



# The Heather Trust

Sustainable, Resilient Moorland

## Evolving moorland habitats

*PLUS*

Grouse shooting and  
muirburn licenses in Scotland

Graze the Moor 'no fence' collars update

Wildfire management round-up



Annual Review 2022  
[www.heathertrust.co.uk](http://www.heathertrust.co.uk)



# Peatland ACTION

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## THE LATE QUEEN, HER MAJESTY QUEEN ELIZABETH II

The Heather Trust was very much saddened by the death of the late Queen at Balmoral on 8th September. The Queen was a supporter of the Trust over many years and it was clear she understood, and passed on to her

family, the delicate balance so essential to our ambition for sustainable and resilient moorlands throughout the UK. We sent our condolences to His Majesty the King, the Royal Family and Estate staff at Balmoral.



## Professor Davy McCracken, President



Professor Davy McCracken

I was delighted and humbled to be elected as President at the Annual General Meeting this autumn.

For those who don't know me, I have spent over 30 years studying farming and biodiversity interactions and advising on agri-environment policies and land management practices.

Although I am not a heather specialist, I have worked with the Trust for years, particularly through my involvement with Scotland's Moorland Forum and the Working for Waders initiative.

I feel strongly that the results of research can only ever be translated into effective management on the ground if those findings are made available in a variety of ways that ensure the relevance of the findings are understandable by different audiences.

So Knowledge Exchange has been a major focus of my work over the years. While that did not stop during the Covid pandemic – it just shifted to participating primarily in online

events – it has been great over the last year to get back out and about to host and attend in-person meetings.

What I have learned over the years is not to assume that someone looking at the same landscape or discussing the same issue will see or perceive things exactly as you do.

Face-to-face meetings, ideally in the great outdoors, are vital to help tease out those differences and ensure that discussions can take place in a positive and meaningful way.

The Trust does this so well and that – and the fact that it works at the wider UK level – was what encouraged me to agree when asked if I would consider being President.

It is essential not to look at heather moorland in isolation from all the other land management practices and policies and the fact that those practices and policies vary so much across the UK will – I am sure – make my role interesting over the coming years.

## Viv Gill, Chair of Trustees



Viv Gill

It has been a busy year for The Heather Trust as we continue to balance varied interests on the open moorland and uplands of Britain. Environmental issues – whether it be wildfire management or the importance of peatlands - continue to be top of mind for the Trust, informing how best we can represent our priority concerns.

From continuing to run Scotland's Moorland Forum with the broad range of tasks that entails, to supporting Working for Waders; and from steering the all-important Bracken Control Group, to engaging with grassroots adaptive management projects such as 'Graze the Moor', our activities have been extensive and various. More on all of these within this Review. Alongside all of this our team have had a presence at a number of key events including ScotSheep, the Royal Highland Show and Scottish Game Fair.

I would like to thank our interim Chair, Roger Burton, for all his hard work and dedication to the Trust over the last year, and I am very pleased to say that Roger will remain an active and much valued Trustee going forward.

Which leads me to say that I am very happy to be taking up the role of Heather Trust Chair, having been a member of the charity for many years as well as directly involved in Heather conservation in the North Pennines.

Balancing the interests of an upland farm whilst safeguarding heather moorland within the newly launched environmental land management (ELM) schemes will provide a greater focus on ensuring farming activities are more sustainable. In our own small patch of moorland in Northumberland, we have been actively involved in much of these changes as they have evolved – from working as a Test and Trial Farm as new environmental schemes are developed, to working with local farmers as we review Landscape Recovery schemes in order to conserve our moorland landscape and ecosystem through long-term restoration.

As we face so much economic, environmental and social change, the role of The Heather Trust can only continue to increase in importance for us all. Thank you for your continued support.

## HT ANNUAL REVIEW 2022 – BOARD REPORT

It is almost a year since, with the support of my co-Trustees and in particular Colin Shedden, who assumed the role of Vice-Chairman, I found myself stepping into the role of Chairman on an interim basis. A year in which much has changed both within the Trust itself and in the arena of upland management within which we work. Change, as they say, is constant, and there is no greater certainty than there is more change to come in the year or two ahead. In such times, a steady hand on the tiller makes for plainer sailing. It has been my chief task to proffer such a hand and I hope we are now well positioned for the journey ahead.

Antony Braithwaite's unexpected announcement that he was standing down as chairman of the Trust after 7 years in that capacity left a real leadership gap. As a farmer, moorland owner and director of the Northumberland National Park Foundation he had brought multiple insights and skills that led into playing an active, hands-on role. With no evident successor, it was therefore very encouraging when a serendipitous conversation put me in touch with someone who seemed might be a good fit for the bill. It was even more promising when, after hearing more about our requirements of the role, and attending the Board's summer meeting, Viv Gill confirmed that she would be happy to accept the Trustees' invitation to put her name forward. It gave me great pleasure to hand over the Chair to her at our recent AGM, confident that the Trust will move forward in her capable hands.

When Prof Rob Marrs was re-elected as our president at last year's AGM, he had given notice that it would be the last time he stood, and that we would need to find someone to step into his shoes. The Board were unanimous that this role be fulfilled by someone with well-regarded and relevant scientific expertise. It gave us great pleasure therefore when Davy McCracken, Professor of Agricultural Ecology, Head of the Dept. of Integrated Land Management at SRUC and Head of their Hill and Mountain Research Centre, agreed to accept the role. As well as his professional roles, Davy has been a long-standing member of Scotland's Moorland Forum and also co-chairs the Working for Waders programme, so is well acquainted with our work.

There have been further changes in the staff team this year with our Director's Assistant, Anne Stoddart, resigning for pastures new after 12 years. Taking on the role following Anne's departure, we have welcomed Amy Smith who has seamlessly picked up the work. We also recruited Tarra Gilder-Rai to the new part-time Business Manager role under our new business model reported in last year's review. This leaves us with a Director England role to fill, which we hope to progress with during 2023.

Turning to look at the world outside the Trust, the question we asked last year 'Where is moorland management going?' remains as relevant now as it did then. The precise direction and nature of it remains clouded by the swirling mists of economic and political uncertainty.

With formal consultations underway, we already have some strong indications as to what might emerge in Scotland. We will soon enough know more when the responses are analysed and the planned Agricultural and Wildlife Management legislation is published. Of course, until both respective Bills complete their passage through Holyrood, their final shape will remain subject to the uncertain winds of politics, and their eventual outcomes on how those affected respond. Those same winds have also recently been fanning or, depending on one's perspective, allaying fears in England and Wales for the future for upland agricultural businesses and the rural communities at whose heart they lie, as well as for our precious moorlands themselves, as payments supporting upland land use to deliver for climate change and biodiversity continue their post-brexit change trajectory against the backdrop of tough times and choices for the UK economy.

The Heather Trust is not itself representative of any one sectoral interest group, rather we work with and for those who share our goal to secure sustainable, resilient moorlands for the benefit of everyone. It is often observed that we play a distinctive role holding the middle ground in the deeply divided and increasingly polarised debate over upland land use: as an independent convener bringing diverse players and stakeholders together - whether on a moor or a, now often virtual, meeting room - to share experience and learning about topical moorland issues; and as an honest broker helping them air differences of opinion in a respectful, safe space, and wherever possible build consensus around solutions.

Over recent years this has perhaps been more particularly evident in our Scottish activities. Here Anne Gray, liberated from all the demands of managing our business, and no longer stretched to cover the whole country, quickly picked up both the pace and focus of work as the post-Werritty Review implementation tempo started to gear up. Under her initiative, Moorland Forum made changes to its ways of working to give more space for in-depth consideration of two 'hot' (no pun intended) topics: 'Rewilding' (in all its guises) and Muirburn.

In these times of turbulence and transition, it is vital that the Heather Trust remains a strong presence in the debate and, as ever, seeks to facilitate and offer impartial guidance on the ways forward for our precious heather moorland. Much of our time is spent representing the Trust on a number of project boards and stakeholder groups. The Board is now turning its attention more closely to how we might increase our capacity and influence south of the Scottish border. We would not be able to consider this without the continuing financial support of our members, income from our Country Market and Sporting Sale and generous donations from individuals, and the hard work and dedication of our administrative staff. We thank them all, hope any who can will help us grow this support, and look forward to the year ahead.

**Roger Burton, The Heather Trust**



## Office Bearers



### President Professor Davy McCracken

Ahead of its site visit onto Garrows Estate, the Trust voted to appoint Professor Davy McCracken as President to replace outgoing President Rob Marrs.

As Head of the Department of Integrated Land Management and Head of Hill and Mountain Research Centre at Scotland's Rural College, Davy is an agricultural ecologist and has spent over 30 years studying farming and biodiversity

interactions and advising on agriculture and agri-environment policies and land management practice. He is involved with a very wide range of relevant fora, including the Working for Waders Initiative which he co-chairs and Scotland's Moorland Forum – and thus makes the important link between research, policy and practice.

Davy is also a newspaper columnist, writing on upland land management and nature matters; much of his research over the years has been into the challenges and opportunities facing High Nature Value farming systems across Europe.

Like his predecessor, he is not an 'ivory tower' professor. He loves nothing more than getting out on site to discuss practical matters. As such, Davy will bring not only a wealth of knowledge to the role, but an ability to help the Trust shape its input to policy and practice.



### Chair Viv Gill

Alongside Davy's election to President, Viv Gill was also elected as Chair of the Heather Trust. Combining her time as a hill farmer in Northumberland and a business consultant specialising in international pay and reward and board governance, Viv will bring her varied experiences of both environmental and charity work to the role.



### Vice President Malcolm Hay

Malcolm's estate at Edinglassie near Huntly in Aberdeenshire has become an important site for peatland restoration work.

## Board of Trustees

George Dodds and Richard Cooke were appointed as Trustees, along with Dr. Emily Taylor, whose co-option earlier in the year was formally ratified at the AGM. Roger S. Burton, Hamish Waugh, Dr. Colin Shedden and Robert Benson all remain as Trustees.



### Dr. Colin Shedden

Colin is Scottish Director of the British Association for Shooting and Conservation and lives near Dunkeld.



### Robert Benson

Robert was formerly the Chairman of the Moorland Association and is an experienced sporting manager based in Cumbria with extensive links across upland management communities.



### Hamish Waugh

Hamish Waugh is a traditional hill farmer in the Scottish Borders farming over extensive unfenced moorland with heather on the highest areas and on North facing slopes. Hamish uses traditional farming practices which promote biodiversity and encourage a wide array of both plant and bird life.



### Roger S. Burton

Roger has recently retired after 26 years with Scottish Natural Heritage and has a strong insight into the public benefits that well-managed moorland can deliver.



### George Dodds

George runs an environment consultancy in north Northumberland that concentrates on providing advice on agri-environment schemes to farmers and landowners in England. He has previously worked for both the RSPB and the National Trust. Currently, the main focus of his work is habitat restoration in the uplands. This includes an estate-wide, long-term vegetation monitoring programme in the College Valley Estates with help from the Centre for Ecology and Hydrology that is now in its 10th year.



### Richard Cooke

Richard is the long-time former chairman and secretary of the Association of Deer Management Groups in Scotland and has been involved since its inception in 1992. He qualified as a chartered surveyor in 1976 and was General Manager for Dalhousie Estates in Angus for 32 years. Richard has also chaired the Lowland Deer Network Scotland and has been a Board Member of the Deer Commission for Scotland and of the Cairngorms Partnership.



### Dr. Emily Taylor

Emily heads up the Crichton Carbon Centre and oversees all of its projects. Emily is an environmental scientist and peatland specialist. She has designed and delivered peatland restoration projects across the south-west for almost 10 years and delivers the highly popular programme of Peatland Action restoration training events throughout Scotland. Emily provides a perspective on peatland restoration and the trajectory towards fully restored blanket bogs. Emily comes from a family farming background on Coll, and now lives in Dumfries and Galloway.

## Meet the Team



### Director Scotland Anne Gray

Having worked as Director from 2018 to 2021, Anne Gray now leads Scottish Policy and Projects for the Trust.



### Membership and Finance Officer Clara Jackson

Clara Jackson started working for the Trust in 2010 and manages memberships, finance and sponsorship.



### Events and Business Support Eppie Sprung

Eppie Sprung joined the Trust in 2017 and co-ordinates our annual Country Market and Sporting Sale and our communication channels. In addition, Eppie provides general business and governance support to the Trust.



### Consultant Simon Thorp

Simon Thorp (previous Director) provides input to the Trust running the Bracken Control Group.



### Business Manager Tarra Gilder-Rai

Tarra Gilder-Rai has joined the team as Business Manager.

Tarra is an MBA qualified Business Operations specialist with over two decades experience in analysing, transforming and managing businesses. Prior to joining The Heather Trust, Tarra provided management consultancy to a range of clients and was COO of the growth agency Orange and Blue, following a career in the City where she worked as the right hand to the Managing Director of KBC Bank and was Director of fintech company, Complete Genius.

She has worked largely in the finance and IT sectors, but has solid exposure in the third sector. She brings with her a breadth of skills ranging from the back-office functions of Financial and Operations Management, to the front office functions of Communications, Marketing and Business Development.

Tarra is known for her skills as a problem solver, disentangling complex issues, and clarifying strategy. She is thrilled to be a part of The Heather Trust!



### Administrator Amy Smith

Amy Smith joined the team at the end of March as Administrator.

Amy has 8 years' experience in the third sector, and over a decade's experience with marketing and operations. More recently she has worked for creative agencies, handling marketing and internal communications for the likes of Honda, Asda, Jaguar Land Rover and Mercedes Benz Vans. Her heart lies with charity work, though!

Amy has a wide range of skills that we hope to make use of at the Heather Trust, including technical operations, website architecture and development, graphic design, marketing management and strategy development, to name a few.



## PROFESSOR ROB MARRS RETIRES

Professor Rob Marrs had been President of the Trust for the last 15 years. He took up the role in 2007, following in the footsteps of his friend and mentor Charles Gimingham.

Rob has been an undoubted asset to the Trust. His passion for his work on moorlands is evident to all and he has gone above and beyond the

figurehead role that many charity presidents fulfil. He has delivered bracken control and muirburn demos, making the science behind both topics easy and accessible for all. He has also overseen the delivery of research funded by the Trust through our small grants program. The fund aims to give small amounts of additional funding to existing larger research programs to enable further and

fuller data gathering or analysis to get additional value from the work. Over the years, Rob had a steady supply of PhD students that could provide such added value.

He has also very generously donated many days of his time and expertise to the lucky bidder in the Trust's Country Market and Sporting Sale. In his self-effacing way, Rob said that he learns as much on these visits as the recipient, but we know from the enthusiastic thank you notes that he's provided great value to the moor owner or manager on their day out together.

Much of his huge body of work over the years has come from the Hard Hill experimental plots in the Moorhouse NNR in the north Pennines. It is a unique, long-term ecological study examining both treatments and responses on heather moorland. The relevance of this work is now vital in informing ongoing policy in England as well as Scotland.



# FINANCIAL HEADLINES FOR 2021

As presented at our AGM on 12th October 2022

TOTAL INCOME

£227,757

UNRESTRICTED

£163,351

.....

DONATIONS AND LEGACIES

£57,155

INCOME FOR CHARITABLE ACTIVITIES

£103,215

INVESTMENT INCOME

£2,981

RESTRICTED

£64,406

.....

DONATIONS AND LEGACIES

£64,406

TOTAL EXPENDITURE

£205,167

UNRESTRICTED

£124,424

.....

RAISING FUNDS

£11,084

CHARITABLE ACTIVITIES

£113,340

RESTRICTED

£80,743

.....

CHARITABLE ACTIVITIES

£80,743

SURPLUS IN 2021  
£22,590



# CMSS 2022



Eppie Sprung,  
CMSS Co-ordinator

We had some fiercely contested Lots this year! In my five years of co-ordinating the Country Market and Sporting Sale, I have never known the battle for a Lot to go on as long! It was almost two hours after the auction officially ended that the bidding concluded on the most hotly contested Lot: two days' hind stalking for two rifles with three nights' accommodation at Pait & W Monar Estate, Wester Ross. [For those of you not familiar with the run-over period in our auction - the auction extends for 10 minutes every time a bid is placed - to provide the underbidder with a chance to place a new bid. Typically, this extends the auction time by about 15 or 20 minutes, not the 2 hours we experienced this year!] Our sincerest thanks go to Nick Jones who donated the Lot to us, raising a whopping £2,475!

Other popular Lots included Hind Stalking on Dunlossit Estate (presented by the Estate), A Walked-up Day in Aberdeenshire (presented by our Vice President, Malcolm Hay) and an evening's duck flighting for two guns in Wensleydale (presented by AT Thornton-Berry).

Our Director for Scotland, Anne Gray, teamed up with Tweedhill and College Valley to present a Relaxed Macnab, which involved accommodation for three nights with the chance to catch a salmon and shoot a brace of grouse and a roe buck over the course of the weekend. The winner of the Lot is keen to repeat it next year so there may well be some competition if we are able to secure the Lot again!

One of our bidders made a full holiday out of their geographically well-paired winnings. Winning both three nights in the Mews House in Dalswinton and a day's haaf-netting with Sir Johnny Scott on the River Nith at Glencaple – both in Dumfriesshire – meant a perfect getaway:

*"I cannot underline it enough, both parties were wonderful. Dalswinton is a lovely peaceful Estate and Lady Sarah was very kind and helpful and so was the very knowledgeable Ghillie Andy, who is great fun. The Estate was busy, but they made us welcome and looked after us.*

*I am nervous to say too much about the Haaf netting as I would so like to do it again. Sir Johnny was extremely helpful and wonderful company and gave us lunch. Robbie Cowan was extremely good at instruction and guided me in the river and we just had the most fabulous day in wild surrounding, listening to the music of the geese, then all the waders (oystercatchers, sandpipers, redshanks and curlew), as the tide came in and then went out. We saw salmon jumping, but not into my net, only the place."*

As always, the success of the auction is dependent on the immense generosity of both our donors and our bidders. Our heartfelt thanks go to each and every one of them.

£28,121 was raised this year, from a combination of auction bids and cash donations. This money will support us in continuing to work towards our vision of sustainable, resilient moorlands for the benefit of everyone.

The 2023 auction will open on 21st April and close on 5th May so please pop the dates in your diary and e-mail [events@heathertrust.co.uk](mailto:events@heathertrust.co.uk) should you have a donation to make to our 2023 sale.







# The Heather Trust

Sustainable, Resilient Moorland

## Become a Member

**Your membership of The Heather Trust will help us to work towards our vision of sustainable, resilient moorlands for the benefit of everyone.**

MEMBERSHIP TYPE & FEES	
<b>ANNUAL MEMBERSHIP</b>	
Member	£50
Estate Member	£120
Gamekeeper/Student	£20
<b>LIFETIME MEMBERSHIP</b>	
Standard	£750
Couple	£1,000
Aged over 55	£500

*Join today*

Visit: [www.heathertrust.co.uk](http://www.heathertrust.co.uk)  
or telephone: 01387 723201



# The Heather Trust

Sustainable, Resilient Moorland



## Please remember us WITH A GIFT IN YOUR WILL



### MERVYN BROWNE OBITUARY – HEATHER TRUST

Mervyn Knox -Browne of Milton of Ardtalnaig Farm, south Loch Tay who was a much-loved and revered member of the Highland Perthshire community, passed away in November at the age of 95. Until slowed by the vagaries of old age, he was brown as a nut and usually dressed in dungarees and upturned tackety boots. I met him nearly 40 years ago with a cheery group of shepherds and stalkers at a ceilidh at Meggernie Castle in Glenlyon, a place he knew well. Everyone relished Mervyn's stories and friendship, for there was no finer gentle gentleman.

To spend time with Mervyn was to step away from the stress of our media-bombarded lives and to, revel in his wit, wisdom and kindness and contemplate the essential things in life: nature, the changing seasons, rural life in remote communities, and stories and legends associated with the hills and glens. He could predict the weather from watching the hills and his close affinity and understanding of the lunar phases, and he knew the Gaelic names of every notable hill in Scotland and could translate their meanings. There in the peace of his farmhouse on long winter evenings, a dozing collie at his feet, Mervyn epitomised the importance of retaining the oral tradition. Mervyn loved people. He also valued what some might see as isolation

Born in Glenfinn, County Donegal, his childhood was spent exploring the 16 miles the family owned on the River Finn, one of the finest salmon rivers in Ireland, as well as 20,000 acres of hill and moor. Later his father took on Aughentaine, the family estate in Co Tyrone, and sadly Cloghan would be sold. Mervyn always struggled in his relationship with his strict disciplinarian father; 'We never got on, though I always had a strong relationship with my mother. My father had big ideas for how my life would shape up and sent me to boarding school at Glendalmond. I missed home terribly, particularly my old keeper friend from Donegal, Donal McGlinn, a real character who chewed tobacco and had a unique take on life. He taught me to fish and to 'guddle' – lying on a riverbank trying to catch salmon and trout with your hands. We netted silvery fish and packed them into fern-lined boxes to transport them to the railway station using a wheelbarrow fitted with a bicycle wheel, minus tyre, so that it could run over the narrow-gauge railway line. However, I quickly discovered that, though I hated lessons, the bonus was the glorious hills and the river Almond surrounding the school, where I could escape.

Due to my father's continual pressure, I had a brief, unremarkable spell in the Army (RASC) before I broke free and forged a life working on the land.' Mervyn would never return to live and work on the family estate and instead chose the life of a hill sheep farmer, leaving the trappings of his previous world far behind.

Mervyn worked blackface sheep and beef cattle with his beloved collies and was always happiest on the hills with his fellow shepherds. Patient and kind, many of the younger generations acknowledge his mentorship and its influence on their lives. Mervyn worked on various farms before securing a

### NEWS

full-time job on a remote farm on the Braes of Balquidder. In 1954 he acquired Milton Farm and 500 acres, having asked the sceptical banker in Killin for a loan. In 1956 he married Catherine Ferguson ( Kate), and together, they farmed Milton.

He understood the need to improve the land while farming sensitively with nature. He also built up a successful shoot and was considered an excellent shot. His diaries included detailed records of the weather, and he understood the phases of the moon, stars and planets and their interconnectedness to everything else. He worried that we were losing these vital connections. He said we were witnessing far more wild, erratic events due to oncoming climate change.

One of his weather-related stories caused amusement when a group of shepherds and their collies regularly met above Balquidder, where the Hydro Board's rain gauge was situated. Officials were baffled as to why there was an exceptionally high rainfall in that precise spot until Mervyn pointed out that the dogs were lifting their legs against the gauge.

In 1957 there was an opportunity for Mervyn to take on an auxiliary weather recording station on Loch Tay for the Met Office and the Climate-ological Observations Link. He kept data on the monthly rainfall, frost, minimum and maximum temperatures, hours of sun, wind speeds, and the densities of cloud cover. His view of the dramatic Munros of the Ben Lawers group helped him provide data on snow patches too. After 60 years, the Met Office presented him with an award as one of their most valued and longest-serving Scottish recorders.

A former president of the Perth Area NFU, Mervyn also logged the arrivals and departures of avian migrants, the dates of the first frogspawn, and various critical flowering plants, providing valuable information known as phenology for the Woodland Trust. His records revealed a story of demise – numbers of swallows, house martins and swifts were crashing; gone were the haunting cries of the curlew and the annual arrival of lapwing, and the call of the cuckoo was becoming rare. He knew that this was due to man-made changes.

Like many farmers on marginal land, Mervyn diversified. He was closely involved in the forerunner of The Heather Trust - The Joseph Nickerson Reconciliation Project, alongside his friend, the late John Phillips, assisting him in early tick research. He loved his role and later with the Heather Trust, which led to several years as the Scottish and Irish representative of Man Friday Helicopters – (MFH), controlling bracken and advising landowners on how to carry out effective aerial spraying.' As a founding member, Mervyn remained Vice President of The Heather Trust - the authority on the subject but nicknamed himself the 'revolting peasant', especially when the Trust, as it had to be, became ever more scientific.

In 1999 Mervyn was awarded an MBE for services to the community and conservation. During his lifetime, he had 22 beloved collies – all were buried high on his farm overlooking Loch Tay, and each grave was marked with a red hawthorn. 'You never forget your dogs', he said. Then, in a profoundly moving ceremony appropriate to this gentle soul who loved the land and his animals with all his heart, he was laid to rest beside them, surrounded by the elements and nature in the raw.

**Mervyn Knox-Browne**  
**May 29th 1927 - 17th November 2022**

Polly Pullar



# PROPOSALS FOR GROUSE SHOOTING AND MUIRBURN LICENSES IN SCOTLAND



*During the last quarter of 2022, moorland managers, their representatives and the wider community of interest have been responding to a Scottish Government consultation ahead of the Wildlife Management (Grouse) Bill, which is expected in 2023. This Bill follows on from the Scottish Government’s acceptance of the recommendations of the Werritty Review two years ago. It seeks view on how grouse shooting and muirburn licenses for Scotland should be implemented, and also on the regulation of snares and other mammal traps, bringing with their training, registration and use regimes further in line with those for avian traps.*

In terms of grouse moor licensing, the Scottish Government has reiterated that the impetus behind this is to address raptor persecution and ensure the management of grouse moors and related activities are undertaken in an environmentally sustainable and welfare-conscious manner. The Minister for Environment, Biodiversity and Land Reform, Mairi McAllan MSP said,

*“In November 2020, the Scottish Government published its response to the recommendations of the Werritty Report. [These sought] to address raptor persecution and ensure that the management of grouse moors is undertaken in an environmentally sustainable manner.”*

She recognised that “the range of measures to tackle wildlife crime” previously taken have been without sufficient success to leave things at that. However, there was also recognition of the “important contribution to the rural economy” that grouse moor management and shooting makes, and that Scottish Government also believe it is a minority of interests that are involved with illegal activity, but “this situation must not be allowed to continue.”

On muirburn, the Minister is concerned with the potential for it to go wrong and the environmental harm that might cause. In Scotland, muirburn is carried out more widely than on grouse moors, so the regulation will apply to anyone burning vegetation for wildlife or livestock management reasons. Although not specifically mentioned in the consultation itself, it is nevertheless widely recognised that those managing grouse moors are often the best trained and most knowledgeable burning practitioners and their expertise could be captured and shared more widely with others.

So, regulation of grouse shooting and muirburn is happening, and the discussion with government and its agencies in Scotland is around how it is done.

## Grouse shooting

Proposals for a grouse shooting license include: that it should be the activity of shooting grouse that will require a license and it will be the landowner or person controlling the shooting rights that must obtain a license to cover the ground over which grouse may be shot; the license should be administered by NatureScot on an annually renewable basis; that NatureScot will use the civil burden of proof (balance of probabilities) when determining a suspected breach on the basis of evidence as reported by PoliceScotland, and in deciding what consequential action would be appropriate; and there will be a requirement to keep records of various activities, which it is suggested could include number of days shooting, number of birds shot, and numbers and types of predators/predator control used.

## Code of Practice

It is also proposed that a Code of Practice will be introduced, and given statutory footing, as follows, “The Code of Practice will set out legal requirements (i.e. those set out in statute or regulations) as well as strongly recommended practice and best practice guidance for moorland management. The Code will be developed in conjunction with key stakeholders including those involved in grouse shooting, land management, animal welfare, and conservation....and will be reviewed and updated at regular intervals; NatureScot will have regard to it and be able to take into account compliance with it in connection with licensing decisions.”

## Muirburn

The consultation recognised that the management of vegetation with fire is a complex issue and that the scientific evidence around benefits and harms is thin, conflicting and contested; a conclusion also reached by a recent NatureScot commissioned, report from SRUC (led by our new honorary President), reviewing the published science. In view of these uncertainties, Scottish Government’s intent was to take a ‘precautionary approach’ and “that the Bill should contain powers to modify the regulation of muirburn in the future, as the scientific evidence base develops.” The focus of this approach was the scope of its intended ban on muirburn on peatland. In this context it was proposed that this should be extended from peatland deeper than 50cm under the current advisory Scottish Muirburn Code to apply to a reduced depth of 40cm “to bring Scotland in line with England” – overlooking that in England the ban applies only to Protected Areas and with no other rationale or impact quantification provided. It was, however, proposed that there would be



exceptions to such a ban for habitat restoration, public safety or research reasons, which hopefully suggests some potential for a pragmatic approach. We would like to think that some of the conversations we’ve had with government this year about wildfire risks on modified peat have been listened to. There was no indication in the consultation about who might hold a license, or the basis on which it might be granted/withdrawn so there is still plenty to be discussed.

## The Heather Trust’s work on these proposals

The Trust has submitted a response to the consultation with a particular focus on habitat and biodiversity issues, consistent with our charitable aims.

We have also been very busy engaging with Scottish Government, NatureScot and the various moorland stakeholders in Scotland via our facilitation of Scotland’s Moorland Forum and its sub-groups. Muirburn has been a particular focus for the Forum’s discussions for much of the year – not only among member organisations, including site visits to Clune and Glenmazeran estates in the Monadhliaths, but also reaching out to a wider audience online. The Muirburn Code Working Group has discussed potential Code revisions and done a great deal of thinking about what a practical and workable muirburn license would look like, while the Scottish Wildfire Forum has completed and released a muirburn training module.

On the wider Moorland Management Best Practice front, we have helped develop a new strategy and funding support framework, in which we will continue to play a leading role. We expect the outputs to contribute to and support the new Code of Practice. The Forum also hosted a visit to the Auchnafree Estate in Perthshire by the Minister, giving her a short glimpse into the integrated nature of moorland management best practice.

We now need to build on these collaborative efforts and strong working relationships to ensure proportionate, practicable processes through which moorland managers can continue to deliver the expectations for sustainable, resilient moorlands.

Anne Gray,  
The Heather Trust

# GRAZE THE MOOR NO FENCE UPDATE

*The Graze the Moor project on Molland Moor in Exmoor National Park has received Farming in Protected Landscape’s (FIPL) funding from Defra to enable the introduction of “no fence” collars for their cattle. The project held an open day at the end of September to provide an update on the work to improve biodiversity on the moor, and to discuss the effectiveness of the “no fence” collars.*

The collars allow tenant farmer Richard Langdon to create virtual enclosures and exclosures without the need for physical fencing and thus move the cattle about the moor more effectively. On Molland they have been used predominantly to keep cattle off of areas that are at risk of overgrazing. Animal welfare has always been a central part of the project and it remains that way, so virtual boundaries are carefully selected to ensure cattle have enough good, palatable vegetation, while still keeping them away from particularly vulnerable areas. The GPS collars have also had the added advantage of enabling Richard to easily locate each animal. That has time saving advantages for cattle checking and it also allows any that stray out of the enclosed area to be found and brought back to the herd.

Richard says that the cattle learned the new system quickly. Music is played through the collars when the cattle are approaching a virtual boundary and, if they get too close to it, they receive a shock similar to touching an electric fence. Richard says they learned within a day or two to turn away from the virtual fence line when they heard the music.

Over the summer, project ecologist, Dave Boyce, has also redone the original 164 transects across the moor. He is still analysing the results but says that signs are encouraging that there is a reduction in old degenerate heather and Molinia and an increase in new pioneering heather, whortleberry (also known as bilberry) and fine leaved grasses. In moorland recovery terms it is still early days, but the signs are encouraging.

Perhaps more worrying is the high level of tick that have been found on the moor which is undoubtedly presenting challenges for animal welfare.

Graze the Moor is one of only a few projects across the country that uses “adaptive management” principles to guide management decisions. It has a unique steering group made up of Molland Estate’s Christina Williams, tenant farmer Richard Langdon, Exmoor National Park Authority, Nature England, an independent ecologist, CCRI to provide research and reporting rigour, tick and bracken experts, and the local veterinary practice for animal welfare input. It highlights the unique nature of each moorland and the need for flexibility in terms of decision-making. It also flags up the financial challenges of farming in upland environments using practices that will deliver biodiversity benefits.

Christina Williams,  
Molland Estate



# MOORLAND MANAGEMENT

AN ENGLISH PERSPECTIVE FROM LAND AGENT  
ROBERT BENSON



*No one can be absolutely certain what the future will bring but the signposts are there for all to see. Where we have recent scientific research to guide us, this should not be ignored, or hand-picked to suit a different agenda. Surely, we all should make use of this up-to-date science, prioritise its review (if that is really necessary) and couple this with the huge experience of managers on the ground.*

As I write, it seems sadly that the body responsible for protection of SSSIs in the Uplands of England, Natural England, is doing its level best to ignore it. These upland areas have been improved enormously with wonderful peatland restoration work over the last 20 years or so. The mind-set of managers has changed as they have recognised their responsibility for the delivery of public goods in addition to securing their own particular interest. These improvements are helping to mitigate climate change, by improving carbon sequestration. In ensuring that these are active peat-forming bog areas, there are other benefits which will help with improvement in water quality and, in due course, help alleviate flooding.

These benefits are well known. No one disputes this position.

It must therefore be incumbent on Natural England, and perhaps more to the point Defra, to build in protection of these hugely important ecosystems in the light of undoubted change that is bringing massive risk. There is more carbon locked up in UK Peatlands than in all the trees in Britain and France.

There is a combination of factors coming together to create a serious wildfire risk to peatlands in the uplands, ultimately driven by climate change. This is resulting in long periods of very dry weather, particularly in the late winter, early

spring before everything has greened up. There is also much reduced grazing pressure with stock off wintered, or increasingly removed entirely, plus what seems to be an increase in public use of disposable barbeques in the outdoors, with the risks that come with that now increasingly well publicised.

To this dangerous combination we have to add the management strait jacket that moorlands have been subjected to. This is effectively an edict which, while apparently providing a route to obtaining a license to manage this growing vegetation, is in practice a route to preventing any management at all on blanket bog and increasingly looking as though this may be extended to all peatland.

Natural England is not alone – there are many land managers working in the questionable belief that rewetting alone will build in the resilience required to protect these areas in the long term from the risk of wildfire.

The heading of the report carried out by Fitzwilliam Wentworth Estate in association with the Peak District National Park, and others assessing fire risk, fire behaviour and pathways in the Peak District includes the words said many years ago by Professor Rob Marrs – Wildfire is inevitable. It's not if, but when.

This report can be accessed at [peakdistrictwildfire.co.uk](http://peakdistrictwildfire.co.uk) Natural England were involved in this report – which is effectively a risk assessment. When published, it was described as a real game changer. Very little, if anything, has changed and the fuel load is increasing at an alarming rate.

The risk is huge and the outcome is inevitable unless the advice of experienced land managers, backed up 100% by the fire service, is acted on immediately with management of the fuel load made the top priority.

**Robert Benson**  
Trustee, The Heather Trust



Photo © George Dodds & Co.

# SFI MOORLAND STANDARD

EMPOWERING FARMERS & COMMONS ASSOCIATIONS  
TO UNDERSTAND AND ENHANCE THEIR PUBLIC GOODS

*Defra issued the first three Sustainable Farming Incentive (SFI) standards on general release on 30th June 2022. These apply to England and are available to BPS claimants. There will be more standards to come but, as I write, a review of Environmental Land Management (ELM) is underway so any comments on likely content would be speculation.*

Turning now to what we do know is that the SFI Moorland Standard is now available at the introductory tier. The purpose is to undertake a survey of the moorland parcel and then evaluate and plan opportunities for maintaining and enhancing provision of public goods. The payment rate is £10.30/ha/yr for the SFI Moorland with a £6.15/ha/yr supplement for common land with two or more legal interests. The agreement lasts three years and there is one survey point assessed per 10 ha per year.

[All land parcels in the moorland region are eligible as long as BPS has been claimed on the land in the past. While for many holdings an SFI pack can be automatically downloaded from the RPA portal, all land currently under HLS or CS or is Common land requires a phone call / email to the rural payments service to release an SFI pack.]

At the Foundation for Common Land we are keen to empower those with a responsibility for grazing and managing commons to better understand the natural and historic heritage assets. So we looked for a mechanism to provide a quick, practical and cost-effective way for farmers and land managers to complete the requirements of the SFI Moorland so we started exploring digital tools.

A few months later and with funding from Defra, the Foundation for Common Land is running an SFI Moorland Roadtest on three upland commons. We partnered with the Land App who are developing a beta mobile phone app that generates the survey points, enables you to walk towards the point using GPS and, when you are there, you click and respond to the drop down questions. The surveyor will take a photo in app, which is automatically geolocated on the map of the common. Each common can be divided into several survey areas and allocated to different commoners and land managers. No mobile phone signal is required and the tool works on Android or Apple phones.

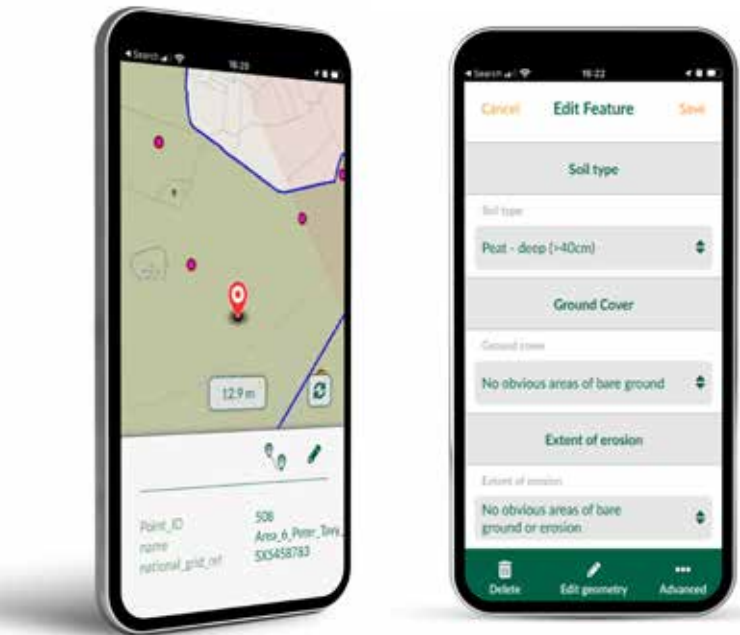
The benefit of the Land App platform is that survey data can be shared free of charge with all the commoners, landowners and other interests so everyone can see what has been found. Data can also be exported for analysis in other applications.

The commoners road-testing the SFI are undertaking the surveying over the next three months and we will be sharing our experiences and improving the digital app so it can be soon made available to all.

In addition to the surveying, which is required for all moorland parcels, on commons it is compulsory to complete several other steps before applying. All commoners, owners and other legal interests must be informed about the SFI application and the Association must sign a binding and enforceable agreement between the parties who will be delivering the SFI and sharing the grant payment. The Foundation for Common Land has drafted a precedent internal agreement and this, after field testing, will be made available to all with guidance notes.

More information is available via our webinar available on the Foundation for Common Land's YouTube channel and also on our online Common Land toolkit.

**Julia Aglionby**  
Executive Director -  
England, Foundation  
for Common Land







# LOUPING ILL

*There has been growing concern from moor owners, managers and sheep farmers about the lack of a vaccine for louping ill since 2017 and fears of the consequences of not having a vaccine are now coming home to roost.*

2022 has been a year of high tick burdens in many areas of the UK. There is evidence of increasing prevalence of, and areas of the country affected by, tick-borne diseases in both livestock and grouse. Action against the general rise in tick-borne diseases needs to be prioritised. Reductions in sheep numbers, reduction in the amount of bracken control, particularly given the wilding movement, and difficulties over getting a license for Asulam, are not helping the situation. Lyme Disease is a very real worry for humans, and it is now becoming clear that louping ill in particular may be much more widespread than in the past.

Over the last year a concerted effort by moor managers in Scotland, GWCT and more recently augmented by the Moorland Association in England, including a major funding campaign by Estate owners, has resulted in Louping Ill Vaccine Development Research being carried out at Moredun.

The aim is to develop a new generation louping ill vaccine. The research team had, at the end of September 2022, completed all of the sheep vaccination and louping ill challenge trials. The results, based on the clinical signs of the vaccinated versus the unvaccinated sheep groups, were promising. The team are now performing the molecular tests and pathology required to obtain full results, which will be analysed as soon as practically possible.

In tandem with this, the Veterinary Medicines Directorate has been consulted regarding the vaccine development pathway and Moredun are awaiting feedback, which will enable them to refine the development plan and develop a commercialisation strategy. They are now seeking a commercial partner to take forward the vaccine manufacture and market authorisation and are currently in discussion with a ruminant vaccine company.

## HEATHER BEETLE - TRAPPING FIELD TRIALS IN 2022

The Heather Trust, the Moorland Association and Moorland Community Tradition Ltd. have combined together to fund a project to trial trapping of heather beetle, recognising that heather beetle devastation has become a very major concern over the last 15 years or so. This has been based on work done by David Hall at the University of Greenwich who has collected volatiles from both male and female beetles and synthesised the components of the pheromone and helped to design a trial using these pheromones as a lure to trap heather beetle as they emerge in the Spring.

A meeting was held with a company called Sentomol who specialise in designing traps and these traps and the pheromone lure were deployed in April 2022 on various English moors, in the Peak District, Bowland, N Pennines and North York Moors. Unfortunately, the beginning of the trial in April missed some unseasonably early very warm weather at the end of March with reported emergence in Bowland and Scotland. It also coincided with some very poor cold weather and a distinct lack of heather beetle in most areas.

It is hoped that the trial will be repeated in 2023 – a supply of early emerging beetle is needed as it seems that these have the strongest pheromone.



**Robert Benson**  
Trustee, The Heather Trust

# BRACKEN CONTROL UPDATE



*Simon Thorp coordinates the activity of the Bracken Control Group (BCG). The Group addresses all issues that relate to bracken and its control; it works across all sectors and interest groups. Since the 2013 bracken control season, one of the Group's functions has been to submit the annual application to allow the use of asulam, the main bracken control herbicide.*



## AVAILABILITY OF ASULAM

On 31st December 2012, asulam was removed from the schedule of approved herbicides across the EU.

Since the 2013 bracken control season, the availability of asulam in the UK has been maintained by successful applications, submitted by the Bracken Control Group (BCG) for an annual emergency approval (EA).

The EA procedure provides temporary approval for pesticides where there are extenuating circumstances that justify it. It is not intended as a long-term alternative to regulatory approval.

The number of approvals granted for asulam is exceptional and this situation cannot continue indefinitely.

## RESEARCH – ENDOCRINE DISRUPTOR

Currently, the biggest research question is the potential for asulam to have an endocrine disrupting<sup>1</sup> effect on the thyroid and its relevance for humans.

UPL have confirmed their commitment to asulam and have outlined a research programme to investigate the endocrine disruptor (ED) status. Details were provided in the statement to support the EA application.

The ED programme will take about 3 years to complete, assuming that no problems are identified. As is the way of such things, issues may arise that require additional research to investigate and this could introduce delays.

In the worst case, the ED status may be such that use of asulam will be banned completely, as has happened in Europe.

If the ED status is compatible with continued use of asulam, an application for full regulatory approval in the UK will be submitted. This will need to be processed before approval can be granted.

The time scales for this work are long. UPL has indicated that if all goes well, the necessary data will be available in 2026 to prepare the dossier of information required for the application for full approval.

On this basis, CRD<sup>2</sup> has indicated that it might not be until 2030 that full approval could be granted. This timing is only an initial estimate; approval might come sooner, but any bumps in the road will delay this process further.

## OTHER RESEARCH

Exhaustive trials have been carried out of alternative herbicides that have been reported on as the National Bracken Chemical Control Trials (NBCCT)<sup>3</sup>. Although work is continuing, currently asulam has been shown to be the most effective herbicide with the least risk of unintended consequences from application.

One area that shows some hope is to use an herbicide mix. Use of 50% Asulox with the drift retardant / adjuvant Validate showed good levels of bracken control, when first tested. A trial is in progress and the results will be reported after survey of the plots in the summer of 2023. This approach may offer a way to achieve effective bracken control with use of less active ingredient.

## APPROVAL FOR THE USE OF ASULAM

The application to use asulam in 2022 was successful, but approval was not granted until 21st June for the spraying season that started on 1st July. This was far too late to allow spraying plans to be put in place in a timely fashion and introduced a large amount of stress on the system. If an approval is to be granted, earlier approval is essential.

The 12-month approval is far too short. A longer-duration is required to justify expenditure on: research, training, up to date equipment and to allow landowners and managers to complete the requirements of agri-environment schemes. The EA application for 2023 was submitted on 1st November 2022. As ever, there can be no guarantee of success, and if successful, it will be the 11th year that authorisation has been achieved under this emergency, annual approval process. CRD has pointed out that this is longer than might have been granted if full approval had been granted from the 2013 season.

## REVIEW OF BRACKEN AND ITS CONTROL

In recent EA applications, the BCG has promoted the need for a review of bracken and its control. Defra hosted a meeting in August 2022 that was attended by the BCG

<sup>1</sup> Endocrine disruptors are natural or man-made chemicals that may mimic or interfere with the body's hormones, known as the endocrine system.

<sup>2</sup> CRD – Chemicals Regulation Division of the Health & Safety Executive

<sup>3</sup> The reports are on the Research Reports page of BCG website





and representatives all the UK administrations. There was support in principle for a review and further proposals are expected.

During the meeting, there was support for the continued use of asulam, subject to caveats about its safety and ED status. There was agreement that the EA process is not working for anyone, but it was pointed out that there is no alternative mechanism.

A longer-term approval has been proposed along an agreed trajectory with annual milestones established. This would provide the opportunity for longer-term planning of bracken control programmes, research and investment, while maintaining an annual check that no new information had come to light that would affect the approval to use asulam.

As CRD has suggested that it might not be possible to achieve full UK regulatory approval until 2030, it is clear that an alternative solution is required. Availability of asulam cannot rely on continuing emergency authorisations.

By considering all aspects of bracken and its control, the proposed review would be well-placed to consider how an alternative solution could meet all requirements.

**CONCLUSIONS**

Eradication of bracken is not proposed, nor is it desirable, but consideration needs to be given to what limits need to be placed on the expansion of bracken to mitigate the associated threats.

At first sight, bracken control appears to be a simple issue. However, as a result of the range of different issues and interest groups involved, it quickly becomes complicated.

In simple terms, there is little doubt that the threats from bracken are increasing, such as: expanding coverage, tick-borne diseases, toxins leaching from the plant, habitat for sheep ticks, impact on grazing, biodiversity suppression, landscape impact and loss of grazing.

On the other side of the coin, bracken is a native plant and it has a right to be here. It adds to a diverse habitat that is of benefit to species of birds and insects. In some areas it is harvested as a crop to provide livestock bedding, a source of fuel, a material for compost, a bio-filtration medium, and it has been proposed as a source of bioethanol.

On balance, the BCG suggests that the area of bracken coverage needs to be managed so that the benefits are not eclipsed by the challenges posed by the plant, as is happening in a large part of the country.

To achieve an appropriate level of control, we need the best tools. Currently this is asulam. The political will is required to make this happen.

**FURTHER INFORMATION**

The Bracken Control Group's website: [www.brackencontrol.co.uk](http://www.brackencontrol.co.uk)

The application for the Emergency Authorisation for the 2023 season contains much detailed information. The full application and appendices are available from: [www.brackencontrol.co.uk/asulam/eaapp2023](http://www.brackencontrol.co.uk/asulam/eaapp2023)

Bracken Briefings are available on the BCG website - <http://www.brackencontrol.co.uk/briefings>

# Evolving Moorland Habitats

## *the Engo* RESILIENCE THROUGH WETNESS HOW RSPB IS PROTECTING CARBON STORING PEATLANDS FROM FIRE

*In this year's review we've asked various contributors to give us their thoughts on how aspects of moorland habitats will evolve in the future to play their part in meeting the various national and international challenges of climate change and biodiversity improvements, while still providing value for the rural economy and communities. As the climate changes, a focus of concern for many moorland managers is wildfire mitigation and this is a topic that is highlighted in several of these articles. There's lots of food for thought in these wide ranging contributions which we hope stimulate healthy discussion.*

*Fire – something all land managers in the Peak District agree is a major threat to habitats. Moors for the Future's wildfire database holds records of 2,881 reported fires in the South Pennines since 1976, with wide ranging ignition sources including camping stoves, poorly managed prescribed burns and deliberate arson.*

Given the nature and climate emergencies, we urgently need to reduce the incidence and impact of fires, but in a landscape visited by millions of people each year this is challenging, not least because the Peak District's uplands are in a far from resilient state. Though protected, large areas of upland habitats are seriously degraded, in part because of a history of burning. Unlike the forests of California or the dry scrub of the Mediterranean, the upland habitats of Britain are not adapted to fire, so each time they burn they become drier, less complex, and more vulnerable to the next fire – a vicious circle.

The long-term solution is to restore resilience to these places. By making bogs wetter and diversifying existing monocultures back toward a natural vegetation community, if an ignition event occurs, habitats will be in a stronger position to minimise a fire's severity.

At Dove Stone, managed in partnership with United Utilities, the RSPB has installed over 15,000 dams and planted over 800,000 handfuls of Sphagnum moss in the last decade. Dams hold water, raising the water table, and allow further restorative actions to be implemented, such as planting Sphagnum, the keystone of a healthy bog system. Sphagnum retains water even through severe droughts and it is only under Sphagnum where peat is truly protected. The introduction of more trees into the landscape also increases this effect, with moisture retained under canopies.

Where heather dominates, RSPB cut fire breaks to help diversify plant communities. At Dove Stone and in the North Pennines at Geltsdale, bog and wet heath communities are

now developing on cut areas where once heather dominated. Given time, these wetter communities bring greater resilience to fire as the available fuel reduces.

While management is key to making these landscapes more resilient, reducing ignitions is another priority. Unlike naturally fire-adapted habitats found elsewhere in the world, ignitions from natural sources, such as lightning, are incredibly rare in Britain, with ignition here being almost always man-made, whether accidental or deliberate. Education is key to reducing these ignition events, so RSPB has employed seasonal fire rangers to patrol during periods of high-risk, talking to visitors about the risks of barbecues and campfires and engaging with local communities to raise awareness. The fire rangers are assisted by a team of dedicated volunteers who watch for smoke during times of high fire risk.

Unfortunately, accidents only account for an element of ignition events, with deliberate ignition a known problem that is harder to tackle. In a press conference this summer, Greater Manchester Police and the Fire and Rescue Service confirmed that several fires at Dove Stone were being treated as deliberate.

Whether a result of accidental or deliberate ignition, RSPB have ensured our sites are well equipped to tackle fires alongside the Fire and Rescue Service should they occur. RSPB staff operate equipment like argocats and fogging units to ensure a swift response, with further approaches and technologies being explored to amplify this effect.

There will never be a single answer to managing the risk of fire but, by working together and utilising multiple approaches to prevention, detection and response, we give ourselves the best possible chance to minimise the risk while enhancing Britain's upland biodiversity.

**Tom Aspinall**  
RSPB Conservation Officer for the Peak District



15,000 dams and over 800,000 handfuls of Sphagnum moss at Dove Stone increase wetness and resilience to fires



RSPB teams are equipped with argocats and fogging units to assist Fire and Rescue Services when fires breakout



Moisture retaining Sphagnum protects the peat below during fire events



# THE EVOLUTION OF MOORLAND ADVICE

*There is nothing better than sitting on a moorland taking in the sights and sounds; the chuckling call of the Red grouse, distant call of a Curlew and the ‘drumming’ of Snipe. Twenty years ago, moorland advice was generally about livestock numbers, supplementary feeding and burning. Today, there are a plethora of issues for an adviser to consider; hydrology, climate change, depth of peat and its condition, threat of wildfire, carbon, flood mitigation, vegetation monitoring...*

One of the positive aspects of moorland restoration has been blocking of grips. Restoring the hydrological nature of a moor can only be a good thing for the habitat; biodiversity, as well as flood mitigation downstream and reducing the colouration in water. Are there missed opportunities that would have greater impacts? Before the draining of moorland, there would have been a myriad of pools, flushes and meandering watercourses. These were important for a wide range of species. Grip blocking / peat restoration provides opportunities to recreate these lost habitats. Work in the last 2 years has shown that creating pools in the right places can lead to increased usage by moorland species. Remote cameras have shown their importance to Red grouse as well as breeding waders such as Snipe, Curlew, Lapwing and wildfowl.

A peat depth measuring stick is now an important piece of kit in an adviser’s armoury. Measuring the depth of peat on a site can throw up more questions than answers. For example, an average depth of greater than 0.4m of peat

on a 45° slope – is this blanket bog? Vegetation composition would suggest not. Is there a need to have clearer definitions of the types of deep peat?

The best moorlands for biodiversity are those that have a mosaic of habitat types and ages within the landscape. Increasingly, there is a demand to cut rather than burn. But what is best for the habitat and achieving biodiversity goals? It is hoped that current research will provide answers that can influence policy.

On some moors, a combination of the loss of wintering sheep and reduced areas that can be burnt has seen a loss of habitat mosaics and an increased ‘fire load’. Anecdotal evidence would also suggest that loss of habitat mosaics also reduces numbers of birds such as Skylarks and Meadow pipits. A dominant heather canopy can also cause a significant reduction in the diversity of plants and bryophytes. This has been noted at a number of sites in the North East of England where heather, at least 60 years old, is not conforming to the Calluna life cycle model especially on sloping ground. At these sites, plants and bryophytes can comprise less than 5% of vegetation cover.

Our moorlands are fantastic places and habitats for many species. Future advice has to be based on sound scientific grounding that can be tailored to site-specific conditions and deliver a multitude of issues for future generations.

**George Dodds,**  
George Dodds & Co Environmental Consultancy

Photo © George Dodds & Co.



# BIODIVERSITY CONSIDERATIONS

*Scotland’s moorlands are many and varied.*

*Often when we hear the term, we think of the heather clad hills and mountains of eastern Scotland. However, we also need to remember that grass dominated moorlands are a major feature of the wetter west.*

Rough grazing is the generic term that is used in agricultural statistics to cover both types of moorland, and by this definition, over 70% of Scotland’s land area is covered in moorland.

Around 40% of rough grazing occurs in hill and mountainous areas, with the remainder occurring all the way down to sea-level the further north and west you go.

It is recognised that a proportion of these moorlands contain tree cover, such as productive conifers in areas such as Argyll, Galloway and Lochaber or native Scots Pine within the Cairngorms and parts of the north-west.

It is also worth highlighting that we have been concerned about biodiversity on Scotland’s moorlands for decades, with NatureScot’s Index of Terrestrial Birds showing continuous declines in birds like black grouse and curlew since the mid-1990s.

This mirrors well documented declines in other well-monitored groups – such as butterflies and moths – over the same time period.

As a result, the ‘ask’ from wider society from all of Scotland’s moorlands is changing, with an increasing emphasis being put on the need to support a wider range of biodiversity outcomes.

Scotland’s draft Biodiversity Strategy highlights three ways it is expected that this can be achieved:

- Providing benefits for a greater range of biodiversity by increasing the variety of habitats on moorlands through the establishment of trees, shrubs and tall herb vegetation [for example, along watercourses and in gullies]
- Restoring degraded peatlands so that they can return to being functional wetlands, thereby benefiting a wide range of biodiversity and helping to store carbon
- Putting even more focus on the control of grazing by deer and livestock, to ensure that inappropriate densities do not damage restored peatlands, newly planted trees and shrubs or prevent natural regeneration of these where it is feasible

The main challenge will be how best to achieve some or all of these biodiversity aspirations, while ensuring that managers of the moorlands can still maintain viable income streams. The Heather Trust has an essential role to play in helping bring different stakeholders together to discuss how best these challenges can be overcome.

**Davy McCracken,**  
The Heather Trust





SMF = Scotland's Moorland Forum  
WfW = Working for Waders  
GWCT = The Game & Wildlife Conservation Trust  
MMBP = Moorland Management Best Practice

# CALENDAR OF ACTIVITIES



SMF = Scotland's Moorland Forum  
WfW = Working for Waders  
GWCT = The Game & Wildlife Conservation Trust  
MMBP = Moorland Management Best Practice

# ONLINE MEETINGS AND DISCUSSIONS

<b>Muirburn Code Working Group Meeting</b> 12th January	<b>Uplands Alliance Meeting</b> 29th March	<b>Peatland ACTION Stakeholder Engagement Event</b> 1st September
<b>MMBP Strategy Development Sub-Group Meeting</b> 17th January	<b>Muirburn Code Working Group Meeting</b> 6th April	<b>Cross-Party Group on Sustainable Uplands</b> 6th September
<b>MMBP Steering Group Meeting</b> 26th January	<b>Peatland ES UK Project Advisory Meeting</b> 22nd April	<b>SMF Chair's Working Group Meeting</b> 14th September
<b>Peatland ES UK Project Advisory Meeting</b> 28th January	<b>WfW Facilitation Group Meeting</b> 29th April	<b>Scottish Wildfire Forum Meeting</b> 20th September
<b>Scottish Forum for Natural Capital - Sustainable Land Management Group Meeting</b> 3rd February	<b>Scottish Forum for Natural Capital - Sustainable Land Management Group Meeting</b> 5th May	<b>SMF Full Forum Business Meeting</b> 21st September
<b>Cross-Party Group on Sustainable Uplands</b> 8th February	<b>Heather Trust Board Meeting</b> 12th May	<b>Uplands Alliance Meeting</b> 6th October
<b>SMF Public Online Debate: Rewilding</b> 9th February	<b>MMBP Steering Group Meeting</b> 13th May	<b>WfW Facilitation Group Meeting</b> 7th October
<b>Heather Trust Board Meeting</b> 17th February	<b>England &amp; Wales Wildfire Forum Meeting</b> 18th May	<b>Bracken Control Group Meeting</b> 25th October
<b>Moors For The Future Meeting</b> 17th February	<b>Moors For The Future Meeting</b> 19th May	<b>MMBP Steering Group Meeting</b> 28th October
<b>SMF Chair's Working Group Meeting</b> 23rd February	<b>Muirburn Code Working Group Meeting</b> 1st June	<b>NatureScot 30 by 30 Workshops</b> 31st October
<b>WfW Small Grants Fund Review Meeting</b> 25th February	<b>WfW Facilitation Group Meeting</b> 7th July	<b>Muirburn Code Working Group Meeting</b> 4th November
<b>SMF Discussion Series Reference Group</b> 2nd March	<b>SMF Public Online Debate: Muirburn</b> 1st August	<b>WfW Facilitation Next Steps Meeting</b> 11th November
<b>SMF Full Forum Business Meeting</b> 16th March	<b>WfW Small Grants Fund Review Meeting</b> 4th August	<b>MMBP Steering Group Meeting</b> 28th November
<b>WfW Facilitation Group Meeting</b> 18th March	<b>Muirburn Code Working Group Meeting</b> 10th August	<b>2024 Wildfire Conference Planning Meeting</b> 13th December
	<b>Uplands Alliance Meeting</b> 17th August	



the wildfire fighter

# WILDFIRE MANAGEMENT

*“Wildfire Management” is an odd phrase. It suggests wildfires are an inconvenience that can be controlled and supervised in the rural environment. Imagine any other location where if fire occurred the approach would be to control and supervise it? Wildfires are devastating, they destroy everything they touch and are extremely difficult to extinguish. We must change our approach from one where we try to “manage” these events, to one where we work to prevent them from happening and mitigate the damage they can cause.*

Wildfires need three things to exist – oxygen, fuel and an ignition source. We can’t reduce the amount of oxygen available, but we can certainly work to reduce the number of ignition sources and the availability of fuel.

In the UK most of our wildfires are accidentally started, predominantly by an act or omission by a person, so any effective wildfire prevention approach needs to incorporate easy to understand, good quality information that highlights the risk of fire and how the human behaviour is an important factor in fire prevention.

Fuel is something we can control. There are long term strategies being applied across the UK such as peatland restoration, which is a great mitigation approach that will slow down the spread of wildfire, or reduce the intensity of fires that occur but, unless the above ground vegetation is managed, then the wildfires that we can expect to see will be of such a high intensity that they will undo all of the good work being put in to restore peatland and create blanket bogs.

Fuel management might seem counter-intuitive in creating a natural and sustainable environment, but carried out correctly and sympathetically is a necessary and useful approach for wildfire prevention and mitigation.

There is one approach which splits the audience – prescribed burning. Many see this as producing unsightly burn scars across our beautiful landscape but, done correctly, the use of fire as a land management tool provides valuable fire breaks that quickly become green again, but stop the spread of wildfire. A strategic approach that identifies where fire breaks should be located by considering factors such as the assets at risk from wildfire, slope of the land, how much sunlight the area gets and the prevailing wind can result in a fire resilient landscape which will mitigate the spread of fire, reduce the fuel loading and therefore the fire intensity, and protect key assets.

Of course, burning isn’t the only tool in the box. Cutting and grazing are also excellent fuel reduction approaches, and can work hand in hand with prescribed burning. The method isn’t necessarily the thing we should focus on; we should be thinking about fuel reduction for fire prevention and mitigation reasons and using whatever tool is most appropriate.

As climate change progresses, fires will be started by causes our friends in the Mediterranean are challenged with, such as dry lightning. So, public information, while still important, will need to be combined with effective fuel management, so that, when a wildfire starts far from where people can see it and raise the alarm, it is not able to spread and build intensity in a landscape that is not prepared for it, but it is slowed down and controlled by a managed, fire resilient landscape.

**Deputy Assistant Chief Officer Bruce Farquharson**  
Scottish Fire and Rescue Service  
Chair of the Scottish Wildfire Forum

the natural capital consultant

# THE NATURAL CAPITAL VALUE OF MOORLAND HABITATS

*Those who are lucky enough to live close to, work in or enjoy moorland habitats already know that they deliver a huge range of benefits, over and above those which are recognised by the economic value ascribed to them. Those benefits include, for example, water storage and filtration, food for pollinators, carbon capture and storage, recreational value contributing to health and wellbeing, and, of course, wonderful biodiversity. In today’s jargon, these are the ecosystem services delivered by the natural capital of our moorlands.*

We are now wrestling with the challenge of how to measure and value these ecosystem services so that land management decisions can take them fully into account. At the moment there is an array of tools and methodologies being trialled, using a variety of technologies, available at a range of prices and producing results with varying degrees of reliability. That is to be expected at this early stage in the development of a natural capital approach and we can expect better and more affordable measurement techniques over time.

Part of the reason for attempting to ascribe a value to ecosystem services is so that policy decisions can be better informed, allowing land managers and society to decide what the priorities should be for moorland management. Carbon sequestration has got off to a strong start on this, with millions of pounds of grants available for peat restoration across the UK. In the private sector, water companies now recognise that investment in upland catchments can save them costs downstream and are directing their spending accordingly. However, managing a habitat as complex as moorland has long involved trade-

offs, such as those between agriculture, sporting and public access, and that picture becomes even more challenging when ecosystem services are taken into account. Is it more important to enhance biodiversity or manage land to reduce flood risk? What might peat restoration schemes mean for habitats and public access? The answers will vary from place to place.

The question of funding the provision of ecosystem services is another area of intense debate. While publicly-funded grants are likely to continue to be important, budgets for agri-environment schemes will come under increasing pressure now that we are outside the CAP and HM Treasury expects private funding to fill the gap. Some markets are starting to emerge: a regulatory market for nutrient neutrality exists in some catchments in England and Wales and there will be a statutory market for biodiversity net gain in England from November 2023. The carbon credit market, by contrast, is a voluntary one and land managers are cautious about selling credits which they might find they need in their own businesses in future. The challenge of securing a financial return for investors from environmental enhancement has not been completely cracked yet.

Moorland habitats provide a wonderful array of benefits to society and the planet. The better we can become at identifying, describing and valuing those benefits, the better our chances of securing a sustainable future – economically, socially and environmentally – for these precious places.

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By Kate Russell, Tellus Natural Capital



Photo © George Dodds & Co.



# REFLECTIONS ON WILDFIRE



*Simon Thorp was the chairman of the England & Wales Wildfire Forum from 2016 until earlier this year. He provides some reflections on where the debate about wildfire has got to and where it needs to get to.*

### THE THREATS FROM WILDFIRE

As Director of the Heather Trust I saw wildfire as a threat to all forms of land management. In the late summer of 2003, the year after I took over as Director of the Heather Trust, there were two large wildfire incidents that captured public attention and confirmed my concerns about wildfire.

The first incident took place on Bleaklow, in the Peak District. Even though this seems small scale now, at the time, the area of 740ha was seen as a large incident. Of particular importance was the impact that the fire had on the upland habitat and the underlying peat and, looking back, this incident occurred at the start of the discussion around peatland and burning. The response to the damage caused by the fire was led by the newly-formed Moors for the Future project. This project attracted funding of £3.5m, which seemed to be an astronomic sum then. How times change!

The second wildfire incident was on Fylingdales Moor in the North York Moors. Here, the size of the fire was a mere 250ha but the fire caused extensive damage to the moorland

habitat and the upland peat soil, exposing over 2,000 historic features that had not been identified before. 2011 proved to be another bad wildfire year. The Crowthorne fire in Swinley Forest, Berkshire, was a major incident covering 300ha of woodland, but it was its location that made it especially significant. Broadmoor Hospital, Sandhurst Military College, the Transport Research Laboratory, a gas main, main roads, and the M3 motorway were all nearby. In addition to the risk of extensive evacuation being necessary, the smoke from the fire drifting over Westminster served as a wakeup call. The infamous wildfire incidents at Saddleworth and Winter Hill in 2018 consumed 1,800ha each and were a sign that our problems in the UK are increasing.

### THE DEVELOPING WILDFIRE RISK IN THE UK

In the UK we have had the luxury of being able to adopt a reactive approach to wildfire, but this must change. The scale of the wildfire problem is increasing as shown in Figure 1. It is not necessarily the size that is the biggest problem, as the location of a wildfire is important in defining the risk. For example, in 2018, fires occurred in more populated areas: standing arable crop (Little Marlow, Berkshire – 30ha), urban common land (Wanstead Flats in East London – 100ha). Arguably, the biggest risk to life and property occurs on the rural-urban interface.

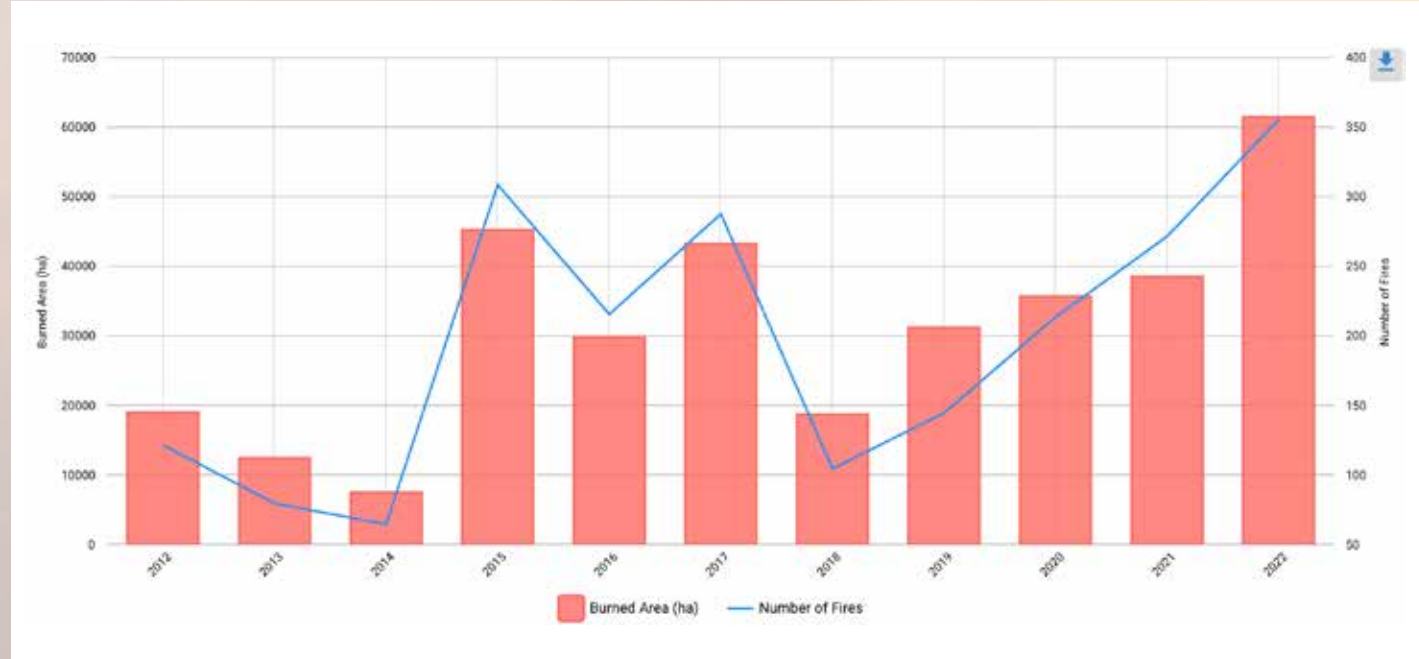


Figure 1: Global Wildfire Information System (GWIS) Annual Statistics for United Kingdom. Downloaded from: <https://gwis.jrc.ec.europa.eu/apps/gwis.statistics/estimates>



### INTERNATIONAL WILDFIRE

To place the UK problem in context, in 2022 the worst-affected country in the EU has been Spain, where fire has destroyed 244,924 hectares, according to GWIS data, followed by Romania (150,528 hectares) and Portugal (77,292 hectares). However, in the UK there is no room for complacency and thinking that serious wildfires only happen elsewhere. In response to the greater threats from wildfire, other countries are much better organised.

I attended the international wildfire conference in South Africa in 2011 and was impressed by the scale of the response and the resources allocated to wildfire. The Working for Wildfire programme had large numbers of aircraft and vehicles to move personnel to fight wildfires. We may not have the sources of ignition associated with people cooking on open fires in the UK, although the BBQ pundits are doing their best, and our risks are lower, but there are lessons that we must learn from the measures that other countries put in place.

Wildfire incidents are occurring in all parts of the world, even in the peat on Greenland. The figures from the EU quoted above are an indication of the scale of the problem that is coming our way with climate change. There should be no doubt about the scale of the threat. The statistics from California make salutary reading (Table 1) – wildfires kill and can destroy property on a large scale.

### DEVELOPING A UK RESPONSE TO WILDFIRE

The Fire and Rescue Services (FRS) have long been given responsibility for wildfire but, in Scotland in 2004, it was recognised that the FRS cannot deal with this on their own and there was a need to bring people together to discuss the issues. The Scottish Wildfire Forum developed from this and the England and Wales Wildfire Forum (EWWF) followed in 2008. I represented the Trust on both forums from the start, and took over as Chairman of the EWWF in 2016.



In the last 20 years, we have been playing catch-up in the UK and have made considerable progress, with many encouraging developments, but we have a long way to go. A reactive response will not suffice; we must consider wildfire as part of land management planning. In his foreword to the next international wildfire conference, which takes place in Portugal in 2023, the conference chairman emphasises the need for addressing the causes of wildfire, not just the FRS response (see box).

*Prior conferences helped organizations and professionals from more than 70 nations to develop a common fire lexicon, doctrines, training manuals, techniques, and operational standards. We excelled on preventing, detecting, and extinguishing wildland fires, mastering a portfolio of technological solutions.*

*Through time, the political and physical systems that we are part of, tackled mostly the consequences (suppressing fire) instead of addressing the root causes (human activity and how it uses the land). The reinforcement of suppression, without investing in fuel management, is a quick fix, that escalates the problem to a higher level. This firefighting trap or Fire Paradox, in a global warmer and drier environment, is exposing different biotas and communities to severe fires, wildfires, bushfires, forest, vegetation, landscape and rural fires as they are named from north to south, west to east.*

**TIAGO MARTINS DE OLIVEIRA**  
Chairman of the AGIF Board of Directors.  
Chairman of the Organizing Committee of the 8th International Wildland Fire Conference.  
Porto, Portugal May 2023.



Name	Hectares	Start date	Structures	Deaths
August Complex	417,898	Aug-20	935	1
Camp	62,050	Nov-18	18,804	85

Table 1: California – Largest and Most Deadly Wildfires

The FRS tactics for fighting wildfire have improved significantly, but a large wildfire in woodland or deep vegetation cannot be extinguished easily. An integrated approach to fire management is required. This should start with efforts to prevent wildfire ignition in the first place but land management planning should focus on reducing the intensity of a fire by management of the fuel load and, by using fuel / firebreaks, make it possible to stop wildfires once they have started. Planning must take place in advance of the wildfire; when the smoke has started to rise, it is too late.

Biennial national wildfire conferences have been held since 2003 and I have contributed to most of them on behalf of The Heather Trust. The latest one was held in November 2022 and is reported on elsewhere in this review. The wildfire forums took over the running of these conferences in 2015 and this has provided a greater focus on the issues that are important to the UK, while encouraging input from international delegates and speakers.

One of the concerns has been the lack of engagement by government. There is a large amount of expertise available in the wildfire community, but this is not being harnessed by government to feed into the development of policy that covers wildfire issues.



The Home Office has started to move in the right direction and, with encouragement from the EWWF, published their Wildfire Framework early in 2022. For the first time the framework “identifies responsibilities, clarifies relationships and facilitates coordination at government level and between key wildfire stakeholders, in England”. This is a significant step forward, but it is a first step of many that are required.

The framework states that “a coordinated approach is essential to mitigate the impacts of wildfire to people, property, habitats, livestock, natural capital and wildlife, and to plan the most effective response to wildfire incidents.” Laudable concepts, but the government also needs to introduce measures to implement them.

A public-private partnership could be the best approach, but the government needs to support the development of such an arrangement and provide some resources. In England and Wales this could be based on the EWWF, with input from the FRS.

CONCLUSIONS

Wildfires will occur in all parts of the country. They are not just the preserve of remote rural areas; as has already been demonstrated, they can and will occur close to centres of population.

In this country there have been no fatalities as a direct result of a wildfire incident. There have been some close shaves and I fear that it is only a matter of time before lives are lost. Must we wait until this happens before we wake up to the severity of the threats posed by wildfire?

Greater leadership is required from government to set up an integrated approach to wildfire management that places more emphasis on mitigation of the risks in advance of wildfire incidents. Wildfire affects a wide range of government departments; it is not all about loss of heather in some remote corner.

There is no room for complacency. It is not *if* a wildfire will take place on any area of land but *when*.

All the indications from wildfire research are that the wildfire risk is increasing in the UK, as well as the rest of the world. We need to get our act together – fast.

<sup>1</sup> The Royal Society blog post: Global trends in wildfire and its impacts - Professor Stefan Doerr and Dr Cristina Santin, Swansea University. <https://royalsociety.org/blog/2020/10/global-trends-wildfire/>

# Good reasons for the growing interest in *forestry*

## Businesses are increasingly seeking to offset their carbon footprint through forestry. Jonathan Cahusac summarises the motivations and benefits

The Scottish Government’s target of planting 36 million trees by 2030 and commitment to funding for peatland restoration, has initiated a growing trend among businesses to invest in Scotland’s natural capital.

In a climate where investors are increasingly wary of the environmental impact of businesses and governments are looking at climate change-related regulation in all sectors, it pays to be proactive in looking for carbon-neutralising solutions.

New approaches to land use

It would seem that previously less-favoured hillside, unproductive and otherwise remote and rural land is an increasingly popular asset for companies and institutional investors looking to offset their carbon footprint. This otherwise ‘difficult’ terrain can be the ideal location for planting native woodland and contributing visibly towards Scotland’s net zero targets.

As well as providing a crucial form of land-based carbon capture essential to improving the environment, responsible forestry can positively impact the survival of Scotland’s native endangered species, from wildcats to capercaillie.

Voluntary standards like the Woodland Carbon Code offer accreditation schemes which allow forestry projects to demonstrate how much carbon dioxide they actually sequester – offering confidence and legitimacy to businesses.

“ With this heady combination of tax, cash and environmental incentives in play, Scotland’s forestry industry looks likely to increase in popularity among investors. ”

Financial incentives and benefits

Further incentives to invest in Scotland’s forestry industry come in the form of the grants available for the creation and maintenance of new woodland. There are also attractive tax advantages involved in the ownership and management of woodlands: from a generous 100% business property relief (under certain conditions) to exemptions from income and capital gains taxes. The sale of commercial woodland timber can also be highly profitable.

Forestry also seems to be navigating the recent extra challenges of the Covid-19 crisis with more ease than some industries, as the pandemic appears not to have negatively impacted land values, for now.

With this heady combination of tax, cash and environmental incentives in play, Scotland’s forestry industry looks likely to increase in popularity among investors. But this is not the easiest terrain to navigate – given the often complex environmental, financial, legal and land use issues involved.

At Lindsays, we already work with businesses, estate owners, accountants, land agents and others who are highly experienced in this area and can help signpost you through the issues and decisions. We’d be happy to speak to you, offer relevant guidance and make introductions.



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## UK WILDFIRE CONFERENCE 2022: THE HUMAN DIMENSION

*The Wildfire community from the UK, Republic of Ireland, Europe and as far afield as Australia gathered in Belfast, Northern Ireland for a 2 day conference on the human dimensions of wildfires. There were also site visits, a helicopter display, Gala Dinner and a wide range of exhibition trade stands. Around 220 people attended the conference.*

The conference was pulled together by a Steering Group of the Northern Ireland Environment Agency, Northern Ireland Fire and Rescue Service and the Belfast Hill Partnership, with support and sponsorship from Northern Ireland Water, the Scottish, English and Welsh Wildfire Forums, and the European Forest Institute. It was the eighth conference in the series since 2007.

Human Dimensions was the theme, with the first keynote speech by Mark Smyth NIFRS on Compassionate Leadership. The international dimension was covered by Dr Peter Moore's (ex-UN FAO) talk on the need to work with not against people. Robijn Brongersma from the Pau Costa Foundation covered the tricky issues of how to create cross-border fire management plans in Ireland through stakeholder engagement.



Sebastien Lahaye (France) led a session looking at response, prevention, fire danger intelligence and community wildfire protection plans. While Christine Eriksen (Australia) looked at the psychology of evacuation.

Other speakers covered a diverse range of topics including: health impacts, co-operative Wildfire Groups, working with upland farmers, integrated wildfire plans for the Mourne Mountains, challenges in wildland urban interface fires, Healthy Hillsides in Wales, communication networks, community mitigation, multi-agency working case studies, Irish partnerships for grouse, politicians and wildfires.

Jim Hammond NIEA wound up the conference covering the new multi-stakeholder wildfire strategy for Northern Ireland.

At the end of the conference, Bruce Farquharson, Chair of the Scottish Wildfire Forum, announced that the Heather Trust will be hosting the 2024 conference in Scotland; with venue and conference theme to be confirmed soon.

**Michael Bruce,**  
Firebreak Services Ltd.



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## PEATLAND ACTION OFFERS FUNDING AND SUPPORT FOR PEATLAND RESTORATION PROJECTS

*More than 30% of Scotland's land total is covered by peatlands. They're a unique habitat capable of storing vast amounts of carbon – 1.8 billion tonnes – the equivalent of 45 years of our total net annual emissions.*

However, past drainage and management have damaged many of these peatlands, which are now in such poor condition that instead of acting as carbon sinks, they are emitting greenhouse gases. In 2020, degraded peatlands released 15% of Scotland's total net emissions – more than energy or buildings.

The good news is that we can restore peatlands to a condition where they are functioning properly again.

The benefits of functioning peatlands are wider than just carbon capture and storage. Peatland in good condition has a greater plant diversity and in turn higher numbers of invertebrates - a food source for birds such as grouse and other upland species. Restored areas absorb and hold rainwater for longer than damaged areas, before slowly allowing it to seep into river systems. This regulation of water flow is important as it reduces the likelihood of flooding downstream. It also helps alleviate issues associated with drought conditions such as wild fires.



Restoration reduces soil erosion, helping to improve water quality at source, which is important for fisheries and drinking water catchments.

Peatland restoration is a relatively new and growing sector with the capacity to help support the development of a green economy. Funded by Scottish Government and delivered by NatureScot in partnership with the National Park Authorities, Scottish Water and Forest & Land Scotland, Peatland ACTION has been at the forefront of this development, and instrumental in accelerating progress. Over the last ten years, Peatland ACTION has supported hundreds of landowners and organisations to restore over 35,000 ha of peatland. As well as developing and implementing a range of new peatland restoration techniques, the project provides training for specialist contractors.

The work it is doing is crucial to achieving Scotland's aim of reaching net-zero carbon emissions, as well as addressing the biodiversity crisis.

Funds of £250m from the Scottish Government Infrastructure Investment Plan are earmarked for 250,000 ha of peatland restoration between 2020 and 2030. To meet this ambitious target, NatureScot and the other Peatland ACTION delivery partners are actively seeking to support landowners to restore their peatlands and manage them sustainably.

Peatland ACTION can provide 100% funding for restoration as well as help with project management and completing grant applications. It provides specialist advice and resources to deliver on-the-ground peatland restoration and guidance for multi-million pound, large-scale projects over multiple years, as well as smaller, community-based restoration projects.



For more information on Peatland ACTION visit: [www.nature.scot/PeatlandACTION](https://www.nature.scot/PeatlandACTION)  
If you are interested in developing a peatland restoration project contact us today: [peatlandaction@nature.scot](mailto:peatlandaction@nature.scot)



# 30x30 AND NATURE NETWORKS

*In response to the biodiversity crisis, that has seen 49% of species decrease in abundance across Scotland since 1970, Scottish Government has committed to two ambitious projects.*

The ‘30x30’ project which commits Scotland to conserving 30% of land and sea for nature by the year 2030 and the ‘Nature Networks’ project with a goal of better connecting nature-rich sites across Scotland.

Both projects sit within the emerging Scottish Biodiversity Strategy 2022-2045 and, as with the overarching strategy, aim to not just halt the biodiversity loss seen across Scotland but ‘bend the curve’ and reverse this trend. The result will be a Scotland with natural habitats and species that are more resilient to the effects of climate change and other pressures.

The current suite of statutory protected areas (Sites of Special Scientific Interest, European sites, National Nature Reserves and Ramsar sites) encompasses 18.2% of Scotland’s land. These areas have been key in securing gains across a variety of species and habitats. To increase the amount of land conserved for biodiversity by at least 12% over the next seven years is an enormous task.

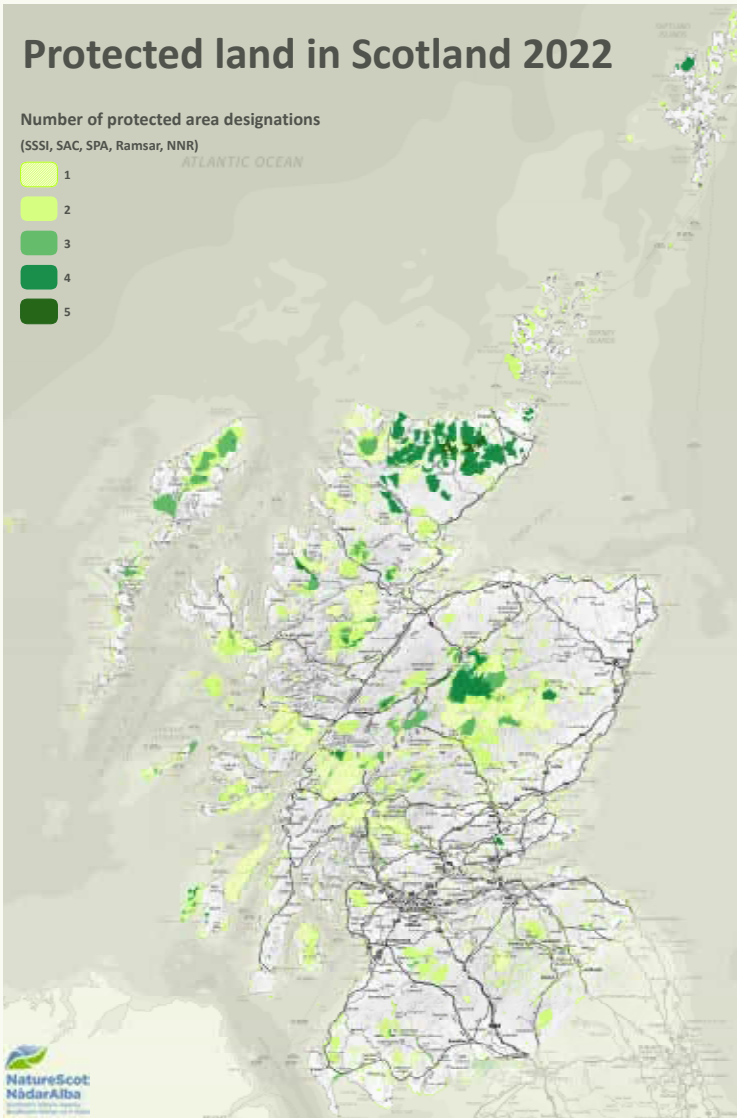
The 30x30 project presents an opportunity to not just increase the amount of land that’s delivering for nature but also to question more radically how land is conserved, and delivering, for nature. It is using this opportunity to both improve our existing sites but also bring in a much more collaborative, bottom-up approach to conserving land through other effective area-based conservation measures (OECMs). These OECMs do not require statutory protection in the same way that previous designations have and so present an opportunity to be more flexible and agile in meeting the challenges nature faces. Clear definitions and criteria will be required on what constitutes an OECM, ensuring they deliver for nature in the long term.

The Nature Networks project is broader in scope, recognising that, for area-based conservation to work, there needs to be greater connectivity between areas of high biodiversity value being conserved. As with 30x30 it recognises the need to work at a landscape scale when looking to address the pressures biodiversity faces. Nature Networks will build on existing approaches to connecting landscapes; enhancing connecting habitat, developing habitat corridors and stepping-stones allowing habitats and species that rely on them to thrive. Biodiversity will be at the core of any Nature Network but they will also seek to maximise nature’s contribution to people, such as adaptation and mitigation to climate change through ecosystem services and health and wellbeing benefits.

The two frameworks are being designed using a co-design approach, meaning that stakeholders are not just consulted but are equal partners in deciding what the frameworks look like. Over the last few months, over 100 organisations from across Scotland, both geographically and sectorally, have come together to work through the challenges the frameworks need to address. They have worked to find the high-level solutions the frameworks need to feature to ensure they are successful in delivering for both people and nature.

With the workshops having come to a close, NatureScot are now pulling together the amazing amount of experience and in-sight that co-creators have brought to the design process. Both frameworks are due for public consultation in April 2023.

**Christian Christodoulou-Davies**  
Project Manager, NatureScot



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# SCOTLAND'S MOORLAND FORUM

*Scotland's Moorland Forum is one of the main ways the Trust delivers its work in Scotland. The Forum is made up of 27 organisations with varied interests in moorland and uplands environments. The Trust is funded by NatureScot to facilitate the work of the Forum.*

**Discussion at the Forum**

The Forum's discussion series, introduced at the end of 2021, took shape during 2022. Our first topic was Rewilding and we saw an impressive 200+ attendees join us for an online conversation between the Forum's Chair, Hugh Raven, and three expert speakers. This was preceded in November 2021 with a Chatham House Rules discussion amongst Forum reps and our speakers and the output from both of these events was a Synthesis Paper, which was sent to MSPs, civil servants and relevant and interested others, that captured consensus, difference, knowledge gaps and relevance to policy development.

Our second topic for the remainder of 2022 was muirburn. To explore this topic we arranged a site visit to Glenmazeraan Estate in the Monadhliath mountains followed by a Chatham House Rules discussion, and a couple of months later an online conversation – again with three expert speakers and Hugh Raven. The topic was further explored at the Forum's November discussion meeting and a synthesis paper should be out in early 2023. The online conversations and synthesis papers are available on the Forum's website at [www.moorlandforum.org.uk](http://www.moorlandforum.org.uk) (under the Discussion Series Tab).

The Forum has also welcomed Minister for Environment, Biodiversity and Climate Change out on site at Auchnafree Estate to discuss grouse moor management practices more generally in light of the licensing proposals. We are grateful to Alix Whitaker and her keeper Richard, as well as the Tayside and Central Scotland Moorland Group for making this possible.

At our November meeting, members also heard from speakers on the Peatland Code and its role alongside

public funding in restoration efforts across Scotland, and from Mark Wilson of the British Trust for Ornithology on their work, through the Working for Waders Initiative, to develop wader sensitivity maps. This really important work should help influence woodland expansion and new forestry developments to ensure they avoid areas where wader could otherwise recover to better numbers than are currently seen (more on this in our research pages).

**Moorland Management Best Practice**

The Forum has been running a project to develop best practice guidance in moorland management since 2017, but it has struggled to be adequately resourced and funded up to now. During 2022, the Trust's Director Scotland, Anne Gray, worked with members of the Moorland Management Best Practice Steering Group to develop a clear forward strategy and structure for the project, which, in turn, has led to an increase in staffing and funding support. A new Best Practice Officer, Louise Farmer, started at the beginning of November. Louise, formerly a Regional Officer with BASC in England, is based at NatureScot and will initially work across Moorland Management Best Practice, Wild Deer Best Practice, NatureScot's shared approach to wildlife management and give some support to the Working for Waders Initiative too. Louise won't be drafting guidance herself in the main – we will be turning to specialists for that – but she will co-ordinate effort and ensure consistency across Scotland's suite of wildlife management best practice guides.

**Muirburn Code Working Group**

The Muirburn Code Working Group of Scotland's Moorland Forum has met regularly throughout 2022 to act as a sounding board to NatureScot and Scottish Government on muirburn licensing proposals; to consider the changes needed to refresh and update the Muirburn Code in light of licensing and to find ways to promote best practice muirburn. The Group also work closely with the Scottish Wildfire Forum which has developed a Lantra-accredited muirburn training module.



# WfW UPDATE

*The Working for Waders (WfW) initiative was established in 2017 to bring together a broad range of stakeholders with a common desire to halt the loss of breeding waders in the face of worrying declines.*

We have been fortunate to receive significant support since its inception from NatureScot – in terms of both funding and staff input – and from in-kind contributions from a wide range of organisations who have helped provide focus for the work of the initiative.

That support has allowed WfW not only to fund farmers and land managers to take positive actions on the ground for waders, but also to develop guidance on how best to undertake such management and assess the resulting impacts on wader numbers and productivity.

The initiative has also funded activities focused on making more effective use of existing wader data.

For example, a hotspot map has been produced showing trends in wader abundance and distribution across Scotland. We are currently seeking to identify how best to incorporate this information into land management planning, particularly in relation to discussions and decisions on woodland expansion.

Throughout 2022 we have also been reflecting on how the initiative has worked over the past five years, and especially what more could be done to help make a difference at the scale needed to reverse the declines in waders in Scotland.

That reflection – and especially the actions arising from it – is not yet complete. But one example will hopefully serve to illustrate some of our thinking on where WfW needs to concentrate its efforts in the future.

It is already recognised that it will be vital to protect and maintain breeding waders where they still occur in good numbers – which is primarily on managed moorlands and on some of the Scottish islands.



## UPLANDS MANAGEMENT GROUP

At the end of June, Simon Thorp, the chairman, made the disappointing decision to suspend the activity of this Group. The Heather Trust remains a keen advocate for the concept of cross-sector groups that can provide a practical input into the many upland debates, and perhaps provide future proofing and protection against unintended consequences when new regulations are introduced. Until a stronger purpose for the UMG emerges, which allows it to generate meaningful outputs, the Group will remain in abeyance.



However, if we are going to properly redress the balance, then we also need to ensure that farmers and crofters can help waders increase in both numbers and productivity within those areas from which they are currently disappearing.

While measures taken by any one individual farmer or crofter can be beneficial, it will really only be through collective action – at the scale of neighbouring farms and crofts or across a catchment – that we will achieve real benefits on the ground for birds like curlew and lapwing.

WfW therefore needs to do more to ensure that future land management support policies in Scotland do not leave waders behind. For example, including positive actions for waders within the biodiversity conditions put on the receipt of future agricultural support payments; developing agri-environment schemes that reward groups of land managers for doing more for waders; and ensuring that existing wader hotspots are taken into account when decisions are being made as to where best to target woodland expansion or peatland restoration.

That will not only mean that WfW needs to engage in more strategic policy discussions but also that effective wider partnership working needs to feature even more in WfW's future.

**Davy McCracken**  
Co-Chair, Working for Waders



# UPDATE AND OUTLOOK BEYOND 10 YEARS OF PEATLAND-ES-UK EVIDENCE ON HEATHER MANAGEMENT



*Dr Andreas Heinemeyer is an Associate Professor at the Stockholm Environment Institute (SEI) at the University of York (Department of Environment & Geography). He routinely measures and models how and how fast carbon cycles through terrestrial plant-soil systems, how much carbon is stored and how carbon and water cycles interact. Currently, he is finalising the 10-year report of an ongoing research project on assessing upland peatland heather management impacts on ecosystem services we all rely on, such as carbon storage (climate change mitigation), water storage (providing drinking water) and biodiversity (plants, invertebrates and birds).*

Blanket bogs cover much of the UK uplands in vast ‘blankets’ of peat. Crucially, an intact bog provides benefits or ecosystem services to our society, not only carbon storage and, as such, potential to mitigate against climate change, but also drinking water and recreation linked to biodiversity in addition to farming economy. However, as peatlands are reliant on a high water table to lock away carbon and grow peat (about 1mm per year), the anoxic conditions also stimulate methane production and thus add to climate warming greenhouse gases in the atmosphere. The balance between carbon storage and greenhouse gas emissions is very much understudied, especially on blanket bogs. As world leaders gather at COP27, this is why our science about UK blanket bogs matters: we need to understand how these systems respond to environmental changes and how management can be a useful or detrimental tool to ensure a safe bog future with continued benefits. To understand peatland responses to climate change and underpin best practice management by evidence we do need to understand

how these systems work, also in relation to increased wildfire risks threatening bog functions and their carbon stores.

The Peatland-ES-UK project (<https://peatland-es-uk.york.ac.uk/home>) aims to assess key plant-soil processes underpinning ecosystem services and their sensitivity to climate and management. The study compares a heather burn intervention to alternative mowing (with leaving or removing brash) and to additional uncut areas across three sites in Northern England. We completed our 10th year of two funding phases, including funding from the Heather Trust. However, to provide meaningful insights to underpin an evidence and outcomes based management approach we need another 10 years to capture the complete vegetation regrowth impact. Luckily we have just secured 4-years of further funding from the Natural Environment Research Council (NERC) as part of a wider £2.5m project to assess vegetation management in relation to wildfire mitigation. Our sites will continue to be assessed for impacts on carbon storage; comparing burnt, mown and unmanaged heather areas. As to the current project, a quick update on the outcomes of the Heather Trust funding: we assessed nutrient concentrations in vegetation and found that either management, but mostly burning, increased levels of some crucial elements (i.e. likely an ash fertilisation effect!), which we also found to relate to increased carbon uptake (which was greater on burnt than mown plots).

Our results are a vital contribution to the evidence base around an outcomes-based management policy. Notwithstanding recent policy changes on heather burning, we hope that this project will continue to provide a platform to bring together all interested stakeholders (ideally to include Defra and Natural England) to ensure its future and deliver on its long-term aims set out by Defra and Natural England and now also the NERC.

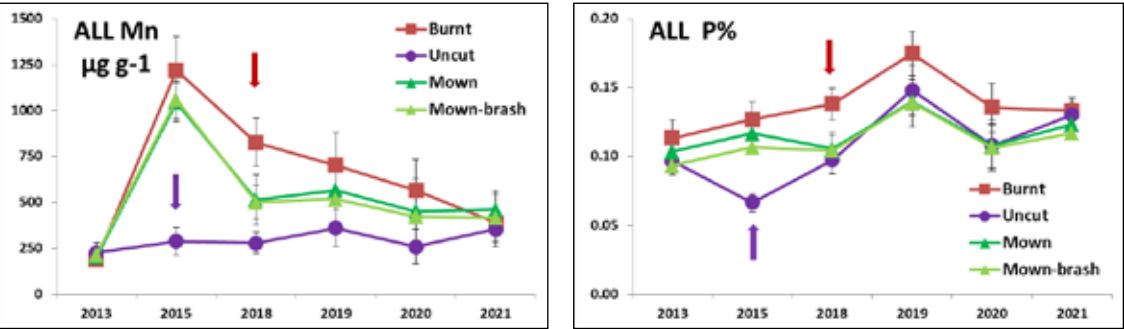


Figure 1: Nutrient contents in heather increased post-management (2013), especially for nitrogen, potassium, manganese (Mn) and phosphorus (P). The increase was highest in the years following management compared to uncut plots (purple arrows) and declined over time. Especially for Mn and P, burnt plots (red arrows) showed larger and longer lasting impacts than mown plots.

# COLLABORATIVE WORKING IS KEY TO DEVELOPING NEW KNOWLEDGE AND UNDERSTANDING OF UK WILDFIRES

The UK has a complex fire regime, including the historic and current use of fire as a management tool in our moorlands and heathlands, as well as episodic wildfires, which in bad seasons stretch the resilience of our emergency services and land management sector. In England alone between 2009/10 and 2016/17 there were around 32,000 wildfires each year<sup>1</sup>. Most are small (less than 1 ha), but larger incidents do occur, many in our rural regions (e.g., Winter Hill & Saddleworth, summer 2018; Marsden Moor, Feb 2019; Flow Country wildfire, Apr 2019). The mix of land cover types and a diverse rural-urban interface means there are distinct fire challenges for the UK, including threat to human life and property, as well as impacts on land assets and important ecosystem services (e.g., carbon, biodiversity, water quality).

The recent fires across the UK during the extreme heat of summer 2022 has highlighted the danger posed by wildfires, with particular challenges in the rural-urban interface. Multiple Fire & Rescue Services across the UK declared major incidents during the most extreme period in July 2022, with London Fire Brigade declaring its busiest day since the Second World War<sup>2</sup>. These sorts of events may be signals of times to come. Under future climate change, we will likely see an increase in the number of days above critical ‘fire danger’ thresholds<sup>3</sup> with the potential for the wildfire season to extend later into the autumn period<sup>4</sup>.

Fire danger is the combination of both constant and variable factors that affect the initiation, spread, and ease of controlling a wildfire. Fire Danger Rating Systems (FDRS) have a primary objective of assessing fuel and weather conditions and provide estimates about the potential fire behaviour under those conditions. This information can then be used to inform management, planning and preparation decisions at times of elevated risk. However, we do not currently have a FDRS that adequately captures the complexity of wildfires in the UK.

## UKFDRS RESEARCH PROJECT

The ‘Toward a UK Fire Danger Rating System’ (UKFDRS) project is funded by the Natural Environment Research Council (NERC) and aims to establish and test the scientific underpinning and key components required to build an effective, tailored UK fire danger rating system. This requires an understanding of the location and state our key fuels (e.g., heather, gorse, grasses), their fuel moisture dynamics and fuel flammability, all building towards a better understanding of the fire behaviour in these fuels.

This multidisciplinary project started in early 2020 just as the COVID-19 pandemic was starting – not an ideal time to start a major field and lab intensive project! Since restrictions eased in 2021 and through 2022, the project team, supported by our project partners, has been working intensively to gather field data, worked long hours in the laboratories, crunched computer code and inspected satellite images to progress our six Work Packages. You can find out more about the specific areas on our project website [www.ukfdrs.com](http://www.ukfdrs.com). The UKFDRS project still has over two years left to run but we are already generating valuable datasets and findings. We will keep our website up to date with project publications<sup>5</sup> but do get in touch if you’d like to find out more.

Developing a functional system for a range of users will take time – speak to colleagues in Canada or Australia where their work has been going on for decades – but, by working together across sectors, projects<sup>6</sup> and disciplines, we can make significant impact in the years to come.

**Dr Gareth Clay,**  
Department of Geography, The University of Manchester  
[gareth.clay@manchester.ac.uk](mailto:gareth.clay@manchester.ac.uk)  
Twitter: [@garethdclay](https://twitter.com/garethdclay)

<sup>1</sup> Forestry Commission (2019) Wildfire Statistics for England 2009-10 to 2016-17. Available from [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/779468/FC\\_Wildfire\\_Statistics\\_for\\_England\\_2009\\_10\\_to\\_2016\\_17.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779468/FC_Wildfire_Statistics_for_England_2009_10_to_2016_17.pdf)  
<sup>2</sup> <https://www.nationalfirechiefs.org.uk/News/fire-services-deal-with-unprecedented-number-of-incidents-during-the-heatwave>  
<sup>3</sup> Arnell et al. (2021) The effect of climate change on indicators of fire danger in the UK. Environmental Research Letters, 16, 044207. <https://iopscience.iop.org/article/10.1088/1748-9326/abd9f2>  
<sup>4</sup> Perry et al. (2022) Past and future trends in fire weather for the UK. Natural Hazards and Earth System Sciences, 22, 559-575 <https://nhess.copernicus.org/articles/22/559/2022/>  
<sup>5</sup> <https://ukfdrs.com/publications/>  
<sup>6</sup> See also the Scottish Fire Danger Rating System project <https://www.scottishfiredangerratingsystem.co.uk/>. You can find a copy of their final report under ‘News’



# SENSITIVITY MAPPING SUMMARY

Britain’s breeding waders are in trouble. Population trends based on data from the BTO/JNCC/RSPB Breeding Bird Survey show that most UK breeding populations of wader species are declining. Among a range of factors stacked against them, which include agricultural intensification and increased rates of egg and chick predation, the conversion of various grassland and moorland habitats to forest has been identified as one of the main threats to wader populations.

Of course, woodland creation can deliver a wide range of economic, environmental and conservation benefits. Forest expansion has a key role to play in the UK’s efforts to reduce net carbon emissions but requires ambitious tree-planting targets to be achieved. In Scotland alone, these targets amount to 150 km2 of new woodland per year by 2025. A host of competing land uses and environmental constraints have ended up making some breeding wader habitats among the most attractive for tree-planting.

Unfortunately, tree planting in these areas is likely to have negative impacts on waders. Woodlands displace and fragment open habitats used by breeding waders and can also increase the impacts of predators such as foxes and crows on the breeding success of these ground-nesting birds. Even though regulators and woodland developers spend a lot of time, effort and money carrying out surveys and assessments to avoid the creation of woodlands in good wader habitats, this isn’t a perfect system. Some newly established woodlands still have the potential to harm wader populations.

A better understanding of the areas which are being used by waders would make it easier for planners, consultants and decision-makers to avoid these regions when planning forest expansion. To this end, BTO has developed maps that zone areas according to their value for waders. BTO researchers have modelled wader abundance using Bird Atlas data, alongside other environmental datasets, to produce 1-km resolution ‘sensitivity maps’ of predicted

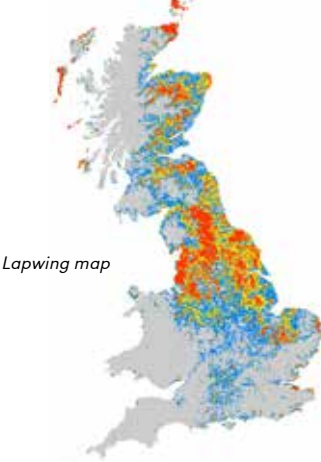
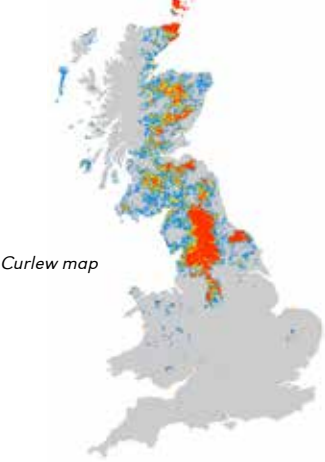
wader abundance. These can be used to guide policy decisions on where to target woodland creation to minimise negative impacts on waders or where best to focus wader conservation efforts so that they benefit as many birds as possible. At a more local level, the maps can be used to inform and guide assessments of proposed woodland developments.

This information can also be used to estimate the proportion of each species’ population within broad landscapes. Two landscapes that punch well above their weight for waders are moorlands managed for grouse shooting and islands. Waders breeding in these areas benefit from reduced levels of egg and chick predation and, as a consequence, several species are much more numerous here than in other parts of Britain. Together, these landscapes comprise 12% of Britain’s land area, but support between 40% and 80% of several of our most important breeding waders, including Curlew, Lapwing and Golden Plover.

Wader sensitivity maps for the whole of Great Britain are freely available to view at <https://app.bto.org/wader-map>. These maps have already been adopted by the Forestry Commission to inform decisions about individual tree-planting proposals. However, the most effective way to use the maps to benefit wader populations would be to inform strategic decisions about where to focus conservation efforts, and where to prioritise woodland creation and other alternative land uses.

*This work was carried out by British Trust for Ornithology and funded by Borders Council, Cairngorms National Park, Forestry Commission, JNCC, RSPB, Scottish Forestry, and Working for Waders. It wouldn’t have been possible without the skill and dedication of the thousands of voluntary bird surveyors who contribute to BTO’s long-term monitoring schemes.*

**Mark Wilson,**  
Research Ecologist, British Trust for Ornithology



Images © BTO/Philip Croft

Follow this link to view maps on the BTO website: <https://app.bto.org/wader-map/>

# ENGAGING THE PUBLIC WITH PEATLAND MANAGEMENT



*Peatland management has recently become a frequent feature in the mainstream media. However, many members of the public have limited knowledge about what peatland management actually involves. The debates around current issues are often presented as black and white and miss the nuance of management decisions. Following our research into the values land managers*

*hold in relation to peatland management in the Yorkshire Dales (presented in last year’s review), we wanted to share our results with the public. To do this, we commissioned a comic from educational resources company, Dekko Comics. (featured on the next spread)*

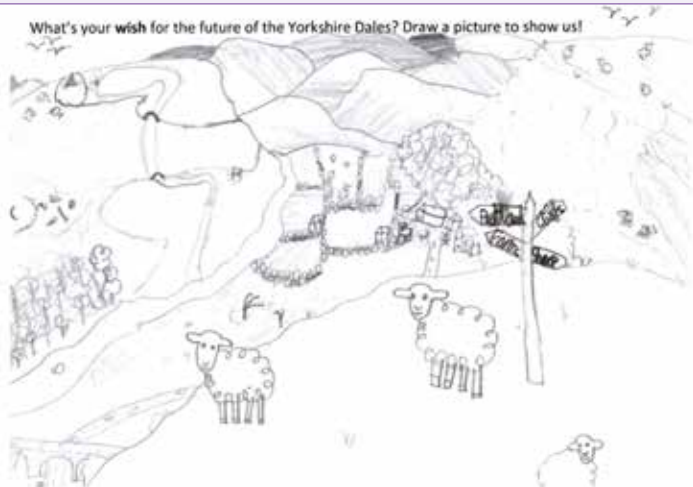
The research team consisted of representatives from the Heather Trust and Yorkshire Peat Partnership, alongside researchers from the Universities of Derby and East Anglia. We won a small grant from the Natural Environment Research Council (NERC) to develop new ways of engaging the public with scientific research. Our aim was to translate our research findings into a format that would be accessible to the public, and particularly young people, thereby opening up the conversation around moorland management.

The comic storyline was developed around four characters representing the four viewpoints which had emerged from our research. These four characters find a magic teapot, which contains ‘Jeanie’, who offers them a wish related to the Yorkshire Dales. The farmer character is just about

to wish for more control over how the land is managed, when a gamekeeper takes the teapot and tries to wish for the moorlands to always be managed for grouse, with the associated benefits for the local economy and wild birdlife. Before he can make his wish, however, the teapot is taken by a conservationist, who wants to wish for the peatlands to be rewetted to limit flooding and store carbon. Finally, the teapot is taken by someone in favour of rewilding and allowing the peatland vegetation to grow naturally. Jeanie, meanwhile, becomes frustrated at the four characters’ inability to make a wish, so she makes her own wish for them all to share a cup of tea together. The comic ends with the characters agreeing that they all love the landscape and the wild birds and deciding to work together to come up with solutions. 1,200 copies of the comic were distributed through National Park visitor centres and schools in the Yorkshire Dales area.

Alongside the comic, we also ran a competition asking young people to draw their wish for the future of the Yorkshire Dales. I made a visit to a local school and used the comic as the basis of sessions with different ages of students. At the end of the sessions, all students I engaged with felt that they knew something about peatlands (compared to only 15% before the sessions) and 66% felt that they now knew lots about peatlands. 53% of students also definitely wanted to learn more about peatlands! We received a range of responses to our competition and it was fascinating to see how young people’s wishes for the future of the Yorkshire Dales were also intertwined with their visions of their own futures and role in the landscape.

**Dr Kirsten Lees**  
Researcher, University of Derby

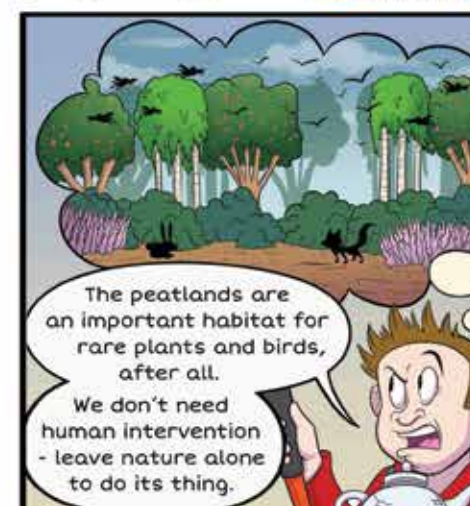
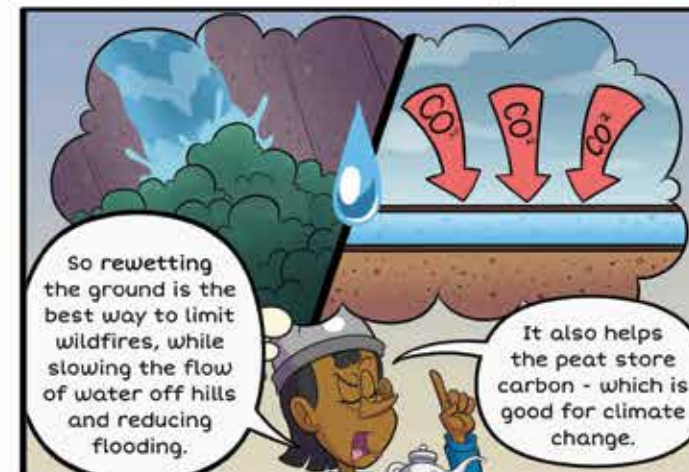




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