Our irreplaceable heritage – priority habitat grasslands

This briefing recommends that:

- **Defra urgently publish a public consultation on the interim Irreplaceable Habitat list, to include the addition of semi-natural priority habitat grasslands;**
- **Natural England publish accompanying ecological guidance.**

Priority habitat grasslands are among the most threatened and unique habitats in England. They are intrinsic to our traditional farming heritage and represent some of our most iconic and loved landscapes, such as the hay meadows of the Yorkshire Dales or Oxfordshire's floodplain meadows, studded with beautiful Snake's Head Fritillary (*Fritillaria meleagris*).

However, most of these rare, often ancient, grasslands have been destroyed in the last century, with the remaining fragments now struggling to survive. For example, there may only be around 800 ha of upland hay meadows remaining in England. These grasslands can be carbon-rich, having accumulated carbon deep in the soil over centuries. Yet, this carbon can easily be re-emitted back into the atmosphere if the grasslands are disturbed. They are the ultimate multi-taskers and provide a wealth of critical benefits, such as climate mitigation and adaptation, nutritious food, wildlife habitat, flooding alleviation, and cleaner air and water.

Priority habitat grasslands are irreplaceable and cannot be re-created within a meaningful timeframe, due to their age, uniqueness and environmental context. Once they are gone, they are gone. These precious habitats must be safeguarded for future generations**.**

"Many eyes go through the meadow, but few see the flowers for it"- Ralph Waldo

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Policy context

Irreplaceable Habitats (IHs) have been defined as England's most ecologically valuable terrestrial and intertidal habitats, that cannot be successfully or easily restored, created or replaced within a meaningful timeframe[1]. In the latest (2024) National Planning Policy Framework (NPPF) in England, IHs are given additional protections within the planning system, where 'development resulting in the loss or deterioration of irreplaceable habitats (...) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists'[2]. Those 'wholly exceptional reasons' are not defined beyond 'where the public benefit would clearly outweigh the loss or deterioration of habitat', or in the case of Nationally Significant Infrastructure Projects. However, this is often very subjective and open to interpretation, with no clear definition, criteria or rationale behind those habitats currently listed on the NPPF, which does not include any priority habitat grasslands.

An interim IH list for the purpose of Biodiversity Net Gain (BNG) implementation was published on GOV.UK in February 2024[3], with underpinning legislation in the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. The webpage included a commitment to consulting on the interim IH list in 2024. However, **this consultation has not yet taken place**. The interim IH list has 8 habitats[4]; **no types of priority habitat grassland are currently included on the list, despite them meeting the irreplaceability criteria of age, uniqueness, species-diversity, and rarity.**

Biodiversity Action Plan priority 'broad habitat' types

The UK's most threatened habitats, in need of conservation action, were listed in the UK's Biodiversity Action Plan (UK BAP), as a response to obligations under the UN Convention on Biological Diversity (CBD). All UK BAP habitats are considered of principal importance for the conservation of biodiversity under section 41 of The Natural Environment and Rural Communities (NERC) Act. These are known as 'priority habitat' types. The UK BAP priority habitat grassland types are:

- Lowland dry acid grassland
- Lowland calcareous grassland
- Lowland meadows
- Upland calcareous grassland
- Upland hay meadows
- Calaminarian grasslands

Other priority habitats with grassland elements, that should be considered:

- Coastal sand dunes
- Coastal floodplain and grazing marsh
- Purple moor-grass and rush pasture

[1] See the definition on GOV.UK: https://www.gov.uk/guidance/irreplaceable-habitats

[2] https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf (par. 193. C.)

[3] https://www.gov.uk/guidance/irreplaceable-habitats

[4] Ancient woodland; Ancient and veteran trees; Blanket bog; Limestone pavements; Coastal sand dunes; Spartina saltmarsh swards; Mediterranean saltmarsh scrub; Lowland fens.

Declines

Large-scale losses of England's priority habitat grasslands over the last century have been well-documented[i], with remaining remnants now highly fragmented. Although estimates vary, the extent of priority habitat grassland across the UK has previously been estimated at around **244,376 ha, so roughly under 1% of the UK's area**[i] (in England this will be a smaller area), most of which is restricted to upland areas. **Priority habitat grasslands cover a tiny proportion of England's land**. In comparison, blanket bog is listed as an IH and covers 244,536 ha of England[iii], , and ancient woodland covers 364,889 ha[5]. The majority of England's grassland and 32% of total land cover is largely monoculture 'improved' and intensively managed grassland; permanent semi-natural grasslands account for another 5% of total land cover[iii]. **Protection and restoration of remaining semi-natural grasslands is needed.** Natural England has definied for priority habitat grasslands the minimum threshold at which we can be confident that the habitat, and its associated species, are thriving in England and are expected to continue to thrive sustainably in the future. For example, to achieve 'Favourable Conservation Status' lowland calcearous grassland an increase in the current extent of the habitat by 149,000 ha (approximately 390 % above the baseline of about 38,687 ha).[iv]

International importance

Alongside priority habitat status, many of our rarest and most imperiled grassland types receive additional recognition within the European Union's legislation (Annex I Habitats Directive), indicating that they are habitats of international conservation concern. Despite their importance on a global stage, many are at high risk in England. As one example, only 1,579ha of lowland hay meadows are estimated to remain following declines exceeding 97%; of this, only half remain in good ecological condition[v]. They are now classed as 'Endangered' on the European Red List of habitats.

Irreplaceable habitats

The criteria given on the IH GOV.UK webpage for determining the irreplaceability of habitats are: age, uniqueness, species diversity, and rarity. **Priority habitat species-rich grasslands meet all of the IH criteria.**

Age

- Are permanent habitats, which often have had undisturbed soils for centuries or longer. Over time, they develop complex ecological functions and soil structure, such as mycorrhizal fungal and plant relationships.
- May take decades, centuries, or longer to recover to near natural species composition and functional traits where degradation occurs[vi].
- Seed banks can reflect land use history over long periods, with the seeds of some ruderal species (associated with cultivation) persisting for over 150 years.[vii]

Uniqueness

- Have been influenced by unusual or rare environmental and/ or historical circumstances, which help determine its irreplaceability.
- Have many specialised grassland species that depend on healthy species-rich grasslands in order complete their lifecycles, and are increasingly threatened by habitat loss, degradation,

[5] This figure includes plantations on ancient woodland sites within the ancient woodland inventory. https://www.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england

and fragmentation; species such as Pasqueflower (*Pulsatilla vulgaris*), the Adonis Blue (*Lysandra bellargus*), and Skylarks (*Alauda arvensis*).

- Have evolved over time in unique environmental contexts. This includes physical factors such as low soil fertility and low-input management over a long time period. For example, it is well established in scientific literature that there is a correlation between low soil phosphorus and mineral nitrogen within grasslands as potential indicator of irreplaceability.[viii]
- Have a complex ecosystem which provides a sense of place, and a connection with the land at a local, regional, and national scale; for example, floodplain meadows (such as Lammas Meadows) form part of the local heritage and cultural landscape for a community to reference. Within many of the UK's nationally important designated landscapes, grasslands are a key component of a national landscape's character and natural beauty.

Species diversity

- Have national and international importance for fungi assemblages, especially waxcaps.[ix] Some larger, very long-lived fungi species[6] are useful indicators of a grassland's age.[x]
- Have diverse grassland and wildflower species[xi] , and support axiophytes and incredibly rare and threatened species, such as the 'Endangered' Field Gentian (*Gentianella campestris).*
- Have diverse insect populations, the presence of which within grasslands is indicative of undisturbed soil - which is challenging to recreate within a meaningful timeframe once disturbed, and may adversely impact the ability of these indicator species to disperse.

Rarity

- Have dramatically declined across the last century; likely over 97% is estimated to have been destroyed since the 1940s.[xii]
- Remnants are often in tiny fragments, which is a barrier to species dispersal, limiting species' ability to adapt to a changing climate, and can limit the financial viability of management.

[6] Clavarioids, Hygrocybe, Entoloma, Geoglossum, Dermoloma.

Degraded priority habitat grasslands

Priority habitat grasslands are sensitive habitats which are easily degraded via land use change, such as cessation of grazing, overgrazing, tree planting, or application of fertiliser. This could lead to declines in overall ecological function and ecological condition, and a loss or reduction in features that would identify it as meeting the criteria of a priority habitat grassland. However, key attributes may remain in the grassland that could identify it as irreplaceable, despite degradation - such as component plant or fungi species, and environmental context, such as soil properties or hydrological functions. **Therefore, restorable priority habitat grasslands could be identified as potentially falling into the irreplaceable category**, thus contributing to targets such as 30x30. This should take into account degradation that could occur in response to future climate warming and consider the ecological functions of grasslands.

Current guidance

Published guidance[7,8] on IHs has been informing on-the-ground decision making on irreplaceable habitats. However, there has not yet been a national consensus on what defines irreplaceability, a criterion for selection, national list of irreplaceable habitats, or legislative driver. Therefore, a **consultation on the IH list is vital to provide certainty to developers, ecologists, and Local Planning Authorities**.

[7] Surrey Nature Partnership's *'Irreplaceable Habitats' Guidance for Surrey* https://surreynaturepartnership.files.wordpress.com/2020/08/irreplaceable-habitats-guidance-for-surrey_final_aug2020.pdf

[8] Biodiversity net gain: good practice principles for development, a practical guide (Technical Note 3) https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/

Strategic approach to unlock the value of grasslands

Species-rich grasslands are multifunctional, providing **multiple ecosystem services from the same piece of land**.[xiii] However, unlike peatland and trees, there is no government-led Action Plan or Defra Grassland Taskforce, despite grasslands covering more than 40% of England's land. **A Grassland Action Plan could unlock the value of grasslands as a vast national asset**[9], and deliver against the UK Government's Environmental Improvement Plan, nature and climate targets, as well as strategies such as the Land Use Framework and the 25-year farming roadmap.

Recommendations

The UK Government must urgently hold a public consultation on the interim Irreplaceable Habitat list and include semi-natural priority habitat grasslands. Otherwise, these irreplaceable grasslands risk being destroyed by omission, forever.

This should be complemented by:

- A summary definition of IHs;
- The inclusion of this updated IH list within BNG guidance and legislation;
- Supporting ecological guidance on identifying irreplaceable habitats, which signposts to existing policies, national inventories and species data lists, mapping tools, and habitat management and restoration guidance.

[9] Read Plantlife's briefing on our call for a Grassland Action Plan: https://www.plantlife.org.uk/wp-content/uploads/2024/09/Grassland-Action-Plan-England-Briefing-Plantlife.pdf

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ANNEX – Example irreplaceability criteria indicators

Age	Uniqueness	Species-diversity	Rarity
Acid grassland			
Can take many decades to resemble 'ancient' examples[xiv]	Dependent on suitable substrate of acid rocks or superficial deposits such as sands and gravels and soils that are typically infertile[xv]	Range in species-diversity; between 5 species per 4 m^2 to 25 species per 4 m^2, when under favourable management[xvi] Lowland open, 'parched' acid grassland on sandy soils in particular contain rare vascular plant species, and rare and scarce invertebrates[xv]	Lowland acid grassland in England c. - 20, 000 ha[xvi]
Calcareous grassland			
It may take up to a century for the unique floristic assemblages to resemble 'ancient' examples, if disturbed[xvii] Suggestions of indicator species of long continuity; species restricted to old calcareous grasslands (>100 years)[xviii] Unpublished surveys have shown that extreme stress-tolerators such as Pulsatilla vulgaris have yet to recolonise chalk grassland ploughed briefly in the 1950s	Dependent on suitable calcareous geology and soils (rendzina or calcareous brown earths), and long history of pastoral agricultural management[xix]	Some typescan have approx. 20 – 40+ species per 4 m^2 when under favourable management[xx] More bryophytes (mosses) associated with calcareous grasslands than any other grassland type in Britain[xxi] Support c. two-thirds of threatened and near-threatened grassland vascular plant species[xxii]	Estimated 38,687 ha of lowland calcareous grassland in England[xxiii] Tiny, fragmented patches - in England, it is estimated that 85% of lowland calcareous grasslands are less than 10 ha[xxiv] In an EU context, the equivalent of lowland calcareous grasslands are classified as 'Vulnerable' on the European Red List[xxv]
Neutral grassland			
Timescales for lowland meadows to resemble 'ancient' examples may be measured in many decades[xxv] Indicator species of long continuity have been suggested for types of unimproved neutral grasslands[xxvi]	Associated with low-input regimes, with a specialist group of rare and declining plant species[xxvii] Floodplain meadow alluvial sols are vital for carbon sequestration, growing deeper with each flood event. Their well-structured soil can consist of +50% empty space by volume, which provides a huge store for water.	Lowland meadow may exceed 40 species per 4 m^2, and include some threatened, specialist, range-restricted, and uncommon species[xxviii]	Estimated around 80% of lowland meadow grasslands are smaller than 5 ha[xxix]

For further information or enquiries please contact:

Jo.Riggall@Plantlife.org.uk
Grassland Advocacy Officer
Jo.Riggall@plantlife.org.uk

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This briefing has been produced by Jo Riggall, with co-author Craig Llewellyn CEcol MCIEEM CSJK (Associate Ecologist at Atkins & Biodiversity Policy Specialist), and input from Joshua Styles MCIEEM (FISC 6) (Director, Principal Ecologist and Botanical Specialist, at Styles Ecology Ltd)

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