The Heather Trust

Sustainable, Resilient Moorland

What Are Britain's Uplands For?

A round-up of our 2019 events series

PLUS

NetZero
What does it mean for our moorlands?

Langholm Moor
A summary of the final report

Heather Beetle
Our Peak District work concludes

Annual Review 2019

www.heathertrust.co.uk

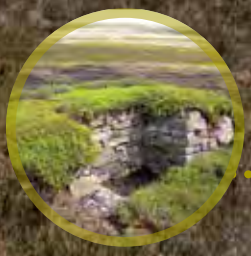
Managing your moorland today, for a sustainable environment tomorrow

Moorland management

Heather restoration

Access routes

Ponds & wetland creation



Shooting butts

Surveys

Availability in 2019/2020 for:
Access Repairs
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Grip Blocking
Watercourse Revetment

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Rob Marrs, President

Rob Marrs

It was with great pleasure, when in 2007, I was elected as the second President of The Heather Trust, following on from the sterling work of one of my great ecological heroes, Professor Charles Gimingham. Twelve years later, I am immensely proud to still be here as President. Being President is really interesting because you get to see all of the great work the Trust does but do not have to do any of it. With The Heather Trust, the Presidency is ambassadorial with occasional requests for advice and sometimes helping with training days. Specifically, the President has no voting powers other than as an ordinary member at the Annual General Meeting.

It is worth recalling that The Heather Trust is a Scottish charity (No: SC049374), and it is run by its members. The Heather Trust's aims reflect those of the founders of the Trust, which were derived from the Joseph Nickersen Reconciliation Project, namely to develop and promote sustainable, resilient moorlands through:

- facilitation and collaboration;
- engagement and representation;
- education and demonstration based on research, experience and best practice.

In recent years it has been a pleasure to see our executive directors in action, first Simon Thorp and more recently Anne Gray. They have, between them, been involved in: Defra's Uplands Stakeholder Forum; the collaborative guidance-producing Uplands Management Group; the Uplands Alliance; Bogathon and Sphagathon, which led to the development of good peatland and carbon management practices; facilitating Scotland's Moorland Forum; the Working for Waders Initiative; the Graze the Moor Project on Exmoor; various wildfire groups; and this year embarked on a series of upland and moorland discussion events around the country. In addition, staff of The Heather Trust, via the Bracken Control Group, have maintained the use of Asulox for bracken control within Great Britain and Northern Ireland; this is essential in our fight to manage what can be a plant out of control. In all of these initiatives, The Heather Trust's wise council and status as an honest broker has been paramount.

My first involvement with The Heather Trust started when The Heather Trust and the University of Liverpool were awarded a contract by Defra to find out how to control purple moor grass (*Molinia caerulea*) and restore moorland. Defra wanted answers that were based on academic rigour but were also practical for real moorland managers. This partnership set up a large number of successful experiments that developed techniques for *Molinia* control and subsequent moorland restoration. This partnership developed into "The Demonstration Moors Project", a Defra-funded project where The Heather Trust worked with four upland estates in England and Wales to improve moorland management. This project really showed me the true strength of The Heather Trust, breaking down barriers between conflicting interest groups, which at the start of the project would barely speak to each other. I get a great thrill in talking to land managers and keepers; I learn more from them than I guess they do from me!

Thus, there is still a lot to do in terms of improving moorland management under the present conditions. Each year I reflect on this and have been commenting for the last three years that we still don't know how Brexit will affect it in the future; I am still none the wiser on this score! However, the biggest threat for conserving moorlands in the twenty-first century will be the effects of climate change and our responses to it. At the moment, we do not know how moorlands will change in a warmer UK but almost certainly it will be harder to maintain the moorlands as we know them today. Moorland management will almost certainly become more complex, with policy changes involving carbon accounting needing to be addressed as well as issues over water quality and 'slowing the flow', and all of this within a framework of (and a continued desire from most moorland managers to continue) managing vegetation for the conservation of biodiversity and the production of livestock. The leadership and conciliatory skills of The Heather Trust in upland land management will, therefore, be needed for a long time to come. I hope that you can all support Anne Gray and The Heather Trust team to continue this very important role.

Anne Gray, Director

Anne Gray

For a small charity, The Heather Trust punches well above its weight. We facilitate the development of co-produced best practice guidance in both England and Scotland; we champion, on a range of different national stakeholder groups, the place of sustainable, resilient moorlands; as well as managing Scotland's Moorland Forum and providing support to Scotland's Working for Waders Initiative. Our Moorland Forum and Working for Waders work is supported with funding from Scottish Natural Heritage for which we are extremely grateful.

On top of this, we run the national Bracken Control Group, project manage Graze the Moor on Exmoor, Chair the England & Wales Wildfire Forum, run a national heather beetle survey and we have delivered seven events around the country in the last year, bringing a diverse range of interests together to discuss the future of upland areas.

The HDH Wills Charitable Trust gave us funding in early 2018 that has allowed us to run a three-year small grants programme. This has been used: to part-fund the final year's work and write up of our Peak District Heather Beetle study; to enable the University of Liverpool to carry out data-analysis and write up a paper on *"Rewilding the Uplands: the effects of removing sheep on soils and plants"*; and to enable the University of York to begin three-years' worth of work on the nutritional value of heather and sedge under three different management regimes; cut, burn and leave.

Our work is anchored in our core purpose as a charity, which is as a reconciliation project. We seek to bring the varied and different interests in moorlands and uplands in Great Britain together to find common purpose and an agreed way forward.

Your membership of the Trust and the many generous donations we receive to our Country Market and Sporting Sale are vital to keeping the Trust independent and able to function effectively. This year we took the decision to change the Trust's legal status. This was approved at a Special General Meeting ahead of our 2019 AGM. We are now The Heather Trust SCIO (Scottish Charitable Incorporated Organisation). SCIO is the contemporary legal vehicle under which most charities now operate. A consequence of the change is that we have had to set up a new bank account and we will shortly be writing to members with details so that they can update their Standing Order to us.

Finally, having agreed a refreshed Vision and Mission for the Trust in 2018, we have also taken the opportunity to update our logo. We are still very much the same Heather Trust with the same foundations and beliefs, but with a new, contemporary identity.

You can read about all of the above work and initiatives in this year's Annual Review of 2019. We very much hope you enjoy catching up with what we have been up to. We also hope that you will agree we fulfil an important niche in the moorland management world which is worth continuing to support.

Antony Braithwaite, Chairman

Antony Braithwaite

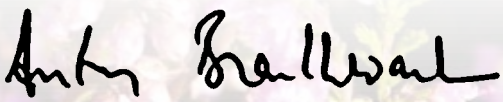
Anne Gray has completed her first year in the driving seat, at a time when different visions of the uplands are being developed and championed.

We are very much involved. We manage Scotland's Moorland Forum and Simon Thorp, on our behalf, chairs England's Uplands Management Group. Brexit will bring change to the upland's way of life and the sheep-formed landscape that has existed for the last 50 years. Carbon storage and capture in peat and woodlands is the new force in the room.

We are the perfect venue for discussion on how to develop ideas of management and we hold discussion meetings in different areas of Great Britain.

We do research ourselves but have very limited resources. Above all, we strive to maintain our reputation of being 'science-led' and not to push a political angle in the projects we back and the conclusions drawn. The effects of different sorts of heather management (grazing, burning, cutting, etc), heather beetle and bracken management have been our staple diet and we are now planning a big project to look at the current state of moorland around Great Britain.

Please support Anne and her team in all they do. Members and everyone concerned about the future of the uplands are lucky to have them working on our behalf.



INTRODUCTION

This year has seen us say goodbye to two long serving Board members: Richard May and Barrie Hunt, and Adam Smith also moved on from the Board at the end of 2018. We thank them sincerely for the contribution they have made over the years and look forward to maintaining connections with them moving forwards.

We are also delighted to welcome Roger Burton and Viscount Devonport as new members of our Board.

Office Bearers

President
Professor Rob Marrs
Rob is a Professor in the School of Environmental Sciences at the University of Liverpool and has a particular focus on bracken, fire and peatland.

Chairman
Antony Braithwaite
Antony is a landowner based in Northumberland with a keen interest in grouse and fisheries.

Vice President
Mervyn Browne MBE
Mervyn was a founding member of The Heather Trust over 30 years ago and specializes in bracken control work, particularly in Ireland.

Vice President
Rob Dick
Rob is a farmer and business consultant based near Kelso and was Chair of The Heather Trust between 2003-2007.

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

Board

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

Ian Condliffe
Ian lives in Ilkley and was Defra's national principal technical advisor for upland environmental research and development.

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.

Colin Matheson
Colin was a chartered surveyor and land agent for over 45 years and is currently a Director of the College Valley Estate in North Northumberland.

Roger 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.

Viscount Devonport
Viscount Devonport has been a moorland owner since 1972. He was part of a 15-year demonstration farms and moors project with the Countryside Commission and participated in the Otterburn Project.

Meet the Team

Director
Anne has been Director of The Heather Trust since March 2018 and Director of Scotland's Moorland Forum from November 2018. She came to the Trust from Scottish Land & Estates.

Director's Assistant
Anne Stoddart has been with the Trust since 2011 and supports the Director in all the Trust's activities. She also provides administrative support to Scotland's Moorland Forum and Working for Waders.

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

Events and Business Support
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 (previous Director) provides input to the Trust running the Bracken Control Group and the Graze the Moor Project, and Chairing the Uplands Management Group and England & Wales Wildfire Forum.

L to R: Eppie, Clara, Anne G and Anne S

A new look for The Heather Trust

The Communications Sub-Group of The Heather Trust Board – comprising of Board members Ian Condliffe and Colin Shedden and team members Anne Gray and Eppie Sprung – formed at the start of 2019 with the initial objective of developing a comprehensive Communications Plan.

The Communications Plan identified a number of priorities, including: encouraging open and honest dialogue at events; improving the Trust's website; developing new approaches to the presentation of information provided to the Board; and designing a new logo that more closely represents the updated Vision and Mission of the Trust.

Significant developments have been made throughout the year on each of these priorities, culminating in the approval of a new logo by the Board of Trustees at the end of October. The new logo illustrates the Trust's Vision of sustainable, resilient moorlands for the benefit of all and reflects the contemporary approaches the Trust is taking in working towards this Vision.

The Heather Trust
Sustainable, Resilient Moorland

Strategic Plan

During 2018 The Heather Trust Board and staff undertook a strategic planning exercise to agree a clear vision, mission and long-term goals for the organisation. This in turn has allowed us to produce an annual strategic plan that sets out what we aim to achieve each year in pursuit of our ambitions. Below is an evaluation of progress during 2019.

Vision
Sustainable, resilient moorlands for the benefit of everyone.

Mission
To develop and promote sustainable, resilient moorlands through facilitation and collaboration; engagement and

ACTIVITIES FULLY DELIVERED

INTENDED ACTIVITIES: A series of explorative, non-instruction, discursive conversations of what "sustainable, resilient moorlands" look like. Production of follow-up communication to be worked up but may include:
- Blog posts/write ups
- Video output from the day
- Case studies
- Working towards an Infographic

TARGET: 3 events

DELIVERED: In total we delivered seven events in the 'What are Britain's Uplands for?' series:
- Perthshire (24 attendees)
- The Lammermuirs (16 attendees)
- East Cairngorms (49 attendees)
- Powys (32 attendees)
- The Peak District (27 attendees)
- North York Moors (25 attendees)
- Northumberland (44 attendees)

Reports were developed following each event and a summary report has been developed of all seven.

INTENDED ACTIVITIES: Facilitate Scotland's Moorland Forum and support Working for Waders initiative, Project Manage the Graze the Moor Project, Chair the England and Wales Wildfire Forum and run the Bracken Control Group.

DELIVERED: Both of these Initiatives have been ongoing through the year.

INTENDED ACTIVITIES: Delivery of the Country Market and Sporting Sale.

TARGET: £25,000

DELIVERED: We raised a total of £27,236 through a combination of auction sales and cash donations.

INTENDED ACTIVITIES: Consider whether a membership structure is the correct approach for The Heather Trust.
Assessment of appropriateness of legal structure.
Review constitution / charitable objects.

DELIVERED: Following a review of the legal structure, the Board (with the support of the membership at a Special General Meeting) made the decision to convert to a Scottish Charitable Incorporated Organisation.

INTENDED ACTIVITIES: Establish a communication mechanism that regularly seeks the views of our stakeholders.
Develop and implement a communication strategy, including:
- Social media
- Web
- Print
- Newsletters
- Face-to-face
- Blogs

DELIVERED: A Communications sub-group of the Board was set up to establish communications priorities.
An organisational Communications Plan was developed and approved by the Board.
The changes prioritised were the updating of the website and the development of a new logo.
We have had the following communications successes:
1. Facebook Followers: 1,226
2. Twitter Followers: 1,059
3. Mailing List Subscribers: 698
4. Blog Views: 814

INTENDED ACTIVITIES: Skills audit of Board and staff team.

DELIVERED: Completed.

INTENDED ACTIVITIES: Deliver an AGM, which not only complies with our constitution but also helps to deliver on our Strategic Outcomes.

DELIVERED: The AGM was delivered alongside our final 'What Are Britain's Uplands for?' event.

INTENDED ACTIVITIES: Continue to run an effective and efficient organisation.
Continue to review our Finance and IT systems

DELIVERED: Throughout the year we have:
- Carried out data cleansing
- Moved to new accounting software
- Improved our banking authorisation processes
- Developed employee/Board policies

INTENDED ACTIVITIES: Agreement of impact focused infographic for annual return.

DELIVERED: Included in Annual Report.

INTENDED ACTIVITIES: Capturing the needs of stakeholders through:
- Informal discussions
- Training / event feedback
- Surveys
- Attendance on stakeholder and working groups/panels

Use monitoring and evaluation tools across all delivery areas.

TARGET: Representation on 10 working groups/panels

DELIVERED: Ongoing representation on:
- England and Wales Wildfire Forum
- Working for Waders Facilitation Group
- Moorland Management Best Practice Steering Group
- Peatland Action Board
- Uplands Stakeholder Forum
- Uplands Alliance
- Uplands Management Group
- Our Common Cause Steering Group
- Scotland's Moorland Forum
- Bracken Control Group
- Scottish Forum for Natural Capital Land Management Group

Annual survey distributed in January.
Feedback gathered from events.

INTENDED ACTIVITIES: Keep our networks under review to ensure we work with the full range of organisations / individuals relevant to our areas of interest.

DELIVERED: We have undertaken an organisation-wide data cleansing exercise. Increased promotion of our social media channels, blog and newsletter. Updated press list.

INTENDED ACTIVITIES: Engage the services of an external fundraiser/s.

DELIVERED: We have engaged the services of Peter Steel, external fundraiser.

INTENDED ACTIVITIES: Publish an annual report that will showcase what we have achieved within the last year and demonstrate what we intend to achieve over the coming year.

DELIVERED: Our Annual Report is due to be published in December.

EVALUATION

representation; education and demonstration based on research, experience and best practice.

Core Activity Areas
The Heather Trust organises its work under key activity areas:

1. Developing, promoting and sharing best practice advice and guidance (including research, education, training and demonstration)
2. On a GB wide basis, and from an impartial standpoint, facilitating and collaborating with a wide range of stakeholders through joint projects, forums, networks etc.
3. Engaging with and representing the interests of Sustainable Moorlands
4. Ensuring the effectiveness, impact and sustainable growth of the organisation

ACTIVITIES PARTLY DELIVERED

INTENDED ACTIVITIES: Scope the extent of a 'State of GB Moorlands' report and seek funding for it.
- Initial stages to pull together a consortium of interested organisations.
- Explore Resourcing

DELIVERED: An outline has been developed for a thorough scoping exercise to be carried out. Our external fundraiser is in the process of securing funds for this purpose.

INTENDED ACTIVITIES: Annual professional review process.

DELIVERED: Our Annual Review process will take place in January each year.

INTENDED ACTIVITIES: Consideration of crowdfunding – involve campaigns and an assessment of who else is currently crowdfunding.

DELIVERED: We have been monitoring other crowdfunding campaigns in organisations with similar aims.

INTENDED ACTIVITIES: Produce plain English "So What?" guides – that translate research for the practitioner audience

DELIVERED: Two So What? Guides (Bracken Control and Flammability) have been published on our website

INTENDED ACTIVITIES: Update practitioner "How To" guides
- Burning
- Managing bracken
- Heather Beetle
- Grazing assessments
- Heather cutting
- Upland tracks

DELIVERED: Heather Beetle update available at **www.heathertrust.co.uk** and heather cutting guidance available at **www.moorlandmanagement.org**

INTENDED ACTIVITIES: Develop comprehensive policies and procedures.

DELIVERED: The employee and Board policies that have been developed need final approval by the Board.

ACTIVITIES OUTWITH OUR CAPACITY THIS YEAR

INTENDED ACTIVITIES: Deliver theory - and site-based issue specific training events delivering existing good practice guidance, e.g. PoMM, UMG.
Two formats
1. Muirburn/cutting/grazing management/ bracken control
2. Sustainable moorlands theory (ecology, hydrology, carbon, access) – balancing public and private interests.
Investigate CPD/accreditation with SDS/ Lantra, etc
Trial 1 event in each format in 2019.

INTENDED ACTIVITIES: Deliver a Resilient Moorlands conference

INTENDED ACTIVITIES: Sustainable Moorland Demonstration events/programme – focus on the Natural Capital agenda (readiness for Health and Harmony).
A Monitor Moors programme.
Consider the establishment of demonstration moors.

INTENDED ACTIVITIES: Briefings / introductions on policy / issues
- Natural capital
- Integrated moorland management for single land use owner

INTENDED ACTIVITIES: Increase diversity of Board.
Year one priorities
- Gender
- Age

As we move into 2020, we have updated our annual plan. In the coming year we will continue with the activity above that is ongoing as well as run a short series of sustainable moorlands events with a natural capital funding focus, take forward the training events that we weren't able to do in 2019, and run the site visit element and assist with other organisation of the Challenging Upland Future Conference taking place in Scotland on 1 and 2 September 2020. We very much hope you will continue to support our efforts and that you will be able to join us at one or more of our 2020 events.

SAVE THE DATE:
8TH MAY 2020

Country Market and Sporting Sale

Eppie Sprung, our Events and Business Officer, shares her thoughts on our 2019 Country Market and Sporting Sale and looks forward to 2020.

2019 was certainly a little trickier than our 2018 Sale. A poor grouse season and a few backlogged stalking days due to poor weather and suddenly we were down a good number of regular donors!

Unsurprisingly though, you amazed us with your generosity yet again and made up for the shortfall with some brand new donors coming on board and some new Lots that really captured the imagination.

My personal favourite was the Stalking Telescope, donated by one of our Board members (Barrie Hunt), which took off in a way none of us would have anticipated when the bidding opened. Another popular Lot that took me by surprise was the Daffodil Bulbs, donated by David MacRobert. What a beautiful addition they will make to the winner's garden this coming spring!

The MacCheviot was, as always, incredibly popular and turned out to be the Lot that raised the most money whilst the brilliant Rough Shooting at Gisborough had the largest number of individual bids.

In total we raised £27,236, made up of both auction Lot purchases and cash donations.

Over the coming months, I will undoubtedly be in touch with each and every one of you to ask for Lot donations for the 2020 Sale. However, please don't feel you need to wait to hear from me to make a donation. If you have an idea for a Lot donation, under any of our categories, please send me an e-mail on: events@heathertrust.co.uk.

2020 Categories:

- Shooting
- Stalking
- Bespoke Macnabs
- Fishing
- Country Living
- Tickets and Days Out
- Art and Books
- Accommodation

THE HEATHER TRUST TEAM'S SALE EXPERIENCES

A Long Weekend in Dumfriesshire for Director, Anne Gray

Anne was the successful bidder for a weekend in The Mews Flat at Dalswinton Estate (kindly donated by Peter and Sarah Landale). The flat sleeps up to six and was the perfect place for a get-together with four old friends from Anne's teenage years.

"We took up the lot in mid October and enjoyed a lovely, relaxed weekend in Dumfriesshire. Despite The Heather Trust's office being near Dumfries I in fact live in, and for the most part work from, south-east Scotland, so getting the chance to explore the south-west corner of Scotland was very

welcome. Dalswinton is beautiful, has a fascinating history and Sarah could not have been more helpful or made us feel more welcome. We enjoyed an afternoon's archery at Laggan Outdoors on the Saturday of our stay, followed by the trip to picturesque Kirkcudbright and on Sunday we had an autumnal walk around Dalswinton and rounded off with an extremely tasty late lunch at the Auld Girth Inn. I can't think of a better way to spend a weekend."

Clay Pigeon Shooting for Director's Assistant, Anne Stoddart

Anne was the lucky winner of the Clay Pigeon Shooting Lot (kindly donated by Chris Amos) back in the 2018 Sale. She then had a wonderful afternoon out in the spring of 2019:

"Curiosity got the better of me and I decided to place a last-minute bid on the Clay Pigeon shooting lot kindly donated by Chris Amos in the 2018 auction. Chris was a fantastic teacher taking time to carefully explain the workings and safety features of my gun. He even managed to get this complete novice to hit the first three clays in succession! There was time to try various shooting strategies –

double clays and 'bouncing rabbits' - which were met with varying success on my part and demonstrated with well honed skills by Chris. The setting is fantastic and this lot would equally suit the novice or experienced shot. A huge thank you to Chris for a grand afternoon out."

A Family Getaway for Membership Secretary, Clara Jackson

Clara secured a luxury getaway for her and her family in the stunning Ghillies Cottage (kindly donated by Laura Kirkpatrick) near Thornhill in Dumfries and Galloway. Her trip will take place in December and we can't wait to hear all about it!

Lead Ammunition on Moorlands

Colin Shedden, Director Scotland, British Association for Shooting and Conservation and Heather Trust Board Member, discusses the changes in legislation and policy relating to non-lead ammunition.

Those of us who shoot, whether with shot gun or rifle, will be aware of changes to both legislation and policy over the years, starting for us in Scotland with the Regulations that prohibited the use of lead shot gun ammunition on or over wetlands in 2005. This legislation used, as a definition of wetland, a modification of that used in the Ramsar Convention. The Convention wetland definition includes "peatland". The Scottish definition does not include peatland. If it had done, those shooting on much of Scotland's moorland would have had to switch to a non-lead alternative 14 years ago. The Scottish legislation was designed to prevent feeding waterfowl accessing spent lead shot and there was no perceived threat to ducks or geese from lead shot on peatland or moorland.

However, at the end of October, the European Commission published a proposed Regulation that would effectively prohibit the use of lead in "gunshot" for hunting over wetlands. This proposed EU legislation does include peatland, as well as a buffer zone of 400 metres around all "wetland". This is being proposed, despite 24 of the 28 EU Member States already having legislation in place. In addition, on the 3rd October 2019 the European Chemicals Agency (ECHA) launched a call for evidence on the possible impact of a proposed ban on the use of lead ammunition in the European Union. This proposed ban covers all uses of lead ammunition, apart from military use. ECHA will also be looking at the risks posed by lead to both the environment and humans.

In recent years we have also become aware of further restrictions on the use of lead ammunition. SNH policy prevents its use on its land, and it only supplies non-lead ammunition in the adaptive management goose schemes it supports, for example. RSPB, National Trust for Scotland and the John Muir Trust also prohibit lead ammunition on their estates. Scotland's largest landowner (Forestry and Land Scotland) is also working to prohibit lead ammunition (mainly in deer stalking) by 2020/21.

In July, Waitrose, who claim to be the largest retailer of game in the UK, stated that it would be phasing out the use of lead shot on the estates that it sources game from and by 2020/21 all of its game will have been shot with non-lead alternatives.

The pressure against the use of lead ammunition continues to grow and not just on wetlands. The ECHA background statement starts with: "Lead is a non-essential (i.e. having no biological function) heavy metal that is toxic to humans and wildlife. It affects most body systems, having negative effects on general health, reproduction and behaviour." This sets the tone of the debate.

Obviously, a number of organisations, both here and in the EU, may fight some of the restrictions being proposed, based upon non-lead shot such as steel (soft iron) being unsuitable for some shot guns, non-lead alternatives not being available for smaller calibre rifles, increased ricochet with copper bullets and reduced effectiveness when compared to lead. However, even a no-deal Brexit will not necessarily save the UK from the impact of ECHA proposals via REACH, which is a European Union Regulation concerning the Registration, Evaluation, Authorisation & restriction of Chemicals. This will continue to apply to the UK post-Brexit.

MOOR Flavour

Heather Trust Country Market & Sporting Sale

24th April
to
8th May 2020

Now's the time to add our 2020 Country Market and Sporting Sale to your calendar.

It is always a highlight of our calendar thanks to the generosity of both our donors and our bidders. Without you we would never be able to secure the much needed funds we need to deliver our work.

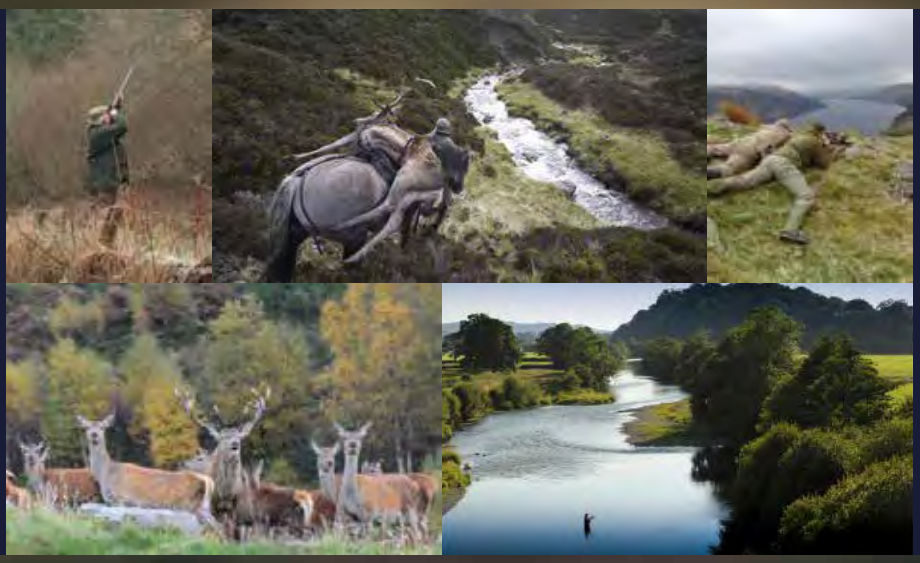
YOUR DONATION

As a supporter of The Heather Trust, we are asking you to extend your generosity once again and support the Sale by donating under one of the following categories:

SHOOTING
STALKING
BESPOKE MACNABS
FISHING
COUNTRY LIVING
TICKETS AND DAYS OUT
ARTS AND BOOKS
ACCOMMODATION
PROFESSIONAL SERVICES
CASH DONATIONS

To donate or ask any questions, simply send an e-mail to:

events@heathertrust.co.uk



Thank you for your support!

The Heather Trust
Sustainable, Resilient Moorland

Bringing clarity to *land ownership*

With the right guidance and advice, Voluntary Registration of land can provide title clarity and ease ongoing management of an estate. Michael Yellowlees explains how.

As most landowners are aware, the Registers of Scotland is engaged in a huge exercise to have all Scottish land on a new digital Land Register by 2024. To help it on its way, the agency has long been encouraging all landowners to voluntarily register their land.

"We are seeing more and more clients applying to register their properties."

Given the scale of the task – after all, we're looking at the complete refashioning of a register that dates back to 1617 – it is now generally accepted that 2024 is not an achievable target. This has prompted some to suggest that, if the timescale for completing the Register is no longer imminent, there is no longer a need to consider voluntary registration of your land.

We disagree. Voluntary registration still offers very real benefits for the owners of both rural and urban properties.

As well as providing title clarity, it can facilitate the ongoing management of farms and estates. For this reason, we are seeing more and more clients applying to register their properties.

Benefits of voluntary registration

The process of voluntary registration will involve some time and expense, especially with some rural properties, but the benefits of going through the process sooner rather than later are clear:

- The end result is an accurate online map based on the modern ordnance survey map. This means having a title plan showing definitive boundaries and identifiable features.

"Whenever you are dealing with Lindsays, the lawyers just make the whole process much easier than other firms."

Lindsays' client feedback, The Legal 500: The Client's guide to the UK legal

- All of the information relating to the property will be on one title sheet (or a series of sheets depending on the extent of the property) rather than in numerous old deeds which require deciphering and interpretation.
- A detailed examination of the title during the registration process may disclose previously unknown assets.
- Where there are boundary issues between neighbouring titles, being first on the Register will put that landowner in a stronger position.
- With clarity over title and boundaries, selling the property will be easier and quicker, saving both time and legal costs. The same will apply with intra-family transfers.
- Although it is not yet compulsory to register your existing Sasine title in the Land Register (except in certain circumstances), there is the risk that at some point the Keeper of the Registers may take action and compulsorily register the title – referred to as a Keeper-induced Registration. This may result in details being missed or opportunities for the landowner to provide detailed knowledge being lost.

Our Rural Services team has worked with numerous individuals, estate owners, farmers, partnerships, trusts and charities to complete the voluntary registration of their land – in fact, we handled the first voluntary registration in Scotland. The team would be happy to speak to you and to assist in making the process as straightforward as possible.

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EVENTS AN OVERVIEW

There are many differing perspectives on how Britain's uplands should look and what they should be used to deliver. This loosely speaking ranges from those who would like to see the continuation of "traditional" management for farming and sporting interests with the particular mix of wildlife, rural jobs and communities this supports, through to those who advocate what has become termed "rewilding" with its alternative case to deliver for people and the natural environment.

These two perspectives are often presented in a very polarised way by the media and this can fuel further division. However, there are many steps and stages between these two positions, and indeed other agendas such as renewable energy and forestry expansion - which have an environmental as well as an economic imperative - to take account of. For many people the portrayal of one as "all good" and the other as "all bad" is neither helpful nor realistic.

Throughout 2019, The Heather Trust ran seven discussion/debate events focusing on the future of land use and management of Britain's uplands. The events aimed to provide a space for honest and respectful debate about the issues. We wanted to attract people with a range of viewpoints to come together in equal number to explore how land use and management supports the natural environment, the rural economy and communities, and wider society.

By bringing people together - who would not naturally find themselves in the same room - we started to build shared understanding and trust, which in turn is a stepping stone toward building consensus from conflict.

Format:

Each event consisted of a morning site visit to explore aspects of existing management particular to the venue. This was then followed by an afternoon of presentations and a panel-led debate.

Events took place in:

- Lurgan Farm, Perthshire
- Invercauld and Mar Lodge, East Cairngorms
- The Hopes Estate, The Lammermuirs
- Beacon Hill, Powys
- Bradfield Moor, The Peak District
- Goathland East Moor, North York Moors
- College Valley Estates, Northumberland

Each event explored different themes chosen to reflect the issues pertinent to the place we were in. These themes included: hill farming; grouse moor management; re-wilding; deer management; heather and peatland restoration; investment in public goods delivery (carbon storage, water management, biodiversity and public access); conservation and species recovery; visitors and tourism; and community engagement.

In attendance were academics, government researchers, policy makers, environmental charities, uplands advisers, farmers, gamekeepers, shoot owners, stalkers, rewilders, lobbyists, campaigners, interested members of the public.

Themes

Following each event, the questions raised in the afternoon debates were analysed to identify the key themes. Natural Capital turned out to be the most talked about topic and this is represented below.

Learning

The events brought with them some useful learning for The Heather Trust. Firstly, it was clear that there was definitely interest in attending events such as these (all but one of the events sold out) and that the events attracted people with a range of different perspectives. Secondly, we found that site visits worked well in terms of getting people to have constructive conversations with each other. There is nothing like talking about what is actually living and growing and being done on a hill or moor. It is so much better than a theoretical

conversation about an idea of generic hill or moorland. Finally, we found that the factors affecting and influencing management of any site varied a great deal. While we might see farming, game management, carbon, water, waders, raptors, designated sites, community interests, trees, outdoor recreation and so on, all having a role to play, the relative importance of each varies and therefore there is no one size fits all solution to the question of achieving the right balance. However, that doesn't mean to say there are not principles and approaches that can be applied to help find the right solution for each circumstance.

Evaluation

99% of feedback respondents found the site visits Good or Excellent

98% of feedback respondents found the speakers / presenters Good or Excellent

96% of feedback respondents indicated they would be interested in continuing these conversations and attending future Heather Trust events

92% of feedback respondents felt the event improved relationships between people, organisations and groups with disparate interests in moorland management and land use

91% of feedback respondents felt the event improved their understanding of what good, sustainable moorland management looks like

90% of feedback respondents felt the event improved their appreciation of moorland ecosystems

Next steps

The Heather Trust plans to take forward a number of pieces of work by way of follow-up to these events.

We will:

1. Explore the approaches and mechanisms that will enable each area of moorland and hill to contribute in the best way it can to achieving regionally and nationally important outcomes. These approaches will need to promote balance between economic, environmental and social uses of the uplands, and recognise that all are important and that none can dominate. Since each moor is different, ultimately government working with stakeholders will need to identify a policy framework that will allow enough flexibility for each place to find its own balance.
2. Promote developments in approaches to and investment in the delivery of public goods (climate regulation/carbon storage, water quality and flood risk management, biodiversity and public access for mental and physical health) thus enabling moorland managers to make financially realistic choices to manage for these outcomes.
3. Find better ways to ensure neighbouring land uses as far as possible complement each other rather than conflict.
4. Continue to get people of all perspectives together on moorland to keep the conversation going

With thanks to: SRUC, Powys Moorland Partnership, Moors For The Future Partnership, Cairngorms National Park Authority The Hopes Estate and College Valley Estates for sponsoring the events.

In the following pages we have asked participants at our events to provide articles on some of the themes we explored throughout the *What are Britain's Uplands for?* series. They are individual perspectives which give a flavour of the range of issues covered this year.

The future of hill farming in Scotland

Davy McCracken, Head of Integrated Land Management at SRUC (Scotland's Rural College) gives his thoughts on our first event in Highland Perthshire.

The first in this series of Heather Trust meetings was co-funded by SRUC and took place in March 2019 at Lurgan Farm near Aberfeldy, managed by Martin Kennedy (National Farmers Union Scotland Vice-President) and his family.

We were particularly keen to stimulate a discussion around what hill farming is already delivering for the Scottish economy, environment and society because only once you know the current situation is it possible to consider what policy and support changes might be most relevant to introduce in the future.

For me, there were two key take-home messages from the meeting.

Firstly, we need to maintain land managers in our hills and uplands. Hill farming systems are already very fragile and the prospect of Brexit only increases the threat hanging over those systems. If we lose a significant number of hill farmers in the months and years ahead, then we will lose the ability to have any influence on how huge areas of Scotland are managed in the future.

Secondly, although the areas we are talking about account for about 70% of our total land area, we don't have any one body which speaks for both the agricultural and nature conservation sides of the upland land use debate. However, both sides have a lot in common, with strong agreement that hill farmers have an important role to play not only in producing food but also in helping to restore peatlands, enhance biodiversity and plant more trees.

If we are to get policy makers and the wider public to understand what hill farmers are already doing for the environment - and what these areas can achieve in the future - then we need to start speaking with a common voice.

Extracted from an interview with Colin Ley: 'Common voice' needed for hill farming's future. The Courier. 23rd March 2019

MANAGEMENT OF MOORLAND – an English perspective

Robert Benson, former Chairman of the Moorland Association, gives his perspective on the future of grouse management in England.

The days of simply thinking about the grouse bag and nothing else are long over. All moorland owners, managers and keepers largely accept that they have now got to deliver a range of public goods in addition, hopefully, to providing a shootable surplus of grouse.

This process has accelerated over the last 20 years as we all recognise the necessity of managing these uplands to the advantage of all. We worked hard with Natural England on this using their "Outcomes Approach" policy over a number of years. Inevitably taking all the objectives into account – the need for cleaner water, improved carbon sequestration, better biodiversity, grazing and grouse shooting – also made it clear that compromise was key.

At the heart of this, on deeper peat in particular, is the importance of ensuring that any action taken ensures that this peat, where possible enhanced by a more sphagnum rich mix of plants as part of the process, continues to function well and at the same time meets the objectives of the collective interests. The start was the planned complete reversal of the government funded hill drainage, carried out in the 1950s to early 1970s, to improve the agricultural potential. This has now largely been done on moorland managed for grouse with over 4000km of grips blocked.

The key now is to build in the ongoing management of that moorland by the people on the ground with the necessary experience to provide resilience over the long term in a sustainable way. In particular, ongoing management of the above ground vegetation is vital. Moor owners have made huge investment over the last twenty years in terms of equipment, and training using the latest and innovative techniques to achieve this.

Traditional moorland management has and should continue to serve us well. We accept that it has not always been right but have and continue to take huge steps to improve the way it is done. Whilst this journey is never complete and, sadly, we still lack comprehensive science, climate change makes it imperative that management continues. It is sad that this is largely ignored by those with a different agenda and that compromise seems to have been rejected.

SUSTAINABLE MOORLANDS – Tackling environmental challenges in the East Cairngorms

Jos Milner, East Cairngorms Moorland Partnership, provides insight into the East Cairngorms Moorland Partnerships approach to sustainable moorlands.

Landscape-scale collaboration will be needed to tackle the Climate Emergency and the, somewhat overshadowed but equally significant, Biodiversity Crisis. In the East Cairngorms, six large sporting estates (Balmoral, Glenavon, Glenlivet, Invercauld, Mar and Mar Lodge) and the Cairngorms National Park Authority (CNPA) have been working collaboratively as the East Cairngorms Moorland Partnership (ECMP) for several years now, over an area of 138,000 ha, almost a third of the National Park. The Partnership is trying to deliver public benefits alongside private interests and while momentum has been building, so the delivery of public interests has become increasingly relevant and pressing. The Partnership aims to deliver peatland restoration and woodland expansion, which are key responses to the Climate Emergency, and the conservation of priority species, including moorland raptors, waders and mountain hares, relevant to the Biodiversity Crisis, whilst maintaining the viability of other estate enterprises.

If moorland management is truly sustainable, it should enable deer and grouse to persist alongside moorland vegetation communities and other species of conservation value. Within ECMP we have been taking stock of what we have, in order to identify where to focus efforts and to measure improvements. This has included monitoring of mountain hares, moorland raptors and wader breeding productivity, as well as identifying and quantifying areas of degraded peatland, areas of moorland that should not be burnt and areas of existing and potential woodland expansion.

Within the ECMP, woodland currently only accounts for about 10% of the land area. Woodland cover has increased by around 1,500 ha during the past 10 years, with a further 2,000 ha of regeneration and planting currently committed to. However, as the area of woodland increases, it becomes more challenging to expand the area of woodland further without making difficult compromises.

By the end of 2018, peatland restoration work had been carried out on nearly 700 ha of degraded peatland on ECMP estates, which corresponds to an estimated saving of 8,667 tonnes of CO_2 per year. Additional projects are currently in progress but a lack of contractor capacity has limited work this year to only 76 ha, with a further 150 ha unable to go ahead despite Peatland Action funding being available.

Muirburn, if not carried out in line with best practice, can have adverse effects on the environment, including the climate. ECMP keepers and CNPA staff met for a joint muirburn training and discussion day earlier this year and we have been applying the Muirburn Code to identify areas that are inappropriate for burning. Less than 40% of the 88,000 ha of moorland in the ECMP is under rotational muirburn.

Together with British Trust for Ornithology (BTO), ECMP estates have been monitoring breeding productivity of waders in order to better understand the causes of breeding failure on keepered ground. Over 2 years, estate staff have found and monitored 183 wader nests, with 54% of Lapwing, 65% of Oystercatcher and 75% of Curlew nests successfully hatching. Nest failure was primarily due to predation or abandonment/ poor weather, but agricultural operations and livestock caused additional failures. Contrary to previous studies, we found no effect of proximity to woodland cover on nest success, perhaps because predator control was able to ameliorate the potential negative effects of woodland.

The first year of mountain hare monitoring has shown good numbers of hares. Following training by GWCT, ECMP keepers surveyed 10 sites covering a total area of 40 sq km. Counting at night with lamps or thermal imaging equipment, an average of 16 hares per km were encountered. This compares favourably with SNH's previous study and other Scottish sites counted during 2018/19 using the same methodology. Monitoring will continue in the coming years and be used to ensure management of mountain hares is sustainable.

Raptor monitoring, with the help of the Raptor Study Groups, shows that there are over 50 pairs of moorland raptors within ECMP. Nonetheless, there could be more. A big challenge for ECMP partners is therefore to find ways of improving the conservation status of moorland raptors along with other red and amber moorland bird species. As with the other challenges to sustainable moorland management, compromises are likely to be needed.

Peatland restoration work in the ECMP

The demands of the landscape are now everyone's business

Catherine Hughes, Powys Moorland Partnership, reflects on the benefits of bringing individuals, with sometimes opposing viewpoints, together into one conversation.

It seems that farmers are now under the spotlight with a service that has been taken for granted for years: from producing sustainable food by grazing animals who thrive on little to no inputs across our vast Welsh landscapes (not to mention the mowing of the vegetation which they do along the way as a by-product) to allowing walkers, riders, cyclists and the rest to access the land easily, to enjoy the beauty and take in the stunning views. The demands of the landscape now seem to be everyone's business; and stakeholders are appearing from all quarters with their own view.

Thanks to our Heather Trust event in July, where interested parties came together to discuss the way forward, it was so refreshing to hear rewilding, grazing, shooting, renewable energy, tree planting, carbon storage and flood management all discussed so positively - all under the same roof.

One theme was clear: there is a lot of passion about our landscapes and a better understanding of some of the management needs to be a whole lot better than it has been. Through our quietness - farmers and shooters - we have bred suspicion.

We thought Anne was brave in handling all the different people and opening up an honest debate on what we all want from our landscapes if they are to deliver so much, particularly as climate change and threatened rural communities are becoming evident.

Presentations from the various parties during the day, along with a walk across the moors in the afternoon, helped people understand that, if we do want our landscapes to deliver so much, we need to compromise on what direction is needed to help future generations; and it is possible by all working collaboratively.

Everyone's voice needs to be heard.

Our moorlands are indeed little understood and we now have an opportunity to see what they really are capable of.

COMMUNITY ENGAGEMENT: An opportunity not a threat

Robert Frewen, Country Land & Business Association, provides his perspective on the importance of community engagement.

Engaging with the local community is becoming increasingly important for landowners generally, including moor owners.

With a growing population, there is an increased need for space for all sorts of reasons and all sorts of activities. That space can only come from one source – the landowner. Good moorland has many special qualities and the best way for a wider audience to appreciate it and understand its management is to engage. Voluntary engagement is likely to be welcomed and should achieve much more than compulsory engagement which may come down the line. On a local level, engagement is a way to get local support for long-term plans. It can help to manage relationships positively across a land holding and include not just local residents but tenants and employees as well. The larger the estate, the more important it is to engage.

So, a moorland owner should look at what he or she can provide for the local community and discuss this through bodies such as parish councils. One owner with very deep pockets built a new sports pavilion for the village but there will always be things that can be done without the need for substantial financial input.

In England moorland is almost all "access land" under the CROW Act of 2000 but also almost all designated SSSI or SAC/SPA and even RAMSAR so engagement is a good way to manage access to protect special features. In Scotland of course moorland falls under Scotland's access legislation, where access can be enjoyed if undertaken responsibly, and moor manager engagement is similarly recommended to ensure positive relationships.

Schools visits and other educational events are also really important opportunities for engagement and to engender support.

In summary, engagement should be seen as an opportunity not a threat. The larger the landholding the greater the need for engagement and for the very large, consider making a "whole estate plan" and asking the local authority to endorse it.

GREEN INVESTMENT: **peatland opportunities**

Chris Dean, Peak District National Park Authority, provides his perspective on the role of green investment following our What are Britain's Upland for? Peak District event.

Peatland is the keystone supporting many moorland ecosystems that sustain a range of livelihoods on the moors. The Peak District, 'What are Britain's Uplands for?', event was a fitting opportunity to centre on the ecosystem services that moorlands can offer, and consider whether private "green" investment might offer income to support their management. For years, the value of peat as a carbon asset and provider of other ecosystem services benefits has been well known - the sum of which is the natural capital of a habitat, landscape and moor. The introduction of the Peatland Code established a mechanism that is now in place and is ready for investment. Growing concern in climate issues, and the current impetus from the 25-year Environment Plan in this area, has created a space for Natural Capital Investment - private sector investment into the delivery of public goods - to now grow.

Covering just 3% of the world's surface, 13% of all the world's blanket bog is in the UK and 60% of the UK's peatland is in Scotland. As peatlands make up the UK's largest carbon store, blanket bogs play a vital role in tackling climate change. However, extensive areas of peatland have been damaged by pollution, drainage and wildfires, which can cause large bare peat areas. Huge amounts of carbon that were previously stored in the peat are released into the atmosphere and rivers – causing damaged peatlands to contribute greatly to greenhouse gas emissions. In contrast, healthy peatland gathers and stores carbon, slows the flow of water to reduce flooding downstream and provides a unique habitat for endangered wildlife and rare plant species.

The 'What are Britain's Uplands for?' event was an important opportunity for the community to hear about the concepts and mechanisms of natural capital investment approaches. Speaking from Triodos, one of the banks with an investment strategy built around positive impact and sustainability, Dan Hird commented on how moors can best be managed from a financial point of view:

''We have fantastic resource in the Peak District – opportunity to sequester carbon, natural flood management benefits, water quality improvements...The challenge is finding out who will pay for the ecosystem services providing those benefits and that is where we as a bank are really interested in getting involved.''

Dan's comments reflect the developing opportunities for collaborative working on natural capital based approaches, to moorland restoration and management. Moors for the Future Partnership has recently been contacted to apply for funding to develop a peatland natural capital investment scheme, to the point of investment. This bid is for natural capital investment readiness funding organised by Triodos in partnership with the Esmée Fairbairn Foundation. Importantly, it recognises the need to develop the sound basis for a natural capital investment based on peatlands, to the point of being investable.

The recognition of the value and importance of natural capital to the natural environment has also been reflected in the ecosystem services approach to nature restoration, conservation and management. Consequently, the Partnership has adapted a 'toolbox' of ecological restoration techniques towards optimisation for different ecosystem services. For example, blanket bog restoration optimised for the delivery of natural flood risk mitigation also positively impacts upland habitats, drinking water quality and wildfire mitigation. A positive association between golden plover population increases and gully blocking works has recently been reported in the Breeding Bird Survey 1990 – 2018. This goes some way in underlining the compatibility of optimising ecosystem services in peatland conservation with a range of moorland management techniques, and the resulting positive environmental outcomes.

Taking these optimised ecological restoration techniques into consideration and highlighting the emerging potential of new income-generating possibilities to protect these vital moorland ecosystem services is crucial. With firm agreement on the importance of good management, 'What are Britain's Uplands for?' brought together different outlooks on the moors and opened up unique opportunity for landowners, gamekeepers and farmers to discuss natural capital with key organisations. To deliver these ecosystem services peatland has to be in good condition, so there lies an incredible potential on the moors.

Wilding an Upland Estate

Walter Riddell, of Hepple Estate, introduces us to the approach to land management he will be taking over the coming years.

The Hepple Estate is a rugged upland patch, amounting to 4,000 acres in the middle of the Northumberland National Park. It runs from the heather clad summit of the Simonside range down past peat bogs, birch and alder-shrouded burns, through sheep pasture and scrub woodland to the banks of the river Coquet. The estate has belonged to my family for over two hundred years, and has been gently and sympathetically farmed by the Robson family for the past seventy. I spent the happiest periods of my youth at Hepple and returned home after seventeen years of investing in high technology companies in the South to rediscover a place that carried tremendous natural power, pristine burns and complexity in its environment, and a local community that I loved and was, albeit slightly tenuously, still part of.

My family and I love Hepple, as do all who live on or visit her craggy, fern-flecked flanks. We love the wildness of the place, the vigour of its natural environment and we want to see this, its principal asset, amplified. But rock hard economic imperatives also power the drive towards a wilder Hepple. Our current business lines are under pressure. Commodity lamb, game birds and timber are sub-economic at our scale and as markets globalise are likely to deteriorate further (whatever happens after the Big B). Furthermore, offering these things as commodities breaks my heart. The lamb that comes off the moor in the autumn filled with heathery flavour, the slow-growing timber that once brought us a premium locally, the grouse and other wild game birds that skim off the crags, these are worth so much more than the commodities of their kind.

We also have a significant quantity of scrub juniper at Hepple. Four years ago I started a distillery that is designed to create the highest quality gin using our own juniper (and a brand-new way of distilling). Juniper is the principal flavour in gin and while this is normally lost in terms of taste we make ours in such a way as to celebrate it and its wild roots properly. Wild things often taste more delicious, think of strawberries, raspberries, even garlic, and yet what gin is traditionally known for is being "made in London". We have found our quality-conscious customers are easily convinced that true flavour lies beyond the back alleys of our capital city.

Our wilding at Hepple starts next year, with a new priority to put a self-determining and self-supporting environment at the heart of everything we do. We will stop partitioning the place into different economic areas of pasture, woodland and moorland and start to enable a single, interlinked habitat. This also goes for our various economic activities. We believe that a party is better with the most diverse guest-list possible, where everyone is (gently) encouraged to mingle. We know that getting "mingling" right will require quite a bit of management, particularly at the beginning, but we will try to be light-touch. We're hoping to reduce our spending on chemicals or machinery and probably up it on the human labour side. Our cattle and sheep will be exposed to a less predictable environment, so may have to change. We will have dramatically fewer of them, but hope to make a higher profit on their sale. We will sit on our hands and see more weeds, more mess, more uncertainty. But we believe that our reward will come in the form of wonderful surprises, unexpected explosions of diversity, unexpected economic options and opportunities. We also think it will be a place people will find engrossing and uplifting - and surprisingly personal.

Throughout this, we aim to monitor and analyse more deeply than we have done before. We are linking with Newcastle University and private companies to combine rigorous, technology-heavy recording systems with volunteering and citizen science. We'll let much of this research out, so others can see what is really going on.

Finally, one degree of success will be to see within this wilder Hepple more space for human-kind. For one, they'll be far harder to find! But we also look forward to employment and visitor numbers rising. It is a big place, and there is a lot of work to do.

Unlocking the potential of natural capital

Dan Hird, Triodos Bank, shares his thoughts around the funding of public goods delivery.

Last August, I spent a very interesting day with The Heather Trust at its *"What Are Britain's Uplands For?"* stakeholder event in the Peak District, which was focused on discussing the National Park's future use and management.

I was immediately conscious of the wide variety of people at the event, ranging from NGOs and water companies to landowners and gamekeepers. As we walked across the moor, it was interesting to listen to the wide and honest exchange of differing views as to how the Peak District could be managed in the future and potentially restored as a valuable natural asset for everyone – including the 20 million people who live within an hour's drive of the National Park.

Of course, a change of land use and restoration programme on a huge scale will require significant financial investment and currently it's unclear where the money or the financial incentives will come from. Afterwards, I realised I was the only person from the financial sector at the event. I concluded that this was because, firstly, investment in restoration of our natural environment is not yet a recognised commercial model. Secondly, unlike Triodos, most of the banking and finance industry do not see tackling climate change and environmental conservation as a fundamental part of their business mission.

Scientific evidence indicates that human activity is a primary cause of climate change, resulting in more extreme weather events, environmental degradation and significant biodiversity loss. It's now generally accepted that urgent restoration of the natural landscape (or "natural capital") of the UK is essential in helping to tackle the effects of climate change. The big question is how do we finance it? Should the government provide all the funding through grants or a new subsidy regime, or is there a place for private investment?

From the bank's perspective there is real potential to develop a commercially viable model around the concept of investment in our natural capital assets (i.e. the UK's stock of valuable natural resources – including our uplands) and monetisation of the ecosystem services that flow from these assets (including natural flood management, carbon sequestration and ecotourism). We recognise it's a new concept and would require a change in mindset, as well as a "can-do" partnership approach and intermediation between numerous stakeholders within the public and private sectors.

The government will continue to have many competing priorities for the foreseeable future, and in reality, it could be many years before the planned new Environmental Land Management (ELM) initiative is rolled out to replace current agricultural subsidies. It was very clear at the event that many landowners are completely in the dark about what ELM will look like and what it will mean for them and the future of their land management activities. As a result, everyone seems open to new ideas.

Since sponsoring the first conference looking specifically at natural capital investment in 2018, Triodos Bank has been focused on taking the initiative with natural capital to see if we could move the discussion beyond academic debate and into practice. In early 2020, we hope to report back on some of the initial projects we have developed, including some elements of natural flood management.

The recent extreme flooding event in South Yorkshire is a sobering reminder of the devastating effects of extreme weather. The limitations of traditional hard flood defences at low level were exposed and a restored and functioning upland landscape in the Peak District could have significantly mitigated the flow of water from the moors.

The financial cost of flooding is generally borne by the insurance industry, local authorities, government and of course local communities. In the near future, we will seek to persuade some of these stakeholders to enter into commercial arrangements with landowners in the Peak District to help with the financing and delivery of an evidence-based natural flood management intervention.

Through learnings from the initial projects, we will be exploring a number of important questions in relation to the role and appetite for engagement from various stakeholders, including beneficiaries of ecosystem services, government agencies and potential investors, with the aim of determining how we might use the learning to scale up natural capital investment to restore our most important natural landscape assets.

The Heather Trust
Sustainable, Resilient Moorland

ACTIVITY HIGHLIGHTS

1

'What Are Britain's Uplands For?'
EVENTS: **7** /
ATTENDEES: **217**

2

STAKEHOLDER AND WORKING GROUPS THAT WE ARE REPRESENTED ON: **11**

3

FACEBOOK FOLLOWERS: **1,226**

4

TWITTER FOLLOWERS: **1,059**

BRAEMAR
10th May
What Are Britain's Uplands For? East Cairngorms

KINGUSSIE
5th June
Scotland's Moorland Forum

EDRADYNATE
21st March
What Are Britain's Uplands For? Perthshire

PERTH
1st March and 1st November
Moorland Forum meetings

AIRTH
12th March
Working for Waders, Taking the Initiative Event

TORTHORWALD
HEATHER TRUST HQ

GRINTON, SWALEDALE
4th November
Heather Beetle Site Visit

YORK
13th November
Uplands Management Group

CHORLEY
3rd October
England and Wales Wildfire Forum

LLANGUNLLO
10th July
What Are Britain's Uplands For? Powys

CARDIFF
20th - 21st November
Wildfire Conference 2019

MOLLAND
28th February and 10th October
Graze the Moor project meetings

Ullapool
Inverness
Fort William
Perth
Stirling
Glasgow
Ayr
Dumfries
Dublin
Exeter
Plymouth

Photograph by Rob Yorke

ACTIVITY HIGHLIGHTS

DELNADAMPH
27th March

East Cairngorms Moorland Partnership Muirburn Event

SCONE
6th July

Scottish Game Fair

BATTLEBY
Various dates

Peatland Action Project Board meetings
Working for Waders Facilitation Group
Principles Of Moorland Management Steering Group

GIFFORD
24th April

What Are Britain's Uplands For? The Lammermuirs

EDINBURGH
Various dates

IUCN UK Peatland Programme
Commission of Inquiry Meeting
Scottish Forum for Natural Capital, Sustainable Land Management Working Group
Royal Highland Show
The Nature of Scotland Awards

HETHPOOL
23rd October

Heather Trust SGM and AGM / What Are Britain's Uplands For? Northumberland

INGRAM
20th June

Bracken Control Group meeting and site visit

GOATHLAND
5th September

What Are Britain's Uplands For? North York Moors

BRADFIELD
7th August

What Are Britain's Uplands For? The Peak District

LONDON
Various dates

Uplands Alliance
Uplands Stakeholder Forum

SOUTHAMPTON
26th March

Natural Hazard Partnership Conference

5 MAILING LIST SUBSCRIBERS: **698**

6 BLOG VIEWS: **814**

7 FUNDS RAISED THROUGH CMSS: **£27,236**

8 OSCR Scottish Charity Regulator BECAME A SCIO

The Heather Trust is a champion for Great Britain's iconic and much loved moorlands. Our moorlands are part of our culture and history and they are home to a unique assemblage of bird and animal species. Many moorlands have protected status, such as Special Protection Area (SPA), Special Area of Conservation (SAC) or Site of Special Scientific Interest (SSSI) because they host species and plant communities that is particularly valued, or for the beauty of the wider landscape, such as Area of Outstanding Natural Beauty.

Moorland is not a single habitat type, but a range of habitats, including dry and wet heath, blanket bog and tall herb vegetation, species rich and upland grasslands. It is characterised by low-growing vegetation and the wildlife and livestock which benefit from its open character.

We are interested in sustainable, resilient moorlands for the benefit of everyone. This means taking account of contemporary issues such as climate change, water management, biodiversity and public access and ensuring these can be delivered through management practices that provide people with a living from moorlands and uplands. In our Moorland Management section we highlight current work relevant to this objective.

CLIMATE CHANGE AND MOORLANDS: achieving NetZero by 2050

Earlier this year, the UK Committee on Climate Change submitted a report to the UK Government on the UK's contribution to stopping climate change; the NetZero report. It makes recommendations for changes to enable the UK to become a net zero carbon economy by the year 2050. The report says NetZero is technically feasible, but there needs to be big, systemic changes. Some of these changes have implications for moorlands and their management. In some respects there are opportunities and in others there are challenges.

By moving to NetZero the UK's anthropogenic contribution to rising global temperatures will end. This is, the Committee suggests, an important leadership message from one of the richest countries on the planet. This should be achieved by change within the UK and not by offsetting abroad.

Within the UK the Committee advises most sectors will need to achieve near zero fossil fuel emissions through reducing energy use where feasible, a shift to using only renewable sources of energy and by utilising new technology. The need for carbon offsetting even within in the UK should then be minimal.

To achieve this, the Committee highlights that the UK must make firm reductions in fossil fuel use for: housing and domestic heat; industry; carbon capture and storage; road transport; agriculture; aviation; and shipping.

Land Use Change

If, however, road transport, domestic heating, industry, shipping, aviation and so on are to achieve NetZero, this has implications for changing land use in terms of production of fuel crops (forestry and other biomass crops) and renewable energy sites (some, but not all, will be offshore wind). Although reductions in energy use is recommended, so too is the electrification of transport and this, along with domestic heating requirements, will require a doubling of electricity production and all of it from renewable sources compared to 50% from renewables today. Just to be clear, that's X4 the amount of renewables production that the UK currently has. This shift from a country largely reliant on fossil fuels to one largely reliant on electricity from renewable sources cannot fail to impact land use.

Taking fossil fuel reductions, more renewable energy and small amounts of offsetting together, the report says that a fifth of the UK's agricultural land must shift to alternative uses that support emissions' reduction such as, afforestation, biomass production and peatland restoration.

The Committee recognises that it is tricky to reduce emissions from agriculture because of the inherent biological and chemical processes that food production relies on. However, it recommends advances in livestock breeding and diet, and a reduction of at least 20% in lamb, beef and dairy consumption to free up a fifth of existing agricultural land for activity that will sequester carbon.

Greater ambition, urgency and clarity of implementation is highlighted, e.g. 2040 is too late to phase out petrol and diesel cars and plans are too vague, and afforestation targets for 20,000 hectares/year across the UK nations (due to increase to 27,000 by 2025), are not being delivered, with less than 10,000 hectares planted on average over the last five years. The report, in fact, suggests increasing the afforestation target to at least 30,000 hectares per year and says this change must be made quickly.

The report also notes that the UK emissions' inventory has not sufficiently captured emissions from eroding peatland up to now and this should change. This indicates that there will be increasing pressure to restore peatland from a state where it is predominantly dry, drained and in places bare of surface vegetation to a state where it is - for the most part – wet, intact and peat forming.

The report certainly signals a direction of travel. Peatland restoration is highlighted as important, not least because the UK has a considerable peatland resource. Restoration work is happening on moors across the country and this

should be celebrated as an important early contribution to efforts to achieve NetZero.

Greater tree cover and reductions in livestock numbers are clear recommendations from the report, that appear to go hand in hand. This potentially has implications for moorland cover. The matter of reducing meat-based diets is certainly more complex than the report sets out. Livestock production on moor and hill ground, when done well and at appropriately low densities, can have benefits for carbon storage in soils, for creating diverse habitats in favourable condition, and provide a source of homegrown meat. Supporting such management may be preferable to promoting diets more reliant on soya and other plant-based proteins if this shift involves the clearing for forests in other parts of the world to meet demand.

There is no getting away from the fact, however, that more trees will have to go somewhere. The report does not suggest this has to be plantation forestry alone and there is some emphasis put on the biodiversity benefits of native planting. Moorland owners and managers should be considering how increased tree cover can be undertaken with minimal impact on good moorland. Initiatives such as clough planting and the re-establishment of moorland edge scrub could be beneficial not just to carbon sequestration but to biodiversity agendas.

That being said, if the UK is to accommodate more trees in the numbers outlined, this suggests a more strategic approach to planning where they go is required. Climate change mitigation matters enormously, but so does reversing declines in biodiversity, supporting food production and the rural economy. We cannot achieve one objective at the expense of others and there are now too many "asks" of land to leave matters entirely to chance. While it would be wrong to impose land use on landowners, there is, I believe, a need for landscape scale decision-making to inform future appropriate targeting of incentive regimes.

The incoming government will of course have to make important decisions about how to implement NetZero and we await their decisions with interest.

Author: Anne Gray, The Heather Trust

Burning on blanket bog in England

Blanket bog is a priority habitat under the EU Habitats Directive and action to restore areas of degraded bog to a functioning state is required. Restoration involves a range of activity including blocking drainage channels, reseeding areas of bare peat, reprofiling of peat hags, reducing grazing pressure and rethinking vegetation management regimes. These actions help create a habitat where the water table is at, or close to, the surface and the surface is vegetated with bog species. This is likely to include some heather on naturally drier hummocks but at lower density that can be found on degraded bog. Managing heather and other vegetation during the transition period from degraded to functioning, which can take a considerable number of years, may therefore be required and Natural England has recognised this. While ending rotational burning is currently part of the measures required for restoration, Natural England will consent, in some circumstances, to what has been termed restoration burning to achieve heather management during transition.

On 11 February this year Natural England issued a position statement on *Burning: a tool for the restoration of upland blanket bog*. This advised that rather than ask moorland managers to follow the traffic light system for decision-making, about when and whether to burn on blanket bog for restoration purposes, Natural England would now require to consent requests to burn on blanket bog themselves. Natural England advise their decision-making would continue to be informed by the descriptions of blanket bog outlined in the Blanket Bog Land Management Guidance and they would be guided as follows:

Extract from Natural England position statement

a) *We would not expect burning for restoration to be effective when damaged hydrology has not yet been restored, or Sphagnum is frequent to abundant, or heather is not dominant;*
b) *Burning for restoration may be effective where the bog has been successfully rewetted, Sphagnum is absent to occasional, and heather (or other species such as purple moor grass) are dominant (all these conditions would need to be met);*
c) *Where a heather beetle infestation has occurred any burning remedy would still need to be consistent with the restoration of blanket bog habitat set out here;*
d) *We also recognise that there may be exceptional site specific circumstances where recovery of blanket bog may benefit from a burn.*

At the end of the summer, Defra issued a consultation on a proposal to ban burning on deep peat (>40cm) on Sites of Special Scientific Interest that are also European designated sites (i.e. SPAs or SACs). This, if enacted, would bring an end to consents issued by Natural England for rotational burning on such blanket bog. The proposal contained provision for burning on blanket bog to continue under licence from Natural England in exceptional circumstances such as for restoration purposes or for the management of wildfire.

The new government will need to decide how to proceed with this in due course.

Scotland's Grouse Moor Management Review

The Grouse Moor Management Group was established in November 2017. It was asked by Scottish Government to examine the environmental impact of grouse moor management practices such as muirburn, the use of medicated grit and mountain hare culls, and to advise on the option of licensing grouse shooting businesses. The Group have also considered raptor persecution issues.

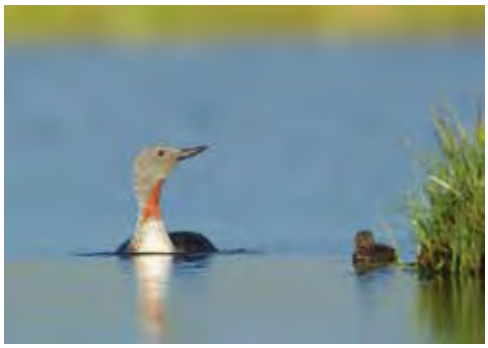
The Group is Chaired by Professor Alan Werritty and the includes land agent, Alexander Jameson, Professor Alison Hester, who is a senior scientist at the James Hutton Institute and an expert on natural capital and land use change, Professor Colin Reid who is a Professor of Environmental Law at Dundee University, expert ornithologist Professor Ian Newton and Mark Oddy formerly of Buccleuch Estates and who Chaired the Langholm Moor Demonstration Project.

The Heather Trust responded to a call for written evidence and the Director, in her role as Director of Scotland's Moorland Forum, met with Professor Werritty late last year as part of the group's oral evidence gathering. Our contribution in this regard has focussed on the role of co-produced best practice guidance in setting and maintaining agreed management standards, how achievement of high management standards by moorland managers can be better recognised and the role of statutory codes such as the Muirburn Code.

The Review Group have now submitted their findings to Scottish Government and, at the time of going to print, their report has still to be publishing. We believe this is imminent and we will communicate it through our newsletter and on our website when it is available.

Peatland ACTION

Delivering on-the-ground peatland restoration across Scotland



Images by Lorne Gill/SNH and Mark Hamblin /2020VISION

We are committed to working with land managers, contractors, advisors and the public.

Restoring peatlands benefits water quality, farming practices, carbon storage, flood alleviation and biodiversity.

We provide funding and technical advice to help create a healthier peatland landscape for people and nature.

If you have a peatland restoration project that you think might be eligible and would like to speak to one of our advisors please contact us at: peatlandaction@nature.scot

Scottish Natural Heritage
Dualchas Nàdair na h-Alba

Peatland ACTION

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Peatland ACTION

Anne Gray, The Heather Trust Director and Scotland Moorland Forum's representative on the Project Board, provides an overview of Peatland ACTION.

Peatland ACTION is Scotland's major peatland restoration project. It is run by Scottish Natural Heritage and is currently funded by Scottish Government. To date, it has delivered 19,000 hectares of restoration across Scotland but has ambitions to increase that to 20,000 hectares a year.

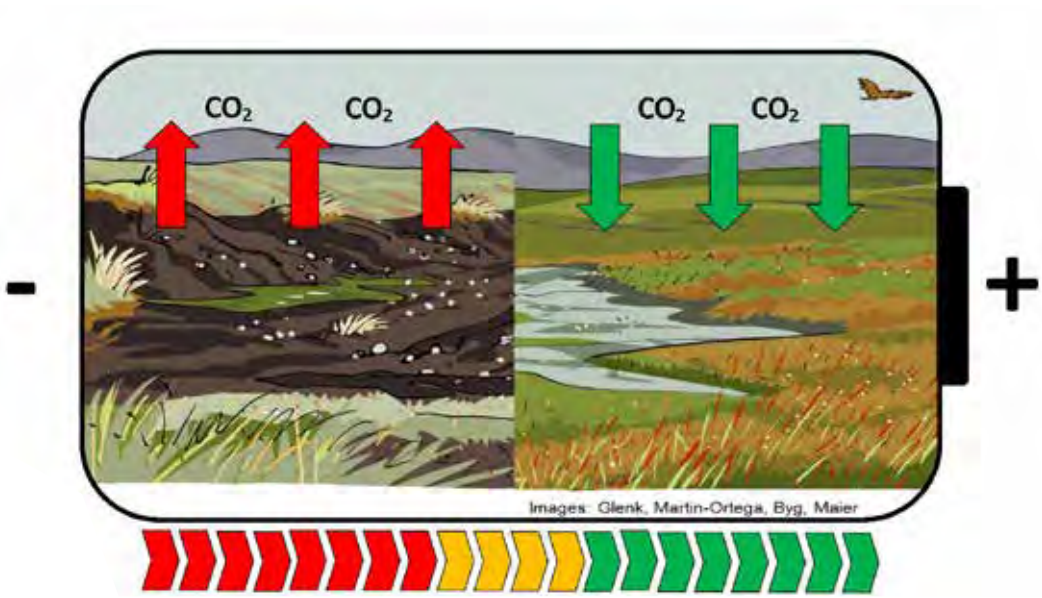
Anne says of the Project "Moorland owners and managers have responded very positively to the Peatland ACTION Project. There is good interest and a pipeline of applications from across Scotland. The Project Team work in concert with farms and estates to take initial interest through to completed restoration. The locally based Peatland Project Officers are key to making this relationship work."

"There are also some exciting developments in landscape scale restoration going on, some of which are being led by Scotland's deer management groups. This enables a more strategic approach to be taken across an area and since deer management groups are concerned with habitat improvement, it means peatland restoration is part of a bigger local initiative to deliver good upland habitats. Although not the only example, the Monadhliaths Deer Management on the west side of Strathspey has led the way."

Monitoring and measuring the outcomes of restoration so that lessons can be learned as progress is made is also vital. Peatland ACTION has increased its team in the last year to improve its data-gathering and analysis capacity so that this can be done.

Moorland owners and managers in Scotland will be able to apply for work to be completed in 2020/21 shortly. Details at **www.nature.scot/climate-change/taking-action/peatland-action**

Support with restoration is also available in England through regionally-based peatland programmes and in Wales through Welsh Government in partnership with a number of NGOs.



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Peatland ACTION

Glenk,. K., Martin-Ortega, J., Byg, A. (2017). Peatlands ecological conditions and associated benefits. Open access under the Creative Commons copyright. This image has been drawn by Ximena Maier. This can be abbreviated as in the Battery itself as Gelnk, Martin-Otega, Byg, Maier.

Bracken Control

Simon Thorp coordinates the activity of the Bracken Control Group and this includes liaising with the authorities to obtain an Emergency Authorisation to allow Asulam, the main chemical agent, to be available to control bracken.

The Threat posed by Bracken

It is claimed that bracken has changed little since the time of the dinosaurs. It is present on all continents, except Antarctica, and it is likely to turn up there, as the ice retreats.

The ability of bracken to dominate other vegetation puts it at odds with other rural interests, as a monoculture of bracken is of little value to anything other than bracken.

The conditions in 2019 suited bracken well. A successful season makes bracken control even more important to protect the diversity offered by other vegetation species.

Sheep ticks *(Ixodes Ricinus)* thrive in bracken litter and the population and range of ticks is increasing, along with the impact ticks can have on humans, livestock and wildlife through the range of tick-borne diseases.

Bracken Control Techniques

Generally, there is no wrong way to control bracken: techniques range from trampling by stock, through hand pulling, bruising, crushing, cutting, and chemical control by hand-held equipment to chemical control by helicopter. All techniques have an impact and the choice will depend on the nature of the ground, the size of the problem and the aspirations of the owners and managers of the land.

Asulam

The Bracken Control Group promotes the control of bracken by any means, but the decision to form the Bracken Control Group followed the decision in 2011 by the EU that the information available to demonstrate the safe use of main chemical control agent, Asulam, was insufficient to justify registration under the latest EU regulations.

In addition to being an effective agent for the control of bracken, Asulam has two key additional benefits: it is authorised for aerial application, and it offers selective control of bracken with little or no impact on non-target species. Aerial application is the most effective technique for controlling large areas of bracken and the only technique where the access for ground-based equipment is difficult or impossible, such as on steep hillsides or on broken ground.

Registration

The initial application for the registration of Asulam under the latest EU regulations was submitted in 2013, but this is a slow process. A decision about registration is unlikely to be made until 2020, at the earliest.

Asulam is the active ingredient, and if the application is successful, it will apply to Asulam only. A further application is required to register the product that uses the active ingredient, in this case, Asulox. This could take a further two years.

Since December 2012, the use of Asulam has been maintained by seven successful applications for Emergency Authorisations granted by the Chemicals Regulation Division of the Health & Safety Executive. The applications have been submitted by the Bracken Control Group and the draft approval of the eighth application, that will cover the 2020 bracken control season, was announced at the end of November. This includes some additional restrictions:

- the approval will cover application by helicopter only, and therefore it will not be possible to use hand-held or ground-based equipment to apply Asulam.
- The buffer zone against surface water bodies will be increased from 50m to 90m.

Part of the justification for the granting of the Emergency Authorisations is the link between bracken and the increasing threat from tick-borne diseases. It has recently been confirmed that Tick-Borne Encephalitis (TBE) has been identified in the UK; humans can be badly affected by Lyme Disease, and the number of people infected is rising, but TBE has a much higher impact on human health.

In view of their impact on the ability to control bracken, the Bracken Control Group will be considering the additional restrictions to establish what scope there might be to challenge these. If this is of interest, please monitor the BCG website – see below.

Conclusions

There is little doubt that the threat from bracken, and the associated impact of tick-borne diseases, is increasing.

There is a need for investment to develop new, more effective and safer bracken control techniques, but there is a risk that investment will not be forthcoming while uncertainty remains about the availability of Asulam.

It is important that the bracken control industry works closely with governments and public health organisations.

For more information about bracken control see the Bracken Control Group's website: ***www.brackencontrol.co.uk***

Working for Waders

Patrick Laurie, Communications Co-ordinator with the Working for Waders Initiative, provides us with an update on the project's progress in 2019.

Working for Waders is now at the end of its second year and can look back upon a good deal of progress and action. The Working for Waders Initiative brings people together from a wide range of backgrounds and organisations, enabling them to deliver real and meaningful change for wading birds in Scotland.

A key aspect of the project is encouraging farmers, land managers and gamekeepers to take ownership of wader conservation and much of the work undertaken so far has focused upon engagement and facilitation, not least at two "farming and waders" events, which were held during the summer in the Scottish Borders. Over fifty farmers turned out to learn more about making wader scrapes and managing hill grazing and the level of enthusiasm shown on the day seemed to demonstrate that farmers are ready and willing to engage with issues around conservation.

Elsewhere across the Working for Waders workload, scientific research has been funded at several locations in Scotland, which looks at wader breeding productivity and the impact of predation. This has been carried out by a range of different project partners working with communities, schools, estates and farms from Lanark to Caithness. This research will be vital as the project continues to draft guidance documents and demonstrate its "boots on the ground" credentials.

At a more academic level, the project is also working hard to identify hotspots and areas of particular interest for wading birds and this should help to prioritise conservation effort over the coming years. This kind of mapping represents a major piece or work and the knowledge of landowners and farmers is being carefully integrated into advanced computer modelling to ensure that politicians and civil servants have the information they need to make the right decisions for wading birds.

Now approaching its third year, Working for Waders is laying plans for more collaborative and innovative progress across Scotland as we fight to protect our beautiful, charismatic and iconic wading birds.

The Heather Trust provides support to the Working for Waders Initiative in Scotland. Scottish Natural Heritage generously provide the funds to enable this to happen.

Scotland's Moorland Forum on a visit to Glen Feshie Estate in the Cairngorms

Scotland's Moorland Forum

Anne Gray provides an update on the Forum's progress in 2019.

The Heather Trust facilitates Scotland's Moorland Forum and we are supported to undertake this work by Scottish Natural Heritage.

The Forum consists of 27 diverse member organisations including bodies that represent those who make a living from moorlands such as farmers and crofters, gamekeepers and shooting interests, stalkers, bodies whose primary interest is conservation and the natural environment, government and government agencies concerned with nature, water and forestry, the national parks, representatives of other upland land uses such as the forestry and water industries, as well as academic and research institutions. As such, the Forum provides the prime opportunity for cross-cutting debate on the future of Scotland's moorlands and uplands and their communities. We seek consensus, where possible, on key issues. Where consensus is not possible, there is still considerable value in shared understanding and the opportunities provided for the sharing of knowledge and experience. Our aim is to have a sustainable future for moorland through collaborative work.

The Forum has taken forward two major pieces of work during 2019. The first is the development of *Valuing Scotland's Moorlands*; a document which will be submitted to Scottish Government in early 2020 as the Forum's contribution to the development of future land use and management policy in Scotland. In many ways this is ground-breaking. It is the first time a truly cross-sector consensual view has been published. It will be available at **www.moorlandforum.org.uk** once completed.

The other major work has been the development of Moorland Management Best Practice. The Forum's moorland management guidance series was formerly known as the Principles of Moorland Management, but plans are in place for a name change, dedicated website and a strategic overview to set out the work's ambition. This, along with the continued publication of further individual guidance topics, will see it positively transformed.

As well as two full business meetings and the various sub and focus groups that have taken the Forum's work forward, we also enjoyed a summer visit to Cairngorms National Park in June. After a discussion in the morning, about various approaches to managing Scotland's moorlands and upland areas, we visited Glen Feshie Estate, part of the wider Cairngorms Connect project, in the afternoon. Glen Feshie is owned by Wildland Limited and we were shown round by Director of Conservation, Thomas MacDonell.

Best Practice Guidance

Through work in Scotland and England, Simon Thorp promotes the value of providing practitioners with guidance that establishes the best moorland management techniques. Here, he describes the concept.

I am an advocate of an approach to improving moorland management standards that offers guidance, not prescription. This approach seeks to achieve management improvement by providing practitioners with a source of information about the best techniques available.

The Heather Trust has been promoting this guidance approach for many years and was involved with the establishment of the Principles of Moorland Management Project (now known as Moorland Management Best Practice) for Scotland's Moorland Forum and the setting up of the Uplands Management Group in England. As the objectives of both these groups are very similar, some exchange of guidance is able to take place.

Before being issued, the guidance is approved by cross-sector moorland specialists and government agencies to make sure that the guidance establishes acceptable practices. As a result, the standards outlined in the guidance should be the standards that practitioners adopt and, if practitioners are following the approved guidance, their management is likely to achieve the best possible outcomes. In some cases, the guidance may be seen by governments as a more effective route to higher management standards than additional regulations. Therefore, it is important that practitioners embrace the opportunity that the adoption of best practice guidance offers.

The established guidance may also be used as the foundation for formal and informal training schemes. Current moorland managers are very skilled but, in this increasingly critical world, practitioners need to have their skills backed up by qualifications or accreditation.

In summary, the guidance approach:

- Recognises that skilled and sensitive management is required to maintain the value of moorland
- Will assist practitioners in delivering consistently high standards of moorland management
- Can include advice on how moorland can be managed to maximise the contribution to wider society
- Should be developed by consensus, combining practitioner knowledge with available scientific evidence

Moorland Management Best Practice

Moorland Management Best Practice is the new name for the guidance being developed by Scotland's Moorland Forum. As well as a name change and a new website www.moorlandmanagement.org, the project has published new guides this year, and these include:

Mountain Hare Counting Guidance – a supplement to last year's Mountain Hare Management guidance

Wildcat Friendly Predator Control

Night Shooting Guidance

Peatland Restoration advice

Sheep tick guidance is also close to completion and a technical "use of leaf blowers" guide has been added to the Muirburn Code website.

Uplands Management Group

Guidance has been published from Task & Finish Groups on the following topics:

- Vegetation Transfer - factors to consider when transferring vegetation as part of restoration work to reduce the risk of also moving diseases / pests.
- Sphagnum - A review of restoration techniques in place on six moors in England.
- Sphagnum Guidance - Working with the Moors for the Future Partnership, this developed into "Guidance for Land Managers on Managing Blanket Bog".
- Moorland Wildfire - a risk assessment approach to mitigating the impact of wildfire.
- Veterinary Medicines in use on the North York Moors - a summary of the treatments available for the management of upland sheep flocks.

A Task & Finish Group has completed its work on reviewing the options for monitoring restoration work on blanket bog and at the time of writing, the report is about to be published. Further work to develop a monitoring protocol for use by practitioners is planned.

The website also provides a home for the Heather & Grass Burning Code (and the supporting Best Practice Guides), the reports published by Natural England from the Uplands Evidence Review, and other reports that practitioners may find useful.

Wildfire

Based on his experience, as Chairman of the England & Wales Wildfire Forum, Simon Thorp provides his perspective on the current thinking about wildfire in the UK.

Recent and ongoing press coverage about the wildfires in California, Brazil, Indonesia, Australia, Spain and Portugal demonstrate that wildfire is a big, international problem. Wildfires affect three to four million km^2 of the global land surface every year, which equates to over 3% of the Earth's vegetated land surface.

In the UK, the wildfires that occurred in 2018 were well publicised and, during the year, the area burned by wildfire in the UK was the third highest in the EU. It should be remembered that the two highest-profile incidents at Saddleworth and Winter Hill were only the very top of the tip of the iceberg and many other significant fires took place throughout the UK during the year.

What is not so widely recognised is that 2019 has been a very severe wildfire year. The big difference is that there have been no significant wildfires in the second half of the year. Figure 1 shows how the year was developing up to the end of May. In this period, the area burned by wildfires was about six times greater than the average area burned in the 10 years to 2018 - and then nothing.

*Figure 1: Burnt Areas (ha) mapped in EFFIS**

EFFIS = European Forest Fire Information System

The burnt areas mapped in EFFIS represent, on average, about 80% of the total area burned by wildfires, since only fires larger than 30ha are mapped by EFFIS.

Issues that the Wildfire Forums are addressing

The England & Wales Wildfire Forum works closely with the Scottish Wildfire Forum and the Wildfire Group of the National Fire Chiefs Council.

Climate change predictions indicate that wildfire is likely to have a greater impact in future and, as a result, the challenges faced in Mediterranean countries today (99 people died in the fire at Mati in Greece) are likely to be our problem tomorrow.

There is a perceived lack of awareness of the threat of wildfire within government departments, the local resilience forums/ partnerships and land managers. The Forums believe that planning for wildfire should be a routine part of land management so that wildfire incidents do not come as a surprise.

Wildfire incidents are not confined to remote rural areas. In what is called the Rural–Urban Interface there is arguably a greater risk to people and property. For example, the fire in Wanstead Flats in East London, in July last year, could have turned into a major incident, and fires can occur in standing crops, as happened near Marlow, last year.

Public Health issues from the impact of smoke inhalation need to be considered. Aerosol particles (known as PM2.5) in high concentrations can exacerbate lung and heart conditions. The smoke from the fires in the North Pennines had a big impact in Manchester, last year, and health problems associated with smoke from wildfires have been reported in the valleys of South Wales. Figure 2 shows the precautions that were required by a resident in Manchester, last year, and Figure 3 shows the results of monitoring for Carbon Monoxide on 30th June 2018.

Figure 2: Protection from Smoke

In spite of the great strides that the Fire and Rescue Services have taken in recent years to improve their planning for and response to wildfires, in 2018 and 2019, they were still confronted by fires that were beyond their capability to control. This has highlighted the need for wildfire to be seen not just as a problem for the Fire and Rescue Services; the owners and managers of land must also take responsibility for better planning and preparing for wildfire

Defra commissioned the Uplands Management Group (UMG) to develop guidance for a risk assessment approach to wildfire. The guidance can be viewed on the UMG website. This is an important step forward as, for the first time, it provides a framework for the managers of land to work within to prepare their land for wildfire. The guidance also provides a template for a response plan, which can be developed with the local fire and rescue service, so that everyone knows what to do when there is a wildfire.

Conclusions

Wildfire is an increasing threat and we must learn to live with it. A cross-sector approach to planning and preparing for wildfire is required so that the amount of damage from a wildfire is reduced.

Fuel management must be seen as an important tool for mitigating the impact of wildfire. Intelligent use of the tools that are available should be encouraged: mouth, match and machine to reduce the fuel load coupled with restoration of our peatlands to provide greater resilience.

Figure 3: Air Pollution from Carbon Monoxide

New initiative to combine data across studies and sites to better inform peatland policy and practice

Mark Reed, Newcastle University, introduces the core common outcomes work being undertaken in Newcastle.

Researchers, practitioners and policy-makers from across Europe, whose goal is to understand better how peatlands respond to climate change, land use and restoration, are taking part in an initiative to standardise peatland data collection.

The process started with a workshop in March, hosted by Newcastle University. The aim was to begin the process of finding a way to standardise the collection of environmental data so it can be combined from multiple studies and sites to better inform policy and practice. Starting with UK peatlands, the group is now replicating the process across other peatlands as part of the United Nations Global Peatland Initiative, before exploring the potential to extend the approach to other areas of environmental science.

As post-Brexit agricultural policy moves towards paying for public goods, there is growing interest in peatlands as the UK's largest terrestrial carbon store. Disagreements over policies and practices to sustain healthy peatlands have often led to calls for more research. However, much of the existing research cannot be used to guide policy and practice because of variation in the approaches taken to collect data. As a result, research often leads to confusing and conflicting recommendations with no way for decision makers to assess apparently contradictory findings.

To tackle this problem, the Newcastle workshop identified the full range of climate, biodiversity and hydrology variables or "outcomes" that can be measured in peatlands. The group is now developing a set of core (essential) variables or "outcomes" that can be measured and reported in standardised ways for UK peatlands. Researchers and practitioners will then be able to choose if they wish to measure outcome from the core list, increasing the likelihood that their data can be combined with other studies in future evidence syntheses. Alternatively, they may choose to measure different outcomes if they are more relevant to their study, in the knowledge that these will be less likely to be synthesisable in future.

The group was inspired by the medical community who developed this approach and now routinely collects data based on a set of agreed core outcomes. These data are then combined with all studies in a discipline and used to inform policy and practice. Whilst there is growing recognition that sets of essential variables are required in peatland science, the workshop in Newcastle was one of the first occasions that the approach had been applied to the natural sciences.

One of the implications of this approach is that the outcomes will need to be measured in a number of agreed ways (depending on the type of project), which will also be tackled as part of this process. A small number of outcome measures are being chosen to start this process, where all available methods will be reviewed. Working with NERC's iCASP project, the group is identifying criteria against which methods and protocols for collecting outcome measure data can be evaluated e.g. accuracy, ease of use and cost. They will then identify relevant methods and protocols for assessing each prioritised outcome measure, and systematically evaluate each identified method and protocol against each criterion. The result will be a menu of reliable methods, ranging from very accurate but potentially highly technical and expensive methods, through to reliable but easier to measure methods that could be used by practitioners or in citizen science initiatives.

The process is being organised and facilitated by Newcastle University and IUCN UK Peatland Programme, funded by the Economic and Social Research Council as part of the NERC Valuing Nature Programme Peatland Tipping Points project, and co-designed with Defra, the Food and Agriculture Organisation of the United Nations and UN Environment.

The Graze the Moor Project

Simon Thorp provides a summary of this Exmoor based project. This article is an extract from the final report from the project that is about to be published. A link will be available from the Trust's website.

Introduction

The Graze the Moor project took place on Molland Moor (681ha) on the southern edge of the Exmoor National Park. The main project ran for five years, from April 2014 until March 2019, but it followed a two-year case study and a 12-month extension has been funded to continue the work, until the end of March 2020.

Graze the Moor was a collaborative project established in response to a need, identified by the landowner and graziers of Molland Moor, for a better understanding of the impact of grazing on moorland in south-west England.

The Heather Trust's involvement with Molland Moor started in 2002 when a five-year demonstration project was run there, with support from Defra.

Project partners

- The Molland Estate (ownership and management of the Moor)
- Exmoor National Park Authority (project funding, ranger input)
- Natural England (designated site issues, ecological monitoring)
- The Heather Trust (project management)
- Dave Boyce (ecological monitoring, *Molinia* control trial)
- Steve & Richard Langdon, Luckworthy Farm (grazing management)
- Countryside & Community Research Institute, University of Gloucester (economic analysis and external evaluation)
- Royal Agricultural University, Cirencester (economic analysis and external evaluation)
- R&D Applied Biology (sheep tick survey)

Funding

Exmoor National Park Authority provided the bulk of the funding for the project and all partners contributed in-kind support. Additional funding came from local grant-making bodies and it is significant that some of this additional funding was obtained during the course of the project. This demonstrates how a long-term project can develop momentum and attract support.

Vegetation Surveys

The project included a range of vegetation surveys. These established the condition of the vegetation on the Moor at the start of the project, how this has changed since 1947 and how the vegetation reacted to the management regime established during the project.

Conclusions:

- On Molland Moor, between 1947 and 2013, there has been a significant decline in heath cover (56.2%) with a simultaneous large increase in purple moor-grass (409%), and acid grassland (62% between 1947 and 2010; 43% increase between 1991 and 2013).
- This decline is continuing, with the remaining heather stock being heavily skewed towards the oldest age-classes.
- Without management, these areas will continue to degenerate towards species-poor purple moor-grass vegetation.
- Overgrazing of heather during the winter months is beginning to show through and to be a concern.
- The amount of ungrazed purple moor-grass is an issue. An increase in cattle grazing in the summer might help, if focused on these areas.

Molinia Control Study

A study assessed three different control options for purple moor-grass *Molinia caerulea* - referred to as '*Molinia*'. The work assessed the impact of: cutting, burning and spray-burn-reseed with heather.

Conclusions:

- The spraying treatment is the most effective method to reduce the abundance of *Molinia*.
- If cutting is used, the litter layer should also be removed.
- Where *Molinia* litter blows off, or is removed, burning and cutting can also enhance the competitive balance between *Molinia* and heathers, provided the stocking is not too heavy.
- It seems likely that most of the remaining stands of heather-dominated vegetation at Molland will be lost without concerted and targeted management that aims to favour heather at the expense of *Molinia*.

Figure 1: Members of the project team. From L to R - Allan Butler (RAU), Christina Williams (Molland), Simon Thorp (Heather Trust), Janet Dwyer (CCRI), Julie Tucker (Farm Secretary), Dave Barrow (Moorkeeper), Steve and Richard Langdon (Luckworthy Farm)

Moorkeeper

The concept was for a part-time Moorkeeper to provide a presence on the Moor and carry out or coordinate management work. The Moorkeeper was also a point of contact for anyone wishing to discuss the management of the Moor or report any issues.

The concept was assessed to be successful.

Grazing Management

Historically, Molland Moor was managed with winter stocking; in the winter, animals grazed the Moor during the daylight hours and were taken off the Moor overnight to be fed and housed or placed on adjoining in-bye land.

The project encouraged the year-round re-introduction of traditional, hill livestock to reverse the increasing reliance on what are perceived to be more commercial breeds of sheep and cattle on Exmoor that require winter housing and higher levels of input.

To prevent localised over-grazing, a 'snacker feeder' was used to spread concentrates on different parts of the Moor each day.

Conclusions:

- The livestock did well and maintained condition.
- The use of the Moor in winter has provided the farm business with more flexibility.
- The use of the snacker feeder proved to be an effective way to move cattle around the Moor.

Sheep Tick Survey

Some of the stock losses on the Moor had been attributed to tick-borne diseases. In response to increasing concerns about the increasing number of sheep ticks, a survey was commissioned in late 2018.

The survey revealed that the tick population on the Moor is very high and the analysis of the ticks identified that a wide range of tick-borne pathogens are present.

Conclusions:

- The combination of large numbers of questing ticks and the variety and distribution of potential pathogens is of great concern. This level of activity poses a high level of risk to human and animal health and welfare.
- Further work has been recommended to consider potential interventions.

Project Evaluation

To confirm the results of the work, an external evaluation of the project was carried out by Professor Janet Dwyer, the Director of the Countryside & Community Research Institute at the University of Gloucestershire. The key conclusions from the evaluation report have been included in this article.

Economic Comparison

The Royal Agricultural University (RAU) carried out an economic comparison to compare the financial results of the hill stock enterprises on Molland Moor (Luckworthy Farm), with farms that operate a more conventional system, without Moorland grazing.

This work is still in progress, but interim conclusions are that:

- The hill stock enterprises are performing at a similar standard to an average 'LFA sheep and beef' farm in the south-west uplands.
- Using the Moor does not economically disadvantage the farm business, if suitable hardy stock are kept - outputs are lower, but costs are also lower.

General Conclusions

- The importance of the support received from partners cannot be overstated.
- The long-term impact on the habitat from the removal of the restriction on winter grazing by cattle offers some benefits but this needs to be monitored further.
- The ability to graze the Moor during the winter allows farmers more management flexibility.
- The dominance of *Molinia* is a major threat to the habitat diversity on the Moor.
- The Sheep Tick threat on the Moor poses a severe risk to humans, livestock and wildlife.
- This is a long-term exercise and to establish clearer trends it should be continued for a further five years, as a minimum.
- There are some indications that the various management actions / experiments could benefit from being bolder and cover a wider area.

Figure 2: Cattle on the moor in winter

Figure 3: Ridgway Cross from the west

The Peatland-ES-UK project

Andreas Heinemeyer, University of York, provides an overview of progress made to date in his Peatland-ES-UK project.

Background

The UK uplands harbour some of the most beautiful places, painting an ever-changing display of seasonal colours and moods. I have the privilege to work in such places. Tough as it can be at times, I never fail to admire the wide, open views, the awe-inspiring mountains and roughness of farmland [Fig. 1]. But why bother? It all comes back to evidence-based management. Nearly every square metre of the UK countryside has or still is being managed. Ever increasing demands, be it agricultural production or recreation, pose greater questions around best land management and how to define it. One aspect is burning of heather-dominated peatlands as part of grouse moor management, specifically on blanket bog. These vast blankets of organic matter, several metres deep in places, contain not just some fascinating wildlife and rare birds, but also by far the largest UK carbon stores. Blanket bogs form under a cool and wet climate, resulting in high water tables and low soil oxygen content, preventing decomposition of dead organic matter.

The known unknowns

Previous research has highlighted that the climatic range of this globally rare habitat is going to shrink under a warmer climate. Moreover, burning has been linked to declining carbon stocks, biodiversity, water storage and water quality. However, the jury is still out on the robustness of such evidence (Ashby & Heinemeyer, 2019). Recently, there have been some important publications questioning many of the assumptions and findings in previous research surrounding burning impacts (e.g. Davies et al., 2016; Heinemeyer et al., 2019) and highlighting key evidence gaps (Harper et al., 2018). These studies highlighted two key issues: (1) major uncertainties remain about the generalisation of carbon losses, biodiversity decline, water quality and impacts in relation to burning and/or alternative management and prevention of wild fires; (2) a lack of long-term studies (covering a complete management rotation, e.g. burn cycle), landscape scale replication (i.e. every site is different) and 'gold standard' monitoring of Before *versus* After - Control *versus* Impact (BACI) studies assessing management change within a paired catchment design (e.g. burnt vs mown). Such BACI studies are costly (as they require long-term monitoring) but relate to changes directly attributable to management change and this is important.

Moreover, a major uncertainty remains regarding net greenhouse gas (GHG) emissions (i.e. methane) of intact (i.e. high water tables, peat forming with high cover of Sphagnum moss species) versus managed blanket bog, especially grouse moors. Not only are there hardly any UK studies available (Evans et al., 2017), but monitoring of field methane emissions have only advanced during the past 5-10 years. Accurate emission monitoring and robust assessments require long-term monitoring. There are strong indications that very wet bogs can become a strong net GHG source under warmer conditions as methane emissions increase, outweighing any carbon gains from peat accumulation.

The Peatland-ES-UK project

The Defra-funded project 'Restoration of blanket bog vegetation for biodiversity, carbon sequestration and water regulation' (BD5104) ran from 2012-2016 and was initiated to address many of these identified knowledge gaps, particularly around comparing impacts from burning to alternatives (i.e. mowing & uncut). The project took a more holistic research approach by considering a wide range of interconnected aspects around carbon, water, biodiversity with impacts far beyond the uplands [Fig. 2]. However, as Defra funding ceased after the initial phase 1, results were clearly only of limited value in relation to predicting long-term ecological changes. Importantly, the project has been

Figure 1: One of the Peatland-ES-UK sites (Mossdale; upper Wensleydale) with an abundance of cotton grass a few years after mowing of heather.

extended until 2022 with generous funding from Yorkshire Water, United Utilities, the Moorland Association, the British Association for Shooting and Conservation, the Yorkshire Peat Partnership (via the Yorkshire Wildlife Trust) and further support from Natural England. This will enable us to study a 10-year post-management period, allowing a more robust interpretation of findings toward predicting likely long-term impacts.

The Heather Trust (HT) contributed previously to water quality measurements and now, with funding supplied by the HDH Wills Charitable Trust, they are able to contribute to the second phase (2019-2022). Whilst the main project looks at the assessment of different management regimes of heather dominated blanket bog, namely burning versus mowing or uncut management, the HT funding will enable a closer look at how management impacts the nutrient levels in regrowing vegetation, particularly in heather and sedge shoots. Notably, young shoots are very important for many birds (not just red grouse) as young shoots contain the highest levels of many nutrients, for example, necessary for successful breeding. Moreover, sedge flowers contain high nitrogen and phosphorus levels, which are important (i.e. egg and bone development) for many bird species as well as for livestock, such as sheep.

The project will measure nutrient contents over time and relate those to management as well as to variability in climate (making use of locally collected climate data as part of the main project). Sampling will be done at replicated plots across three different sites (two in the Dales and one in the Forest of Bowland), each consisting of a burnt and a mown catchment (the latter also containing uncut and brash removal plots). Nutrient levels will then be related to annually recorded vegetation cover and heather growth. The nutrient analysis will focus on a wide range of key nutrients and relate data to phase 1 acquired data and literature values in relation to information on 'healthy levels' of those nutrients. The 10 year period post-management allows assessing heather regrowth toward maturity as well as completing a full catchment-scale management rotation (i.e. all heather areas either mown or burnt); only too often are management impacts assessed on very small experimental plots (a few square meters), which can deliver questionable results as management in the surrounding area outside the plots is often different. Moreover, the paired catchment experimental BACI design (adjacent burnt vs mown with uncut plots) allows a direct comparison of management impacts, as climate and other factors are known to be similar, overcoming potential considerable differences between plots when locating experimental plots in Space for Time studies (an alternative but less ideal approach) at separate sites (i.e. with different climate and vegetation). The paired catchment-scale management in this project [Fig. 3] is therefore a unique opportunity using robust scientific methodology to assess management impacts within a realistic upland management context. For general information on the project please see **http://peatland-es-uk.york.ac.uk/** or contact Dr Heinemeyer (**andreas.heinemeyer@york.ac.uk**).

A WAY FORWARD: **toward an 'adaptive moorland management toolbox'**

Science should not stop at the publication stage but aim to result in impact through active engagement with stakeholders. In fact, science should be informed by end-user needs right from the start, in addition to translating findings via a pathway of science to policy. In our study this happens regularly via input from the Project Advisory Group

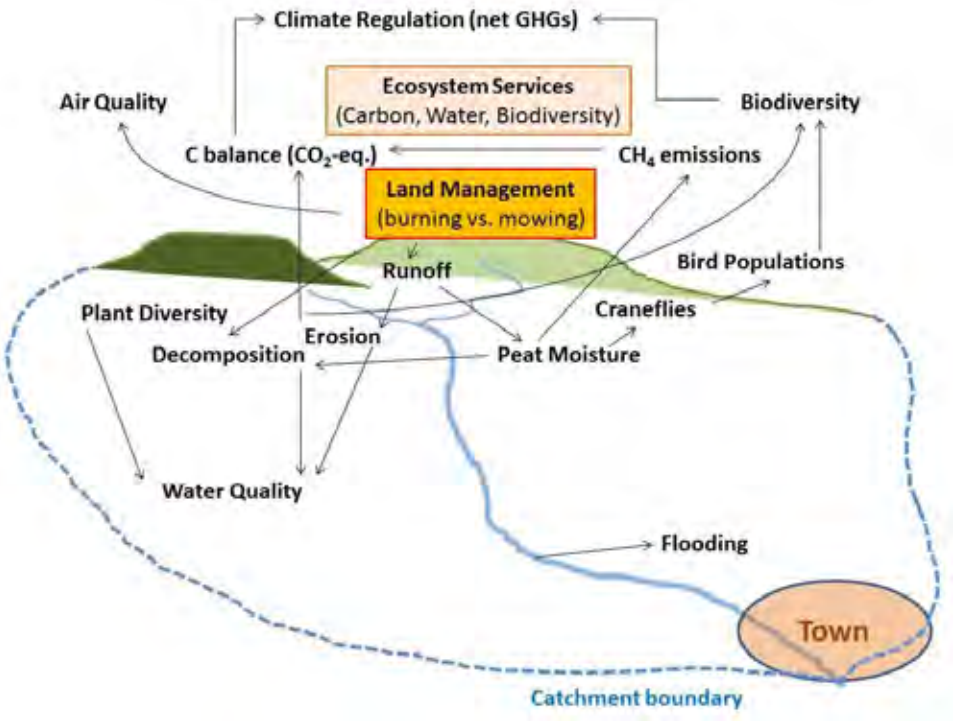

Figure 2: Schematic network of the main linkages between management impacts on plant-soil-water processes and associated key ecosystem services aspects (related to carbon, CO_2-equivalents (CO_2-eq), greenhouse gas emissions (GHG) water and biodiversity) across a generic catchment area containing upland areas with blanket bog. Processes and parameters investigated in the Peatland-ES-UK project are shown in bold.

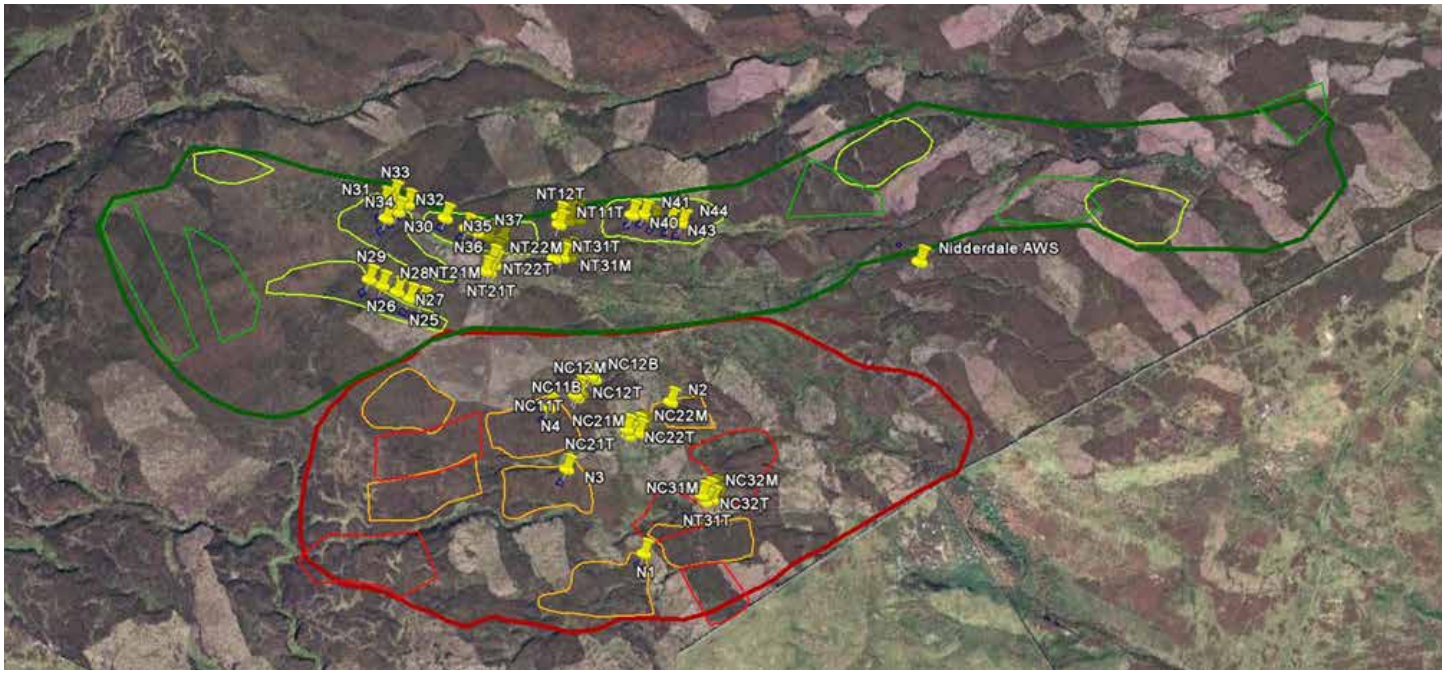

Figure 3: Outlines for the paired sub-catchments (red = burnt; green = mown) at the Nidderdale site with pictures obtained from Google Earth (2010). Shown are the large catchment outlines, the monitoring plots (5x5 m) and further slope monitoring locations (yellow pins) and the burnt and mown management areas (small polygons; with 2013 orange and pale green and 2015 red and dark green, respectively).

(all funders) and participation in workshops and conferences (including at The Heather Trust's AGMs). From my experience over the past ten years working in the uplands, I think there is a strong case for a 'toolbox approach' for better moorland management. Burning has its potential place amongst alternatives such as mowing and leaving areas uncut. I would suggest that burning should not happen on very dry sites, steep slopes or around gullies, whilst 'cool' burning on generally wet and flat areas allows efficient management with other benefits such as tackling wildfire issues (reducing fuel load biomass). Moreover, burns should be placed within mown areas also containing blocks of uncut heather areas, limiting any potentially negative burn impacts and/or benefiting from the various management options. I suggest that such an adaptive management approach would still lock away carbon, reduce runoff rates, limit potential water quality issues whilst also providing a much more varied habitat for wildlife and limiting fire risk. In fact, as very wet sites can result in slow plant growth and higher methane emissions, the carbon and GHG balance of very wet sites might well be improved by controlled burning and/or possibly minimal and targeted drainage – we clearly need to assess management implications across a wide range of site conditions to come to firm conclusions.

To end this contribution, I would therefore propose a joined-up approach, engaging landowners and users to work together with government agencies and researchers as part of a national monitoring programme. This would be targeted at trialling such an adaptive management approach, addressing remaining evidence gaps and identifying impacts and benefits of the different options: we all can (and should) always do better.

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REWILDING THE UPLANDS: the effects of removing sheep grazing on soils and plants

Rob Marrs, University of Liverpool, provides a summary of his recent research into sheep grazing and the impacts on soils and plants.

(Re)-wilding is a popularised means for enhancing the conservation value of marginal land. In the British uplands, it will involve a reduction, or complete removal, of livestock grazing (sheep), based on the belief that grazing has reduced plant species diversity, the 'Wet Desert' hypothesis. The hope is that if livestock is removed, diversity and the nutritional value of the vegetation will recover. In Scotland's red deer range, reducing or removal of deer has been an equally important focus of rewilding approaches.

We tested this hypothesis in two studies at Moor House National Nature Reserve (North-Pennines), where seven sets of paired plots were established between 1954 and 1967 to compare ungrazed/sheep-grazed vegetation.

In our first study we just compared the nutritional value of the total vegetation inside and outside the enclosures. There were almost no differences between grazed and ungrazed vegetation. However, there have been changes in species composition with some species, that must have been reduced by grazing, recovering after the grazing was stopped. This suggests that these recovering species would be more nutritious compared to those that persisted.

Hence, in our second study we compared leaf properties of seven focal species that occurred only, or were present in much greater abundance, in the absence of grazing to those of nine common species that were common in both grazed and ungrazed vegetation. Each sample was analysed for macro-nutrients, micro-nutrients, digestibility, palatability and decomposability. An example of our results are shown in Figure 1. Here the focal species, the cloudberry (*Rubus chamaemorus*) has a much greater digestibility on all measures except lignin concentration compared to the mean value of a range of common species that tolerate sheep grazing. We also measured changes in abundance of the focal species through time.

Our results support the 'Wet Desert' hypothesis, i.e. that long-term sheep grazing has selectively removed/reduced species like our focal ones, and on recovery they were more nutritious (macro-nutrients, a few micro-nutrients) palatable, digestible and decomposable than common species. Measured changes in abundance of the focal species suggest that recovery of these species will take 10-20 years in blanket bog and 60 years in high-altitude grasslands. Collectively, these results suggest that sheep grazing has brought about biotic homogenization and its removal in (re)wilding schemes will reverse this process eventually! The headage payments era has taken its toll in the Highlands/uplands, and it will take some time for recovery.

The Heather Trust is thanked for some financial support to the University of Liverpool for this research.

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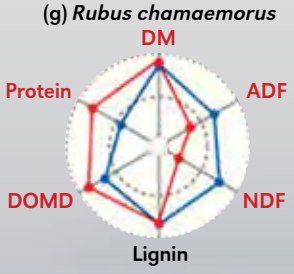


Figure 1. Comparison of a range of variables that indicate how digestible species are between *Rubus chamaemorus* (red), a species that increases when sheep-grazing is removed and the mean value of species that tolerate sheep-grazing. Note that Rubus has greater levels of dry matter, protein and DOMD (energy) and lower concentrations of fibre (ADF, NDF); only lignin concentration was not significantly different here.

Managing Moorland for Birds of Prey and Red Grouse: The Final Report of the Langholm Moor Demonstration Project

Adam Smith, GWCT, shares the final conclusions of the Langholm Demonstration Moors Project.

The Langholm Moor Demonstration Project, which followed the earlier 'Joint Raptor Study' at the same location from 1992 – 1997, set out to establish whether the moor could be recovered as a national and local asset, supporting grouse populations for driven grouse shooting; birds of prey in an internationally important protected area for hen harrier; and to deliver other wider biodiversity. The project explored different approaches to management that might be of benefit to Scotland's moorlands and deliver positive outcomes for society.

The project was a partnership of Buccleuch, Scottish Natural Heritage, Game & Wildlife Conservation Trust, RSPB and Natural England. The project was funded by these bodies, along with rural development support from the Scottish Government. These partners have published the report at a time critical for moorland policy, when Scotland and the UK are facing many questions about upland land use. A case for support will need to be made for moorland management derived "public goods" such as biodiversity and mitigation of climate change, and Langholm informs this case.

To this end, parts of the project were markedly successful: addressing decades of heather loss, the subsidised grazing removal and gamekeeper management recovered overgrazed moorland. Gamekeepers reduced predation levels on ground-nesting birds, including raptors and waders, allowing some recovery of their populations. The project also provided insight for thousands of visitors into raptors' relationships with prey, the recovery of heather habitats, and the economic cost of maintaining heather moors.

Despite a grouse population recovery in some years, the gamekeeper management which brought these positive outcomes could not be afforded in the long run. This was because the grouse did not breed sufficiently well in enough years for there to be the shooting that would achieve the chosen economic return. The report explores the possible reasons for this and the implications for current and future moor funding and management in detail.

Lord Lindsay, Chairman of Scotland's Moorland Forum 2007 – 2018, who contributed the foreword to the report said:

"During my chairmanship of Scotland's Moorland Forum, which spanned the life of the Langholm Project, moorland was challenged by changing land use, as grazing pressure increased or decreased, and as forests and woodlands expanded, separating moors from each other. In other places the pressure on ground nesting birds exerted by predators was the critical issue. The Langholm Moor Project brought these issues together and crystallised the drive for solutions."

Mark Oddy speaking for the project hosts Buccleuch said: "Buccleuch was proud to be part of this important project."

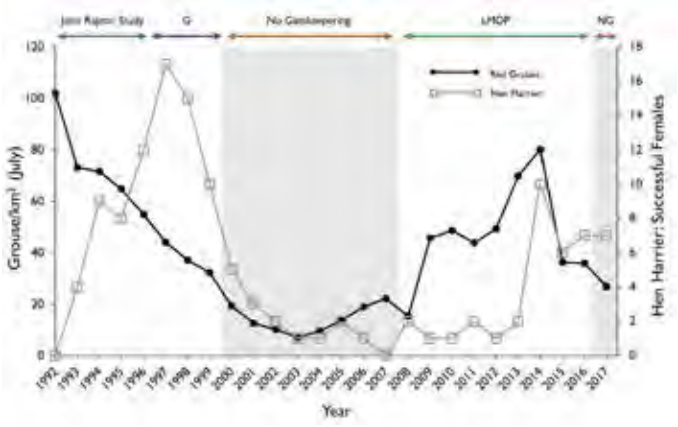
"Clearly, many challenges lie ahead in ensuring these benefits can continue but this report underlines the fact that moorland management has a positive and substantial contribution to make in preserving our cherished moorland for the future"

Ross Johnston, Deputy Director of Sustainable Development at SNH commented: "This report is being published at a critical time, with the climate emergency and biodiversity loss high on the agenda."

"The report shows the strength of partnership working in tackling key wildlife management issues. The project delivered some recovery of wader bird populations, supported important rural jobs, allowed many visitors to enjoy seeing hen harriers and other raptors in an attractive setting and has produced many important scientific publications."

"We also now know that driven grouse moor management is difficult in the face of rising predation pressure – much of it due to historical land use changes such as habitat loss and, at Langholm, neighbouring forestry harbouring predators."

Copies of the report can be downloaded at www.langholmproject.com and further information and enquiries can be sent to info@langholmproject.com



Langholm Moor was the location of the Joint Raptor Study (1992-1996) and the Langholm Moor Demonstration Project (2008-2017). In both periods, and from 1997-1999 (G) the moor was managed for red grouse and hen harriers. From 2000-2007 and after February 2016 there was no predator control (No Gamekeepering/NG) on the moor. Sheep grazing pressure was reduced by around half from 2011. The number of grouse per km² in July from block counts and the number of hen harrier females successfully fledging young varied and the most recent analysis suggests their abundance is related to moorland management activity.

HEATHER BEETLE: Conclusions from our Peak District study

Anne Gray, The Heather Trust, provides an overview of the findings of the Heather Beetle Study which took place in the Peak District from 2013 to 2018.

The Heather Trust ran a six-year monitoring study (2013-2018 inclusive) on two sites in the Peak District, Combs Moss and Crag Estate. The monitoring work was carried out by ecological consultants, Penny Anderson Associates Ltd, and involved regular monitoring of heather cover after a heather beetle attack on plots which were either burnt, cut or left alone.

Funded by The Heather Trust, Natural England and the HDH Wills Charitable Trust, the results of the study showed that after five or six growing seasons there was no significant difference in terms of the recovery of heather between the different plots and there was a reasonable level of recovery on the sites studied during that time. Earlier work on the Langholm Moor Demonstration Site in southern Scotland showed similar outcomes, with no one treatment doing substantially better there either.

Additional trials were carried out on Combs Moss. In one area, prior to the study, the vegetation had been burnt several times resulting in a loss of heather. This was seeded as part of the trials but there seemed, on this site, little benefit. Subsequent monitoring of young heather showed beetle attack was more severe on the young re-generating heather than the old unmanaged heather. The results of this work suggest that repeatedly burning damaged heather could result in loss of heather over time and isn't to be recommended.

While heather beetle damage may look alarming and it is understandable that moorland managers want to do 'something' to help the heather recover, there appears to be little gain in rushing to intervene. Despite initially looking dead, much of the heather on the study sites re-grew with time. This suggests that areas of heather beetle damage may be best integrated into the moorland management rotation in the normal manner, rather than targeted for intervention measures immediately after beetle attack.

The full research document, a Heather Trust Heather Beetle briefing, which summarises the key findings of this work, and a write up of heather beetle work on Langholm Moor is available on our website **www.heathertrust.co.uk/heather-beetle**

What next?

As indicated by our 2019 Heather Beetle survey, this year has been a bad year for heather beetle attacks and there are a range of theories as to why that might be the case.

Many feel increasing severity of attack is related to climate change. That is, different and more extreme weather patterns are challenging for heather growth and health, so weaker plants succumb more easily when beetle strike. The National Trust in particular put out a press release this summer to indicate that this was their belief.

There are also theories about the relationship between heather beetle and their predators having got out of balance and the impact that nitrogen deposition on moorland, coming from industry and vehicle exhausts, might be having. There was some academic research done into this in Spain in 2016, which suggests nitrogen 'fertilised' heather favours heather beetle productivity but has an adverse impact on their prey's liking for them.

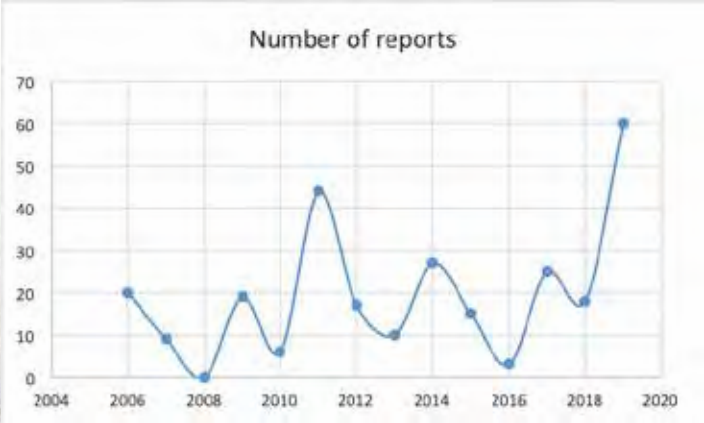
There are also those who wonder if a programme of rewetting moors might be favouring beetle productivity.

To understand the role of any of these theories in attacks would require investment in research into the beetle's ecology which is currently poorly understood.

In the meantime, The Heather Trust will continue to gather information on outbreaks through our annual survey to pick up any particular trends or patterns.

HEATHER BEETLE REPORTING 2006 TO 2019

The Trust has been running a self-selecting heather beetle reporting service since 2006. The table below shows how the level of returns has changed year on year. It shows a variable picture, but with a definite increase in reporting this year.

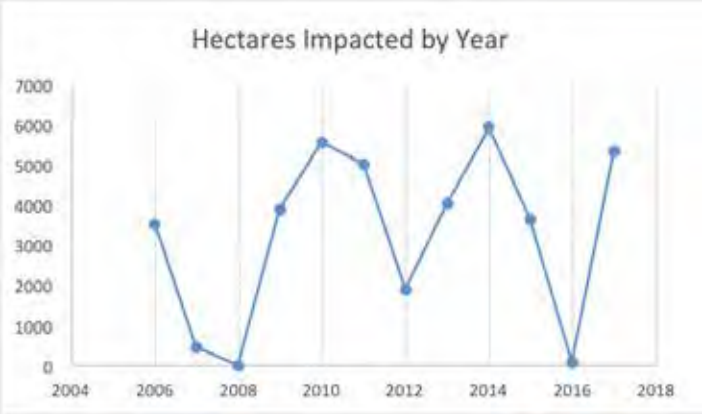


Geographic spread of attacks

There is no discernible trend in geographic spread of reports across the whole period of the survey. Reports can and do come in from any area of moorland across Great Britain and they do not tend towards either east or west.

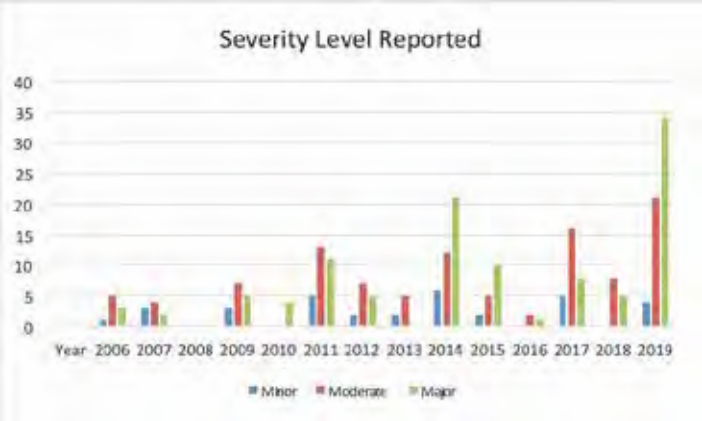
Hectares impacted

Up to 2017 we gathered information on the hectares impacted as provided through the returns. Overall this followed the same pattern as prevalence of reports, but it is interesting to note that in 2011 we had the highest number of reports of beetle attacks but 2014 saw a bigger area of reported damage.



Severity of attack

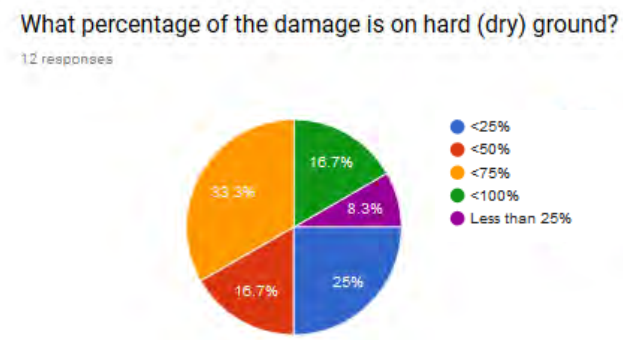
We have also recorded the severity level of the attack as measured by the respondent. The chart below shows how the reports made each year are split between minor, moderate and major levels of attack.



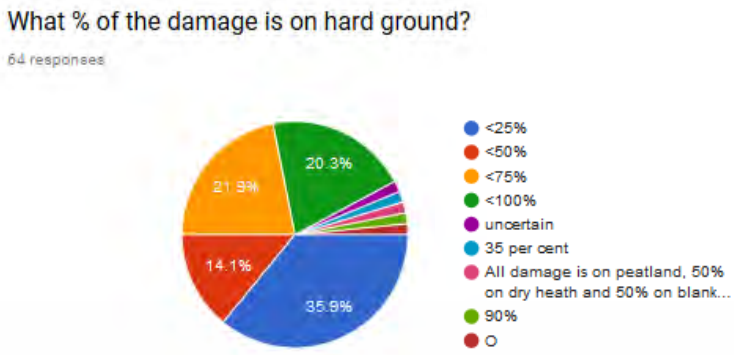
What percentage of the damage is on hard (dry) ground?

We have also more recently started to gather information on whether wetter areas of moor are affected more than dry areas and the results for the 2018 and 2019 are given below.

2018:

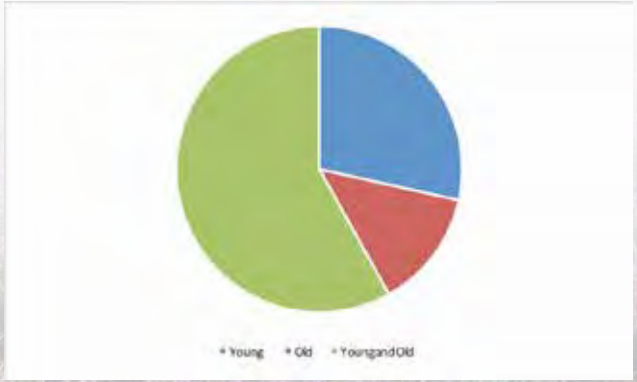


2019:



What age of heather is affected?

We have found no notable trend towards either only young or only old heather being affected, with the majority of reports indicating both were affected equally.



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Technical Specification

Characteristics	
Structure	Oscillated
Polymer	High Density Polyethylene
Anti-slip design	Yes
Ecology Influence	Environmentally Neutral
Colour	Brown*
Securing Method	Usually Steel pins - varying lengths
Slip risk PTV value	>40 (low)
UV Stabilised	Yes
Nominal Dimensions	
Width	2.5m
Length	15m

Provides an alternative for heavily engineered stone roads

Glen Feshie Scotland's Moorland Forum Summer Meeting

Excitement building for 2019 Upland events

Anne Gray presenting at ClimateXChange event, Edinburgh

2019 AGM at College Valley Estates

Bradfield Moor 'What Are Britain's Uplands For?' event

Molland Cattle Graze The Moor Project

Rob and Liz Marrs enjoying the Kelso Races Lot they won in our 2019 Sale

George Dodds and Stephen Crees at College Valley Estates

Anne Gray and Mark Wilson, BTO discussing Working For Waders maps

Arwyn Davies welcomes us to Powys

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Please mention The Heather Trust when responding to these adverts

LEGACY FUNDING

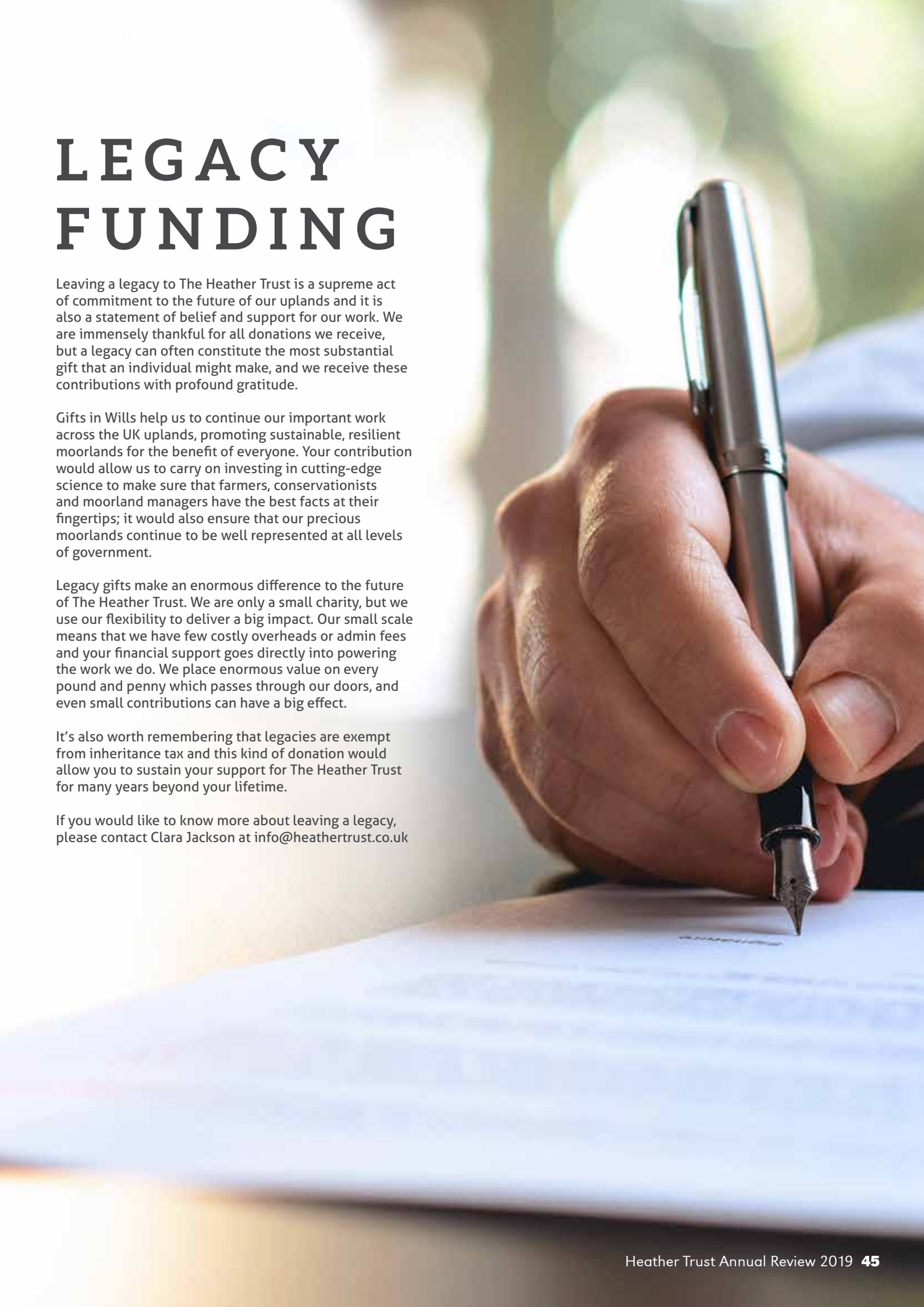
Leaving a legacy to The Heather Trust is a supreme act of commitment to the future of our uplands and it is also a statement of belief and support for our work. We are immensely thankful for all donations we receive, but a legacy can often constitute the most substantial gift that an individual might make, and we receive these contributions with profound gratitude.

Gifts in Wills help us to continue our important work across the UK uplands, promoting sustainable, resilient moorlands for the benefit of everyone. Your contribution would allow us to carry on investing in cutting-edge science to make sure that farmers, conservationists and moorland managers have the best facts at their fingertips; it would also ensure that our precious moorlands continue to be well represented at all levels of government.

Legacy gifts make an enormous difference to the future of The Heather Trust. We are only a small charity, but we use our flexibility to deliver a big impact. Our small scale means that we have few costly overheads or admin fees and your financial support goes directly into powering the work we do. We place enormous value on every pound and penny which passes through our doors, and even small contributions can have a big effect.

It's also worth remembering that legacies are exempt from inheritance tax and this kind of donation would allow you to sustain your support for The Heather Trust for many years beyond your lifetime.

If you would like to know more about leaving a legacy, please contact Clara Jackson at info@heathertrust.co.uk



Just because the environment is a responsibility

doesn't mean it can't be an opportunity

A growing number of buyers are looking to allocate funds for environmental measures, including carbon offsetting, natural flood management, rewilding and net biodiversity gain.

EnTrade designs marketplaces to enable them, offering moorland managers and farmers new revenue sources, new uses for land and new opportunities for diversification with minimal risk or investment.

We work with water companies, public bodies and businesses in transport, energy, construction and manufacturing, providing the scientific expertise to design effective environmental projects, and an online marketplace for accredited environmental services to deliver them.

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