The project "**Integrated planning tool to ensure viability of grasslands"**

LIFE VivaGrass (Project no. LIFE13ENV/LT/000189) Action A2

# REPORT

on

## Study tour to Lancashire, Cumbria and Yorkshire, United Kingdom

September 29 - October 3, 2014

October, 2014

# Contents

# 1. Introduction

The study visit to the Lancashire, Cumbria and Yorkshire in Northern England was organised in the frame of the LIFE Viva Grass project (A2 action) from September, 29 until October, 3, 2014.

The main goal of the study visit was to see the grasslands ecosystem restoration and maintenance experience and various economically viable grasslands management solutions in UK.

During the study visit 4 farms with several specialisations were visited (see chapter 4, 5, 7 and 8). Additionally was visited Colt Park meadow research station in Ingleborough National Nature Reserve, to see long term trials and to discuss with scientists researching the meadows, their potential for carbon sequestration and the role of meadow in supporting pollinating insects (see chapter 9). There were organised also 2 meetings with a goal to learn more about several projects related to meadow restoration implemented in Lancashire and Cumbria (see chapter 3 and 8) and one meeting with representatives of the Lancaster Bee Keepers Association, to learn more about the problems and challenges related to bee keeping in UK (chapter 5). Detailed programme of the study visit tour see in Annex 1 and route of the tour see in Annex 2.

## 2. Participants of the tour

The group consisted from 12 persons in total, representing different project partner organisations from Lithuania, Latvia and Estonia:

| **Name, Surname** | **Represented Institution** |
|---|---|
| Anda Ruskule | Baltic Environmental Forum - Latvia |
| Dace Iraids | Otras Majas |
| Dana Prizavoite | University of Latvia |
| Diana Benkunskiene | Silute district municipality |
| Endla Reintam | Estonian University of Life sciences |
| Ilze Kalvane | Baltic Environmental Forum - Latvia |
| Pille Tomson | Estonian University of Life sciences |
| Rasa Kmitiene | Silute district municipality |
| Remigijus Budrikas | Silute district municipality |
| Sigitas Seputis | Silute district municipality |
| Valda Zaļaiskalna | Cesis municipality |
| Valdemars Dambekalns | Farm Sovites |

*Participants of the tour (1st row left: Sarha (our guide), Endla, Ilze, Anda, Dace, Valda, 2nd row left: Dana, Diana, Rasa, Pille, 3rd row left: Sigitas, Remigijus, Valdemars (Author: bus driver)*

## 3. Meeting on the LIFE Viva Grass project and Hay Time project

*Author: R.Kmitiene*

***Date:*** *September 29, 2014,*
***Venue****: Royal King's Arms Hotel, Library*
***Goal:*** to learn about the goals of the hosting Hay Time project and LIFE Viva Grass project
***Reporter****: Ilze Kalvane (Baltic Environmental Forum - Latvia)*

Mrs. **Anda Ruskule** from the Baltic Environmental Forum –Latvia introduced participants with the main goals and expected outputs of the project LIFE Viva Grass. Anda gave also general overview about the project partners involved in the project and project implementation scheme. Anda introduced representatives of Hey Time project with the typical Baltic landscape of grasslands ecosystems and main goals and participants of the study visit to Lancashire, Cumbria and Yorkshire.

Introduction to the Hay time project was made by project officer Mrs. **Sarah Robinson**. The Hay Time project has been implemented by the Forest of Bowland Area of Outstanding Natural Beauty (AONB) in partnership with Yorkshire Dales Millennium Trust (YDMT) from April 2012 until March 2014. The main tasks and successes of the project were:

1. To restore botanical diversity of meadows across the AONB area and within 2 years over to 50 ha were restored. Before the project has been started only approx. 50 ha were left as botanically diverse meadows in the region. Meadows were restored transferring the seed from species-rich donor sites to receptor sites.
   In frame of the project several seed harvesting methods were used: green hay, seed vacuum, collection by hand and purchase of processed seed. The methods were chosen depending on characteristics of the target plant species and local conditions (type of soil, field slope, distance between donor and receptor sites etc.). For example, vacuum harvesting works better for the plant species whose seed is dispersed by wind, such as yellow rattle (*Rhinanthus minor*). This species is indicator species for natural valuable meadows and important for sheep feeding during the winter season in England.
2. To survey the wider resource of grasslands still present within the AONB,
3. To integrate the project into community and education opportunities. During the project were organized events with guided walks with local experts, wild flower and grass identification visits, seed collecting walks, photography workshops and wildflower plug planting events. Within the project were implemented also actions as improvement of access to meadows, for example, there has been built bridge for persons with wheelchair, popularized traditional skills such as mowing with scythe and involved volunteers by seed collections.

More about project please see http://www.ydmt.org/programme-details-hay-time-14609.

## 4. Visit to Laund Farm in Chipping

***Date**: September 30, 2014*
***Location:** Chipping, Preston, Lancashire*
***Goal**: To learn about opportunities of large scale sheep dairying farming*
***Reporter**: Anda Ruskule (Baltic Environmental Forum- Latvia)*

LIFE Viva Grass group was welcomed at the class room of Laund Farm (set-up with support of agri-environmental schemes for education of kids), where **Mr. John Stott** briefly introduced to the history of their sheep milking enterprise. Simon and John Stott are the 3rd generation of the family farming. Their family has been at Laund Farm since the 1930's. In 2000 they have decided to diversify their farming practice, when approached by a dairy proposing to go for sheep milk production. Already in 2003 the dairy stopped business with sheep milk because of lack of market for this product. However, Laund Farm continued with sheep dairying farming and even expanded their business. Now they collect sheep milk also from other farmers and deliver it into 12 dairies across the North of England. Every year they get new costumers. Currently they develop their own brand of chees (including different kinds of chees from soft to 12 month matured as well as ice cream), which are produced in one of the dairies where they deliver milk, but there are plans to establish own dairy.

Size of the farm is ca. 2500 ha (half owned, half rented). Farm owns 1000 sheep. 500 sheep are for milking. In average they get 3 l (max. 5 l) of milk from one sheep per day. Sheep are milked twice a day. They get in total up to 1000 l of milk per day. Price for one litter of milk is 1£. For the commercial sheep sold for meat they earn 3£ per kg. Additionally each year farm gets 30 000 £ as subsidies.

Milk sheep are grazing outside, but in the evening in barn they get additional fodder, containing all necessary minerals, because grazing is not enough for production of milk. Sheep are lamming seasonally, therefore in December they are not milked. For pastures they have seeded mixture of seeds containing different species of grasses as well as white and red clover. This combination is stable and should not be receded for more than ten years. Mr. John Stott showed to the group the barn, self-designed milking equipment, hey shed and silage pits as well as different machinery used in the farm. There is a solar panel on the roof of barn, producing electricity for the farm.

**Mr. Simon Stott** told about development of their own sheep milk cheese and ice cream brand, plans for production and envisaged export market. He explained that sheep milk products are demanded and considered as especially healthy and recommendable for kids, because they are less allergic comparing to cow milk products.



(a) (b) (c)

*Photos: Mr. J. Stott presents the chees produced from sheep milk of Laund Farm (a); hey storage and machinery (b); sheep in pasture (c) (Author: Anda Ruskule)*

## 5. Visit to Ball Sykes Farm in Slaidburn

***Date**: September 30, 2014*
***Goal**: To meet Peter & Lynda Blackwell and to see how the meadows of their farm are contributing to the Hay Time project*
***Reporter**: Anda Ruskule (Baltic Environmental Forum- Latvia)*

*Author: A.Ruskule*

**Peter & Lynda Blackwell** welcomed the group and guided through the meadows of the Ball Sykes Farm. **Sarah Robinson** told about biological value of these meadows and involvement of the Ball Sykes Farm in the Hay Time project. It serves as species-rich donor site for the project meadow restoration activities. This farm includes six unimproved species rich meadows as well as three fields where meadow restoration is implemented. These meadows are among the species richest in Lancashire, in the late 1990's designated as Sites of Special Scientific Interest (SSSI) and in 2017 - as meadows European importance (included in Natura 2000 network as Special Areas of Conservation). Currently the meadows are managed as part of an agri-environmental scheme that supports continuation of traditional management practice. In 2013 this site was designated as Lancashire's Coronation Meadows - a project for encouraging meadow restoration to mark the 60th anniversary of the Queen's coronation.

**Mr. Blackwell** explained the grassland management practice applied in Ball Sykes Farm. The farm has 100 sheep and 12 cows. The meadows are not grazed during late spring and summer to allow meadow species to flower and set seeds. Once hey is cut, it is dried in the field, so the seeds can drop out and to germinate the following year. According to agri-environmental scheme the meadows can be mowed for hey after 15 July. Cattle and sheep are let into the field for grazing in August after hey is collected. Fields are grazed throughout the winter until Easter. Sheep stays outside for whole winter, also during the lamming time. Sheep manure is composted during winter and spread on fields in spring. Mr. Blackwell showed also machinery used for collecting seeds for meadow restoration. The seeds are spread on restoration sites in late autumn to get cold for better germination.

(a)

(b)

(c)

*Photos: machinery for seed collection (a); S. Robinson tells about species rich meadows of Ball Sykes Farm (b and c) (Author: Anda Ruskule)*

## 6. Talks with representatives of Lancaster Bee Keepers Club

***Date**: September 30, 2014*
***Venue**: Royal King's Arms Hotel*
***Goal:** To learn about bee keeping in UK and new initiatives to support bee population and pollination services*
***Reporter**: Anda Ruskule (Baltic Environmental Forum- Latvia)*

*Author: R.Kmitiene*

**Dr. Fred Ayres,** chairman of Lancaster Bee Keepers Club, introduced to the reasons for decline of honey bee population in UK and activities undertaken to support bee keeping and pollination services provided by bees. He explained that honey bees are pollinating 60 % of commercial crops and 70% of winter forage for wild animals. 95 % of bees in UK are maintained by hobby bee keepers. In 1920's a bee disease whipped out the native population, therefore bees from other parts of Europe were brought to UK. During the last decades sever decline of bee population has been observe. The main reasons for that is British obsession with closely mown lawn, use of pesticides that destroys navigation system of bees, lack of flowering meadow species as well as bed weather. Also the new F1 hybrid flowers used for gardening do not produce nectar. Large plantations of rape provide only one sort of nectar that creates nutrition deficit for bees. New initiatives to support pollination by bees involves establishment of wildlife corridors – 5 m stripes free from any agriculture, establishment of pollination patches – small pockets of land converted into meadows as well as convincing owners of the business land to cut grass only once a year.

The bee keepers were questioned by the group about the best options for grassland management that would make happy bees as well as farmers. Dr. Fred advised to use mixture of different management practices as well as to cut the grass after flowering (mid-July).

## 7. Visit to Piper Hole in Ravenstonedale

***Date:** October 1, 2014*
***Goal:** to meet Mr. Hunter and see how his meadows have been involved in the Coronation Meadow project (see more about the project www.coronationmeadows.org.uk).*
***Reporter:** Endla Reintam (Estonian University of Life Sciences)*

*Author: A.Ruskule*

After arrival to Piper Hole, Mrs. **Anda Ruskule** explained the Viva Grass project goals and the goal of visit to England. **Mr. Hunter** gave the overview of the farm activities and showed his animals, machineries and restored meadows. The Piper Hole is not traditional farm as they produce goat milk soap next to managing of meadows. The farms have 5 workers, from who 2 are dealing with soap making, 1 is contracting and helping mainly other farmers with different things (project management, buying machineries ect.), 2 (father and daughter) are dealing with animals and meadows. They have around 30 ha under meadows, ca 400 animals (goats, sheep, pigs, cattle), from which ca are 100 goats and manage total around 200 ha of land. The farm has been in this place centuries and the history of place goes back to the $14^{th}$-$15^{th}$ century. The last time the when one of the meadows (on the best soil – red soil) was ploughed was after Second World War as there was urgent need of food. After that and on others meadows no ploughing have been done. The main reason is that the soil is very shallow on limestone.

The goal of the farm today is not to get the highest production but to manage with lowest cost and lowest external input with highest quality of fodder for animals to get quality production (sheep meat, goat milk). They use only herbal fodder, not giving extra energy or protein with concentrates. They make haylige (dry silage), what contains 10.9 – 11 MJ/kg energy in dry matter. Making hay needs 5 to 6 dry days, but haylige is possible to make with 3 days. As there is restriction to cut grass before July 15$^{th}$, there is no sense to make silage as the grasses are almost dry anyway. Storage of haylige is easier as well – no need for storage place, it can left outside as it in plastic. They are able to make up to 250 haylige balls per day. They use straw as well, but they buy it. They keep only local breeds as they are able to survive just with local fodder – grass. They are able to get 2.9 to 3 litres of milk per goat in the beginning of lactation and 1 – 1.5 litres in the end of lactation. With extra energy supply they would get 4 – 4.5 litres per goat, but that's not their goal. The lactation of one goat can be up to 18 months, but their goats calve every year (usually in February). The fat content of the milk is 4.5 – 5%, for some special breeds up to 9%. They milk goats twice per day on milking place (for 5 goats at the same time). The current production is enough for making soap. This is the first year for them to make soap and they market it on road side and in local market. The plan is to go to the farmers markets. They don't sell the milk for food production because of special rules for that. The extra milk they use for lamb and also calf feeding. Their main income comes from lamb meat selling and from agro-environment scheme support to meadows restoration (65 pounds/ha for grazing and 200 pounds/ha meadow restoration). Without any support system, the price of the final product (lamb) would be 3 – 4 times higher as it is now (1 pound/kg). The farm joined with agro-environmental scheme in 1991. They produce mainly organically but they are not certified organic producers as it is difficult to market the product in neighbourhood. The profitability of goats is higher than of sheep with 200 pounds/animal and 60 pounds/animal, respectively. However the cattle and sheep are needed to manage grasslands.

From 30 hectares on 25 ha they collect haylige for themselves; 5 – 6 ha are used to cut green hay or seeds and give as donors to restore other meadows. In such a way the restoration is around 20 ha per year. They have all needed machinery for cutting and rolling green hay, collecting seeds and making haylige. With their machinery they help other farmers as well. Their machines are quite small, as there is serious problem of grasslands compaction on small fields. They don't dry seeds; the cut out biomass is collected to the baskets and spread onto the existing grassland. To have better soil contact the grassland is harrowed after seeding.

To fertilize the meadows they use cattle, sheep and goat manure – 2 tons per acre every year. They will make one cut per year for haylige or for green hay, after that it's only grazing. Usually first cattle grazing and after cattle sheep, because of that no need for cutting after grazing.

On restored meadows they have around 70% of flowering plants and 30% of grasses (see pictures).

(a)

(b)

(c)

*Photos: Mr. Hunter explains haylige content and quality (a); restored meadows (b and c) (Author: E.Reintam)*

## 8. Visit to Sprint Mill in Kendal

***Date**: October 1, 2014*
***Goal:** to meet Mr Edward Acland and see his meadow management; to meet Steve Tomlin, scythe tutor and see how meadows have influenced his business; to hear about Meadow Life project, the Cumbrias hay meadow project.*
***Reporter:** Ebdla Reintam (Estonian University of Life Sciences)*

*Photo: A.Ruskule*

After lunch in Sprint Mill Mr and Mrs Acland introduced their farm and activities, we made tour around the farm, saw scythe cutting and after the tour were listening the presentation about Meadow Life project.

The Sprint Mill is old wool mill from 1814-s. The current owners bought it 45 years ago in very bad conditions. The mill building walls were collapsed from some parts. The total land area is 15 acres (6 hectares) in 3 different parts: former grassland, wooded area around river and woodland 2 miles away in separate part. The owner is concerning about usage of planet Earth and in that reason his goals are to protect and increase biodiversity without extra input (fossil fuels energy) just with hand power. They got a grant to restore the mill house.

Under the restoration and biodiversity increase is around 6 – 7 acres field bayed 27 years ago. It was empty one piece grassland surrounded by stone wall. Now it's divided by 10 subdivisions (see the map), including orchard, hazel coppice, oaks, ash, biomass willow (8 different species), meadows ect. They don't have their own cattle or sheep, but allow others to graze there. The Shetland cows (2) are eating there for 3 to 4 weeks. They intent to increase wooded area and they grow seedlings themselves from local material. For example, to get hazelnut seedlings they put nuts with soil to the plastic box, store it over the winter and then they will have in spring already small seedlings. They plant 1 year old trees, coppice them after one year and again after 8 – 9 years (for peas sticks). It is important to protect the young threes at least 2 years against deers. If to coppice the trees not from the ground but higher, there will be no such deer damages. They created hedges between the subunits to stop south-west winds. The management of hedges is in old style – cutting branches after every 2 years (not in every year) and leaving the branches there. It is good for birds and wildlife.

Under the orchard they cut the hay by scythe and it's done by Steve Tomlin. He is propagating scythe in England and the scythe came more and more popular during last 10 years. He is organizing scythe contests and teaches how to cut with scythe.

To bring more diversity to meadows they plant new species after cattle grazing in autumn before its getting to could. It is important that the plants have time for rooting before could time. There have been planted over 23 species during last 4 years. They grow the plant seedlings themselves.



(a) (b) (c)

*Photos: Mr Acland (a); Mr Tomlin (b), plants ready for planting (c) (Author: E. Reintam)*

**Meadow Life project in Cumbria** (see for more information www.cumbriawildlifetrust.org.uk):

Started in 2013. The main goals are: hay meadow enhancement/restoration; set up and run plant nursery at HMP Haverigg; use of volunteers for survey; deliver a programme of hay meadow events. The sits are all over the Cumbria – donor sites, restoration sites, ect.

The important step is the baseline survey of meadows, identifying and removing weeds, harrowing the sites, spreading of seeds and green hay. Its around 67 ha restored, the goal is ca 130 ha. They trained 46 volunteers, who surveyed 40 ha in 2013 and 36 ha in 2014. Its have planted 28000 plants in 8 different locations in the help of more than 40 volunteers. In HMP Haverigg it is plan to grow 20 000 plants for the year 2016. In the project they organize different events: painting days, exhibitions, scything days, felting days, guided walks. The farmers involved to the project have contract and they will be supported under agro-environmental scheme. Maximum allowed number of sheep is 4 per hectare and the shortest grazing of grass is allowed not less than 2.5 cm.

# 9. Visit to Colt park meadow research station at Ingleborough National Nature Reserve

***Date**: October 2, 2014*
***Goal**: To get acquainted to Colt park meadow research station and talk with scientists about long term trials at meadows.*
***Reporter**: Dana Prizavoite (University of Latvia)*

*Author: S. Brewer*

The UK study tour concluded with a visit to the species-rich wildflower hay meadows at Colt Park on the Ingleborough National Nature Reserve, under the guidance of Natural England's Senior Reserve Manager at Colt Park Mr. **Colin Newlands** and Yorkshire Dales Millennium Trust's Hay Time project officer Mrs. **Tanya St. Pierre**.

At the outset Mrs. **Anda Ruskule** explained the Viva Grass project goals and the goal of visit to England. **Tanya St. Pierre** and **Colin Newlands** introduced with Ingleborough National Nature Reserve. Ingleborough is one of the famous Three Peaks of the Yorkshire Dales National Parks. Together with Pen-y-ghent and Whernside, this mountainous area is renowned and protected for its special wildlife, geology and spectacular scenery. More habitants are included in European Habitats and Species Directive - limestone pavement, limestone grassland, alkaline flush, upland ash woodland, juniper scrub and blanket bog habitats. The area of territory is 1012 hectares. Site of Special Scientific Interest is 5.23 hectares. First National Nature Reserve (NNR) at Ingleborough was Colt Park wood purchased in 1962. Ingleborough NNR base at Colt Park Barn established in 1990 and reserve officially opened in June 1993. Most of the land is managed by Natural England (the government's advisor on the natural environment) and others nature organizations - the Yorkshire Wildlife Trust and Yorkshire Dales National Park Authority. Ten farmers are grazing sheep in the reserve. 90% of the reserve is mapped as Open Access land, and can be visited throughout the year. This is popular place to visit, especially, at holidays. This place is not only important for nature conservation, but for landscape too, because people have lived in and farmed this area for thousands of years.

**Colin Newlands** told about Colt Park meadows management research. The meadow management experiment being set up in 1989 in one of the meadows next to the NNR office. The partners in this research were English Nature and University of Newcastle. Before this experiment meadow was poor with plants and fertilized. At the meadow was established three blocks with experimental plots, where each of them was different managed – grazed, cut, fertilized and added seeds. The most important aspect of the results was the discovery that there was a combination effect. The best practise of meadows restoration and management are cutting on 21$^{st}$ July, grazing in autumn and spring with adding seeds and without fertiliser. Very important from meadows plant species is Yellow Rattle *Rhinanthus minor* which suppresses aggressive plant species and helps develop biologically valuable species. The minus of species-rich wildflower hay meadows is that hay is less than 1/3 as in intensively managed meadows. **Tanya St. Pierre** added that from 1999 University of Lancaster is realized meadow monitoring in this station. Every year each experimental plot they manage as before and every second year they characterize species botanical composition. Now they are inferring that plant roots keeps carbon more than realised in biological grasslands. Better photosynthesis process and nutrient circulation are in species – rich grasslands. They hope that with this research results they will be able to influence government policy and money distribution to farmers.

# Programme for the LIFE Viva Grass project (project no: LIFE13 ENV/LT/000189) study visit tour to Lancashire, Cumbria and Yorkshire

(29 Sept – 3 Oct 2014)

| 29/09/14 | 30/9/14 | 1/10/14 | 2/10/14 | 3/10/14 |
|---|---|---|---|---|
| • Arrivals at MAN Airport<br>• Transfer by train to Lancaster (2 pm)<br>• Check into the Royal King's Arms Hotel<br>• Informal afternoon in hotel library with talks about the Hay Time project and the VIVA GRASS LIFE project<br>• Evening meal in café/restaurant close by | • Breakfast @ hotel 8am<br>• Bus departs 9 am<br>• Visit to Laund Farm, Chipping to meet Simon Stott and his sheep milking enterprise<br>• Visit (with lunch available at £5/head) to Bell Sykes Farm, Slaidburn to meet Peter & Lynda Blackwell, their meadows and see how they have been involved in the Hay Time project<br>• Return bus to Lancaster for free evening | • Breakfast @ hotel 8am<br>• Bus departs 9 am<br>• Visit to Piper Hole, Ravenstonedale to meet Mr. Hunter and see how his meadows have been involved in the Coronation Meadows project<br>• Visit (with lunch available at £/head) to Sprint Mill, Kendal to meet Edward Acland and see his meadow management and meet Steve Tomlin, scythe tutor, to see how meadows have influenced his business<br>• Visit to Cumbria Wildlife Trust offices to meet the team there and learn more about their meadow projects<br>• Return bus to Lancaster for evening meal in café/restaurant close to the hotel<br>• 7.30pm – talk from the Lancaster Bee Keepers in the hotel Library Room | • Breakfast @ hotel 8am<br>• Bus departs 9 am<br>• Pick up a packed lunch from local shop<br>• Visit to Colt Park meadow research station, to see the long term trials and talk with the scientists researching the meadows, their potential for carbon sequestration and the role of meadows in supporting pollinating insects<br>• Lunch on site and then bus return to Lancaster<br>• Free afternoon and evening in Lancaster (city guide maps will be provided) | • depart by train for return journey to MAN airport and onward travel home |

# Route of the study tour