

Peatlands: A Campaign for National Parks' Policy Position Statement

November 2021

Summary

We are calling for:

- Much greater priority to be given to the restoration and rewetting of peatlands of all types in National Parks with the aim of bringing all this peatland into good condition or restoration management by 2030 at the latest.
- A stronger commitment to protecting existing areas of intact functioning peatland and protecting those areas which are already damaged from further degradation.
- An immediate end to burning as a land management technique on peat soils. This practice is extremely harmful to the climate and biodiversity; has negative landscape impacts when it results in large areas of heather monoculture; reduces water quality; and increases flood risk. Furthermore, there is no evidence that such practices are needed for peatland restoration or the maintenance of healthy peatlands.
- The adoption of a spatial approach to planning for nature's recovery which clearly sets out appropriate locations in National Parks for new woodland and/or peatland restoration taking account of both nature and climate impacts and other relevant criteria such as archaeology and cultural heritage.
- An immediate and complete ban on peat use in horticulture.
- National Park Authorities to do more to promote, and explain, the role of peatlands to visitors to National Parks, ensuring people understand that peatland restoration and the protection of existing peatland are as important as tree-planting in terms of carbon storage and biodiversity enhancement.

Background

1. Peatlands are areas of land with a naturally accumulated layer of peat formed, as a result of waterlogging, from a mix of partly decomposed plant materials over thousands of years. There are three main types of peatland in the UK:
 - blanket bogs - extensive areas where peat has accumulated to varying depths and 'blankets' the ground, these are usually found in the uplands, often in areas which have been used for livestock grazing for thousands of years and which in some cases are now used for grouse shooting;

- raised bogs – discrete isolated areas of deep peat, often several metres higher than the surrounding landscape, found mainly in lowland areas which are now largely used for agriculture; and
- fens – areas of low, flat marshland or former marshland, found primarily in northwest Wales and the east of England.

Other important peatland habitats in the UK include the valley mires in the New Forest which contains 75% of the valley mires in North Western Europe.

2. Blanket bogs and raised bogs are both entirely fed by rainwater and other forms of direct precipitation (e.g. mist, fog, dew) while fen peatlands are river and groundwater-fed. The majority (85%) of all surviving UK peatland habitats are blanket bogs but there are also substantial areas of lowland raised bogs and fen peat¹. Overall, the UK has between 9-15% of Europe's peatland area (46,000-77,000km²) and about 13% of the world's blanket bog – one of the world's rarer habitats².
3. Peatlands make up about 15% of the National Parks in England but the extent of deep peaty soils varies significantly from less than 1% in the New Forest and the South Downs to over 35% in the Broads³. The three Welsh National Parks contain over 50,000 hectares of peat covering approximately 13% of their surface area and containing around 30% of the soil carbon resource of Wales⁴. Approximately 30% of Wales' peat bog is found within the boundaries of Snowdonia National Park⁵.
4. All types of peatlands support important wildlife habitats and are vital carbon and water stores, as well as providing many other benefits but such areas could be making a far bigger contribution to tackling the climate and ecological emergencies. Around 80% of the UK's peatland habitats are currently considered to be in a degraded condition⁶ as a result of drainage and other damaging activities undertaken as part of both historic and current management practices. The UK Government's Committee on Climate Change (CCC) has set out ambitious targets for peatland restoration as part of their Net Zero report⁷, suggesting the area of restored UK peatland could increase from the current 25% to around 55-70% by 2050.
5. In the 25 Year Environment Plan for England⁸, published in January 2018, the Westminster Government committed to: publishing an England Peat Strategy by late 2018. The England Peat Action Plan⁹ was finally published in May 2021 and includes a commitment to support National Park and AONB bodies "to deliver significant amounts of peatland restoration over the next 10 years" as part of plans to restore at least 35,000 hectares of peatland by 2025. There are also commitments to set a target for peatland restoration as part of the Net Zero Strategy due to be published later in 2021; to phasing out the use of peat in horticulture and the use of managed burning on peat; and to producing an up-to-date and detailed England peat map by 2024.
6. In November 2020, Natural Resources Wales published a National Peatlands Action Programme 2020-2025¹⁰ which aims to deliver 600-800 hectares per year of restored peatlands. The Welsh Government has produced a free to use map with information on depth and extent of peatland bodies in Wales¹¹. It has also committed to producing a baseline condition survey for priority peatland bodies which was due to be delivered by April 2021.

7. This paper begins with an overview of the benefits of peatlands and the reasons that so many of them are in poor condition before setting out what the Campaign for National Parks believes needs to change in order to ensure that all peatlands in National Parks are restored and effectively protected in the future.

Benefits of peatlands

8. **Nationally and internationally important biodiversity:** Because of the extreme conditions in many peat bog habitats they generally contain fewer species than many other habitats but those plants and animals which do occur are of high conservation importance because of their rarity or threatened status. Species found include rare *Sphagnum* mosses, a range of bog specialist vascular plants, invertebrates such as the bog hoverfly and breeding bird species including the golden plover, dunlin and curlew. Fen peatlands can support some of the most biodiverse assemblages in the UK.
9. **Carbon storage:** Peatlands constitute the most spatially efficient way of storing carbon of all terrestrial ecosystems. Temperate peatlands contain on average seven times more carbon per hectare than any other ecosystem of that climatic zone¹². Undamaged bogs remove carbon dioxide from the atmosphere (sequestration) through photosynthesis in mosses and other peatland plants. Over time, carbon is stored in the peat which is composed of the dead, semi-decomposed plant remains. It is estimated that if Welsh peatlands were returned to near-natural condition, their climate change mitigation potential is 300,000 tonnes of carbon dioxide per year¹³. In total, 153 million tonnes of carbon are locked up in both deep and shallow peaty soils across England's National Parks, equating to more than 40% of the UK's annual CO₂ emissions¹⁴.
10. **Clean drinking water:** Healthy peatlands provide higher quality water that is much cheaper to treat for drinking due to reduced sediment load and better water colour. 70% of all drinking water in the UK is derived from surface water that comes mainly from upland catchments, which are generally dominated by peat.
11. **Flood-risk alleviation:** Some *Sphagnum* species hold up to 20 times their dry weight in water and thus play a significant role in moderating water flow and helping to reduce downstream impacts of heavy rain. This is mainly because significant 'surface roughness' is created by both the semi-porous *Sphagnum* layer and by the natural surface micro-relief resulting from differential *Sphagnum* growth¹⁵. Where peatland has been damaged, drainage ditches, erosion gullies, burnt vegetation and bare peat allow water to travel far more quickly from peatlands to downstream areas, potentially exacerbating flood events.
12. **Cultural heritage:** Healthy, properly functioning peatlands have preserved some of the oldest archaeological remains such as roads, tracks, houses and settlements, monuments, artefacts and bog bodies. This includes significant discoveries such as a prehistoric burial at Whitehorse Hill on Dartmoor¹⁶ and the 'Sweet Track' in the Somerset Levels¹⁷. Peatlands also record environmental change, as the peat layers of different depth can be dated, and their plant remains analysed to provide insight into past climate and ecological conditions.
13. **Recreational opportunities:** As healthy, high-quality peatland landscapes tend to be visually appealing and sustain a wide variety of biodiversity, they can be attractive places for recreational users. However, recreational use can also be damaging for these areas.

Damage to peatlands

14. The principle causes of damage to peatlands are atmospheric pollution (largely historic), drainage, burning, overgrazing, tree planting, vehicle use, track building and peat extraction. Lowering the water table causes peatland to dry out, oxidise and waste away as it encourages the growth of plant species, such as heather, that do not easily form peat or that actively degrade the existing peat through aerobic oxidation. This results in losses of soil carbon and emissions of carbon dioxide to the atmosphere. Gripping (or ditching) to lower the water levels was often implemented with agriculture subsidies in the late twentieth century and while such activities are no longer funded, the old drains continue to have an effect and even in relatively recent times some moorland owners have been de-wetting sites to create the drier conditions which heather requires.
15. As many peatland species are highly adapted to acidic, waterlogged and nutrient-poor conditions, they are very sensitive to changes in land management activity as well as climate change and pollution. In addition, *Sphagnum* species have their growing points at the tips and are therefore easily damaged or destroyed by grazing, burning, trampling and drainage. This means the effects of drainage can be exacerbated by fire, overgrazing, climate change, pollution and recreational activities.
16. Human-induced fires are a significant cause of damage to peatlands. Although fires can occur naturally on bogs as a result of lightning strikes these tend to burn only the surface vegetation and the peat underneath is only likely to catch fire if it is unusually dry following previous disturbance. In addition, natural fires are very rare in the UK and occur only once every two to three centuries on any specific area of peat bog, allowing time for the bog surface and vegetation to fully recover in between.
17. In contrast, human-induced fires, either as wildfires or managed burns, occur typically every 10-30 years which leads to a reduction in the *Sphagnum* cover over time. A recent review of the evidence on wildfires by Natural England¹⁸ found “strong evidence that managed fires escaping control cause a proportion of wildfires, particularly in the uplands”. The review reports data from a study in the Peak District National Park which found that only 24% of fires for which a cause could be identified from 1976 to 2004 were specifically attributed to escaped managed burns, but that these tended to be larger, accounting for 51% of the area affected by wildfires.
18. Typically, wildfires take hold on drier peatland areas with non-typical peatland vegetation, which provides a greater fuel load for the fire. Wet bogs in good condition have less vegetation to fuel a fire, and their wet state hinders the impact and spread of fire (i.e. wet peat does not burn). Recovery back to bog species after a fire depends on the frequency and intensity of the burn along with other factors such as the condition of the remaining bog vegetation, water levels, livestock numbers and altitude. If burning has left a bare peat surface it can take up to 50 years for *Sphagnum* plants to return.
19. Rotational burns are used in a number of National Parks as part of grazing management for sheep or sporting management for grouse. Some NPAs support the use of burning on the basis that it is a traditional land management technique which helps maintain grazing for livestock and access for recreational use by reducing the rate of growth of invasive vegetation such as gorse and bramble¹⁹. Defra and a number of other organisations have

funded work to investigate the potential for alternatives to burning, such as rotational mowing²⁰.

20. Burning is sometimes used as part of moorland restoration schemes and in the belief that it helps reduce the risk of wildfires on degraded peatlands with abundant heather. However, burning can also help to maintain the degraded state. The Natural England review of the evidence on wildfires recommended that there should be further investigation of “the relationship between routine managed burning and prescribed burning... and wildfire occurrence, extent and ideally severity and impact”.
21. Poorly managed burning damages peat-forming vegetation and encourages “fire-tolerant” species, such as heather, at the expense of other peatland species. The rapid heather growth provides a short-term carbon gain, but the long-term carbon trend is negative. Without the right plant species and appropriate levels of water, peat-forming is not possible, and the bog becomes “non-active” and will almost certainly be emitting carbon.
22. Currently heather and grass burning is subject to legal requirements restricting when and how it can take place and, in both England and Wales, a licence is required in certain circumstances²¹. In response to the Werrity independent review of grouse moor management, the Scottish Government announced²² a statutory ban on burning on peatland except under licence for strictly limited purposes such as habitat restoration. They are also proposing to review the current definition of peatland to consider whether a stricter definition should be imposed.
23. Following pressure from RSPB and other environmental NGOs, the Westminster Government committed in 2019 to introducing a national ban on burning on peatland²³. This was followed by the threat of legal challenge from the owners of large grouse moors²⁴ and repeated calls from environmental NGOs for a statutory ban to be introduced²⁵. New restrictions on burning on blanket bog were introduced in England in February 2021 but these have been criticised for being too weak as they only apply to designated sites and allow for too many exemptions²⁶. Some major landowners have already adopted policies opposing the use of burning on their land. For example, in late 2019, Yorkshire Water committed to including a presumption against burning as a land management technique in all future leases for the 13 areas of moorland the company owns²⁷.
24. There is now a growing body of evidence about the disbenefits of burning. In particular, the IUCN (International Union for the Conservation of Nature) UK Peatland Programme has undertaken a detailed review of the evidence which concludes that wet peatlands are less prone to wildfires and that healthy peatlands do not need burning for their maintenance. The IUCN states that burning should not occur on peatlands and that “the most effective long-term sustainable solution for addressing wildfire risk on peatlands is to return the sites to fully functioning bog habitat by removing those factors that can cause degradation, such as drainage, unsustainable livestock management and burning regimes. Re-wetting and restoring will naturally remove the higher fuel load from degraded peatland vegetation.”²⁸
25. Natural England has published an updated version of its position statement on “Burning as a tool for the restoration of upland blanket bog”²⁹. This refers to “the large and increasing

body of evidence that burning on blanket bog is damaging to peatland across a range of environmental outcomes and ecosystem services” and states that “burning on blanket bog is generally considered to be harmful”. Natural England will still allow one-off burns for restoration purposes in exceptional circumstances but in a blog in November 2020³⁰ they set out the measures they are taking to end routine burning, including amending agri-environment agreements to remove support for burning.

26. Damage is also caused to peatlands by:

- **Afforestation:** Although there has been a sharp reduction in the amount of new planting on deep peat since 1990, about 10% of UK blanket bog has already been planted with commercial forestry. This requires drainage, cultivation and fertilisation leading to peat shrinkage, cracking and oxidation which significantly increases greenhouse gas emissions. There is a risk that the current emphasis on tree-planting targets could lead to increased pressure for planting on peatlands. The Woodland Carbon Code³¹ which sets out the requirements for UK based woodland creation projects aimed at sequestering carbon does not allow tree planting on soils with a peat layer of more than 50cm. However, the UK Forestry Standard which sets out the requirement for all woodland, regardless of who owns or manages it, says only that sites with peat exceeding 50cm in depth should be avoided for the establishment of new forests³² meaning there is still not a complete ban on tree-planting on deep peat.
- **Overgrazing and trampling by sheep and deer:** Such activities change both the composition of vegetation and its structure and allow more rapid surface water flow. Light grazing may be beneficial for peatland biodiversity helping reduce competing vegetation.
- **Windfarm construction:** Associated works such as access tracks and the construction of turbine foundations damage peatland hydrology causing the vegetation to change and potentially initiating erosion with ecological and carbon loss effects often beyond the footprint of the construction area.
- **Commercial peat extraction:** This occurs mainly on raised peat bogs to provide peat for horticultural use. The mechanised peat removal has a major ecological impact, stripping away the living layer and subsequently exposing large quantities of peat to oxidation and loss of carbon. The drastically lowered water tables can also have an impact on neighbouring areas of bog. Most peat use in the UK can be readily replaced by more sustainable non-peat alternatives. The Westminster Government had originally committed to halting the use of peat in horticulture by 2020 through a voluntary approach but has now recognised that this does not work and has instead committed to consulting on banning the sale of peat.
- **Pollution:** Nitrogen deposition, resulting from fertilisers, transport emissions and factory farming can also cause species changes by, for example, permitting growth within bog communities of species not normally associated with the bog habitat or by encouraging dominance of a few vigorous species such as *Typha* at the expense of the richer biodiversity of natural fen communities. Historical industrial pollution was a factor in bog degradation in large areas of the English uplands.
- **Climate change:** This is predicted to make damaged peatlands more vulnerable to degradation through drying. The risk of accidental wildfire is particularly high on drier

peatlands and one of the most severe threats to peatland carbon stores, water quality and wildlife. Drier summers however are compensated for by wetter winters, so the overall annual water availability may not change significantly. The range of *Sphagnum* species copes with a variety of conditions of wetness, so bogs in healthy condition are likely to be more resilient to climate change in the coming decades.

- Tracks and the vehicles which use them: such damage is often particularly prevalent in areas which are managed for grouse shooting, such as the eastern fells of Cumbria and the Northern Pennines.

Restoring peatlands

27. In partially damaged peatlands, short-term measures such as changing livestock numbers and stopping burning as well as ditch blocking can be successful in recovering peat-forming mosses within a few years. On more degraded peatland, especially those with very low water tables and bare peat, peatland restoration is slower. Stabilisation of the peat surface can be achieved in around 5 years, however, full hydrological restoration may take 20-50 years³³, or potentially even longer – the timescales for full ecosystem restoration may be similar to those for woodland restoration.
28. A range of vegetation management practices have been deployed to restore peatlands including restriction of grazing (particularly in association with re-vegetation of bare areas) and removal of scrub and trees. In extremely damaged sites, seeding bare peat with a nurse crop of grasses, sometimes with lime, fertiliser and heather brash, allows for rapid re-vegetation and stabilisation of bare peat, although a more direct approach has been the use of micro-propagated plugs of locally sourced *Sphagnum*, which can achieve 100% cover of plots within 4-5 years. Once the peat is stabilised, further *Sphagnum* re-introduction can be used, if necessary, to help restore hydrological function and to re-start carbon sequestration (peat accumulation), though full hydrological recovery may take many years.
29. Given the damage caused to peatland by drainage and over-grazing, consideration is now being given to alternative forms of agriculture which are more appropriate for use on wet peatlands. Paludiculture, as it is known, includes both traditional peatland cultivation, such as reed mowing, and new approaches, such as the cultivation of crops for use in biomass or as an alternative to horticultural peat³⁴. The aim is to allow peatlands to be used productively whilst still delivering the benefits of climate change mitigation and habitat restoration. This idea is still under development but trials are already underway to identify what crops would be most appropriate for paludiculture in the UK³⁵.
30. Some of the National Park Authorities (NPAs), including the Brecon Beacons, Snowdonia, the Broads, the Peak District, Yorkshire Dales, Dartmoor and Exmoor³⁶, already have well-established and very successful landscape-scale peatland restoration programmes. The vast majority of peatland in National Parks in both England and Wales is privately owned so NPAs and others leading restoration projects are heavily reliant on partnership working and community engagement activities both before and after delivery of practical restoration work and restoration can only happen with the agreement of the landowner. The fact that NPAs produce Management Plans in partnership with other local stakeholders means that there is already a well-established mechanism in place for developing the appropriate partnerships in these areas. Such work can be resource intensive so there is a need

for sustained funding for peatland restoration projects, particularly given the long timescales of many peatland recovery processes.

31. Both the Westminster and Welsh Governments have already committed funding to peatland restoration schemes. In 2017, Defra launched a £10 million peatland grant scheme, and the Welsh Government has committed £1 million per year for peatland restoration as part of its National Peatlands Action Programme. In the England Peat Action Plan, the Westminster Government committed to investing over £50 million in peatland restoration by 2025. However, the Office for National Statistics estimates that fully restoring the UK's degraded peatlands could cost between £8 billion and £22 billion over the next 100 years, although this would save £109 billion in terms of reduced carbon emissions³⁷.
32. There is further information on the importance of peatland restoration and examples of the kinds of projects already underway in the report on [National Parks and the Climate Emergency](#) which we published in June 2021. Some of the key recommendations in that report are also very relevant to securing increased levels of peatland restoration in future, including the need for consistent and multi-year funding for NPAs and that NPAs should be seeking opportunities to work outside their boundaries on major nature recovery projects.

Campaign for National Parks' Position

33. Much greater priority should be given to the restoration and rewetting of peatlands of all types in National Parks with the aim of bringing all this peatland into good condition or restoration management by 2030 at the latest. This should be accompanied by frequent monitoring to assess progress against a baseline condition in order to demonstrate evidence of ongoing recovery. There should also be a stronger commitment to protecting existing areas of intact functioning peatland and protecting those areas which are already damaged from further degradation.
34. The following actions are needed to ensure greater priority is given to peatland restoration:
 - Greater certainty of long-term funding for NPAs and others leading projects to allow them to plan and deliver long-term restoration programmes. To develop and maintain constructive working relationships with local partners on an ongoing basis, funding is needed to support communication, public engagement, post restoration monitoring and maintenance as well as delivery. NPAs need to be able to work with landowners and land managers on a long-term basis to ensure they understand the benefits of peatlands and the reasons for managing them in a different way.
 - Future agricultural/land management support schemes which support positive, environmentally sustainable peatland restoration and management. Such schemes need to be designed to provide “public money for public goods” and to prevent overgrazing and other damaging agricultural practices on peatlands.
 - Sufficient resources for the relevant agencies (Natural England and Natural Resources Wales) to enable them to establish the current condition of peatland habitats; secure appropriate management of them; and undertake regular monitoring.
 - Greater availability of the specialist machinery and contractors required for peatland restoration work. Long term funding would help with this by allowing local businesses to plan ahead as would the provision of training to ensure sufficient availability of the appropriate skills. Such measures would also help support rural employment.

- More support for the development of light-touch solutions for sensitive locations in designated landscapes where engineered solutions may not be appropriate and may do more harm than good.
 - A requirement to undertake landscape and visual impact assessments as part of the development of any restoration schemes in National Parks, and to take full account of access and any other special considerations that might apply, for example, where the scheme is on common land
35. There should be an immediate end to burning as a land management technique on peat soils. This practice is extremely harmful to the climate and biodiversity; has negative landscape impacts when it results in large areas of heather monoculture; reduces water quality; and increases flood risk. Furthermore, there is no evidence that such practices are needed for peatland restoration or the maintenance of healthy peatlands.
36. A spatial approach should be adopted to planning for nature's recovery which clearly sets out appropriate locations in National Parks for tree-planting and/or peatland restoration taking into account both nature and climate impacts and other relevant criteria such as archaeology and cultural heritage. This would help ensure that the most appropriate type of habitat is being supported in any particular location. This spatial approach should be informed by accurate and up-to-date evidence and mapping of existing habitats including detailed site assessments and information on original habitats where inappropriate planting has taken place in the past to ensure that these can be appropriately restored in future. These details should be used to inform the development of National Park Management Plans, Local Nature Recovery Strategies and other related activities.
37. A review should be undertaken to establish whether the existing peat depth (>50cm) at which tree-planting is ruled out by the UK Forestry Standard is still appropriate and whether there is a need for a complete ban on tree-planting on peat of a certain depth. In the meantime, a precautionary approach should be adopted to avoid the risk of further damage to priority habitats and the risk of releasing more carbon, than is sequestered through tree-planting. In support of this, there should be a requirement for the relevant agencies to share data and work together more effectively, for example, to ensure that the Forestry Commission avoids tree-planting on inappropriate sites. Commercial tree planting on peat soils is not appropriate for both climate and nature beneficial outcomes.
38. A complete ban on peat use in horticulture should be introduced immediately. The horticultural industry should also be doing far more to adopt, and promote, the peat-free alternatives that already exist.
39. NPAs should do more to promote, and explain, the role of peatlands to visitors to National Parks, ensuring people understand that peatland restoration and the protection of existing peatland are as important as tree-planting in terms of carbon storage and biodiversity enhancement³⁸. Peatland habitats contribute to the special qualities of many National Parks attracting people to visit these areas with subsequent benefits to the rural visitor economy. However, the value of peatlands is far less appreciated in comparison to trees and woodland, probably because the peat resource is hidden below ground and it is harder to appreciate what we cannot see. People need to understand the benefits of peatlands and to appreciate how easily these areas can be damaged if they are to support measures aimed at protecting and restoring them, particularly where there is a need to exclude recreational

users from areas that have been damaged by intensive use. Some National Park societies are working with NPAs and other conservation bodies to build practical volunteering opportunities into peatland restoration projects to provide first-hand understanding of the purpose, challenges and benefits of this work. There should be more support for initiatives of this type.

40. There is also a need for better education and awareness raising among the public about the causes of wildfire and particularly the risks posed by litter and the inappropriate disposal of items such as disposable BBQs. This should include a major investment by Natural England and Natural Resources Wales in promoting the Countryside Code in National Parks. The Countryside Code, which was updated in 2021 and is supported by partners across conservation and land management sectors, now includes a new element: *“Do not light fires and only have BBQs where signs say you can”*. Whilst this is a welcome addition, there is no evidence that the Code is effectively changing behaviours and more investment is needed to ensure it is widely promoted and followed.
41. Consideration should also be given to restricting the sale and/or use of certain items which pose a particular fire risk. There should be a complete ban on the sale of disposable BBQs in National Parks.