BD5303: Monitoring the effects of Environmental Stewardship on Landscape Character and Quality

Executive summary

This three year Research and Development Study has been funded by Defra and run by Natural England. It reflects a concern that previous monitoring of agri-environment schemes has not captured fully the landscape effects of these schemes.

This study has developed a sampling frame that allows the landscape effects of agri-environment **schemes** to be assessed from the national to the local level**. It has developed rapid, consistent, repeatable and rigorous methods for assessing the landscape effects of Environmental Stewardship (ES) and subsequent agri-environment schemes.** A detailed survey method lay down a baseline and explored the different landscape effects of ES. From this, a rapid field survey method has been developed allowing the quick collection of data on the landscape performance of individual options in a wide range of circumstances. At the strategic level, using digital data and a bespoke database, complex information is presented in simple format. This allows consistent assessment using landscape thresholds to identify the landscape performance of ES across every National Character Area (NCA).

Using meta-analysis of field survey results, the study has reviewed different counterfactual scenarios. It has also developed an approach for capturing public opinion on which elements of the landscape people value and would prefer agri-environment schemes to support. This will be particularly valuable in informing landscape-scale projects.

Results

1. Overview. The information collected through these different forms of analyses **provides the most comprehensive evidence to date on the landscape effects of agri-environment schemes** and particularly ES. The study has confirmed that ES is meeting the objective of maintaining and enhancing landscape character and quality. It is having a strongly positive effect on the landscape of the Uplands and a positive effect on landscapes elsewhere. The exception is urban fringe areas and some western pastoral areas, where its effect is neutral.

In pastoral and mixed farming areas, including the Uplands, the primary landscape need is **to conserve and restore characteristic landscape features** such as hedgerows, hedgebanks, walls, small farm woodlands and trees, and semi-natural habitats. In intensive and large scale arable landscapes the emphasis needs to be on enhancing the landscape by reinforcing or reintroducing **landscape structure and diversity** through the use of wide buffer strips to strengthen field boundaries and through the reintroduction of semi-natural and non-arable habitat to create localised areas of diversity and interest.

2. Benefits. The evidence identifies that ES options can **conserve, restore and recreate key landscape characteristics**, as well as:

- Highlight landscape scale and pattern
- Conserve / reintroduce traditional land use patterns, colours and textures e.g. through hay cutting and conserving wild flower meadows
- Help reinforce local distinctiveness and sense of place
- Conserve, restore and help reveal historic features in the landscape.

3. Option choice. The study has confirmed that ES has the right range of options to support the character of our different landscapes but would benefit from new ELS options for the restoration of

boundary features[1] outside the Upland SDAs. **The study has also highlighted other important areas that would significantly increase the landscape benefits of ES.**

4. Uptake. It is evident that over 50% of uptake by area is focused on a primary ES 'palette' of some 17 options. While HLS agreements can generally be characterised as a range of specific options tailored to individual localities, ELS agreements are often very simple in option choice and do not necessarily respond to the needs of the local landscape. Here significantly greater benefits would be achieved if (a) there was more careful selection of options to conserve and enhance landscape character; and, (b) there was landscape advice/targeting to ensure each option is applied in the optimal location.

ELS low input grassland options are the most popular options by area of uptake in all areas except the Uplands. They cover over 30% by area of all ES uptake in the Upland Fringe and in Western pastoral and mixed landscapes, yet fall far short of meeting the identified landscape threshold. This suggests the need for more purposeful targeting. On the other hand hedgerow options also have very high levels of uptake (up to 70% of all linear feature uptake) but meet their landscape threshold in nearly all types of landscape, bringing discernible landscape benefit. This rarely includes significant uptake of the enhanced management options that bring most benefit and added value – these again could be purposefully targeted.

There are a wide range of other options that have low levels of uptake that rarely meet their landscape threshold yet are vital for supporting the local nuances of landscape (e.g.options associated with woodlands and trees, wood pasture, orchards, ponds, haymaking). Stronger targeting of these options would be highly beneficial in reinforcing local distinctiveness.

5. Location. Options fall into one or more of the following **strategic location** types: (a) options best **dispersed** across the landscape, especially boundary and buffer strip options helping define the scale and structure of the whole landscape; (b) the targeting of grassland options with very high levels of uptake into topographical **swathes or zones** that highlight topography and provide a visual and functional link between areas of more natural grassland and aid resource protection; (c) the **clustering** of options to recreate habitat mosaics, bring back traditional landscape patterns, and protect concentrations of historical / archaeological features; and (d) targeting options in specific locations where they will help **restore local distinctiveness.**

The study has identified that the location of options can be very influential in defining their impact on the landscape, both strategically and at the local scale. Arable options are particularly influential. In the right location these can significantly enhance the landscape, for example, helping define the boundary of large-scale field systems, but in the wrong location can detract from the landscape, as when placed in blocks randomly imposed on the established field structure. Advice that promotes arable options should take account of potential adverse effects and encourage the appropriate scale, design and location of these options.

6. Future monitoring. Evidence collected through monitoring at different spatial scales provides a much better understanding of ES uptake 'what, how much and where' and its effects on landscape character and quality. This can directly inform targeting and advice both nationally and more locally to ensure that the ratio of benefits to costs are maximised. **This underlines the strong value for money that monitoring can offer.**

7. Informing other work. The findings of this study and any future monitoring will inform the National Character Area Profiles and their Statements of Environmental Opportunity. They will also inform monitoring and management planning within National Parks and AONBs; and other integrated management projects such as the Nature Improvement Areas.

8. Further research. Further research would be beneficial. In particular: (a) review of benefits arising from the special projects under HLS capital items: HAPs, HTB & PAH/OES; (b) case studies to assess how to mitigate potential adverse landscape effects of in-field arable options while ensuring that their primary purpose is met; and (c) understanding better how farmer attitudes and their appreciation of landscape affect agri-environment decisions.

[1] There is already a new option EB14 for the restoration of hedgerows in the lowlands