

## Plantlife – Written evidence (NSD0039)

### Introduction

1. Plantlife welcomes the opportunity to provide written evidence to the Science and Technology Committee on this issue and would be pleased to provide further information, or to elaborate on any points made within this response.
2. Plantlife is a UK conservation charity working nationally and internationally to save threatened wildflowers, plants and fungi. We own nearly 4,500 acres of nature reserve across England, Scotland and Wales. We have 11,000 members and supporters.

### Summary

The UK is in a pivotal moment for tackling the climate and nature crises: as the host of COP26 in Glasgow this year, the Government has an opportunity to take the lead on innovative, sustainable solutions to these crises through the adoption of nature-based solutions. This can be relatively simple. Permanent, species-rich grasslands offer one of the most straightforward and effective nature-based solutions to climate change. Plantlife encourages the Government to pursue a policy of grassland protection, restoration and management through a new Grasslands Action Plan, to facilitate not only the storage of a significant volume of carbon within the soil, but also to provide key ecosystem services.

#### **1. What is the potential scale of the contribution that nature-based solutions can make to decarbonisation in the UK?**

Nature-based Solutions (NbS) are defined by the IUCN as “actions to protect, sustainably manage and restore natural and modified ecosystems in ways that address societal challenges effectively and adaptively, to provide both human well-being and biodiversity benefits”.<sup>1</sup> Species-rich grasslands are an immensely valuable, natural solution to climate change. The un-tilled soils of meadows and grasslands store around a third of all carbon in the Earth.<sup>2</sup> However, many grasslands soils have become degraded. By restoring grasslands across the UK, carbon emissions can be sequestered out of the atmosphere and locked into the ground. Grasslands therefore represent a critical asset in the ongoing work to achieve the UK's net zero ambition. This is a core ask of Plantlife's Grasslands+ campaign along with a wide range of partners. However, the benefits are not just climate-related. Further positive outcomes of ensuring healthy grasslands are as follows:

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<sup>1</sup> IUCN, *Defining Nature-based Solutions*, (n.d.), <https://www.iucn.org/theme/nature-based-solutions/about>

<sup>2</sup> Eze, S., Palmer, S., and Chapman, P., (2018) Soil organic carbon stock in grasslands: Effects of inorganic fertilizers, liming and grazing in different climate settings. *Journal of Environmental Management*, 223. pp. 74- 84. <https://eprints.whiterose.ac.uk/131752/1/Samuel's%20accepted%20manuscript.pdf>

- grassland soils capture and hold back water, reducing flooding risk, which is particularly important given the increasing frequency and intensity of flooding events as a result of climate change
- meadows lock up pollutants and require minimal inputs of fertilisers and pesticides
- species-rich grasslands are critical reservoirs for pollinators including bumblebees, butterflies and moths
- species-rich pasture is at the heart of sustainable and resilient farming systems
- livestock nutrition and health improves as species-rich grassland provides a diversity of species for grazing<sup>3</sup>

A study by Maskell et al. found that, where grasslands had been degraded by arable activity, the cost of restoring their biodiversity was only £520 ha/yr (a figure which they derived from the 2013 IEEP report).<sup>4</sup> Therefore, the carbon storage potential of grasslands ecosystems represents an excellent and low-cost opportunity for the UK to move towards its decarbonisation goals, as well as providing further vital ecosystem services to improve the overall health of the UK's ecosystems.

## **2. What major scientific uncertainties persist in understanding the effects of nature-based solutions and affect their inclusion in carbon accounting, and how can these uncertainties be addressed?**

There is a key evidence gap in knowledge of the carbon potential within species-rich grasslands in the 'real-world', particularly within a UK-context. We need to have more in depth evidence that will help to inform our understanding of species-rich grassland soils and the way that they function within the wider ecosystem. This includes gathering additional evidence on the role of legumes and whether they have a positive effect on carbon storage in UK species-rich grasslands and on the dynamics of soil carbon in the topsoil, including at deeper soil depths. Answering these questions will improve the likelihood of grasslands being viewed as a viable nature-based solution by Government since the carbon sequestration potential can be better benchmarked.

## **3. What frameworks already exist for the regulation and financing of nature-based solutions?**

No response

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<sup>3</sup> Plantlife, *Hay festival?: Action now for species-rich grasslands*, (2018), [https://www.plantlife.org.uk/application/files/2315/3087/2058/Grasslands\\_action\\_plan\\_-\\_Plantlife.pdf](https://www.plantlife.org.uk/application/files/2315/3087/2058/Grasslands_action_plan_-_Plantlife.pdf)

<sup>4</sup> Maskell et al., *Restoration of natural capital: review of evidence*, (2014), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/517024/ncc-research-restoration-natural-capital-review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/517024/ncc-research-restoration-natural-capital-review.pdf)

#### **4. Who are the key stakeholders for the implementation of nature-based solutions in the UK? How can stakeholders' expertise and concerns inform the incentives and requirements for implementing nature-based solutions?**

Over the course of the last century, 97% of our species-rich grasslands have been destroyed by agricultural techniques such as ploughing, overgrazing and the use of fertilisers.<sup>5</sup> Because of this, farmers are key stakeholders in the implementation of grasslands management as a nature-based solution. In order to make grassland protection and management appealing to farmers, the newly devised ELM scheme should reflect the importance of grasslands as a nature-based solution in the UK. The maintenance and restoration of species-rich grasslands should be included in each of the ELM categories (sustainable farming incentive, local nature recovery, and landscape recovery) and made as accessible to land managers as possible.

However, restoring and maintaining species-rich grasslands can be a complex process. Land managers need to have access to practical on-farm advice to guide them through the process step-by-step. Plantlife strongly advocates for an improved advice and support service for farmers and other land managers with secure long-term funding. The Government should improve access to training and advice on both agronomic and environmental practices of grassland restoration and maintenance. While a portion of this support could be delivered digitally, it will remain vital for land managers to access in-person guidance from an advisor at an individual farm or farm cluster level since it is essential for the delivery of high quality grassland restoration and/or creation. Plantlife's Meadows Hub has been working to provide advice and guidance to land managers of all sizes to restore grasslands across the UK. However, there is value for this to be provided more widely and in an official capacity through Defra.

#### **5. How should implementation of nature-based solutions be integrated with other government policies for landscapes and seascapes, for example, agricultural, forestry, and land-use planning policies?**

Many of the UK's environmental goals can be served by protecting species-rich grasslands. Firstly, grasslands represent key reservoirs of biodiversity: wildflower meadows and other permanent grasslands can be home to 40 species of plants and fungi per square metre.<sup>6</sup> However, this exceptionally biodiverse ecosystem now covers less than 1% of UK land<sup>7</sup>, leading to significant declines in wildflower populations. Maintaining and restoring healthy grasslands will serve to support the UK's ambition to reverse biodiversity loss by creating more habitat for wildflowers and other wildlife. For England, this solution should be implemented through landscape-scale approaches as part of the Nature Recovery Network, fulfilment of

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<sup>5</sup> Plantlife, *Caroline Lucas to Champion Threatened Wild Flower*, (2017), <https://www.plantlife.org.uk/uk/about-us/news/caroline-lucas-to-champion-threatened-wild-flower>

<sup>6</sup> Plantlife, *Why grasslands are so important to the future of sustainable agriculture*, (2021), <https://www.plantlife.org.uk/uk/blog/why-grasslands-are-so-important-to-the-future-of-sustainable-agriculture>

<sup>7</sup> Plantlife, *Hay Festival?: Action now for species-rich grasslands*, (2018), <https://www.plantlife.org.uk/uk/our-work/publications/hay-festival-grasslands-action-plan>

the commitment to protect 30% of land for nature by 2030 and the forthcoming Green Paper on nature. As this issue cuts across many areas of government policy, Plantlife is calling on the Government to prepare a Grasslands Action Plan (akin to the Tree Action Plan<sup>8</sup>) in order to direct resources into grasslands as a nature-based solution to climate change through all relevant policy mechanisms.

Not only can grassland management and restoration deliver an increased level of biodiversity within the UK, but through the Environment Bill, there is already a framework to deliver this ambition. The Bill sets out a requirement for biodiversity net gain to be a requirement of planning permission, and to be considered a priority in all nationally significant infrastructure projects, such as the expansion of the UK road network.

Over 700 species of wildflower grow on UK road verges, meaning that inappropriate management of this valuable ecosystem threatens nearly 45% of the UK's total flora<sup>9</sup>. Plantlife has demonstrated that there is public support for prioritising wildflower preservation alongside key national infrastructure and local authority management through its successful road verges campaign, which has generated over 132,000 signatures to date.

Biodiversity net gain has the potential to be an important mechanism for creating new species-rich grassland and restoring degraded sites. However, traditional hay meadows and other ancient grasslands (which have never been ploughed or fertilised) cannot be recreated or compensated for elsewhere; Plantlife is calling for these ancient grasslands to be protected from development as 'irreplaceable habitat' akin to ancient woodlands.

Nature-based solutions must be assessed for their full impact. For example, tree-planting and woodland creation are among the most popular and visible nature-based solutions to climate change. However, there is a growing risk of inappropriate tree-planting on species-rich grasslands and other priority habitats, as well as the creation of monoculture woodlands which have little value for biodiversity or for public health and wellbeing; such initiatives can do more harm than good. Tree-planting initiatives must be based on the principle of 'right tree, right place' to ensure that nature, climate and people benefit.

Species-rich grassland preservation, management and restoration can be highly beneficial to farmers and a sustainable food and farming system, and the new Environmental Land Management (ELM) scheme represents a fantastic opportunity to support the expansion of this nature-based solution. Within ELM, the tier 1 management scheme (Sustainable Farming Incentive) provides a pathway for farmers to be paid for ensuring and improving ecosystem services (many of which

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<sup>8</sup> DEFRA, *England Trees Action Plan 2021 to 2024*, (2021), <https://www.gov.uk/government/publications/england-trees-action-plan-2021-to-2024>

<sup>9</sup> Plantlife, *About the Campaign*, (n.d.), <https://plantlife.love-wildflowers.org.uk/roadvergecampaign/about-the-campaign>

are also nature-based solutions to climate change, such as grasslands carbon capture). This tier rewards farmers and land managers on an individual level and thus it is the most accessible mechanism through which farmers and land managers can be rewarded for sustainable farming practices and the provision of ecosystem services<sup>10</sup> – such as those listed in the response to question 1 – as well as the creation of space in which people can engage with the beauty and natural heritage of their environment. Each of these ecosystem services can be achieved by healthy, thriving grasslands. While payment for the management of non-farmed land by farmers and land managers is essential to ensure the success of this nature-based solution, Plantlife strongly believes that farmers should be paid for exceeding baseline ELM guidance, rather than simply for avoiding harmful practices.

## **6. How should nature-based solutions be planned and monitored at the national level?**

Identifying remaining meadows and species-rich grasslands is a critical first step in developing a network of sites for recovery. Plantlife suggests that an effective way to monitor grasslands at national level would be to improve the national inventory of meadows and species-rich grasslands, similar to that of Ancient Woodlands. There would be scope to include the data collected from within the ELM scheme to improve our knowledge of the spread and quality of grasslands across the UK and use the meta-data provided by farmers (who will be required to submit information to receive their ELM support payments) to build a clear national picture of species-rich grasslands. This would allow for greater protection of existing sites and enable new mechanisms, such as conservation covenants, to ensure no net loss of our natural capital. Plantlife's ambitious but achievable goal is for 120,000 ha of species-rich grassland to be restored by 2043. This is an ambition which should be adopted by the Government.

*10 September 2021*

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<sup>10</sup> DEFRA, *Environmental Land Management: Policy discussion document*, (2020), [https://consult.defra.gov.uk/elm/elmpolicyconsultation/supporting\\_documents/ELM%20Policy%20Discussion%20Document%20230620.pdf](https://consult.defra.gov.uk/elm/elmpolicyconsultation/supporting_documents/ELM%20Policy%20Discussion%20Document%20230620.pdf)