



**LIFE06 NAT/S/000113**

**FINAL REPORT**

Reporting Date

**31/01/2012**

LIFE PROJECT NAME

**Restaurering av våtmarksområdet Hejnum Kallgate**

Restoration of the Wetland Area of Hejnum Kallgate



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**Restaurering av våtmarksområdet Hejnum Kallgate**  
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<b>Project start date:</b>	<01/09/2006>
<b>Project end date:</b>	<31/08/2011>
<b>Total Project duration (in months)</b>	<60> months
<b>Total budget</b>	<b>617.112€</b>
<b>EC contribution:</b>	<b>Max 381.287€</b>
<b>(50%) of total costs</b>	
<b>(50%) of eligible costs</b>	

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## 2. Key-words

LIFE-project, Natura 2000, restoration, management, grazing, wetland, hydrology, bog woodlands, alkaline fens, *Euphydryas aurinia*, *Cypripedium calceolus*

## 3. Executive summary

During 2006-2011 the beneficiary, the Administrative Board on Gotland, has been running the project "Restoration of the Hejnum Kallgate Wetlands" within the framework of the EU LIFE fund, financing 50 % of eligible costs. Apart from EU, the Swedish Environmental Protection Agency (25 %) and World Wildlife Fund (2 %) have also contributed a large share of funds.

When Hejnum Kallgate was suggested as a Natura 2000-site, the idea arose to carry out a LIFE-project with the overall objective to restore and preserve this 950 ha large wetland area, with its unique natural habitats, together with plants and animal species in need of protection. This goal should be achieved by cautious clearance of overgrowth and restoration of grazing, which should favourably affect the valuable natural assets of the area.

Expected results of the project were: hydrology throughout the area should remain undisturbed, and the total area of existing habitats should remain constant. No damage from tramping should occur and the pressure of grazing should be evenly distributed. The area managed with methods aimed at nature conservation should expand. Hejnum Kallgate is the main locality on Gotland for the Marsh Fritillary (*Euphydryas aurinia*). The LIFE-project goal was to increase the butterfly population during the project period by 50 % from 242 larvae colonies invented in 2004. The project was also aimed to protect Gotland's sole locality for the Lady's slipper (*Cypripedium calceolus*), and the number specimens should be constant (500-1000), or preferably increase. Beside management actions, the project also should make facilities for the public awareness of the area, such as arrangements of walking trails and production of information material.

The project has carried out a hydrological study and an aerial photograph study. A 20 km permanent fencing around the outer border of the area has been constructed, enclosing the two main larger areas of grazing. In 89 ha of different management areas, 82 ha of overgrown areas have been manually cleared within areas that will be transferred into EU's environmental support programme, and thus grazing is secured in the nearest future. At present 73 % of the area is now grazed. Two waterholes have been drilled, and four permanent cattle pens as well as five cattle grids have been constructed to facilitate animal care. A 2,3 km traditional Gotlandic pole fence has been built as a barrier along the Slite-Visby highway, and an outlook tower has been constructed just outside the Natura 2000-site. From the information centre, surrounded by a traditional pole fence, the public can reach an 8, 2 km long, partly boarded, hiking trail arranged inside the wetland area. The project partner Gotland University has made continuous monitoring of specific plant species in the project. Established permanent plots will be used for future monitoring as part of the After-LIFE Conservation Plan.

The project has produced one brochure and one leaflet, that both were released in a Swedish and an English edition. A very detailed map have been made and printed to be available at the information centre, together with other information material, e.g. boards and brochures.

Information boards about the Marsh fritillary and Lady's slipper have been constructed, and one 16 ha large rich fen area has been gently thinned to increase the mosaic of rich fen openings suitable for the Marsh fritillary. If this will benefit this sensitive butterfly species remains to be seen. Future monitoring, as part of the After-LIFE Conservation Plan will follow this up.

Below is a table showing dates of products and milestones and their delivery to the Commission

**Table 1.** Key deliverables and outputs

Deliverable or Milestone	Number of the associated action and type of publication	Deadline	Delivery to EC
Progress report 1	F1	30 June 2007	30 June 2007
Progress report 2	F1	31 October 2008	31 October 2008
Aerial photo study	A2, website	31 December 2007	31 October 2008
Hydrological study	A3, website	31 December 2007	31 October 2008
Website	E8	30 June 2007	31 October 2008
Midterm Report	F1	31 October 2009	31 October 2009
Species inventory 1	D2, website	31 October 2007	31 October 2009
Brochure (Swedish/English version)	E7, 2000/1000 copies, info centre	30 June 2008	31 October 2010
Species inventory 2	D2, website	31 October 2008	31 October 2009
Progress report 3	F1	31 October 2010	31 October 2010
Folder (Swedish & English version)	E8, 1000/500 copies, info centre	30 June 2009	At the end of March 2011
Species inventory 3	D2	31 October 2009	Cancelled
Map over the area	E6, info centre	30 June 2010	First proof 31 October 2010. Final proof with the Final Report
Species inventory 4	D2, website	31 October 2010	With the final report
Ending of the project	F1	31 August 2011	
Final report	F1	30 November 2011	31 January 2012*

\* This delivery date was approved by the Commission in an e-mail from 14<sup>th</sup> of December 2011.

## 4. Introduction

Hejnum Kallgate contains Gotland's largest continuous wetland, with exceptionally distinctive hydrologic conditions. The area lies on marl-limestone covered by calcareous mud and is a unique area with a great richness of threatened species. Several species and subspecies are endemic to this area. The LIFE-project was located in a 950 ha area and involved 13 landowners. In the area occur both managed and unmanaged parts. At present 73% of the Natura 2000-area is grazed by cows. The area is part of the Natura 2000 network (SE0430147) designated under the Habitats Directive. Habitats targeted within this project have been: *Juniperus communis* formations on heaths and calcareous grasslands, Alkaline fens, Fennoscandian wooded pastures and Bog woodlands. Species targeted have been Marsh fritillary *Euphydryas aurinia* and Lady's slipper *Cypripedium calceolus*. Threats identified to habitats have been: wear and tear of the area, such as changed hydrology, heavy tramping and forestry, overgrowth by ceased grazing or too intense grazing. Threats identified to targeted

species have been: picking and wear and tear on the population of Lady's slipper and, extinction of Marsh fritillary caused by too intense grazing.

The future favourable conservation status of Hejnum Kallgate is wholly dependent on the preservation of its habitats and species. For example, the southern part comprises a barren ephemeral swamp with thin layers of lake marl, which is a totally unique habitat, and cannot be found elsewhere. The vegetation within this area is sparse but rich. The profusion of herbaceous flora is remarkable, considering areas with barren soil conditions and the area hosts an array of butterfly species worth protecting, and one of them is Marsh fritillary.

On the whole, the wetlands of Hejnum Kallgate comprise the sole large non-arable wetland area of marlstone on Gotland. In 2001 farmers in the area started a relatively intense grazing, and at the same time parts of the forest were cleared significantly for the benefit of pasture. Some of the sensitive wetlands were badly damaged by tramping.

Most of the area was earlier grazed, but has since the end of 1950 been slowly overgrown by young juniper and pines. The aim of this LIFE project has therefore been to restore this area in a careful, gentle way and open up for pasturage with nature conservation in view, as well as making it safeguarded from different types of disturbance, which might otherwise be detrimental to its unique flora and fauna. Thinning has been performed by personnel of the County Board, the partner Skogsstyrelsen, as well as by smaller local companies. Grazing impact on the occurrence of specific sensitive species defined by the project have been monitored throughout the project period with methods testing both transects and permanent plots. Results suggest that the method of monitoring permanent plots have been the most successful method for the purpose of this project. The monitoring has been performed by students of the partner Gotland University.

Certain measures were carried out to improve grazing practices within the area. Permanent fencing, cattle pens and more long-term solutions in terms of livestock-handling have facilitated grazing and animal care. Lighter-weight cows were pastured where the risk for damage to the ground surface is great, for example close to the Marsh fritillary's main reproduction area. Timing for letting the animals out to pasture have also been varied depending on the ground conditions and weather.

Several facilities for public awareness of the area were performed in the project, e.g. an information centre, a hiking trail, an outlook tower, information signs, brochures and a detailed map.

Overall, this LIFE-project definitely have made the landowners, and farmers grazing the area, more aware of how they, in a sustainable way, can manage the land without harming habitats and species that should be protected. The project has also made this unique wetland area more accessible to the public.

## **5. LIFE-project framework**

### **5.1 Working methods**

The working methods largely follow the original grant agreement, but two technical modifications as well as a budget modification have been approved by the Commission after the Midterm Report (see section 5.3).





Above is a schematic timetable presentation of the different project actions included in this LIFE-project. Some of the activities were delayed as indicated in the table, and two of the actions was deleted e.g. construction of a parking lot (E2) and clearing of regrowth (D1).

Technically the project contains no innovations in areas such as management actions. In the management of this area in question, Hejnum Kallgate, it has been extremely important that this sensitive and wet area should not be damaged by the maintenance that is performed. All clearing work has been manually performed. The timber was removed from the area either by horse or by a so-called "iron horse", which is a type of a very small band wagon. Besides in this sensitive wetland, a large custom-designed band wagon was used to run out the wood needed for the boarded point. The cut shrubs from clearings were burned on site. With regard to livestock husbandry grazing periods and kinds have been varied and monitored.



Transport of timber: a, with the "järnhäst", b, with a band-wagon

Activities of clearings have been performed inside the Natura 2000-site (see Annex 1), while certain arrangements or constructions have been placed also outside the area, i.e. information centre, outlook tower and one of the catch pens for handling of grazing animals.

Two different tests for the monitoring of specific vascular plant species have been performed by the partner Gotland University, which hopefully lead to a method that can be used in monitoring the effect of future managing on the most sensitive plant species.

The project has constructed facilities for the public to be able to experience the area. It includes of course information materials, but also for example, observation tower and hiking trail. The tower has attracted many visitors, particularly from the near local district in Hejnum and Bäl parishes. The hiking trail and the detailed map, which was completed in the project, will certainly be valuable tools making this unique area known to the public.

## 5.2 Project administration, beneficiary, partners and organisation

The project beneficiary has been the County Administration Board of Gotland. The project was managed by a project team consisting of, from the County Board, the project leaders, Anna-Lena Fritz (Conservation team) and Gunilla Lexell (Rural and Farming team). Also included, have been two men representing the County Administrative Field Working team. One of them has had the role to act as coordinator for the team that takes care of clearing and fencing. He also managed the procurement of the material required for fences and footbridges (Tage Wickström). Retirements during the project period have caused replacements by other persons from the County Administrative Board, to act as supervisors for the County Board



Field Working team (Bertil Ekedahl and Alf Lindwall). The project group through the years also has included three to four land owner representatives. The landowners represented both those who keep livestock husbandry at the Natura 2000 site as well as those without any grazing animals.

In the County Administrative Board's internal group for the compilation and monitoring of the economy in the project, in total, three different persons have participated during the project period (Kjell Nilsson, Henric Lavergren and Gullvi Jakobsson). Work with the website and advertisements also involved one person (Lena Hultberg) that is a Communication Officer at the County Board.

Except during the summer holidays, the project team has held meetings about once a month in Hejnum parish centre, which has been perceived as quite sufficient. In total, it held 32 meetings since the project started. All meetings, except for field tours, are recorded and are available on the Swedish page of project website [www.life-hejnum.se](http://www.life-hejnum.se). In the section on guided tours and information sessions (E9 and 10), see a list that summarizes the information meetings held in the project.

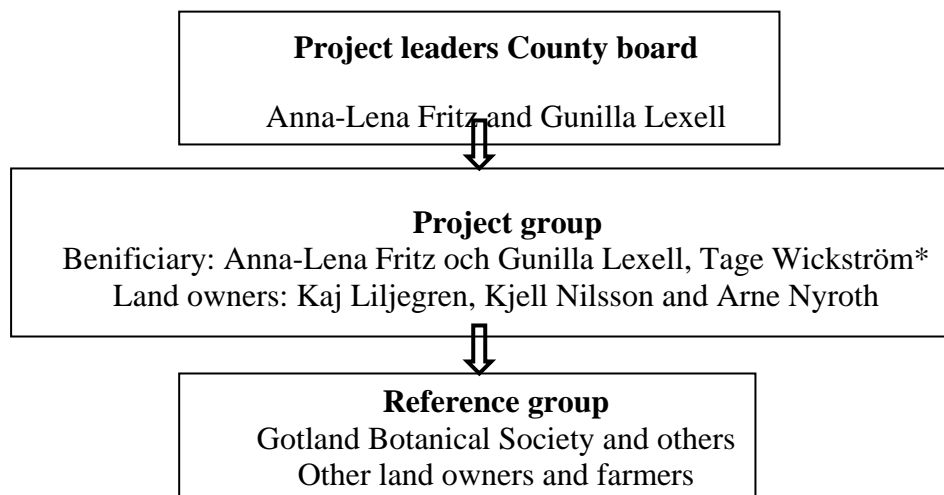
At start, the project involved four different Partners. Because of problems with financial reporting of personal costs by the partners, all of them but one partner, The Gotland University, where withdrawn as partners from the project. The technical responsibilities of these former partners where therefore taken over by the beneficiary.

The partner Gotland University has been responsible for monitoring specific plants species in the project area, Activity D2. Follow-up was carried out by students who carried out the work as part of a project or thesis. The University has contributed mentorship to students in the project which corresponds to a lecturer for about one week a year during the project period. This mentorship has been performed by the senior professor Karin Bengtsson.

At the very late stage of the project a second modification was conducted, including a new partner, the Swedish Forest Agency (Skogsstyrelsen) fo the time period 1<sup>st</sup> January-31<sup>st</sup> August 2011. For more information, see the text below under the Second modification headline in part 5.3.

## Organigram

### Organisation – RESTHEJK



\* Replaced by Bertil Ekedahl after retirement

## 5.3 Project modifications

### First modification

During the project's progress, certain issues were raised that led to a necessity for a modification of the project in relation to that given in the original grant agreement. A modification request of both the technical and budget part was thus submitted and approved by the Commission 7<sup>th</sup> of May 2010, and a new agreement signed on 27<sup>th</sup> of August 2010.

Due to some reduced costs, the budget was modified. However, the financial support from the Commission remained 50 % of the total eligible costs mentioned in Annex 1 of the Grant agreement, with a maximum of 381.287 euro.

The main changes composed reductions in the total area of land that should be thinned (C1), from 156,2 ha that originally was actual for clearing activities, to ca 90 ha in the new agreement. There were 82 ha cleared in the end of the project. Areas excluded from thinning will not be grazed. The reason is that *Euphydryas aurina*, among other species of butterflies is very sensitive to grazing activities. Despite the fact that some parts were excluded from grazing, less comprehensive clearings were performed in rich fen areas where juniper bushes were denser. A nearby very similar area was left uncleared as a future reference area to evaluate the effect of thinning on individual density of *Euphydryas aurina*.

The action of clearing re-growth (D1) was also excluded. The reason for that is that cleared areas as soon as possible after clearing will be part of the EU's environmental support, so funds from the project could not be used to double finance this activity. For areas not intended for inclusion in the EU's environmental support, there was no need during the project time to perform more clearing activities. Further thinning of re-growth will be part of environmental support schemes.

The action E2 Parking place was also excluded due to its unsuitable location at along a very busy highway.

During the extremely wet summer of 2009, repeated also 2010, the project realized that a very large part of the planned hiking trail (E3) in the wetland area needed a boarded point. The more expensive construction of a boarded point therefore had to be included in a budget modification. The shorter, boarded point, as well as the enclosures planned at the Lady's slipper locality was excluded and instead replaced by signs leading and informing visitors at the site.

Because of misunderstandings about partners participation, we had to exclude them all, except Högskolan (the Gotland University), as partners in the project. This fact of course also needed a budget modification.

### Second modification

The second modification was conducted at the very late stage of the project, and involved a partnership modification adding a new partner to the project. The reason for the need of this second modification was administrative changes within the organisation of the Beneficiary. Forestry Board (permanently as well as temporarily employed to implement the actions C1 –

C4, E1, E3 and E4 of the project) from 1 January 2011 became their own authority, Swedish Forest Agency's (Skogsstyrelsen), which means that their costs in the LIFE-project, from being personnel now fell into the category of external assistance. This has the effect that the project could not be able to follow the financial rules set by the Common Provisions of article 13. Thus the Forest Agency was added as a partner from the first of January 2011, which together with the beneficiary, the County Administrative Board were responsible for implementing the actions C1, E1, E3 and E4. This supplementary agreement No. 2 was signed by the Commission the 22<sup>nd</sup> of August 2011.

## 6. Progress, Results

### A. Preparatory actions/management plan preparation

#### A.1 Working plans

Planned cost: 10 843 € Outcome: 10 695, 84 €

Before the project started, in connection with planning the application of a LIFE project, an inventory of the area Hejnum Kallgate was conducted with respect to point out parts where it could be appropriate make thinning activities and to reintroduce grazing. The basis for the desired structure was different depending on individual management areas. The expected structure was planned with nature conservation in mind, but also with the hope that these areas could classify as being parts of the EU's environmental support. This inventory thus was the ground for the management areas in the LIFE project.

A total of 14 management areas were treated in the work plan, of which finally nine were cleared in the project. The reason for this is described in more detail in the section C.1 (Thinning).

The working plan has been written and continuously updated for different management areas. The plan was drawn up by the project managers. It describes, except general goals for the areas, also the percentage shrubs and trees that would be removed in specific areas. In the first areas that were cleared 2007, the project leaders marked individual bushes and trees that should be cleared away. In the first two management areas, cleared in late 2007 and early 2008, we also counted the total amount of trees and bushes that were removed to get an impression of the total amount of thinning that was needed (see table below). The both management areas had approximately the same size, but area no 34 was much more densely overgrown.

The table below shows the number of marked trees and bushes that was cleared in management area no. 34 and 39.

Management area no.	<i>Juniperus communis</i>	<i>Pinus sylvestris</i>	<i>Picea abies</i>	<i>Taxus baccata</i>	<i>Prunus spinosa</i>	<i>Other brushwood</i>	Sum
34 (2,5 ha)	2005	131	21	25	101	492	2775
39 (2,6 ha)	284	20	7	6	82	335	734
Sum	2289	151	28	31	183	827	

## A.2 Aerial photo study

Planned cost: 4 788 € Outcome: 3 420, 98 €

This cost was lower than planned simply because the consultant gave us a lower quote compared to budget.

The report, written in Swedish, is available at the project home page.



This study was conducted by a consultant early in the project, to set a base knowledge of the development and impact of the landscape of the Natura 2000 sites Hejnum Kallgate and Kallgatburg in Hejnum parish between the years 1958 and 2006. The basis of the study has been aerial photographs from the years 1958, 1974, 1986, 1999 and 2006. The images from the years 1958 and 1974 consisted of black and white paper images at a scale of 1:30 000. The pictures were of moderate quality. The images from the years 1986 and 1999 consisted of infrared colour images on film at a scale of 1:30 000. These pictures were of good quality and readability. The pictures from the year 2006 consisted of digital images with a pixel width of 0.48 meters.

The later photo pictures had a very high quality and outstanding readability. In addition, a geological map as well as topographical and economic maps was used. The area was also visited in the field. Flight photographs were interpreted using a stereoscope. Flight screens were also photographed electronically, geocoded and processed by a digital mapping program where land use was documented digitally for each of the different years in which aerial photographs were available.

Results showed that approximately 20% of the forests in the two Natura 2000 sites Hejnum Kallgate and Kallgatburg were influenced by forestry. It should be said that the method used for this study could not detect selective cutting of individual trees in small areas. Natural values associated with older trees are in varying degrees affected by the forestry activity that occurred in the area. Field studies showed that in areas where clear-cutting has taken place natural values has dropped sharply, while several of the areas that was cut to a lesser extent still have a long continuity of mature trees which led to that these areas have retained much of their natural values.

The areas that are clearly influenced by the hydrological changes in the area are in the area's middle part, and cover large parts of Kallgatburg and the entire central area of Hejnum Kallgate. The effects have been that the central region has overgrown substantially, especially in the east. In the north part, the place Rövätar is to a small extent influenced by ditching conducted in the area. However, lager drainage was drawn through the wetland Orgvätar in the northwest part sometime between 1958 and 1974. The effect has caused a faster drainage and less prolonged water in relation to rainfall and high flows during winter months. Bälsalver in the south part of Hajnum Kallgate appears to be hydrological more or less intact. Almost no overgrowth at all is detected there.

The effects of grazing were visible in the 1958 aerial photographs. Thereafter, a forty-year period took place where traces of grazing became increasingly diffuse. Trails have become overgrown and the fence borders have become increasingly blurred.

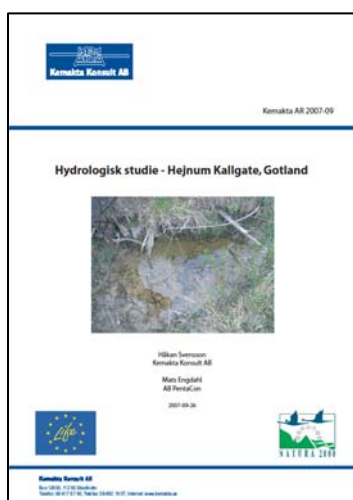
In the 2006 aerial photo, the effects of grazing have again become visible. Fence boundaries are clear. It can be seen also in the aerial photo that overgrazing in parts of the area is evident in comparison with the 1999 aerial photo. Images from 1999 and especially 2006 also include vehicle damage to an extent not previously occurred in the area.

### A.3. Hydrological study

Planned cost: 3 061 € Outcome: 4 930, 83 €

The cost for this action was higher than planned because the time required for field work took longer than that predicted.

The report, written in Swedish, is available at the project home page.



Like the aerial photo study, a hydrological study was performed early by a consultant at the initial phase of the project. The purpose of the study was to conduct a description of the hydrological situation in Hejnum Kallgate and identify the hydrological conditions that make the unique characters of this area. Furthermore, the impact on the hydrology of the various activities undertaken in the area was also investigated.

The wetlands within Hejnum Kallgate depend on a constant base flow of out flowing groundwater, a flat surface having slow runoff, and on the damping effect that the ridges from Ancyclus and Littorina provides. Hejnum Kallgate is divided into two basins.

Water flow in the area typically has two maxima, in the autumn flow increases in the area gradually until December due to a decreasing evaporation. Water flow declines thereafter slightly in January-February and then increase sharply in March as spring floods. During summer months, the water flow is low as an effect of a high evaporation and / or decreasing precipitation.

The area consists of a variety of unique habitats. Common to most of these habitats in Hejnum Kallgate is that they are more or less sensitive to hydrologic disturbances resulting from the increased drainage from the area and thus decreasing availability of water. Excessive damping is also not conducive to the wetland habitats; however, expected adverse effects due to backwater are not considered a problem in the current situation. In the Natura 2000 conservation plan for Hejnum Kallgate, current areas of individual habitat types should remain unchanged. Therefore, any efforts to promote hydrological conditions should rather be to prevent drainage than to expand the acreage of existing wetlands. The consultant recommended that assuming conservation objectives must be met; only minor ditches and breakthroughs in Littorina ridge initially should be added, as the effect of damping will be



slow. First after monitoring of the resulting effects, decisions can be made on further actions to take place.

## B. Land purchase

### B.1 Lease of land

Planned cost: 1 065 € Outcome: 1 163, 15 €

The small difference between budget and outcome is only due to exchange rate.

During the project period, an area on private land of 1.2 ha has been leased through a contract. At this area the information centre was established, surrounded by a traditional Gotlandic pole fence. The contract applies to the year 2056, and after the LIFE project has ended the County Board will continue to pay the rent.

## C. Non-recurring biotope management

### C.1 Thinning and logging

Planned cost: 148 631 € Outcome: 144 459, 48 €

The outcome of this action compared to budget was lower because some of the management areas was not so densely covered with trees and bushes, which made clearing less time consuming than expected (for example area no 58 in Bälsalver).



*Manual thinning and transport of small juniper bushes at Bälsalver (area no 58) in October 2010*

In connection with planning the application of a LIFE project, an inventory of the area Hejnum Kallgate was conducted with respect to point out parts where it could be appropriate make thinning activities and to reintroduce grazing. This inventory was the ground for the management areas in the project.

Clearing of the first management areas (no 34, 39 and later also no 9 (see map in Annex 1), started with the project leaders who in field marked bushes and trees to be removed. This was done to show the desired structures of a mosaic, grazed landscape with both open glades and

more dense areas. This was a time-consuming way of marking, but resulted in a very good experience for the field workers to get a picture of the desired result. Later in the project the field workers could make the clearings themselves, without premarking, based on instructions given by project leaders in working plans and directly demonstrated in the field.

First clearings were performed by the County Board “field working team”, but later also by hired companies. Through the whole project local farmers that keep livestock pasturing the area, have been involved in the planning (as part of the project group) and execution of thinning and logging.

In the Grant Agreement thinning was planned to be done in an area of 160 ha (exact figure was 156 ha, see Table 3 below). Due to several reasons, e.g. that some of the management areas should not be grazed and others already were part of the EU's environmental support, the Commission approved a reduction to ca 90 ha in the total area of thinning actions. In mid October 2010 the project performed the approved clearings in the most sensitive 16 ha area of Bälsalver. Table 3 summarizes the total number of ha of areas that were cleared within the project. The map in Annex 1 shows where management areas are placed in the Hejnum Kallgate project site. According to the 1<sup>st</sup> project modification, it was stated under action C1 that thinning should be performed at **ca 90 ha**. The exact size of the management areas were 84,9 ha, and excluding an area of a so called key habitat of 6,6 ha in area no. 39, there were in the end 71,8 ha cleared within the project.

A key habitat is a term used by the Forestry Board for areas that have been selected for having exceptional natural values of for example very old trees of continuity, dead wood, lichens etc. This specific area has a lot of dead wood and a denser cover of the nationally red listed species *Taxus baccata*, and was therefore excluded from thinning.

The final thinning approved by the Commission was a reduced area of Bälsalver covering 16 ha that was thinned in October 2010. These thinning of mostly very small juniper bushes and pine trees in rich fen areas were made, to open up these areas with the aim that they will become more suitable for *Euphydrys aurina*. A very similar type of area nearby was kept as a reference to evaluate the effect of thinning on individual density of *Euphydrys aurina*.

In summary, completed thinning has been successful. The desired structure with open glades, alternating with more or less intact groups of trees and shrubs have been strengthened in the management areas, which has been the objective of clearing in areas where grazing will occur. One objective of the LIFE-project in making clearings of these areas have been that cleared areas as soon as possible after clearing will be part of the EU's environmental support. All thinned areas have at this moment already been included or accepted to be included, into this programme.

All Natura 2000 habitats necessary to restore in the area Hejnum Kallgate area have been restored in this LIFE project. The aim of the project is thus reached and all wetlands are now in a favourable conservation status.

The table below lists the different management areas in this LIFE-project, their size and comments on why some of the original agreed areas were not thinned.

**Table 3.** Total thinning performed in the project compared to initial project agreement. Colours correspond to the map in Annex no 1.

Area No.	Area (ha) in original agreement	Actual area thinned	Comments
34	2,61	2,61	
39	13,50	6,09	6,6 ha is a so called key habitat, and was not thinned
15	7,01	7,01	
9	34,77	34,77	
12	5,40	5,40	
19	1,16	1,16	
4	4,50	4,50	
58	15,92	15,92	
36	4,49	4,49	
<b>SUM</b>	<b>89,36</b>	<b>81,95</b>	
16	0,97	0	The area was not meant to be thinned, but will be grazed
31	4,38	0	Located on the same property as <i>Cypripedium calceolus</i> , an area that is not grazed
52	1,83	0	The area has environmental support from EU
53	15,96	0	The area has environmental support from EU
54	5,86	0	To protect the sensitive <i>Euphydryas aurinia</i> , the area will not be grazed
56	34,29	0	To protect the sensitive <i>Euphydryas aurinia</i> , the area will not be grazed
57	8,05	0	The area has environmental support from EU
<b>SUM</b>	<b>71,34</b>		

As described in the section Evaluation and conclusions p. 38, there was a major forest fire in the northern part of Hejnum Kallgate, originating from burning of bushes in a thinned management area of the project (no 36). Approximately 40 ha of the Natura 2000 site were burned mostly in the habitat of alkaline fens. The consequences of the fire will be monitored, as suggested in the After-LIFE Conservation Plan. It will be interesting to follow ground vegetation recover. Already this summer new fresh vegetation established very soon after the fire. Orchids in the alkaline fen that was burned inside Natura 2000, did not seem to have been affected at all, while some of the very old and sparsely distributed trees, probably will die and fall. In cooperation with the Swedish Forest Agency, the County Board plan in early 2012 to put up traps to monitor protected insect species favoured by fire.

## C.2 Transport of timber

Planned cost: 20 263 € Outcome: 11 250, 07 €

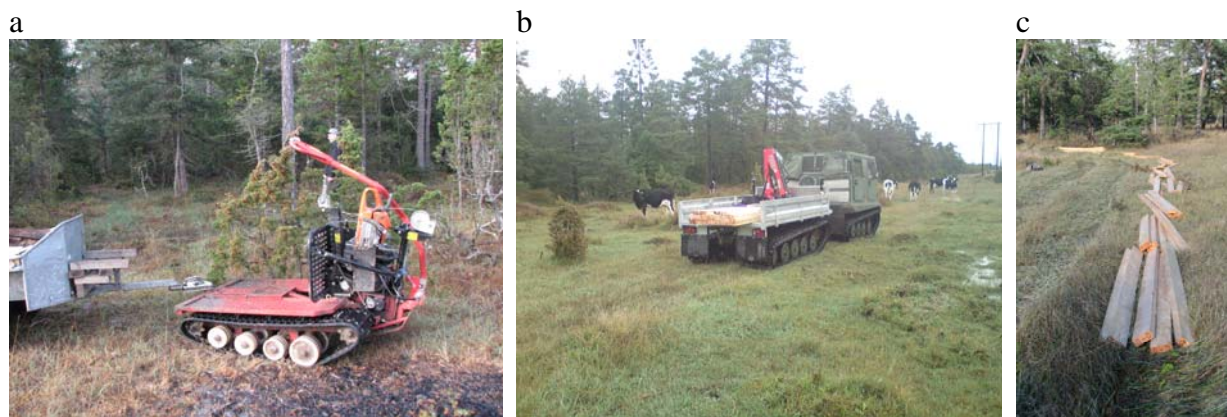
The cost was almost half of what was planned for this action. The main reason for this is the fact that personnel costs for this action are incorporated in the action of C1. Personnel in the field working teams have been taking turns to perform this task in connection with clearing. The transport also became very time effective with a small trolley connected to the “järnhäst” for transportation of the timber.

Thinning activities in Hejnum Kallgate have mostly generated lots of juniper bushes. The smaller ones have been burned at the place and the larger straight ones have been used as

material in building the traditional fences in the area. Small amounts of timber have however been transported out of the area, either by horse, i.e. area no 9, where one of the landowners used his own horses, or by the “järnhäst”, purchased within this activity. The timber was given for free to the different landowners. The project has not received any income for the timber. The “järnhäst” is labelled with a LIFE-logo.

The pictures below show the different work stages in the LIFE-project where timber was transported. The first picture show the “järnhäst” in action, and this machine was also later used in transporting planks along the way while constructing the boarded point. The main part of planks used for the trail was however transported by a band wagon.

One of the desired results of the LIFE project was that no human activity performed in the project should lead to damage to the ground surface. This result was thus met by using this kind of gentle vehicles for transportation.



*Transport of timber: a, with the “järnhäst”, b, with a band-wagon and c, planks along the boarded trail*

### **C.3 Fencing of animal enclosures**

Planned cost: 46 309 € Outcome: 56 009, 44 €

The higher cost for this action is for the first, an underestimation of the time it took at first to clear the fence routing, and second to put the fence up. It was at several places, hard to bring down the pillars in the ground, but second also the fact that the enclosed areas got 3,7 km longer than originally planned in the grant agreement. The route now follows the border of the actual area that is grazed within these pens.

Fencing of the area's main enclosures for grazing animals has been performed with permanent posts of oak and a three-wire electric fence. Most of the oak material comes from clearings of pastures restored in other nature reserves on Gotland. Thus only a smaller part of this material have been bought and financed by the project. In total this fence has a length of 20 km (see map in Annex 2).





The fence encloses the two major grazed areas at the Natura 2000 site, the north one is 175 ha and the central-south one is 587 ha.

The fence was set up by the County Administrative field working team. The first part of the work, to clear the fence area, took 171 (141) day's work to do, and the second part, to set up the fence took 155 (145, 5) day's work. Figures in parenthesis are day's work financed by the project, and the rest are field working men financed by money from labour market policies.

#### C.4 Fencing of the south part

Planned cost: 34 225 € Outcome: 39 895, 62 €

The difference between budget and outcome of this action was due to the fact that it took longer than planned to get the fence ready, mainly because work had to be suspended due to winter.

Several landowners in the most southern part of the project area had requested a traditional fence instead of the lamb fence as described in the original Grant Agreement. This technical change was agreed by the European Commission as a minor change and was approved in the letter from 11<sup>th</sup> of December 2008. The project has therefore put such a fence up at a distance of approximately 2 360 meters (see the yellow line along the highway 147 on the map in Annex 2). Along the rest of the distance, about 930 m, an electric permanent fence has been set up, similar to the other permanent fences. The traditional fence has attracted much positive attention. The fence has a sign with reference to LIFE and Natura 2000, see the added picture. Similar signs are put up in other parts of the area, for example at the outlook tower and the cattle pens.



Länsstyrelsen  
GOTLANDS LÄN



#### Här pågår ett LIFE-projekt

Tunet som avgränsar Natura 2000-området Hejnum Kallgate mot Slitevägen har finansierats med stöd från EU:s fond LIFE, för "Restaurering av Våtmarksområdet Hejnum Kallgate"

#### Frågor

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Visborgsallén 4, 621 85 VISBY, Tel: 0498-29 21 00, [www.lansstyrelsen.se/gotland](http://www.lansstyrelsen.se/gotland)  
[www.life-hejnum.se](http://www.life-hejnum.se)

*The typical Gotlandic pole fence, delimiting the area towards the road*



In all, six stiles have been put up at different places in the territory to facilitate climbing over fences. Three of them are placed along this south fenced part. Apart from enhancing the south end with an attractive framing, this fence also prevents undesirable vehicles from entering the sensitive area.

### C.5 Arrangements for animal care

Planned cost: 10 290 € Outcome: 36 353, 65 €

The costs for these arrangements were estimated far too low in budget. Especially the cattle grids became expensive due to high steel prices.

According to the project agreement, effective trapping devices for animal care should be arranged within the area. This could facilitate catching of animals at times with for example heavy rains, making the ground vulnerable for tramping effects. Six cattle pens were planned.

Tree places suitable for animal water supply should be arranged, as well as four cattle grids.

The arrangement of cattle pens have been changed in the project. The most southern one was planned to be placed in an area that should not be grazed, and was thus excluded. Far north two pens were suggested, but only one was needed. The other three left were moved to be placed in more suitable places. One of them had for example to be moved to an open place, from being suggested to be placed in a so called “key habitat” in the forest. To enhance the effects of the cattle pens, a grid system was bought to be able to arrange temporary catch gates, either in connection with the permanent pens, or as own arrangements. These temporary gates have been extremely useful in temporary actions where cattle have to be collected.



*Pictures of constructions facilitating animal care that was performed within the LIFE-project: one of the cattle grids placed near the main road, one cattle pen, and one of the drilled waterholes.*

In the case of water supply for the animals, the grant agreement suggested hose routing in the area. The cost of this was considered to be completely unreasonable, given the long distance and the fact that the hoses are to be located at frost free depth. This could mean a lot of destruction in the area. Instead, the project made two new man-made waterholes which provide good water to the animals. The waterholes may be used only for the animals.

So in total there were 4 cattle pens, 5 cattle grids and 2 waterholes made.

The technical changes of the activity were approved by the European Commission in the letter from 27<sup>th</sup> of January 2010.

The final places for cattle pens, cattle grids and waterholes are presented on a map in Annex 3.

### **C.6 Protection of Lady's Slipper**

Planned cost: 1 685 € Outcome: 1 047, 32 €

The difference between planned and real cost of this action was due to the fact that we unfortunately could not arrange payment to a “Lady’s Slipper guard”.

Lady’s Slipper *Cypripedium calceolus* is an orchid which has been added to the EU habitat directive list, and as in the case of the Marsh Fritillary, Sweden has undertaken to protect it within Natura 2000. There is a large population of Lady’s Slipper in the north part at Hejnum Kallgate, with every year about 500-1000 flowering stems. It was discovered for the first time in 1949, and ever since then numerous visitors have joined the pilgrimage to the site where the plants are in its finest bloom in early June. The Swedish Society for Nature Conservation on Gotland has participated for free in the project by arranging annual walking tours to the Lady’s slipper site for the general public.

The project plan in the Grant Agreement shows that there is a wear on the area where Lady’s Slipper grows, and the risks that plant site shall be subjected to vandalism and the excavation of seedlings, is very high. Therefore, the project plan included enclosures to be built at the larger accumulations of plants to avoid damage of plants, the path to the Lady’s slipper area to be made more easily walked through the construction of a boarded point, and that clear information must be displayed at the plant sites.

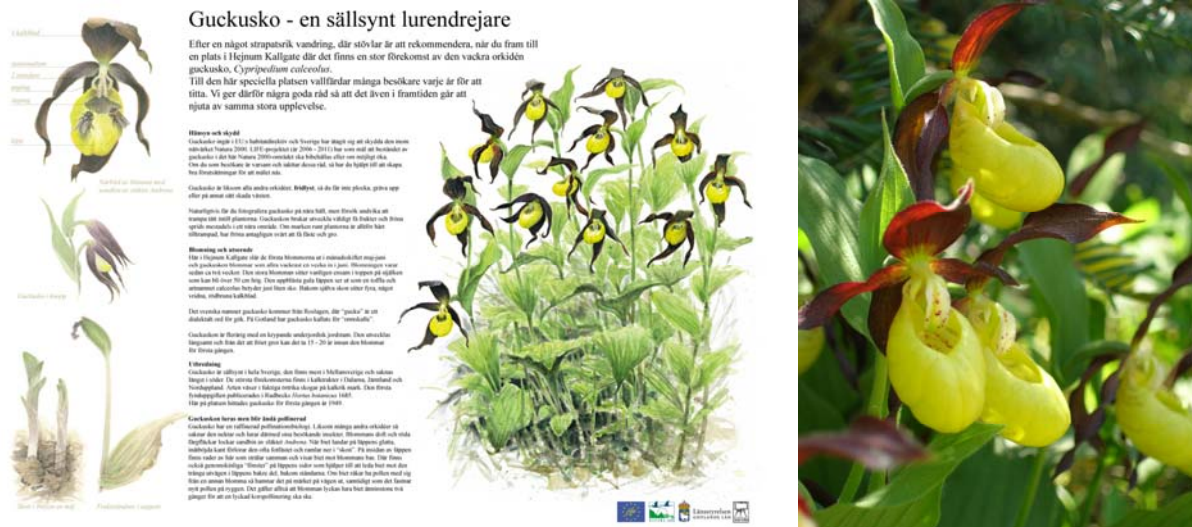
The aim of the project for Lady’s Slipper has been that the population at the Natura 2000 site shall remain intact or, if possible, increase. The aim of this activity is reached. Plants have not declined during the project. Future monitoring planned by beneficiary will show if this also will be sufficient for a long term protection of the species.

According to the landowner's wishes there was no footbridge to the locality with Lady’s Slipper, and groups of plants were not fenced. There are information boards placed in the area. The project contracted an artist to design the material and the beneficiary provided the proper text material. The place where the orchid grows is not very easy to find, so the project have also put up signs as guidance to facilitate for visitors. The goal will thus be achieved by means of specific information targeting the general public. The landowner has been very pleased that she has got an opportunity to give comments on the information text. Thus she also started to become a supporter of the project rather than an opponent.

Modifications for removal of the footbridge and payment of a “Lady’s Slipper guard” have been approved by the Commission in the 1<sup>st</sup> modification. Because of time lacking together with an early spring 2011, the project unfortunately could not arrange the action of a “Lady’s Slipper guard”. Anyway, the project has got very positive response from the public about this information campaign and presumably more than 1000 people have visited the area during the project period, and no damage was done to either the location or plants.

The fear of vandalism and the excavation of seedlings are probably exaggerated. To our knowledge, digging up plants have only occurred once, and that was many years ago. The project is fully convinced that the effort in this LIFE project, to put up boards with an interesting and informative text about the orchid species, its interesting ecology and some

rules of how to behave, is the best way to learn visitors to respect the Lady's Slipper at the species natural growing site. The project has got very positive response from the public about this information campaign.



### C.7 Protection of Marsh Fritillary

Planned cost: 2 843 € Outcome: 963, 32 €

The only cost for this action has been the production of information boards. Personnel costs for planning and writing the text for these signs are in action F1.

Hejnum Kallgate is the most important breeding locality on Gotland of the Marsh fritillary, *Euphydryas aurina*. One of the LIFE-project goals was to increase the butterfly population during the project period by 50 % from 242 larvae colonies counted in 2004, making thinning activities together with grazing. This should be achieved by easily moved protective fencing, around important breeding sites in the area, especially the central part, along the power line and experiments with lighter weight animals, grazing the area at different time.

Project experience have shown that the most effective way to protect the species of *Euphydryas aurinia* in this very important place of it's distribution on Gotland, is to keep the central enclosure (of 53 ha) intact where no grazing is allowed. This enclosure covers most of the area around the power line. This power line road is at regular intervals cleared from overgrowth by the local supplier of electric power, and have thus along the line formed a very suitable breeding locality for the butterfly species.

From the experience in the project and from the notes of experts it is concluded that the conservation status of Bälsalver, the most south part of Hejnum Kallgate, will be more favourable by not grazing this area, because *Euphydryas aurina* is very sensitive to grazing activities. The Swedish expert in this species, Claes Eliasson, have in several investigations seen negative effects from grazing in surrounding areas, (Eliasson, C. 2002, 2004 and Eliasson, C. et al 2009) and he and his colleagues strongly recommend that there should not be any grazing in Bälsalver. In his opinion the butterfly population is too sensitive to allow grazing experiments in this area.





*Euphydryas aurinia*: A, *E. aurinia* at Bälsalver B, a leaf underside of *Succisa pratensis* with an aggregation of *E. aurinia* eggs, and C, a part of Bälsalver with an open habitat where frost heaving has pressed the pine and juniper roots up towards the soil surface. In the front of the picture are *Gymnadenia conopsea* flowering.

In the LIFE Grant Agreement, it was noted that Bälsalver is overgrown by bushes and trees. According to the application this has a detrimental effect on plant species not able to compete, as well as lack of suitable breeding grounds for *Euphydryas aurinia*.

Bälsalver is very rich in orchids, including *Herminium monorchis* and *Gymnadenia odoratissima* among other species. There is also the much endangered species, *Eupoecilia sanguisorbana*, which is attached to its host plant *Sanguisorba officinalis*. The wetland form of this plant species occurs in great abundance at Bälsalver. *Sanguisorba* occur less frequently in the grazed areas. *Scopula virgulata* is another example of an endangered moth that in Sweden only occurs in a very restricted area of central Gotland, where Hejnum Kallgate is included. This species is probably also sensitive to intensive grazing.

There are many factors affecting the reproductive success of the Marsh Fritillary. Attacks of parasitic wasps and years with drought or extreme precipitation are negative for the development of larvae. The butterfly is dependent on *Succisa pratensis*, as a host plant for egg laying. The female butterfly lays all her eggs on the underside of a few *Succisa pratensis* leaves. She chooses leaves faced at the sun and that grows on a slightly elevated mound so that eggs and larvae are unlikely to be flooded. Intensely grazed plants become small and their leaves are pressed to the ground, which makes them unsuitable for egg laying.

The LIFE project study on historical aerial photos (Martinsson, M. 2007) showed that the area Bälsalver although grazing slowly ceased already in the 1970s, overgrowth is virtually non-existent. The reason is very special freezing phenomena occurring in the area due to its special hydrological regime. In fact we do not know anything about the historical distribution of the *Euphydryas* population in this area. In a follow-up study of sensitive plant species, our Partner Högskolan, interestingly have shown that plant individuals of *Herminium monorchis* and *Gymnadenia odoratissima* occurred more frequently in areas where nearby trees and bushes were larger, suggesting that these places are more suitable than open places.

Due to reasons presented above the project has questioned whether a 50% increment of the butterfly population is a realistic goal, and therefore also question whether it is useful to spend funds on thinning the area if future grazing is harmful to the species.

For reasons not foreseen in the project application, the project thus in the first modification request suggested excluding thinning in some parts of Bälsalver, which was approved by the

Commission. Despite the fact that Bälsalver will not be grazed, a 16 ha large area within the rich fens of Bälsalver in the south part of the Hejnum Kallgate area have been thinned with the aim of slightly open up the landscape where juniper bushes were closely placed in rich fen areas. Hopefully this will facilitate living conditions for *Euphydryas aurina* and other endangered species of butterflies in this area. A very similar type of area (no 56) was left without thinning, and will become as a reference area, in the future to evaluate the effect of thinning on individual density of *Euphydryas aurina*. Monitoring will thus continue to follow in accordance with the After-LIFE Conservation Plan.

The County Board will of course regularly make future monitoring of the species in the area (at least every 2nd year), to secure that the species will continue to be in a favourable conservation status according to obligations set by the habitat directive. If necessary, the grazing will be more regulated to suit the needs for the Marsh Fritillary.

## **D. Recurring biotope management**

### **D.1 Animal care and clearing of ree-growth**

Planned cost: 0 € Outcome: 0 €

Clearing of re-growth was deleted from the project in the 1st Modification (see section 4.6). The former Partner Hejnum hällar economic association was early in the project responsible for animal care and planning of grazing activities. They were later excluded from the project.

As known before this project started, and also confirmed by the aerial photo study, grazing activities were in part of the Hejnum Kallgate too intense for the very sensitive wetlands. In the conservation plan for Natura 2000 the grazing period normally includes grazing from 25 May to 15 October, and grazing animals may not be allowed in the area if it will be damaged by trampling. Experience have shown that this grazing period is too long and the LIFE-project has therefore tested to shorten this period to prevail instead between midsummer (ca 25 of June) to 25 September in the most sensitive, wet areas.

### **D.2 Monitoring of specific plant species**

Planned cost: 6 574 € Outcome: 7 729, 57 €

The cost for this action was somewhat higher than planned because of a raised salary for Professor Karin Bengtsson, during the project period.

Gotland University has co-financed the follow-up studies that were carried out on a number of protected species in the area. The inventory comprised the following species: Great burnet *Sanguisorba officinalis*, Devil's-bit scabious *Succisa pratensis*, Musk orchid *Herminium monorchis*, Short-spurred fragrant orchid *Gymnadenia odoratissima* L., and Fen pondweed *Potamogeton coloratus*. The populations of Great burnet, Musk orchid and Short-spurred fragrant orchid have been selected since they are of high natural value and the occurrence of these species indicate that the habitat is in a favourable conservation status. They are also species which swiftly react to changes.

The project partner Gotland University, conducted in 2007 an initial survey of the species described in the project. The method used is the same as for the national monitoring of Natura 2000 with semi-permanent sample plots located along transects (Enström 2007). The

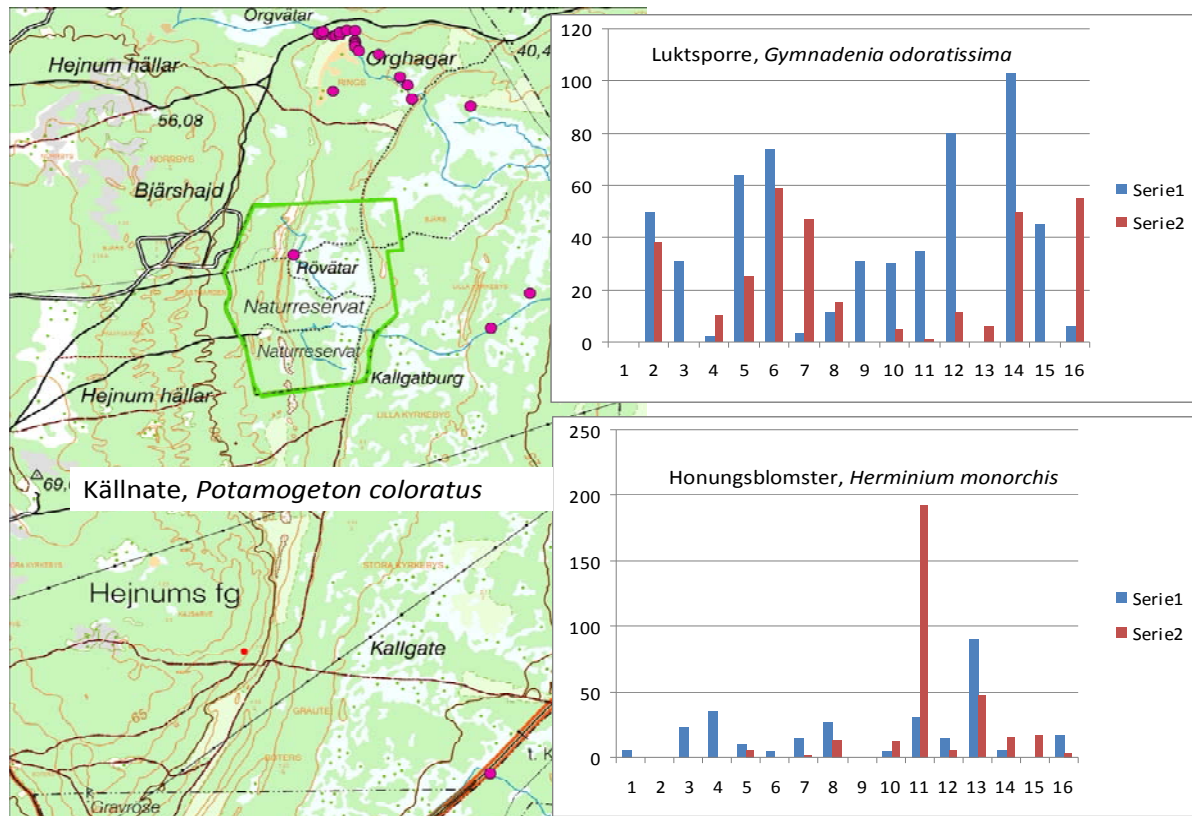


evaluation showed that the method was not really suited for targeting the specific species. However, the material gave a good picture of the coverage of tree and shrub vegetation in the surveyed areas. Monitoring with the transect method was very labour intensive and the species to be followed to a large proportion ended up outside the semi-permanent surfaces. Therefore, in 2008 the University instead made this monitoring with permanent sample plots. The species that was listed in the test surfaces were: *Sanguisorba officinalis*, *Herminium monorchis*, *Gymnadenia odoratissima* and *Succisa pratensis* (Persson 2009). Both publications are presented at the project website.

For the monitoring method with permanent plots, 16 permanent circular sample plots (28 m<sup>2</sup>, 6 m in diameter) were marked in the area. The GPS coordinates of the centre of each surface were recorded. A further 24 points were also marked with significant occurrences of the target species. The number of plants of the species *Herminium monorchis* and *Gymnadenia odoratissima* was counted. The presence of *Sanguisorba officinalis* and *Succisa pratensis* were assessed according to the criteria of general, less general and very rare for each sample plot.

In the sampled plots were monitored abundance of shrubs and trees, described in terms of size / (0-1m, 0-5m and 0-10m / general, less general, very rare), bare soil (%) and height of the grass tussocks (0 <10 cm , 10 <20 cm, 20 <30 cm). Other species found in the plots was also noted, as for example, different orchids.

Unfortunately our partner was not able to do any monitoring activities in 2009, as they are dependent on students making this work. However, monitoring was done in June and July 2010 by the student Klara Ståhlhandske. Part of her work is presented in the map and graphs below. The overall results from the study are presented in Annex 4 and on the project web site. The map show the inventory of occurrence of *Potamogeton coloratus* in the area and the graphs show the re-monitoring of the permanent plots. Blue bars are results from 2008 and red ones are from 2010.



The follow-up studies in specific areas at Bälsalvret, where all grazing has been abandoned, have demonstrated that both the Musk and Short-spurred fragrant orchids occur in greater numbers on short tussocks than on medium-tall or tall tussocks, as well as in proximity of larger shrubs and trees. Worthy of interest is the possible interpretation that a gradual development of overgrowth of shrubs and trees provides more shade, shielding species from the wind and curbing condensation of water from open areas, which might favour both species. With this knowledge gained from the project, together with the knowledge of freezing phenomena that keeps Bälsalver open, the decision was made that grazing is not necessary to facilitate reproductive success in Marsh fritillary in this specific area. On the contrary, grazing this sensitive wetland area, instead probably would harm the species.

## E. Public awareness and dissemination of information

### E.1 Information Centre

Planned cost: 50 505 € Outcome: 42 102, 92 €

The cost of this action was less than planned. The Commission had approved to build an earth closet at the information centre, but we had to exclude the closet. The closet would have entailed maintenance costs in the future, that the Administrative Board not could be able to fund.

The information centre has been equipped with board holders, bench tables and the connection from the information place to the walking trail. Near the information boards have also been arranged a barbecue area. On the road, along the entrance to the parking lot, there are two cattle grids placed, and the whole information centre is surrounded by a traditional Gotlandic pole. The parking lot was laid out by an external firm.

In early spring 2011 all facilities at the information centre were finally at place. The project engaged the artist Gebbe Björkman (Ateljé Gebbe) to draw pictures for information boards. He made three separate plates in A1 format, where one illustrates a typical rich fen in the area, another one the ecology of *Cypripedium calceolus*, and the third plate the ecology of *Euphydryas aurinia*. The County Administrative Board has provided the text material and all plates have the Life and Natura 2000 logo on them. A map showing where boards are placed is presented in Annex 5.



*Pictures of constructions made in the LIFE-project at the information place; Information boards, Parking lot with a traditional Gotlandic fence, and a cattle grid.*

## **E.2 Parking lot**

Planned cost: 0 € Outcome: 0 €

This action was deleted from the project because the parking lot was considered to be placed at an exceedingly dangerous place, along a too busy highway.

## **E.3 Hiking trail**

Planned cost: 53 263 € Outcome: 76 808, 46 €

During the extremely wet summer of 2009 and 2010, the project realized that a major part of the larger loop of hiking trail planned in the wetland area would need a board walk. This was of course more expensive than planned and thus needed a modification request. When approved by the Commission (1<sup>st</sup> Modification on 7<sup>th</sup> of May 2010) this action started rather late in the project (in the second half of October 2010), and because of a very snowy winter 2010, the boarded part of the trail was finally finished just before our Final seminar at the end of June 2011. The cost for this action became more expensive than planned, mainly caused by higher personnel costs than planned (55 743 euro). The time needed to complete the board walk took somewhat longer than planned and salaries increased for the workers when they became their own authority, Swedish Forest Agency's (Skogsstyrelsen). The external assistance of timber transport (5 313 euro) and travel costs (5 420 euro) was not included in budget, but was of course necessary to fulfil the action.





The construction consist of oak logs in the bottom and longitudinal planks (five in width) of core pine Total length of the footpath is in compliance with what was planned, 8,2 km, of which the boarded part are approximately 1,2 km, Along the trail has also been placed three stiles where the path is passing animal enclosures.

In Annex 5 is a map showing the trail's final route.

The work with constructing the boarded trail was performed by members of the County Administrative field working team and by the partner Skogsstyrelsen, the Swedish Forest Agency, after 1 January 2011, when they separated from the County board and became their own authority.

#### E.4 Information boards

Planned cost: 20 887 € Outcome: 14 886, 84 €

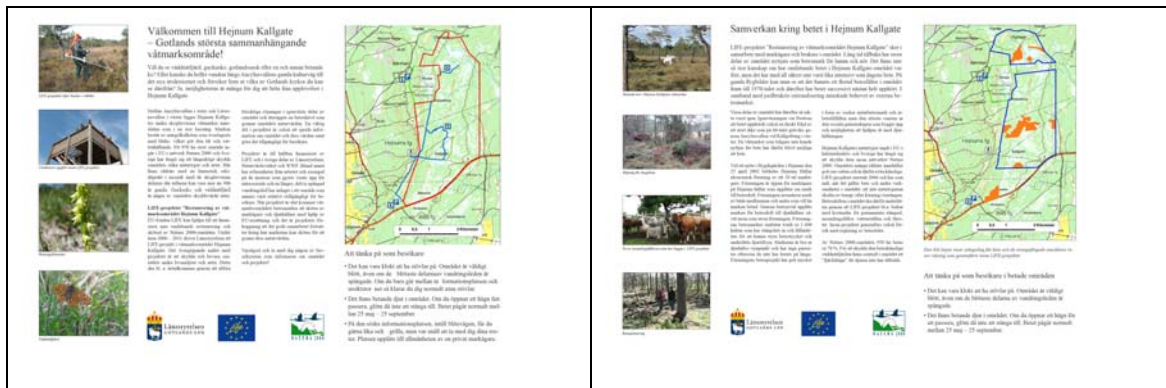
The main reason for the difference between budget and outcome of this action was the fact that we engaged our partner Skogsstyrelsen to produce sign holders for the project. They made them and also put them into place at a very reasonable price.

It is not always easy for visitors to find their way around the enormous wetland area of Hejnum Kallgate. One of the desired results of the LIFE project, apart from the nature conservation measures, was therefore to inform the general public both about the project and the valuable natural assets of the area. An important part of the project has thus been to improve information and accessibility.



In Fig. 1, the timetable indicates that this part of the project was delayed. Three different information boards were produced as described under action E1. Copies of the plates have

been placed at different spots in the area. The paintings of the signs are performed by an artist procured. A map showing where boards have been placed is presented in Annex 5.



Two other boards were also produced, one general board presenting the project and its planned outputs, and one board with information about the grazing activities and facilities made for the handling of livestock. Both these boards have special information on what the public have to notice when visiting the area. The boards were designed at the County Board and printed by a firm procured by the Swedish Environmental Protection Agency as part of a State agreement for sign making. The cost was paid by the County Board.

All the boards have the LIFE- and Natura 2000 logos on them.

**E.5 Outlook tower**

Planned cost: 22 755 € Outcome: 24 659, 69 €

The difference between budget and outcome of this action is caused by exchange rate.

The outlook tower is placed on the west ridge, just outside the Natura 2000 area. This action was completed in late winter 2009. The tower now has a lovely gray patina and melts therefore well into its surroundings. The tower has become a popular destination especially for local people. The tower has a sign with reference to LIFE and Natura 2000.



The outlook tower



The tower labelled with LIFE and Natura 2000 logos



Inauguration of the tower



### E.6 Map over the area

Planned cost: 2 270 € Outcome: 2 374, 46 €

The small difference between budget and outcome of this action is caused by exchange rate.



The very detailed orientation map is completed and is valuable for the public to be able to move into the area outside the designated trails. The map is available at the information centre, web site and at the County Board. A first draft of the map was first sent to the Commission together with the Midterm report. The final version with Natura 2000- and LIFE logos are delivered with this report, Annex 6. The former partner Gotland Bro Orienteering Club, a nonprofits organization, has done the job to draw up a detailed map of the area (Activity E6). The number of copies that should be printed was not specified in the Grant Agreement. Budgeted funds were sufficient to print 300 copies.

### E.7 Brochure/fact leaflet

Planned cost: 1 685 € Outcome: 2 361, 55 €

The difference between budget and outcome of this action is caused by exchange rate and the fact that printing costs were slightly more expensive than planned.

Below is a picture of some of the pages of the fact leaflet.



In the Grant Agreement the Swedish brochure should have an English summary. The text had then a tendency to be too voluminous. Instead, the project wanted to translate the whole

brochure into English, which was approved by the Commission in a letter from the 17<sup>th</sup> of December 2010. They were printed in 2000 copies of the Swedish version, and 1000 copies of an English one. The brochures are presented on the website, at the information centre, at the parking place of the nature reserve Kallgatburg (close to The Natura 2000 site Hejnum Kallgate), at the Community centre of Hejnum parish, and at the Administrative Board.

### E.8 Website and folder

Planned cost: 8 661 € Outcome: 8 236, 48 €

The outcome of this action was only slightly less expensive than planned.

The website; [www.life-hejnum.se](http://www.life-hejnum.se) is presented in Swedish and also provided with an English version. The final information folder was finished before the final seminar that was held on 30<sup>th</sup> of June 2011. The work with the folder was an action that was delayed in the project, as indicated in the timetable (fig 1). The reason for the delay was mainly that the project leaders had a very heavy workload with other duties at the County Board, at the time when the folder was planned to be written. The delay of the folder production until the final seminar was approved by the Commission in a letter from the 27<sup>th</sup> of January 2010. The folders are presented on the website, at the information centre, at the parking place of the nature reserve Kallgatburg (close to The Natura 2000 site Hejnum Kallgate) and at the Community centre of Hejnum parish, and at the Administrative Board. The folders are also provided in Annex 7.



### E.9 Guided tours

Planned cost: 354 € Outcome: 78, 03 €

The difference between budget and outcome is due to that costs for planning of this action in fact have been charged to the administrative account of F1.

Our former partner the Nature Conservation Society of Gotland has contributed for free to this LIFE-project with public tours in the area mainly to the Lady's Slipper locality. The beneficiary have also during the time of the project provided guided tours, both as strictly tours or in combination with information meetings (E10). Yearly there have been lectures combined with excursions for students of the ecological programme at the Gotland University. There have been some major and interesting excursions with a focus on

discussion of EU compensation for forest grazing, where this LIFE-project area of Hejnum Kallgate could show very good example areas restored within the project; Swedish Environment and Agriculture Committee, field tour and discussion about EU financing of grazed woodlands (29 May 2007), Environmental Protection Agency, administrators of conservation management, field tour and management discussions (17 September 2008), Swedish Ministry of Environment, field excursion (14 October, 2008), EU-conference in biol. diversity, excursion and discussions about EU financing, management and species protection (30 September 2009), and an excursion in the project area for members of County Administrative Board of Jönköping, mainly concentrated on information about the ongoing LIFE project (22 April 2010). Table 4 summarizes the activities of guided tours in the project.

Year	Date	Type of activity	No of participants	Action
2007	15 February	Information meeting landowners, and reference group	ca 30	E10
	29 March	Nature association in Gotland	12	E10
	10-11 May	Platform meeting, Östergötland	2 from the project	E11
	29 May	Swedish Environment and Agriculture Committee	ca 20	E10
	12 August	Excursion Marsh fritillary for landowners	5	E10
	22 August	Practical demonstration of thinning	30	C1/E10
2008	28 January	Meeting with the reference group	26	E10
	29 May	Guided tour	48	E9
	17 September	Environmental Protection Agency, administrators of conservation management	72	E10
	29-30 September	Platform meeting, Danmark	1 from the project	E11
	14 Oct	Ministry of Environment, excursion	7	E11
2009	08 April	Excursion with students from Gotland University	10	E10
	28-29 May	Platform meeting, Gotland	29	E11
	28 May	Guided tour	42	E9
	25 July	Excursion and inauguration of the tower	14	E5/E10
	30 September	EU-konference in biol. diversity, excursion	33	E10
2010		Excursion in the project area for members of County Administrative Board of Jönköping		E9
	22 April		9	
	26 May	Meeting with the reference group	15	E10
	25 June	Recording at the project site of the Swedish radioprogramme "Naturmorgon"	4	E9
2011		Excursion with students from Gotland University		E10
	15 April		8	
	30 June	Final seminar	29	F3

### **E.10 Information meetings**

Planned cost: 6 072 € Outcome: 968, 55 €

The difference between budget and outcome is due to that costs for planning of this action in fact have been charged to the administrative account of F1.

In the Grant Agreement there were at least two meetings planned, where landowners, the public and the press should be invited. In total we had four meetings, one of them held during the final seminar. Several of the information meetings that have been held within the project, have been arranged in combination with excursions (see table 4 above).

An initial information meeting for landowners, farmers and reference group was held 15 February 2007. Meetings/excursions where the public and press have been invited were held 22 of August, with a practical demonstration of the thinning process within management areas, 25 of July 2009 in connection with the inauguration of the outlook tower and at the Final Seminar.

### **E.11 Seminars**

Planned cost: 2 105 € Outcome: 3 532, 68 €

The arrangement of the LIFE-Platform meeting on Gotland in 2009 was not a planned activity in this project from the beginning. This seminar caused the action to be more expensive than planned, although the Swedish Environmental Protection Agency covered most of the costs. This seminar of course gave the project a great opportunity to show the project site and discuss planned activities among members of the Commission and other LIFE-projects.

According to the application, the project leader should develop skills by attending courses, seminars and conferences dealing with the protection, restoration and management of wetlands. In addition, at least one study should be conducted for another project on *Euphydryas aurina*.

Regarding the first part, with developed skills, the project have had access to a combination of two very competent project leaders, full time employed at the County board. One of them is specialized on protection and management of valuable nature, especially in habitats and species related to protection of Natura 2000, and the other one with extremely good competence on management in connection with the rules of EU regulations of environmental support. As employed at the County board, project leaders therefore have had continuous development within each one's responsible field of competence, as well as necessary contacts with the Swedish Environmental Protection Agency in connection with the on-going National Programme of Threatened Species, written for *Euphydryas aurinia*, which hopefully have satisfied the need skills during the project period.



*The platform meeting on Gotland 2009, with participants inside one of the cattle pens financed by the project*

The project have unfortunately not visited any other LIFE-programmes regarding protection of *Euphydryas aurina*. There was however a planned exchange from the Danish project ASPEA to visit Gotland, but the Danish project could unfortunately not find a suitable time to come. During the project period, this LIFE-project has been presented in connection with the annual LIFE-Platform meetings in Denmark 2006, in Östergötland 2007, Denmark 2008 and in Gotland 2009, representing on-going projects in Sweden, Denmark and associated Partner countries.

### E.12 Layman´s report

Planned cost: 4 211 € Outcome: 0 €

This report has been written after the ending of the project, and the cost can therefore not be charged to the project. Layman´s report is printed as part of the County Board´s report series of Nature and Environment No. 2012:3. It is presented in a Swedish and an English version on the LIFE project website and in Annex 8.

## Deliverables

Deliverable or Milestone	Number of the associated action	Deadline	Delivery to EC
Areal photo study	A2	31 December 2007	31 October 2008
Hydrological study	A3	31 December 2007	31 October 2008
Web site	E8	30 June 2007	31 October 2008
Species inventory 1	D2	31 October 2007	31 October 2009
Brochure	E7	30 June 2008	31 October 2010
Species inventory 2	D2	31 October 2008	31 October 2009
Folder	E8	30 June 2011	With the Final Report
Species inventory 3	D2	31 October 2009	This inventory was not done
Map over the area	E6	30 June 2010	With the Final Report
Species inventory 4	D2	31 October 2010	With the Final Report



## Publications within the project

1. Martinsson, M. 2007. Markanvändning under femtio år på Hejnum Kallgate. Länsstyrelsen, Rapporter om natur och miljö 2008:3.
2. Svensson, H och Engdahl, M. 2007. Hydrologisk studie – Hejnum Kallgate, Gotland. Kemakta Konsult AB.
3. Enström, I. 2007. Inventering i Natura 2000-område Hejnum Kallgate 2007. Ekologiskt projektarbete, Högskolan på Gotland.
4. Persson, Å. 2009. Inventering av skyddsvärda växter på Bälsalvret i juni-juli 2008. Ekologiskt projektarbete, Högskolan på Gotland.
5. A five-folded brochure “Hejnum Kallgate, Unique wetlands in the north-east of Gotland”. Aron Hejdström Production commissioned by The County Administrative Board of Gotland. Copied in a Swedish and an English edition.
6. A 12-page folder “Restoration of the Hejnum Kallgate wetlands”. Aron Hejdström Production commissioned by The County Administrative Board of Gotland. Copied in a Swedish and an English edition.
7. Most of the publications have with earlier reports been sent to the Commission. They are available at the project web-site. Remaining publications are sent with the Final report.

## F. Overall project management

### F.1 Project administration

Planned cost: 149 812 € Outcome: 83 658, 13 €

Personnel costs for administration of the project were much lower than planned. The main reason for that has mainly to do with periods of heavy work load for the project leaders in other duties at the County Board, especially in 2008 and 2009.

The project beneficiary has been the County Administration of Gotland. The project was managed by a project team consisting of two representatives from the County Board, the project leaders, Anna-Lena Fritz and Gunilla Lexell. Also included, have been two men representing the County Administrative Field Working team. The project group through the years also has included three to four land owner representatives. The landowners represented both those who keep livestock husbandry at the Natura 2000 site as well as those without any grazing animals.

In the County Administrative Board's internal group for the implementation and monitoring of the economy in the project, has participated in total three different persons during the project period. To work with the website and advertisements also involved one person.

Except during the summer holidays, the project team has held meetings about once a month in Hejnum parish centre, which has been perceived as quite sufficient. The meeting locality was hired through a contract, annually during the project period. In total, it held 32 meetings since the project started. All meetings, except for field tours, are recorded and are available on the Swedish page of project website [www.life-hejnum.se](http://www.life-hejnum.se).

Participating landowners/animal keepers were paid a sum of 400 SEK per project meeting for one landowner with grazing animals, and one without animals, according to a decision made by the project group 13<sup>th</sup> of June 2007. The beneficiary felt that the salary paid was a reasonable requirement to compensate the fact that project meetings were held in the day during working hours. This was retroactively paid from the beginning of the year 2007.

## **F.2 Reference group**

Planned cost: 211 € Outcome: 82, 49 €

The outcome of this action was lower than planned and includes travel costs for the arranged meetings. Planning of this action has been charged to the administrative account of F1.

The project reference group involves together with land owners / users, also Gotland Botanical Society. The main purpose of the meetings with the Reference Group has been to report on what has been achieved in the project and to present progress and future plans. The reference group has had the opportunity to express views and wishes about what should be improved in the project. At one of the first meetings with the landowners, they expressed the wish to be part of the reference group. Because the landowners are rather few in the area (e.g. 13), the project group accepted them to be included. The project team has accepted the reference composition despite its size.

There are many wills in the project and we believed that it is still the best solution for everyone to express thoughts at common meeting occasions. There is in the Hejnum Kallgate area an obvious rivalry between some landowners keeping grazing animals, in contrast to those without animals. Animal keepers have usually very much attention and contact with the Administrative Board, which other landowners does not have. The reference meetings have thus had a positive effect in acting as an arena for everyone to meet and discuss conservation issues, and make landowners to be proud of their Natura 2000 site, either with or without grazing animals.

Two meetings with the reference group have been arranged. A meeting with the reference group was held on 28<sup>th</sup> of January 2008, and except from land owners and Gotland Botanical Association, representatives of the Partners in the project also participated. A second meeting with the reference group was held in 26<sup>th</sup> of May 2010. The last one was planned to be held in early spring 2011. Because of too much work with the effect of the accidental forest fire at the end of May, this meeting was not completed.

The majority of landowners have been very positive to the project, especially with the efforts made on facilities making the area more available to the public.

### F.3 Final seminar

Planned cost: 1 053 € Outcome: 1 298, 26 €

The outcome of this action was almost in accordance of what was planned. The difference is mainly due to exchange rate.

A closing seminar of the project with a field trip was held on 30 June 2011, with extremely warm and sunny weather. Our Governor attended, and the seminar and tour was of course open to all interested: the Commission, landowners, farmers, general public and media. The Commission and other ongoing LIFE-projects were specially invited through a common E-mail sent 2011-03-04.

During the day of the seminar there were totally 29 participants attending at different parts of the day. In the morning session there were 20 persons participating in a field trip concentrated on what was done in the project to facilitate animal care, and also examples of thinning performed. We also visited the large fire area in the north part of the project- and Natura 2000 site. Attending this first part of the seminar were mostly landowners, animal keepers and two persons from the LIFE MIA project I Västmanland.

The participants of the seminar were thereafter invited to a field lunch at the project information centre. In the afternoon the group visited Bälsalvret, where we demonstrated the thinned area, and the Professor Karin Bengtsson, talked about the monitoring of species that our project partner Gotland University had done in the project. After that, our County Governor gave a speech, inaugurated the trail and all participated in a long walk along the trail and visited the outlook tower. Different wetland species were demonstrated, and we also had the nice opportunity to show Marsh fritillary eggs on the underside of a leaf of a devil's-bit scabious plant.



*County Governor Cecilia Schelin Seidegård cuts ribbon at the opening of the boarded trail, and a group of interested listeners at excursion on Bälsalver. The Partner Gotland University is represented by Professor Karin Bengtsson, seen at far right of the picture*

#### **F.4 After-LIFE Conservation Plan**

The plan should be written in connection with the project completion. It should contain information on how the area will be managed in the future for long-term natural values to be maintained or enhanced where necessary. The main purpose will be to ensure that habitats and species of the Natura 2000 area in Hejnum Kallgate will continue to be at a favourable conservation status. The full text of the plan is presented in Annex 9, and on the web-site as a separate document.

### **7. Evaluation and conclusions**

#### **a. The process**

When Hejnum Kallgate was suggested as a Natura 2000-site, the idea arose to carry out a LIFE-project with the overall objective to restore and preserve this 950 ha large wetland area, with its unique natural habitats, together with plants and animal species in need of protection. This goal should be achieved by cautious clearance of overgrowth and restoration of grazing, which should favourably affect the valuable natural assets of the area.

Overgrazing in sensitive wetlands and rather rough clearings had occurred in parts of the Hejnum Kallgate a few years before the project started. The County Board was of course interested in finding a solution to this problem, not least to find a solution to the fact that the threatened species *Euphydrias aurinia* in the long run, with this intensive land use, would suffer and enter an unfavourable conservation status. Therefore, the above idea was presented to the farmers that kept grazing animals in the area, and resulted in their interest to become a partner of the project.

An external consultant prepared and wrote the application for the project.

#### **b. Project management**

It has been valuable to have two persons from the beneficiary acting as project leaders, representing different disciplines i.e. nature conservation, and rural and farming. On the other hand their other duties at the County Administrative Board in some periods have been far too heavy to be able to spend enough time in the project. It is also not an optimal situation to change key persons within the project time, as is the case with the staff in charge of economic questions.

There has been a great added value for the project to cooperate with the partner Gotland University, although they had some difficulty to fulfil their duty of monitoring, due to lack of students available.

The Swedish Board of Forestry was a partner for only a very short time at the end of the project, since they became their own authority. Many of the field workers also acted during the time they were part of the County Board

There have been several different external monitoring experts involved during the time of the project, but it has not been perceived as an obstacle in the reporting process. They have all been well prepared and willing to give constructive criticism of draft versions of progress reports.

### c. Success and failures

There have been two major successes with this LIFE project. First, Hejnum Kallgate has been thinned in a very gentle way, by hand which had been too expensive to do without the support of funding from EU. These thinned areas can now enter the scheme of EU's environmental support. If this, in the long run will benefit the area's natural values, remains to be seen. But it has definitely set a good basis for animal keepers to get an insight into the natural values of the area and to plan grazing activities based on these conditions.

Second, the area of Hejnum Kallgate has been made more accessible for the public. Information efforts, walking trail and the outlook tower, have all become popular facilities.

There has been quite a lot of time spent to sort out misunderstandings, mostly based on conflicts between individual landowners. Some of these problems could preferably have been solved before the project started.

The misunderstanding of partners to fulfil their obligation of reporting has been a trouble. From start, the project had 4 partners, of which all but one had to be excluded. One partner, the Swedish Society for Nature Conservation, was responsible for the action E9, guided tours in the area. They have made their guided tours for free and could thus of course continue to cooperate within the project, but not acting as a partner, i.e. that a partner shall bear a part of the costs of (co-fund) the project. The other two partners, Hejnum hållar Economic Association and Bro Orienteering Club, had misunderstood how they should report their costs in the project, and therefore also had to be excluded.

The former partner Hejnum hållar ekonomiska förening, will still be responsible for livestock handling, as they own the animals grazing in the area of Hejnum Kallgate. However, as beneficiary the Administrative board of Gotland will have the overall responsibility to rule the management in time and space which means early and longer grazing periods where land soil layer are stronger, and late and shorter grazing periods where the ground is more sensitive. The earlier problems we had with difficulties for animal keepers to end grazing in time and take away the animals in the autumn have been much improved during the project.

The partner, Gotland University, who has made good reporting, has on the other hand been dependent on students to fulfil the monitoring action of D2. The number of students attending ecological studies is quite small, so it has been difficult some years to find anyone available. Besides, the time of monitoring often coincided with periods when students often take temporary summer employments. This led to a situation that one year monitoring was not done.

This project has been rather small, with only one project site. Probably the whole project could have benefitted a shorter and thus more effective execution time.

Unfortunately in late spring 2011, a major forest fire started on the 30<sup>th</sup> of May when our partner Skogsstyrelsen (Swedish Board of Forestry) was burning juniper bushes from clearings in the area. The weather was dry and warm, and in the afternoon that day it started to become very windy. The fire started in far north of the Hejnum Kallgate area, and spread quickly to the south towards the area with the population of *Cypripedium calceolus*. Inside the Natura 2000 area, approximately 40 ha of open to sparsely tree covered alkaline fen area were burnt. Outside Natura 2000, more wooded areas were heavily affected by both fire and



firebreaks that had to be drawn through the area. The fire was not completely extinguished until after several weeks.

This unfortunate event caused some trouble for the project. Almost every man available at the project partner Skogsstyrelsen, together with volunteers, had to fight the fire that was very hard to extinguish. The Project had in 2011 engaged some external assistance for making the final clearings in the project ready in time. Unfortunately these companies had to fulfil what Skogsstyrelsen should have done, which is one reason why external assistance was much more expensive than planned.

#### **d. Comparison against the project-objectives**

**1. Protection of the prioritised habitat Bog woodland (\*91DO) within the Hejnum Kallgate area.**

Since this project started, there have been some adjustments of earlier classification of habitats in the Swedish Natura 2000 sites as a result of an extensive inventory project that has been going on for some years, and that now is completed. This habitat inventory has also been done in Hejnum Kallgate, and has resulted in some major changes in habitat classification. The earlier very large part of Bog woodland (427 ha) have to a large extent been reclassified as the habitat of Fennoscandian wooded pastures (9070) due to new national criteria of habitat defining. Left are now 52 ha of Bog woodland. The remaining part of this habitat is in good conservation status.

**2. Protection of the unique distribution of Alkaline fens (260 ha, 7230) within the Hejnum Kallgate area.**

The earlier occurrence of this habitat have after the new classification become somewhat less (208 ha). The lost areas are mainly reclassified as *Molina* meadows (6410). Some small areas of other, not earlier recognized, priority habitats have also been located in this Natura 2000 site: somewhat less than one ha of each Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* (\*7210) and Rupicolous calcareous or basophilic grasslands of the *Alyso-Sedion albi* (\*6110), and approximately 10 ha of the habitat Nordic alvar and precambrian calcareous flatrocks (\*6280).

**3. Protection of Gotland's main locality for the Marsh Fritillary (*Euphydryas aurinia*). During the next 5 years the butterfly population will increase by 50 % from 242 larva colonies in 2004.**

This aim should be achieved by adapting grazing so that the butterfly remains unharmed. Measures may include monitoring grazing periods and the number of cattle, as well as selecting certain areas where clearance till be minimal and grazing banned.

Rich fens are often dependent on grazing for the conservation of valuable natural assets, although the wetlands are equally sensitive to wear and tear. According to the Grant Agreement certain measures had to be implemented so as to improve grazing practices in the Hejnum Kallgate area. Smaller pens and more long-term solutions regarding livestock management will facilitate grazing and animal care. Lighter-weight livestock will be pastured where the risk of damage to the ground surface is great, e.g. close to the Marsh Fritillary's main reproduction areas. Timing for letting the livestock out to pasture should also be monitored, depending on ground conditions and weather.

The Marsh Fritillary, *Euphydryas aurinia*, has its stronghold on Gotland at Hejnum Kallgate. Particularly favourable sites for the butterfly can be found at Bälsalvret at the very south end of the site towards the road to Slite, as well as along the southernmost power line in the central part of the area. Extensive grazing can be favourable to the butterfly, although heavy grazing can be disruptive. Since the butterfly is sensitive to heavy grazing, a 50 ha area has been fenced off in the central part of the Natura 2000 site, where grazing cattle are denied access. The larva of the Marsh Fritillary is dependent on Devilsbit scabious *Succisa pratensis*, which is its host plant. The female butterfly lays all her eggs on the underside of the leaves of some few Devilsbit scabious plants. Heavily grazed Devilsbit scabious plants become small barely raising them from the ground, making it difficult for the Marsh Fritillary to use them as host plants.

In this LIFE project experience have shown that a 50% increase of larvae colonies of the Marsh fritillary, have been an unrealistic goal. Nevertheless, this LIFE project has resulted in great improvement of grazing practises and all the planned activities to favour the Marsh fritillary have been done, i.e. gentle thinning in a 16 ha area of alkaline fens, information boards, and grazing regulated with lighter weight cows, shorter grazing times and cattle pens combined with loose grids that facilitate collection of animals. The time for grazing has been improved, and in the wettest part, in the north, cows are placed only after midsummer, and the grazing ends not later than 25<sup>th</sup> of September. This last date of grazing has been reached in agreement with farmers, to cover the whole area. 73% of the area is now grazed, i.e. 693 ha.

In addition to intensive grazing affecting the species negatively, it is also many other factors that control the reproductive success of this sensitive species. For example is drought in spring and early summer, or an unusual period of high precipitation also negative factors for reproductive success of the Marsh fritillary. Both these phenomena have occurred during the project period, making it difficult to evaluate the effect of only the grazing pressure. However, the project decided to exclude Bälsalver, the south part of the Natura 2000 area Hejnum Kallgate, from being grazed. But, in Bälsalver thinning of juniper bushes was done in a 16 ha large area, where alkaline fens were gently opened. This thinning was performed in 2010, so the eventual positive effect of this action will be monitored first in 2012 (see the After-LIFE Conservation Plan).

**4. Protection of Gotland`s sole locality for the Lady`s Slipper (*Cypripedium calceolus*). The number will be constant (500-1000 specimens) or preferably increase.**

The goal should be achieved by means of specific information targeting the general public.

Lady`s Slipper, *Cypripedium calceolus*, is an orchid which has been added to the EU habitat directive list, and as in the case of the Marsh Fritillary, Sweden has undertaken to protect it within Natura 2000. There is a large population of Lady`s Slipper at Hejnum Kallgate that was discovered for the first time in 1949. The site where Lady`s Slipper grows is very isolated and gives an absolutely fantastic and unbeatable experience of nature. In the original Grant Agreement the population should be protected by means of fencing parts of the site to protect the species from unwanted wear. The landowner did not want the planned boardwalk and fences. The project thus considered that it would be very unlucky to go against the landowner's willingness to cooperate in the project. The Swedish Society for Nature Conservation on Gotland has participated in the project for free by arranging annual walking

tours to the Lady's Slipper site for the general public. In the first modification of the project the action of a boardwalk and fencing was deleted.

This LIFE project has put up information boards at the Lady's Slipper site, telling about the species ecology and how visitors should behave in order to protect the species. Through information the project will encourage the public sense of respect and responsibility to help in protecting this very rare species on its sole locality on Gotland. The projects decision, not to foreclose the orchid locality is probably a better way for the public to promote caution by experience the natural locality. Future will show if this is a sufficient measure. The population will be monitored as described in the After-LIFE Conservation Plan.

In addition, the project had an idea to pay a small salary to a "Lady's Slipper guard" during the flowering period, with the task to inform the public about the species and the ongoing LIFE-project. Unfortunately the time was not enough for the project leaders to arrange this part of the agreement.

### **e. Environmental benefits, policy and legislation implications**

This LIFE project was definitely needed to control the effects of grazing better. Before the project started, there were first performed extensive cuttings of trees and far too many bushes. Many trees and bushes in this Natura 2000 site are extremely old with very high values of biological diversity associated to them. Then there followed a very intensive grazing with heavy animals, that was harmful to the wetland areas, especially in the north part of the area. The Natura 2000 habitat of alkaline fens (7230) and bog woodland (\*91D0) thus, at that time was entering an unfavourable conservation status, because of too intense grazing and damaging of the ground. Large enclosures also made it difficult for the farmers to keep their daily inspection of the animals. Further planned thinning in the area had to be gentler performed than earlier. One major problem before the project started, was also the timing of grazing. The sensitive wetlands cannot stand too long periods with grazing each year.

The benefit of this project targeting the above mentioned habitats, have been successful in terms of gentle thinning performed in suggested management areas, and gained experience of how to do it the best way to benefit habitats, lighter weight cows and defined shorter periods of grazing. Facilities for animal care have also made it easier with animal inspection possibilities.

There has been some trouble with the central enclosure, surrounding the most important and sensitive reproductive site of the butterfly species *Euphydryas aurinia*, that should be protected in the area. Farmers wanted to graze this 53 ha area, but were not allowed because the species is sensitive to intensive grazing. During the project period, the farmers have instead been offered to graze another Natura 2000 site of similar size. Negotiations are now in progress for an agreement of compensation to these landowners. Hopefully the "butterfly enclosure" area soon can be a new nature reserve thus giving the landowners the opportunity to get compensation.

The LIFE project definitely have made the landowners, and farmers managing Hejnum Kallgate, more aware of how they, in a sustainable way, can manage the land without harming habitats and species that should be protected.

## **f. Innovation, demonstration value**

All work with thinning and clearing has been performed manually. The two project leaders wrote working plans for the different clearing areas. In the initial phase of the project it was also the project leaders that in field marked bushes and trees to be removed. The method of marking was mainly to enlarge already existing glades and combine them with small openings where grazing cows already had their paths. This was clearly a very effective method, showing the field workers desired structures of a mosaic, grazed landscape with both open glades, and in parts, more dense areas. Later the field workers could do the job themselves with only some corrections and guidance from project leaders. This method of marking in demonstrative purposes can be used in other areas to restore grazed woodlands.

The timber from cuttings was removed from the area either by horse or by a so-called "iron horse", which is a type of a very small band wagon. Besides in this sensitive wetland, a large custom-designed band wagon was used to run out the wood needed for the board walk. Despite its large size, this band wagon was harmless to the sensitive wetlands, making only small traces to the ground. The County Board will definitely consider the possibility to use a similar vehicle for conservation purposes in other protected areas.

The two different tests for the monitoring of specific vascular plant species were performed by students representing the partner Gotland University, responsible for action D2. The tests included species occurrence in semi-permanent sample plots, as well as species occurrence of permanent sample plots. The results have been summarized in publications available at the project website. The monitoring results are also provided with this report in Annex 4.

When monitoring specific plant species, as in this study, results clearly show that permanent plots are to prefer. Semi permanent plots give very few individual hits of the species you are interested in. The method with semi permanent plots will mainly be used in the Swedish programme of monitoring "typical species" as a measure of conservation status of specific habitats in Natura 2000 sites. Result of monitoring in this LIFE project could thus suggest that uncommonly distributed such typical species will be difficult to detect with that method of monitoring.

## **g. Socio-economic effects**

Most of the landowners managing grazed areas in Hejnum Kallgate are full time farmers, and thus very dependent on the EU funds for management. This project has of course facilitated for them to report more areas into grazing plans, funded by EU. They have benefitted from this project in many ways. The LIFE project has for example given permanent fencing, cattle pens and gates, cattle grids and water supply. Information efforts and walking trails inside the grazed landscape, have certainly given a positive effect on public attraction to this area. Hopefully this will foster small business in the parishes of Hejnum and Bäl.

The so called "järnhäst", will also be very helpful in future work of conservation with gentle thinning needed in grazed areas.

The field working team of the County Board (and later Skogsstyrelsen as a partner) included workers that were more or less socially handicapped. For them it was a great opportunity to get meaningful tasks to perform in this LIFE project. Some of the workers participating had just job training, and were not paid any salary from the project. As these workers could not



participate in regular labour, this project has been very important in a region like Gotland where labour is limited.

## h. Long term indicators of the project success

It is too early to say what will be long term indicators of the LIFE project. Hopefully however, landowners and farmers keeping livestock will continue to manage the area in a gentle and sustainable way, and have nature conservation in mind. The size of grazed EU habitats in favourable conservation status will then be one good measure of project success. Future monitoring of the reproductive success of Lady's slipper and Marsh fritillary will also be a good measure of project success, as well as the number of visitors/year.

Some of the properties in the Natura 2000 site will probably need some kind of agreement, with or without financial compensation, to secure a favourable conservation status of Hejnum Kallgate in the future.

## 8. Comments on the financial report

### Project costs inquired

Changing rate: European Central Bank: 8, 9275 (02/01/2012)

RestHejK Category	Original Budget		Outcome		Variation	
	Total eligible costs in Euro (A)	% of total eligible costs (B)	Total eligible costs in Euro (C)	% of total eligible costs (D)	In Euro (E=C-A)	In % (F=C/A-1)
1. Personnel	443 842,00	67,22	318 721,72	51,49	-125 120,28	-28,19%
2. Travel	49 546,00	7,50	22 456,83	3,63	-27 089,17	-54,67%
3. External assistance	37 276,00	5,65	125 356,78	20,25	88 080,78	236,29%
4. Durable goods / infrastructure	35 863,00	5,43	45 452,80	7,34	9 589,80	26,74%
5. Durable goods/equipment	8 684,00	1,32	21 338,56	3,45	12 654,56	145,72%
6. Lease of land	1 065,00	0,16	1 163,15	0,19	98,15	9,22%
7. Consumable material	37 466,00	5,67	36 890,14	5,96	-575,86	-1,54%
8. Other costs	3 370,00	0,51	7 187,82	1,16	3 817,82	113,29%
9. Overheads	43 123,29	6,53	40 418,32	6,53	-2 704,97	-6,27%
Total	660 235,29	100,00	618 986,12	100,00	-41 249,17	-6,25%

In several categories there is a great problem of final costs exceeding the financial rules of the Common Provisions. In general we must admit that the budget of individual categories was not that well planned as had been required in this project, although the total cost of the project was more in accordance with budget. Below are general comments on individual categories. Comments on outcome of specific actions are explained in the text under each heading.

### 1. Personnel

Final costs are almost 30% lower than planned in budget. Almost half of this lower cost is due to the external assistance that the project had to engage during the forest fire in Hejnum Kallgate, as explained below in the category of external assistance. The other half of the lower

cost spent was mainly due to that project leaders did not spend as much time as planned in budget, due to heavy work load with other duties at the County Board.

## **2. Travel**

Travel was much less used than planned, mainly due to the same reason as for personnel, but also that actual travel costs per km were lower than the base in budget.

## **3. External assistance**

External assistance has in the end become extremely much higher than planned in budget. There are mainly two reasons for that. First, the external assistance needed for transporting all the timber out in the wetlands, along the boarded part of the walking trail, was a cost not planned as an external assistance at all in budget, but rather as personnel. The field working team at the County Board did not have the capacity, with the kind of transporting vehicle needed. This assistance was of course necessary for getting the material of heavy planks at place. Second, the accidental, large fire that raged in Hejnum Kallgate in spring 2011, forced the project to engage external assistance for a longer time than planned, to help thinning the final parts of management areas, while our partner, the Forestry Board, was fully occupied with fighting the fire.

## **4. Infrastructure**

This category became somewhat more expensive than planned, but does not exceed the rules set by the Common Provisions.

## **5. Equipment**

This category far exceeds budget due to the fact that the gates bought for the action of animal care (C5), was of some unknown reason not recognized and taken into the new budget after the Midterm Report. The cost was already known at that time, but was unfortunately never incorporated in the budget. These gates have been very useful in actions of collecting animals as they are driven into the cattle pens.

## **6. Lease of land**

The small difference between budget and outcome is only due to exchange rate.

## **7. Consumables**

These costs are in well accordance with planned costs.

## **8. Other costs**

This category exceeds the budget with more than double the planned cost, but is totally not very high. With the same reasoning as regarding equipment costs, there are costs already known in Midterm Report that was not taken up in the new budget, i.e. costs for advertisements, yearly costs for domain name and web hotel etc.

In a letter from the Commission at 7<sup>th</sup> May 2010 we had some recommendations and requests of financial character, which should be considered in our final report.

## **Answer on questions from the Commission in two earlier letters**

In the referred letters below some of the questions have been answered while others were asked to be treated in the Final Report.

**1<sup>st</sup> letter**

The first letter is from 7<sup>th</sup> of May 2010. There are 11 questions asked, no 3 and 5 were answered in the third Progress Report. The other ones will be treated below.

*1. Please explain how the personal costs are calculated, in general, for you and your partner, i.e. how the annual gross salary including social charges and the annual no of working hours are determined and how the registration of the hours actually worked for the project has taken place.*

In Annex 10 is provided an example of how the annual gross salary has been calculated for Anna-Lena Fritz, Gunilla Lexell, Gullvi Jacobsson and Lena Hultberg for the years 2009 – 2011. The County Board has monthly salary slips for the whole project period where salary, vacation, travel expenses and social charges are registered. Time registration is done regularly in the electronic time registration system Agresso, available for all workers at the County Board, where project actions can be defined by individual project codes. Individual workers weekly register their own time at different activity codes and save it into the system. The record of the time is then consolidated every month. Participants of the project have besides registered their time at monthly timesheets for this specific LIFE project. The timesheets have been controlled against the Agresso system, and will thus correspond with each other. Timesheets have been signed by a person defined at a certification scheme on the authority.

A similar electronic system called Tidskog has been used for time registration of the field working team. The registration is done every week where the team leader register the time worked as well as time absent in time sheets, they are then approved by a supervisor and finally sent to the registration person, Elisbeth Vickman, that register the time into the system. Individual time spent in the project can be followed by a specific “object name” referring to the project in the time registration system.

Karin Bengtsson representing the partner Gotland University does not register her time in a central system. Her yearly working hours have through the project been 1700 hours/year. She has continuously registered her time spent at the project in timesheets signed by the Principal.

Skogsstyrelsen, when they became their own authority and at the same time partner in the project (2011-01-01 until 2011-08-31), also register in Agresso, with the same procedure as described above when they were included in the County Board.

*2. Please provide for the whole project period the supporting documents for the personal costs reported for Ms Fritz and Mr Botulfsen from your organisation and Ms Bengtsson from the partner University of Gotland, i.e. documentation for the annual gross salary (preferably by supplying the December salary slip if it contains accumulated yearly figures or similar print outs from the payroll system from the HR department), the obligatory social charges, how the annual number of working days have been determined and copies of timesheets or other documents on which the time actually worked for the project has been recorded.*

The documents asked for are provided in Annex 11.

3. This question was treated in our third Progress Report. We confirm that the annual gross salary provided with Final Report for all staff correctly reflect the actual costs incurred.

4. Regarding this question, it has been answered, and the time difference regarding timesheets and time registration for A-L Fritz have been adjusted and sent to the Commission together with the third Progress Report. The time reported in this Final Report is registered on a monthly basis, just like the Commission recommends.

5. This question was answered in the third Progress Report.

6. *With regard to the time registration records provided for the field workers, please ensure that there is a clear reference to the LIFE project in these documents or make sure that the link to the project can be identified via at least one of the codes contained in these documents (for example "Objektets namn" or "Objekt nr").*

For an answer see under question no 1, where the time registration system are explained.

7. *Travel- In your letter of 12 March 2010 you state that the costs have been adjusted to the rate of 0,22 €/km according to LIFE regulations (published in the application guide). Please note that the travel costs charged to the project should be in accordance with your internal rules. In particular, the costs declared cannot be higher than those actually incurred, which seems to be the case, according to the additional explanations provided in your e-mail of 31 March 2010, for the rate for travels with buses, since you stated that the actual rate is 1,7 SEK/km, less than 0,17 €/km.*

At the time of preparing the letter of 12 March 2010, the project was in fact advised by the External Monitor at the time to register a higher travel cost per km for the field working team. The actual cost for the field working team have correctly been 1,70 SEK/km as explained in the e-mail of 31 March 2010, and that is the cost registered in this Final Report.

8. *Please submit the invoice no 51025 of 26/3/2009, reported under infrastructure, together with the corresponding proof of payment. Please also explain in detail the selection procedure employed when selecting the supplier and provide a copy of the report from the selection committee and of the authorising officer.*

During March and April 2008 the County Board did a Government procurement of actions in the LIFE project: outlook tower, information centre and walking trails. The procurement specifications were divided so companies were welcome to bid on either project action or offer the whole package of actions. There were a lot of interest from different companies during this process, but in the end only three bids came in. One of the companies came in too late, one was far too expensive and the third company had not presented all the qualifications needed.

The procedure of procurement was very time consuming, and the project manager thus decided to ask a local company on Gotland. This company had not built a construction like this before, but the company had good references from mostly restoration of older buildings. This company was not part of the former procurement process. They were asked to give a quote concerning the outlook tower based on a drawing of a tower construction, in a book of recreation facilities published by the Swedish Environmental Protective Agency.

The documents asked for are presented in Annex 12.

9-11. These notes concern cost that have been placed in wrong categories, but are now with



this Final Report placed as the Commission suggest in the letter.

## **2<sup>nd</sup> letter**

The second letter from the Commission dated 17<sup>th</sup> of December 2010 is taking up some technical and financial issues.

*Action C1 (thinning).* The Commission asks about the size of the targeted area of thinning, which is explained under the section C.1 on page 14 and in Table 3 on page 16.

*Action C5 (facilities for livestock).* The Commission asks the project to provide information and pictures on the construction of cattle pens and cattle grids. These constructions are reported under the section C.5 on page 19, and see Annex 3 for their location.

*Action D1 (grazing and clearing).* This action has been deleted and have no expenditures included in this Final Report.

*Action D2 (monitoring of plant species).* Results of the monitoring of plant species in 2010 are provided with this report in Annex 4.

*Action E4 (information boards).* There were totally five information boards produced in the project with a total cost that remains within the flexibility margins defined an Article 13 of the Common Provisions. The boards were printed in six copies each of the painted boards on Ladys Slipper, Marsh Fritillary and an alkaline fen. The other two boards on the general information about the project and grazing activities in the area were printed in two copies each. See page 25-26, and annex XX for the location of boards.

*Action E7 (brochure).* The Commission reminded us to put name/acronym in future media. The advices have been followed when producing the folder, F8, see page 30 and Annex 7. The folders are provided with this report. The cost for producing also an English version of the brochure made the expenditure higher, but has remained within the flexibility margins defined an Article 13 of the Common Provisions.

*Actions C1, C2, E3, repairs for the “iron horse”.* The cost for the new bands needed to repair the “iron horse” have been reported as a consumable cost, and has remained within the flexibility margins defined an Article 13 of the Common Provisions.

## **9. Annexes**

1. Map of clearing areas
2. Map of fencing that has been financed by the project
3. Map of facilities for animal care
4. Reports on monitoring of specific plant species
5. Map showing the location of walking trails and information boards

6. Detailed map of the Hejnum Kallgate area
7. Folders in Swedish and English versions
8. Layman's Report in Swedish and English versions
9. After-LIFE Conservation Plan
10. Lists of documentation of annual gross salaries, timesheets etc.
11. Documents asked for in a letter from the Commission from 7<sup>th</sup> of May 2010, paragraph 2.
12. Documentation of procurement