LM0442: Establishment of a Monitoring sample of sites being managed under HLS to maintain or restore Lowland Fen

Agri-environment monitoring theme: Higher Level Stewardship outcomes

What are the issues?

Higher Level Stewardship (HLS) was introduced in 2006, to provide support to farmers in managing land for environmental benefits. It is delivered as part of the Rural Development Programme for England (RDPE) and contributes to strategic priorities for biodiversity, natural resource protection, sustainable farming and food and sustainable rural communities. Evidence of the effectiveness of agri-environment schemes is required by the European Commission and this project is part of an Environmental Stewardship (ES) Monitoring and Evaluation Programme, providing an evidence base for the effectiveness of ES. HLS is a major mechanism for delivering the Government's Biodiversity 2020 outcomes, and maintenance and restoration of wetland habitats represents a key element of HLS delivery. This project reports findings from a survey of a sample of wetlands being managed under options for the maintenance (HQ6) and restoration (HQ7) of lowland fen with the intention of characterising the vegetation communities that were being targeted for management under these options and more widely establishing a baseline sample for future monitoring of the effectiveness of management.

What are the aims of the project?

HLS options for the management of lowland fen are currently (2016) delivered on around 940 HLS agreements worth more than £1m per year. These options were noted as a priority for focused monitoring and evaluation in the agreement level monitoring undertaken from 2009-11. We selected almost 80 sites, divided between the maintenance option HQ6 and the restoration option HQ7 for a detailed baseline survey, involving a broad condition assessment and recording of vegetation in five fixed quadrats per site.

The aims were to:

- Describe and map the National Vegetation Classification (NVC) communities present in each site;
- Provide an assessment of the current condition of a sample of sites under HLS options for maintenance or restoration of fen;
- Compare the current condition of sites in the sample under maintenance with those under restoration management;
- Assess progress where possible against the Indicators of Success set for each agreement and evaluate the appropriateness of the indicators set;
- Evaluate management, soil and other relevant information, including adjacent management, and explore the reasons for the vegetation condition observed;
- Provide an overall assessment of the targeting and delivery of HLS fen maintenance and restoration options, with reference to the actual and potential effectiveness at delivering environmental benefits.

Figure 1: Lowland Fen (Source: Natural England/Belinda Wheeler)

Which policy areas will the research inform?

The results of the survey will help evaluate the effectiveness of ES in delivering environmental benefits, in line with the European Commission Common Monitoring and Evaluation Framework (CMEF).

It will help to inform reporting on the contribution of ES wetland management to the Government's Biodiversity 2020 targets as well as helping to refine the delivery of the new Countryside Stewardship Scheme that has replaced ES from 2016.

Department for Environment Food & Rural Affairs

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What are the results from the project and how will they be used?

The final sample comprised 78 sites, of which 74 were subject to a full survey. HLS options for management of lowland fen were found to have been used on a wide range of NVC communities, from mires and tall-herb fens to wet woodlands and more inappropriately grasslands and reedbeds.

Targeting of the fen options was assessed in more detail: Of sites where HQ6 was applied, 55% were judged correctly targeted at fen features in good condition whilst 24% were correctly targeted at fen features but would be better managed in the restoration option HQ7. The remaining 21% were judged inappropriate for fen management but might have been managed appropriately under other HLS options. Of sites in HQ7, 89% were targeted correctly at fen features including one site which may actually have been eligible for HQ6. 11% of the HQ7 sites were judged inappropriate for fen management.

Of the 13 sites judged to have been wrongly targeted for management in fen options, 6 were sites where a Reedbed option would be more appropriate, 5 where Grassland options would be more appropriate, one was a wet woodland and one an upland flush.

As this was a baseline survey with agreements at different stages (some very new) it was not possible to undertake a comprehensive analysis of the impact of HLS, although evidence from condition assessments suggested that 36% of the HK7 stands may have improved in condition. However, an assessment was made of the current feature condition relative to the targets set in the indicators of success as shown in Fig. 2.

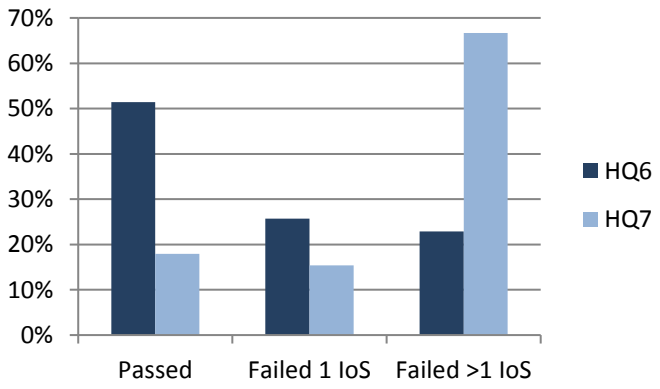

Figure 2: The percentage of sites under each fen management option (HQ6 and HQ7) that (left) passed all indicators of success, failed one (centre); or failed more than one (right) individual attribute targets.

The range of eco-hydrological conditions addressed by fen options requires significant tailoring of indicators of success. 34% passed all indicators set. The indicators of success most commonly failed related to habitat structure/height and cover and frequency of key species. The indicators set were not always wholly appropriate with 46% of sites set at least one indicator that was inappropriate for the habitat type present. This was typically through adoption of generic indicators that were not appropriate in a specific site.

A key factor in bringing about improved condition was use of a supplement supporting additional management with 57% of sites having the grazing supplement HQ12 and 15% the cutting supplement HQ11. The survey found that 70% of sites were actually under grazing, with cattle used most frequently (58%); 27% of sites were found to be subject to ongoing cutting management, although 5 sites in receipt of the cutting supplement did not appear to be in a current cutting regime. Scrub control had taken place at 32% of sites and active water management at 24%. This was often supported by payments for capital works.

There was a strong indication that for most sites grazing management, either alone, or in combination with cutting is required to deliver the anticipated environmental benefits. The majority of sites in good condition were grazed and of the 14 sites that were not subject to either cutting or grazing only one was in good condition.

The project demonstrates the importance of effective targeting at the outset of the scheme, including correct identification of the wetland feature and that most sites (and especially those targeted for restoration) need tailored intervention management with appropriate use of grazing and/or cutting supplements. If these requirements are met, it seems likely that sites can be restored to lowland fen in good condition. Where targeting is poor, or management less interventionist, outcomes are less likely to be met. The findings here will be used to further reinforce guidance for Countryside Stewardship advisors.

Where can I find further information about this and related research?

The full project report can be found on the Defra science pages search LM0442. For more information contact enquiries@naturalengland.org.uk or Defra's Environmental Analysis Unit.

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