



# The burning issue

Policy makers in England are considering if new measures are necessary to limit burning in the uplands – a hot topic in more senses than one, writes **Stuart Brooks**

**THE UPLANDS** of England are relatively wild places in our national context. But wild is not necessarily ‘natural’ and it is perhaps in our uplands where we find this dichotomy most pronounced. A walk in somewhere like the Peak District can at times feel like venturing into an alien landscape, or at least one managed to within a whisker of its true self. Indeed, much of our upland landscape is managed intensively, with fire a significant tool in man’s armoury. But is the burning of moorland a damaging practice and what, if anything, should policy makers be doing to mitigate it?

The English uplands are not uniform; their soils, climate and wildlife vary greatly – mostly related to geology and altitude. However, our cool, wet climate has led to peatland formation over much of our upland landscapes. Layers of peat build up over thousands of years from undecomposed plants – typically sphagnum mosses, other lower plants, sedges, heathers and grasses. Latest estimates from the Joint Nature

Conservation Committee are that England is home to around 14,000km<sup>2</sup> of peatland, with roughly half of that qualifying as deep peat.

In agricultural terms, peatlands are low grade – places to be ‘improved’ or converted to productive use such as forestry. Over the last 30 years our understanding of their form and function has helped us better appreciate their role within the ecosystem and even their influence on global climate regulation. We now know that healthy peatlands store carbon as plant material that is locked in beneath high water tables where they don’t break down. When we drain and burn peatlands, the carbon that has built up over thousands of years is released into the atmosphere as carbon dioxide; in so doing, a carbon sink becomes a carbon source.

In England, the poor condition of our peatlands means that 350,000 tonnes of CO<sub>2</sub> are released into the atmosphere every year – the equivalent of that produced by 140,000 cars annually. To put this into a global context, the

International Mire Conservation Group estimates that global emissions from damaged peatlands account for the equivalent of around 10% of all CO<sub>2</sub> emissions from fossil fuels.

Carbon management has helped to elevate the status of peatlands, but their role within the upland water catchment is also recognised, notably by the water companies themselves. About 70% of our drinking water comes from upland areas, mostly within peatland catchments. Water companies now invest in landscape-scale conservation initiatives, halting burning and the blocking of ditches, as a cheaper, more effective natural solution to improving water quality. As an alternative to chemical treatments, the spin-off benefits for both wildlife and carbon are significant.

Yet, despite their importance, England’s upland peatlands are not in good health at all. In fact, Natural England, the government body responsible for protecting the English countryside, claims that only 4% of the country’s peatlands are considered to be in good condition.



#### MAN-MADE CHANGE

Our uplands have been subject to change for thousands of years, but intensive management associated with sheep grazing and grouse shooting has had a profound influence over the last 200 years. Some of our uplands have also suffered

the aim of creating uneven-aged stands of heather to act as food and shelter for game birds. Other associated management such as the killing of crows, stoats, weasels and foxes has resulted in a much altered state – and on a landscape-scale. And while the industry is quick to denounce illegal

chessboard patches of short heather for feeding, and long heather for cover and nesting. But on upland peatlands at least, there is now a strong argument for calling a halt to burning for reasons of carbon capture, water quality and biodiversity.

Within this debate it is often said that fire is a natural phenomenon and that peatlands have always been burned. It's true, fires do occur naturally on peatlands, but such events are extremely rare. Natural fires start from lightning strikes after hot weather when the vegetation is dry. They also typically only affect the surface, especially when the water table is high (as is the case on undrained peatland).

Studies of the layers of peat show that a natural burning interval on upland peatlands in the UK is between 200 and 300 years. On a typical 'managed' upland, however, the burning cycle tends to be every 15-30 years on individual patches (but annually across the wider area).

It is estimated that where a fire has burnt away all the living sphagnum moss, it takes approximately 50 years for the peatland to recover fully. Although this kind of

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from high levels of atmospheric pollution associated with the industrial revolution (such as nitrogen deposition). So, wild hills and dales, although relatively unpopulated, are none the less heavily influenced by us.

Burning for grouse shooting, in combination with drainage, is practiced largely to manipulate the vegetation, with

persecution of raptors, it is unfortunately still all too common in upland areas.

Other cases can be made against intensive grouse moor management, but it is the burning issue that is perhaps most pressing. Certainly, traditional grouse moor management relies on fire to create the artificial habitat necessary to hold high densities of birds – the now familiar

burning is rarely the intention, fires can get out of control and result in unintended consequences. The worst case scenario is the creation of a bare peat surface, which is then highly prone to erosion and very slow to recolonise with vegetation.

A burning interval of 15-30 years will tend to encourage the growth of heathers, while shorter intervals result in the dominance of tussock forming grasses, such as hare's tail cotton grass and purple moor grass – essentially replacing the mosses, sundews and asphodels usually found on a healthy peatland surface with a much simpler, monotonous sward.

#### REPAIRING DAMAGE

Projects such as Moors for the Future and the Yorkshire Peat Partnership have

demonstrated that restoration is possible and cost effective but requires long-term commitment and funding. Landowners delivering public benefits such as clean water, carbon management and wildlife habitats should be incentivised through public funding support.

The body of scientific evidence now firmly supports the principle that burning on upland peatland, especially deep peat, damages its integrity and function. Natural England and the IUCN UK Peatland Programme have pulled the evidence together to arrive at this consensus view. In areas such as the Peak District, burning on peatland should simply be stopped, and I hope Natural England is minded to bring forward new policies and mechanisms to ensure that happens.

Our understanding of peatlands and the 'ecosystem services' they provide have begun to change the way the uplands of Britain are managed, with the water industry in the vanguard. For decades, many conservation bodies (ourselves included) and some private landowners have managed upland peatlands without resorting to the use of fire. I sincerely hope this 'tradition' is evolving and that the burning of our upland peatlands will soon be consigned to the history books under a chapter headed 'Past follies'. □

#### About the author

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PHOTOGRAPH: NORTH YORK MOORS NATIONAL PARK



PHOTOGRAPH: PETER CAIRNS/2020/ISSON



PHOTOGRAPH: PETER CAIRNS/2020/DIVISION

Fanning the flames (clockwise from above): the familiar chessboard pattern seen on moorland managed for grouse; burning has long been a tool in man's armoury; the sundew is just one of many plants found in healthy areas of peatland