



The Moorland Association  
**Moorland Association briefing:  
Fire and the moorland landscape**

### **Background**

Defra is currently undertaking a review of wildfire in England which will be used to inform future wildfire management planning. The report was initially due to be published in June 2019 but has been delayed until December. The Moorland Association believes there are a number of developments which should be considered of vital importance and given due regard in the review. The MA is concerned that other policy agendas of peatland restoration and carbon NetZero are clouding clarity on the significance of wildfire as an issue. Government is also consulting on changes to regulations on controlled burning that would see an imminent ban of managed burning over deep peat due to EU infraction proceedings.

### **Key issues**

#### ***Wildfires***

- Recently, there has been a global surge of large wildfires and prolonged fire seasons, associated with a complex mix of climate change, changing land management practices and human behaviour.
- 2019 has been a horrific year for the UK with 135 wildfires recorded up to June.
- This is part of a very worrying trend - the first half of 2019 and 2018 together have seen more damage caused by wildfires than the previous decade. 2008-2017 just over 30,000 Ha were burnt in 93 wildfires.
- Nearly 50,000 Ha have been destroyed in the 214 wildfires since January last year.
- Some of the most notable and severe wildfires have been on moorland; Saddleworth, Winter Hill, Marsden, Dovestones.
- Hundreds of thousands of pounds previously spent on peatland restoration did not prevent these sites from burning.
- New MET Office data shows that the UK could see a 16-fold increase in the frequency of extremely hot weather and twice as many flash floods by 2070 if we follow a high emission pathway.

#### ***Fuel Loads***

- Climate change has increased global fire occurrence and area burnt, as well as lengthening the fire season in some countries through increased production of vegetation, through both warming and higher precipitation, which has led to higher fuel loads.
- Defra's own guidance on wildfire mitigation via the Uplands Management Group clearly highlights the critical importance of managing fuel loads.
- Fire chiefs in Scotland, England and Wales have recently endorsed the use of controlled burning as a means of combating wildfires.
- New Government policy to cease heather burning will lead to thousands of tonnes of new biomass building up in high fire risk zones.



## The Moorland Association

### ***Burning heather over deep peat***

- Government policy currently views burning over deep peat as damaging believing it will prevent restoration of deep peat. Yet, ONS report *UK Natural Capital: Peatlands July 2019* states that burnt peatland is adequate for carbon storage as an ecosystem service, and that when methane and nitrous oxide are included, a near natural bog is a source of emissions not a sink (0.01 tCO<sub>2</sub>e ha<sup>-1</sup>yr<sup>-1</sup>). 95% of English Blanket Bog is in favourable or recovering condition with burning as part of its management.
- There is a world of difference between uncontrollable wildfires, burning with intense heat into the peat and careful, skilled 'cool' managed burning of top vegetation only.
- 95% of all grouse interests signed the Voluntary Commitment not to rotationally burn on deep peat earlier this year and to only use fire as part of a carefully considered restoration action following the Blanket Bog Land Management Guidance.
- We estimate that on 30-40% of our members' land there is no sustainable alternative management technique to controlled burning (e.g. cutting), leading to increased wildfire fuel load.
- Emissions from controlled cool burns in small patches, must be weighed against catastrophic emissions and loss of stored carbon in a wildfire scenario.
- There is more carbon locked up in UK peat soils than in all the trees of Britain and France, representing 42 per cent of our entire carbon stock. Wildfires not only produce greenhouse gas emissions from vast areas of burning vegetation but release much of the carbon stored in the soil.
- Historical atmospheric pollution, particularly coal smoke emitted during the industrial revolution damaged the layer of protective mosses on the moors. This exposes the fragile peat beneath which erodes resulting in increasing carbon emissions.
- MA members are looking at ways to reintroduce the king of carbon capture, Sphagnum moss, on deep peat.
- Restoration burning removes dense heather canopies enabling moorland managers to inoculate the soil with Sphagnum moss plug plants and provides the mosses access to sunlight and rainfall.
- Sphagnum moss not only protects the fragile peat, thereby preventing loss of carbon, but also slows water flow across the surface (it holds 20 times its own weight in water) – mitigating against flash flooding further downstream.
- Moors for the Future Partnership working largely on grouse moors in the Peak District estimate that the work done re-vegetating bare peat between 2003 – 2018 has avoided the loss of 540,000 tonnes of CO<sub>2</sub>.
- Carbon capture on managed grouse moors can help the UK meet its climate change target of NetZero greenhouse gas emissions by 2050 without adverse consequences for land use with controlled burning in the tool kit.

### **Recent Developments**



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### ***Llantysilio Mountain fire report***

Denbighshire County Council has produced an [official report](#) on the massive Llantysilio Mountain fire last year. Llantysilio is designated as a SSSI for its heathland habitat communities and upland breeding bird assemblage including black grouse and curlew. The fire on the mountain burnt from mid-July until late August and resulted in approximately 250 hectares (617 acres) of the mountain habitat suffering catastrophic damage.

The report concluded that a lack of land management on the mountain led to limited firebreaks, dense vegetation & dry undergrowth – resulting in a high fuel load.

- The North Wales Fire and Rescue Service (NWFRS) believe the lack of robust land management activity in recent years meant that firebreaks on the mountain were limited and increased the amount of combustible material available to fuel the fire.
- Denbighshire County Council's Countryside Services highlighted the need for regular and effective land management work in moorland areas to mitigate against the risk of wildfires spreading.
- Natural Resources Wales (NRW) cited Ruabon Moor as a local example of a moorland which is effectively managed by small patch burning and mowing. On this particular moorland the main driver for management is red grouse management, whereas on Llantysilio there was no such driver.
- NRW hope to have Management Agreements in place with the 4 major landowners within the SSSI and also any other landowners and the common land graziers to actively manage the heathland on the mountain through mowing and controlled burning.

### ***EMBER project critique***

A recently peer-reviewed and published critique of the EMBER project throws into doubt the conclusions of EMBER, regarded as the most definitive research produced about burning impacts on blanket bog ecosystems.

The paper published in the [Journal of Applied Ecology](#) identified and discussed 'significant overlooked flaws' in the project design and said the findings of the project were currently unreliable and conclusions should be treated with caution by policy-makers who 'need to re-examine the strengths and limitations of the prescribed burning evidence base'.

- EMBER wrongly assumed that the study sites were similar in every respect except for burning management
- It failed to consider key variables like rainfall, temperature, vegetation and altitude - all known to affect the functioning of blanket bogs.



### The Moorland Association

- As a result, careful controlled burning has been blamed for a host of environmental ills, such as drying out the peat, causing flooding and carbon loss, reducing mosses, colouring drinking water, when in reality there are many other factors at play.

We are nearing the end of a government consultation on new regulation to ban burning of heather over deep peat, a move which is partly based on the now apparently flawed findings of the EMBER Project and possibly others. The Moorland Association strongly urge Defra to take account of these latest findings and to hit the pause button on upcoming legislation. If such large flaws were overlooked in this high-profile study, then it is likely that the wider evidence base contains similar flaws.

### **Going Forward**

- Land managers must be able to counter wildfire risks.
- There is compelling evidence for controlled burning to be retained as an essential tool to reduce fuel loads.
- Taking a pragmatic long term and holistic view to protecting and improving the integrity of these precious upland peatland sites requires more tools in the tool kit, not less.
- A voluntary approach based on agreed outcomes not blunt legislation, would appear to us to be the best way forward to both protect and enhance our peatlands.