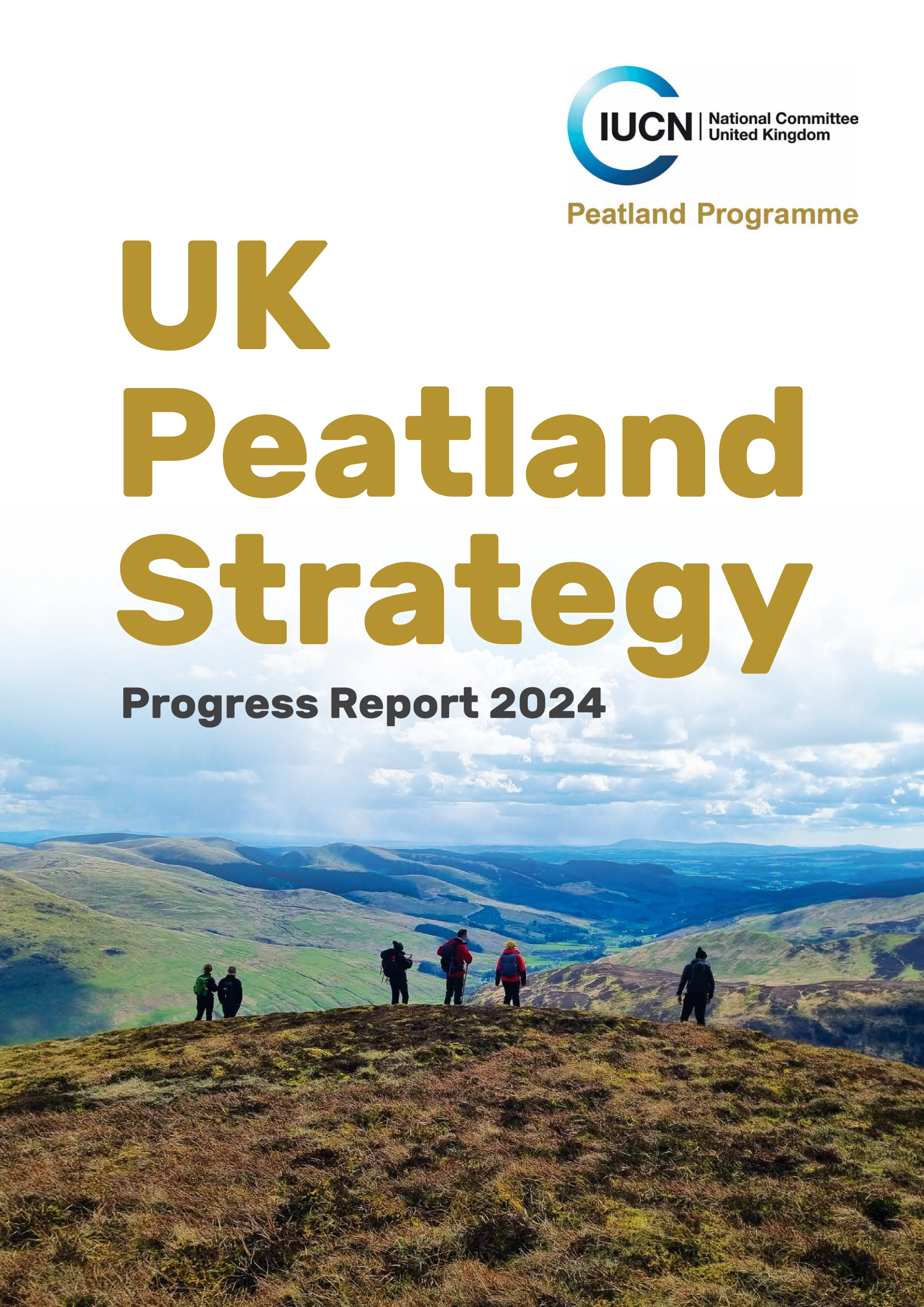
IUCN National Committee United Kingdom

Peatland Programme

UK Peatland Strategy

Progress Report 2024



UK Peatland Strategy - Progress Report 2024.
IUCN UK Peatland Programme.

September 2024

The report can be downloaded from
iucn-uk-peatlandprogramme.org

Cover image: Overlooking Carrifran and Moffat Water

Contents

Talla, Gameshope and Carrifran Peatland Code restoration project © Emma Hinchliffe

Introduction

In 2018, the IUCN UK Peatland Programme (IUCN UK PP) published the UK Peatland Strategy. It represented a watershed moment in peatland conservation for the four countries. We outlined goals and objectives based on what we felt was the required direction of travel, with the idea that these would act as springboards for action.

The aim of the strategy was, and remains, the promotion of a collaborative and co-ordinated effort in restoring and conserving the UK's peatlands. It set the headline target -from within the ~3 million ha of peatlands in the UK- to have "**two million hectares of peatland in good condition, under restoration or being sustainably managed by 2040**".

Peatlands are subject to many demands, with varied land uses – upland livestock production, lowland arable, drinking water provision, sporting estates and nature conservation – with each management type often pursuing their own objectives.

Others are interested in peatlands for recreation, cultural history or, for some, their climate change role. A strategic approach is required to help address the different pressures faced by peatlands and generate the interest needed to secure the best, long-term solution for society.

The past 5 years have seen a vast uplift in both peatland restoration action and the acknowledgement of the importance of peatlands across different sectors. We have seen significant new research and an increase in capacity and skills across the peatland sector, which will enable a quicker future pace of delivery. **However, we have also observed that action in most areas of the strategy has been slow and fragmented. It is critical that we do not lose momentum**; restoring peatlands remains one of the most cost-effective solutions for reducing greenhouse gas emissions and combatting biodiversity loss.

The actions of the UK peatland community between now and 2040 will determine whether we can collectively restore our peatland to a healthy state, halt biodiversity loss and enable these ecosystems to become resilient to climate change. At present, it looks likely that we will miss the international Paris target (2015) to limit global warming to 1.5°C and there is strong evidence that the nature that supports our peatland ecosystems is in decline.

The past 5 years have seen **a vast uplift** in delivery of restoration and acknowledgement of the importance of peatlands.

Our approach to this report

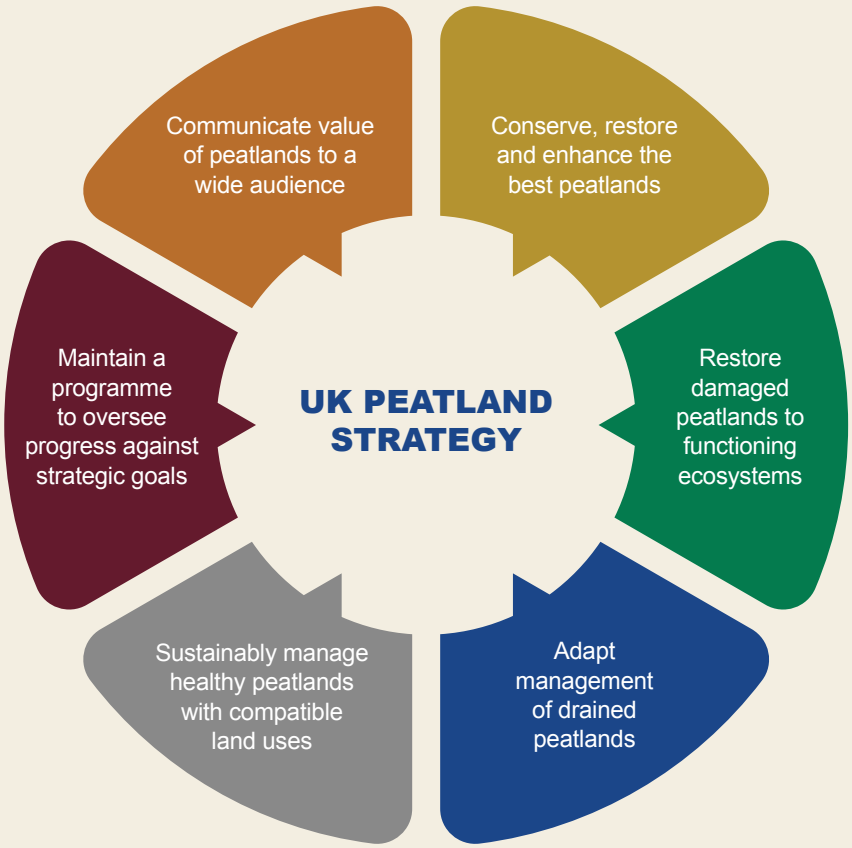
This review will report on the extent of progress made towards the outcomes and milestones in the UK Peatland Strategy and identify where improvements need to be made to reach the UK's domestic and international commitments.

The IUCN UK Peatland Programme has collated and analysed information from a diverse range of sources across the UK to compile this report, focussing on data that is publicly available. **The report provides an opportunity for the peatland community to reflect, celebrate successes, discuss opportunities and to embrace the remaining challenges still facing UK peatlands**.

In areas where there has been a lack of progress, we urgently need to understand why, and to decide how to collectively move forwards.

The report is structured around the 6 goals of the UK Peatland Strategy as written in 2018.

The six goals of the UK Peatland Strategy 2018-2040



2040 VISION

Our peatlands are protected, enhanced, sustainably managed and are recognised for their intrinsic value and the public benefits they provide.

2040 TARGET

Two million hectares of peatland in good condition, under restoration or being sustainably managed by 2040.

Summary

Conserve and Restore

- There has been minimal progress towards the goal of protecting 95% of UK peatlands. Assessments of SSSI/ASSIs[1] is on a six-year cycle. IUCN UK PP analysis found that some sites of special scientific interest (SSSI) peatland sites have not received a condition assessment in over a decade. Where assessments have been made, there does not appear to be an appreciable move towards favourable condition for the majority of UK peatlands.
- The last JNCC assessment (2019) estimated that of 21,822 km^2 of the UK's SAC blanket peatlands, only 358 km^2 were in good condition, equating to 16.4%.
- There is still no shared UK-wide definition for what constitutes 'peatland' or agreement as to what 'restoration' entails. There remains no broad agreement on the depth of 'deep peat' with depths currently varying between 30 - 50 cm across the UK countries and depth criteria being applied at a variety of thresholds for different policy applications. This creates confusion across sectors as to what 'peat' and 'peatland' are. In some cases, this risks undermining peatland conservation objectives.
- No unified map of UK peatland exists across the four devolved countries although there have been recent updates to modelled mapping approaches at the national level. These are however severely constrained in their site-specific application by limited field data inputs to the modelled maps.
- Since peatland restoration projects began at scale in the 1990s, approximately 250,000 ha of restoration activity has been undertaken on UK peatlands (see Figure 1).
- Around £318 million in funding has been recently pledged for peatland restoration across the UK, with the Scottish government pledging the majority of this (77%).
- Private finance is now playing a tangible role in the restoration and long-term management of UK Peatlands. The first Peatland Code project was validated in 2018 and since then 300 projects have been registered with a predicted net emissions reduction of almost nine million tonnes CO_2e over the lifetime of these projects.

Adapt and Sustainably Manage

- Whilst there has been much discussion around the ban of peat for horticultural use across UK parliaments, no legislation has been forthcoming to introduce a ban on the sale of horticultural peat. Instead, progress towards ending use is being driven by voluntary phase-outs in the sector. Until a clear end date is communicated through legislation it is unlikely that horticultural peat use will cease completely in the UK. A series of time limited exemptions could be used to allow for the remaining barriers to be overcome through research and trials.
- Some progress has been made to regulate burning on peatlands in parts of the UK. A ban on burning designated areas of deep peat in England was introduced in 2021. Introduction of Scotland's Wildlife Management and Muirburn Bill (2024) will ban burning on all Scottish peatlands *(designated and undesignated) except under licence* from 2025 onwards. In Northern Ireland, dates for the burning season are being reviewed as part of the development of Farm Sustainability Standards (FSS) that will be introduced in 2026.

[1] ASSI- Area of Special Scientific Interest in Northern Ireland. The equivalent to SSSI designation.

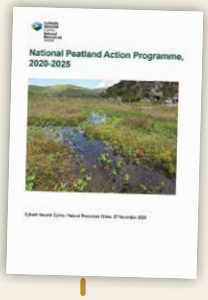
- The net benefit of historic and current agri-environment schemes to peatland sustainable management and conservation objectives is difficult to assess. Available data are not easy to attribute to peatland objectives. It is hoped that future post-CAP agri-environment schemes will be structured to allow the monitoring of management interventions and the benefits that this significant public financing stream can deliver for UK peatlands.
- The topic of paludiculture or 'wetter farming' on peatlands has gained significant traction; particularly in England where partnerships between eNGOs, farmers, growers and government agencies are delivering inspirational projects to demonstrate the potential for adaptive management of UK peatlands.

Co-ordinate and Communicate

- There is increasing public interest in peatlands, and peat-related topics are increasingly discussed in the UK Government and featured in the media. Scientific progress and synthesis reports by key policy influencers such as the Intergovernmental Panel on Climate Change (IPCC) and Committee on Climate Change (CCC) have increasingly acknowledged the role of "peat" in climate change mitigation and nature recovery since 2018.
- There have been positive trends in the size of the peatland sector, as the number of job advertisements for peatland-related jobs in the UK has increased significantly since 2018. The number of jobs more than doubled within the past four years, and there has been a gradual increase in the number of permanent positions. With this comes concern about the retention of peatland expertise as a number of experts reach retirement age and short-term funding threatens retention of experts within their existing roles.
- Peat-themed research projects have been awarded over £25 million since 2018 by UK-based funding bodies. Around 100 peat-themed scientific publications are produced each year from UK research institutes.
- Three of the UK's nations now have a country specific peatland strategy, which reflect the overarching objectives and aims of the UK peatland strategy and serve as key documents shaping the conservation of the UK's peatlands. Northern Ireland is the only country yet to formalise a peatland strategy: a draft strategy for consultation was published in 2021.

Timeline of country strategy publications

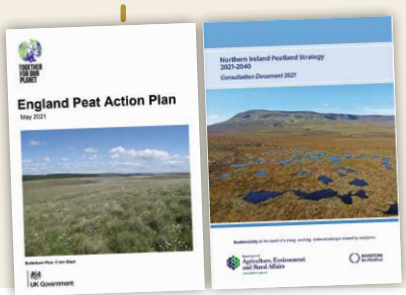
2015 — NatureScot publish Scotland's National Peat Plan



2018 — Natural Resources Wales publish the National Peatland Action Programme

2018 — The IUCN UK Peatland Strategy is published

2020 — DEFRA publish the England Peat Action Plan and the draft of the Northern Ireland Peatland Strategy is published



2021

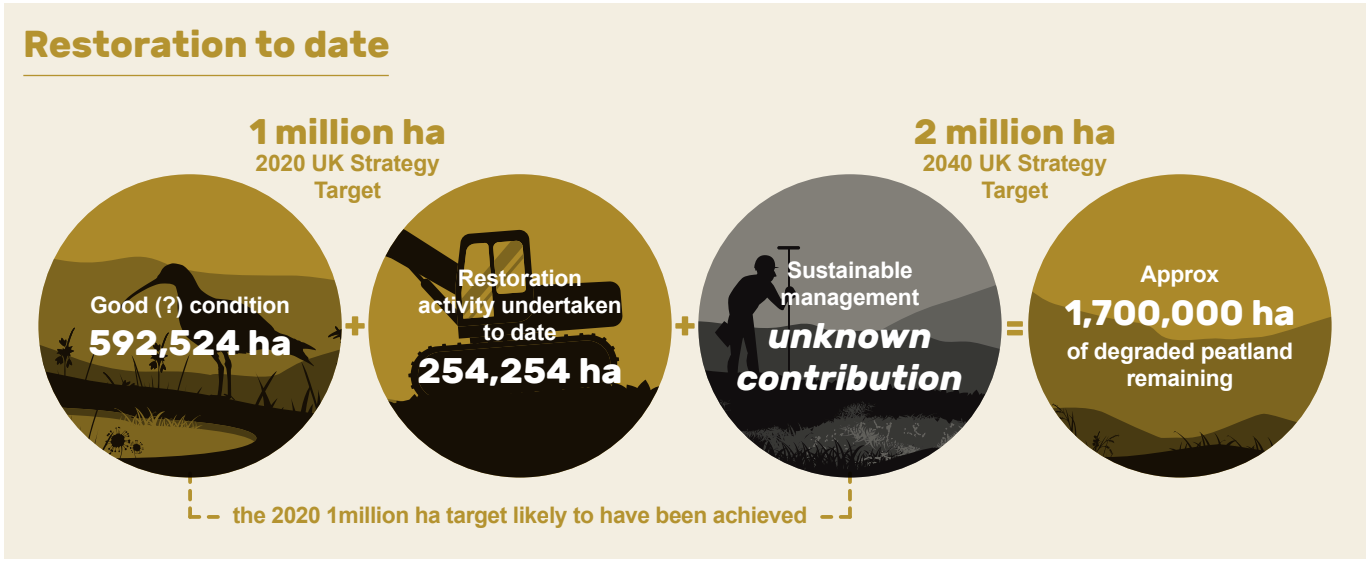


Figure 1: Illustration of level of progress to date for UK peatlands. We estimate that ~592,524ha are in 'good' condition and a total of ~250,000 ha of restoration activity has been undertaken to date. We assume that 80% of the remaining peatland resource is degraded. **Assuming a net positive contribution by sustainable management practices on some peatlands we infer that the 2020 milestone of 1 million ha is likely to have been achieved for UK peatland recovery.**

These estimates have a lot of assumptions attached to them including, but not limited to:

- An assumption that the JNCC (2011) assessment of c. 80% of UK peatlands being degraded is still broadly applicable
- An assumption that restoration figures collated by the IUCN UK PP have no spatial overlap and figures used relate to a positive change in peatland condition over that area.
- An assumption that 'good' condition broadly aligns with 'favourable condition' status of habitats as assessed by the statutory nature conservation agencies.
- An assumption that sustainable management practices (of unknown quantity) are making a net positive contribution to the condition and recovery trajectory of UK Peatlands. This is a large uncertainty as the balance of sustainable practice and unsustainable management and its net effect on peatland condition is unknown.

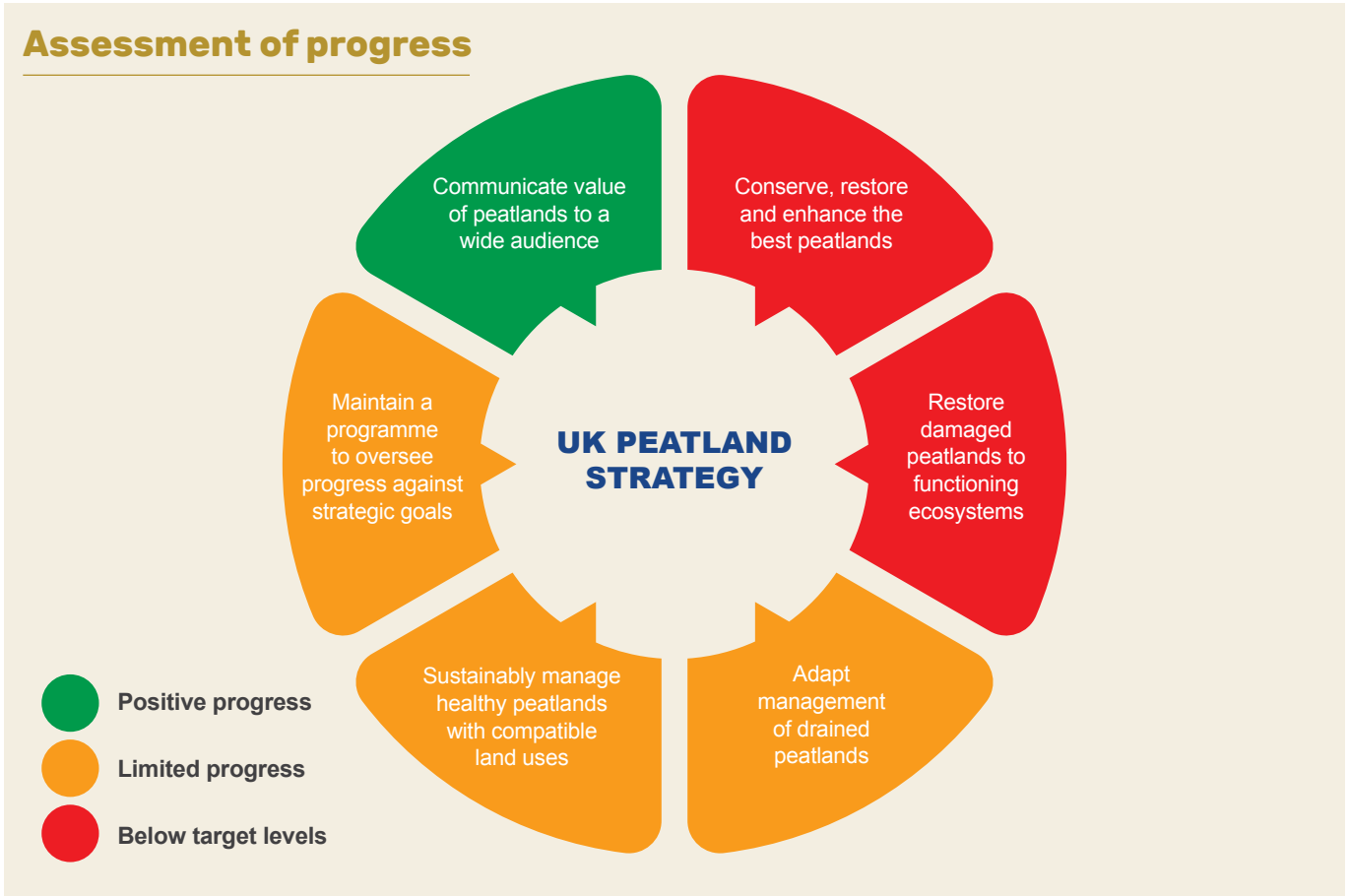


Figure 2: Based on our assessment of progress against the UK Peatland Strategy (2018) RAG scores have been assigned to each of the strategic goals to indicate progress.

Conservation

Curlew © Damian Waters Drumimages.co.uk

Summary

- There are significant areas of peatlands across the UK which have no formal designations, therefore there is no statutory monitoring undertaken of these sites meaning their condition is unknown. However, they are widely assumed to be unfavourable or declining due to multi-level threats which may include: atmospheric deposition, land use change and/or burning management. Scotland is the only nation where over 50% of the designated peatland sites are in favourable condition.

- The statutory agency condition assessment process is the main tool which underpins conservation of our SSSI/ASSI designated peatlands. Across England, Scotland and Northern Ireland, our analysis suggests that only 19% of condition assessments for peatlands have been carried out within the last 6 years. Wales updated condition assessments in 2020 using desk-based methodology, which has limitations due to the lack of new field survey data to feed modelled assessments.

- The JNCC reported on the condition of the UK's peatlands in 2019, but much of the short-term trend data was based on 'extrapolation from a limited amount of data'. They noted that nitrogen deposition was a significant threat to condition over more than 25% of the extent of both blanket and fen peatlands.

- The above highlights that we are **uncertain about the current status of a large proportion of the UK's peatlands** and, **where condition data is available, the general trend is that condition of Annex 1 (habitats formerly part of the European Natura 2000 network) peatlands across the UK is declining**.

Across England, Scotland and Northern Ireland **only 19% of condition assessments** for peatlands have been carried out within the last 6 years. Wales has undertaken desk based assessments.

2018-2040 Strategy Objectives

Peatland restoration © Lorne Gill / SNH

Conserve and enhance, through restoration management, the best and most readily recoverable peatlands.

Early conservation to secure the best areas avoids higher costs and greater risks of failure associated with repair of more severely degraded areas.

Recover mire vegetation communities to areas where past management has resulted in a shift to other vegetation communities (e.g. heath).

Objectives

Bring about the long-term preservation, enhancement and sustainable management of peatlands in areas that support:

- semi-natural mire plant communities and
- other semi-natural vegetation on peat soils (e.g. heath) through:
    - Maintaining and enhancing a suite of local, national and international level of protected areas for biodiversity alongside wider measures to ensure the favourable status of peatland habitats and species across their range
    - Conserving functional ecosystem units as the building blocks for habitat networks
    - Preventing damage from development and conflicting land management
    - Ensure the full long-term costs of potentially damaging activity is properly taken into account during the decision making process.

Outcomes (2018-2040)

- 95% of UK peatlands supporting semi-natural vegetation are under sustainable management for their peatland biodiversity and ecosystem function
- 95% of peatlands are protected under relevant local, national and/or international protected area designation types (or related designations post-Brexit)
- Cost savings are being made through avoiding the need for major interventions
- Policies are in place for peatland protection and restoration in new developments and land management change, including the prevention of intensification of artificial drainage and direct habitat destruction
- Environmental assessment processes are designed to assess full costs to carbon, water and biodiversity.

Milestones

2020
Meet the IUCN UK Peatland Programme challenge: 1 million hectares of peatland in good condition, under restoration agreements and being sustainably managed.

Establish the current baseline and begin to define management plans.

2030
50% of the peatland resource is conserved in good condition.

2040
Target (95%) is achieved.

Protected areas

Conservation of peatlands across the UK has focused primarily on 'deep peat' sites[2] where these are formally protected most frequently as SSSI/ASSIs, SPAs or SACs. However, across the UK nations extensive areas of peat still lack any formal conservation designation protection. Formal designation of peatland sites recognises their importance and should, in theory, protect them from activities which lead to further degradation.

Our analysis of protected sites data however, suggests that in practice this is often not the case. Artificial drainage is one of the most damaging activities on many lowland and upland sites, with water-borne nutrient enrichment affecting many lowland peatlands. The latter is of a piece with the general pollution of water-bodies widely reported in the press and is a bigger issue for many sites than atmospheric deposition. Abstraction for public water supply, agriculture is also a significant pressure in some areas. Burning and overgrazing are currently commonplace on upland shallow peats and built developments are on the rise, even on sites which are nominally protected in both uplands and lowlands. There is also a continued threat from current and legacy atmospheric deposition of pollutants and from the overarching pressure of climate change. All of these threats may act alone or in combination to damage peatlands. Therefore monitoring and enforcement of designated sites protections is of vital importance for peatland health.

There have been a handful of extensions to the areas of designated peatland features in Scotland. There has been just one fen site (West Penwith Moors and Downs in Cornwall) and no bog sites designated across the UK since 2018. Without the protection of an official designation, there is no requirement for formal monitoring of the site. Based on our analysis of data from protected sites and our findings on condition, it is reasonable to assume that the majority of peatlands outside of these areas will be in a similar or worse condition.

The UK has the largest number of Ramsar Sites (176) designated as wetlands of international importance of any of the Contracting Parties: many of these sites are peatlands. Resourcing for baseline inventory and monitoring of Ramsar Sites and wetlands more widely has proved challenging, partly because of the remote and patchy nature of certain wetland habitats, but also because of fluctuations in the resources that are made available to public authorities for this purpose. The UK has continued to make best use of existing resources and to develop and use new technologies.

Protected area condition

Underpinning this is the condition status of the SSSI/ASSI; all SSSIs/ASSIs should be in or moving towards 'favourable' condition. Condition is assessed using the common standards guidance laid out by the Joint Nature Conservation Committee (JNCC). However, budgets for monitoring have been inadequate; our assessment suggests that **> 50% of peatland sites across the UK have not been monitored in over a decade or have not had an updated 'features' assessment** (see Figure 3). This means that decisions around appropriate management may be made on out-of-date evidence and recorded trends may not be realistic.

The last UK-wide update on trends in condition on peatland habitats was published a decade ago by the JNCC.[3] This report suggested overall bad condition for all nine peatland habitat types under nature designation. Six of these habitats were considered to show an overall improving trend in condition status. However, being fen habitat types, these occupy a relatively small proportion of the total UK peatland habitat. The condition of most bog habitats, including that of blanket bog, was found to be declining. Figures from the more recent JNCC 2019 reports[4] showed that the structure and functions of significant areas of the UK's peatlands (the largest extent of SAC qualifying features are blanket peatlands with approx. 22,000 km^2) are in unfavourable

[2] Use of Peat Depth Criteria - Accounting for the Lost Peatlands v1.1.pdf (iucn-uk-peatlandprogramme.org)
[3] Third UK Habitats Directive report (2013) - UK level habitat details - data.gov.uk
[4] UK conservation status assessment for H7130 - Blanket bogs as part of the Fourth Report by the United Kingdom under Article 17 of the EU Habitats Directive (jncc.gov.uk)

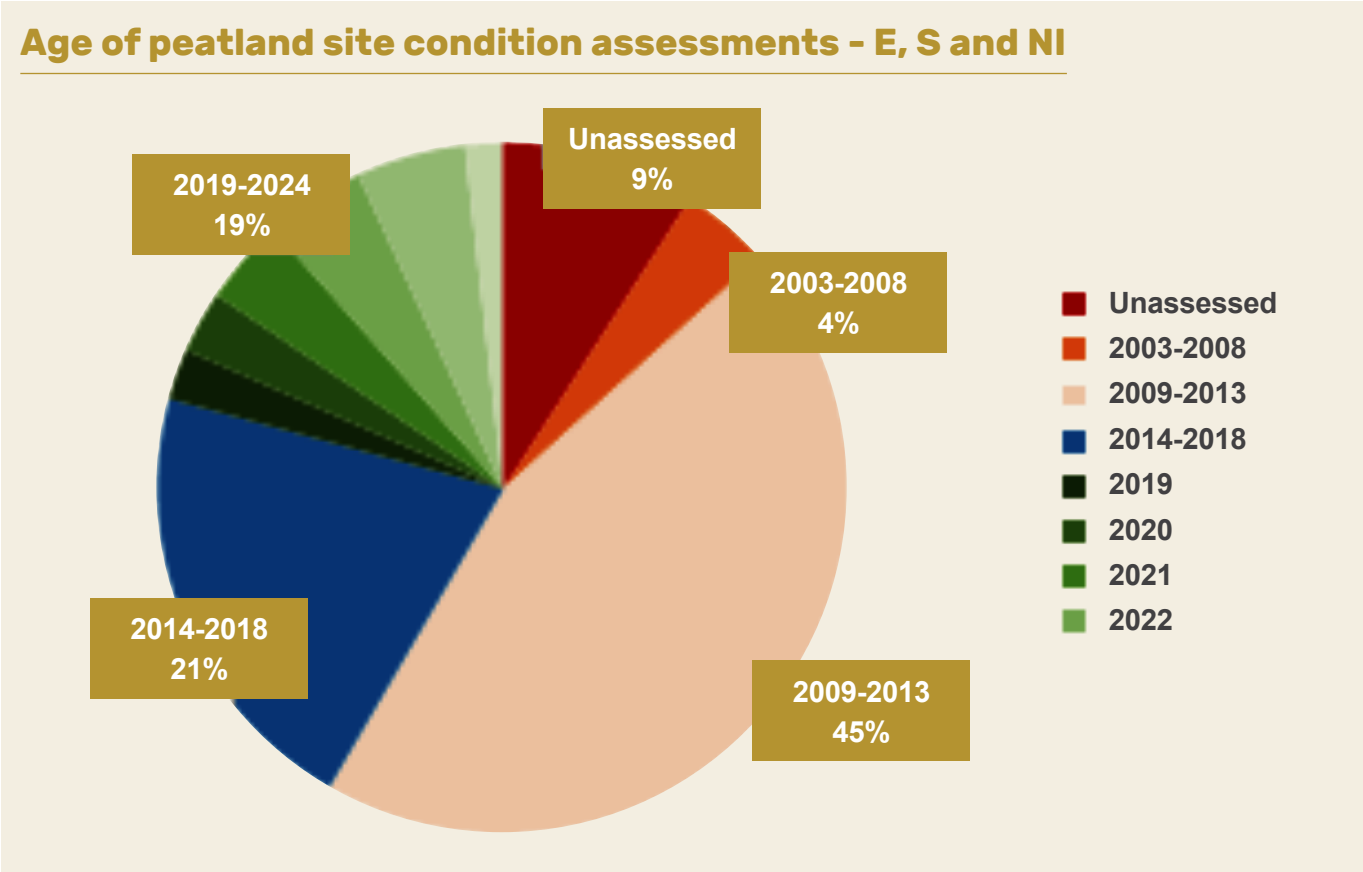


Figure 3: Field condition assessments by year for England, Scotland and Northern Ireland. The period following the publication of the UK peatland strategy is shaded green by the individual years with the aggregated value indicated in the box.

N.B. The data from Wales is not included as all condition assessments were updated using a desk-based methodology in 2020, we have only used data which was derived from field assessments carried out in line with CSM guidelines.

or unknown condition. Only 16% of blanket peatlands and 19% of fens (a relatively small area totalling 66 km^2, designated as *Molinia meadows on calcareous, peaty or clayey-silt-laden soils*) were estimated to be in good condition. The overall long-term trend was not given, however future prospect for suitable range for both habitats was good, area extent poor (bog) or bad (fen) and structure and function for both was bad.

Our assessment of SSSI/ASSI condition data and designations figures, shows that despite the acknowledgement of the importance of peatlands both as habitats and for their ecosystem services provisioning, many of the UK's peatlands remain in unfavourable condition (see Table 1 and Appendix). This suggests that policies aimed to protect them, and designations are not functioning effectively and/or are lacking enforcement.
For some sites, historic damage affecting the feature will not yet have been addressed through restoration activities.

While there has been progress made in peatland restoration across the UK, until there is an increase in the number of up-to-date condition assessments, we cannot confidently say that the condition of the UK's peatlands is improving. The most up-to-date trend assessment for the UK's peatlands indicates that condition is 'bad' in all habitats but that status trends are variable with some improvements noted.

England

In England, 71% of the recorded blanket bog habitat, the majority of which is in the uplands, is designated as a SSSI. In 2018, Natural England's data showed only 11% of these designated sites are currently considered to be in Favourable Biological Condition[5] but our analysis of the most recent data puts this figure at closer to 9%, indicating a potential decline in condition status. In a recent report by Wildlife and Countryside Link[6]

[5] (Natural England, 2019 PLD0031 - Evidence on Peatland (parliament.uk) accessed 12/02/2024)
[6] 30x30 in England Progress Report: https://wcl.org.uk/30-by-30-progress-report.asp

progress toward the Global Biodiversity Framework's 30x30 target reported that out of the 8.5% of England's land area that is protected only 3.1% of this is also effectively managed to support conservation outcomes.

The previous government announced in 2022 that there would be a four-year undertaking (2023-2028) to update the condition of all of England's SSSIs. Once completed this should provide a significant insight into the current state of English peatlands, that has not previously been available. All of the 2024 assessments completed (24 peatland features as of March 2024) and the majority of 2023 assessments show a positive uplift from previous condition reports which is an encouraging trend.

In England a greater proportion of fens are in 'favourable condition' than bogs. However, in both categories when the location is introduced to the analysis, lowland sites are faring worse than upland sites with both a lower percentage of favourable sites and a number of partially destroyed sites.

Scotland

Scotland became the first of the UK's nations to publish a peatland strategy when Scotland's National Peat Plan was published in 2015. The plan was the first step in recognising the importance and extent of Scotland's peatlands.

There is a greater extent of peatland in Scotland than any of the other UK nations and formal designation of a greater number of sites would mean that there is a requirement to regularly monitor site condition of the majority of this resource. **The total area of SSSIs which contain features with peatland habitat amounts to 5.6% of Scotland's land area[7]; this equates to around 28% of all peatlands**. A greater extent is covered by Special Area of Conservation (SAC) designation which was formerly part of the EU Natura 2000 habitat network. In principle the Habitat regulations which govern SACs should provide greater protection than that of SSSI designation. However, it is currently unknown as to the future status of these regulations post Brexit.

Condition Assessment of Scotland's SSSI peatland features suggests **that 34% were in unfavourable condition at their last assessment, however, around 66% do not appear to have had a condition assessment within the last decade**. Like England, fens in Scotland have a higher percentage of features in the favourable category than bogs. Also, similar to England for bogs and fens the same pattern

		UK habitat extent (km²)	Overall assessment of UK conservation status	Overall conservation status trends in UK
H7110	Active raised bog	154.34	Bad	Declining
H7120	Degraded raised bog	203.25	Bad	Improving
H7130	Blanket Bog	21967.36	Bad	Declining
H7140	Transition mire and quaking bog	c. 47*	Bad	Declining
H7150	Depressions on peat substrates of the *Rhynchosporion*	unknown	Bad	Declining
H7210	Calcareous fens with *Cladium mariscus* etc.	3.788	Bad	Improving
H7230	Alkaline fens	33.3	Bad	Improving
H4010	Northern Atlantic wet heaths	4677	Bad	Stable

Table 1: Status of major UK peatland habitats listed under Annex 1 of the Habitats Directive. *Source: Natural England PLD0031 evidence for the 'State of England Peat Inquiry'*
* https://committees.parliament.uk/writtenevidence/105627/html/#_ftn2

[7] SNH Commissioned Report 701: Scotland's peatland - definitions & information resources (nls.uk)

is seen where **condition for upland sites is proportionately higher than for lowland sites**.

There has been a small number (14) of area extensions to existing designated peatland sites in Scotland since 2018, but **no additional peatland features have been designated**. A greater extent of peatland is covered by the European designation of SACs than SSSI features and so analysis of this designation for the next reporting period will also be examined.

Wales

Welsh SSSI data was assessed in 2020, largely via desk-based assessment where existing data and remote sensing were used to reconfirm previous assessments depending on the confidence in the data; of the 243 peatland designated features within Wales **this method has not been able to produce conclusive desk-based condition assessments for 119 sites (49%)**. Sites with insufficient data to confirm condition remain classed as 'unknown'. Natural Resources Wales reported that field-based common standards monitoring to verify the condition status of a selection of their peatland features may take place during 2025.

Northern Ireland

Peatland habitat and peat soils cover c.18% of the land area in NI. We were unable to obtain data on the condition of fens in Northern Ireland, however, whilst these can be areas of significant biodiversity, bog forms the greatest extent of peatland in NI: **around 23% of bog features on designated sites are considered to be in favourable condition**.[8] Many fen areas fall outside of ASSI protection but for designated fen ASSIs, 30% of Fen, Marsh and Swamp features are in favourable condition. Similarly to Scotland, there are still extensive areas of bog in NI which have no formal protection.

The NI Peatland Strategy has not yet been published. The draft strategy seeks to implement the Committee on Climate Change recommendations to bring 150,000 hectares of peatland under restoration/sustainable management by 2050.

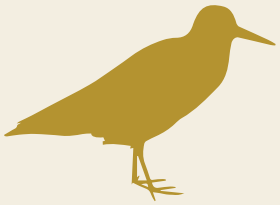
Peatland species

In addition to wider habitat monitoring and assessment, tracking indicator species trends (see Figure 4) is also important to assessing ecosystem health. Defra and JNCC are currently undertaking a review of UK biodiversity indicators with the report expected to be published in 2024.[9]

Evidence on a range of peatland indicator species is somewhat deficient. Taxonomic skills and newer remote assessment skills (e.g. bioacoustics and eDNA) are one of the capacity and skills gap areas that needs to be urgently tackled if we are to be able to collect and monitor peatland indicator species data. We need better and more strategic monitoring of a suite of peatland species: bird data tends to be relatively comprehensive due in part to the collection and recording of data by hobbyists. For less studied groups e.g. freshwater algae or bryophytes, biological recording data is much more scarce.

Evidence around the level of public spend on biodiversity specifically targeted at peatlands is not available. General trends for biodiversity spend in both public and NGO sectors show that biodiversity expenditure has increased over the last 5 years but the data suggest that this is largely for delivery of habitat creation schemes and woodland planting as opposed to targeted species recovery or protection measures on existing habitat extent. The biodiversity credits market is only just emerging and there are limited opportunities to utilise new measures like Biodiversity Net Gain (BNG) for peatland enhancement and restoration. Biodiversity benefits of peatland restoration are typically just thought of as implicit. But it is critical that we start to strategically measure and track some key indicator species to ensure that the rapid scaling and changes in management we are observing in our peatland landscapes are suitable for delivering against the nature crisis as well as the climate crisis.

[8] NI Environmental Statistics Report (daera-ni.gov.uk)
[9] UK Biodiversity Indicators 2023 | JNCC - Adviser to Government on Nature Conservation



Dunlin

- Red listed. **-13% contraction** in range. Winter population **down 45%**.
- Key indicator of upland bogs. Breeding habitat loss and lower food availability in degraded peatlands.
- **In areas of Dartmoor where peatlands are being restored, the species is increasing in number**, highlighting the importance of restoration efforts.

Bog sun jumper spider

- Conservation status not evaluated
- One of the UK's **rarest invertebrates (6 site records)**
- Lowland raised bog degradation and habitat loss.

Desmid algae

- Data deficient due to taxonomic challenges but c. 50% of the ~800 UK species are found in oligotrophic peatlands.
- A number of species are on the UK and EU Red Lists
- Threatened by drainage, nutrient inputs and microhabitat loss (e.g. diversity of Sphagnum) - restoration action is likely to recover some lost diversity.

Fen Orchid

- Red listed.One of only 9 plants in the UK that **are red listed Europe-wide**.
- Limited to a couple of sites in Norfolk fens and Wales. **Loss of habitat extent**.
- **JNCC (2017) trend for the number of individuals of the species in the UK was increasing**.

Large marsh grasshopper

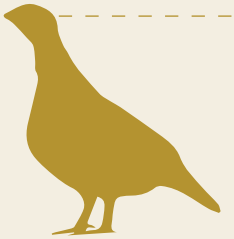
- Mire specialist
- **Population stabilised in the New Forest**. Reintroductions in Norfolk have returned the species to part of its former range.

Common Cottongrass, Great Sundew, Bog Rosemary and Bog Myrtle

- BSBI (2014) **faring better UK wide than in England where there have been greater declines**.
- Post restoration, when recovery conditions are favourable transplant programmes may help re-establish range where seedbanks are limiting.

Bog Moss - *Sphagnum* (spp.)

- **Insufficient data**
- JNCC (2019) the **habitat quality is not adequate for the long-term survival of the species**.

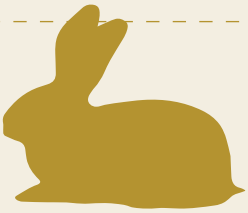


Red Grouse

- Green listed- least concern
- BTO - populations are cyclical, experiencing boom and bust periods. **Range of the species has contracted but the population remains stable**.

Hen harrier

- Red listed - least concern
- BTO - i**ncreased range +30% (particularly in Wales)**. **Significant declines in some areas of Scotland**.



Mountain Hares

- **Red list - Near threatened (NT)**
- **Populations 3.3 times greater on areas of restored bogs than on managed moorland** areas in the Peak District.

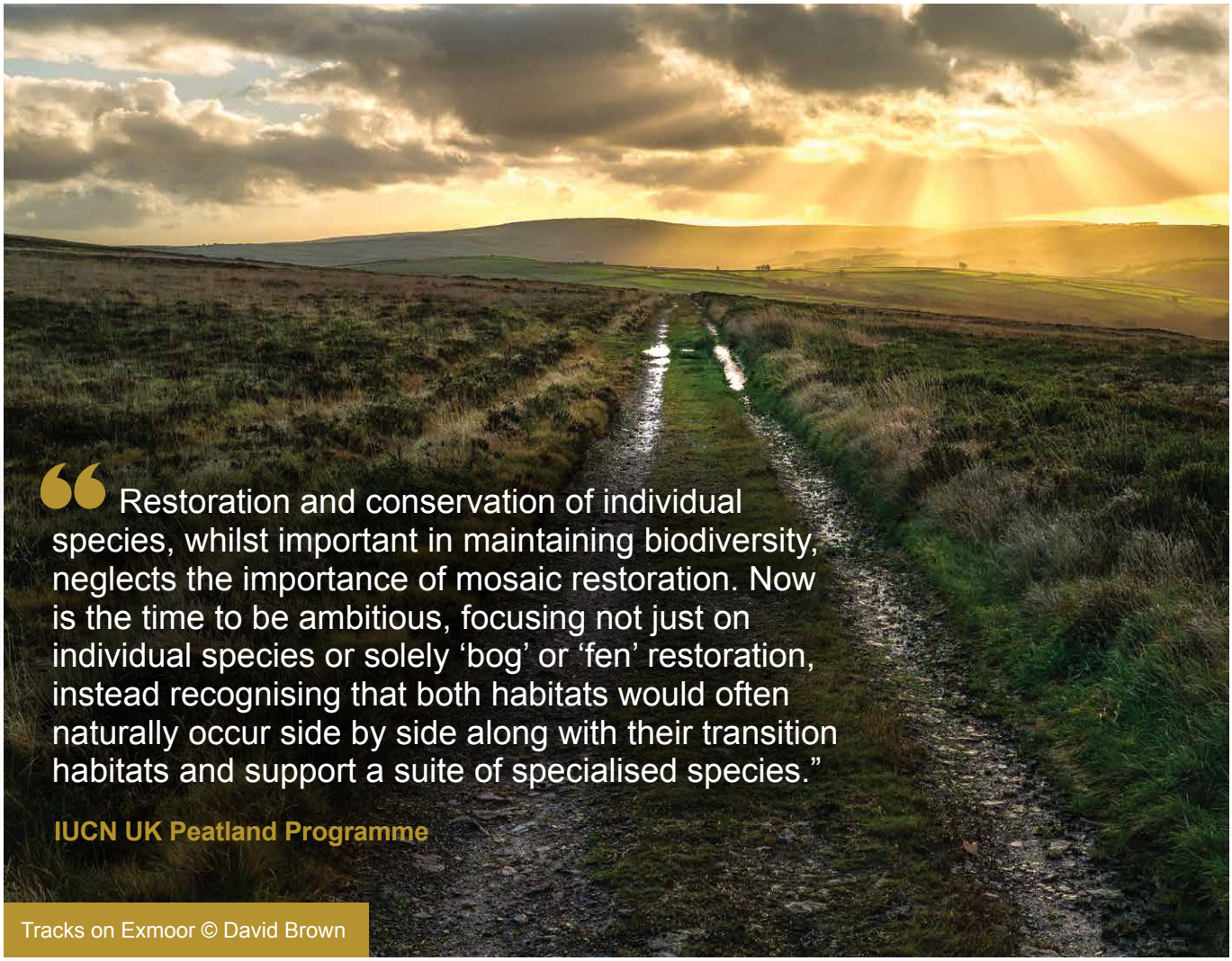
Figure 4: Peatland species and current conservation trends. Infographic indicating trends of some key peatland species. 21% increase in UK public sector biodiversity funding (to c. £700million) over the last 5 years; around half of this spending is through agri-environmental schemes. Spending by non-governmental organisations increased by 16% over the last 5 years. *Data from JNCC*

Case study: Species reintroductions to complement habitat restoration

Healthy populations of large heath butterflies can be used as an indicator of good-quality lowland raised bogs due to their ecological requirements for wetter sites with a reliance on bog plant species for their lifecycle.

They are unlikely to naturally recolonise areas where they have become locally extinct because they only disperse short distances, and there are often large distances between suitable habitat locations. There has been success with direct reintroductions of large heath butterflies.

The IUCN Guidelines for Reintroductions and Other Conservation Translocations state the need for a clear understanding of a species' biotic and abiotic habitat requirements, evidence based decision-making and ongoing monitoring and management adjustment in the light of new evidence. Research into these aspects means that species reintroductions are more likely to be successful. In the case of the large heath, extensive research has been undertaken and used to inform site selection for reintroductions.



> "Restoration and conservation of individual species, whilst important in maintaining biodiversity, neglects the importance of mosaic restoration. Now is the time to be ambitious, focusing not just on individual species or solely 'bog' or 'fen' restoration, instead recognising that both habitats would often naturally occur side by side along with their transition habitats and support a suite of specialised species."
>
> **IUCN UK Peatland Programme**

Tracks on Exmoor © David Brown

Conservation: UK Peatland Strategy Milestones progress summary

Milestones	Progress
2020: 1 million ha in good condition, under restoration agreements and being sustainably managed	 Without up-to-date condition assessments of designated sites, significant proportions of unknown condition and mapping for restored **sites we are unable to conclusively state the contribution that designated sites make towards the 2020 milestone** of '*1 million hectares of peatland in good condition, under restoration agreements and being sustainably managed*'.
2020: Establish the current baseline condition and begin to define management plans	 **Given the age of many condition assessments, we cannot say that a current baseline has been established. The condition data that we have suggests that land management practices continue to have a detrimental effect** on peatland health and that management plans are either not clearly defined, ineffective or have not been implemented.

Over the next 5 years...

It will be necessary for there to be **significantly greater resourcing for monitoring of designated peatlands** across the four countries of the UK to be able to demonstrate attainment of international and domestic targets for peatland restoration. To allow for this there will need to be:

- **Greater levels of resourcing for statutory nature conservation bodies** coupled with **increased capacity and measures put in place to recover lost skills** (e.g. botanical identification).

- Time allocated for monitoring of protected sites to update out of date condition assessments so that land management decisions are evidence based.

- **Co-ordination of data** on nature conservation designations to ensure that UK-wide reporting can continue in an efficient manner.

Ensure policies are in place to prevent damage, coupled with restoration funding being available across all four countries to support conservation objectives and **prevent further declines on *both* designated and non-designated sites**. One way to strategically plan for effective peatland conservation would be to **develop formal land-use frameworks within each country** - as is currently in development for England - to ensure that peatland conservation opportunities are maximised.

Attainment against the Global Biodiversity Framework's 30x30 targets will crystalise. Increased formal designation of protected sites is unlikely to happen in the remaining time to 2030 and other more nimble measures such as the application of the IUCN 'Other effective area-based conservation measures' (OECMs)[10] will be key to achieving the long term and effective in-situ conservation of biodiversity outside of protected areas.

Establish a monitoring framework for undesignated peatlands to ensure that peatland extent and condition and function is being maintained and, where possible, improved. There is no accounting for loss in extent of peat soil or extent of peatland habitat. Outside of formal designations there is very little data available and no actions are currently taken to catalogue the loss of habitat extent through development and land use impacts. Changes to EIA regulation and data collection could help with this and the introduction of associated impact tools, e.g. the carbon calculator in Scotland, could help to collate data if properly resourced.

[10] IUCN WCPA Other Effective Area-based Conservation Measures Specialist Group | IUCN

Restoration

> “The costs of restoring 100% of peatlands could be significant at between £8 billion and £22 billion but these are approximately one-tenth to one-fifth of the carbon emissions benefits that would be gained. More conservative estimates of the benefits of meeting the Committee on Climate Change objective of having 55% of peatland in good status were of the order of £45 billion to £51 billion over the next 100 years.”
>
> **Office of National Statistics**
> UK Natural Capital: Peatlands (2019)

Butterburn Flow Restoration © Emma Hinchliffe

Summary

- There have been significant high-level government and policy commitments made to support peatland restoration across the four countries since the publication of the UK Peatland Strategy. **In total the money pledged to-date by the four devolved governments to directly deliver restoration action is £318 million**. The Scottish government have made the most significant and long-term pledge of £250 million.

- **Peat partnerships are now established across most contiguous peat dominated areas of Great Britain. There is no formal, co-ordinated peat partnership across Northern Ireland**. There are also some counties in England with fragmented pockets of deep peat or areas with shallow peatland that do not have a formal peat partnership to co-ordinate and deliver restoration activity.

- **Peatland restoration rates across the UK remain below the targets set**: UK Peatland Strategy, Committee on Climate Change (CCC) and devolved government targets. The July 2024 CCC report summarised: "*peatland restoration rates are off-track ...and delivery needs to ramp up in these key areas in the next year to ensure the UK's 2030 target [for emission reduction] remains within reach*". The report also notes that the **UK-wide targets are significantly less ambitious than the CCC recommendation of 67,000 ha pa**.

- **CCC reports that ~12,700ha of peatland restoration was completed in the UK in 2022/23, compared to a target level of 32,000 ha**. It is still extremely difficult to aggregate reliable data on annual restoration delivery across the UK without a formal restoration register to collate data.

- Wales is currently the only UK nation delivering on their target, with approximately 600 ha per annum against a target of 600-800 ha per annum.

- **Our best estimates indicate that, since peatland restoration activity began in the UK during the 1990s, approximately 250,000 ha of peatland have had restoration activity carried out to date**. This estimate carries a lot of assumptions and caveats and it will be critical to understanding the breakdown of these figures over the next reporting period.

Approximately **250,000 ha of peatlands** have had restoration activity carried out to date. But restoration levels remain below target.

2018-2040 Strategy Objectives

Eroding blanket bog © Penny Anderson

Restore heavily degraded areas towards functioning peatland ecosystems

Whilst challenging, peatlands that are severely degraded can be stabilised through restoration intervention and placed on the road to recovery.

There are a number of heavily degraded sites across the UK where action can be taken now whilst assessing and prioritising other opportunities.

Objectives

Restore peatland ecosystem function and enhance biodiversity through the restoration and ongoing sustainable management of upland and lowland peatlands that no longer support semi-natural vegetation but which have:

- remaining deep peat resource including mineral workings, deep drained, improved grasslands and closed canopy forestry plantations
- an adjacent semi-natural peatland site that depends on the degraded area coming under restoration management.

Safeguard restorable peatland areas from development and land management activity that would undermine restoration potential.

Optimise UK carbon efficiency by co-ordinating forest management, renewable energy development and peatland conservation through planning to ensure positive outcomes for all.

Outcomes (2018-2040)

- Majority (80%) of heavily degraded peatlands in the UK are under restoration management aimed at recovering long-term security of the ecosystem
- Recognising that initial recovery halts losses but can begin to recover function across biodiversity and carbon sequestration:
    - Intervention to repair bare peat areas, former mineral workings and agricultural/ afforested areas is underway to halt peat loss and re-establish peatland habitat where possible
    - Restoration work across the UK has been delivered as a result of both private and public finance.
- Land use development plans identify safeguards for peatlands, policies for forestry and renewables identify safeguards for peatlands
- Good practice restoration advice is available to support effective, efficient and sustainable peatland restoration.

Milestones

2020
Meet the IUCN UK Peatland Programme challenge: 1 million hectares of peatland in good condition, under restoration agreements and being sustainably managed.

2030
Areas capable of restoration identified and given protection in development plans.

2040
Sites identified as priorities have restoration plans agreed and suitable funding routes identified.

Restore ecosystem function and enhance biodiversity

Scale

The Committee on Climate Change (CCC) report[11] to parliament in June 2023 highlighted significant issues with the rate at which peatland restoration is being undertaken in the UK, along with a lack of ambition. Whilst the combined government targets for England, Scotland and Wales are 29,000 ha per annum by 2025, in 2022/23 it was reported to total only 12,700 ha (as reported by CCC analysis) whilst the CCC recommended a UK wide rate of 67,000 ha per year by that date[12] was required. However, the CCC's 12,700 ha annual figure reported for restoration delivery is out of step with what we believe to be being delivered. It is incredibly complicated to disentangle data from partners on annual restoration delivery. **Based on data made available to us, our most reliable estimate from which to judge progress is that 254,254 ha of restoration activity have been delivered across the UK to date which is equivalent to activity having being undertaken on around 12% of our degraded peatlands. This sits against a backdrop of a further ~2.1 million ha of degraded peatlands requiring some form of restoration management or at the very least, a transition to adaptive or more sustainable management (see Figure 5)**.

However, there are a number of caveats to these figures:

- We do not have a comprehensive and cohesive map of UK peatlands. This is largely due to a lack of shared definition of peatland across the four nations and the lack of a platform to share and coordinate this data at a UK level. Therefore, our baseline **estimates of UK peatland extent carry some uncertainty**.

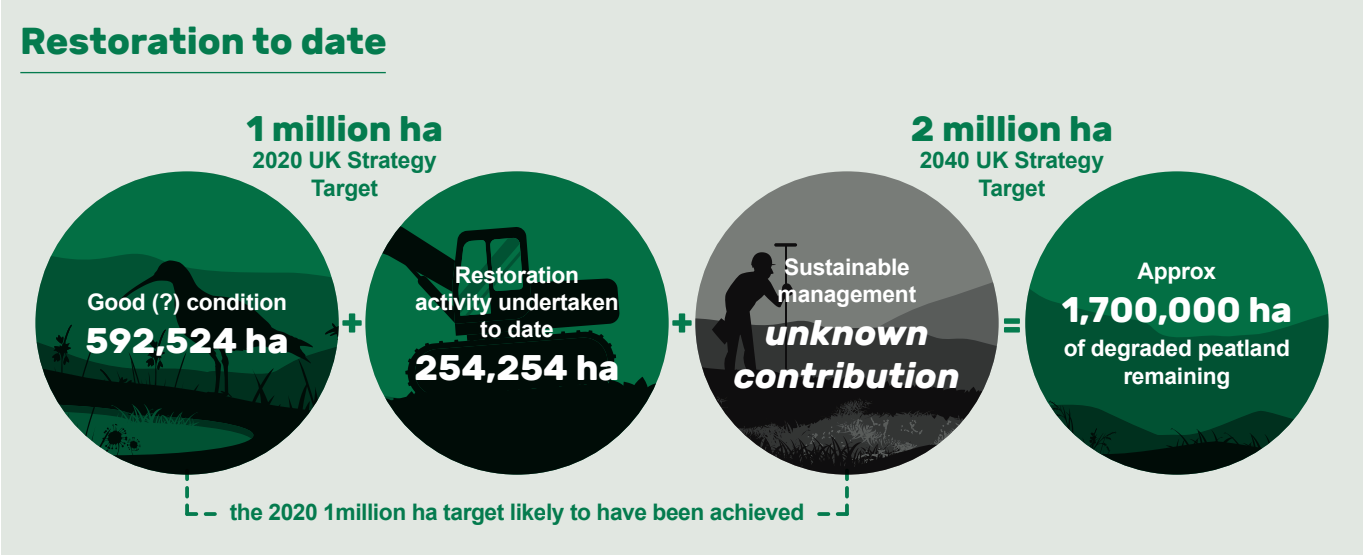


Figure 5: Illustration of level of progress to date for UK peatlands. We estimate that ~592,524ha are in 'good' condition and a total of ~250,000 ha of restoration activity has been undertaken to date. We assume that 80% of the remaining peatland resource is degraded. **Assuming a net positive contribution by sustainable management practices on some peatlands we infer that the 2020 milestone of 1 million ha is likely to have been achieved for UK peatland recovery.**

These estimates have a lot of assumptions attached to them including, but not limited to:

- An assumption that the JNCC (2011) assessment of c. 80% of UK peatlands being degraded is still broadly applicable
- An assumption that restoration figures collated by the IUCN UK PP have no spatial overlap and figures used relate to a positive change in peatland condition over that area.
- An assumption that 'good' condition broadly aligns with 'favourable condition' status of habitats as assessed by the statutory nature conservation agencies.
- An assumption that sustainable management practices (of unknown quantity) are making a net positive contribution to the condition and recovery trajectory of UK Peatlands. This is a large uncertainty as the balance of sustainable practice and unsustainable management and its net effect on peatland condition is unknown.

[11] CC 2024 report: Progress in reducing emissions 2024 Report to Parliament - Climate Change Committee (theccc.org.uk)
[12] Progress in reducing UK emissions - 2023 Report to Parliament (theccc.org.uk)

- **Estimates of peatland condition have a high degree of uncertainty** due to the lack of assessment conducted on undesignated sites and the age of current condition data for the designated site network. The proportion of peatland in 'favourable' condition is extrapolated from the designated site network but it is likely that undesignated peatlands are, in theory, more vulnerable: some undesignated sites will be in good condition and some will not.
- **Restoration figures are estimated**. This is because:
  - **Data is not co-ordinated**.
  - **The definition of restoration applied by delivery bodies is not standardised**. It is typical to record the site boundaries of restoration activity as 'hectares restored' but the monitoring of change is often lacking.
  - **Different restoration techniques require different measures of success and, potentially, different area criteria applied to them**. The area criteria will vary depending on the reason for reporting e.g. the area of influence of restoration on GHG emissions vs biodiversity may be different.
  - **Restoration is not a one-pass activity**, and some activity could have been double counted if more than one phase is carried out.
  - **Restoration activity is not a guaranteed recovery of the peatland**. Some historic and current restoration work may be at risk of failure or reversals. This requires long-term monitoring effort.
  - Restoration is often a collaborative activity undertaken in partnership. **Restoration figures can be reported independently by partners which risks double counting**. We have tried to avoid this in our collation by only counting data from the major partnership delivery bodies but without spatial analysis the degree of double counting or data erroneously excluded cannot be assessed.

Challenges to reporting scale of delivery

- **Collective understanding and shared definitions**: A collective definition across the UK of what restoration entails has also still not been established. There are also gaps in scientific understanding and a need therefore to gather data to improve our understanding of what the area of influence of a given restoration intervention is and what it is having an influence over (e.g. drainage blocking and what the area of influence is on hydrology and how it impacts biodiversity). Small scale changes in the post restoration period would also be insufficient to trigger a change in favourability status (using common standards monitoring protocol for designated sites) making it difficult to gauge restoration success using this commonly deployed standard.

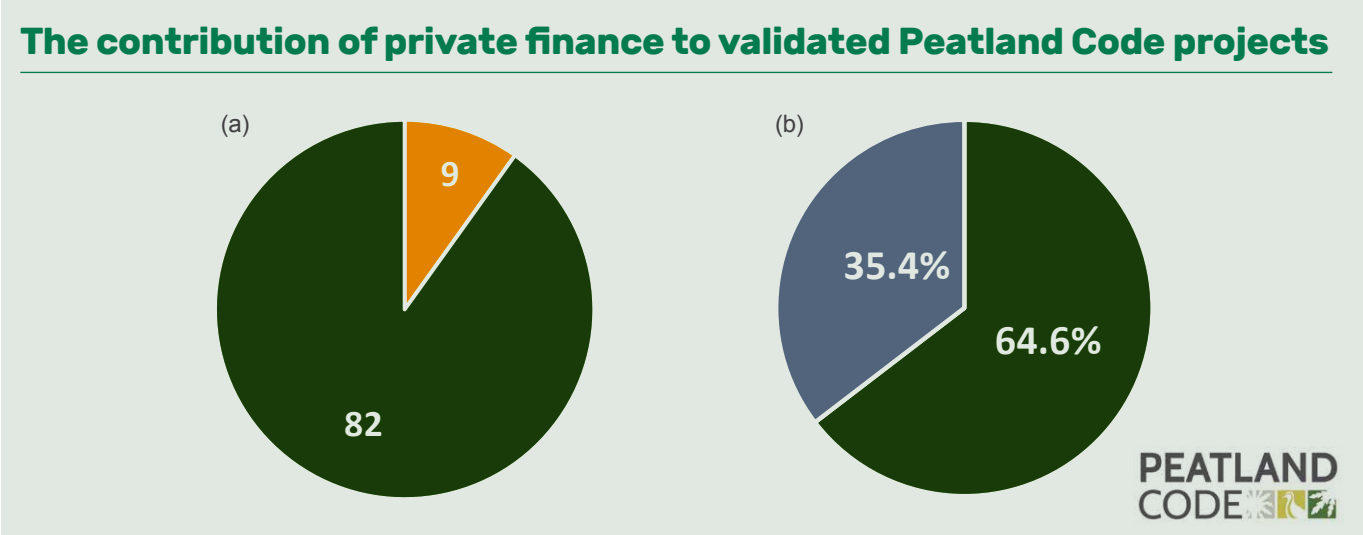
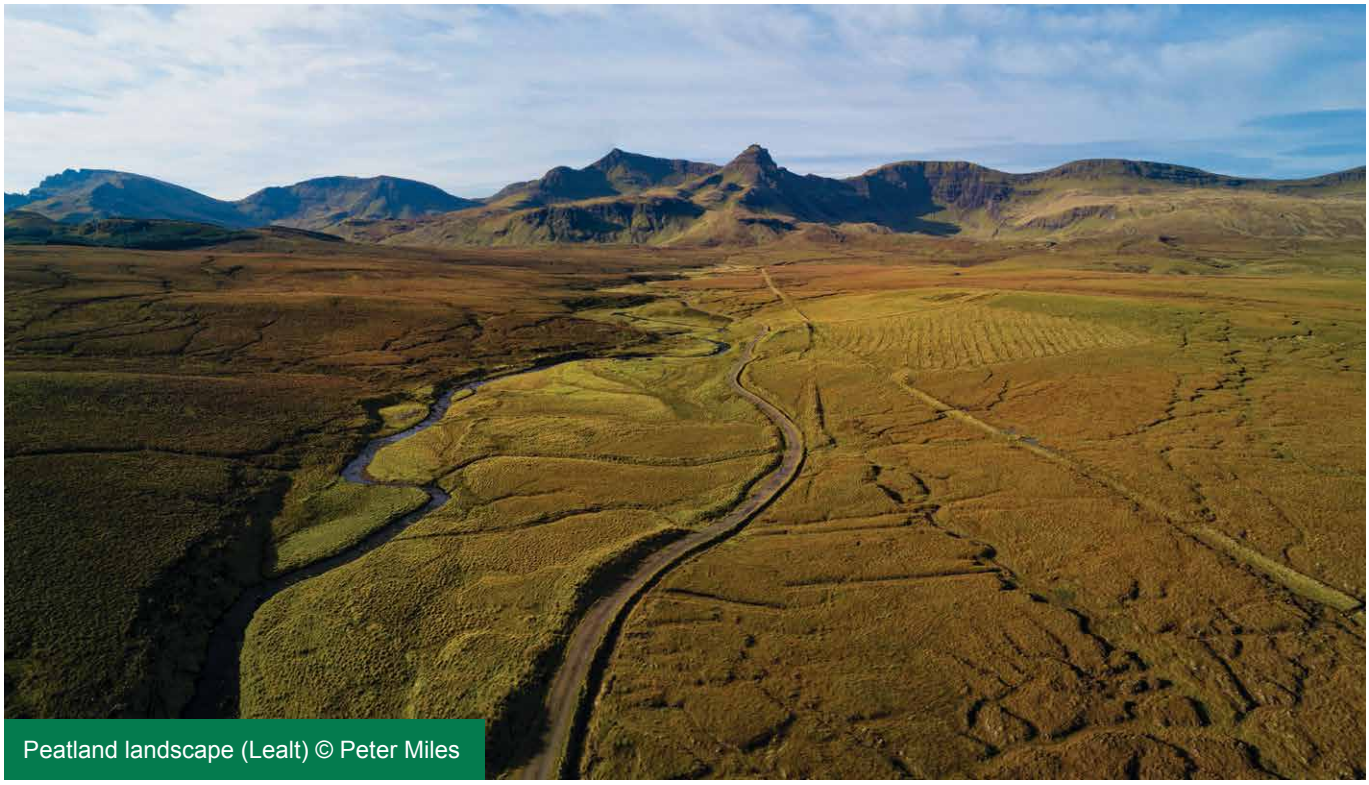


Figure 6: Proportion of funding source used for validated Peatland Code projects (n. 91). (a) Nine validated Peatland Code projects, to date, use no public funding support. The remaining 82 validated projects use a mix of public/private. (b) For these 82 blended finance projects, an average of 35.4% of finance is via the Peatland Code and the remaining 64.6% originates from public funding.



Peatland landscape (Lealt) © Peter Miles

Wider implementation of methodology such as 'Eyes on the Bog' could help to capture indicative changes, to demonstrate that sites are 'heading in the right direction'.

- **The lack of a central register for reporting restoration**. Government agencies, NGOs and private owners (including utility companies) have all been undertaking restoration and amassing data. Without a central repository for data and a standardised assessment of the functional area that has been restored, it is difficult to understand how effectively funding is being applied. The 'functional area' of restoration is important: for example, agri-environmental agreements may cover a whole common of 1000 ha, but the restoration works may only *functionally* affect a small proportion of the site. Disaggregation of this data would be an important step in understanding the effectiveness of the measures and funding already in place.

There has been some progress on collectively reporting on restoration activity and mapping of restoration areas, for example Scotland's 'PeatSCOPE' tool and the 'Peatlands of Wales' maps. The England Peat Map and the England Peat Restoration Register are also both currently in the pipeline.

Restoration Financing

The Office for National Statistics (ONS) report[13] highlights the scale of funding commitment and finance that will be required to restore the UK's peatlands. Current public funding commitments for restoration delivery are shown in Table 2. It is now widely accepted that government funding alone will not be able to cover the cost of peatland restoration. The level of public funding is determined by political will and has the potential to be both increased or decreased in the future. Therefore it is imperative that projects which support access to the voluntary carbon market and other emerging private finance markets are incorporated into efforts to generate private investment.

The Peatland Code, launched in 2015, has registered over 300 peatland restoration projects across the UK with a predicted net emissions reduction of almost 9 million tonnes CO_2e. At the time of publication, 91 projects have undergone

[13] UK natural capital - Office for National Statistics (ons.gov.uk)

validation: 9 of these projects are entirely funded by private sector finance and are using no public grant funding to support their restoration project. The majority of projects are utilising blended finance with an average 64.6% public and 35.4% private split 9% of Peatland Code projects are entirely funded through private finance (see Figure 6).

Safeguard restorable peatland areas from development and land management activities

Shallow peatland although covering significant areas of the UK, is not prioritised and protected in the same way as 'deep' peatlands are.[14] Depth measurement accounts only for what is *currently* present, rather than assessing whether the conditions exist for deep peat formation and whether an area is viewed as having the potential for habitat re-creation or restoration. Most restoration activity is currently driven through climate related targets and so most schemes target areas of deep peat. It is not currently understood how much attention is being paid – in terms of funding and policy – to vulnerable shallow peats and this should be examined during the next reporting period.

Co-ordinate forest management, renewable energy development and peatland conservation through planning to ensure positive outcomes for all

There has been limited progress regarding co-ordination of land use (inc. agriculture, forestry and development) and most policy and related funding is still isolated in silos. Strategic planning is needed to ensure that environmental sectors which are all striving for action in support of net zero and nature targets do not compromise each other. Scotland and Wales both have land use frameworks in place to promote sustainable management of land resources. In England, particularly where there are large extents of agriculturally vulnerable peatlands, a land use framework – currently in development – has the potential to support better decision making for peatlands.

Extensive development and land use change is still taking place on peatlands, including roads, housing and windfarms. It is currently unclear whether compensatory activities and restoration projects associated with these changes are delivering 'net gain' for UK peatlands. Restoration plans should seek to deliver net gain in support of the 2040 UK Peatland Strategy targets for restoration and conservation. The climate, carbon and biodiversity impacts of the development should all be considered in this net gain calculation.[15]

Large areas of afforested peatlands persist across the UK: the most recent estimate places approximately 18% (439,410 ha) of the UK's peatlands under forestry and the CCC have recommended that, to meet the sector's contribution to Net Zero, 25% of low productivity trees on afforested peatland are removed by 2050.[16] There have been a number of successful forest to bog restoration trials and projects[17] but financial, research and policy barriers still exist, which are preventing the rapid and large-scale roll out of forest to bog restoration.

Funding mix

Funding for peatland restoration activity in the UK is delivered as a mix of:

- Public money from, for example;
  - Agri-environment funding, like the Environmental Land Management (ELM) scheme in England and the Agri-Environment Climate Scheme (AECS) in Scotland;
  - Other grant funding, e.g. England's Nature for Climate Peatland Grant Scheme, and Paludiculture Exploration Fund, Northern Ireland's Peatland Challenge Fund and Natural Resources Wales' Development Grant and National Peatland Action funding.
  - EU INTERREG and EU LIFE
- Private finance from, for example;
  - Voluntary carbon markets e.g. Peatland Code

[14] Use of Peat Depth Criteria - Accounting for the Lost Peatlands v1.1.pdf (iucn-uk-peatlandprogramme.org)
[15] Peatland and Development March 2023 - FINAL.pdf (iucn-uk-peatlandprogramme.org)
[16] Land use: Policies for a Net Zero UK - Climate Change Committee (theccc.org.uk)
[17] iucn-uk-peatlandprogramme.org/sites/default/files/2024-02/Demonstrating Success Forest to Bog_1.pdf

	2020-2021	2021-2022	2022-2023
Hectares restored	5,658	5,637	7,502
Capital (£m)	*4.22*	*12.13*	*17.10*
Resource (£m)	*3.74*	*3.45*	*4.66*
Total transferred (£m)	**7.96**	**15.58**	**21.76**

Table 2: Restoration figures for peatlands in Scotland 2020-2023. The actual figures are significantly less than those which were projected by the Scottish Government. *Source: Peatland Action data*

- Water companies
- Private donors
- Philanthropic grant schemes

The bulk of future public funding for peatland restoration is likely to come via agri-environment agreements. However, with the UK's departure from the EU there are currently significant changes being made to most agri-environmental options and the full details of the peatland components are not yet publicly available across the four nations.

There is a narrative trend that restoration costs are increasing and this places current budgets for peatlands under strain. This is likely to be due to multiple factors but includes:

- Increasing materials and labour costs
- Advances in restoration understanding and techniques
- Complexity of sites: there is a suggestion that some of the easier access/more straightforward sites have been completed and that we are now progressing to restore more complex sites.

Phased delivery (e.g. due to budget constraints within annual funding cycles) can in some instances increase the costs. Although there are opportunities for scale and phasing to increase efficiencies and drive costs down also.

Restoration delivery and financing instruments

England

In England, the Nature for Climate Peatland Grant Scheme (NCPGC) is the main mechanism for peatland restoration grants with 15,000 ha of peatland brought under active restoration management since 2020. At least a further 10,000 ha are forecasted to be delivered by the scheme through a recent extension to 2026. After this period environmental land management schemes (ELMs) are expected to be the main delivery mechanism for peatland restoration. There is already good progress towards delivery through ELMs with the most recent round of Landscape Recovery expected to restore 35,000 ha of peat. A significant ramp up in delivery is needed to meet the target to restore 280,000 ha of peat by 2050.

Scotland

In the past six years there has been a significant increase in the availability of funding for peatland restoration in Scotland, the Scottish government set up a fund of £250 million with the aim of restoring 25,000 ha per year. However, progress on restoration has been slow, the Climate Change Committee (CCC) reports that in Scotland rates will need to triple in order to meet their own government targets (Table 2). It Is also important to highlight that although the Scottish government has set a restoration target of 250,000 ha, there are approximately 1.5 million ha of degraded peat in Scotland. Upscaling restoration effort in Scotland would be a relatively easy win within the land use sector to support the ambitious net zero targets outlined by the Scottish government.

Wales

The Welsh government has set a target of 45,000 ha in favourable condition by 2050 in order to meet net zero commitments. Wales is currently restoring around 650 ha per year against a government target of 600-800 ha per year. The Welsh National Peatlands Action Plan estimated that only 10% of Wales's peatlands are in favourable condition representing a degraded extent of 56,248 ha, this means that there will need to be an upscaling of effort will be required in order to meet the 2050 target.

Northern Ireland

Since the publication of the draft NI Peatland Strategy consultation document in 2021 there has not been a published target of either extent or funding levels beyond a commitment to ensure that "Peatlands in Northern Ireland are conserved, restored or appropriately managed".

	Scotland	England	Northern Ireland	Wales
Hectares pledged	250,000 by 2030	280,000 by 2050	-	45,000 by 2050
Hectares restored	40,607 (2018-2024)	15,000 (2020-present)	1750	5150 (2020-2023)
Funding announced (£m)	£250m by 2030	£50m by 2025	£3m (2023-2028) plus €10 million from the Irish Governments Shared Island Initiative (until 2028) is supporting peatland restoration projects across Scotland, Northern Ireland and Ireland.	£1m per year to 2025
Funding delivered (£m)	£67.8m (2020-2023)	£33m (2018-2023)		£6.4m (2018-2023)

Table 3: Available funding and pledges for restoration from UK national governments by devolved area. Utilises publicly available data for direct restoration activity grants only. Cost of "£8.4 billion of restoring all peatlands to near natural condition" ONS, 2019[18]

Ridge Carbon Capture
© Ridge Graham

Case study: Delivering blended finance through the Peatland Code

Ridge Graham was the first peatland restoration project in England to be delivered through the blending of private finance with the Government's Nature for Climate Peatland Grant Scheme (NCPGS). 450 hectares of blanket bog have been restored, providing multiple co-benefits. The restoration included deployment of 2,000 stone dams, 3,000 bags of heather brash across bare peat and the reprofiling of 20,500 m of peat hags.

A key outcome of the project is centred on community engagement. Ridge Carbon Capture piloted a model that ensured not only the landowner, but their farming tenants benefited from and shared in carbon revenues.

Extensive data is collected pre-restoration to track the health of the peatland. Ridge Graham will create a net emissions reduction of 52,657 tonnes of CO_2e and Peatland Code validation and verifications will be completed by a third party to ensure the benefits are achieved.

https://www.ridgecarboncapture.com/wp-content/uploads/2023/10/Ridge-Graham-Story-Overview-Compressed.pdf

[18] UK natural capital - Office for National Statistics (ons.gov.uk)

Restoration: UK Peatland Strategy Milestones progress summary

Milestones	Progress
2020: 1 million ha in good condition, under restoration management and being sustainably managed	 Without up-to-date cataloguing of restoration activity at the devolved or UK level we are unable to conclusively state that the 2020 milestone of '*1 million hectares of peatland in good condition, under restoration management or being sustainably managed*' has been met. It is clear from reporting at the country-level to bodies such as the CCC that **restoration delivery is currently not meeting the domestic targets set**.

Over the next 5 years...

It will be necessary to increase the level of restoration delivery. There are a number of ways in which this can be increased:

- Greater levels of funding allocation. Streamlining funding delivery to simplify the process of administration.

- Longer term funding commitments not only to capital works but to those bodies who deliver peatland restoration work e.g. partnerships, national park authorities and other competent bodies.

- Improve alignments with private finance to facilitate more private investment

Agree a common definition of 'peatland restoration' to allow for collaborative reporting against domestic and international agreements and targets.

There is a danger that if we continue to place emphasis on area-based metrics alone that we miss opportunities to invest in management of some of our better condition peatlands and the wins that they offer for protection and preservation of biodiversity. Now that restoration activity is becoming almost commonplace, we need to start and move beyond acting on the easiest opportunities and plan restoration strategically to;

- Increase efficiency in delivery

- Ensure that early restoration interventions are identified and implemented to prevent further decline of our more intact sites and preserve the remnant biodiversity found there.

- Ensure that restoration interventions are prioritised on shallow peat areas where loss of peatland extent is a short-term risk.

- Ensure that the more 'difficult' sites are not left behind e.g. opportunities for forest to bog restoration

- Ensure that funding allows for delivery of restoration action across the full suite of our UK peatland diversity including uplands, lowlands, bogs and fens.

- Updates to national strategies (where in place) and production of associated implementation plans and targets is recommended to achieve this strategic delivery.

Mechanisms need to be put in place to guard areas which have been restored from damaging practices and to protect public investment that has already been delivered to ensure that maximum public benefit is realised from this funding.

IUCN UK Peatland Programme will produce a set of principles for peatland restoration to set the groundwork for a UK Peatland Standard (similar to the UK Forestry Standard)[19] which will seek to fill the current void between overarching strategy and real-world application of restoration. These principles will seek to unify restoration activity which is taking place across the UK and help to ensure that new sector entrants are supported, and that poor practice is avoided.

[19] The UK Forestry Standard - GOV.UK (www.gov.uk)

Sustainable Management

Oblong-leaved sundew © Brian Eversham

Summary

- **The 2020 milestone of including peatland carbon in the UK greenhouse gas inventory has been met**. However, emissions from shallow peatlands are not accurately reflected in GHG inventory reporting as data is deficient from shallow peat soils.
- Per 'Conservation' findings we remain some way from peatlands being sustainably managed but **an assessment as to the degree of sustainable management of UK peatlands is not currently feasible**.
- **There have been some improvements with regards to legislative protection of peatlands** e.g. the restrictions placed on burning in England and Scotland (2021 and 2024 respectively). As many protected peatlands remain in unfavourable condition across the UK this suggests that unsustainable land management practices, coupled with other pressures persist.
- As per the 'Global Peatland Assessment' (2022) recommendations, there needs to be greater embedding of the ambitions of the national peatland strategies within climate, biodiversity, water quality and land-use policies.

The **2020 milestone of including peatland carbon** in the UK greenhouse gas inventory has been met.

2018-2040 Strategy Objectives

Wet grazing © National Trust Images / Joe Cornish

Applying land uses that are compatible with healthy peatlands

Conserving and rehabilitating peatlands, so that they function fully does not mean that these areas become off-limits to economic activity. Various options for site-adapted land use on wet and rewetted peatlands have been developed and tested, including farming, sporting and other recreation.

This includes minimal intervention where no action is required to maintain peatland habitat.

Objectives

Sustainable management across UK peatlands can be achieved through:

- Demonstrating and communicating the benefits of healthy peatland landscapes and peatland restoration, and highlight the win-wins for wider society and specific land use activities
- Involving local communities at an early stage and support communities in overcoming any dependencies on unsustainable peatland use
- Developing economically viable systems for supporting peatland management:
    - Providing support for land managers who manage peatland sustainably, ensuring the right level of public funding to overcome any market failures
    - Avoiding public money being directed into fiscal regimes that can result in peatland damage.

Outcomes (2018-2040)

- Sustainable management practices adopted on 80% of UK peatlands
- Healthy peatlands are delivering benefits for land managers and rural economies. Land managers are recognised for the wider services the healthy peatlands they manage deliver for society
- Local communities are engaged at the earliest stage. Support is provided to help them to overcome their opportunity costs and dependence on unsustainable peatland use.

Milestones

2020

Peatland carbon is incorporated into UK Greenhouse Gases inventory reporting and peatland management forms part of mitigation plans.

2030

All peatlands under sustainable management, as indicted by the Committee on Climate Change (2017).

Sustainable management of peatlands

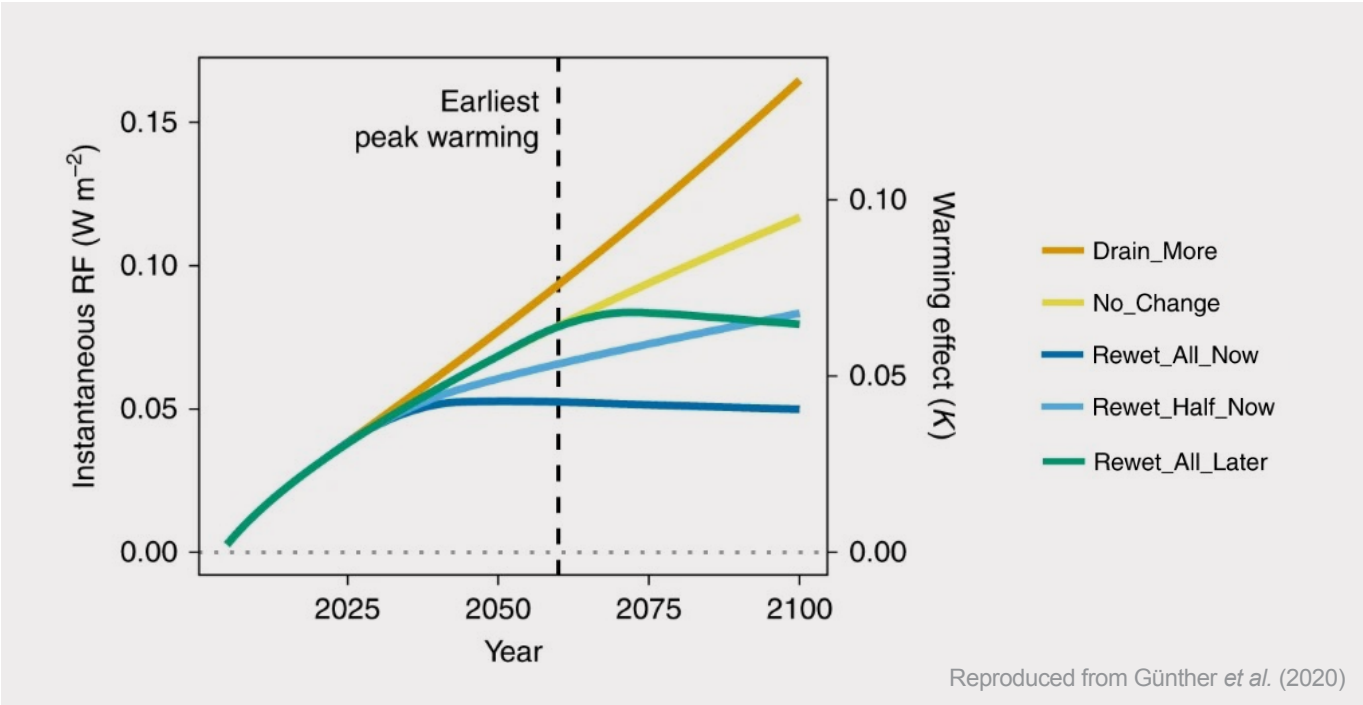
In the context of the UK strategy means the application of land uses on natural and semi-natural peatlands which support maintenance of, or recovery towards, favourable condition. This action can also include minimal/no-intervention approaches. Conserving and rehabilitating peatlands through good management does not mean that these areas become off-limits to economic activity. However, there are a number of economic land-uses on peatlands in the UK which continue to unsustainable levels and represent a challenge to achieving the 2040 milestone of having '*2 million ha of peatlands under good condition, restoration or being sustainably managed*'.

Demonstrating and communicating benefits of healthy peatland landscapes and peatland restoration

The latest evidence shows that urgent rewetting of degraded peatlands delivers the best climate outcome.[20] Peatland carbon emissions were incorporated into the UK greenhouse gas inventory in 2019. They are accounted for under 'Land use, land use change, and forestry' (LULUCF) in the 2022 report (published in Feb 2024). Greenhouse gas data and the high levels of emissions reported (see Figure 7) demonstrates that the majority of peatlands are not currently under sustainable management or suffering from past degradation. This draws a parallel with the conservation data reported in the previous chapter.[21]

However, there are still evidence gaps to be addressed here as discussed in the DEFRA 2017 report by Evans *et al.*, these include;

- the lack of inclusion of shallow peats
- uncertainties around emissions factors,
- uncertainties around the allocation of peat areas to condition classes,
- the mapping of peat extent and the extent of condition change since mapping.
- The impact of other land management practices (which are not covered by LULUCF explicitly) but which will have an impact on peatland condition e.g. overgrazing and burning.



Reproduced from Günther *et al.* (2020)

Figure 7: Graph indicating the radiative forcing potential (RF) of peatland greenhouse gas emissions and their warming potential under a variety of scenarios.[20] The data highlights that urgent re-wetting, despite methane release, delivers the best overall climate outcome.

[20] https://www.nature.com/articles/s41467-020-15499-z

[21] % of reported degradation from assessment of GHG data is likely to produce a higher value as low-level net emissions can occur on near-natural peatland habitats. Comparing this figure with the conservation assessments gives a likely range of % degraded peatland across the UK


Buttermere floodplain © David Brown

Involving local communities at an early stage and supporting in overcoming dependencies on unsustainable usage

In our recent agricultural issues brief[22] we included a case study on Dartmoor. tDue to degradadtion remaining unchecked for long periods, delayed rerstoration interventions were found to have had more pronounced negative effects on the local community. The importance of strong communication to land-users and involvement of communities in the decision-making process around land management change and opportunities is emphasised.

In this brief we also highlighted the need for greater farm advisory capacity with specialist peatland advisors available to ensure that the most suitable funding options are delivered where greatest benefits would be achieved. Whilst in some areas we are in a transition phase away from 'traditional' land management practices and towards a more sustainable way of managing peatlands, additional advisory capacity is essential in helping land managers and farmers to understand the new support options that are available and to ensure they are integrated with other measures effectively. There is a broad pool of local expertise across the UK peatland community that could be drawn upon to support this objective although it is contingent on proper resourcing of people.

There is a need for tightened or increased legislation around the most damaging peatland activities (e.g. burning, development and extraction for horticultural usage). If not, the positive effects of the large area (~250,000 ha) which has been restored to date may be countered by degradation elsewhere or due to continued pressure on restored areas. Development continues to be a negative pressure on peatlands, leading to degradation or even loss of peatland extent. There are currently active planning proposals across the UK for built tracks, hydro schemes, windfarms and housing developments that will all result in a degree of lost peatland extent and additional impacts. Development should be avoided where there is likely to be negative impacts directly or indirectly on a peatland. Where development is permitted it should follow good practice guidance and compliance monitoring data should be made openly available to ensure that the impacts of construction and mitigation measures on peatland function and biodiversity can be understood.

Developing economically viable systems

Due to the current condition of UK peatlands it is fair to assume we remain someway off the target of having 80% of UK peatlands under sustainable management at present. This poses a significant threat to livelihoods and represents a significant cost to the UK economy e.g. in carbon emissions and future restoration outlay. The socio-economic costs that are associated with inaction should be considered in future peatland policy development.

Delays in the publication of new agri-environmental schemes since leaving the EU has created uncertainty around what support and what the land management asks will be. There needs to be greater urgency across the UK on this. Options for replacement schemes are being worked up at present and are expected to be implemented during the next 5-year period.

[22] Agricultural issues brief - 10 key recommendations.pdf (iucn-uk-peatlandprogramme.org)

Sustainable Management: UK Peatland Strategy Milestones progress summary

Milestones	Progress
2020: Peatland carbon is incorporated into the UK Greenhouse Gases inventory reporting and peatland management forms part of the mitigation plans	 The 2020 milestone for sustainable management has been met with peatland carbon now included in the greenhouse gas inventory. Climate impacts of peatland management and condition can now be formally accounted for. Peatland management measures, particularly re-wetting, are included as part of the mitigation plans for climate targets. However, emissions from shallow peatlands are not accurately reflected in GHG inventory reporting as data is deficient from shallow peat soils.
2030: All peatlands under sustainable management, as indicated by the Committee on Climate Changes (2017)	 Looking across analysis from the 'conservation' and 'restoration' goals and the lack of data available to assess 'sustainable management', the UK as a whole remains largely off-track to have all peatlands under sustainable management by 2030.

Over the next 5 years...

Ban horticultural peat through the introduction of legislative mechanism across all four nations.

Implement post-CAP agri-environment schemes to deliver for peatlands. Remove perverse incentives such as paying for burning management and incentivise increased activity such as enhanced levels of rewetting in agricultural lowlands and combined measures of restoration coupled with biodiversity enhancement to speed up the rates of recovery. It is essential that the implementation of the new agri schemes allows for the monitoring of their impact on peatland condition and function.

Impact of recently introduced burning legislation in England and Scotland should be monitored to ensure that these peatland areas move to more sustainable management systems and that the consequences of a shift in management (e.g. from burning to cutting) are fully understood.

Accelerate forest to bog restoration. The CCC have recommended that, to meet the sector's contribution to Net Zero, 25% of low productivity trees on afforested peatland are removed by 2050.[23] Current rates of forest to bog restoration are, anecdotally, increasing but figures have not been collated to represent the current level of afforested peatland restoration. Coupled with this, research should be prioritised to allow for inclusion of forest-to-bog under the Peatland Code to facilitate private finance support for restoration.

In relation to development, restoration management plans associated with built developments should seek to deliver net gain in support of the 2040 Peatland Strategy targets for restoration and conservation. The climate, carbon and biodiversity impacts of the development should all be considered in this net gain calculation. All peatland types, including lowland raised bog, should be considered as 'irreplaceable habitat'.

[23] Land use: Policies for a Net Zero UK - Climate Change Committee (theccc.org.uk)

Adaptive Management

> “Be bold and ambitious about what can be achieved by when”
>
> **Lowland Agricultural Peat Task Force**
> Chair’s Report (2023)

Sphagnum moss plug for species introduction © Emma Hinchliffe

Summary

- Adaptive management in the context of the strategy refers to shifting the management of drained peatlands under intensive productive use to deliver wetter ways of farming, or peatland 'paludiculture'.
- **Opportunities exist for paludiculture across the UK**.
- New devolved **agri-environmental schemes** (currently in development) **do not explicitly support paludiculture or support market generation for paludiculture products**. Without this, land manager confidence in adopting sustainable peatland paludiculture at scale on agricultural peat soils is not likely to become a reality in the short to medium term.
- **Paludiculture research and trial projects have attracted over £24 million in funding since 2018** and crops suitable for paludiculture in the UK have been identified.
- **Challenges and barriers remain**, and markets, financial incentives and new regulations must be developed to adopt paludiculture at a large scale.
- **Paludiculture is still in its infancy in the UK**, but progress has been made to identify the barriers and recommendations to make large-scale paludiculture a future reality. Arguably, England has made the most investment in exploring the potential for paludiculture
- The England Peat Action Plan was published in 2021. The Lowland Agricultural Peat Task Force (LAPTF) was setup in 2021 to look at ways to reduce degradation of and emissions from lowland peat sites in England. The LAPTF report was published in 2023 and made 14 key recommendations; the government responded positively to the recommended actions, but it is too soon to assess the impact of this inquiry as yet. Defra have announced that its ELMs will support raised water levels and have initiated pilot schemes to improve our understanding of water management in lowland regions.

Paludiculture research and trial projects have **attracted over £24 million in funding** since 2018.

2018-2040 Strategy Objectives

Title © Doug Malpus

Shifting management of drained peatlands under intensive productive use to deliver wetter ways of farming.

Some existing land uses currently rely on maintaining drainage of peatlands. Resulting negative environmental and socio-economic impacts can be reduced by providing new products that thrive on wet peatland soils, minimising the need for drainage.

This represents an opportunity to maintain farming livelihoods and generate new enterprises within UK agriculture.

Objectives

1. Improve farming practices on peat soil to slow the loss of soil carbon by encouraging:

- Partial conversion of ploughed land to grass conversion e.g. buffer strips, field corner management etc.
- Other practices to reduce soil and soil carbon loss in the absence of re-wetting
- Water management to encourage higher water levels within the peat soils.

2. Develop and introduce wetland agriculture systems to the UK:

- Trial new systems for and new ways of working that can reduce the carbon impact of agricultural practices on peat soils. This will include the trial and development of novel crops.
- Look to new markets for products from sustainably managed peatlands and develop alternative products where the use of peatland is unsustainable. In doing this, ensure that the burden of any impacts is not exported to other countries.

Outcomes (2018-2040)

- The impact of greenhouse gas emissions from agricultural use of peat is reduced through a shift to wetter farming.
- The distribution and extent of agricultural peat soils across the UK is maintained through the introduction of new soil management regimes and cropping systems.

Milestones

2020
Vision agreed for agricultural soils.

2030
Early opportunities are being delivered for agricultural peat soils to bring them under sustainable management regimes.

2040
Vision for agricultural peat soils is delivered.

Paludiculture: progress in developing and introducing wetland agriculture systems to the UK

The UK Peatland Strategy identified paludiculture – a system of agriculture suitable to wetland habitats – as an opportunity to slow the loss of soil carbon and to support continued profitable agriculture. Paludiculture has potential to reduce GHG emissions from degraded peatlands through rewetting whilst still allowing commercially profitable crops to be cultivated. The discussions around paludiculture have so far focused on lowland peatlands currently used for agriculture, where the right conditions for paludiculture can usually be created by raising the water table. Opportunities exist for paludiculture on peatlands across the UK. A broader definition of paludiculture[24] or 'wetter farming' has not been extended to all of the UK's agriculturally productive peatlands. This potentially limits the conversation around adaptive management of degraded peatlands with stakeholders who need to retain an economic interest in the land.

i. Improvements to farming practices on peat soils

Since the release of the UK Peatland Strategy, progress has been made to identify the requirements for establishing paludiculture in the UK. In 2021, The Lowland Agricultural Peat Task Force (LAPTF) was set up by Defra to explore how farmed lowland peatlands in England could be better managed, and to identify new approaches and more sustainable management practices. The task force introduced a roadmap[25] to making wide-scale adoption of paludiculture a commercial reality in England over the next ten years, starting from 2023. The roadmap sets out a targeted programme of investigation, development and reform, and presents various pathways to make paludiculture available as a mainstream option for farmers. The roadmap recognises that achieving change at scale is required to deliver broader benefits for farmers, as well as the environment, climate, and nature. To achieve a fundamental shift, there is also a need to involve wider society and raise public awareness of the lowland agricultural peat challenge.

It is also important that paludiculture is developed in a way that meets sustainability principles to avoid replacing one form of unsustainable management with another. The IUCN UK Peatland Programme released a briefing document in 2023, identifying five principles for sustainable peatland paludiculture[26] that should be considered when implementing paludiculture projects:

- Prioritise rewetting that halts peat degradation through appropriate, stable water level management;
- Develop a planned approach to paludiculture activity appropriate to local circumstances;
- Recognise the full range of public benefits in economic assessment and support for paludiculture;
- Plan and manage paludiculture with regard to biodiversity objectives;
- Engage at catchment scale for the potential benefits of paludiculture to be fully realised.

Paludiculture is supported by the UK's crop science organisation NIAB, collaborating with Natural England to build a paludiculture community, drawing together knowledge and experience across sectors. The UK Paludiculture Community can be found at paludiculture.org.uk. Paludiculture has also been acknowledged in the CCC *Progress in Reducing UK emissions reports* since 2022[27] as part of a pathway to reduced emissions from agriculture.

ii. Trial new systems and look to new markets

Progress has been made to explore the potential for paludiculture in the UK. The £5 million Paludiculture Exploration Fund (PEF) introduced

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[24] Principles for Sustainable Peatland Paludiculture.pdf (iucn-uk-peatlandprogramme.org)
[25] Roadmap to making wide-scale adoption of paludiculture a commercial reality in England: Independent report to the UK government (publishing.service.gov.uk)
[26] Principles for Sustainable Peatland Paludiculture.pdf (iucn-uk-peatlandprogramme.org)
[27] CCC 2024 report: Progress in reducing emissions 2024 Report to Parliament - Climate Change Committee (theccc.org.uk)

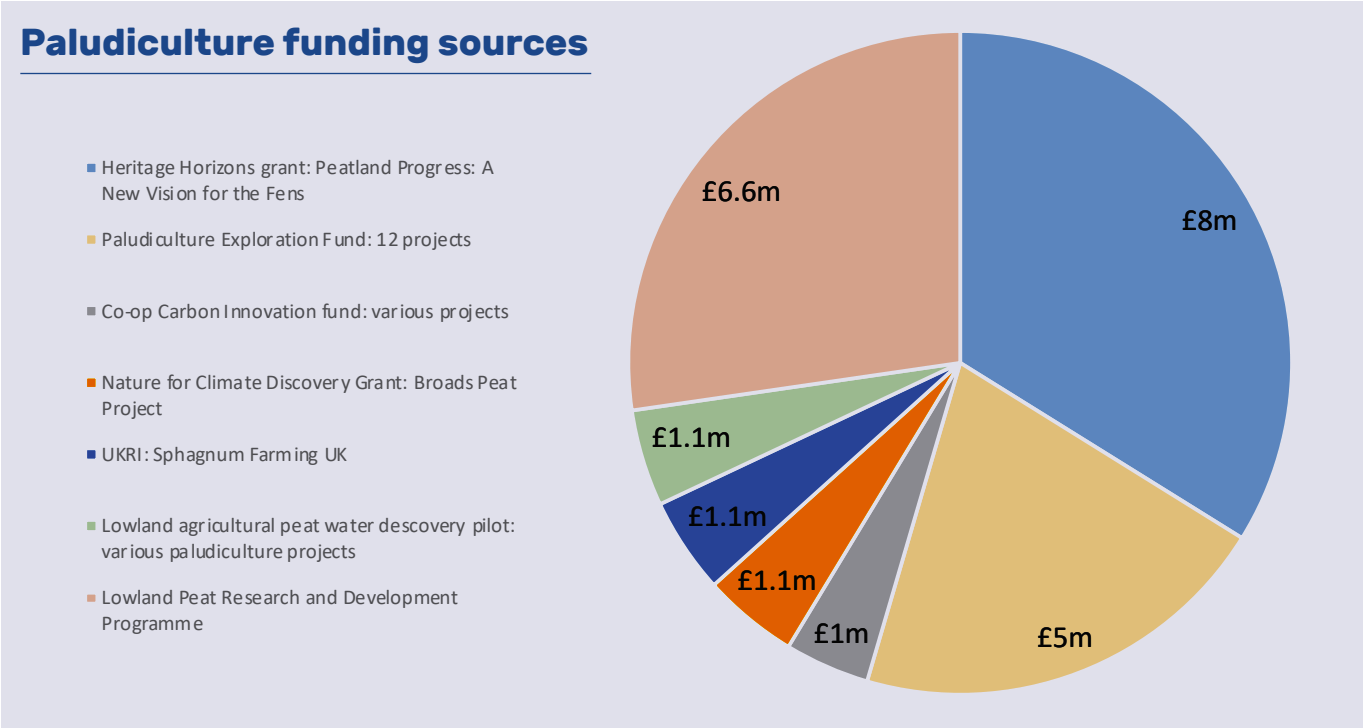


Figure 8: Funding allocated to paludiculture projects and research since 2018 totals ~£23.9million

by Natural England in early 2023 aims to address the current challenges and barriers to commercial growing of paludiculture crops on lowland soils in England. PEF aims to fund projects that explore how water levels can be raised and managed at different scales, how crop production could be increased, how peat wastage and GHG emissions can be reduced, and how new products and markets could be developed from paludiculture crops. The grant was awarded in 2023 to 12 projects across England. Paludiculture projects have attracted further funding from various sources, with £23.9m invested since 2018 (see Figures 8 and 9).

Trial and development of novel crops suitable for paludiculture in the UK

Paludiculture crops can have a variety of uses, from food to fodder, fibre or fuel. In the UK 88 native species have been identified that are potentially suitable for paludiculture. Fibre and biomass crops currently show the greatest potential, but there are also food opportunities to be explored. Some examples of suitable crops highlighted by the Lowland Agricultural Peat Task Force in their roadmap are summarised in Table 4.

Remaining challenges

Despite the potential benefits to peatlands, the commercial growing of paludiculture crops in the UK is still at an early stage. There is a need to overcome significant practical, economic and societal challenges and barriers to implement paludiculture on a large scale. Challenges include the need to support rural economies, develop markets and supply chains, manage water within complex and heavily modified landscapes, and avoid displacement of emissions associated with food production to other areas.[28] Some likely requirements for large-scale implementation of paludiculture include:

- Development of financial incentive schemes for farmers, landowners, and investors;
- New regulatory and permitting approaches to accommodate paludiculture;
- Investment in supporting infrastructure and machinery;
- Development of markets for paludiculture products – government support will be required to establish these;

[28] Defra LP2 paludiculture report - April 2020.pdf (uel.ac.uk)

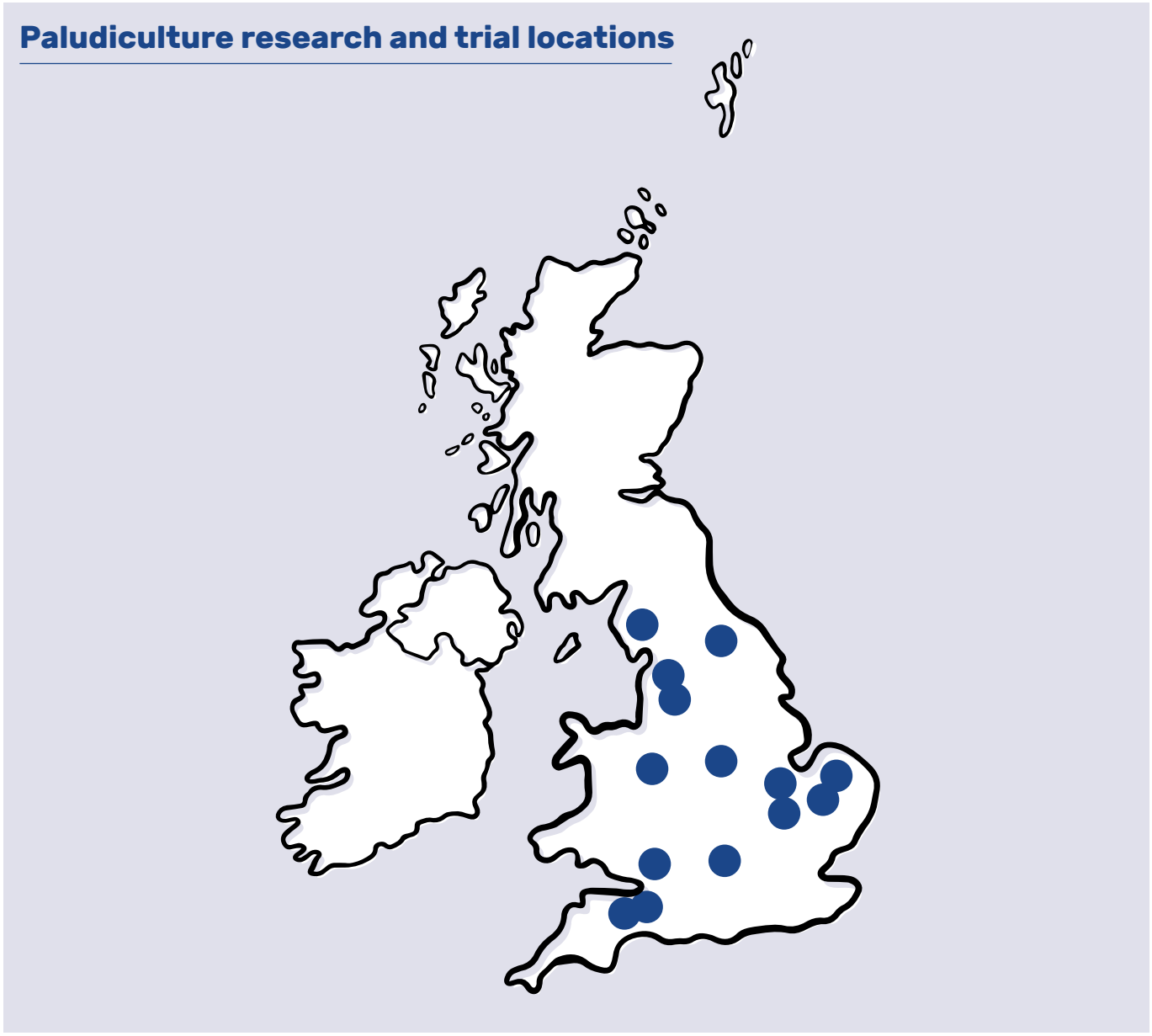


Figure 9: Indicative map of paludiculture research and trial locations across the UK (based on known projects and information published on paludiculture.org). It is notable that the majority of paludiculture trial- and research projects are currently concentrated in England due to funding being largely focussed on reducing high emissions from lowland agricultural soils. However, potential **opportunities for paludiculture exist across the UK**.

Product/market	Potential paludiculture crops
Food and flavourings	bilberry, celery, cheese, cranberry, meat, nettle, sedge grains, sweet grass grains, watercress, water pepper, bog myrtle, meadowsweet, round leaved sundew, water mint and wild celery
Herbal remedies, medicines and biomedical	bilberry, bog myrtle, cranberry, comfrey, hemp agrimony, lady's smock, meadowsweet, round leaved sundew and *Sphagnum* moss
Construction materials and furniture	bulrush, reed, alder, rush and willow
Bioenergy	bulrush, reed and willow
Growing media	*Sphagnum* moss
Fabrics	Bulrush and nettle
Industrial chemicals	Reed and *Sphagnum* moss

Table 4: Potential crops suitable for paludiculture in the UK.

- Making the term ‘paludiculture’ widely recognised and accepted rather than it becoming a polarising or exclusive term;
- Clearly defining what ‘paludiculture’ encompasses. Some groups suggest crops and livestock, other suggest just crops, and others still perceive it as farming only flat regions for Typha or reed or that it necessitates complete flooding of land;
- Strong evidence base to develop viable systems and to quantify benefits and trade-offs.

Paludiculture does not yet offer an immediately implementable solution in the UK, but its potential to contribute to wider peatland conservation goals, sustainable farming systems and the reduction of greenhouse gas emissions remains. Paludiculture offers an important opportunity for growth in the agricultural sector, particularly where productivity is declining due to soil losses. Moreover, growth in the paludiculture sector can also align with the path to net zero, offering an opportunity for sustainable growth and delivering wider benefits through the reduction of GHG emissions and clean water provisioning.

Early progress to overcome some of these challenges has begun, for example through Defra’s Water for Peat Pilots, set up in 2023. The Lowland Agricultural Peat Small Infrastructure Pilot (LAPSIP) is providing £3.8m for improvements to water management infrastructure, supporting Internal Drainage Boards to update and install technologies that can enable more controlled management of water needed to rewet peat soils safely and sustainably. A further £3.1m has been awarded to projects across England through the Lowland Agricultural Peat Water Discovery Pilot (LAPWDP), building partnerships to investigate, understand and plan how water could be managed to rewet and preserve peat soils in the long-term.

To fully understand and address these challenges further funding will be required to enable the sustainable management of water tables that can enable paludiculture and support climate and environmental benefit.

Little Woolden Moss trials © Nathan Chandler

Adaptive Management: UK Peatland Strategy Milestones progress summary

Milestones	Progress
2020: vision agreed for agricultural soils	 **Partially achieved**. Early opportunities are starting to be delivered for agricultural peat soils to bring them under sustainable management regimes. Progress is strongest in England but opportunities exist in all four nations. The LAPTF roadmap sets out a targeted programme to making paludiculture a commercial reality in England, and a number of grants (such as the Paludiculture Exploration Fund and the Nature for Climate Discovery Grant) are supporting the establishment of paludiculture projects across the UK. There is currently no agreed vision on agricultural soils across the four nations and it is likely that these will be developed at the devolved level.

Over the next 5 years...

Ensure peatland restoration is part of the lowland picture. With the opportunity for transformative and revolutionary land management change it is important that opportunities are taken to regain some of the UK's lost lowland peatlands, where possible, to meet the UK's 30% by 2030 biodiversity and habitat restoration targets. Peat soil extent should be preserved as far as possible to increase the opportunities for re-creation of lost peatland habitat.

Move beyond trials to delivery at scale. The next logical step towards the 2030 milestone is to begin to expand the size of field trials and to see delivery of adaptive farming approaches on peatlands being adopted in other nations across the UK.

Research to understand and maximise co-benefits. It is important that the co-benefits of paludiculture can be reliably evidenced and demonstrated if it is to be implemented. Firstly, large-scale adoption would represent a significant land use change and it is important to understand how this will contribute to the UK's climate and biodiversity recovery targets. Secondly, evidence is needed to underpin public or private investment into paludiculture for carbon, water and biodiversity and societal improvements. Extensive research, such as Lowland Peat 3, is already looking into some of these questions, but this needs to continue to build a complete understanding of what is possible. With regard to the Peatland Code, emissions data for peatlands under different forms of paludiculture will be needed to allow for the assessment and certification of any emissions reductions benefit and to leverage private finance.

Funding support to help transition to paludiculture and promote the long-term health of peatland habitats. It is clear that a paradigm shift to paludiculture in our lowland peatland landscapes will require a significant amount of investment, especially in set-up costs for landowners and producers. However, although these can be mitigated, e.g., through the use of shared specialised machinery banks, it is important that funding is also made available for restoration of remaining semi-natural habitats. In England ELMs, including improved offers to raise and maintain water levels closer to the land surface, will need to be monitored to ensure they support this transition.

Research to inform and design new hydrological management systems. If implemented at scale, paludiculture will involve an entirely new way of managing water in the landscape. As mentioned in principle five, this will involve integrated thinking over sub-catchment and catchment areas, but it will also require a better understanding of how the water will move through and interact with the landscape and how we can leverage it to our advantage (for irrigation, nutrient control, water retention, etc.). This should build on the work of existing schemes such as the Water for Peat Pilots and inform a long-term strategy for water management that views these lowland areas as contiguous hydrological units, recognising their past as extensive wetland ecosystems, while valuing and balancing the needs and concerns of local stakeholders in the implementation of a mosaic approach.

Communication

Drumburgh Moss, Cumbria © Emma Hinchliffe

Summary

- Peatlands are recognised internationally and domestically; this is reflected in publications which act as drivers for climate change policy such as the IPCC and CCC progress reports.
- **Peatlands have gained increasing attention from the UK and devolved Governments over the past five years**. Peat and peatlands have increasingly been included in discussions in the UK Parliament, and in news items on the UK Government website; however, this trend has reversed since coverage peaked in 2021. **"Peatlands" have been mentioned in parliamentary debates 213 times since 2018 – however, this is almost four times lower than the number of mentions of "woodlands" during the same period**.
- Public interest in peatlands is rising. The number of Google searches for peatlands and related topics have steadily increased.

Public interest in peatlands is rising. The number of Google searches for peatlands and related topics have steadily increased.

2018-2040 Strategy Objectives

Guided walk © Peter Batchelor

Communicate peatland values, both intrinsic and measurable, to a wide audience.

Widespread public and organisational support is delivering long-term protection for those areas of peatland in good condition and is preventing damaging activity that would reduce peatland function in other areas. This recognition of peatland benefits is delivering the means for peatland conservation.

Objectives

Communication instils public support for peatland conservation, restoration and sustainable management as delivered by accompanying goals:

- Provide printed and digital resources to enable understanding of peatlands
- Share peatland stories with the media
- Showcase peatland restoration case studies
- Disseminate key messages to stakeholders
- Present peatland science in an accessible format.

Outcomes (2018-2040)

- Peatlands are recognised for the benefits they provide and society is aware of both the benefits of healthy peatlands and impact of degradation.

Milestones

2020

Increased peatland coverage in the media, which supports the goals of this strategy (demonstrated through an impact survey).

2030

Public attitudes survey demonstrates widespread knowledge of peatlands and support for public spending.

2040

With a large proportion of the UK's peatlands in good condition or under conservation management, communications work is focused on the benefits these habitats are delivering and the need to maintain conservation of these areas.

Instilling public support for peatland conservation, restoration and sustainable management

Public awareness and support for peatland conservation and management objectives is critical to the success of the UK Peatland Strategy targets. Since the publication of the UK Peatland Strategy in 2018 peatlands have been gaining more public attention as demonstrated by a significant, steady increase in Google search trends for peatland-related keywords and phrases (see Figure 9). The word "peatland" has been searched most frequently in Scotland, whilst interest in the phrase "peat free" is highest in Wales and England, peaking every spring and coinciding with the start of the gardening season. There is a significant increase in the volume of searches for the topic "peat free" from 2020 onwards, whilst "peatland restoration" received little search interest until 2021. Peatland restoration has been the most popular search topic in Scotland, followed by Wales and Northern Ireland, with the least search interest in England.

Increased peatland coverage in government debate

Peat and peatlands have increasingly been included in discussions in the UK Parliament, as the number of mentions of the word "peat" has increased by an average of 7 mentions per year. "Peatlands" have been mentioned 213 times since 2018 (see Figure 10) – however, this is almost **four times lower than the number of mentions of "woodlands" during the same period**. Peatlands received the most mentions in 2021, when "peat" was mentioned 113 times. Most of these instances were in relation to the Environment Bill 2021, the Heather and Grass etc. Burning (England) Regulations 2021 and during COP26. There has also been an overall increase in peat-themed news items (including the keywords "peat" or "peatland") on the UK Government website.[29] Mentions have decreased since the 2021 peak.

Key policy documents which make recommendations to government around climate change policy and implementation have also seen an increase in peatland coverage. Peatlands have been increasingly acknowledged in all Intergovernmental Panel for Climate Change (IPCC) and Climate Change Committee (CCC) reports since 2018. The number of mentions of the word "peat" per page has overall increased in IPCC reports; however, the theme and focus of these reports differ from year to year.

The word "peat" appears increasingly in CCC Progress in reducing emissions reports,[30] with an average increase by 25 mentions per year. Peatlands were given the most attention in the 2021 report, in relation to the England Peat Action Plan published that year, but this trend has since reversed.

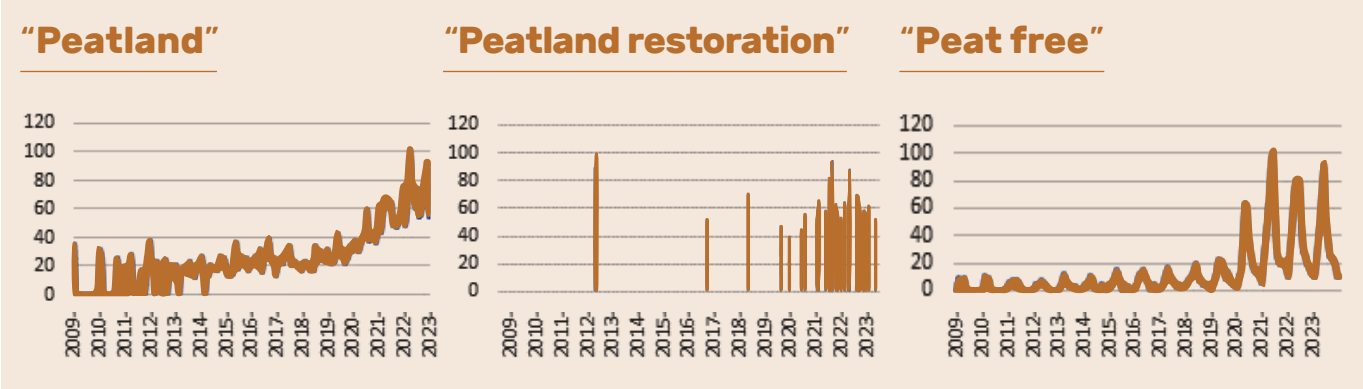


Figure 9: Search interest of peat-related keywords on Google from 2009-2023. Numbers represent search interest relative to the highest point on the chart for the given region and time, rather than search counts.

[29] www.gov.uk
[30] e.g. CCC 2024 report: Progress in reducing emissions 2024 Report to Parliament - Climate Change Committee (theccc.org.uk)

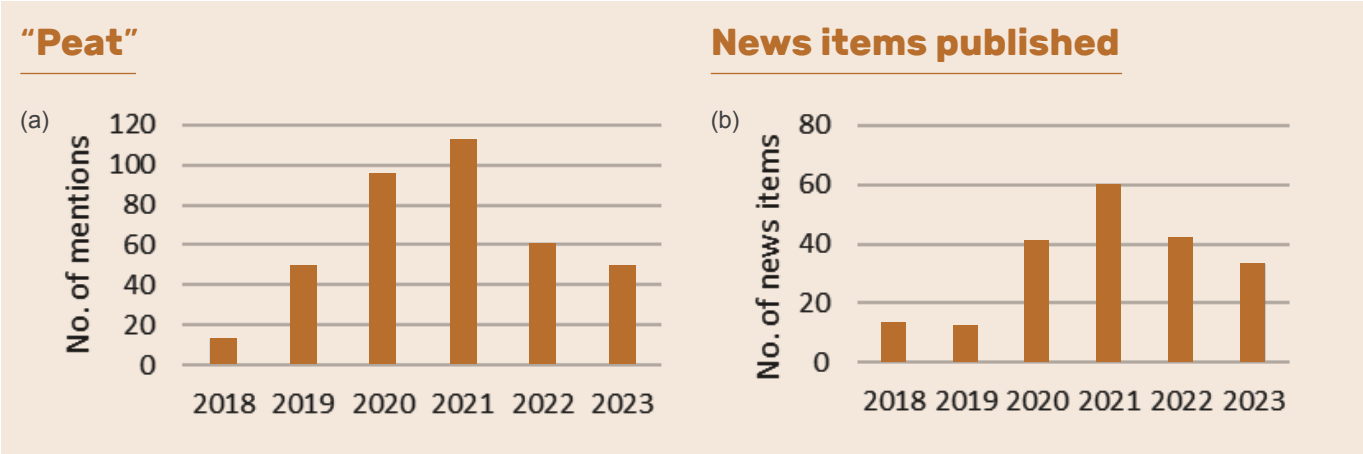
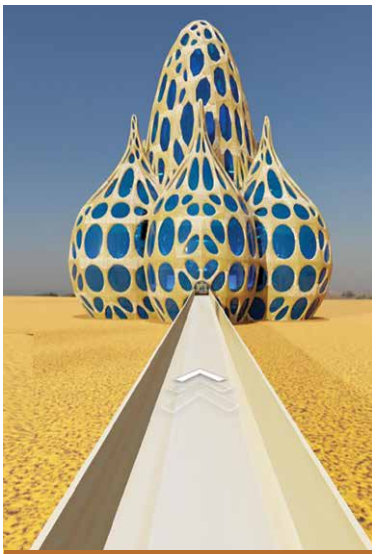


Figure 10: (a) number of mentions of the word "peat" in the UK Parliament, and (b) number of news items published per year on the UK Government website (www.gov.uk).

Provision of resources to enable understanding of peatlands

Organisations across the UK continue to build the resource and work to increase understanding of peatlands at the local, regional and national levels. The IUCN UK PP has played a key role in this since its inception in 2009. Since 2018, the IUCN UK Peatland Programme has:

- shared over 340 peatland news stories from partner organisations and our own work via our website and newsletter;
- placed the UK on an international stage at a variety of events e.g. COP26's Peatland Pavilion;[31]
- provided printed and digital resources to support varied aspects of peatland work;
- showcased peatland restoration case studies through our Demonstrating Success series;
- disseminated key messages to stakeholders and presented peatland science in an accessible format through a series of briefings.



Virtual Pavilion © IUCNUKPP

Case study: IUCN UK Virtual Peatland Pavilion

The Virtual Peatland Pavilion (VPP) first welcomed over 1,680 delegates online at COP26 in Glasgow. Since then, it has been re-developed for each successive Climate COP.

It is capable of hosting online events from within the platform and acts as a comprehensive resource and knowledge hub.

The VPP remains as a resource year-round available through the IUCN UK PP website and was developed in partnership with University of East London (Richard Lindsay), the Global Peatlands Initiative and United Nations Environment Programme.

[31] Peatland Pavilion at COP26 | IUCN UK Peatland Programme (iucn-uk-peatlandprogramme.org)

Communication: UK Peatland Strategy Milestones progress summary

Milestones	Progress
2020: Increased peatland coverage in the media, which supports the goals of this strategy	**The milestone for 2020 has been met**. Peatlands have received increased coverage and attention in the media, in the UK Parliament and in IPCC/ CCC reports since the publication of the UK Peatland Strategy. However, this trend seems to now be reversing after coverage reached a peak in 2021. It is important that peatlands continue to be included in discussions on climate change mitigation, adaptation and within discourse for other related sectors e.g. land use planning, agriculture and water. The trend in public interest has been growing steadily since 2018, with a significant increase in online searches for the terms “peatland restoration” and “peat free”, potentially reflecting the growing awareness of the benefits of healthy peatlands and impact of degradation.

Over the next 5 years...

We need to continue our collective work to advocate for peatlands to a diverse range of audiences. This encompasses all of the ingredients of effective communications from ensuring new data and evidence is available to support messaging to allowing for innovation and creativity through engaging new audiences in peatlands.

As a community, greater collaboration to ensure that finite communications resources are spent effectively would help ensure greater reach. The development of common advocacy messaging is key to ensure that a strong and collective voice is heard by decision makers.

The Mossy Carpet © Jane Akerman

Coordination

Site visit to Butterburn Flow © Tony Bradley

Summary

- Peatland partnerships now exist across almost all of Great Britain's major peatland areas. Northern Ireland still lacks a formal peat partnership but restoration is delivered through a variety of collaborative projects.
- There has been a significant increase in job advertisements related to peatlands since 2020, and the number of permanent positions has gradually increased, reflecting positively on the growth in this sector.
- There is a stagnating trend in the number of peatland-themed scientific publications in the UK with a tendency to need to ensure global relevance of research publications potentially undermining the application of UK-based peatland science.

Peatland partnerships now exist across almost all of Great Britain's major peatland areas.

2018-2040 Strategy Objectives

IUCN UK PP Stering Group in 2017 © Carl Whitham / MFFP

Maintain a formal, government-supported programme to stimulate appropriate funding support, share experience and encourage good land management practice to support all of the strategic goals

Objectives

Establish and maintain a framework to ensure funding and policy support for:

- Capital costs of restoration and ongoing management
- Ongoing research and monitoring
- Maintaining existing landscape-scale peatland partnerships, specifically as peatland management and advisory groups or as part of wider landscape projects
- Communications work to boost peatland support with the public
- Development of alternative products e.g. for use in horticulture, paludiculture crops
- Applied research and monitoring to generate the evidence needed for delivery of funding support. For example, develop natural capital values for peatlands to support a natural capital based approach to management and restoration.

Outcomes (2018-2040)

- Healthy peatlands have measurable ecosystem services value to society
- Peatlands and the services they provide have a measureable economic value that is recognised through funding support for their conservation and management. This will include improved greenhouse gas assessments and formal accounting methodologies
- Public funding is secured to support restoration in return for recovery of peatland benefits to society. This is delivered through national peatland action programmes, regional peatland partnerships, environmental bodies and agri-environment funding
- Government recognised carbon market standards for peatland restoration are adopted in private sector
- Innovative funding mechanisms, which deliver private funding to support the delivery of capital costs for peatland restoration, are established.

Milestones

2020
Funding plan in place to resource the UK Peatland Strategy, comprised of public environmental funding, public benefit payments and private funding.

2030
Review public and private funding measures and address any shortfalls.

2040
Funding support is widely adopted across public and private sectors and is secured through a range of long-term programmes.

Effective coordination is vital. The UK Peatland Strategy set out a number of critical factors that would guarantee that we, as a UK peatland community, achieve our collective goal of restoring our peatlands back to health and ensuring ongoing sustainable management.

Capital costs of restoration and ongoing management - policy support and funding

Co-ordination of policies across sectors/land use silos coupled with long-term funding commitments is key to scaling up and improving the efficiency of peatland conservation and sustainable management. As highlighted in the 'restoration' chapter, funding is not yet at the level to deliver against existing targets and budgets within the sector are frequently squeezed. Short-term funding packages are welcomed as a temporary measure but, for example in England, the variety and complexity of the public funding landscape can sometimes become a barrier to efficiency and delivery.

Logically, simplification of funding mechanisms and long-term certainty of funding availability will be the key to ramping up delivery. We have seen early success of Peatland Action-style models being rolled out in Scotland and Wales to co-ordinate delivery at the national level. However, policy swings and budget cuts still pose issues across all four nations.

Sharing information across the four countries on capital costs, funding structures and funding mechanisms will help to ensure that we continue to improve and support delivery wherever possible. The IUCN UK Peatland Programme will continue to support an annual four-country meeting where collective challenges can be discussed. Statutory bodies and NGO partners also operate UK-wide working groups which are crucial to ensuring co-ordination and reflection on shared goals.

Applied research and monitoring to generate the evidence needed for delivery methods and funding

Research funding levels

In the UK, research funding is largely delivered through UKRI, research councils, Innovate UK and a number of smaller opportunities from project funds and grant bodies. According to the UK Research and Innovation (UKRI) online database, peat- or peatland-themed scientific research projects (with the word "peat" in title or abstract) have been awarded £25,165,737 since 1 January 2018. However, this figure only represents 42% of all projects, as the amount awarded was not specified for most projects, suggesting that the actual amount is much higher. It is therefore difficult to assess whether the amount of funding awarded to peat-themed projects has been increasing over the past six years. The Office for National Statistics (ONS) reported that publicly funded research on peatlands was estimated to be £882,796 in 2018[32] and, when compared to the overall figure reported above for this 5 year period, it suggests there may have been an increase in peatland research spend.

On average, 13 peat-themed projects receive funding per year, with no significant increase in the number of projects funded since 2018. NERC has been the main provider of funding (72% of projects), and most funded projects were studentships (57%) followed by research grants (28%) (see Figure 11).

Number of publications

The amount of peatland-related scientific publications with authors residing in the UK has stayed the same since 2018, with an average of 108 publications released every year, whilst the global trend has seen an increase in peatland-themed publications over the same period (see Figure 12). Just over a quarter of peatland-related publications in the UK refer to peatland restoration, compared to 17% of global papers. The stagnating trend in the number of UK publications could be due to multiple factors:

- due to peatland research in the UK being largely centred on a few academic groups

[32] UK natural capital - Office for National Statistics (ons.gov.uk)

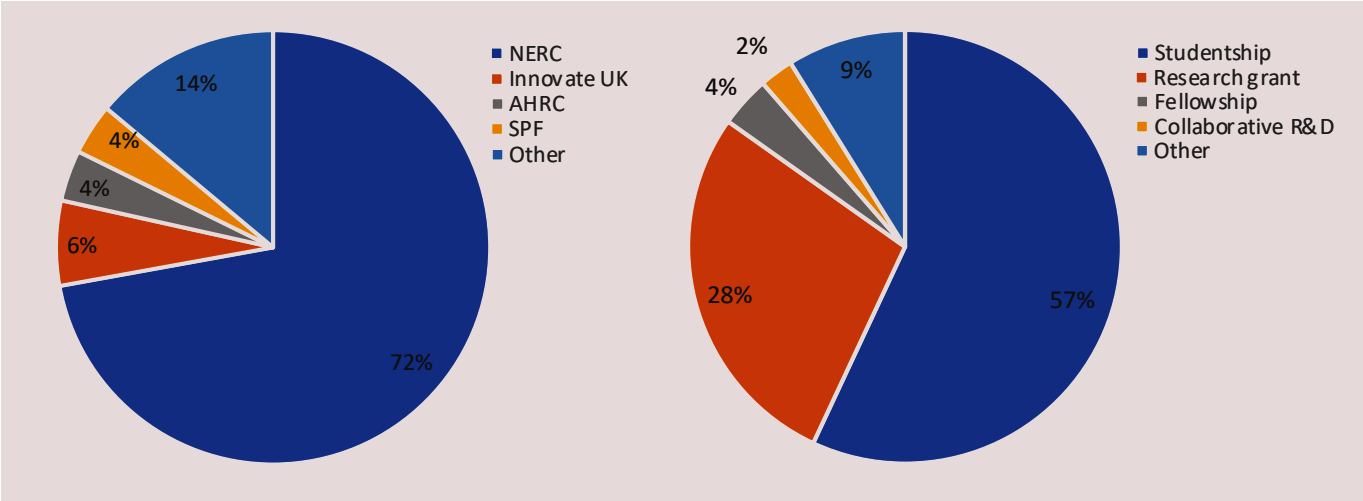


Figure 11: The main funding bodies (left) and the types of peat-themed projects that have received funding since 2018 (right).

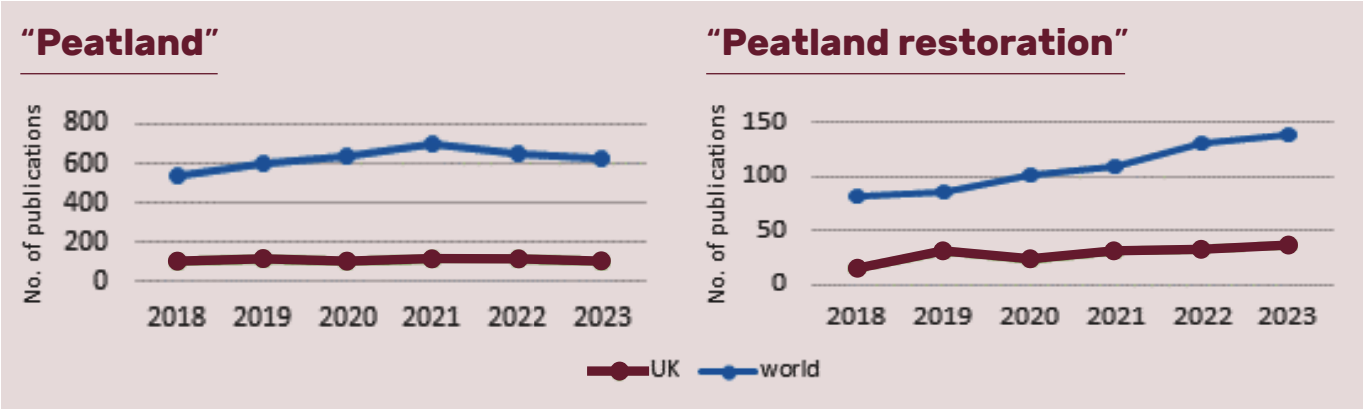


Figure 12: Number of publications that include the word 'peatland' or 'peatland restoration' in their title or abstract.
Source: Web of Science.

- the potential effect of COVID-19 causing delays in research activities
- monitoring budgets within conservation projects are increasingly stretched and the capacity of people to analyse data is also a limiting factor. Cliff edge funding support for monitoring projects leads to a lack of quality, long-term datasets.

There is also an anecdotal (real or perceived) trend of both research funding bodies and journals pushing for higher levels of impact by stating that 'global relevance' is a requirement. Figure 13 illustrates most frequently used words in the titles of peatland-themed publications by UK authors, which feature words and phrases such as "palm oil" and "permafrost" and the word "tropical" is near the top of the list. This has the potential to dilute UK based peatland research and encourage the extrapolation of findings, limiting their application to UK peatlands. With the UK being home to 15% of the world's blanket bog resource and 175 Ramsar sites, the UK's peatlands are globally relevant: this push for external application has the potential to hinder the application of science to practice. UK peatland research *can* be nationally restricted in its focus but still have wide reaching impact.

Monitoring regimes

As mentioned in previous chapters, monitoring is typically project led (rather than nationally deployed and coordinated) and is often short-term. There has been a concerted attempt to identify a set of common attributes that should be measured[33] and how data sets can be synthesised and compared across sites. There are very few long-term monitoring plots on peatlands

[33] Peatland core domain sets : building consensus on what should be measured in research and monitoring (researchgate.net)

Peat publication wordcloud

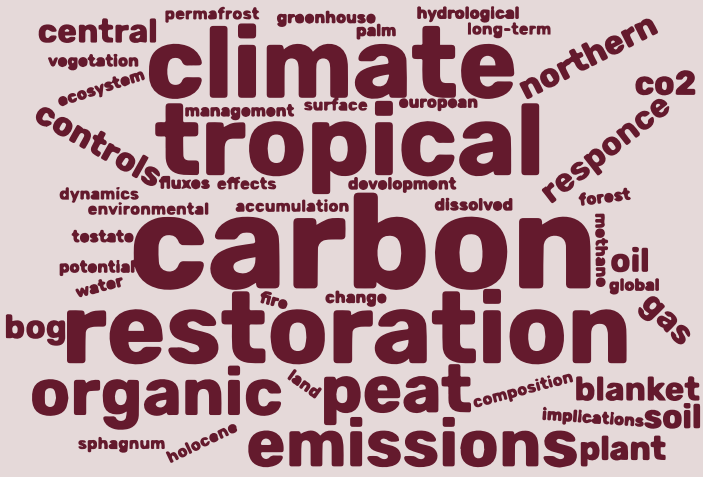


Figure 13: Most frequently used words in the titles of peatland-themed publications in the UK since 2018. *Source: Web of Science.*

Partnership map

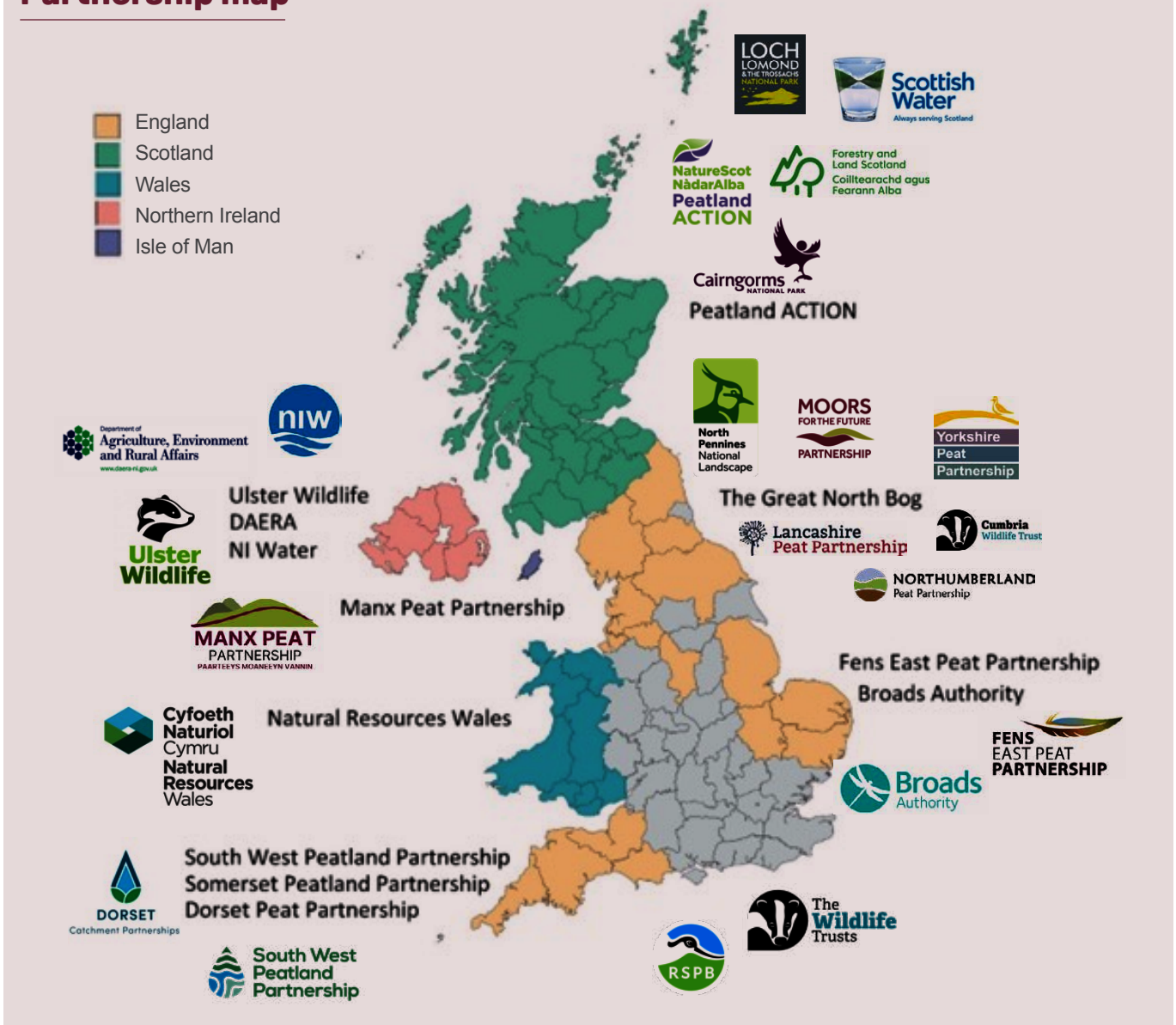


Figure 14: Distribution of the main UK delivery partnerships and the counties they cover. Other delivery partners include NGOs such as RSPB and The Wildlife Trusts who cover a variety of small sites nationally. In addition there are a variety of projects and local, site-scale groups who are not represented here. *Map created with MapChart.*

across the UK (e.g. Munsary, Moor House). The IUCN UK PP Eyes on the Bog methodology[34] was developed to allow for simple, affordable monitoring methods which are also repeatable and scientifically robust. Eyes on the Bog has been rolled out on over 200 plots across the UK in the hope that these plots can be sustained in the long-term with minimal resource and will generate a wealth of data.

Maintaining existing landscape scale delivery partnerships

Peatland partnerships now exist across almost all of the Great Britain's major peatland areas: Northern Ireland still lacks a formal peat partnership but restoration is delivered through a variety of collaborative projects. This co-ordination across the UK is something to be celebrated and is delivering enhanced coordination of peatland conservation and management and improves efficiency. Maintenance of core funding for these partnerships is still a challenge although some recent revenue available through public funding and private finance is now starting to reflect the value of the people needed to deliver these projects. Now that we have collectively built the UK network of partnerships and delivery bodies there needs to be a concerted effort to tackle the challenges of increasing capacity and skills across all of the peatland sector.

Co-ordinated communications work to boost public support and political will

The environmental NGOs have typically led on this work and have built up a library of resources over the last few decades that promote the value of peatlands to a broad audience. To ensure continued public and political support for peatlands in the future, a collective voice is needed with increased coordination of communications and messaging. The IUCN UK Peatland Programme can continue play a role in helping to support this coordination.

Guided peatland walk © Exmoor National Park

[34] Eyes on the Bog | IUCN UK Peatland Programme (iucn-uk-peatlandprogramme.org)

Coordination: UK Peatland Strategy Milestones progress summary

Milestones	Progress
2020: Funding plan in place to resource the UK Peatland Strategy, comprised of public environmental funding, public benefit payments and private funding.	 Delivery is somewhat on track with increasing levels of public funding and private finance available for peatlands. However, as highlighted in the restoration section, the level of capital available is still a limiting factor for scaling up delivery. Whilst England, Scotland and Wales have all funded peatland restoration projects with millions of pounds since 2018, the commitments are usually short-term (e.g. £50 million pledged by 2025 in England), causing uncertainty regarding future funding. The number of Peatland Code projects has grown by 256 since 2018, supporting the private funding of peatland restoration projects.

Note: The UK Peatland Strategy milestones for the 'Co-ordinate' goal focussed on the benefits of co-ordinated funding programmes to increase delivery and efficiency in the sector. The co-ordination objectives of the community are, however, much broader than that and we recognise that this particular milestone does not represent the greatest need for this goal.

Over the next 5 years...

The IUCN UK Peatland Programme will seek to attain long-term funding support. This is to ensure that a co-ordinated, government supported programme continues to stimulate appropriate funding, share experiences and encourage good land management practices to support all of the UK Peatland Strategy goals.

The IUCN UK Peatland Programme will produce an interim UK Peatland Standard. The UK Peatland Standard is intended to act as a reference and guiding principles for sustainable peatland management across the UK, including standards and requirements, regulations and monitoring, and reporting. This structure is similar to the UK Forestry Standard and its aims for supporting sustainable forestry and woodland management. It would not aim to become an accreditation standard which assessed and validated restoration or other peatland projects.

A standard is needed to:

- Provide overarching principles, consistent guidance and an evidence base for what 'good' looks like in terms of peatland conservation and management. With an expanding sector and new entrants requiring training, a UK peatland standard will help to support this increase in capacity and skills.
- Bridge the gap in providing a set of guiding principles to be used voluntarily whilst the four devolved nations publish country-specific approaches to good practice management techniques and principles.
- Support private finance e.g. through the Peatland Code. Where existing market standards are not able to prescribe specific interventions, the UK Peatland Standard would provide a common reference point to sign-post to.

To meet the strategic 2030 milestone, a UK-wide review of public and private funding measures should be undertaken to allow for any shortfalls in funding amount of mechanisms to be urgently addressed. We recommend that this should be undertaken in a co-ordinated manner to ensure cross-border funding options are fully explored as well as devolved funding mechanisms at the country level.

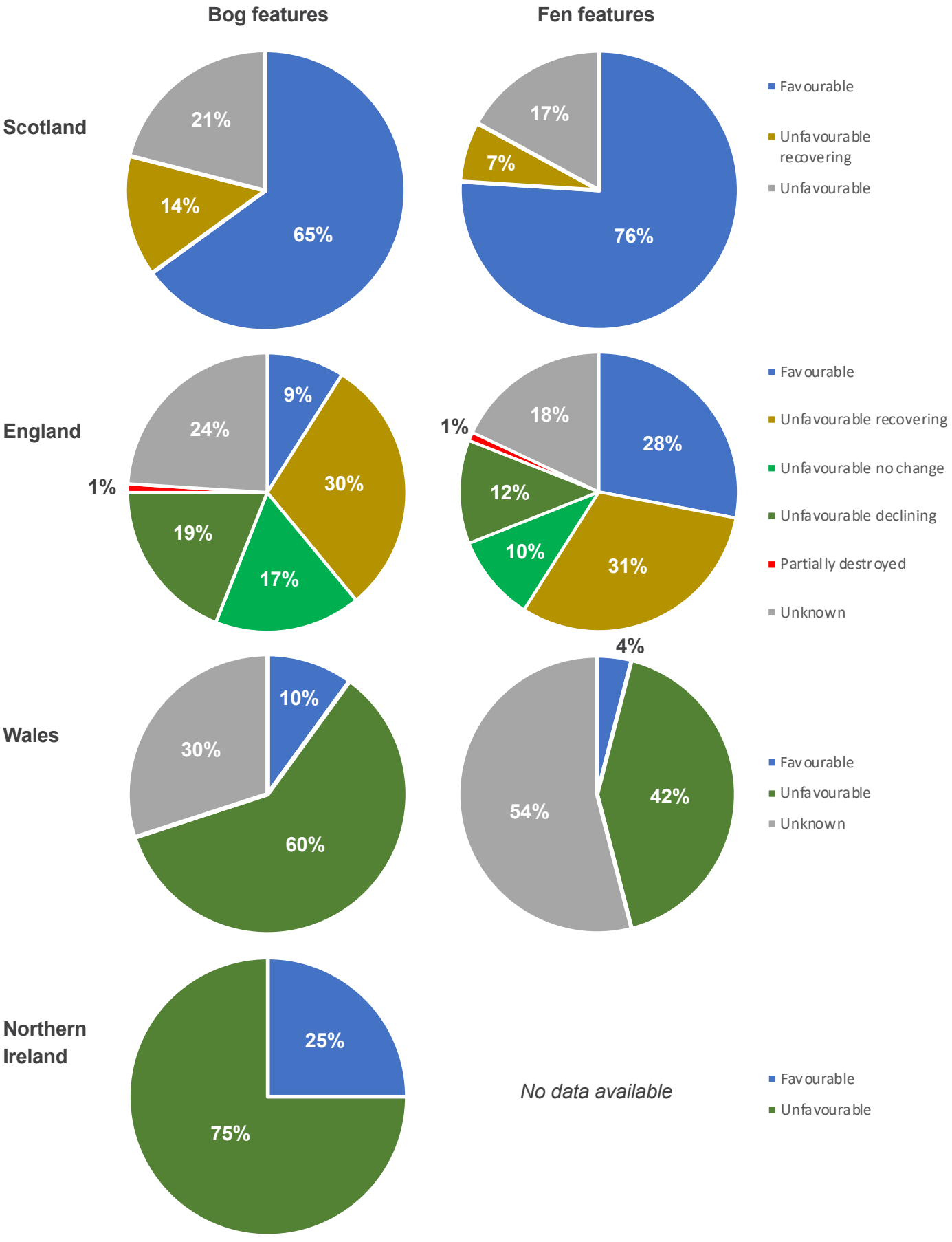
Revisit the research funding support for UK peatland science to ensure that public funding is delivering research which is able to directly support UK peatland delivery.

Continue to boost the profile of peatlands through high-quality communications across all sectors and including the public. Coordinated messaging will be key to giving policymakers and politicians the confidence to boost support for peatlands.

Bog Rosemary © Peter Roworth

Appendix

Latest condition assessments by broad peatland type (bog or fen) and by country.



IUCN National Committee United Kingdom

Peatland Programme

The International Union for the Conservation of Nature (IUCN) UK Peatland Programme exists to promote peatland restoration in the UK and advocates the multiple benefits of peatlands through partnerships, strong science, sound policy and effective practice.

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iucn-uk-peatlandprogramme.org