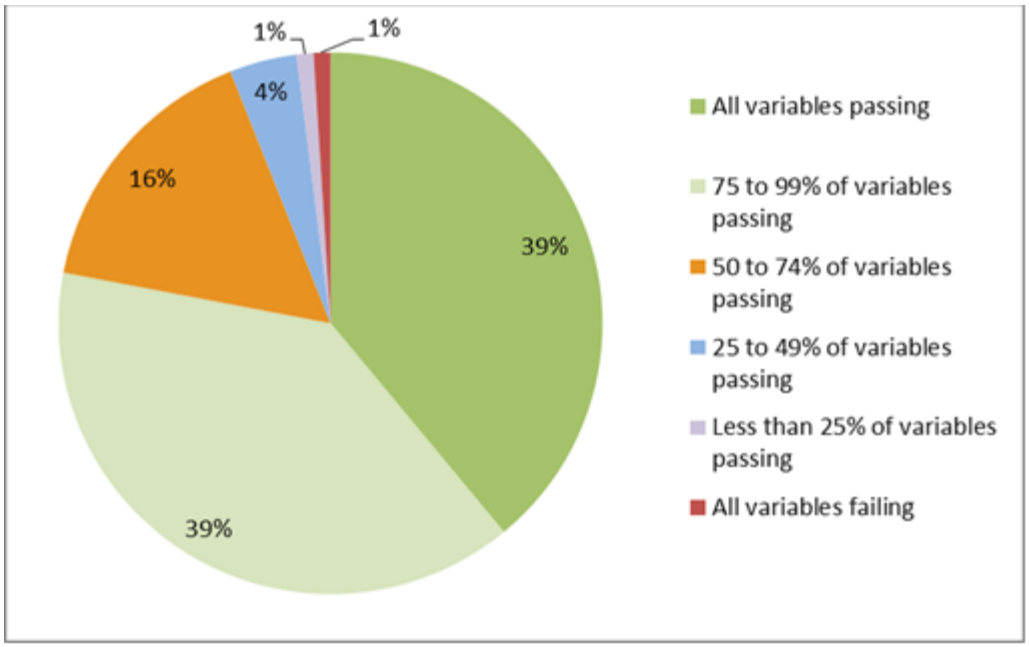

Figure 1 Proportion of variables passing targets for all feature assessments

Geological assessments

Geological features are split into 12 types. All geological features showed a consistently high pass rate, with half the feature types passing all variables for every assessment. Only 2% of assessments had more than 50% of the variables failing. Annex 2 shows this in detail.

Condition of broad features

The analysis of broad feature types presented below omits the geological features considered above. In order to reduce the risk of drawing inappropriate conclusions from very small sample sizes this analysis only considered the 28 broad feature types for which more than 15 assessments were carried out.

Table 3 shows the 15 broad feature types with the largest proportion of assessments in which all variables met or passed the targets.

Table 3 'Top 15' broad features ranked on proportion of assessments passing all variables (1st column)

Broad feature type	Proportion of variables passing targets						
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	Total ISA features assessed
Inland rock outcrop & scree/ upland cliffs & scree	85.0	10	5.0	0	0	0	20
Above ground historic feature	83.7	9.3	7.0	0	0	0	43
Coastal saltmarsh	80.9	12.4	6.7	0	0	0	89
Calaminarian grassland	77.8	14.8	7.4	0	0	0	27
Arable land	75.0	6.3	12.5	6.3	0	0	16
Non ISAT feature	68.4	0	0	3.9	0	27.6	76
Ponds	66.7	12.1	18.2	0	0	3.0	33
Scrub	61.5	23.1	11.5	3.8	0	0	26
Non priority habitat grassland /target features	60.2	17.0	13.6	8.0	0	1.1	88
Non-priority habitat woodland	58.8	29.4	5.9	0	0	5.9	17
Upland calcareous grassland	53.1	37.5	9.4	0	0	0	32
Upland hay meadows	51.6	38.7	9.7	0	0	0	31
Upland flushes fens & swamps/Upland valley mire springs & flushes	43.4	36.1	16.9	3.6	0	0	83
Broadleaved mixed & yew woodland	40.9	41.6	15.2	2.1	0.3	0	580
Habitat for breeding waders (lowland) /Habitat for wintering waders & wildfowl	40.8	44.8	12.8	0	0.8	0.8	125

The 5 features with the smallest proportion of assessments in which all variables met or passed the targets (see Annex 1) were: limestone pavement, coastal sand dunes, lowland heathland, wet ditches and coastal vegetated shingle.

Table 4 shows the 15 broad feature types with the largest proportion of assessments in which no variables met or passed the targets. In most cases the proportions of features with high failure rates are relatively low (most under 6%). It is also worth noting that a number of features appear in both the 'top' and 'bottom' 15, for example non-priority woodland is ranked number 10 in the top 15 (59% of assessments passing all variables) and number 2 in the bottom 15 (6% of assessments failing all variables). Non-ISAT features tend to be recorded in ISAT with only one variable ('Non-ISAT survey: carried out') and so predominately the whole feature will either fail or pass all its variables. Some other features may have relatively few variables recorded during a survey and so they are also more likely to have all variables passing or all failing.

Table 4 'Bottom 15' broad features ranked on proportion of assessments failing all variables (2nd to last column)

Broad feature type	Proportion of variables passing targets						
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	Total ISA features assessed
Non ISAT feature	68.4	0	0	3.9	0	27.6	76
Non priority habitat woodland	58.8	29.4	5.9	0	0	5.9	17
Coastal vegetated shingle	19.4	64.5	6.5	3.2	3.2	3.2	31
Ponds	66.7	12.1	18.2	0	0	3.0	33
Wet ditches	17.6	58.5	16.2	2.8	2.1	2.8	142
Purple moor grass & rush pasture	37.6	39.5	15.9	3.8	0.6	2.5	157
Lowland meadows	38.2	34.5	22.2	3.4	0	1.7	293
Non priority grassland /target features	60.2	17.0	13.6	8.0	0	1.1	88
Lowland calcareous grassland	32.3	43.2	17.7	5.5	0.3	1.0	310
Habitat for breeding waders lowland /Habitat for wintering waders & wildfowl	40.8	44.8	12.8	0	0.8	0.8	125
Lowland dry acid grassland	25.0	43.1	25.0	6.3	0	0.7	144
Lowland fens / Lowland raised bog / Reedbeds	30.6	29.9	20.4	14.0	4.5	0.6	314
Lowland heathland	15.8	54.2	22.3	6.5	0.9	0.3	336
Broadleaved mixed & yew woodland	40.9	41.6	15.2	2.1	0.3	0	580
Arable land	75.0	6.3	12.5	6.3	0	0	16

The 'unfavourable' features have been grouped in Table 4 by looking at the proportion of variables that failed targets. This is different to categorising the expected trend in condition (recovering, no change, etc.) and provides more information on 'how unfavourable' these features are. The approach of using the proportion of variables failing is a crude one with limitations, i.e. it doesn't recognise the relative importance of different variables or the interrelationships between them. However, such subdivisions of 'unfavourable' will be useful and Natural England is developing other ways of using this survey data to categorise and track change in feature condition.

Condition of detailed features

In 2013/14, 103 different detailed feature types were assessed (see Annex 3). There were 49 detailed features with more than 15 assessments in total (excluding geological features) and these made up 91% of all assessments. Table 5 shows the 15 detailed feature types with the largest proportion of assessments in which all variables met or passed the targets. Table 6 shows the 15 detailed feature types that with the largest proportion of assessments in which no variables met or passed the targets. For some feature types the broad feature and detailed feature is the same (the broad feature is not subdivided) and these features can appear in Tables 5 and 6 as well as Tables 3 and 4 above.

Table 5 'Top 15' detailed features ranked on proportion of assessments passing all variables (1st column)

Detailed feature type	Proportion of variables passing targets						
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	Total ISA features assessed
Above ground historic feature	83.7	9.3	7.0	0	0	0	43
Ponds (HLS only)[2]	78.9	5.3	10.5	0	0	5.3	19
Saltmarsh (SM4-28)	77.6	14.5	7.9	0	0	0	76
Arable land	75.0	6.3	12.5	6.3	0	0	16
Lowland calaminarian grassland	75.0	16.7	8.3	0	0	0	24
Scrub of high environmental value	75.0	10	10	5.0	0	0	20
Non-ISAT Feature	68.4	0	0	3.9	0	27.6	76
Native semi-natural woodland (HLS only)	62.7	18.7	13.3	5.3	0	0	75
Non priority grassland /target features	60.2	17.0	13.6	8.0	0	1.1	88
Plantation and landmark woodland	58.8	29.4	5.9	0	0	5.9	17
Upland blanket and valley bog (HLS only)	56.5	37.0	6.5	0	0	0	46
Lowland calcareous grassland (CG9)	55.0	25.0	20	0	0	0	20
Lowland beech & yew (W8, W10, 12-15)	50	37.5	12.5	0	0	0	32
Lowland meadows (MG4)	50	27.8	22.2	0	0	0	18
Upland mixed ashwoods (W8d, e, f, g, W9)	49.3	42.7	8.0	0	0	0	75

[2] HLS only features indicate that this feature was assessed on an HLS agreement but that this was not in an SSSI.

Table 6 'Bottom 15' detailed features ranked on proportion of assessments failing all variables (2nd to last column)

Detailed feature type	Proportion of variables passing targets						
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	Total ISA features assessed
Non-ISAT feature	68.4	0	0	3.9	0	27.6	76
Purple moor grass & rush pasture (HLS only)	43.3	26.7	10	3.3	3.3	13.3	30
Plantation and landmark woodland	58.8	29.4	5.9	0	0	5.9	17
Ponds (HLS only)	78.9	5.3	10.5	0	0	5.3	19
Lowland calcareous grassland (CG7a, b, d, e)	27.3	68.2	0	0	0	4.5	22
Vegetated shingle (SD1, SD2, SD3, MC6)	19.4	64.5	6.5	3.2	3.2	3.2	31
Lowland calcareous grassland (HLS only)	39.7	30.9	17.6	8.8	0	2.9	68
Ditches	17.6	58.5	16.2	2.8	2.1	2.8	142
Lowland meadows	45.8	34.7	15.3	1.4	0	2.8	72
Lowland meadows (MG5)	30.8	32.5	27.5	6.7	0	2.5	120
Lowland heathland (HLS only)	16.3	32.6	37.2	11.6	0	2.3	43
Lowland wetland (HLS only)	47.2	15.1	22.6	11.3	1.9	1.9	53
Non priority grassland /target features	60.2	17.0	13.6	8.0	0	1.1	88
Lowland fens, reedbeds and associated communities	44.9	27.1	21.5	4.7	0.9	0.9	107
Lowland dry acid grassland, (U1, U3, U4 & U20)	21.8	45.5	29.1	2.7	0	0.9	110

5 Higher Level Stewardship assessments

Farm Environmental Plan features

A total of 1,696 assessments were completed on 86 different Farm Environmental Plan (FEP) features. Of these, 27% (453) were carried out in HLS only surveys and 73% (1,243) in Joint surveys. Table 7 shows the 'RAG' assessment for the Indicators of Success (see Section 1.2) broken down by survey type.

Table 7 RAG assessment of HLS indicators of Success by survey type

RAG assessment	HLS only	Joint	Total
Red	38	108	146 (9%)
Amber	11	472	583 (34%)
Green	304	663	967 (57%)
Total	**453 (27%)**	**1,243 (73%)**	**1696**

For the HLS only assessments, 8% were given a red status, 25% amber and 67% green. The Joint survey assessments showed a similar pattern, but with a higher percentage falling within the amber rather than green category; 9% red, 38% amber and 53% green.

Figure 2 shows the number of Red, Amber and Green status assigned to each feature which had more than 15 assessments (only 21 features fall into this category). Upland hay meadows had the highest proportion of green status (17 of the 22 assessments carried out (77%)). Above ground historic feature, Habitat for breeding waders (lowland),and Ponds and Fens also had green status for 70% or more of assessments. Heathland and moorland habitats had a higher proportion of Red and Amber status, with Grass moorland and rough grazing, Upland heath, Fragmented heath and Blanket bog all having 70% or more of assessments flagged as either Red or Amber.

Management options

The HLS assessments examined 86 different management options, but 66% of all assessments were done on just 10 options (all with 40 or more assessments each). Figure 3 shows the results for these 10 options.

Restoration of species rich, semi-natural grassland (HK7) had the highest number of assessments (198), with maintenance of wet grassland for wintering waders and wildfowl (HK10) and restoration of moorland (HL10) close behind (177 and 159 respectively).

Restoration of wet grassland for breeding waders (HK11) and restoration of lowland heathland (H02) showed the highest percentage of green outlooks, 81% and 73% respectively. The two moorland options (HL10 and HL9 (maintenance of moorland)) show the lowest percentage of green outlooks (both 28%) and subsequently the highest percentage of red outlooks, 27% and 21% respectively.

The other options shown in Figure 4 are maintenance of species rich grassland (HK6), restoration of grassland for wintering waders and wildfowl (HK12), maintenance of grassland for target features (HK15) and maintenance of woodland (HC7).

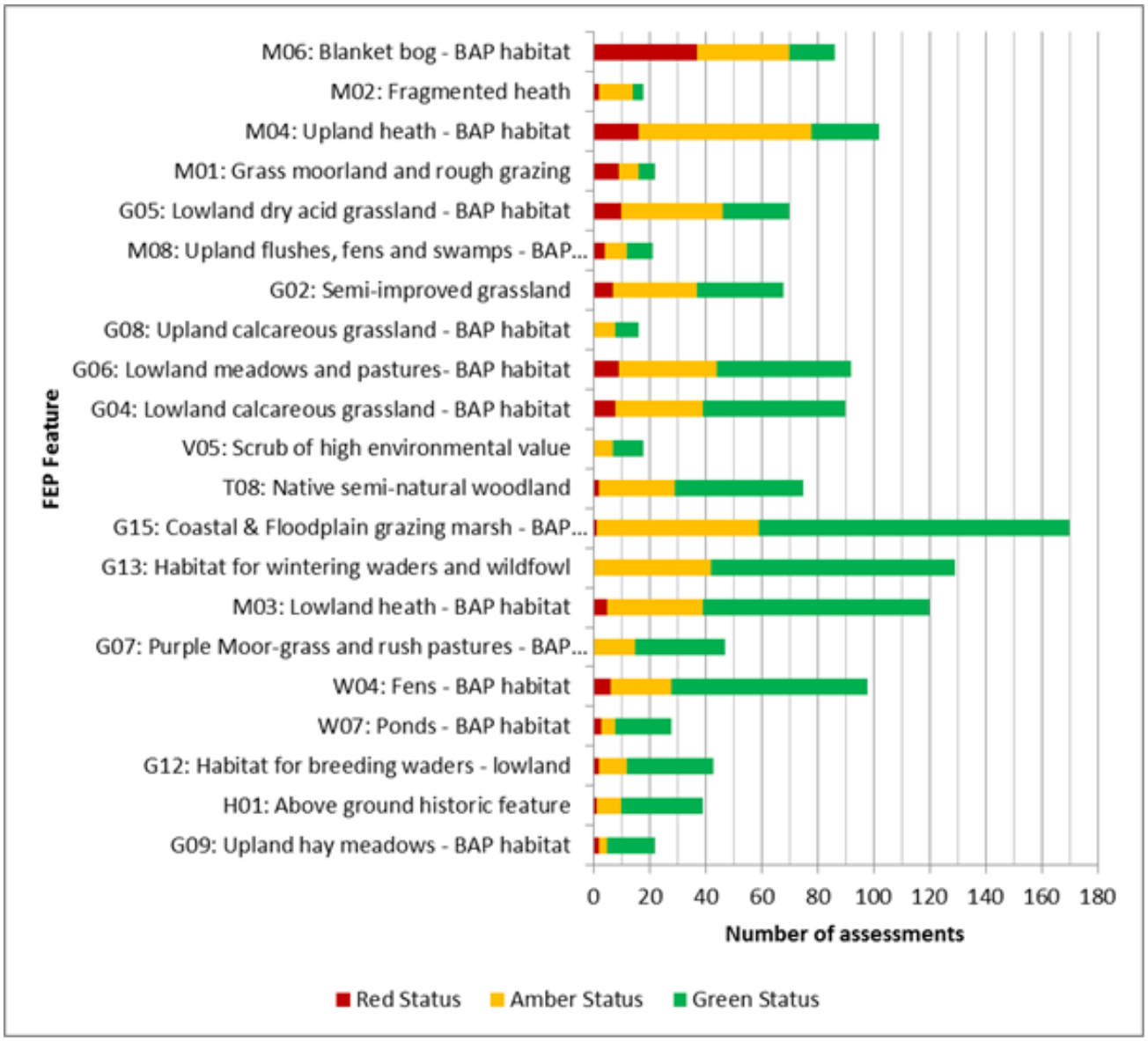

Figure 2 Number of Red, Amber and Green judgements by FEP features

The RAG assessment for HLS IoS is a professional judgement made by the adviser. Some Red or Amber assessments may have been reached because the indicators are judged to be inadequate or not achievable, there was uncertainty over management, or the feature was affected by external factors. It is inevitable that not all targets will be met on every agreement option. However, green assessments were recorded for less than 60% of the features in the 2013/14 sample.

Looking at the RAG status of HLS management options shows some clear patterns, with moorland management options having more red and amber outlooks and lowland heathland and wet grassland having more green outlooks.

With any of the data from HLS assessments it is important not to conclude that the agreements were 'wrong' from the start, as many of the conclusions and remedial actions could stem from our increasing understanding of the management requirements and the interaction of these with site specific ecological and anthropogenic factors.

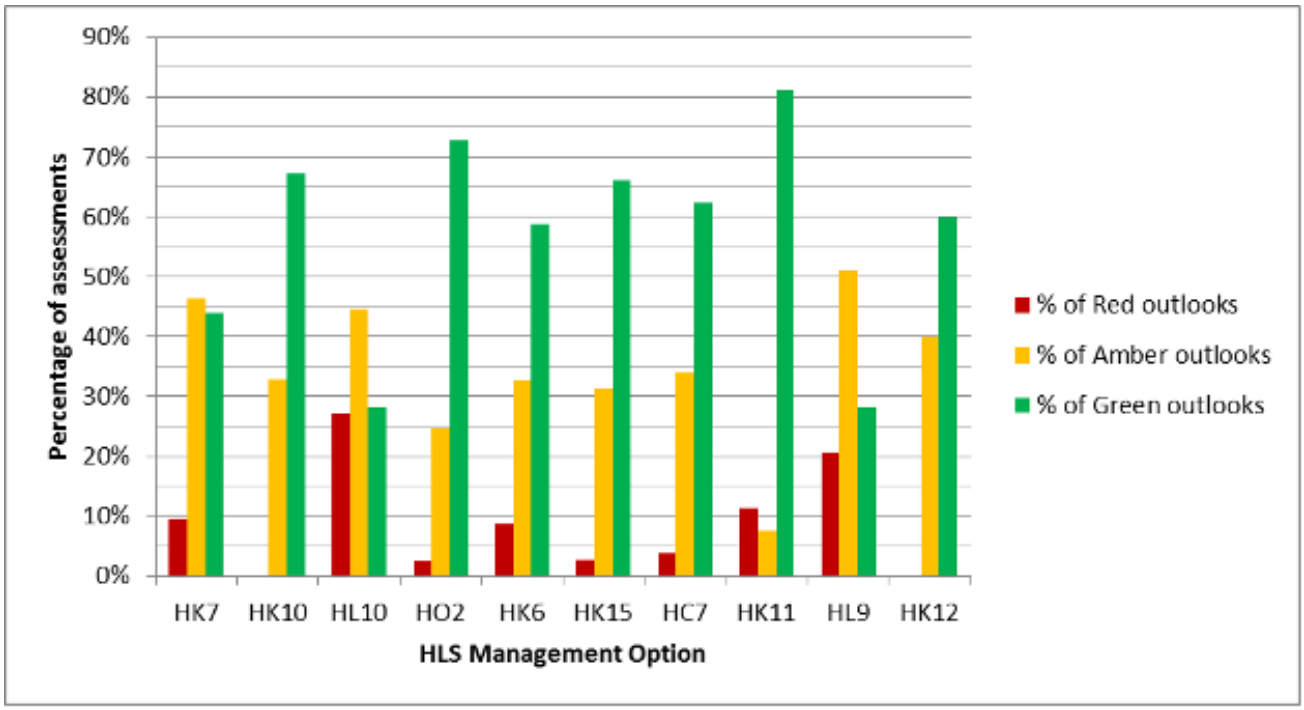

Figure 3 Ten most surveyed HLS management options and RAG status

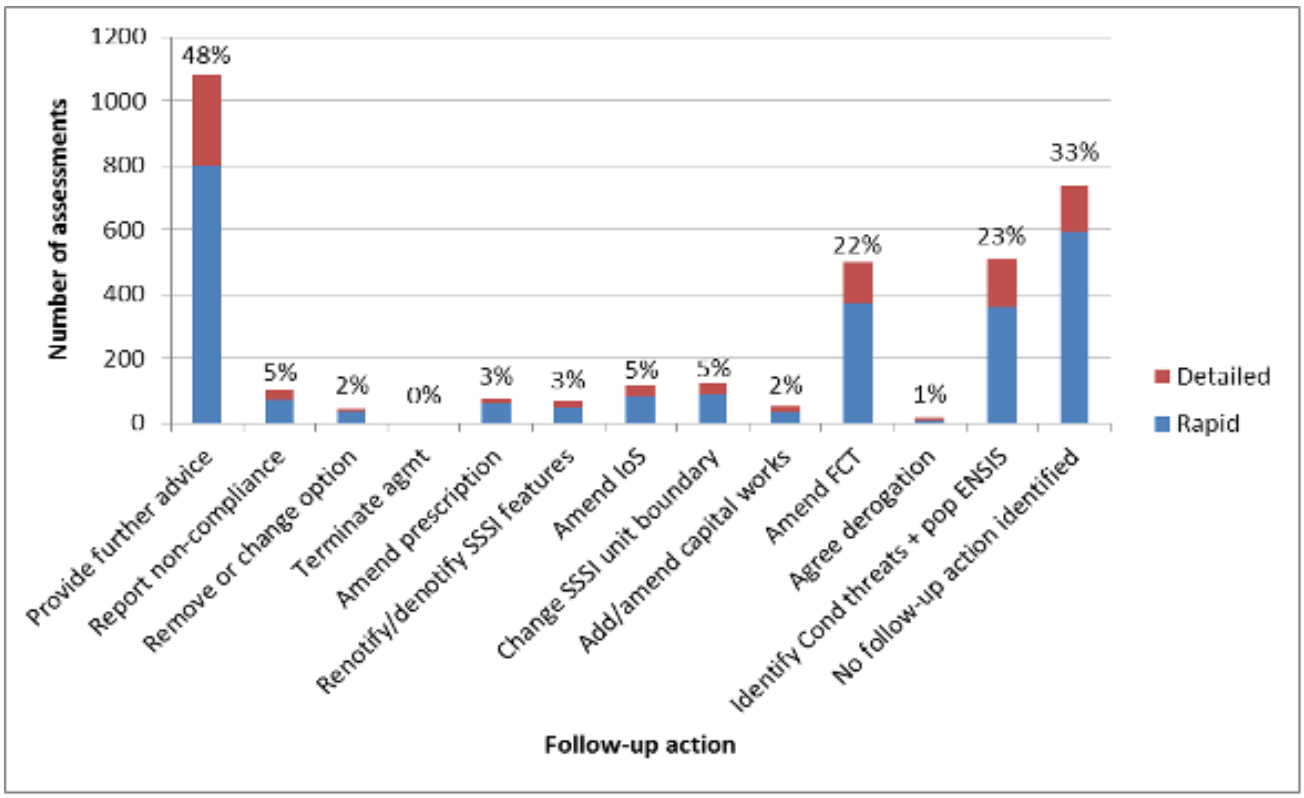

Figure 4 Number and percentage of assessments identifying follow-up actions

Follow up actions identified

Figure 4 shows the follow up actions identified by the advisers for each ISA (an ISA could have any number of the 13 follow-up actions listed in ISAT). The most common follow-up action identified was 'Provide further advice' which was identified in 48% of all assessments. The other two actions identified regularly were 'Identify condition threats and populate ENSIS' (23%) and 'Amend Favourable Condition Table' (22%).

Data entered in the system suggested that 33% of assessments did not require any follow-up action, however this is assumed only because none of the other boxes were selected. It may be that a different follow-up action was required that did not fit one of the categories offered. Carrying out a rapid or detailed site assessment did not seem to significantly affect the resulting follow-up actions identified.

6 Further analysis

The central storage of data in ISAT has allowed this analysis of over 2,000 individual site surveys and this has added to Natural England's evidence base. ISAT also ensures that Natural England meets its evidence aim to "*improve the standards of data management and custodianship of evidence across the organisation*".

Further analysis of ISA data is likely to cover the following areas:

- The proportion of DSA and RSA carried out on different broad and detailed feature types and by Area. This would indicate the extent to which geographical differences were related to the nature of the features assessed. Analysis could also examine any differences in the quality of data between RSAs and DSAs and whether RSAs always provide enough evidence to support judgements on condition.
- The data for feature types could be analysed in more detail to describe the frequency of failure for different variables and any associations between variables. This would provide more information on the key attributes that need to be addressed through management and the extent to which sites and features are close to favourable condition. This information could be broken down by Area to make it more useful to local delivery.
- ISAT data could be used to test and develop different approaches to analysing, categorising and tracking habitat condition.
- The data from HLS assessments could be examined to identify the possible reasons for Red or Amber assessments, e.g. were these associated with a need to amend IoS or prescriptions or were they related to a failure to carry out required management actions. An analysis of the variables failing in relation to the RAG assessments could indicate whether unrealistic targets and recovery rates are being expected on some sites and features.

7 Future delivery and improvement

In 2013/14 Natural England carried out a management review of the ISA system which looked at:

- whether the system is suitable and effective in meeting Natural England's evidence needs;
- how well the system has operated; and
- whether the system needs to change in response to changing priorities and context.

This resulted in recommendations covering strategy, planning, efficient delivery, roles and responsibilities, training and skills, quality assurance and communications. These are being implemented in this financial year (2014/15).

We also introduced a new local delivery model in April 2014 with Area Teams taking more decisions at a local level. The site selection and planning of the ISA programme is increasingly led by our Area Teams and supported by our new Field Unit.

A revised ISA strategy was approved by our Evidence Programme Board in November 2015 and this lists the following key features for the ISA programme:

- A nationally determined (random) sample to provide data for reporting on Annex 1 and Priority Habitats.
- A locally determined (targeted) element to provide the evidence required for local delivery.
- Thematic and landscape scale projects locally or nationally developed.
- Assessment of SSSI and HLS elements, when these both apply to the site being surveyed, to maximise the contribution of ISAs to agri-environment monitoring and evaluation.
- A Quality Management System with consistently applied guidance and standards and quality assurance procedures.
- A programme of training, mentoring and skills development to ensure that all relevant staff have the required skills.
- Use of ISAT to ensure that all data is archived, managed and accessible.
- Analysis of data and reporting of findings to improve local delivery and national reporting.

Annex 1 Broad feature types assessed

Broad Feature	Proportion of variables passing targets							
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	ISA features assessed	of all features assessed
Above ground historic feature	83.7	9.3	7.0	0	0	0	43	1.2
Arable land	75.0	6.3	12.5	6.3	0	0	16	0.4
Below ground historic feature	60	20	10	10	0	0	10	0.3
Broadleaved mixed & yew woodland	40.9	41.6	15.2	2.1	0.3	0	580	16.0
Calaminarian grassland	77.8	14.8	7.4	0	0	0	27	0.7
Caves	100	0	0	0	0	0	7	0.2
Cereal field margins	33.3	66.7	0	0	0	0	3	0.1
Coastal saltmarsh	80.9	12.4	6.7	0	0	0	89	2.5
Coastal sand dunes	12.5	56.3	31.3	0	0	0	16	0.4
Coastal vegetated shingle	19.4	64.5	6.5	3.2	3.2	3.2	31	0.9
Grass moorland and rough grazing	53.8	23.1	15.4	0	0	7.7	13	0.4
Habitat for breeding waders (lowland)/ Habitat for wintering waders & wildfowl	40.8	44.8	12.8	0	0.8	0.8	125	3.4
Habitat for breeding waders (upland)	50	12.5	25.0	0	12.5	0	8	0.2
Hedgerow/ High environmental value boundary	100	0	0	0	0	0	3	0.1
HLS permissive access	100	0	0	0	0	0	6	0.2
Inland rock outcrop & scree/ upland cliffs & scree	85.0	10	5.0	0	0	0	20	0.6
Land at risk of generating diffuse pollution	25.0	75.0	0	0	0	0	4	0.1
Limestone pavement	5.9	58.8	35.3	0	0	0	17	0.5
Lowland calcareous grassland	32.3	43.2	17.7	5.5	0.3	1.0	310	8.5
Lowland dry acid grassland	25.0	43.1	25.0	6.3	0	0.7	144	4.0
Lowland fens/ Lowland Raised Bog/ Lowland Blanket Bog/ Reedbeds	30.6	29.9	20.4	14.0	4.5	0.6	314	8.7
Lowland heathland	15.8	54.2	22.3	6.5	0.9	0.3	336	9.3
Lowland meadows	38.2	34.5	22.2	3.4	0	1.7	293	8.1
Maritime cliff & slope	75.0	25.0	0	0	0	0	8	0.2
Montane heath	42.9	42.9	14.3	0	0	0	7	0.2

Broad Feature	Proportion of variables passing targets							
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	ISA features assessed	of all features assessed
Non ISAT feature	68.4	0	0	3.9	0	27.6	76	2.1
Non priority habitat woodland	58.8	29.4	5.9	0	0	5.9	17	0.5
Ponds	66.7	12.1	18.2	0	0	3.0	33	0.9
Purple moor grass & rush pasture	37.6	39.5	15.9	3.8	0.6	2.5	157	4.3
Scrub	61.5	23.1	11.5	3.8	0	0	26	0.7
Species rich grassland	28.6	14.3	57.1	0	0	0	7	0.2
Traditional orchards	42.9	14.3	42.9	0	0	0	7	0.2
Upland acid grassland	20.8	41.7	37.5	0	0	0	24	0.7
Upland blanket Bog/ Upland blanket bog & valley bog	28.9	61.1	10	0	0	0	238	6.6
Upland calcareous grassland	53.1	37.5	9.4	0	0	0	32	0.9
Upland flushes fens & swamps/ Upland valley mire springs & flushes	43.4	36.1	16.9	3.6	0	0	83	2.3
Upland hay meadows	51.6	38.7	9.7	0	0	0	31	0.9
Upland heath	27.6	57.0	12.7	2.6	0	0	225	6.2
Wet ditches	17.6	58.5	16.2	2.8	2.1	2.8	142	3.9
Wood pasture & parkland	66.7	33.3	0	0	0	0	12	0.3
Total:	**39.6**	**38.6**	**16.0**	**4.1**	**0.7**	**0.9**	**3628**	**100**

Annex 2 Geological broad feature assessed

Broad Feature	Proportion of variables passing targets						
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	ISA features assessed
Karst (IK)	100	0	0	0	0	0	19
Coastal Cliifs & Foreshore (EC)	93.9	0	3.0	3.0	0	0	33
Disused Quarries and Pits (ED)	76.2	19.0	4.8	0	0	0	21
Road Rail & Canal Cuttings (ER)	50	50	0	0	0	0	4
Active Quarries & Pits (EA)	50	50	0	0	0	0	2
River & Stream Sections (EW)	50	50	0	0	0	0	2
Static Fossil Geomorphology (IS)	90.9	9.1	0	0	0	0	11
Mine dumps (FD)	100	0	0	0	0	0	1
Active Process Geomorphological (IA)	90.3	6.5	3.2	0	0	0	31
Finite mineral fossil or other geological (FM)	100	0	0	0	0	0	5
Finite Buried Interest (FB)	100	0	0	0	0	0	3
Total	**90.9**	**6.7**	**1.8**	**0.6**	**0**	**0**	**169**

Annex 3 Detailed feature types assessed

ISA feature	Proportion of variables passing targets							
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	ISA features assessed	of all features assessed
Calaminarian grassland, G10 (HLS only)	100	0	0	0	0	0	2	0.1
Upland calaminarian grassland	100	0	0	0	0	0	1	0
Saltmarsh CO1 (HLS only)	100	0	0	0	0	0	13	0.4
BAP Hedgerow/ High environmental value boundary F02	100	0	0	0	0	0	3	0.1
Calcareous Rocky Slope OV39-40	100	0	0	0	0	0	6	0.2
Siliceous Rocky Slope	100	0	0	0	0	0	3	0.1
Tall Herbs U16 U17 U19	100	0	0	0	0	0	2	0.1
Dry tall herb communities CG6/CG2d-related/MG1-related	100	0	0	0	0	0	1	0
Lowland Calcareous Grassland CG1	100	0	0	0	0	0	3	0.1
BAP Wood Pasture & Parkland T03 (HLS only)	100	0	0	0	0	0	5	0.1
Finite mineral fossil or other geological (FM)	100	0	0	0	0	0	5	0.1
HLS permissive access	100	0	0	0	0	0	6	0.2
Montane Heath M05 (HLS only)	100	0	0	0	0	0	2	0.1
Above ground Historic Feature H01	83.7	9.3	7.0	0	0	0	43	1.2
BAP Ponds W07 (HLS only)	78.9	5.3	10.5	0	0	5.3	19	0.5
Saltmarsh SM4-28	77.6	14.5	7.9	0	0	0	76	2.1
Arable land AO1	75.0	6.3	12.5	6.3	0	0	16	0.4
Lowland calaminarian grassland	75.0	16.7	8.3	0	0	0	24	0.7
Siliceous Scree	75.0	12.5	12.5	0	0	0	8	0.2
Hard Martime Cliff & Slope MC1 MC12 CG1f H7 H8 W21-23 +	75.0	25.0	0	0	0	0	8	0.2

ISA feature	Proportion of variables passing targets							
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	ISA features assessed	of all features assessed
Spring-head Rill & Flush M7&8/M31-35/M37&38	75.0	25.0	0	0	0	0	8	0.2
Scrub of high environmental value V05	75.0	10	10	5.0	0	0	20	0.6
Upland calcareous grassland, G08 (HLS only)	72.7	27.3	0	0	0	0	11	0.3
Non-ISAT Feature	68.4	0	0	3.9	0	27.6	76	2.1
Upland valley mire, springs and flushes M08 (HLS only)	66.7	8.3	16.7	8.3	0	0	12	0.3
Native semi-natural woodland T08 (HLS only)	62.7	18.7	13.3	5.3	0	0	75	2.1
Non BAP grassland G02/G11/target features	60.2	17.0	13.6	8.0	0	1.1	88	2.4
Upland hay meadows MG3, MG8 & M26	60	30	10	0	0	0	10	0.3
Below Ground Historic Feature H02	60	20	10	10	0	0	10	0.3
Plantation and Landmark Woodland T04/T05/T06/T07	58.8	29.4	5.9	0	0	5.9	17	0.5
Upland blanket and valley bog M06 (HLS only)	56.5	37.0	6.5	0	0	0	46	1.3
Lowland calcareous grassland CG9	55.0	25.0	20	0	0	0	20	0.6
Grass moorland and rough grazing M01 (HLS only)	53.8	23.1	15.4	0	0	7.7	13	0.4
BAP Lowland Beech & Yew W8 W10 12-15	50	37.5	12.5	0	0	0	32	0.9
Lowland Meadows MG4	50	27.8	22.2	0	0	0	18	0.5
Lowland neutral grassland MG2	50	25.0	25.0	0	0	0	4	0.1
Ponds (SSSI)	50	21.4	28.6	0	0	0	14	0.4
Habitat for breeding waders - upland G14 (HLS)	50	12.5	25.0	0	12.5	0	8	0.2
BAP Upland Mixed Ashwoods W8d e f g W9	49.3	42.7	8.0	0	0	0	75	2.1
Alkaline Fen (excluding alpine flushes) M9 M10 M11 M13	48.4	45.2	6.5	0	0	0	31	0.9
Upland hay meadows, G09 (HLS only)	47.6	42.9	9.5	0	0	0	21	0.6

ISA feature	Proportion of variables passing targets							
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	ISA features assessed	of all features assessed
Upland heath M02/M04 (HLS only)	47.2	27.8	19.4	5.6	0	0	72	2.0
Lowland Wetland, W04, W05, W08 (HLS only)	47.2	15.1	22.6	11.3	1.9	1.9	53	1.5
Lowland meadows, G06 (HLS only)	45.8	34.7	15.3	1.4	0	2.8	72	2.0
Purple Moor Grass & Rush Pasture, M24/25	45.8	43.8	10.4	0	0	0	48	1.3
Lowland fens, reedbeds and associated communities	44.9	27.1	21.5	4.7	0.9	0.9	107	3.0
Inland species rich MG11 & 13	43.5	41.9	12.9	1.6	0	0	62	1.7
Purple Moor Grass & Rush Pasture, G07 (HLS only)	43.3	26.7	10	3.3	3.3	13.3	30	0.8
BAP Traditional Orchards T15	42.9	14.3	42.9	0	0	0	7	0.2
Upland calcareous grassland, CG9-14	42.9	42.9	14.3	0	0	0	21	0.6
BAP Wood Pasture & Parkland W10 W11 W14-16	42.9	57.1	0	0	0	0	7	0.2
Habitat for breeding waders-lowland G12/Habitat for wintering waders & wildfowl G13 (HLS)	40.8	44.8	12.8	0	0.8	0.8	125	3.4
BAP Wet Woodland W1-3 W4c W5 W6 & W7	39.8	37.6	18.3	3.2	1.1	0	93	2.6
Lowland calcareous grassland G04 (HLS only)	39.7	30.9	17.6	8.8	0	2.9	68	1.9
Lowland dry acid grassland, G05 (HLS only)	35.3	35.3	11.8	17.6	0	0	34	0.9
BAP Lowland Mixed Deciduous W10 W16 W8d W8e	33.5	47.4	16.7	2.0	0.4	0	251	6.9
BAP cereal field margins Ov10 OV11 OV13 OV3 OV4 OV7 OV8 OV9	33.3	66.7	0	0	0	0	3	0.1
Strandline, embryo and mobile dunes, SD4-6	33.3	33.3	33.3	0	0	0	3	0.1
Limestone pavement L01 (HLS only)	33.3	0	66.7	0	0	0	3	0.1
Soakway & Sump M29	33.3	66.7	0	0	0	0	3	0.1

ISA feature	Proportion of variables passing targets							
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	ISA features assessed	of all features assessed
Transition Mire Ladder Fen & Quaking Bog M4 M5 M8 M9b S27	33.3	66.7	0	0	0	0	3	0.1
Lowland Calcareous Grassland CG2	31.6	47.4	16.8	4.2	0	0	95	2.6
Lowland Meadows MG5	30.8	32.5	27.5	6.7	0	2.5	120	3.3
Fen Meadow and Rush Pasture M22 & M23	30.4	41.8	21.5	6.3	0	0	79	2.2
BAP Upland Oakwood W10e W11 W16b W17	29.6	53.7	16.7	0	0	0	54	1.5
Species Rich Grassland G03	28.6	14.3	57.1	0	0	0	7	0.2
Lowland calcareous grassland CG7abde	27.3	68.2	0	0	0	4.5	22	0.6
Land at risk of generating diffuse pollution N01	25.0	75.0	0	0	0	0	4	0.1
Lowland meadows MG8 and related	23.5	29.4	47.1	0	0	0	17	0.5
Lowland calcareous grassland CG3/CG4/CG5	22.9	46.9	21.9	7.3	1.0	0	96	2.6
Blanket & Valley Mire M1-3 M15 M17-20 M25	22.9	66.7	10.4	0	0	0	192	5.3
Lowland dry acid grassland, U1, U3, U4 & U20	21.8	45.5	29.1	2.7	0	0.9	110	3.0
Upland Acid Grassland U2-6	20.8	41.7	37.5	0	0	0	24	0.7
Sub-alpine Dry Dwarf Shrub Heath H4 H7 H8-10 H12 H16 H18 H21 H22	20.2	70.2	8.9	0.8	0	0	124	3.4
Alpine Dwarf Shrub Heath H13-15 H17 H19 H20 H22	20	60	20	0	0	0	5	0.1
Vegetated Shingle SD1/SD2/SD3/MC6	19.4	64.5	6.5	3.2	3.2	3.2	31	0.9
Short Sedge Acidic Fen M4-6	19.2	34.6	38.5	7.7	0	0	26	0.7
Ditches	17.6	58.5	16.2	2.8	2.1	2.8	142	3.9
Lowland wet heath H3; H4; H5; M14-16; M24; M25	17.2	56.0	18.7	7.5	0.7	0	134	3.7
Upland Juniper Heath & Scrub	16.7	66.7	16.7	0	0	0	6	0.2
Lowland heathland, M03 (HLS only)	16.3	32.6	37.2	11.6	0	2.3	43	1.2

ISA feature	Proportion of variables passing targets							
	100	75 to 99	50 to 74	25 to 49	1 to 25	0	ISA features assessed	of all features assessed
Lowland raised & blanket bog M1-4, 6, 15-25, 27, S4, W4-6	14.9	37.0	18.8	21.4	7.8	0	154	4.2
Lowland dry heath H1-4, 6, 7-10, 11 & 12	14.5	58.5	21.4	4.4	1.3	0	159	4.4
Fixed dune grassland SD7-12/SD19/CG10/CG13	12.5	62.5	25.0	0	0	0	8	0.2
Upland wet heath M15 & M16	6.9	75.9	13.8	3.4	0	0	29	0.8
Dunes with Salix repens SD16	0	33.3	66.7	0	0	0	3	0.1
Humid Dune Slacks SD13/SD14/SD15/SD16(part)/SD 17	0	100	0	0	0	0	2	0.1
Calcareous scree OV38-40, CG14	0	100	0	0	0	0	1	0
Limestone Pavement	0	71.4	28.6	0	0	0	14	0.4
Lowland calcareous grassland CG7c	0	50	50	0	0	0	4	0.1
Lowland calcareous grassland CG8	0	100	0	0	0	0	1	0

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