Carpets of heather in bloom on the Invercauld Estate in Aberdeenshire – 75 per cent of the world's heather moorland is found in Great Britain.

Heather, or ling as it is also called, naturally occurs mixed with numerous other flora such as bell heather, bilberry and birch saplings.

Vs

"IF IT WEREN'T FOR SHOOTING, THIS WOULD ALL HAVE GONE."

IS THE CLASSIC HEATHER MOORLAND A CHERISHED BRITISH LANDSCAPE THAT CAN ONLY BE MAINTAINED ON THE BACK OF GROUSE-SHOOTING OR AN ARTIFICIAL HABITAT THAT'S BAD FOR BIRDS OF PREY AND BAD FOR THE ENVIRONMENT? JAMES FAIR REPORTS.

Top left: MediaWorldImages/Alamy; top right: Scotland The Big Picture/naturepl.com; grouse: David Kjaer/naturepl.com

Come 12 August and the fells around Bolton Abbey, in the Yorkshire Dales, will resound to the sound of shotguns. Yes, the grouse-shooting season will be underway and wealthy clients will be forking out thousands of pounds for a single day of this uniquely British past-time.

Grouse-shooting at Bolton Abbey is mainly run for family and friends of the Duke of Devonshire, who also counts Chatsworth House among his landholdings. If there are any surplus grouse left over, which will depend on how well they have bred that year, then days can be 'let' to paying clients. A day's shooting costs about £13,000 for a group of nine 'guns', head gamekeeper Paul Wilby tells me. For that, they're allowed to shoot up to 200 'brace', or pairs, of grouse.

"There's a maximum of 30 days a year," Wilby says. "People think we do it all year, but most of the time the moor is left to nature."

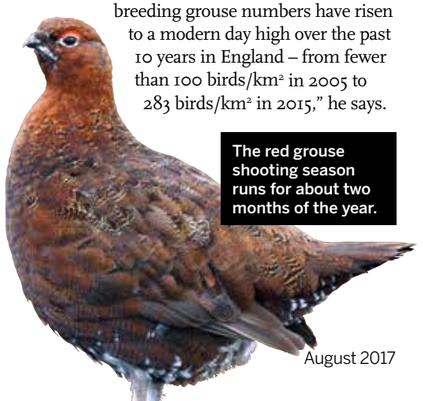
Despite the prices, grouse shooting at Bolton Abbey is a loss-making operation, and the cost of managing the heather moorland where it takes place is partially propped up by income from the estate's other operations – its 450,000 annual visitors and rent from residential and commercial properties.

The estate also receives money under the Common Agricultural Policy (CAP), but this, says Amanda Anderson of the Moorland Association, is for maintaining the moor (for the public good), not to subsidise shooting.

Nevertheless, shooting is vital because it incentivises, and provides some additional revenue for, moorland management, argues Wilby. "The moor wouldn't be like it is without shooting," he says. "Nobody could fund it. Last year, we spent £46,000 on bracken and soft rush control."

But just because grouse shooting is not profitable doesn't mean there isn't money in it. The worth of a grouse moor, according to a 2014 Knight Frank report, is calculated by the number of birds shot in a season multiplied by the value per brace, which increased by 50 per cent in a decade. "The total increase in value of a well-managed moor may be higher because greater numbers of birds are being shot each year," the report added.

This is confirmed by Patrick Thompson, who heads up the RSPB's upland policy team. "Data from the Game and Wildlife Conservation Trust suggests that post-breeding grouse numbers have risen to a modern day high over the past 10 years in England – from fewer than 100 birds/km² in 2005 to 283 birds/km² in 2015," he says.



The red grouse shooting season runs for about two months of the year.

Moorland owners and gamekeepers have done this, Thompson says, by burning the vegetation, in places damaging peat-forming blanket bogs, to encourage the heather growth, increasing the use of the medicated grit that treats grouse for parasites and killing more predators, including – illegally – birds of prey.

BURNING DEBATE

The Moorland Association, however, which represents England's grouse-moor owners, argues that without grouse-shooting, the moors' vegetation would change. Heather would grow long and scraggy, increasing the opportunity for wild fires, and a glorious British habitat would eventually be lost.

Showing me around the estate, Paul Wilby explains how burning encourages the fresh heather growth on which adult grouse feed. "Burning is like mowing a lawn to invigorate dead and dying heather and does not damage the peat surface," he says. "You also have to do it or star mosses and soft rushes take over."

Well-managed heather moorland is fantastic for breeding waders such as golden plovers and lapwings – even the RSPB accepts that – but not just because of the flora: legal control of crows and stoats is another reason ground-nesting birds do so well.

"Peregrine falcons give us a bit of stick on the side," admits Wilby, when I ask him about the impact of raptors on the grouse. Red kites can be a problem, while hen harriers – the bird most commonly linked to predation of red grouse – don't nest on the estate. "They will hunt over this way," Wilby says. "We certainly see them here."

Despite this, Wilby has very clear guidance on how to manage birds of prey. Don't. "The ▶

60%
The percentage of lapwing pairs that fledge a chick on moorland where predator control is carried out – compared to 20% in areas with none.

1,072
The number of jobs estimated to be sustained by grouse shooting in Scotland (by a report in 2010). Grouse shooting contributed £23.3m to the Scottish economy, it said.

4
The number of pairs of hen harriers that nested in England in 2016.

15,000
The total area of Great Britain, in km², classified as heather moorland, roughly seven per cent of our total land area and representing an estimated 75 per cent of all the world's heather moorland habitat.

8 SPECIES OF HEATHER MOORLAND

HEATHER
The purple-pink wildflower from which heather moorland gets its name. Flowers July-September and flourishes in drier, acidic soils.

SPHAGNUM MOSS
A super-absorbent plant that can take in eight times its weight in water and forms carbon-storing peat. Can't survive drainage or acid rain.

BILBERRY
A dwarf shrub that produces blue-black berries July-August and also known as blaeberry, whinberry and whortleberry. Closely related to blueberries.

COTTONGRASS
Not a grass, but a sedge, and needs wet, boggy areas. Distinctive, cotton-like flowers appear April-June. Two main species found on moorland.

RED GROUSE
Adults feed on fresh heather tips, hence their association with this habitat, though chicks require a more varied diet. British subspecies is unique.

GOLDEN PLOVER
This medium-sized plover is redolent of British uplands. The species has experienced a four per cent decline in the UK in the past 20 years.

MEADOW PIPIT
A small, streaky-breasted bird on open moorland is probably a meadow pipit. Some migrate for the breeding season, others are resident all year round.

SHORT-EARED OWL
Migrates to moorland to breed. Distinctive, stiff-winged flight, often out in daylight hunting for voles. Moves away to coastal areas in the winter.

family says, 'If we thought any hen harriers had been killed, we would pack up shooting.' I would be finished [in this job] if I did that."

GIVE PEAT A CHANCE

For Patrick Thompson, the broader impact of grouse shooting on the environment is as big a problem as illegal persecution of raptors. At the RSPB's Dove Stone reserve, on the edge of Greater Manchester in the Peak District, I get a sense of what he means.

Here, site manager Dave O'Hara and his team are restoring peat-forming sphagnum mosses and moorland shrubs such as bilberry to a landscape that was, just a decade ago they say, adversely affected by years of grouse-shooting, sheep-grazing and pollution.

Exposed peat was being eroded by wind and water and passing into and silting up the reservoir, to the extent that its capacity to store water had been reduced by one third. "If we hadn't done this work, it would have carried on filling up with peat," Thompson says.

Another consequence of degraded uplands is increased water run-off where blanket bogs have been lost. Regular flooding events in towns such as Hebden Bridge, in the Calder Valley, are blamed by some experts on this. Others say increased rainfall is more to blame.

Restoring Dove Stone has involved years of painstaking work such as rewetting small gullies by blocking them with stone dams so that sphagnum can recolonise bare patches of peat – in seven years, 12km of gullies have been treated this way. In other areas, bare peat has been reseeded with sphagnum clumps. Funding has come from the landfill tax and agri-environment subsidies, but much of the physical labour is done by volunteers. "We spent £1,500 on cake for volunteers last year," O'Hara says, "But they love doing it, and we got 20,000 hours of work out of them."

The work has paid off for breeding dunlin, which have rocketed from seven pairs in 2004 to 44 last year, while short-eared owls do well here, too.

But when I remark that Bolton Abbey appears to have fantastic numbers of golden plovers – which are also at Dove Stone, but not in such great density – Thompson says: "Birds are not necessarily a good indicator of habitat quality." What he means is that while some species, such as golden plovers – and red grouse, of course – thrive in a managed, heather habitat, others don't. In contrast, blanket bog encourages greater abundance of insects like cranesflies.

DEFINING SUCCESS

At Bolton Abbey, Paul Wilby and Amanda Anderson say they too want to see greater plant diversity. The seedheads of wet-loving cottongrass provide excellent protein for adult grouse, and craneflies help feed the chicks, so it makes economic and ecological sense.

"A few years ago, none of us knew about deep peat or water colouration," Anderson says. "Sphagnum moss holds water up and filters it for free. There is now a sea change in our understanding and attitude – 'wetter is better' for both grouse and environmental outcomes. We are improving blanket bog coverage, working with all interested parties."

Anderson, however, rejects the claim that moor owners have increased grouse density in recent decades in order to boost profits. Grouse densities have improved with re-investment following the war years and medicated grit has smoothed the cyclical nature of the wild population, she says, but harvests in most regions are lower than they were before the wars.

For Wilby, though, maximising the number of grouse chicks that fledge is a critical part of his job. "The most I have seen in one clutch is 17," he says. "Normal is about eight or nine, while if you see a lot of clutches of 11 or 12, you are going to be all right. If the weather turns, you can lose the lot."

NEW VISIONS

So, where does this debate go from here? Certainly, there is a broader, public-engagement issue than simply red grouse v raptors. "Public perception of moorlands is that they are cold, wet and miserable, and we need to change that," Thompson says. "We want people to understand they are great for wildlife, as well as providing important ecosystem services."

Grouse moor managers say if shooting isn't going to pay for the management of heather moorland, what will? "If you asked visitors to Bolton Abbey, 'Should it be managed this way?', lots of them would say 'Yes'," says the estate's Ben Heyes. "But you might get a different response if you asked, 'Would you like your taxes to pay for it?'"

The argument becomes almost circular – our taxes do help manage grouse moors, insists former RSPB conservation director, Mark Avery. "Imagine you owned 10,500ha of upland," he wrote on his blog earlier this year. "You receive £56/ha for that land every year – that's a cool £0.5m. And if you run that land as a grouse shoot, then you still get the agricultural payments."

For Thompson, if one thing were to change, he would like it to be the idea that the more grouse you shoot in a day, the more fun you've had. "I know people who have paid a fortune to fish on the River Spey, not caught a thing and still had the best week of their life," he says. So, if the same ethos applied to grouse-shooting, would the problems and polarisation go away?

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> **Patrick Thompson,** *RSPB uplands policy officer*

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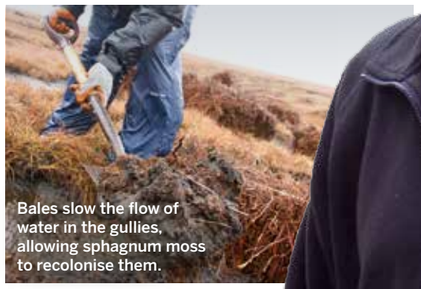
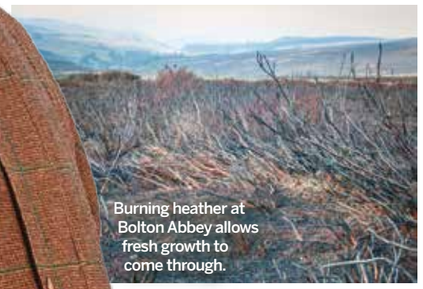
At RSPB Dove Stone, hay bales are used to block gullies that have been rewetted.



Bales slow the flow of water in the gullies, allowing sphagnum moss to recolonise them.



Burning heather at Bolton Abbey allows fresh growth to come through.

Predator control – here a tunnel trap for stoats – is a crucial part of a gamekeeper's job.

top left to right: blickwinkel/Alamy; Alex Hyde/NPL; Nick Upton/NPL; Michael Dietrich/Imagebroker/FLPA; Alex Hyde/NPL; Andrew Parkinson/2020VISION/NPL; Mark Hamblin/2020VISION/NPL; Loic Poidevin/NPL; bottom left to right: Ben Hall/RSPB (x2); Eilidh Thompson/RSPB; Dave Willis (x3)