MOORS FOR THE FUTURE PARTNERSHIP

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# CommunityScience

## External evaluation of the Community Science project

**December 2018**
Prepared for Moors for the Future Partnership
by Countryside Training Partnership

heritage lottery fund
LOTTERY FUNDED

# Contents




**Acknowledgements**

All the people I have met in my work with the Community Science Project have been both welcoming and generous with their time. The evaluation would not have been possible without the information they provided and the insights they shared with me. People have been honest about both strengths and weaknesses of the project, and their hopes for the future.

Any errors and misinterpretations have been made in good faith and remain my responsibility.



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**Countryside Training Partnership**
**December 2018**

**www.countrysidetraining.co.uk**



**Photos:** Moors for the Future Partnership


**URLs cited in this report:** The Moors for the Future Partnership will be launching a new website shortly after publication of this report. The URLs cited may therefore no longer be valid, but www.moorsforthefuture.org.uk will be retained, and will have a search facility meaning the various links and documents can be followed up.

# 1. Summary

The headline conclusion of this evaluation is that the Community Science Project (CSP) has been very successful both in engaging a diversity of volunteers in community science and in collecting robust and valid scientific data. It is clear that lottery players' money has been used to good effect.

The CSP has been well-resourced and has been delivered by a highly effective three-person team. In terms of scientific rigour this project is as good as or better than other citizen science projects across the country. The project's data are being used to create an invaluable baseline as the moorlands of the Peak District and the South Pennines change in response both to climate change and to ongoing management interventions.

The project was delivered across the Peak District and the South Pennines (see map on page 10). The three approaches adopted by the project - opportunistic monitoring, targeted monitoring and long term environmental monitoring - have complemented each other in terms of the data collected and the different individuals involved. The project's communication and engagement activities have also been highly effective.

The project achieved year-on-year increases in the quantity of data collected and the number of people involved between 2015 and 1017. This activity plateaued out in 2018.

A lot has been learnt over the last four years, for example:

- Sightings of mountain hares in their different colouring in summer and winter, made by members of the public with no particular expertise, are proving to be of great value
- The Environment Agency is particularly interested in the long term data being collected from the nine Environmental Monitoring sites
- In other areas where the scientific findings to date are of less importance, volunteers are nonetheless learning a lot and enjoying their engagement with the moorland environment.

The Community Science volunteers have been well trained and well supported. Some have found the physical challenges of working on the hills to be very demanding; others are disappointed that so far they haven't found out what their surveys are telling us.

Both the volunteers and the organisations and individuals involved in the Moors for the Future Partnership (MFFP) are determined that community science activities will continue even though the period of HLF funding has finished. To help this happen a number of the existing volunteer support, communication and data management processes are being taken on by the MFFP team. It will be difficult without the bespoke community science resource to sustain the high levels of activity we have seen to date, but it is to be hoped that the continuation of this sort of volunteering in the Peak District will be a lasting legacy of the project.

The project was the 2017 winner of the Campaign for National Parks 'Park Protector Award', and it was shortlisted for the 2017 National Biodiversity Network Group Award for Biological Recording. The CNP citation summarises the project's achievements:

> "Understanding the impacts of climate change is no small challenge. The Community Science project from Moors for the Future uses the strength of the community to monitor the changes to the environment happening in the Peak District. The environmental information collected by volunteer 'community scientists' are crucial to targeting conservation efforts."

## 2. Introduction

One condition of receiving an award from the Heritage Lottery Fund is that recipients should undertake an appropriate end-of-project review and evaluation. As well as satisfying HLF's requirements this report will hopefully be useful to others who are interested in setting up a community or citizen science project, and will provide a baseline as the project moves into a new phase of delivery.

This report builds on and expands the original evaluation which was completed in March 2018, in anticipation of the project being wound up by the end of May 2018. Thanks to an underspend in some budget areas the project was extended by an additional seven months, meaning that activities could continue into a fourth field season.

Both of the reports are based on a comparatively light touch review of the Community Science Project. Rather than collecting a tranche of new evidence they draw on:

- A review of project paperwork and reports
- Meetings and phone conversations with a wide range of people involved with the project, including a selection of Community Science volunteers, the staff team, members of the project's steering group and colleagues within the Moors for the Future Partnership
- The outputs from workshops attended by staff working for the Moors for the Future Partnership and members of the project's steering group, and of an internal critique of the project undertaken by the project team
- An evaluation workshop for project volunteers.

# 3. Community or Citizen Science – an introduction

The Moors for the Future project is called the 'Community Science Project', but is very closely allied to what is more generally known as 'Citizen Science'. The scope of the Community Science Project is captured by this definition of Citizen Science:

> "The collection and analysis of data relating to the natural world by members of the general public, typically as part of a collaborative project with professional scientists."

In the UK the involvement of volunteers in science, and in particular in collecting biological data, is nothing new. In recent years there has however been a step change both in terms of the numbers and diversity of people involved in these activities, and the amount of scientific data being gathered through this approach. In 2012 the Natural History Museum published a "Guide to Citizen Science"[1] which provides a lot of useful background, and the British Ecological Society now supports a Citizen Science Special Interest Group which aims to "bring people together to support creativity in ecological research" [2].

Typically Citizen Science Projects are set up with two goals in mind:

1. To engage and enthuse people so they can better understand and enjoy their environment, while developing new skills which might in some instances help them in future career moves. Citizen Science activities are sometimes, but not always, undertaken in a social context.
2. To collect useful data. These might be used to inform site management or to track changes in biodiversity or other features of the natural world over time. These changes are often the result of management interventions and / or of climate change.

   One important part of many Citizen Science projects in the UK is for data to be submitted to, and accepted by, local or regional environmental records centres and through them the national Biological Records Centre (BRC) which oversees records collected for nearly 90 different taxonomic groups.

   The work of the BRC is a major component of the National Biodiversity Network (NBN). NBN champions the sharing of biological data, and one particularly important element of its work is the NBN Atlas, a free online resource that comprises the country's largest collection of biodiversity information https://nbnatlas.org.

One recurring question around citizen science is whether it can be relied on both to produce reliable and accurate data while at the same time engaging a diversity of participants. Managing this potential conundrum, and demonstrating the value of the data to third parties, is a key part of any citizen science project. It has been argued that with appropriate training and checks in place there is no reason why citizen science data should necessarily be inferior to data collected by professional scientists (see https://blog.okfn.org/2013/01/23/citizen-science-can-produce-reliable-data )

## Example projects

At a **national level** citizen science initiatives include:

- The RSPB's 'Big Garden Birdwatch' held each January. This first took place in 1979.
- The phenology surveys co-ordinated by the Centre for Ecology and Hydrology and the Woodland Trust since 1998. These surveys use data collected by volunteers to show how the timing of natural events is changing, and how this is linked to our changing climate.

[1] http://www.nhm.ac.uk/content/dam/nhmwww/take-part/Citizenscience/citizen-science-guide.pdf

[2] https://www.britishecologicalsociety.org/membership-community/special-interest-groups/citizen-science/

- The Open Air Laboratories (OPAL) network www.opalexplorenature.org (established in 2007), a partnership organisation involving Imperial College London together with a number of leading museums, other universities, environmental organisations and Government agencies across the UK. OPAL has been largely funded by the Big Lottery Fund and co-ordinates a range of local and national projects.
- Anglia Ruskin University and the Centre for Ecology & Hydrology have recently acknowledged the vital role that citizen scientists have played in helping to track the spread of the harlequin ladybird - an invasive non-native species - across the UK, over the last 13 years.

  See https://www.ceh.ac.uk/news-and-media/news/citizen-scientists-map-rapid-spread-harlequin-ladybirds

At a **more local level** many Citizen Science projects have been and are being undertaken. The vast majority of these projects have benefitted from HLF funding. A few examples:

- The Cyril Diver Project on the Studland Peninsula in Dorset. This was organised by the National Trust between 2013 and 2015, and comprised a comprehensive ecological survey of the heath and dune system on Studland. Survey work was carried out by volunteers, both experts and beginners, and coordinated by a project officer. This project was undertaken eighty years on from a survey conducted by Cyril Diver and associates in the 1930s. Cyril Diver later became the first Director-General of the Nature Conservancy in 1949 www.nationaltrust.org.uk/studland-beach/features/the-cyril-diver-project.
- In 2012 the Greater Manchester Ecology Unit / Local Record Centre started delivery of the "From Grey to Green" project https://www.gmwildlife.org.uk/grey_to_green. This project has encouraged and trained local people from across Greater Manchester to identify and record wildlife. This activity is being continued across the wetlands and peatlands in Salford, Wigan and Warrington as a project of the Carbon Landscape Partnership.
- "Nature Counts" is an HLF-funded project being delivered by the Sheffield and Rotherham Wildlife Trust. The goal is to raise awareness of several important species across Sheffield, including otters and hedgehogs. As well as recording people's sightings of these species, the project aims to encourage local people to take an interest in their welfare and make small improvements to help provide them with homes and habitats.
- "Pollinating the Peak" is another HLF funded project which includes citizen science elements. The project is being led by the Bumblebee Conservation Trust and was awarded £872K by HLF in March 2016. The aim is to raise awareness of the links between our countryside, food and bumblebees in Derbyshire. The project is engaging with people of all ages and aims to inspire a new generation of entomologists and citizen scientists to look after and look out for bumblebees now and in the future.

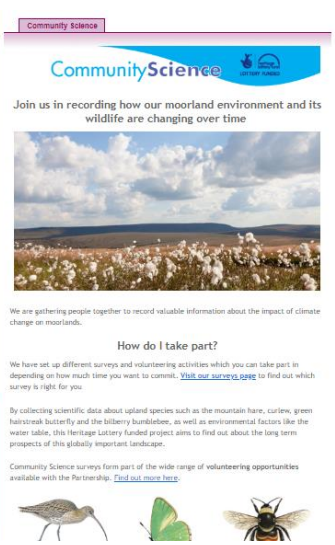
  The Bumblebee Conservation Trust is also delivering a parallel citizen science project along the Kent coastline between Dartford and Deal.
- The 'Wildlife Recorders of Tomorrow' project in Breckland (on the borders of Norfolk and Suffolk) ran from 2014-2017. During this time 23 sites across the Brecks were fully monitored for their wildlife http://www.breakingnewground.org.uk/our-projects/a-home-to-many/wildlife-recorders-of-tomorrow. Some of these sites were monitored via 'BioBlitz' events, at which the public were invited to a mass recording event with experts on hand to help identify as many species as possible over the course of a weekend.
- The Wandle Trust organises 'Invasive non-native species' surveys along the River Wandle in south London. The Trust trains up volunteer 'River Rangers' who survey the river bank four times a year to update distribution maps of four invasive (and easy to identify) plant species: Japanese knotweed, Himalayan balsam, Floating pennywort and Giant hogweed: http://www.wandletrust.org/invasive-species.

# 4. The Community Science project

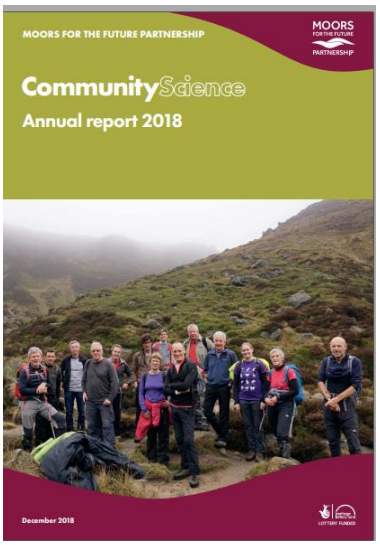
The Community Science Project (CSP) operates across the moorland areas of the Peak District and the South Pennines. The following section of this report presents a summary of the "what", the "how" and the "who" of the CSP.

A mass of more detailed information can be accessed through the project's website - http://www.moorsforthefuture.org.uk/community-science. Particularly useful are the annual reports produced in 2015, 2016, 2017 and 2018 and the publication 'Community Science – the story so far…' (June 2018) which contains preliminary data analysis and findings from the project.

It will shortly be possible to access a 12-minute CSP podcast through the website. This not only explains what the project was all about and its underlying philosophy, but also features the voices of a range of volunteers telling the story of how and why they got involved with Community Science.






### Project goals

- To deliver a community volunteer programme which enables participants to learn, develop new skills and enjoy their moorland heritage, and
- To yield robust and valuable scientific data on the environment and wildlife of the area and in particular to provide a baseline against which emerging climate change impacts can be measured.

**Timeline**

2010-12: The Moors for the Future Partnership (MFFP) developed their thinking about a project which would (i) help the MFFP Science Team with its research and monitoring work, while at the same time (ii) contributing to the Partnership's goal of engaging with people who live in the communities around the moorland areas. In the summer of 2012 MFFP submitted a Round One Heritage Grant application to the Heritage Lottery Fund.

December 2012: MFFP were awarded an HLF Development Grant of £164,000, complemented by £16,000 of cash contributions from MFFP partners, in-kind contributions from the Peak District National Park Authority and a commitment to involve volunteers in the development work.

January 2013 – summer of 2014: Development Phase, culminating in submission of a Round Two application to HLF.

November 2014 – The project was awarded a Round two pass by HLF's East Midlands Committee. The HLF award for the delivery phase amounted to £605,100 (see 'Finance' section below).

December 2014 – March 2015: appointment of the three-person CSP staff team: Sarah Proctor (Project Manager), Tom Aspinall (Project Officer) and Joe Margetts (Communications and Engagement Officer).

2015 – Field season 1

2016 – Field season 2

2017 – Field season 3

May 2018: Project end date as originally planned. The project was extended by seven months - allowing delivery of a fourth field season, thanks to an underspend in some budget areas (see below).

2018 – Field season 4

August 2018: Sarah Proctor resigns as Project Manager. Joe Margetts and Tom Aspinall jointly take on this role, in addition to their other roles within the project.

31st December 2018: HLF funded project ends

## Approach and scope

The Project website[3] (which is hosted within the MFFP website) contains information about the different surveys which are being undertaken by volunteer community scientists. The bulk of activity falls within three categories:

1) Opportunistic Monitoring

This approach is designed to engage people who are up on the moors for a variety of reasons, and for whom community science may not be a prime motivation. Volunteers are invited to look out for and report sightings of five groups:

- Adders, lizards and toads ("Scales and Warts")
- Ring ouzel and redwing
- Mountain hares, brown hares and rabbits
- Curlews, red grouse and swallows.
- Butterflies (orange tip, peacock and green hairstreak).

Sightings are reported to the CSP team by the return of postcards (see illustration below), through the 'MoorWILD' Smartphone app (initially developed by the MFFP MoorLIFE project), through an on-line form on the CSP website, or through "iRecord" (see below).


2) Targeted Monitoring

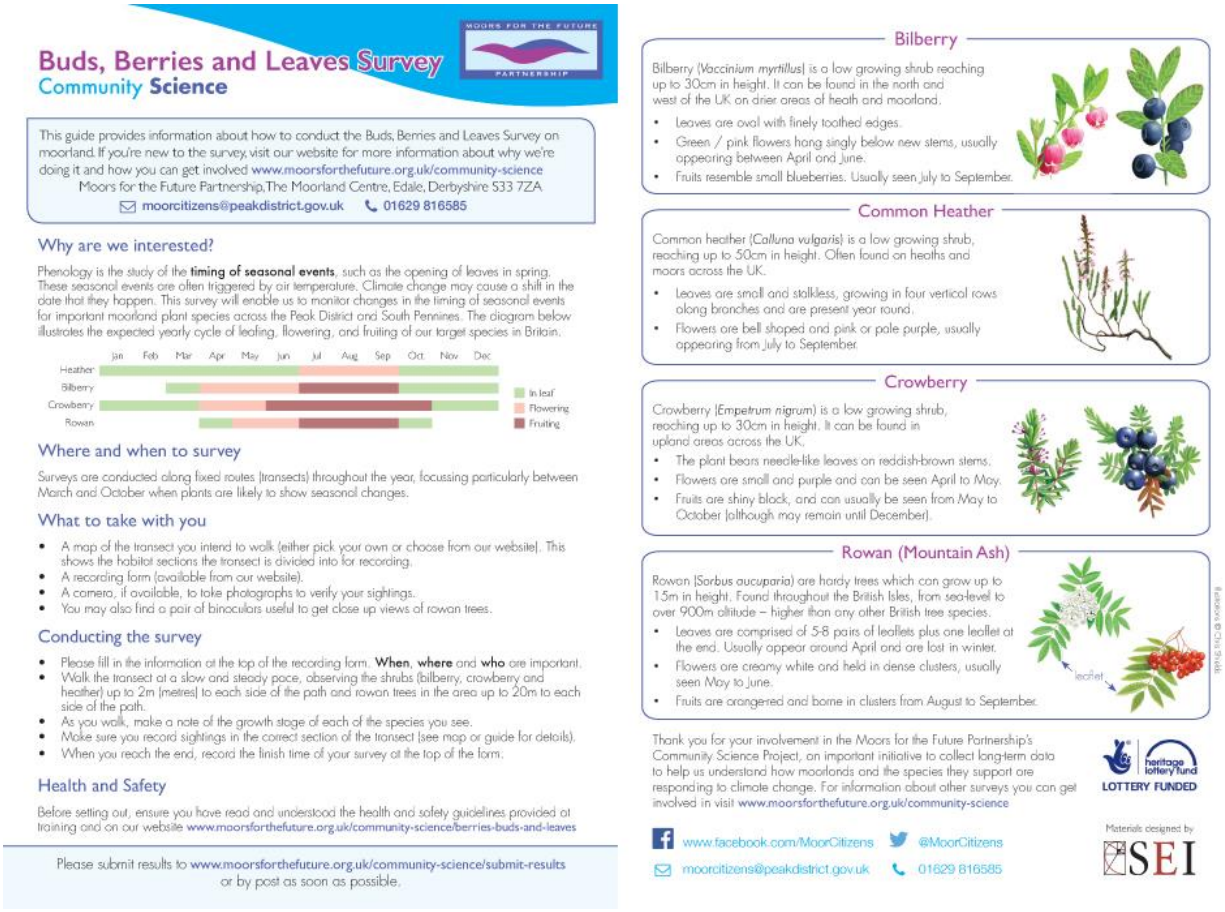
This suite of surveys is delivered by individuals who make a longer-term commitment to the Community Science project. The survey methodology is mostly based on repeated visits to a number of fixed transects or along Rights of Way. In some instances volunteers have identified their own transect routes which fit in with their own pattern of moorland visits, or are close to their homes. In addition to written guidance on waterproof sheets (see example below) the volunteer surveyors can access a range of training opportunities provided both by CSP staff and - usually on a 1:1 basis - by other more experienced volunteers. Targeted monitoring addresses four sets of species:

- Bumblebees (three target species: bilberry bumblebee, tree bumblebee and red-tailed bumblebee).
- Sphagnum. The aim of this survey is to map presence of *Sphagnum* and monitor how this changes over time.

[3] http://www.moorsforthefuture.org.uk/community-science/surveys

- Bilberry, Heather (*Calluna*), Crowberry and Rowan ("Buds, Berries and Leaves"). The aim of this survey is to monitor changes in the timing of seasonal events: leafing, flowering, fruiting and leaf fall of the target species.
- Water voles, mink and otters ("Tails of the Uplands"). The approach here is to identify tracks and signs of these mammals using point surveys. Initially it was hoped to use transect surveys for signs of water voles, but this proved impractical partly because of problems relating to landowner permission, working on SSSIs and the physical challenges of undertaking a survey along some transects.

In contrast to the anonymous nature of postcard submissions in the Opportunistic Monitoring surveys, individuals carrying out Targeted Monitoring are all known by members of the CSP team, and usually submit their results on-line.



## Buds, Berries and Leaves Survey
### Community Science

This guide provides information about how to conduct the Buds, Berries and Leaves Survey on moorland. If you're new to the survey, visit our website for more information about why we're doing it and how you can get involved www.moorsforthefuture.org.uk/community-science
Moors for the Future Partnership, The Moorland Centre, Edale, Derbyshire S33 7ZA
moorcitizens@peakdistrict.gov.uk 01629 816585

### Why are we interested?

Phenology is the study of the **timing of seasonal events**, such as the opening of leaves in spring. These seasonal events are often triggered by air temperature. Climate change may cause a shift in the date that they happen. This survey will enable us to monitor changes in the timing of seasonal events for important moorland plant species across the Peak District and South Pennines. The diagram below illustrates the expected yearly cycle of leafing, flowering, and fruiting of our target species in Britain.



### Where and when to survey

Surveys are conducted along fixed routes (transects) throughout the year, focussing particularly between March and October when plants are likely to show seasonal changes.

### What to take with you

- A map of the transect you intend to walk (either pick your own or choose from our website). This shows the habitat sections the transect is divided into for recording.
- A recording form (available from our website).
- A camera, if available, to take photographs to verify your sightings.
- You may also find a pair of binoculars useful to get close up views of rowan trees.

### Conducting the survey

- Please fill in the information at the top of the recording form. **When**, **where** and **who** are important.
- Walk the transect at a slow and steady pace, observing the shrubs (bilberry, crowberry and heather) up to 2m (metres) to each side of the path and rowan trees in the area up to 20m to each side of the path.
- As you walk, make a note of the growth stage of each of the species you see.
- Make sure you record sightings in the correct section of the transect (see map or guide for details).
- When you reach the end, record the finish time of your survey at the top of the form.

### Health and Safety

Before setting out, ensure you have read and understood the health and safety guidelines provided at training and on our website www.moorsforthefuture.org.uk/community-science/berries-buds-and-leaves

Please submit results to www.moorsforthefuture.org.uk/community-science/submit-results or by post as soon as possible.

### Bilberry

Bilberry (*Vaccinium myrtillus*) is a low growing shrub reaching up to 30cm in height. It can be found in the north and west of the UK on drier areas of heath and moorland.

- Leaves are oval with finely toothed edges.
- Green / pink flowers hang singly below new stems, usually appearing between April and June.
- Fruits resemble small blueberries. Usually seen July to September.

### Common Heather

Common heather (*Calluna vulgaris*) is a low growing shrub, reaching up to 30cm in height. Often found on heaths and moors across the UK.

- Leaves are small and stalkless, growing in four vertical rows along branches and are present year round.
- Flowers are bell shaped and pink or pale purple, usually appearing from July to September.

### Crowberry

Crowberry (*Empetrum nigrum*) is a low growing shrub, reaching up to 30cm in height. It can be found in upland areas across the UK.

- The plant bears needle-like leaves on reddish-brown stems.
- Flowers are small and purple and can be seen April to May.
- Fruits are shiny black, and can usually be seen from May to October (although may remain until December).

### Rowan (Mountain Ash)

Rowan (*Sorbus aucuparia*) are hardy trees which can grow up to 15m in height. Found throughout the British Isles, from sea-level to over 900m altitude – higher than any other British tree species.

- Leaves are comprised of 5-8 pairs of leaflets plus one leaflet at the end. Usually appear around April and are lost in winter.
- Flowers are creamy white and held in dense clusters, usually seen May to June.
- Fruits are orangered and borne in clusters from August to September.



Thank you for your involvement in the Moors for the Future Partnership's Community Science Project, an important initiative to collect long-term data to help us understand how moorlands and the species they support are responding to climate change. For information about other surveys you can get involved in visit www.moorsforthefuture.org.uk/community-science

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moorcitizens@peakdistrict.gov.uk 01629 816585

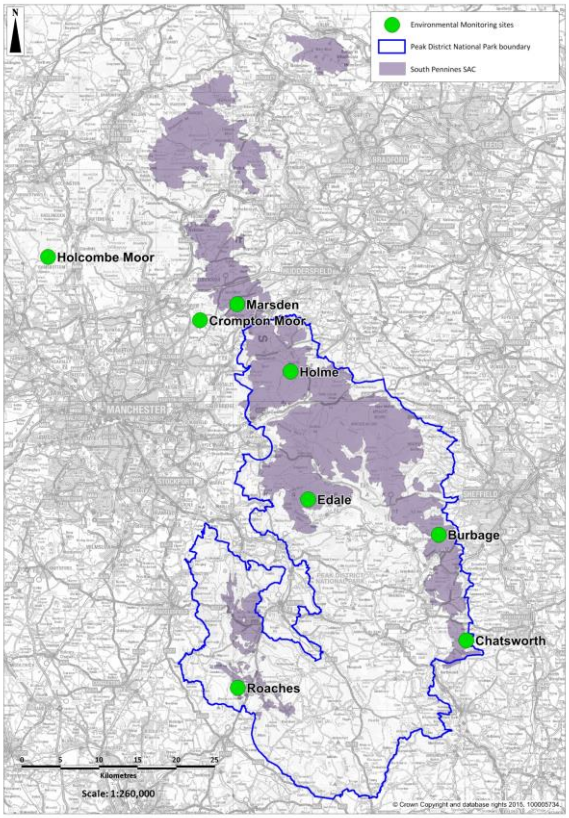
Materials designed by SEI

3) Environmental Monitoring

This top level of monitoring is undertaken by volunteers who collect a range of environmental and ecological data on at least a monthly basis from nine one-hectare (100m x 100m) sites located on land belonging to / managed by project partner organisations or other major landowners.

**The sites:**

- Marsden (National Trust)
- Holcombe Moor (National Trust)
- Holme Moss (RSPB and United Utilities)
- Edale (National Trust)
- Burbage (Eastern Moors Partnership)
- Roaches (Staffordshire Wildlife Trust)
- Chatsworth Moorlands (Chatsworth Estate)
- Crompton Moor – two sites (Oldham Council)




**Data collected:**

- Rainfall
- Temperature
- Humidity
- Peat depth
- Water table
- Vegetation.
- Motion sensor camera for wildlife

4) Other activities

While the three strands of activity described above form the centrepiece of the project, in addition to developing and overseeing this survey work, and managing the data which is being collected, the CSP team (and their volunteers) have:

- Run a major communication and engagement programme. This has been manifest through:
  - The project's web presence
  - Publication of the quarterly "Community Scientist" electronic newsletters
  - Social media activity
  - Attendance at events and hosting visits from other projects (most recently the Black to Green HLF-funded project based in the National Forest)
  - Offering presentations to local groups and others to raise awareness of the Community Science approach (such as village WI groups etc.), and
  - An annual photography competition.
- Recruited, trained and supported a diversity of volunteers
- Managed the data which volunteer community scientists have collected. Activities here include:
  - Checking the data are valid

- Inputting and collating data
- Analysing and interpreting findings
- Making data available to various national schemes and societies. Individual community scientists have been able to do this via the iRecord website - a BRC project that allows anyone, anywhere in the UK, to submit records of any species https://www.brc.ac.uk/irecord.

- Taken on delivery of the "Moorland Indicators of Climate Change Initiative" (MICCI) which was initially set up by the Peak District National Park Authority's Learning and Discovery team[4]. This approach has now been adopted by a number of National Park Authorities across the UK, giving secondary school students the opportunity to "take part in real world climate science".

CSP activities have been rolled out progressively over the project's delivery period. The final Targeted Monitoring survey (Tails of the Uplands) and the last Environmental Monitoring sites (at Chatsworth, Holcombe Moor and Crompton Moor) only got up and running in late 2017/2018.

**Volunteers**

CSP has been successful in engaging a wide diversity of volunteers. As is the case with all environmental volunteering, CSP has found it comparatively easy to engage with some demographic groups (e.g. older, middle class people) but has also had success in working with groups less often involved in this sort of activity, perhaps most notably with clients of the South Yorkshire Crisis Skylight Group (which works with people affected by homelessness) and people supported by Phoenix Futures, an organisation which uses a therapeutic community model to help people with drug problems.

The project has also successfully engaged with younger people, through the school MICCI project, and through work with universities (both as part of formal education programmes and through groups such as the Sheffield University Conservation Volunteer group).

The principal volunteer activity has been collecting data in the field. Volunteers have also been engaged in inputting / analysing data and carrying out mapping work using GIS software, sharing their skills and experience with other volunteers (usually on a one-to-one basis) and promoting CSP at events.

Recruitment

People have heard about the project in many different ways, principally:

- On-line (for example when Googling "Volunteering in the Peak District")
- When they pick up one of the CSP postcards which have been widely distributed in information centres, cafés and other venues in and around the Peak District
- When they encounter CSP at a variety of events
- Through the Countryside Jobs Service (https://www.countryside-jobs.com/workdays/surveys/general
- Through the multiplicity of press articles and other communications which the project has put out, and
- Through word of mouth.

[4] http://www.nationalparks.gov.uk/students/micci-project

**Project delivery and organisation**

- The bulk of the work in organising and delivering the project has been undertaken by the three-person project team (two-person since August 2018).
- The Stockholm Environment Institute (SEI - based at the University of York) acted as the project's "academic consultant". SEI took a lead role in piloting and working up the initial set of survey protocols and drafting sections of the Round Two application to HLF during the development phase.

  During the delivery phase of the project SEI have helped with the development of further monitoring protocols for the Opportunistic and Targeted Monitoring surveys, together with materials required for their implementation. SEI has also provided advice regarding the setup, maintenance and volunteer support at the Environmental Monitoring sites, as well as advising on the selection of new sites.

  SEI has helped with some of the data analysis, and Rachel Pateman of SEI was lead author of the publication 'Community Science – the story so far' (see above).
- Day to day management of and support to the project team has been provided by senior staff working with the Moors for the Future Partnership.
- The project is overseen by a steering group comprising individuals from many of MFFP's partner organisations. The most active participants have come from:
  - The Peak District National Park Authority. PDNPA is the accountable body for the HLF grant
  - The Environment Agency. The project Steering Group has been chaired by Mark Haslam, EA's Midlands Area Environment Manager
  - The National Trust
  - RSPB
  - Natural England, and
  - United Utilities.

Severn Trent Water and Yorkshire Water are also nominally members of the Group, but have taken a less active role.

## Finance

| Income | | |
|---|---|---|
| HLF | £605,100 | 71.9% |
| EA | £17,500 | 2.1% |
| Natural England | £4,200 | 0.5% |
| National Trust | £9,000 | 1.1% |
| RSPB | £5,000 | 0.6% |
| Severn Trent Water | £4,200 | 0.5% |
| United Utilities | £4,200 | 0.5% |
| Yorkshire Water | £4,200 | 0.5% |
| Volunteer time | £171,100 | 20.3% |
| Non-cash (PDNPA) | £8,400 | 1.0% |
| Additional Income | £9,000 | 1.1% |
| **Total** | **£841,900** | |

| Expenditure | | |
|---|---|---|
| Recruitment | £1,050 | 0.1% |
| Staff costs | £365,600 | 43.4% |
| Training for staff & redundancy | £3,850 | 0.5% |
| Training for volunteers | £3,000 | 0.4% |
| Travel for staff | £14,500 | 1.7% |
| Travel for volunteers | £5,300 | 0.6% |
| Expenses for volunteers | £2,400 | 0.3% |
| Equipment & materials | £61,000 | 7.2% |
| Printed materials | £6,900 | 0.8% |
| Website/online data hosting | £6,600 | 0.8% |
| Professional fees (SEI) | £63,000 | 7.5% |
| Managing the project | £20,400 | 2.4% |
| Publicity and promotion | £7,500 | 0.9% |
| Evaluation | £4,500 | 0.5% |
| Overheads | £85,000 | 10.1% |
| Inflation | £0 | 0.0% |
| Non-cash contributions | £8,400 | 1.0% |
| Contingency | £0 | 0.0% |
| Volunteer time | £171,100 | 20.3% |
| Carried forward | £11,800 | 1.4% |
| **Total** | **£841,900** | |

The headline story told by the figures above is that in cash terms (i.e. ignoring volunteer time contributions

- 90% of the cash resource has been supplied by HLF
- 85% of project expenditure has been in relation to staff and other professional support to the project[5].

By the end of May 2018 there was an underspend against the initial budget of £54,000. This underspend came about because of savings in relation to volunteer expenses and travel costs (which many volunteers have chosen not to claim), plus savings relating to Equipment & Materials, Inflation, Website/online data hosting and Contingency. As explained above, this underspend meant that the staff team was kept on for an extra seven months, meaning the project was able to deliver a fourth field season (see Timeline above).

Further savings were made when Sarah Proctor moved on to a new job in August 2018 – freeing up four months of Project Manager salary.

[5] Professional / staff costs comprising Recruitment, Staff Salaries, Staff Training and Redundancy, Staff Travel, Professional Fees (=SEI), Project Management (i.e. inputs by MFFP colleagues) and Overheads (PDNPA @ c. £7,000 per staff member per year).

# 5. Outputs and Outcomes

### Activities and outputs

The project has successfully delivered outputs in line with or in many instances considerably in excess of what was predicted at the outset. This happy situation was achieved by the end of year three, and the project extension into a fourth field season resulted in even more volunteer activity and additional scientific data.

It is pleasing to note that from 2015 to 2017 there was a year-on-year increase in nearly all areas of activity. This increase was not sustained into 2018, plateauing out in part because capacity limits had been reached, and declining in some instances because the project's focus moved away from delivery of training, and more effort in the final year went into data analysis and support for existing volunteers.

The six example figures below - first presented on the 2018 Community Science podcast - provide a flavour of what has been achieved over four years:

- Over 1,000 different individuals have volunteered with the project;
- They have contributed 16,500 hours of activity, equivalent to ten years full time work;
- 1,200 entries into the three photography competitions;
- 1,080$m^2$ of moorland vegetation quadrats had been surveyed;
- 850 bumblebee transects surveyed;
- 117 training sessions delivered, to a total audience of more than 1200 people

More detailed output information is provided in the Project's 2018 annual report, for example:

a) Volunteers and engagement:

- The Project engaged 189 named volunteers in 2018 (370 in 2017) as well as 146 un-named volunteers as members of organised groups (136 in 2017).
- 208 volunteers were trained in ecological survey techniques during 16 Targeted Monitoring survey sessions in 2018 (2017 figures: 358 volunteers at 43 TM survey sessions)

b) Data

- A total of 3,985 Opportunistic Monitoring records have been submitted since 2015 – 891 of these in 2018; 999 in 2017.

  The original target was 100 records in 2015, then doubling each year with an expectation of 400 being submitted in 2017. These initial targets were overly pessimistic with respect to the early years, and high returns have been achieved from the outset.

- In 2018 volunteers spent 811 hours independently conducting Targeted Monitoring surveys (1,162 hours in 2017) and walked 496 transects.

  Figures for earlier years: 2017: 544 transects walked; 2016: 349 transects walked; 2015: 137 transects walked.

c) Survey protocols, training, defined transects and documentation.

- Five Opportunistic Monitoring survey protocols and four Targeted Monitoring survey protocols have been developed. Nine Environmental Monitoring sites have been established.
- 43 Targeted Monitoring transects have been defined.

d) Communications

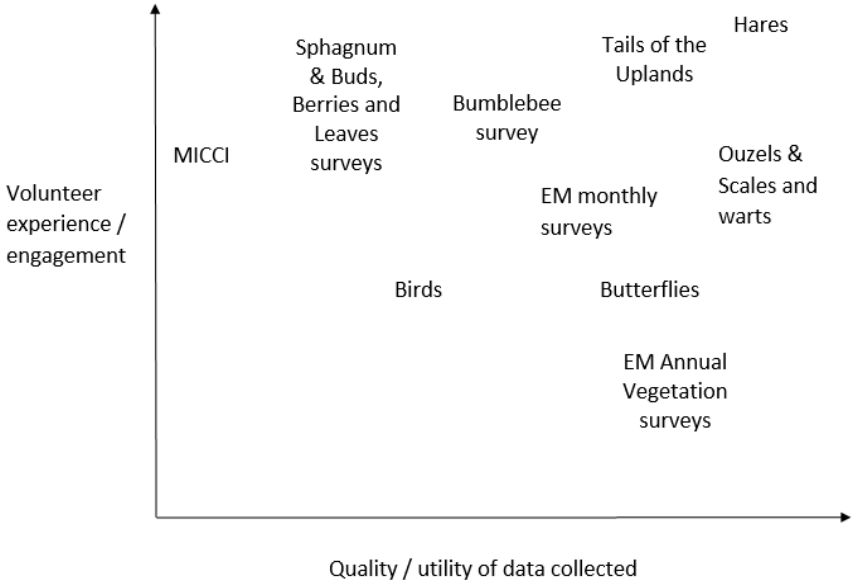
- It is reported that Community Science has achieved a nominal potential audience reach of over 44 million through radio, print and online coverage. There will be a lot of double counting in this headline figure, but nonetheless it is obvious that media coverage has been impressive
- The project met over 1,500 people face to face during 2018, bringing the total face to face audience reach to over 10,100 in the last four years
- Social media followers now number 1869 through Twitter, Facebook, Instagram, Pinterest and Flickr. This figure will be an overestimate, as some followers will be using more than one medium.

The 2018 annual report, and the reports for earlier years, provide a lot more detail with respect to outputs achieved and activities undertaken.
http://www.moorsforthefuture.org.uk/community-science/newsletter

## Outcomes

The Community Science Project set out to achieve two principal sets of outcomes: relating to people and in terms of data. The conclusion of this evaluation is that CSP has been successful in bringing together the need for environmental monitoring with the enthusiasm of many people to go out on the hill and be involved in the collection of scientific data. CSP has given people an additional, tangible reason to spend their time outdoors.

The diagram below gives a qualitative assessment of the extent to which a sample of the project elements have succeeded in delivering its twin goals




- People find Tails of the Uplands and recording sightings of mountain hares highly engaging and they are coming up with very valuable data.
- Some Opportunistic Monitoring surveys are both engaging and useful – not only the mountain hares mentioned above but also for example the butterfly data which is both useful and pretty reliable, the ring ouzel data which has proved useful to the Eastern Moors Partnership, and some of the scales and warts data which is of interest to the Derbyshire amphibian and reptile group.
- Other OM surveys produce less useful information. The bird results for example are generally middling at best in terms of the data collected. There is a higher level of uncertainty around some of the OM data, not least because these are anonymous results submitted by people who have not attended training sessions.
- Sphagnum mapping is good for engagement, but the data is probably not all that valuable (partly because data collected from Rights of Way may not be representative of the wider moorland)
- Some elements of the Environmental Monitoring work (e.g. annual vegetation surveys) provide useful data, but many volunteers find the process of collecting this information to be pretty dull.

  This is not true for all volunteers however - one of the strengths of this project is the diversity of volunteers who have become involved. Some of the EM volunteers are motivated by the rigour involved in collecting long term data in a systematic way.

- MICCI data has been described as “useless” – but the secondary school students involved have the opportunity to learn a lot and for many of them being out on the moors in this way is a novel and sometimes challenging experience.

**Outcomes for people**

*Engagement has been brilliant* –
Member of the CSP Steering Group

The Community Science Project has tapped in to a significant latent demand for this sort of activity – and the enthusiasm and competence of CSP volunteers has (pleasantly!) surprised some professional stake-holders.

People have become engaged from a range of motivations, and the feedback from volunteers has been extremely positive overall. For some volunteers CSP has provided them with a life changing opportunity; a dozen or so individuals have moved on to professional environmental management roles following their involvement with the project.

For many other volunteers, CSP has enabled them to notice things on the hills they had previously not known about, got them out more often than would otherwise have been the case, engendered a feeling of well-being, kept them fit, provided opportunities to meet new people, and to develop new skills. Another motivation is simply people's affection for the Peak District and a wish to be involved in its future.

Volunteer learning is reflected in the way individuals have moved from being categorised as "unskilled" to being "skilled", and the confidence that members of the MFFP science team now have in the quality of the data being collected. People have been impressed by the quality, quantity and scope of the CSP training offered, and volunteers have commented on the way it provides them with a solid underpinning starting point for their different roles. One example of the buy-in which is now being achieved was when over 100 people attended a session on otters on a miserable evening in Hathersage in 2017. As must always be expected, a significant number of people undertook training but then didn't follow this up. This is disappointing, but attendance at the training on its own will usually result in increased understanding of that particular topic and of the importance of the moorland environment more generally.

An important outcome delivered by CSP is the way it has created a new avenue for volunteer engagement in the Peak District. The principal focus for environmental volunteering activities organised by the National Park Authority to date have comprised working as a volunteer ranger or undertaking practical conservation tasks. CSP has now established scientific survey on a par with these other options. Community Science enables people to engage with the moors and climate science in an intensive way, sometimes having a deep impact on attitudes.

While much of the really useful data has been collected by white, middle class, mostly university educated people, the project has also touched the lives of a more diverse audience:

" *to heaven*" – CRISIS participant on
arriving in the Peak District.

The widespread use and acceptance of new technology (see below) is another important outcome of the project to date.

CSP is part of a national trend whereby a 'new breed' of field observers is emerging to complement the 'old school' county recorders.

One outcome which is hard to measure is the extent to which volunteers have increased their understanding of the moorland environment, and the diverse benefits it brings to our society. It's difficult to get a baseline on this, as many volunteers were previously well-informed on such issues.

**Outcomes for science**

In comparison with many other citizen science projects CSP has developed and is implementing a particularly rigorous scientific approach, especially in relation to the Environmental Monitoring sites and the Targeted Surveys. Members of the MFFP science team, colleagues at SEI and other stake-holders have confirmed that the community scientists are producing valuable and credible evidence.

The outcome which will be really valued, relating to the project's ultimate goal of showing environmental changes over time, will not be achieved for quite a few years yet. Important stake-holders such as the Environment Agency will only be really interested in the data when such long-term trends start to emerge.

Some initial science outcomes have however already been achieved:

- Environmental Monitoring sites have been established on 'intact' moorland. This is a new departure in the Peak District and the South Pennines, as the bulk of the monitoring to date has been undertaken on degraded moorland or on sites which are being restored.
- Some data has been accepted into national datasets, for example by the British Trust for Ornithology (some bird data), the Mammal Society (mountain hares and otters), the Bumblebee Conservation Trust (bumblebees) and Butterfly Conservation (butterflies)
- The results of otter point surveys are being used by the Environment Agency
- Otter and mountain hare data are being used by Natural England / the Joint Nature Conservation Committee in reporting on SAC condition to the European Commission.

**Partnership and stake-holder outcomes**

- Community Science has added a new axis to the already well-established Moors for the Future Partnership. Different partners complemented each other in this project: land-holding organisations (the National Trust, RSPB, water companies) provided sites and access; MFFP provided a strong science background, and EA provided a national context alongside its mission to promote evidence-based policy and action. The benefits of joint working have been demonstrated: the National Trust and the RSPB have their own volunteer base carrying out monitoring activities, but CSP has successfully complemented and contributed to these activities.
- One very valuable outcome is that CSP has provided an outlet / follow-up action for people inspired by the MFFP's (and partners') interpretation and communication work. A key message for people visiting the Bogtastic van is that its themes are not just interesting and important in themselves, but that anyone who wishes can have a role in looking after our moorlands.
- The success of CSP has made an impression on MFFP partners, and there is strong feeling across the board that this approach should be incorporated into a wide range of future project proposals. Members and senior staff from the Peak District National Park Authority, lead body for both the project and MFFP as a whole, are reported to be very supportive of the Community Science approach.
- The project has also engaged with a range of other partners, to its own benefit and reinforcing the MFFP brand. These include a number of universities, including the University of Sheffield, the University of Manchester, the University of Salford and Bournemouth University.

# 6. Learning points, good practice and reflections

### Overall assessment

The overwhelming consensus of all those involved in the Community Science Project is that it has been a great success, and that it has delivered over and above expectations. When the CSP is compared with a number of other Citizen Science projects across the UK (see section 2 above) it is clear that the project has achieved good value for money. There has been a good return on the financial investment in relation to the numbers and diversity of people involved, the data which are being collected, the number of monitoring sites and transects which have been established, and the survey protocols which have been developed.

As the project draws towards the end of this phase of delivery it is easy to forget that it didn't feel like an easy undertaking at the outset. The project faced major challenges in raising awareness and getting people involved, in creating a culture where volunteers felt welcomed, supported and engaged, and in adding a new stream of work to an organisation where the principal focus is on conservation works and 'hard' science.

### Project Development, roll-out and scope

A lot of groundwork was carried out during the Project's Development phase (2013-14). Principal achievements over this period included working up the initial tranche of surveys and sites and recruiting volunteers. 20% of the total HLF funding was spent during the development phase (£164K out of £769K).

Colleagues involved during this period felt it was hard work not only in terms of project development itself, but especially in ensuring that the round-two bid met all of HLF's requirements. Following the round-two submission there was a 6-month gap before the next phase of work got going. This is one of the downsides of HLF's two stage application process and meant that volunteers who had been 'warmed up' were left without leadership. Some of the momentum which had been built up during the Development Phase was lost as a result.

### Volunteers

The project has demonstrated flexibility in the range of volunteers who have become involved in its work. One manifestation of this is the way data collection from the different Environmental Monitoring sites is being carried out by different sorts of volunteers.

When people were recruited to the project they were alerted to the physical demands that community science on the moors would place on them. Even so, some volunteers not in the first flush of youth have felt pretty challenged by what they were asked to do, struggling to keep up with fitter members of the group and getting pretty miserable fiddling around with dipwells etc. in cold conditions. Undertaking community science on the moorlands requires considerable commitment, and often means spending quite a few hours out on the hill, sometimes in challenging conditions.

Another comment from volunteers is that while the training sessions were extremely useful, in themselves they didn't always equip people to carry out surveys. To develop full competence requires further mentoring 'on-the-job', and perhaps follow up training sessions.

In two ways in particular things have entirely not worked out as initially envisaged:

1. The expectation was that the bulk of the volunteers would be recruited from amongst and through the multiplicity of existing groups, clubs and organisations in and around the Peak District and the South Pennines. Such an approach certainly has advantages, meaning the project can build on existing social relationships and networks rather than creating an entirely new social grouping - which puts extra demands on project staff.

In a number of instances this 'group approach' didn't work out, and many volunteers prefer to walk the hills on their own and signed up to CSP in an individual capacity. It should not be expected that community groups are necessarily wanting to take on new activities. The Edale community for example is seen as lively and vibrant, and yet there wasn't a significant latent demand to engage in Community Science (people in active communities are maybe already fully engaged with their existing endeavours?).

2. The concept of "Super Volunteers" who would take on a significant organisational role for the project didn't work out. It transpired that people lacked the confidence and / or the will to take on that sort of activity. Similarly, while many CSP volunteers are extraordinarily able, they didn't generally want to take on a formal wildlife trainer role (e.g. leading training sessions to a number of people) although they were more than happy to act as one-to-one mentors to new volunteers out on the hill.

**The Community Science Surveys**

CSP has been successful in developing a diversity of survey approaches, which has enhanced the project's capacity to engage people wanting different outcomes from their engagement with community science.

Overall the survey protocols have worked well in terms of both delivering scientific data and engaging volunteers (see outcomes above). The project has largely avoided the trap of patronising volunteers by sending them out to collect data which is of no value. Other projects which have adopted the BioBlitz approach – which is primarily about mass participation rather than science - have been accused of doing this (colleagues leading a citizen science project in Northern Ireland have concluded that "the BioBlitz approach has probably had its day").

Thought has gone into identifying appropriate categories of target species, and so for example the selected birds and butterflies are all quite easy for non-specialists to identify and distinguish between.

It is eminently sensible that in several instances CSP has been able to build on previous good practice and ongoing activity, rather than reinventing survey approaches from scratch. One example of this is the way the project developed its bumblebee transects using the Bumblebee Conservation Trust's methodology. One stake-holder has raised a question over the extent to which Tails of the Uplands has complemented the Derbyshire Wildlife Trust's existing water vole activities.

As explained above, additional surveys and sites have come on stream over the last three-years, in line with the original plan. With hindsight there is a feeling that the project may have taken on too much, and that rather than setting up nine different surveys and establishing nine environmental monitoring sites it might have been more effective to commit more energy and resource to fewer schemes. Having said that, the project team are reluctant to identify any of the groups for which surveys have been established as being of lower priority / less worth.

These sorts of decisions are rarely clear cut: citizen science projects need to achieve 'quick wins' to motivate participants and create good news stories; they need to generate robust data with the potential to influence land management and policy; and they need to have a range of activities which will appeal to a diversity of volunteers. And all this while leaving time and energy to focus on future development and securing the next phase of the project. All-in-all a very tall order!

One issue as we move forward is the question of whether some of the data being collected might be redundant. A good example is in relation to dipwells: with the data that have been collected to date it should be possible to ascertain where dipwells are located closer to each other than needed, in which case the same information could be gathered from fewer instruments.

**Data**

Senior members of the MFFP science team and other colleagues are generally very satisfied with the quality of the data which the project is collecting (albeit with reservations about how useful some categories of data will prove to be).

Consultees made a number of comments regarding CSP data:

- While the priority for the project to date has been to oversee collection and collation of data, rather than data analysis, it is important that volunteers who put time and energy into community science can see what their data are telling us about the moorlands.

  Although, for example, the primary purpose of the Environmental Monitoring sites is to establish baseline data sets, short-term data are also of interest to people engaged in conservation works in the locality, and people would like to see what their water table data can tell us about the impact of the long dry summer of 2018.

  The feedback reported above is not universal: other volunteers have said they have no idea what their data is telling us – with the implication they're not really bothered, that's not part of their motivation.

- Data obtained through CSP's comparatively intensive approach complements the data collected as part of the 'Common Standards Monitoring' required by Natural England for all SSSIs (which is carried out once every three years).

- The use of iRecord https://www.brc.ac.uk/irecord has often proved to be problematic. The website inexplicably goes down from time to time, and sometimes duplicates records which have been submitted.

  There are alternative approaches to data management and recording. The Greater Manchester Ecology Unit uses the open source wildlife recording toolkit which underpins iRecord (INDICIA http://www.indicia.org.uk) and the 'RODIS' site (http://gmlrc.rodis.co.uk) which GMEU developed as part of its role in hosting the Greater Manchester Record Centre (and so only relevant for records within Greater Manchester).

  Some difficulties would have been avoided if certain data categories had not used iRecord. Sphagnum information might have been better analysed on a map-based system, and Buds, Berries and Leaves, where the emphasis is on phenology rather than the presence or absence of a species, might have better been recorded on a bespoke App, or possibly using the Woodland Trust's system 'Natures Calendar' https://www.woodlandtrust.org.uk/visiting-woods/natures-calendar.

  iRecord nonetheless has benefits, not least that it is free to use and universally available. . It is reported that the system has proved to be somewhat more reliable and less problematic in 2018. Projects going down this route should however be aware of its shortcomings.

- There is general agreement around the country that there is a bottleneck in getting citizen science data into the National Biodiversity Network system. It has been suggested that this reflects perhaps undue reluctance on the part of some 'established' naturalists (especially the network of county recorders) to accept the validity of citizen science data. The bottleneck is partly also a result of the fragmented nature of the record collection systems, the lack of iRecord verifiers for some groups in some counties, and the system's heavy reliance on volunteers.

- Notwithstanding the fact that CSP is a community science project, it has been suggested that the project could have included more humanistic / qualitative monitoring of the moorland (e.g. through a programme of fixed-point photography). This additional approach might then have had resonance with the not insubstantial proportion of the population who may find inclusion of the word 'science' in the project's title a bit off-putting.

## Project delivery

The Community Science Project appointed and retained in its entirety (for the bulk of the delivery period) a staff team of highly motivated and competent individuals, with an excellent mix of scientific, communication and inter-personal skills. Experience with other fixed-term HLF-funded projects suggests that having the right people in such roles is often the greatest single determinant of the success of a project.

The high quality of project communications merit special mention, and justify the resource and effort which have gone into their production. The website http://www.moorsforthefuture.org.uk/community-science) is well written, accessible, easy to navigate and comprehensive; social media activity has engaged a significant number of followers; the Opportunistic Monitoring postcards and the Targeted Monitoring survey guides are produced to a high standard, and are informative and useful. As is the case with so many natural heritage projects supported by HLF, the photographs used both in publications and on the website predominantly feature landscapes and wildlife to the exclusion of people.

Attendance at and contributions to steering group meetings has been good. Because the staff team worked so effectively the steering group has been able to focus on oversight and governance rather than needing to intervene in operational matters.

The Stockholm Environmental Institute's contributions in the early stages of the project were clearly invaluable. As the project developed, and the staff team gained more experience, some of SEI's roles could have been delivered in-house with cost savings. The inclusion of a contract break-clause would have permitted a critical review of how things were going and the flexibility to reorganise who did what.

The appointment of Harriet Carty by HLF as their Project Monitor has proved to be a real boon to the project staff. Harriet has acted as an effective go-between, interpreting HLF's requirements to the project team and helping negotiate ways forward.

## Non-events

No vandalism has occurred at the EM sites. Maybe in part this is down to good luck, but it also reflects their remote locations and that the people who get that far out onto the moors generally are respectful of property. At the outset there was concern that equipment would be damaged – in the event the only problems to have occurred are when curious grazing animals have disturbed the monitoring stations.

The project has reported no serious accidents or other incidents. A rigorous risk assessment process has been adopted for all aspects of the different surveys, taking on good practice developed by the Moors for the Future Partnership. One key element of this is encouragement of a reporting back / buddy system, so that everyone who goes out on survey work can be accounted for at the end of the day.

## Emerging technology and community science

One of the most exciting aspects of citizen science at the moment is the way new (and increasingly affordable) technology is helping volunteer scientists to collect valid and robust data relating to diverse elements of the natural environment. This new technology may be one answer to the concerns raised for many years by bodies such as the British Ecological Society and the Chartered Institute of Ecology and Environmental Management regarding the decline of 'old-fashioned naturalists' able to identify obscure groups of species.

As one example of the way things are going, in the early days of CSP volunteers needed to take expensive (£2K) waterproof laptops up the hill to download water table data. This is no longer necessary as these have been replaced by HOBO shuttles https://www.tempcon.co.uk/shop/data-loggers/onset-hobo-data-loggers/hobo-dataloggers/hobo-u23-data-loggers) which can download data via an optical interface (a memory stick which links wirelessly to a data logger). These pieces of equipment cost much less, meaning the project has been able to buy more instruments thus avoiding long journeys to transfer bits of kit between different groups of volunteers

In the near future other opportunities are coming on stream. Examples include:

- The emergence of affordable handheld X-ray units which can be used to detect concentration of heavy metals in soil (down to a concentration of only 5ppb)
- A unit produced by Oxford Nanopore www.nanoporetech.com which can analyse a sample for DNA. This unit connects to a Smartphone which means the user can submit results and get real time identification of what they have found.
- The ever-increasing use of Unmanned Aerial Vehicles (drones). These can be used, for example, to map vegetation and this could continue to expand the scope of community science activity.

# 7. Sustaining MFFP's Community Science Activities

### Reasons to move on to a new phase of Community Science

There is universal enthusiasm amongst the active volunteers, the project team and members of the wider Moors for the Future Partnership to continue with Community Science work on the moorlands of the Peak District and the South Pennines. And there is agreement that there are advantages in continuing with landscape-wide partnership project, rather than partner organisations pursuing their own 'citizen science' agendas on their own land-holdings.

The scientific rationale for continuation is that four years of data collection have created a valuable baseline, and the value of this data would increase exponentially over the coming ten or twenty years if further comparable data are collected. A failure to follow up would be a loss for individual land-holders as well as for the area as a whole. The project area encompasses the most southerly upland area in the UK, and with respect to a number of indicators it is here we must expect climate changes to impact hardest, soonest.

The project has created a range of resources which would be dissipated if all work now ceased:

- Something like 125 active and engaged community scientists, including many who bring with them enthusiasm, experience and relevant skills, and who know (and appreciate) the sites where community science is being undertaken. Quite apart from the loss to science, these individuals will be left feeling very let down if the project comes to a precipitate end.
- Established Environmental Monitoring sites and Targeted Monitoring transects
- The survey manuals which have been produced for each of the opportunistic and targeted surveys, guides describing the approach required at the Environmental Monitoring sites, and guidance for data volunteers explaining how analysis should be carried out.
- Survey equipment
- Land-owner and Natural England permission to work, respectively, on their land / on SSSIs.

Closing down the Community Science initiative would have a wider impact on MFFP and its partner organisations. For example, and as explained above, CSP is making a positive contribution to the communication and engagement programmes of MFFP and its partner organisations.

One possible implication for membership organisations (i.e. NT and RSPB) if the project finished is that they would come under pressure to support a significant number of volunteers who want to find an alternative avenue to pursue their enthusiasm for collecting scientific data on the moors.

### The Challenge and the opportunity

The CSP delivery mechanism has for the last four years worked extremely well. This delivery model was however only possible because 90% of cash costs were contributed by HLF. Because this was such a generous intervention rate it means its loss is going to be felt particularly keenly.

There are a number of reasons to be optimistic about the future of Community Science within the Moors for the Future Partnership:

- The community science approach has become an integral part of the ongoing MFFP strategy conversations. There is a clear ambition to embed this thinking into all aspects of MFFP delivery, and include it as part of future funding bids. It will become part of the future work plans for MFFP's Communications and Science Teams.

- The appointment of the two remaining CSP staff members – Joe Margetts and Tom Aspinall – to new posts within the MFFP Science Team from January 2019. This means that they will be on hand to answer enquiries and provide some continuity.
- The forward-looking legacy strategy which the project team drew up in the summer of 2018.

**The plan**

Proposals which will support ongoing community science work include:

Volunteer support

- Ongoing efforts to secure funding for a new post of Volunteer Engagement Co-ordinator within MFFP.
- Suggestion that the job description for the internship offered each year to a student from Manchester Metropolitan University will include oversight and support of volunteers

The different Community Science elements

- Opportunistic Monitoring: new contributors will be recruited, not only through the MFFP website but also via the postcard system Postcards will continue to be made available through partner organisations and from the Bogtastic Van.
- Targeted Monitoring: system to be developed whereby new community scientists will be allocated a volunteer mentor from the existing team undertaking any given survey.
- Environmental Monitoring: each of the nine sites now has a lead volunteer and in some instances a partner organisation taking overall responsibility for collecting and submitting data. The critical task here will be to hand on that role when someone steps down. This has happened successfully to date, albeit with the support of the core CSP team.
- Volunteers, with the support of members of the Science Team, will check and input data submitted though OM and TM surveys, as well as those sent in from the Environmental Monitoring sites.
- The visits to the Peak District by people involved in Crisis will be supported by the National Park Authority's outreach rangers
- The MICCI Project will continue for now under the aegis of the MFFP Youth Engagement Officer.

Communications

- The existing CSP web content will be retained on the new MFFP website. A CSP archive section will also be created, containing old newsletters and reports etc.
- The community science ethos and approach will be embedded through the new website, aiming to inspire people, and give them something to do in response to stories about MFFP and its constituent partner organisations.
- Plan to expand the scope of the MFFP's quarterly MoorNEWS publication to incorporate what previously has been covered in the 'Community Scientist' newsletter
- That the MFFP comms team will continue to support the community science social media presence, expanding the scope of this to cover all volunteering activities within MFFP.

Governance and leadership

- Although the community science Steering Group will cease to meet, it is proposed that community science should become a standing item on the agenda for future MFFP meetings.

**Limitations / concerns**

- There will be no more formal training events – training will all be based on 1:1 mentoring by more experienced volunteers
- It may be difficult to sustain the previous level of activity / this amount of volunteer engagement. Over the project period there has been a substantial annual turnover in volunteers, and continued recruitment will be more difficult without the energy and activity of the CSP team.
- If not all elements of CSP can be continued there needs to be a strategy for where the effort should be sustained rather than have that choice made by default.

  It has been suggested that some of the Targeted Monitoring surveys are the areas of activity most at risk.
- Effective community science requires some level of professional support, clear structure, management and accountability. This is particularly important for volunteers – so they feel their work is valued. CSP support therefore needs to be included in one or more job descriptions, not just a good-will add on.
- MFFP partners need to be kept engaged – to provide resource, support, ideas, championing of the approach.
- Some elements of the programme will require resource support from MFFP centrally, even though relevant information is being made available in the various guidance notes etc.

  Areas where volunteers have suggested they might need help include
  - Supply of back-up / replacement equipment.
  - Calibration of certain pieces of equipment
  - Oversight and advice on maintenance activities such as battery replacement, cleaning of solar shields
  - Putting people in touch with one another while complying with GDPR regs
- Making data available to all – in particular to volunteers who collect it:
  - All MFFP data can be made available to third parties when they ask for it; one measure of success for the science team is when their work is cited or acknowledged in others' publications.
  - The baseline data which have been collected are of great value, and it is to be hoped they could be revisited in ten or twenty years' time (or even longer – in the way the Cyril Diver project revisited the Studland data after a break of 80 years. See s. 2 above – page 5). To help this happen, project data collected so far has been archived hopefully in a way which means these are both accessible and secure – and their continued availability is not reliant on the continued employment of any individual.