

Questions from Landscape Recovery interviews and suggested answers.

Floodplain Meadows Partnership April 2026

| Question | Answer | Links to further info |
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| <p>The management of ditches and grips (for sites that are too wet for a hay cut).</p> | <p>Sites that are currently too wet to cut may make excellent sites if the surface infra-structure is cleaned/repared/reinstated. All floodplain land has the potential to achieve the right water regime for a meadow; it just requires the appropriate management of water.</p> <p>See Chapters 7 and 9 of the Technical Handbook for further guidance on re-instating drainage.</p> | <p>https://floodplainmeadows.org.uk/sites/default/files/files/Floodplain%20Meadows%20-%20Beauty%20and%20Utility%20A%20Technical%20Handbook.pdf and</p> <p>https://floodplainmeadows.org.uk/advice/meadow-how-to/care-existing-meadow/manage-your-site</p> |
| <p>What work has been done to quantify the amount of sediment stored (i.e. kept out of rivers)?</p> | <p>We undertook some research collecting sediments after the extensive summer flood in 2007, across multiple catchments in England. The link summarises the findings. We have also undertaken detailed nutrient budgets at a number of sites to quantify inputs and outputs. The hay cut on a meadow is essential to balance the nutrients brought into sites on floods (in particular the removal of phosphorus), maintaining a soil fertility level that can support a species rich plant community. Our data suggest that over the long term the amount of nutrient entering a site via sediments is matched by the amount leaving as hay (where hay is taken each year at an appropriate time.) If a site has sediment deposited in floods, but is managed by grazing alone (i.e. as a pasture rather than a meadow), it will tend to accumulate nutrients because very few are being exported from the site and therefore the available pool will steadily grow until a species-rich plant community is no longer feasible.</p> | <p>https://floodplainmeadows.org.uk/sites/default/files/files/research_zone/d96462.pdf</p> |

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| <p>What work has been done to quantify carbon storage potential?</p> | <p>We are working on a paper looking at soil carbon storage across three different catchments and across several floodplain land-use types. The data show that ancient species-rich floodplain meadows store the most carbon – there can be >200 t ha⁻¹ in the top 50 cm of floodplain soil (bear in mind such soils can be several metres deep). Arable soils typically store only about half that amount , with the divergence being greatest in the top 20 cm. Other grasslands types (e.g. pastures) store amounts in between these two extremes. The link takes you to a recent literature review of ecosystem services for English grassland types, which was used to feed into a Tool Kit for farmers about species-rich grasslands, ecosystem service benefits and funding options - found here:</p> <p>https://www.plantlife.org.uk/wp-content/uploads/2025/11/Plantlife-Realising-Grassland-Potential-An-Ecosystem-Service-Toolkit-for-Farmers-2025.pdf.</p> <p>We have also carried out work looking at the potential for increasing carbon storage across floodplains in Worcestershire - link adjacent.</p> | <p>https://floodplainmeadows.org.uk/sites/default/files/resources/Ecosystem%20services%20of%20English%20grassland%20types_wit h%20Appendix_Final_20241217%201.pdf</p> <p>https://floodplainmeadows.org.uk/sites/default/files/resources/assessment_of_floodplain_meadows_in_worcestershire_and_their_potential_to_store_soil_carbon_final_report.pdf</p> |
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| <p>What work has been done to summarise the phosphorus removal potential of floodplain meadows</p> | <p>We have recently published some work carried out through a PhD (Dr. Vicky Bowskill) studying how hay yield and nutritional value changes throughout the season. She found that the greatest amount of phosphorus was removed around mid-late June in Southern England. These findings support the traditional hay cutting date of midsummer. Meadows further north and/or at altitude would be a few weeks later and the exact date to aim for depends on the weather in a particular year so may range from 21 June to 14 July. The best time to cut the hay is important both to give the farmer the most nutritious crop to feed his animals and to remove the maximum amount of nutrient from the soil to maintain diversity. A second cut in September can be equally useful in summers when rainfall is sufficient to develop a second crop. A second cut maximises the offtake of nutrient per year and can be especially useful during a restoration phase and also where grazing is not convenient. See link.</p> <p>We have been in discussion with Natural England about the use of floodplain meadows as a tool for reducing phosphorus in Nutrient Neutrality plans, and are compiling the data we hold to evidence their nutrient removal potential. From compiling all the evidence we have from nutrient-budget studies, the average annual quantity of elemental phosphorus removed per hectare per year was 7 kg.</p> | <p>https://floodplainmeadows.org.uk/sites/default/files/resources/Vicky%20Bowskill%20Biological%20Conservation%202023.pdf</p> |
| <p>Concerns regarding dog faeces and quality of hay/health implications for livestock. Is it an issue on other sites? How to zone public access.</p> | <p>Could you work with the local dog walking community as part of the long-term project to develop community champions and awareness raising? A dedicated route for dogs around a field edge or through a shelter belt may be an option. Dog walkers often understand that the developing crop should neither be flattened or contaminated.</p> | |

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| | <p>To keep a crop clean, the key period is April to June. Owners may be willing to be more scrupulous in picking up faeces in that season. Temporary fencing of footpaths can also be an option for this short period. An extra consideration is the danger of grass-seeds (hay-seeds) entering dogs' ears. An information notice may encourage owners to protect their dogs from the developing hay crop.</p> | |
| <p>What is the expected species-richness of MG8 grassland – the BNG assessment method (used in some projects) classifies even those MG8 communities thought to be in good condition as “moderate” because they contain <15 species/m²</p> | <p>Our research (link adjacent) shows that the MG8 communities can be very species rich. The research published the values below for species diversity per 1 m² for the four sub-communities. None are less than 15:</p> <p>MG8a: 23.6 MG8b: 21.7 MG8c: 19.3 MG8d: 24.6</p> <p>If a site has low species diversity, it is likely that it is under some stress or has had fertiliser or inappropriate management in the past. We would suggest looking at drainage, soil structure, current management and plant species data to give indications of what problems might be on the site.</p> | <p>https://floodplainmeadows.org.uk/sites/default/files/files/JP021%20edition%201%20-%20A%20review%20of%20the%20NVC%20of%20the%20Calthion%20group%20of%20plant%20communities%20%281%29%20final%20word%20version%20as%20published.pdf</p> |
| <p>Can you give any advice on whether floodplain meadows are flagged under UK Hab 4 (g3a5 lowland hay meadow MG4 and g3a6 MG8?)</p> | <p>Level 4 - g3a Lowland hay meadows corresponds to UK priority habitat and includes MG4,5,8 and MG1c-e, MG2 & MG7c - which is now classified as MG15). The definition doesn't have the different species frequency thresholds/bold species for FPMs.</p> <p>Level 5 (subset of level 4) - g3a5 Lowland hay meadows corresponds to the Annex 1 habitat (H6510 Lowland hay meadows - <i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>) and <i>just</i> includes good examples of MG4.</p> | |

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| | <p>Level 5 (subset of level 4) - g3a6 Other lowland meadows is everything else included in level 4 (g3a) except MG4, i.e. MG5,8 and MG1c-e, MG2 & MG7c – (which is now classified as MG15). Doesn't split out MG8 specifically.</p> <p>MG8 also comes under some of the upland codes (montane and sub-alpine, mostly >600 m)</p> <p>Level 4 - g3b Upland hay meadows corresponds to UK priority habitat and includes MG3 (upland MG8), MG3 can often be found alongside MG8.</p> <p>Level 5 ((subset of level 4) - g3b5 - Mountain Hay meadows corresponds to the Annex 1 habitat (H6520 Mountain Hay Meadows) and includes the same communities as level 4.</p> | |
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| <p>Can you give advice on the most successful and cost-effective establishment method – green hay or seed?</p> | <p>Through studies we have undertaken, we cannot say whether any particular method is more successful than others in terms of sourcing propagules. Our data suggest the care with which a restoration scheme is undertaken is a larger factor in determining the success than the source of the seeds.</p> <p>Dry hay bales are the cheapest method and have been shown to be the most effective at restoring plant species richness in meadows. It has the advantage that grazing stock can be used to spread the seeds in autumn if species-rich hay is spread on fields being grazed. The traditional practice of spreading sweepings from barns, in which species-rich hay has been stored, in winter is also cheap and effective. Green hay gives locally sourced seed and may transfer fungal and invertebrate species too, but it requires careful planning to get the timings right, and a good quality donor site nearby. . We have also published research on what is likely to drive success in floodplain meadow restoration, which appears to be most strongly linked to management after the initial capital works. The most important factors are being flexible about when the hay cut is taken, whilst making sure a hay cut is taken at the best time of year to remove the greatest amount of nutrients, along with maintenance of surface drainage features. Ensure you are working closely with land managers who understand what is needed, are able to be flexible and consistent about taking the hay cut. The method used is likely to be determined by what machinery and seed sources are available locally.</p> | <p>Tool kit for farmers about species rich grasslands, ecosystem service benefits and funding options:</p> <p>https://www.plantlife.org.uk/wp-content/uploads/2025/11/Plantlife-Realising-Grassland-Potential-An-Ecosystem-Service-Toolkit-for-Farmers-2025.pdf</p> <p>Recovering the lost hay meadows - publication on restoration success of 163 floodplain meadow projects in the UK:</p> <p>https://floodplainmeadows.org.uk/sites/default/files/resources/JNC%20Recovering%20the%20lost%20hay%20meadows%20published%202020.pdf</p> |
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| <p>Is it acceptable to use bought in seed/seed mixes, or material that has been harvested off site?</p> | <p>Official guidance from Natural England states:</p> <p>If seed needs to be introduced to existing good quality semi-improved grassland, or to degraded priority habitats, ensure the seed mix and seed source is suitable. The first choice should be local green hay.</p> <p>Native wildflower seed of unknown provenance or from elsewhere in the country should only be used if there is no other option, and restoration to species-rich grassland is a priority over the maintenance of existing good quality semi-improved grassland. Shallow harrowing (no deeper than 2-3 cm) should avoid damaging the root systems of existing plants in the sward.</p> <p>Prioritising: Green hay is generally preferred, then locally sourced seed (e.g. brush harvested)</p> <p>Commercial mix provided the wildflowers are of native British origin.</p> | |
| <p>How long does it take to reduce phosphorus levels in soils, and how long to develop more species-rich swards?</p> | <p>We are currently analysing our data to produce some evidence to answer this question. It's likely to take at least several years of double hay cuts to reduce soil fertility from very high (e.g. P Index 3-4) to a level sufficient to introduce propagules. The rate of decrease is a function of the soil type. Soils rich in clay and/or organic matter are likely to take longer than those dominated by silt and/or sand. Developing species-rich swards once you have applied propagules can take a long time - patience is required. You may see an initial increase in diversity quite quickly, but the patchiness of the sward and the evenness of species distribution throughout the site may take several years. It is therefore very important to manage landowners'</p> | |

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| | expectations – ecological restoration of a species-rich grassland can take a long time. | |
| What are ideal stocking rates/densities? Is there any published work on the value of species-rich floodplain grasslands for livestock/nutrition and health of animals? | Plantlife published some work on the nutritional value of species-rich swards to animals – see link adjacent. In terms of stocking densities on floodplain meadows, it is not clear that this is a key factor in diversity. Animals put onto the meadow to eat the aftermath need to be removed before the soil becomes too wet. The overriding factor is that they are not allowed to compact the soil as it can take decades for a soil to restructure itself. | https://floodplainmeadows.org.uk/sites/default/files/resources/Is_the_rye-grass_always_greener_An_evidence_review.pdf |
| How to access historical maps e.g. Dudley Stamp Land Use maps. NB Dr Iris Kramer is apparently working on 1 st edition river course maps (information from The Rivers Trust). | The Land Utilisation Surveys are now available online, downloadable as shapefiles or to view on a browser. Tithe maps can be obtained via The Genealogist website, although there may be fees. | https://www.data.gov.uk/dataset/b2e07b61-37f0-4b9f-9002-e3fb38497010/digital-land-utilisation-survey-1933-19491 https://www.data.gov.uk/dataset/92131c00-caa7-448f-9fff-0727d9b65760/second-land-utilisation-survey-of-britain https://www.thegenealogist.co.uk/ |