

LAYMANS REPORT 2015-2022

MOORS
FOR THE FUTURE

PARTNERSHIP

MoorLIFE 2020

Layman's Report



MoorLIFE 2020

In October 2015 **Moors for the Future Partnership** began work on MoorLIFE 2020, an ambitious project that has seen €16 million invested in bringing life back to the South Pennine Moors Special Area of Conservation.

The project has been financed primarily by the EU LIFE programme, with co-financing from Severn Trent, Yorkshire Water and United Utilities. MoorLIFE 2020 was designed as an enhanced continuation of the pioneering moorland restoration work already being undertaken by Moors for the Future Partnership, using scientific evidence to promote best practice.



Celebrating EU LIFE funding



What is Moors for Future Partnership?

Moors for the Future Partnership was established in 2003 to protect damaged blanket bog habitats across the Peak District and South Pennines. It provides evidence-based conservation, backed up by innovative public engagement.

The Partnership has raised over £45 million of public and private funding to deliver restoration over 34 square kilometres of bare and eroding peat and created 3 square kilometres of native clough woodlands. It has provided crucial evidence on the recovery of damaged blanket bog and has informed almost 40,000 people about the importance of peatlands which are globally rarer than rainforest and provide essential benefits including natural flood management, drinking water, to health and well-being, and have a crucial role in tackling climate change.

What is blanket bog and why does it matter?

Upland blanket bog can be defined as areas of peat that have formed across the landscapes in upland areas where the climate is cool and wet. Peat and peatlands are among the most important habitat England has to offer, storing an estimated 580 million tonnes of carbon and providing a wild home for some of our most cherished species. When in a healthy state, the peat moorlands of the Peak District and South Pennines can offer vital benefits to the environment and local communities:

- Around 40 million tonnes of carbon are locked up in 750km² of peatland in the Peak District and South and West Pennines. Healthy, wet bogs **keep this carbon stored in the ground** and prevent it from being released into the atmosphere as harmful CO₂. They will also continue to create more peat, meaning even more carbon will be absorbed and captured, helping in the fight against climate change.
- An active, vegetated blanket bog will **lower the flood risk** for communities nearby by slowing water run-off from the uplands. Sphagnum moss, the most important peat-building vegetation found in healthy blanket bog, is highly proficient at absorbing rain water. It can hold between 10 and 20 times its own weight in water. The moss keeps water on the moors, preventing peat erosion in the process.
- Sphagnum moss will also act as a **water filter**, reducing the amount of eroded peat contained in water flowing down to reservoirs that are used for drinking water.
- Healthy blanket bog landscapes provide **habitat for a rich biodiversity** of species. A wide variety of bog mosses and plants encourage invertebrates which, in turn, attract birds, reptiles and mammals taking refuge in this unique environment. In the Peak District and South Pennines, these include curlew, golden plover, birds of prey such as the short-eared owl and merlin, and the mountain hare.
- Wet blanket bogs can act as a deterrent to damaging moorland wildfires, preventing fire spreading and protecting the peat from burning beneath the surface.

“Massive shout out to Moors for the Future. It’s 8 years since I explored the Kinder Plateau and it’s totally transformed. It’s a biodiverse wilderness of mosses, lichens, lizards, frogs, wildflowers, bilberry, rodents, golden plover, birds of prey...”

Rosie on Twitter

Why did we need MoorLIFE 2020?

The Peak District and South Pennines have been described as the most degraded upland habitat in Europe. Due to a range of human-induced factors, pollution and erosion have stripped vast areas of moorland vegetation, leaving peat bare and unprotected, preventing the vital benefits a healthy, active blanket bog can provide. Instead, bare peat results in carbon dioxide being released into the atmosphere, contributing to worsening climate change. In the UK, 10 million tonnes of carbon dioxide are released into the atmosphere every year through damaged peatlands.

Bare peat moorland leaves the peat exposed to further erosion, increases water run-off and increased peat deposits in water supplies, and leaves the landscape vulnerable to wildfires in hot weather. Bare peat is highly acidic, leaving it unfavourable to moorland plants, which in turn discourages biodiversity and removes important habitat for migrating species.

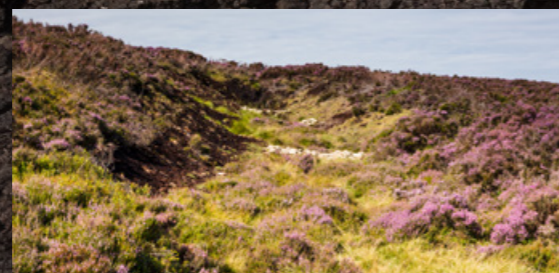
Moors for the Future Partnership has been working to restore this degraded peatland and transform it to healthy active blanket bog since its inception, and the MoorLIFE 2020 project was essential to increase the scale of this work, to maximise funding from our water company partners and – crucially – to increase the moorland’s resilience to wildfire.



Bare peat



Peak Naze before



Peak Naze after

MoorLIFE 2020

Objectives

- To stop the erosion of the peat body by revegetating 837 hectares of bare peat.
- To re-wet blanket bog and reduce peat erosion by blocking grips and gullies to decrease water run-off.
- To reduce wildfire risk and encouraging habitat for wildlife by planting diverse vegetation and removing invasive plant species.
- To create a provide guidance for land managers overseeing peat moorland areas.
- To map and monitor works sites, vegetation cover and wildfire incidents to evaluate the conservation methods we use and maintain best practice.
- To initiate a pioneering programme of communications and community engagement to raise awareness of the importance of our peatlands.



“What an amazing achievement! This work has made an incredible difference to the wildlife and communities of the South Pennines and Peak District, with further benefits for climate and flood reduction too.”

South Pennines Park

Our partnership approach



Our partnership approach means we can work across immense landscapes, taking in the whole South Pennines Special Area of Conservation. Wildlife habitats and water catchments function independently of human-made boundaries. By working with a wide network of partners on MoorLIFE 2020, utilising economies of scale and shared resources, we have been able to work towards our ambitious objectives for the landscape as a whole, across ownership, administrative and legislative borders.

Achievements

Vegetation management

Where peat is degraded and bare, intervention is necessary to initiate and encourage the revegetation of plant species needed to restore the peat to a healthy, wet blanket bog state. As part of MoorLIFE 2020, we:

- **Planted 2,500 hectares of invaluable sphagnum moss – almost 3 million individual plugs – all by hand.**
- **Re-vegetated 54.5 hectares of bare peat.**
- **Managed other moorland plant species, cutting 76 hectares of Molinia (purple moor grass) and 244 hectares of heather. All these cut areas were diversified with sphagnum. We also diversified 811 hectares of cottongrass by planting sphagnum.**
- **Removed 3,550 hectares of invasive species including Rhododendron and Sitka spruce to encourage native blanket bog plants and mosses and the wildlife they attract.**
- **Trialed the use of a remote-controlled mower as a potential alternative to other land management practices.**

Healthy blanket bog provides a range of benefits

Miracle Moss

The most essential of the blanket bog plants are sphagnum mosses – the fundamental peat-building plants. Without these mosses, blanket bog cannot sustain itself so it is essential that sphagnum mosses are reintroduced to peatland. Sphagnum moss has an incredible ability to hold up to 20 times its weight in water. The conditions that sphagnum creates protect the carbon-rich peat below, as well as capturing more carbon at its tip and decomposing from the base to develop fresh peat and keep carbon locked up. Over time, as part of a mosaic of moorland vegetation, the sphagnum grows to help form a thick, protective carpet (blanket) that protects the boggy peat underneath.

As part of our re-planting programme, we need to find sources of suitable sphagnum species to re-introduce onto restored sites. To do this, we usually use cultivated sphagnum moss in the form of plug plants, which we plant by hand. Sometimes we are lucky, and we have enough sphagnum nearby to supply the area. In these cases we only take up to 10% of any donor site's mosses, so they can quickly regrow and replace the donated clumps.



Water Management

There is faster water run-off on upland areas when peat is bare. This causes erosion, water contamination and a higher risk of flooding in the communities below. We have:

- **Created 31,000 mini-dams to block erosion channels that have been eroded into areas of active blanket bog and adjacent to degraded blanket bog.**
- **Pioneered the use of bunds – long, low mounds that retain water in shallow pools created behind them, slowing water run-off and re-wetting those areas where water collects. The bunds created during MoorLIFE 2020 cover 4.3 hectares.**
- **Collaborated in an investigation into the character and distribution of peat pipes – underground channels carrying water – in a typically degraded Peak District blanket bog. Our research found that blocking peat pipes didn't slow down the flow of water, and might result in the creation of more pipes; findings that enabled us to modify our conservation methods and share them with other peatland conservation practitioners.**

Reducing Risk of Wildfire

As climate change sees temperatures rise and the Peak District and South Pennines see increased visitor footfall moorland wildfires have become more prevalent. Wildfires can devastate blanket bog, burning vegetation, killing wildlife and causing peat below the surface to smoulder. To reduce this threat – alongside our work to revegetate and re-wet large areas of blanket bog – we have:

- **Created the Wildfire Log, an online tool for fire services, landowners and rangers to record incidents of wildfire. The log has been designed as a centralised system to enable patterns to be drawn showing where such fires start and how they can be prevented in the future.**
- **Initiated seasonal 'Be Fire Aware' campaigns, using face-to-face engagement and social media to raise awareness of moorland wildfires and how they can be prevented.**

“The work of Moors for the Future and partners are a fantastic example of how many stakeholders can come together and deliver real landscape scale change for the better ensuring the moors are safeguarded for future generations.”

IUCN UK Peatlands



Peat bunds visible from the air

MoorLIFE 2020

Achievements

“Moors for the Future showing it can be fixed! Peatland matters. Absolutely vital and amazing work!”

Sion McGeever

Monitoring our work sites

Monitoring is integral to the MoorLIFE 2020 Project. By experimenting with new conservation techniques and monitoring the impacts of conservation work, we can provide evidence of the benefits of blanket bog restoration. Through our monitoring programme we have:

- **Monitored dipwells every week from September to December throughout the project in order to check depth of the water table. Dipwells are small wells set up in clusters across the moors.**
- **Continued our programme of vegetation monitoring, begun in 2003, to look at what happens when we revegetate bare peat areas and diversify areas dominated by a single vegetation species.**
- **Trialed the use of a fixed-wing UAV (drone) to take aerial images of our work sites and created guidance notes for the use of UAVs for us and other practitioners.**
- **Extended an already comprehensive dataset that spans a vast geographical area.**
- **Developed techniques for measuring whether our carbon emissions in the project were less than the carbon they helped to store.**
- **Assessed the socio-economic benefits to the region of moorland restoration.**
- **Established, through MoorLIFE 2020 research, that restoration of bare peat (and planting sphagnum in particular) reduces the likelihood of flooding further down the river system, raises the water table, reduces erosion, improves water quality and increases habitat diversity.**



MoorLIFE 2020 would not have been possible without our dedicated team of volunteers who hike the hills come rain or shine to help us in our restoration and monitoring work. From weekly dipwell monitoring to vegetation sampling with quadrats or peat-pipe surveying, not to mention helping with the huge task of re-planting and managing invasive species, our volunteers have helped to make our conservation work possible. Volunteers have also helped us with the MoorLIFE 2020 communications programme, staffing the Bogtastic van at sites and events and raising awareness of our 'Be Fire Aware' message, supporting our Junior Rangers and staffing events such as BogFest.



Communications and Engagement

Public engagement has been a vital component of the MoorLIFE 2020 project. Whether it's landowners, policy makers, young people or local communities, we have reached out to raise awareness of the importance of restoring and protecting blanket bog in the Peak District and South Pennines. As part of the project we have:

- **Toured the South Pennines in our Bogtastic Van, containing films, games and demonstrations, enabling those who can't access our upland sites to see the work we are doing. We have taken the van to communities and events across the region, engaging with over 13,000 people.**
- **Hosted Bogfest, an innovative festival-style conference at our base in Edale for over 300 delegates and members of the public. Bogfest brought together peatland professionals, land managers and the public and offered a programme of talks on peatland matters, music, visits to peat bogs and a fell race in the hills above Edale.**
- **Designed an up-to-date 'spotter' app, Explore Moor, helping users recognise plants and wildlife they might see while visiting the moors.**
- **Created a comprehensive Sphagnum Practitioners' Guide detailing planting techniques for land managers and conservation practitioners.**
- **Connected with local and national government, taking part in a reception to launch our plan for water in the upper catchments to 2030 at the House of Commons and playing host to MPs and Government Ministers at site visits.**
- **Focussed on youth engagement, setting up Edale Moorland Junior Rangers to take part in some of our monitoring work and speak to the nation about Moors for the Future Partnership.**
- **Put on a Bogtastic play to introduce families to the wonders of blanket bog and the importance of peatland restoration.**

“We loved the games on the iPad. We had seen the helicopters taking heather across the moors and didn't know what they were doing – we learned about it on the game today!”

“Fab displays, really great for kids aimed perfectly for a wide age range. Welcoming to everyone... thank you!”



MoorLIFE 2020 Environmental legacy

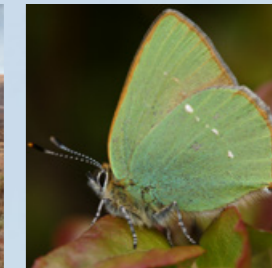
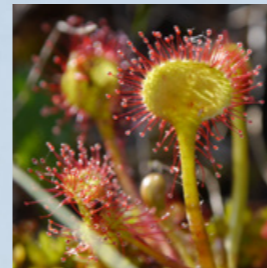
“Our thanks to all involved at the Moors for the Future for their work on the project. So far we have recorded 8 species/groups at 12 upland sites in parts of Derbyshire where no one has previously ventured with a bat detector. We look forward to continuing the work this year.”

Derbyshire Bat Group

MoorLIFE 2020 has achieved, and surpassed, its objectives for **large-scale moorland restoration**. Since its inception, Moors for the Future Partnership has shown that it is possible for even the most degraded peatlands to be restored and placed on the road to recovery. MoorLIFE 2020 took this restoration vision and expertise and dramatically expanded its scope and scale.

The jewel in the crown of MoorLIFE 2020 has been the extraordinary volume of sphagnum moss planted as part of the project – over 3 million plugs over 25km² of moorland. The effects of this planting will be felt not only in the long term as the sphagnum eventually creates new peat, but in immediate benefits to the local environment and communities. Results from our extensive monitoring show that the work undertaken as part of MoorLIFE 2020 is already making real and long-lasting impact. As well as the carbon now locked in the peat protected by new sphagnum and other moorland vegetation, water run-off has been proven to have decreased where the blanket bog has been restored, reducing peak discharges by around 30% and increasing the time it takes run-off to reach lowland areas by up to 20 minutes. There has also been a reduction in dissolved organic carbon (DOC) in water samples. On the sites where we worked, moorland biodiversity has also been shown to have improved since MoorLIFE 2020 began, with Derbyshire Bat Group reporting the first ever sightings of bats on Kinder Scout.

Challenges remain – most notably the increasing risk of moorland wildfires and the damage they can do to large areas of our restoration work – but by its remarkable sphagnum moss planting programme MoorLIFE 2020 has helped make large areas of South Pennines moorland wetter and more resilient to these threats.



Hopes for the Future

While MoorLIFE 2020 is coming to an end, the work of Moors for the Future Partnership in moorland restoration, monitoring and engagement will continue through new projects. By working through the water companies' Asset Management Plans and the government's England Peatland plan, work continues to ensure these moorlands are made resilient in the face of climate change. And by working with partners to set up the 'Great North Bog' coalition, the importance of protecting our peatlands will be at the forefront of UK climate action debate.

MoorLIFE 2020 has shown that working in partnership is a recipe for success. We look forward to continued collaboration with the organisations, companies and private landowners that have made this remarkable project such a unique and welcome 'good news story'.

“A glorious end for the MoorLIFE 2020 EU Life Project... Mission Accomplished! The team brought life back to a vast area of active blanket bog and demonstrated the importance of peatlands.”

EU LIFE Programme





MOORS FOR THE FUTURE PARTNERSHIP

is led by the Peak District National Park Authority. It receives financial support from the Environment Agency, National Trust, South Pennines Park, RSPB, Severn Trent, United Utilities, Yorkshire Water; and support and advice from Natural England, National Farmers Union, Heather Trust, Woodland Trust, ethical finance sector and the British Mountaineering Council.

MoorLIFE 2020

Published by MoorLIFE 2020, a Moors for the Future Partnership project in the EU designated South Pennine Moors Special Area of Conservation. Delivered by the Peak District National Park Authority as the lead and accountable body (the Coordinating Beneficiary). On the ground delivery was largely undertaken by the Moors for the Future staff team with works also undertaken by staff of the National Trust High Peak and Marsden Moor Estates, the RSPB Dove Stone team and the South Pennines Park (the Associated Beneficiaries).

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