Bowland Hay Time

Final report of the Bowland Hay Time project, April 2012 to March 2014

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Hay Time

Saving our precious meadows

Contents

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Bowland Hay Time Project

"Working with farmers to restore meadows across the Forest of Bowland AONB"

A partnership supported by:

FOREST OF BOWLAND Area of Outstanding Natural Beauty

YORKSHIRE DALES MILLENNIUM TRUST

LANCASHIRE ENVIRONMENTAL FUND

1. Summary

The Bowland Hay Time project began in April 2012, and will continue until the end of March 2014. The project has started to restore botanical diversity to over 50 hectares of meadows across the Forest of Bowland Area of Outstanding Natural Beauty (AONB) area; surveyed the wider resource of grasslands still present within the AONB; and integrated the project into community and education opportunities delivered in partnership with Yorkshire Dales Millennium Trust (YDMT) and AONB staff. These opportunities have centred on improving access to and enjoyment of meadows, supporting traditional hay time skills, collecting Hay Time recollections and supporting 55 volunteers within the project to collect, propagate and plant out wild flower plants into the restoration sites.

2. Introduction

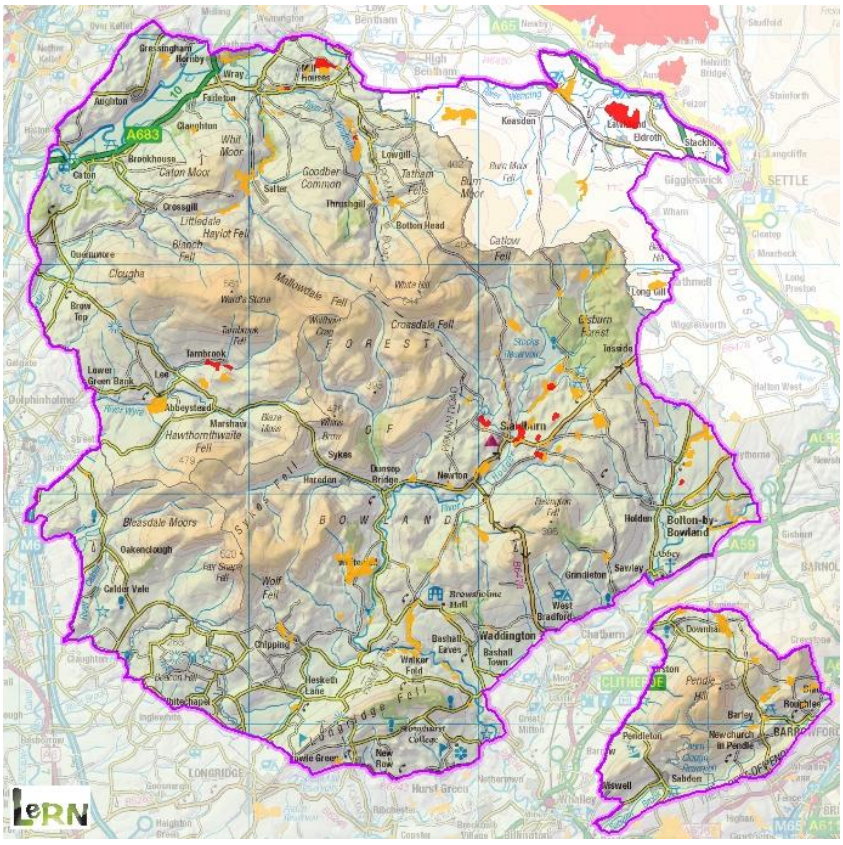
Species-rich meadows contain a vast number of both plant and animal species. As well as the grasses and wild flowers, meadows contain large numbers of soil fungi and fauna, and provide niches and habitats for pollinating insects, spiders and other invertebrates, small mammals and amphibians, birds and the larger predator mammals. On a still sunny July day, they are alive with colour and scent, the sounds of buzzing insects and bird song. Later, when the seeds have set, the meadows fill with the sound of tractors and mowers and balers and people, working together to ensure the hay is collected before the rain comes.

Species-rich hay meadows exist today in only a tiny proportion of their former extent. It is estimated that 97% have been lost since the 1950's, due in the main to changes in agricultural policy and practices. The introduction of inorganic fertilisers in the 1950's, followed by continued advancements in plant breeding, the development of larger machinery and big bag silage all contributed to a shift from species-rich grasslands used for the production of field dried hay to improved agricultural swards used for multiple cuts of grass to produce silage. Reseeding and fertiliser additions combined with early and multiple cuts meant that many of the native species of wild flowers and grasses were unable to complete with scientifically developed strains of rye grass and white clover.

In some areas, however, small pockets of meadows survived and many of these were designated as Sites of Special Scientific Interest (SSSI). Other meadowed grasslands also

survived in these areas which, although not containing all of their traditional species, are reasonably diverse and have also escaped reseeding and routine inorganic fertiliser additions.

The Forest of Bowland Area of Outstanding Natural Beauty (AONB) is one such place. Covering 300 square miles of rural Lancashire, the Forest of Bowland contains some of the most spectacular hay meadows in the North West of England. Nine meadows are designated as SSSIs (red on the map below), covering around 50 hectares of land, and 102 other grassland sites are recognised for their species diversity by being designated as BHS's, Biological Heritage Sites, a county wide designation, shown in yellow on the map below. Here as elsewhere this is a tiny proportion of the original extent of species-rich grassland, but it is a fabulous resource which can be used to help restore species diversity to those grasslands still managed as meadows but lacking some of their original species.



Recent work on adaptation to climate change within the Forest of Bowland looked at the actions needed to ensure the resilience of the area to the effects of climatic change Link to plan here. One such action was to maintain and restore networks of species-rich meadows through the AONB in order to allow species to move in response to changing climatic conditions. This action has been taken forward with the development of the Bowland Hay Time project, in a partnership between the Yorkshire Dales Millennium Trust (YDMT) and the Forest of Bowland AONB unit, drawing on the experience and expertise developed within YDMT in running Hay Time in the Yorkshire Dales since 2006.

The Bowland Hay Time project began in April 2012, and will continue until the end of March 2014. The objectives of the project are:

- to restore botanical diversity to 40 hectares of meadows across the AONB area,
- to survey the wider resource of BHS grasslands still present within the AONB,
- to integrate the project into community and education opportunities delivered by AONB staff. These opportunities have centred on improving access to and enjoyment of meadows, supporting traditional skills such as mowing, collecting Hay Time recollections and images and supporting volunteering within the project.

3. Meadow restoration methodology

To restore diversity to sites which have lost some plant species, seed is transferred from species-rich donor sites to receptor sites. However, before this can be done, it is essential to ensure that the receptor site (the site which is going to be restored) is suitable for restoration and that the donor site is an appropriate one.

3.1 Meet the Hay Time donor meadows

One of the first things we did when the project started in April 2012 was to continue the work already started by Cathy Hopley from the AONB Unit, looking for potential donor sites and then confirming that they would be willing to take part in the project. We would like to extend our thanks to all the donor meadow managers and owners, it is their cooperation and enthusiasm which has made this project a success.

Bell Sykes – Bell Sykes Farm at Slaidburn has the largest number and extent of meadows within the Forest of Bowland AONB. Most are designated as SSSIs, one is a BHS. The site is also designated as Lancashire's Coronation Meadows, a project designed to encourage meadow restoration to mark the 60th anniversary of the Queen's coronation. The Bell Sykes meadows are varied in character, some are damp with plentiful meadowsweet and great burnet, other have edges fringed with melancholy thistle, whilst those on the higher and drier ground have abundant lady's mantle, great burnet and hawkbit.

Barn Gill – two of the meadows at Barn Gill near Slaidburn are SSSIs, and a third, restored by the current owner in the 1990's, is currently in the process of being added to the SSSI suite. These meadows are higher in altitude than others in the area and so come on later. The damp areas have large populations of marsh marigolds and common spotted orchids, the drier slopes are in places dominated by yellow rattle and knapweed.

Myttons – there are three SSSI meadows at Myttons farm, one of which is damper than the other two. They have populations of common spotted orchids as well as lady's mantle and an abundance of knapweed. The damper meadow also has abundant meadowsweet and edges fringed with melancholy thistle.

Moss Side – the meadow at Moss Side has been enhanced in the past with green hay from the churchyard at Dalehead and has developed into a flower rich meadow, with plentiful yellow rattle, eyebright and red clover. A small population of common spotted orchids appeared in 2011 (6 flower spikes), which by 2013 had increased ten-fold.

Ouzelthorn – the meadows at Ouzelthorn form part of the Tarnbrook Meadows SSSI suite. Quite grassy in character, they also contain yellow rattle, red clover, hawkbits, meadow vetchling and knapweed. They have been chosen specifically for use on sites further down the Tarnbrook Wyre valley, in order to conserve the genetic integrity of plant populations within this isolated valley. This SSSI suite of meadows benefited from continuity of management, for many years being managed by the Pye family.

Deanslack – there are 7 meadows at Deanslack, 2 of which are designated as BHS sites. The meadows are all dominated by yellow rattle, red clover and plantain, making them ideal for restoration schemes.

Hansons – The meadow at Hansons has been enhanced through seeding funded via the agri-environment scheme. With particularly large populations of eyebright species, this donor site has been vacuum harvested in order to add the eyebrights to other vacuum harvested seed used in the project.

Dalehead Churchyard – the churchyard at Dalehead contains over 120 plant species in an eclectic mix of grassland types, brought together by variations in soil pH over the site, possibly caused by storage of lime on site during the construction of the building. The site has been used for several public events during the project, for example as a seed collection site by our corporate and project volunteers.

3.2 Site suitability

In order to be suitable for restoration, the **receptor site** must have residual soil nutrient indices low enough to enable the native seed to establish within the existing sward. Soil tests are taken to ensure this; ideally indices for phosphorus (P) and potassium (K) should be below soil nutrient index 2 in order to increase the likelihood of the meadow species from the donor hay establishing in the new site. The receptor site must also have the correct management in place for it to be suitable for a restoration scheme. In most instances within the Hay Time project this was already the case as the sites are within Higher Level Stewardship (HLS) agri-environment scheme, which ensures that traditional meadow management is in place - fields shut up from grazing in late spring, hay cutting no earlier than mid July, aftermath grazing and fertiliser additions limited to specific amounts of farmyard manure. Where HLS was not appropriate, the management was negotiated and agreed with the restoration site owners.

In order for the **donor site** to be an appropriate choice for a particular receptor site, it has to contain the species needed for the restoration and share similar site characteristics with the receptor site. Altitude, aspect and soil type, drainage and climate are all important factors to consider. The project also worked to ensure that donor and receptors were within the same valley, so that the potential genetic integrity of particular plant species populations was maintained. Wherever possible, donor sites were also found within 10 miles of receptor sites, as this allowed seed to be transferred in the form of green hay.

3.3 Seed harvesting and spreading methods

Before any seed can be transferred, the receptor site needs to be prepared. The site needs to be cut and the crop removed if it has been used for a grass crop. If it has been used as pasture, the site needs to be grazed down hard. The seed bed is then prepared by harrowing to create about 50% bare ground.

Several seed harvesting methods have been used within the project – green hay, seed vacuum, collection by hand and purchase of processed seed. All the methods available have their advantages and disadvantages, as set out in Appendix 1, those used within the Bowland Hay Time project were chosen from the experiences of the project within the Yorkshire Dales. The methodology for each is set out below, with any variations for specific sites set out in Appendix 2 where each of the schemes is described.

Green hay – An agreed area is staked out in the donor meadow. This will equate to between 1/3rd and 1/5th the area of the receptor meadow. Shortly after the receptor meadow has been cut, cleared and harrowed, either a tractor pulled Amazone flail-mower or forage harvester and trailer is used to cut and collect the donor green hay. The Amazone flail-mower was only used once within the Bowland Hay Time project, as it was found that compared to the crop from the limey soils of the Dales, the crop from the slightly heavier soils of Bowland was too thick for the machine to run efficiently.

The green hay is transported to the receptor site in a tipping trailer, the trailer is emptied and the green hay loaded into a Millcreek flat conveyor muck spreader. This then spreads the green hay at the ratio of between 1:3 and 1:5, with green hay from 1 ha of donor meadow being spread on between 3 and 5 hectares of receptor meadow.

The aim is for this whole process of cut, collect, transport, tip, spread to take no more than an hour, to ensure the green hay does not heat up, as heating can lead to reductions in the viability of the seed. It is this that limits the green hay transfer method to a radius of about 10 miles from the donor and receptor sites. The forage harvester method is the fastest of the large-scale introduction methods, limited mostly by field slope, as the meadows need to be large and flat enough for the trailer to be pulled alongside. Field gates and turn-ins also need to be wide enough for the machinery to access. The green hay cutting and spreading operations have all been completed by Steve Marsden and his team from Marsden AES Ltd, who won the contract to undertake the work as part of the Yorkshire Dales Hay Time project.

Green hay is the preferred method, as it collects the most seed from the widest range of plants. It is also the most flexible method as the donor farmer can cut the rest of the meadow before or after we harvest the green hay. Crucially, green hay is the least affected by wet weather. As long as the ground is not too wet for machinery, green hay can be cut and spread in light rain. The disadvantage is that a large volume of material has to be transported and spread within an hour or so of being collected.

Leaf vacuum – Seed is harvested from areas agreed on the donor site. The collected seed is spread out on a sheet in an airy barn to dry. The seed is regularly turned for a week or so and once dry is bagged into pillow cases. Once the receptor meadow has been cut, cleared and harrowed, the seed can be spread by hand. This method can be used when the donor farmer does not want to lose any crop, or when the receptor site is too far away from a suitable donor, or is too small to warrant a large scale green hay seed transfer, or when specific species are going to be transferred. Vacuum harvesting works best for plant species whose seed is dispersed by wind, such as yellow rattle, eye bright and the hawkbit family. Although cost effective and available to volunteers, this method collects the least amount of seed and only works in dry weather.

Hand collected seed – this involves collecting seed from appropriate species such as meadow crane's bill, melancholy thistle, meadowsweet, knapweed, meadow vetchling and plantain. Seed heads are collected and then dried in labelled paper bags and then cleaned down to the seeds when dry. The seed can be added to the vacuum harvested seed or can be stored over winter in a fridge and then used to propagate plug plants in the following spring. These plants can then be used to supplement restoration schemes, this worked well within the project using the help of volunteers (see Sections 5 and 9 for further details).

4. Meadow restoration schemes 2012 and 2013

The Bowland Hay Time project has enabled meadow restoration and enhancement to take place during the summers of 2012 and 1013.

Meadow restoration involves the transfer of the important functional species (for example yellow rattle, eyebright, red clover, plantain) back into meadows which have lost these species.

Meadow enhancement involves the transfer back of specific species, quite often the more niche selective species (for example meadow sweet, meadow crane's bill, knapweed,

yarrow, and melancholy thistle) to meadows from where they are missing, but which already have the functioning species listed above.

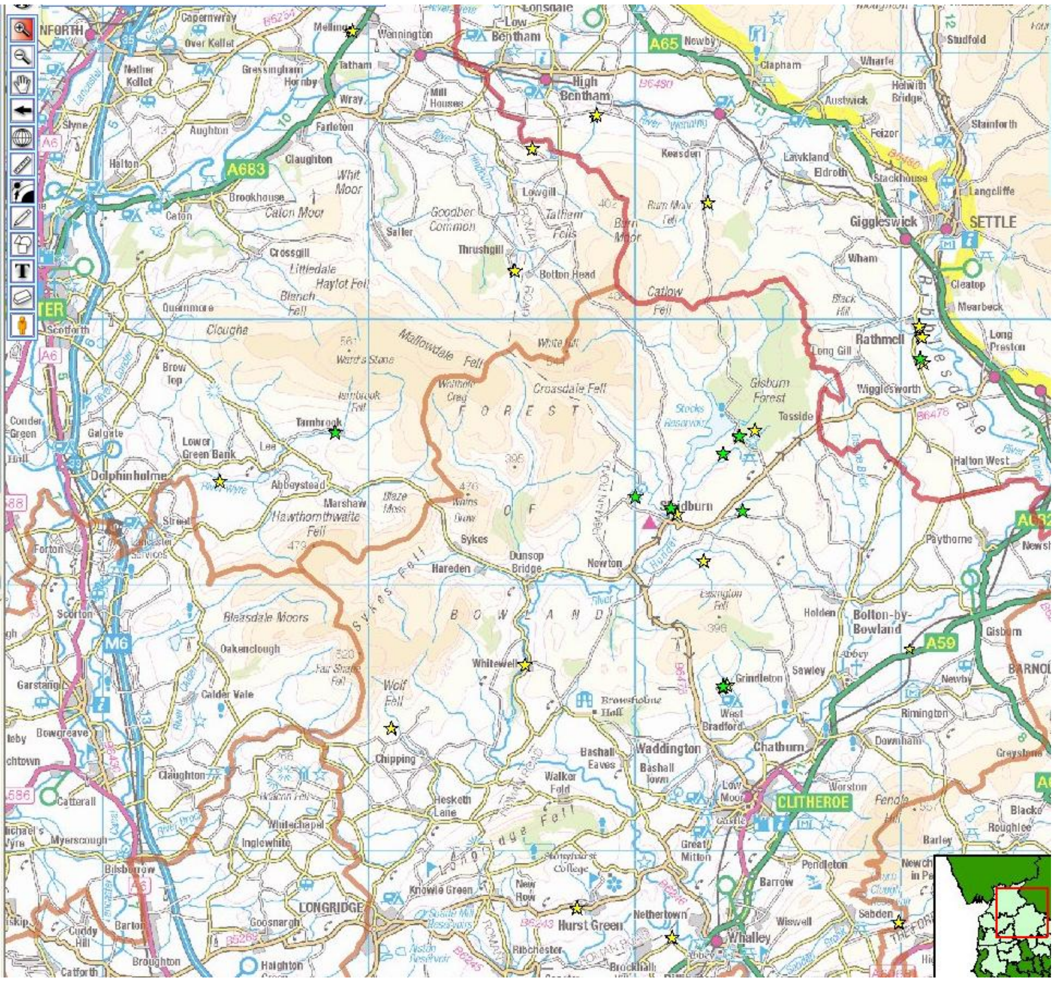
The target for each year was to carry out restoration work on 20 ha of meadows, totalling 40 ha over the two years. The table below shows that the project was successful in achieving this target, in fact exceeding it by 25%. The Natural England (NE) Bowland Team were very helpful, ensuring that all the farms which had meadow restoration as part of their HLS agreements knew about the Hay Time project and the opportunities it presented in terms of project managing restoration works for them.
The whole of 2012 was extremely wet. With an annual rainfall of 1984.00mm, 2012 was the wettest year since record keeping began in 1969 by Muriel Lord of Nan King's Farm in Chipping, in the Hodder valley (Met Office Rain Gauge Station 574005), the area where the majority of the project's restoration sites are located. All of the restoration work was carried over a period of just four days, with the contractors on site until midnight in one case to finish the work before the forecast rain arrived later in the night.

By comparison 2013 was a very different year, with a long cold spring delaying plant growth but followed by good temperatures and lots of sun, allowing growth to catch up. The prolonged sunny dry period in June and July enabled famers to cut their meadows in mid-July and also to make field dried hay rather than wrapping haylage after just one or two days wilting. The settled weather made planning and implementing the restoration work much easier and less urgent.

The table overleaf provides a summary of the schemes undertaken in 2012 and 2013, which are described in more detail in Appendix 2.

Receptor	Donor	Restoration (ha)	Enhancement (ha)	Funding	Method
2012					
Bell Sykes	Bell Sykes	6.3		HLS	FH
Waterford Farm	Verges	1.0		Hay Time	HH & LV
Cappleside	Moss Side	4.6		HLS	FH
Maiden Bridge	Myttons		0.5	Hay Time	HH & LV
Moss Side	Myttons		2.4	Hay Time	HH & LV
Stephen Park	Barn Gill	1.8		FC	FH
TOTALS 2012		13.7	2.9		
2013					
Harterbeck	Verges	2.1		HLS	FH
High Moss House	Deanslack	2.8		HLS	FH
Wolfen Hall	Bell Sykes	1.3		HLS	FH
Lower Swainshead	Ouzelthorn	3.2		HLS	FH
Skelshaw	Bell Sykes	6.0		HLS	FH
Beautry House	Barn Gill	7.6		HLS Hay Time	FH LV
Inn at Whitewell	Bell Sykes Dalehead	1.3		None	FH
Height Top Farm	Barn Gill Hansons Myttons	0.5		Hay Time	LV
Wheatley Farm	Barn Gill	0.9		HLS	FH
Maiden Bridge	Bell Sykes		0.5	Hay Time	PP
Moss Side	Bell Sykes		2.4	Hay Time	HH
Stephen Park	Bell Sykes Dalehead		1.8	Hay Time	PP
Waterford Farm	Bell Sykes		1.0	Hay Time	HH
Hansons Farm	Myttons		0.7	Hay Time	LV
Melling Green	n/a		0.5	Hay Time Friends of Bowland	mowing
Hurst Green	Barn Gill		0.5	Hay Time	LV
Hackings	Emorsgate		0.5	none	PS
TOTALS 2013		25.7	7.9		
TOTALS		39.4	10.8		
TOTAL HAY TIME AREA		50.2 ha			

FH = forage harvester HH = hand harvested LV = leaf vacuum PP = plug plants PS = processed seed



The map above shows the location of the donor meadows, shown in green, and the receptor sites, shown in yellow.

5. Meadow survey 2012 and 2013

The Lancashire Biological Heritage Site (BHS) network is designed to designate sites of local biological importance in order to help ensure they are not lost as a result of development. The network includes 105 sites classified as species-rich grassland within the Forest of Bowland AONB. These sites are either grazed pasture or are managed as meadows. Many of the sites have not been revisited for over 10 years, and so as part of the Bowland Hay Time project, a seasonal field surveyor visited and surveyed a prioritised list of sites during the 2012 and 2013 summer seasons, as well as undesignated sites recommended by Natural England and the RSPB thought to be of botanical interest. A summary of the metrics associated with this work is shown in the table below.

Year	No change	Condition improved	Condition declined	Total surveyed
2012	18	6	29	**53**
2013	23	2	14	**39**
TOTAL	**41**	**8**	**43**	**92**

Each site visit resulted in the production of a detailed species list and an assessment designed to show the current condition and management of the site. The results of the monitoring visits were sent to the site owners, the BHS team within Lancashire County Council, and were also used as part of the prioritisation work within the project. For example, the sites at Skelshaw and Melling Green were both surveyed in 2012, found to be interesting but in need of some restoration work and so then formed part of the 2013 work programme. Quite a number of sites surveyed during the two summers were found to have been agriculturally improved to such an extent since their original designation, that they were deemed to be too damaged to be restorable.

On a more positive note, however, the sites recommended by NE – Wolfen Hall, Lower Swainshead and Wheatley Farm were all found to have restoration potential, were included in HLS agreements and then went on to receive restoration management during the summer of 2013. Three other sites surveyed by Fiona have gone on to be recommended for designation as BHS's, which were not known of before the survey.

6. Improving access to meadows in Bowland

From the sight of the first honey-scented cuckoo flowers in April and May through to the smell of freshly cut grass in late July and August, the meadows of Bowland offer great pleasure to their visitors throughout the summer months. The Hay Time project has worked hard to improve existing access to the meadows by repairing stiles and gates, improving way marking, producing self-guided walk downloads on the AONB website and by delivering events as part of the annual Festival Bowland programme. Over the two years of the project these events have included

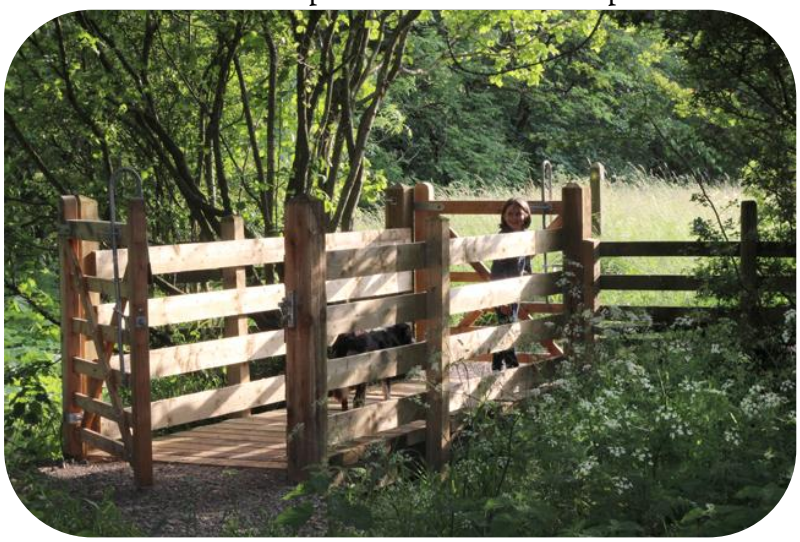
guided walks with local experts; wild flower and grass identification visits; seed collecting walks; photography workshops and wildflower plug planting events. More information about these Festival Bowland events can be found in the table below.

Event	Date	Details	attendees
Bell Sykes Walk	16/6/12	Walk with former County Ecologist Geoff Morries and NE SSSI adviser Jon Hickling through the SSSI meadows at Bell Sykes	22
Mad about Meadows	26/6/12	Walk through the species-rich meadows of Mewith, High Bentham, with the Lancashire Countryside Service	15
Wildflower identification	30/6/12	Visit to Dalehead churchyard BHS grassland with former County Ecologist Geoff Morries and NE SSSI adviser Jon Hickling	16
Bowland – A Botanist's View	5/7 & 8/7/12	Illustrated talk followed by walk through the SSSI meadows at Barn Gill with Geoff & Jon	30
Scything Taster Day	28/7/12	Two sessions with Ian Hunter from Littoral Arts in Cumbria, learning the basics of mowing by hand, with a demonstration of peening from Tom Branton from Salt Lane City Farm, Liverpool, in the meadow at Stephen Park	19
Seed collecting walk and propagation workshop	11/8/12	A trip to Bell Sykes Farm to collect seed from the SSSI meadows, followed by a talk and demonstration on propagation techniques from Peter Foley.	16
Seed collecting walk	13/9/12	A second seed collecting walk to Bell Sykes, in order to collect from species which had not set seed in August	5
Hay Time Recollections & scythe maintenance	6/2/13	An afternoon at High Bentham fat lamb sale talking with farmers about their recollections of Hay Time past, together with peening demonstrations from Tom	5
SSSI walk	16/6/13	A walk around Bell Sykes SSSI with Jon and Geoff	13

Family Hay Time Fun Day	22/6/13	Day at Lower Gazegill with children's craft activities, puzzles and games, guided walks through the meadows around the new circular access for all tramper trail	25
Hay Meadow photography walk	25/6/13	A walk around the self-guided route at Bell Sykes Farm to see and photograph the SSSI meadows with instruction from local photographer Veronica Caperon	8
Meadow Walk	6/7/13	Walk around the SSSI meadows at Myttons Farm with Jon and Geoff	16
Grasses, sedges and rushes	13/7/13	An afternoon of identification training at Dalehead Churchyard with Jon and Geoff	8
Wild flower planting	12 & 16/10/13	Two opportunities to enhance the meadow at Stephen Park, planting out plug plants raised from seed collected at Bell Sykes Farm in September 2012	11
Total events	15	Total attendees	209

The downloadable Bell Sykes Hay Meadow Walk takes two alternative routes around the farm, and passes through the SSSI meadows, and on the longer route, those which have undergone restoration as part of the Hay Time project. A link to the download can be found here.

An access-for-all Tramper trail has been set up at Lower Gazegill Farm near Rimington.



A Tramper is a type of all-terrain electric mobility scooter which enables less mobile people to use footpaths where stiles, gates and bridges have been suitably modified. The route follows a combination of public and permissive footpaths in a circular walk around the farm and through their BHS meadows, and the download will be available on the Forest of Bowland website once the last of the ground surfacing work has been completed.

A Waddington to Slaidburn walk passes through the meadows at Skelshaw which underwent restoration management during the summer of 2013, the download can be found here. This route is part of the LEF funded long distance Lancashire Witches Way, brought together to commemorate the 400 years since the Pendle Witch Trials, running from Pendle Hill to Lancaster.

7. Traditional skills

Although some farmers in Bowland use a scythe to cut nettles and thistles, hand mowing is very rarely seen on farms in the UK. Many farms still have a scythe tucked away at the back of a shed or hanging from a rafter in the barn and some farms still have the old stone grinding blade sharpener sitting in the yard, but these are no longer used.

Since the late 1990's though, a quiet revival has begun. The advent of small, light blades from Austria and the hard work of a few enthusiastic individuals and tutors has rekindled interest in mowing by hand, often as a quieter, more efficient and much more pleasant alternative to using a strimmer. In other parts of Europe mowing by hand is the norm, and visits to these areas have helped to encourage scything in this country, together with events such as the Green Scythe Fair in Somerset.

In order to see how much interest there might be in hand mowing, the Hay Time project organised two half day scything taster sessions at Stephen Park in Gisburn Forest on the 28th July 2012 in partnership with Littoral Arts, who had previously organised and run the Lancashire Scything Festival. A total of 19 people came on the day, many of whom were managing small areas of grassland either through their work or at home, but none of whom were farming on a commercial scale.

In February 2013, the project ran a peening demonstration workshop at Bentham mart on a Wednesday afternoon, when the mart is busy with the weekly fat lamb sale. Tom Branton, from the Salt Lane City Farm in Liverpool came and helped, showing people his free style peening techniques. Peening is where the scythe blade is hammered outwards to make it thinner and easier to keep sharp in the field. We also used the afternoon to talk with farmers and collect hay time recollections.

In August 2013, YDMT and the Bowland Hay Time project organised a two day scythe training workshop tutored by Steve Tomlin. The course covered all aspects of mowing by hand, from setting up a scythe to mowing techniques, sharpening, peening and lots of mowing practice. Over the two days ten people attended, including farmers and small holders wanting to be able to cut small areas of grass and manage their grasslands without the need for machinery.

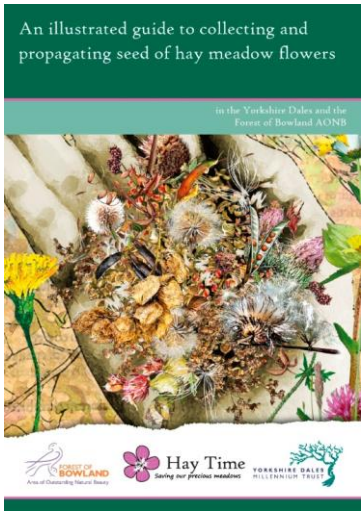
8. Hay Time recollections

There are several publications available which give a fantastic insight into the farming methods and practices of the 19th and 20th centuries, including the traditions around Hay Time in the North of England. As there seemed little value in reproducing similar information as part of the Hay Time project, we decided to concentrate on collecting photographs and recollections from Bowland farms and farming families. The archive at Slaidburn seemed the obvious place to start, as it covers the upper Hodder Valley, where many of the project sites are located. Here we found many photographs relating to hay making in this area since the 1950's, and most excitingly, were given the chance to read the daily diary of one of the Bowland farms which has been kept every day since 1943. To date all of these diaries up to 1961 have been read, and the information relating to hay making is currently being written up. This will be available on the Forest of Bowland website on the Hay Time pages once the work has been completed and all the diaries have been studied.

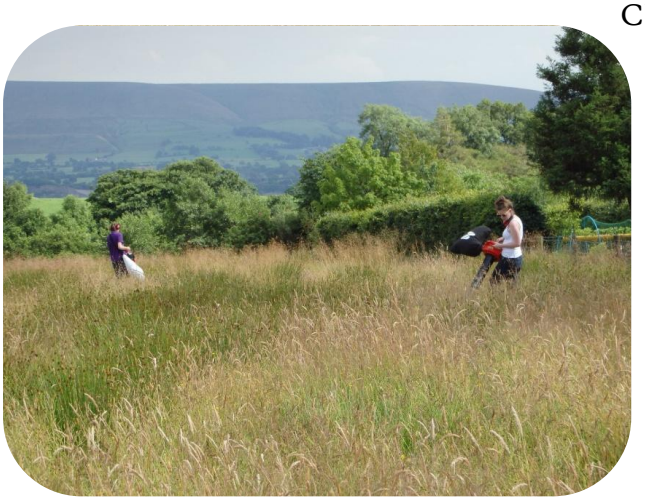
9. Hay Time volunteering

One of the successes of the Bowland Hay Time project has been the way in which it has captured people's imaginations, seen in the success of the Festival Bowland Hay Time events and also in the number of volunteers who have helped us. In particular, this has focussed on the seed collection, plant propagation and wild flower plug planting aspects of the project. Overall, 55 people have volunteered to help. Volunteers have collected seed for the project to propagate, they have collected seed and produced plug plants for their own grasslands and for the project, and they have helped enormously in planting out plug plants into the restoration sites.

As a result of the interest in this part of the project, additional funding was sought to help in the design and production of a new Bowland Hay Time Guide – 'An illustrated guide to collecting and propagating seed of hay meadow flowers'. A local artist, Christine Andrews was commissioned to produce illustrations of the pods and seeds of the ten most important meadow species and together with technical input on propagation techniques from Peter Foley, the leaflet was produced in time for the seed collection season in 2013.



We have also been able to benefit from corporate and organised volunteering and student placements. Staff from Comply Direct and from Dales Holiday Cottages helped collect seed on two occasions, seed which was then planted out by volunteers from Blackburn YMCA. Student placements from Edgehill University, Clitheroe Grammar School and Stoneyhurst College vacuum harvested and planted out seed to produce plugs, all of which have been planted out into restoration site meadows with public access, so the volunteers will be able to revisit the sites where they were working with the project. The project has also worked with the Friends of Bowland group, who together with Countryside Rangers and project staff worked together to mow Melling Green by hand, a task undertaken in order to maintain the species-richness of the site, under threat from the inability to remove the grass crop in previous years.



10. Promotion and partnerships

The work of the Bowland Hay Time project has been promoted through talks and presentations, on the YDMT and AONB websites, through social media, in the press and through various partnership events.

Talks and presentations have been given to the following organisations and groups: Natural England local team; Ribble Life project; Forest of Bowland AONB Joint Advisory Committee; Craven Naturalists group; Clitheroe Rotary; YDMT Corporate Supporters Day.

Links to information about the Bowland Hay Time project can be found on line here: YDMT and AONB.

Press articles have appeared in various local and regional newspapers and publications, including the Clitheroe Advertiser, the Craven Herald, the Rural Life supplement, the Longridge News and Lancashire Life, there is a selection at Appendix 3.

The Bowland Hay Time project is a partnership between YDMT and the AONB, and this has brought many advantages, for example the experience and expertise of the YDMT staff and contractors. The Hay Time project has also been able to help out within YDMT, supporting the work of their LEADER funded 'Sowing the Seeds' Education Officer in school and on trips to Colt Park and the Dales Museum in Hawes.

In August 2012, funding through the LEADER 'Sowing the Seeds' project enabled a visit to Transylvania, to take part in the Gyimes Hay Making Festival. This is a weeklong festival of traditional hay making, mowing and raking, building hay stacks and making cheese, all whilst staying with a local family. A copy of the report from the Festival can be found here. As well as being a great source of information and experience, the Festival also proved to be an excellent networking opportunity, with links now formed with projects across the UK and Europe.

The links with the Natural England local team have been vital in ensuring sites with meadow restoration options under agri-environmental scheme agreements have been restored, as well as enabling the use of SSSI sites as donors.

Together with YDMT the project organised and ran a day's training for Flora Locale, a national organisation providing CPD training to professional ecologists, looking at the theory and practice of field scale meadow restoration. The Hay Time project also hosted a day's field trip in Bowland for the 2013 International Association of Landscape Ecologists (IALE) summer conference, which brought practitioners from France, Italy, Sweden and Croatia to see the work in the meadows at Bell Sykes in Slaidburn.

YDMT's patron, HRH Prince Charles, launched his Coronation Meadows initiative in June 2013 to mark the 60th anniversary of his mother's coronation. The initiative aims to identify 60 species-rich meadows, at least one per county, which can act as seed donors for restoration projects and which have good public access. The Bowland Hay Time project was asked to nominate a suitable site for Lancashire. Our suggestion of the suite of meadows at Bell Sykes Farm, Slaidburn, which already had a downloadable walk through them, was accepted. A link to the Lancashire section of the Coronation Meadows website, with information about Bell Sykes and also two of the sites which are being restored with green hay from Bell Sykes, can be found here.

Most recently, the project has been working in partnership with Buglife's B-Roads project, drafting out the route of 3km wide routes through the countryside as target areas for the restoration and management of species-rich grasslands for pollinators.

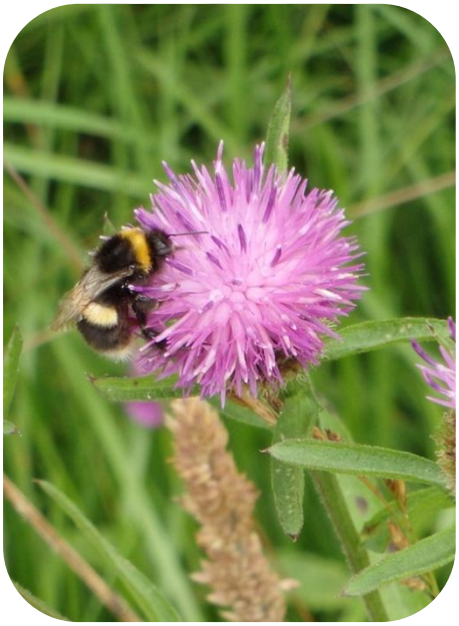
11. Conclusions

The Bowland Hay Time project has enabled practical restoration work to take place on over 50 hectares of meadow land in Bowland, 25% more than the target area, and has surveyed 92 grassland sites throughout the AONB area as a contribution to the BHS project. The project has delivered public facing events throughout 2012 and 2013 far in excess of the target of 10 events, and has gathered a dedicated group of volunteers. Its delivery against the Project Performance Indicators is assessed in Appendix 4.

The project has been able to operate holistically, with the knowledge and expertise of the AONB and YDMT teams adding greatly to the range of activities undertaken. As well as delivering restoration management on the ground, the Bowland Hay Time project has also actively engaged with Festival Bowland visitors and volunteers, covering a broad range of subjects.

We have worked closely with the local Natural England team, as much of the work has been funded via HLS scheme agreements. With scheme developments meaning that less funding will be available for field scale meadow restoration, at least until 2016, we have been looking at how best to use the project's expertise and experience on sites outside of the scheme.

The project has amassed information about many more possible restoration sites, as a result of enquiries leading from articles in the local and regional press. In particular we have received requests for help from local hotels, community groups and schools wanting to restore species-rich grasslands within their grounds. This, together with the current changes to the HLS scheme and the need to restore and manage small sites, has led to the development of the 'Networks for Nectar' project plan. The 'Networks for Nectar' project will allow us to work with owners and managers of small sites, sites too small to gain HLS funding, in order to increase their botanical diversity. This will in turn increase their value to pollinator species, such as bumble bees, honey bees, butterflies and other insects. The aim is to strengthen the network of flower-rich sites across Bowland, enabling pollinating insects to move more freely through the countryside.



Appendix 1: Comparison of seed harvesting and spreading methods					
	Green hay: mower-collector	Green hay: forage harvester	Hay concentrate	Brush harvester	Leaf vacuum
Seed range and quantity	Collects widest range	Collects widest range	Only collects seed from taller plants so more limited range	Only collects seed from taller plants so more limited range	Collects wide range of seed or seed of targeted species
Machinery needed	Mower-collector and Millcreek muck spreader, both tractor-pulled	Forage harvester and Millcreek or other muck spreader	Ian Fletcher harvester and spreader, both quad-bike pulled	Quad-pulled Logic brush harvester and possibly a spinner to spread seed	Hand-held leaf vacuum
Seed harvesting / collecting	Cuts and collects rapidly	Fastest green hay harvesting method on level sites	Slower than mower-collector as have to replace bags frequently	Fairly rapid	Manual operation
Transport to receptor	Material dumped straight into muck-spreader or high-sided trailer	Material blown directly into muck-spreader or high-sided trailer	Bags lifted by hand onto trailer	Least bulky mechanical method	Very little material harvested
Spreading	• Seed needs to be spread within one hour of harvesting • Material dumped in a heap and loaded into spreader by digger / hand • Receptor farmer can do the spreading with their own muck spreader	• Seed needs to be spread within one hour of harvesting • If material blown into a trailer, it is then dumped in a heap and loaded into spreader by digger / hand • Receptor farmer can do the spreading with their own muck spreader	• Seed can be either spread on same day or dried and spread later • Bags emptied straight into quad-bike pulled spreader	• Seed can be either spread on same day or dried and spread later (but seed may be scorched because no chaff to protect it) • If unprocessed (same day spreading), spreading is by hand • If processed, by hand or seed spreader	• Seed spread by hand, either on same day or dried and spread later
Weather dependency	Can be operated in light rain if ground not too wet	Least affected method if ground not too wet	Needs dry conditions	Needs dry conditions	Needs dry conditions
Impact on hay crop	Takes 100% of harvested area	Takes 100% of harvested area	Takes up to 50% of crop from harvested area – potentially difficult for farmer to harvest remainder	Takes less than 20% of crop although can flatten crop	Negligible loss and very little impact on crop
Summary	• Gets widest range of seed • Cuts and collects easily but large quantity of material to be transported and spread • Least weather dependent method • The donor farmer can cut the rest of the field before or after seed harvesting, so more flexibility than other methods • Specialist machinery so needs trained operators • Available through Hay Time	• Gets widest range of seed • Cuts rapidly but large quantity of material to be transported and spread • Least weather dependent method • The donor farmer can cut the rest of the field before or after seed harvesting, so more flexibility than other methods • Uses normal farm machinery • Available through Marsden	• Best used for short donor swards • Intermediate option between green hay and brush harvester • Donor farmer may need to delay cutting • Specialist machinery so needs trained operators • Available through Hay Time	• Main problem is spreading a small amount of material evenly over site • Reduced range of species • Donor farmer may need to delay cutting • Specialist machinery so needs trained operators • Available through Hay Time and Dinsdale Moorland Services	• Relatively small amount of seed collected • Cheap and effective method to inoculate a receptor • Easiest method to implement • Available through Hay Time

Appendix 2: Meadow restoration schemes 2012 and 2013

Receptor: Bell Sykes, Slaidburn
Donor: Bell Sykes SSSI & BHS meadows
Method: Green hay
Reason for choosing method: Donor sites adjacent to receptors
1.3 ha from two meadows was forage-harvested into the trailer and moved to the adjacent receptor fields, where it was spread using the mill-creek spreader. Monitoring visits during 2013 have shown extensive yellow rattle and eyebright. In 2013, the SSSI meadows on the site have been used as donors for three green hay schemes and four vacuum harvested seed schemes.

Receptor: Waterford Farm, Mewith
Donor: Road verges and adjacent meadow
Method: Hand seed collection
Reason for choosing method: landowner very keen to collect seed
There are two meadows at Waterford Farm, managed by the adjacent farm. Hand collected seed was dried and cleaned and them sown into bare patches within the adjacent receptor meadow. Monitoring visits in 2013 showed extensive yellow rattle within the areas it had been seeded.

Receptor: Cappleside, Rathmell
Donor: Moss side, Rathmell
Method:Green hay
Reason for choosing method: Availability of effectively organic green hay
As Cappleside is a registered organic holding, the Soil Association guidance called for organic hay to be used in the restoration. Unfortunately, our one source of organic hay had already been cut, but luckily, as there had been no inputs at Moss side for over 3 years, we were allowed to use it and the restoration could take place. Monitoring visits in the spring of 2013 showed a very strong population of yellow rattle and red clover.

Receptor: Maiden Bridge, Tatham
Donor: Myttons
Method: Vacuum and hand harvested seed
Reason for choosing method: enhancement of specific species and distance from donor
Maiden Bridge is a BHS site with a wide range of hay meadow species. However, they are present in low numbers and so seed from Myttons was added into gaps in the sward in order to boost their populations.

Receptor: Moss Side, Rathmell
Donor: Myttons
Method: Vacuum and harvested seed
Reason for choosing method: enhancement of specific species and distance from donor

The meadows at Moss Side have good populations of yellow rattle, eyebright and red clover, as well as a growing population of common spotted orchids, and have been used as donor hay. The addition of seed from Myttons SSSI meadows was specifically to add in more hawkbits, knapweed and meadowsweet in the damper areas.

Receptor: Stephen Park, Gisburn Forest
Donor: Barn Gill SSSI
Method: Green hay
Reason for choosing method: Close proximity of SSSI donor
0.5 ha of species-rich green hay was forage harvested and transferred to the Forestry Commission owned meadow at Stephen Park. Monitoring visits in 2013 showed a good take of yellow rattle and eyebright. In 2013 further restoration work occurred.

Receptor: Harterbeck, Roeburndale
Donor: Verges
Method: Green hay
Reason for choosing method: Species-rich wide road verges on either side of lane to the farm
This scheme was one of the two which had had to be abandoned in 2012, due to the continued wet conditions. The species-rich verges on either side of the lane up to the farm were ideal as donor hay, as their use will ensure the use of seed from within the relatively isolated Roeburndale valley.

Receptor: High Moss House, Keasden
Donor: Deanslack
Method: Green hay
Reason for choosing method: Availability of green hay
The restoration at High Moss House was also originally scheduled for 2012, but was delayed by the weather. The donor hay from Deanslack has a high percentage of yellow rattle, and is from similar conditions. 0.5 ha was taken and spread over the 2.8 ha at High Moss House.

Receptor: Wolfen Hall, Chipping
Donor: Bell Sykes
Method: Green hay
Reason for choosing method: close proximity of SSSI donor
0.3 ha of green hay was taken from one of the SSSI meadows at Bell Sykes and spread at Wolfen Hall. Originally three meadows had been suggested, but on receipt of the soil analyses, just one was entered into the HLS scheme, as the others had higher residual nutrient levels.

Receptor: Lower Swainhead, Overwyresdale
Donor: Tarnbrook SSSI meadows, Ouzelthorn

Method: Green hay
Reason for choosing method: proximity of SSSI donor from the same valley
0.5 ha of donor hay was taken by trailer from Ouzelthorn to Lower Swainshead Farm, having been cut by forage harvester. Ouzelthorn was chosen as the donor as it is the only species-rich meadow in the vicinity and also because it is from the same valley.

Receptor: Skelshaw, Easington
Donor: Bell Sykes
Method: Green hay
Reason for choosing method: Proximity of SSSI donor
The BHS meadows at Skelshaw contain most of the meadow indicator species for meadows, but some were in very low numbers. 1.5 ha of green hay was transported by trailer to the meadows at Skelshaw in late July.

Receptor: Beautry House
Donor: Barn Gill
Method: Green hay & vacuum harvested yellow rattle
Reason for choosing method: proximity of site
A slight miscalculation meant that the green hay from Barn Gill was spread on one of the receptor fields and an adjoining wetland restoration site. This will not affect the wetland restoration, but meant that further seed was needed for the field which had been missed. This was spread by hand in November from seed vacuum harvested from the yellow rattle dominated meadows at Barn Gill.

Receptor: Inn at Whitewell
Donor: Bell Sykes & Dalehead
Method: Green hay & plug plants
Reason for choosing method: proximity of SSSI donor
Green hay from the SSSI meadows at Bell Sykes was transported to the meadow below the Inn at Whitewell at the end of July. The receptor meadow has also received plug plants grown by the project from seed collected by volunteers at the Dalehead Churchyard site, and also seed collected from the Melancholy thistles at Bell Sykes. These have been placed at marked spots on the edge of the meadow.

Receptor: Height Top Farm
Donor: Barn Gill, Hansons, Myttons
Method: Vacuum collected seed
Reason for choosing method: distance from donor meadows
Height Top is within the Pendle district of the AONB, and as the project did not have any donors close enough, we decided to seed by hand. The farmer gained the help of the Year 5 children from the neighbouring Higham School, and so they came to learn about the meadow and broadcast seed the meadow.

Receptor: Wheatley Farm
Donor: Barn Gill
Method: Green hay
Reason for choosing method: Availability of green hay and size of meadow
0.2 ha of green hay was cut and transported to Wheatley Farm. This scheme tested the limits of using this method, due to the distance between the sites, but it was possible because the receptor field was quite small, and so not many journeys were required.

Receptor: Maiden Bridge
Donor: Bell Sykes
Method: Seed and plug plant enhancement
Reason for choosing method: specific species being added
Plugs of melancholy thistle and great burnet were added during the autumn of 2013, grown from seed collected by the project volunteers.

Receptor: Moss Side
Donor: Bell Sykes
Method: Hand collected seed
Reason for choosing method: addition of specific species
Knapweed and meadowsweet seed was added to the damper areas at Moss Side in the autumn of 2013.

Receptor: Stephen Park, Gisburn Forest
Donor: Bell Sykes, Dalehead
Method: Plug planting
Reason for choosing method: addition of specific species
Festival Bowland volunteers came and planted plug plants of red clover, hawkbits, knapweed and hogweed into the meadow behind Stephen Park, during two events in October 2013.

Receptor: Waterford Farm
Donor: Bell Sykes
Method: Hand harvested seed
Reason for choosing method: proximity of species-rich verges
As in 2012, seed from meadow plants in the verges around Waterford Farm have been collected and dried, and then sown out into bare patches within the meadow.

Receptor: Hansons, West Bradford
Donor: Myttons
Method: Vacuum harvesting
Reason for choosing method: distance from donor meadows

The meadow at Hansons has been used as a donor site within the project, as it has good populations of yellow rattle and eyebright. However, it lacks knapweed and hawkbits, and so seed from Myttons was added in the autumn of 2013.

Receptor: Melling Green
Donor: n/a
Method: reinstatement of mowing management
Reason for choosing method: this site was becoming rank with wet summers preventing mowing
Members of the Lancashire Countryside Ranger Service, Friends of Bowland and the Bowland AONB team joined Sarah and Don in mowing and raking the grass on the green into rows ready for wrapping as haylage. The site is a BHS and is very species-rich, but the lack of mowing in recent years is a threat to its botanical diversity.

Receptor: Hurst Green Churchyard
Donor: Barn Gill
Method: Vacuum harvesting
Reason for choosing method: distance from donor sites.
The relatively new churchyard extension at Hurst Green has been targeted by the Church's Eco committee as a site to develop as a wild flower meadow. Vacuum harvested seed from Barn Gill was given to the committee, together with seeding and management advice.

Receptor: Hackings
Donor: Emorsgate
Method: Purchased seed
Reason for choosing method: distance from donor sites
Hackings is a caravan park which has several different developing wildlife areas, including one area set aside to develop a hay meadow. At the time of the visit, the area had been prepared as a bare tilth, and so we decided on a grass and wildflower seed mix, which was seeded during October.

Appendix 3: A selection of press articles

Craven Herald & Pioneer
Circulation: 13012
Readership: 33831
Display Rate (£/cm²): 3.78
20 SEP 2012

Colleagues help meadows to bloom

A group of volunteers have been helping the Yorkshire Dales Millennium Trust to restore hay meadows in the Forest of Bowland Area of Outstanding Natural Beauty (AONB).

Skipton-based compliance company, Comply Direct, sent a team of volunteers (pictured) to help with the task of collecting seed by hand from a variety of wildflowers found in species-rich meadows. The seed will be used to restore meadows in the AONB that have lost some of their botanical diversity.

The Yorkshire Dales Millennium Trust, which is based in Clapham, has been leading the way in the conservation and restoration of hay meadows for the past six years.

Bowland Hay Time project officer Sarah Robinson said: "It was great to have help from Comply Direct. They helped to collect seeds from areas not suitable for machinery, which we have already used to enhance a meadow near Bentham."

XGE & RIBBLE VALLEY NEWS & ADVERTISER
Circulation ('000): 3
Readership ('000): 9
play Rate (£/sqcm): £0.35
19 SEP 2012

aking hay in 'acula's country

owland's link-up with Transylvania

oppin

f Bowland Area ing Beauty and Yorkshire Dales Trust has forged meadow experts ia to share infor- t tools and tech- at hay time in in a e these traditions ear.

binson, Bowland Project Officer, nt a week living g with the Sarig e Gyimes Valley Transylvania, long with 10 other om other parts of

as exchanging n and sharing hay iences, the group hands-on train- ained experience cts of hay making, (scything) to finish e hay in the barns winter forage).

to the extra man- the delegates pro- Sarig family were a previously aban- adow, bringing it raditional manage- ature years. aid: "It was very physically demanding work, but really rewarding – particularly when we helped to save meadows that the family had not had the man-power to tackle previously.

"It was fascinating to experience a completely different culture, and to see how the techniques used here have evolved very differently to those used back home due to cultural, economic and climatic differences.

"I think our use of machinery in the UK surprised our hosts, who still use a combination of man and horse power to get the job done.

"I was quite jealous to discover that the warmer climate in Transylvania means our counterparts can scythe in the morning, enjoy an al fresco lunch break, and then gather the dry crop in the afternoon, rather than hoping and praying for several dry days like we do here in northern England."

To ensure that the delegates and other international hay meadow experts can continue to exchange information in the future, a web-based network will soon be created to act as a forum for sharing expertise.

Clitheroe Advertiser
Circulation: 7182
Readership: 18673
Display Rate (£/cm²): 2.68
26 JUL 2012

You don't have to be grim to be a reaper!

THE new Bowland Hay Time project is offering a unique chance to learn how to cut hay the old fashioned way this Saturday, July 28th, at Stephen Park in Gisburn Forest, near Tosside.

The project is running a Scything Taster event, providing free training and use of either an Austrian or English scythe.

Of course, if you have your own scythe, you are welcome to bring that along too. Training sessions run in the morning and afternoon, and booking is essential via the Area of Outstanding Beauty office at 01200 448000, or by e-mailing cathy.hopley@lancashire.gov.uk

Spectators are also welcome any time between 10 a.m. and 4 p.m.

The Bowland Hay Time project is a partnership between Yorkshire Dales Millennium Trust and the Forest of Bowland AONB, and it hopes to restore nearly 20 hectares of upland hay meadow in the AONB this summer, followed by more in 2013. For more details please contact sarah.robinson@lancashire.gov.uk

Expert tuition is being provided by Littoral Arts who are keen to revive rural arts such as scything. The event is also supported by Yorkshire Dales Leader, and hosted by the Forestry Commission.

MAINTENANCE: Ruth Pullan peening a scythe blade

Back to basics with scything workshop

Farm and Country

For centuries, farms and meadows were managed by the humble scythe. But the rise of the mower and strimmer made the tool all but obsolete. Now the scythe is making something of a comeback, its environemental (and even social) benefits are rediscovered

The scythe is one of the great symbols of agriculture.

It's distinct and impressive curved blade requires great skill and energy to wield, and is a very visual reminder of the sheer hard graft of being a farmhand.

And, of course, to the untrained, it's a bit terrifying, hence it being the weapon of choice for the Grim Reaper.

Although largely replaced by modern machinery, the traditional art of scything is making something of a comeback.

The versatile tool has environmental benefits, especially for the gentle management of meadows and grassland. It is also good exercise, and can be far more social than using a noisy strimmer.

Organised by the Yorkshire Dales Millennium Trust (YDMT) and the Forest of Bowland Area of Natural Beauty, a scything course was organised recently as part of the Hay Time meadow restoration partnership.

Held at Keasden Head Farm near Clapham, set between the Dales and the Forest of Bowland, the weekend taught participants the traditional skills involved in the art of scything.

Under the expert tuition of Steve Tomlin, the ten participants learnt how to set up and use a scythe, as well as how to maintain it. This included tips on sharpening the blade, peening the edge, and general long-term care of the scythe.

After completing some warm-up exercises, the group were ready to take their first cautious swings of the blade using a tai-chi movement that participants had mastered by the end of the weekend.

"People all over the UK are discovering the scythe as a practical and efficient way of managing their land" says Steve. "These training courses are always lots of fun and it's great to be here in the Dales passing on skills to a group including local farmers and orchard owners, as well as volunteers working on a community meadow."

Steve first learned to use a scythe in the Pyrennees in 2001 and has been involved in the UK mowing scene since the first Scythe Festival in 2005, organising some of the events, teaching and running workshops.

He is a founder member and Training Co-ordinator for the Scythe Association (Britain & Ireland) and travels regularly to Europe to work with scythe experts in Austria and elsewhere.

Ruth Pullan, who took part in the course, said: "The course was really enjoyable and useful. Thanks to Steve's tips on how to improve my technique and how to be energy efficient while mowing, I now feel confident that I could quickly mow my orchard using the scythe. It's such a quiet and peaceful way to manage the land, much better than using a strimmer."

Don Gamble, Hay Time Project Manager, said: "Interest in scything is really taking off, and it was great to see everyone having a good time mastering the scythe.

"I'd like to thank Steve for providing the training and Sheila Mason for hosting the course on her farm."

Course participants will also be invited to help manage meadows and other grassland areas in the Dales and Forest of Bowland that are in danger of becoming overgrown and rank because they are no longer being cut.

To find out more about the Hay Time project, contact YDMT on 015242 51002, or the Forest of Bowland AONB on 01200 48000.

For more information about scything, go to www.scytherspace.wordpress.com

Appendix 4: Project Performance Indicators

Indicator	Project performance
5 of the potential sites have educational access under HLS agreements and this will enable at least 15 schools per year to visit these sites, probably many more.	None of the potential sites cited in the indicator became restoration sites. One potential donor had educational access, Lower Gazegill at Rimington, and this was used as the venue for the Family Hay Time day in June 2013. The restoration at Height Top Farm was completed with the year 5 class from the neighbouring Higham School.
20 volunteers training in wildflower identification and monitoring techniques.	16 people attended the wildflower ID & monitoring training on 30 June 2012 and a further 8 attended the grasses, sedges & rushes training on 13 July 2013.
Opportunities for volunteers to assist with seed collection and habitat management works.	21 people attended the Festival Bowland seed collection walks and 15 people attended the corporate volunteering seed collection days. 11 people helped to plant out wildflower plug plants and 7 helped to maw and rake Melling Green in September 2013.
12 farmers advised in meadow restoration and management.	The project has worked with 18 different farmers and landowners, giving advice and information about meadow restoration management, as well as the 7 land managers who attended the Flora Locale training course.
Improvements made or facilities provided for disabled people	The access-for-all tramper trail through the meadows at Lower Gazegill is a newly constructed circular route. As the owners are part of Bowland Experience, visitors to the farm can have access to a tramper on site.
20 volunteers helping with the project, 5 between 16 & 25	55 people have volunteered to help with the project, including 6 between the ages of 16 & 25
20 volunteer days created for young people	21 volunteer days created, 1 university placement (8 days), 2 work experience weeks (10 days) and 3 young people as part of the group from Blackburn YMCA
40-60 hectares worked on through the delivery of the project (subject to survey results and scheme implementation)	The project delivered meadow restoration, enhancement and management works on 50.2 ha of land
2 part time jobs created/maintained	1 part time project officer post and 1 part time botanical surveyor post created
1 key habitat protected or conserved (Upland hay meadow)	Upland meadows have been the focus of the project, although some sites have been more lowland in character and two (Beautry House and Cappleside) are more akin to wet meadows.