
Introduction

- Grouse moor managers play a vital role in conserving heather and peatland across our uplands including some of our most valuable habitats.
- Heather moorland is rarer than tropical rainforest and 75 per-cent is found in the United Kingdom (Aebischer et al, 2010).
- The Value of Shooting Report (PACEC, 2014) estimated that grouse shooting in England creates 42,500 work days a year, and over 1,500 full-time jobs.
- The Value of Shooting Report (PACEC, 2014) also showed that shooting providers across the country spent nearly £250 million a year on conservation, £100 million of which is spent on grouse moor management.
- Any link between grouse moors and flooding is unproven, but the concerted efforts of grouse moor managers to block open drains in the uplands and re-vegetate bare peatland undoubtedly contributes to slowing the flow of water through the catchment area.

Heather Management

Grouse depend almost entirely on heather moorland and grouse moor managers understand that a healthy population of grouse relies upon a healthy heather habitat. Grouse shooting and the conservation of heather moorland go hand in hand. It is thanks to grouse moor management that more than 60 per-cent of England's upland Sites of Special Scientific Interest are managed grouse moors, and over 40 per-cent are also designated Special Protection Areas for rare birds, and Special Areas of Conservation for rare vegetation under European wildlife directives – the highest possible protection ([The Moorland Association](#)).

The most extensive study into [Loss of Heather Moorland in the Scottish Uplands](#) surveyed 229 moors between the 1940s and 1980s and compared moors managed for grouse with those where grouse management no longer took place. In areas where grouse management was maintained, heather loss took place at a slower rate compared to moorland where grouse moor management had ceased. The study suggested that grouse shooting provides an incentive to conserve heather moorland despite economic pressures and the attractiveness of subsidies to intensify forestry and farming operations (Robertson *et al*, 2001).

Burning/Muirburn

Part of grouse moor management involves rotational heather burning, otherwise known as muirburn, which is undertaken to increase diversity of heather age and structure to provide a healthy habitat for the grouse which other ground nesting birds benefit from. It also prevents the build-up of rank heather and helps maintain a balance of upland vegetation.

Burning takes place in patches on a rotational basis, the frequency of which is dependent on the speed at which heather grows in a particular area. This ensures that there is a mixture of older heather for protection and nesting, younger heather shoots for feeding and a fresh burn where regrowth is just starting. The aim is to create lots of micro habitats so that within one hectare of moorland the grouse and other ground nesting birds have the full range of habitats they require. Controlled heather burning does not involve burning the peat beneath the vegetation, in fact great care is taken to avoid this as burning the peat would delay the regrowth of the heather.

Burning is also beneficial for hill farmers as the patches of fresh burn provide space for grass varieties and young heather to grow which helps to spread grazing out across the moor.

Controlled, rotational burning also helps reduce the risk of damaging wildfires and reduces carbon loss by up to 34 per-cent (Allen *et al*, 2013). Large stands of rank and woody heather pose a major fire risk due to a significant build-up of fuel loads. Uncontrolled wildfires are damaging as they burn with greater intensity and are likely to burn the peat beneath, causing considerable damage to the ability of the peatland to store water and carbon. This view is supported by research into [Heather Burning](#) by the Game and Wildlife Conservation Trust (GWCT).

In 2003, a wildfire which severely damaged 730 hectares of Bleaklow Moor in the Peak District, burned for a week before it was extinguished. The cost of restoring 430 hectares of the moor was £1.235 million, or £2,900 per hectare. If the costs for suppression (£550,000) and to the local economy (£500,000) are added, the total cost of the fire came to £2.5 million (Buckler, Moors for the Future Partnership, 2010).

The statutory code of practice for heather burning, [The Heather and Grass Burning Code](#) (Defra, 2007), was developed in association with key stakeholders under the last Labour Government and acknowledges that “Fire has been used by land managers for many thousands of years. When used with skill and understanding, it can benefit agriculture, game birds and wildlife.”

Evidence linking rotational heather burning to hydrological changes in upland areas is limited to a single study carried out in Yorkshire. The EMBER study focused on the effects of prescriptive burning on blanket peat but did not address the effects of the devastating impact of wildfires, the risks of which are reduced by rotational heather burning. The study also failed to consider the impact of stopping burning altogether, and the effect this would have over a sustained period of time on the health of the moorland and the wildlife sustained by it. For example, work by the [Heather Trust](#) has shown that in some areas heather beetles are the “driving force” behind the reduction in heather cover on moorland and burning is an effective way of reducing the beetle population.

Biodiversity

A Natural England Evidence Review into [The Effects of Managed Burning on Upland Peatland Biodiversity, Carbon and Water](#) (Natural England, 2013) concluded that there was strong evidence that burning and predator control correlated with higher densities of red grouse, golden plover, curlew, lapwing, redshank and ring ouzel. Peer reviewed scientific research by the GWCT (Aebischer *et al*, 2010) has shown that on moors managed for grouse shooting, ground nesting birds such as curlew and lapwing, both of which are species of the highest conservation concern, are 3.5 times more likely to raise a chick to

fledgling stage. The RSPB also recognise the value of rotational heather burning and there is a controlled burning programme in place on their reserves at Loch Garten and Hobbister in order to “increase the suitability of the reserve[s] for key breeding birds such as hen harriers, short-eared owls, merlins and curlews.”

Welsh moors were once the most productive grouse moors in the UK supporting an abundance of other wild birds. Since management for grouse shooting ceased, they went into serious decline. Studies on a former grouse moor in Berwyn show what can happen in just 20 years with lapwing becoming extinct, golden plover declining by 90 per-cent, and curlew declining by 79 per-cent (Warren & Baines, 2014). All three species are now listed as being of conservation concern, with both curlew and lapwing red-listed by the British Trust for Ornithology.

Control of Invasive Species

The conservation of heather moorland also helps control invasive species. Over the past ten years grouse moor managers in England have treated approximately 65 square miles of invasive bracken to stop it swamping and killing other moorland plants and providing a breeding ground for ticks (Moorland Association, 2014). Seasonal workers employed during the shooting season also help with vital conservation work such as spraying ragwort (*Jacobaea vulgaris*) and removing birch saplings on the lower ground of the moor to prevent forest encroachment. This labour intensive work is carried out because grouse shooting provides a financial incentive to conserve heather moorland despite economic pressures and the attractiveness of government subsidies for other activities such as forestry and farming.

Peatland Management

Approximately 70 per-cent of the UK’s drinking water comes from the uplands (Natural England, 2009), and all land managers, not just those responsible for grouse moors, need to be aware of the valuable role of the uplands in the hydrological cycle.

The drainage of peatland with open drains, or grips, was once widespread in the uplands, and in the 1960s and 1970s successive governments offered farmers and landowners grants for draining their land; grants that were aimed at increasing agricultural productivity, not grouse. This practice has since been discredited, and research undertaken by the Game and Wildlife Conservation Trust (GWCT) in the 1980s and 1990s into [Erosion and Moorland Drainage](#) found that drains continued to erode over time, and concluded that blocking these drains was the only way to reverse the deterioration of the moorland. The research found that blocking drains could also help restore natural drainage patterns, encourage re-vegetation of bare peat, and minimise the hydrological changes downstream.

Peatland Restoration

Grouse moor managers, working in conjunction with Defra and Natural England, as part of the Upland Stakeholders Forum, are actively working on a number of projects which include re-vegetation of bare peat and blocking government-incentivised drains in order to re-wet damaged moorlands and encourage the growth of sphagnum moss which slows the flow of surface water and filters out discolouration. Peat Restoration Partnerships have proved highly effective and are an example of stakeholders working together to restore peatland. In 2013 the [Yorkshire Peat Partnership](#), which receives support from moor owners, farmers

and the Environment Agency, reached a milestone with the successful restoration of just over 24,700 acres of peatland.

Grouse moor owners in the North Pennines have already been responsible for blocking approximately 2,700 miles of moorland drainage ditches, and have created approximately 4,485 moorland ponds that benefit insects, water vole and amphibians as well as catching sediment and slowing water run-off (The Moorland Association, 2014). This work resulted in the North Pennines Area of Outstanding Natural Beauty Peatland Programme being awarded the Climate Change Award at the Durham Environment Awards 2015. Their [Management Plan](#) for 2014-2019 recognises that “sound grouse moor management can contribute significantly to the conservation and enhancement of natural beauty.”

Over the last 25 years, grouse moor owners have re-generated and recovered 217,000 acres of moorland, 57,000 in the last decade alone, far exceeding the Government’s 2010 conservation target by 170 per cent (Moorland Association).

It is possible, even probable, that this restoration work may also be reducing flood risk downstream, but it is worth noting that the prominent ecologist Professor Jeremy Purseglove recently stated in [Countryfile Magazine](#) that any link between grouse moor management and flooding is “unproven.”

Existing Legislation and Code of Practice

[The Heather and Grass etc. Burning \(England\) Regulations 2007](#) apply to the burning of heather, grass, bracken, gorse and vaccinium. In England these Regulations have been transposed into [The Heather and Grass Burning Code](#). Similar regulations are in place in [Wales](#) and [Scotland](#).

The Regulations prohibit various types of burning which may create a high risk of soil exposure and erosion, unless under licence from Natural England. These include:

- “In any burning season **you must not burn in a way that exposes a single area of more than 0.5 hectares of bare soil**. An area of soil is ‘bare’ for these purposes if no more than 2% of it is covered by vegetation or plant litter.”
- “In any burning season **you must not burn in a way that exposes an area of bare soil which extends more than 25 metres along the bank of a watercourse** and which is at least a metre wide at all points.”

In attention to the requirements of lawful burning, the Code includes a ‘strong presumption’ against burning in ‘sensitive areas’, these include:

- **“Peat bog and wet heathland**. These areas should not be burned other than in line with a management plan agreed with Natural England.”
- **“Areas within 5 metres of watercourses**. There can be an increased risk of soil erosion close to watercourses (e.g. once vegetation has been removed by burning, soil could be washed into a watercourse by rainwater, or the watercourse might flow with sufficient force that its banks could be eroded).”

The following legislation also applies:

[Wildlife and Countryside Act 1981, Section 28](#). It is unlawful to carry out burning on a Site of Special Scientific Interest (SSSI) without consent from Natural England if burning has been notified as an “operation likely to damage.”

[Ancient Monuments and Archaeological Areas Act 1979, Section 2](#). It is unlawful to burn in a way which damages a Scheduled Monument.

[Part 1 of the Wildlife and Countryside Act 1981](#); and the [Conservation \(Natural Habitats, &c.\) Regulations 1994](#). It is unlawful to conduct any activity, including burning (or cutting or swiping) which disturbs or destroys wild birds, or other protected animals, plants and habitats. This applies regardless of the burning season.

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