



Green Belt Life 2004-2008

*Natural Forests and
Mires in the
Green Belt of
Koillismaa and Kainuu*

Final Report



LIFE Nature project supported by the European Union



Contents

Nature conservation along the border	3
Careful planning and clear instructions	5
Closer to the natural state	6
Countless hectares restored	9
Improving the life of eagles	10
Valuable information from follow-up studies	13
From the cinema to the nature trail	14
Fruits of cross-border cooperation	16

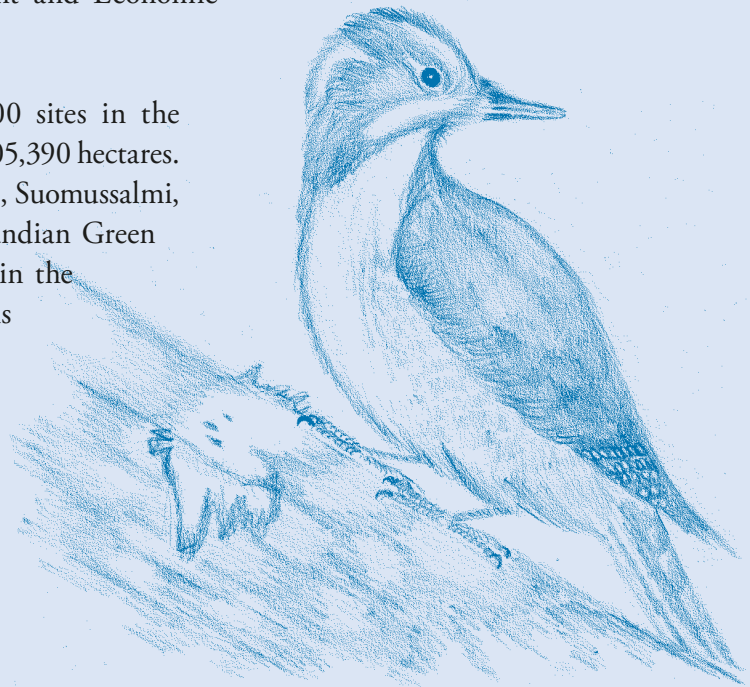
Photo: Hannele Kytö

Nature conservation along the border

The Green Belt Life project, officially “Natural Forests and Mires in the Green Belt of Koillismaa and Kainuu”, was launched in 2004 and ended in 2008. The main objective of the project was to safeguard the favourable conservation status of thirteen Natura 2000 sites. The measures taken to achieve this objective included habitat restoration in drained mires and forests affected by forestry operations, and the reforestation of disused forest roads. In addition, artificial nests were built to strengthen the golden eagle population in Suomussalmi. An important part of the project was monitoring the impacts of habitat restoration and providing information on nature conservation.

The project had a total budget of €1.17 million, half of which was provided by the EU LIFE Nature fund. The other half came from the project participants: Metsähallitus Natural Heritage Services, Ostrobothnia; the Muhos Research Unit of the Finnish Forest Research Institute; the Joint authority of Kainuu Region; and Metsähallitus Forestry Western Lapland. Additionally, funding for habitat restoration in protected areas in Kuhmo and the construction of a nature trail in Lentua was provided by the Employment and Economic Development Centre for Kainuu.

The project area comprised thirteen Natura 2000 sites in the Koillismaa and Kainuu regions, with a total area of 105,390 hectares. The areas are located in the municipalities of Kuhmo, Suomussalmi, Kuusamo and Posio. They lie within the Fennoscandian Green Belt – a unique mosaic of forests, mires and fells in the border regions of Finland, Russia and Norway. This is the largest and most important of the remaining areas of pristine nature in Western Europe, and it is of immense conservation value.





Most of the present-day nature reserves carry traces of previous forestry operations, e.g. drained mires and felled forest areas. Habitat restoration aims at speeding up the process of bringing these ecosystems back to their natural state.

The Natura 2000 network protects the natural habitat types and habitats of species defined in the Habitats Directive. LIFE Nature is the European Union's financial instrument supporting the protection, management and use of Natura 2000 sites.

Within the Green Belt Life project, habitat restoration work was carried out in an area extending from Kuhmo to Posio.

Careful planning and clear instructions

Detailed habitat restoration plans were drawn up for each area on the basis of field surveys, aerial photographs and a wide range of scientific data. The restoration plans contained a general description of the Natura 2000 site in question, account of the goals, methods and effects of restoration, threat analysis, follow-up plan, restoration schedule and cost estimate.

Site instructions were prepared for lumberjacks and excavator operators, explaining in detail how the restoration work should be carried out.



Closer to the natural state

Forest restoration involves adding missing or scarce structural components to forests, such as decaying and burnt wood. The ultimate objective is a natural forest with trees of all sizes and shapes, living and dead.

The aim of mire restoration is to raise the water levels by blocking ditches and removing excess trees, which evaporate water. As the moisture increases, peat begins to re-form and the mire's original species of plants and animals are gradually restored.

The reforestation of gravel pits and disused forest roads running through protected areas makes the areas more peaceful by reducing traffic. When roadside ditches are filled, water will once again resume its natural course.





Photo: Sanna-Kaisa Rautio



The Hyöteikönsuo mire was a challenging site to restore.

Photo: Pekka Veteläinen

Countless hectares restored

The project restored those parts of protected areas that showed signs of having been used for forestry.

A total of 577 hectares of forests were restored: controlled burnings were carried out on 86 hectares, and decaying wood and structural diversity were added on 491 hectares.

Controlled burnings to be repeated at regular intervals were initiated in the following areas: Oulanka, the old-growth forests of southern Kuusamo – Pahamaailma – Vieremänsuo and Elimyssalo – Lentua – Iso-Palonen.

Altogether 375 hectares of drained mires were restored. The most challenging area was the Hyöteikönsuo mire in the old-growth forests of southern Kuusamo Natura 2000 site. The mire area, which measures nearly 200 hectares, was drained for cultivation by using channels in the late 1950s. The drainage was in vain, however, as the fields were never cleared. The largest channels filled during restoration were as much as five metres wide and two to three metres deep. Approximately 2,600 metres of channels were blocked and 36 dams constructed.

A total of 4.1 kilometres of disused forest roads were demolished and reforested, and two hectares of gravel pits adjoining the roads were landscaped.

The habitat restoration work progressed according to plan, except for the controlled burning of 41 hectares in the Juortanansalo Natura 2000 site and the restoration of mire areas located in the area to be burnt. Scheduled for the summer of 2007, the burning was postponed into the future due to heavy rains, and the mires, which cover an area of four hectares, will not be restored until after the burning.

Girdling is a process of removing a ring of bark from around a tree to cut the connection between the leaves and roots, causing the tree to gradually die while it is still standing.



Improving the life of eagles

Listed in Annex I of the Birds Directive, the golden eagle is defined as vulnerable in the Finnish classification of threatened species.

Even though there are vast wildernesses and open areas for catching prey in Suomussalmi, no occupied territories were found in eagle surveys conducted during the project. However, good news came after the completion of the surveys. The first nesting in more than forty years had been observed in the wilderness of Suomussalmi!

To strengthen the golden eagle population, four artificial nests were taken to protected areas in Suomussalmi, where they are now waiting for occupants. The nests were built by the Ornithological Society of Kainuu. Metsähallitus is in charge of monitoring and checking the nests.



Artificial nests bring relief to the housing shortage faced by eagles.



Photo: Jan Tuhomäki



Measuring groundwater depth in a mire to be restored.

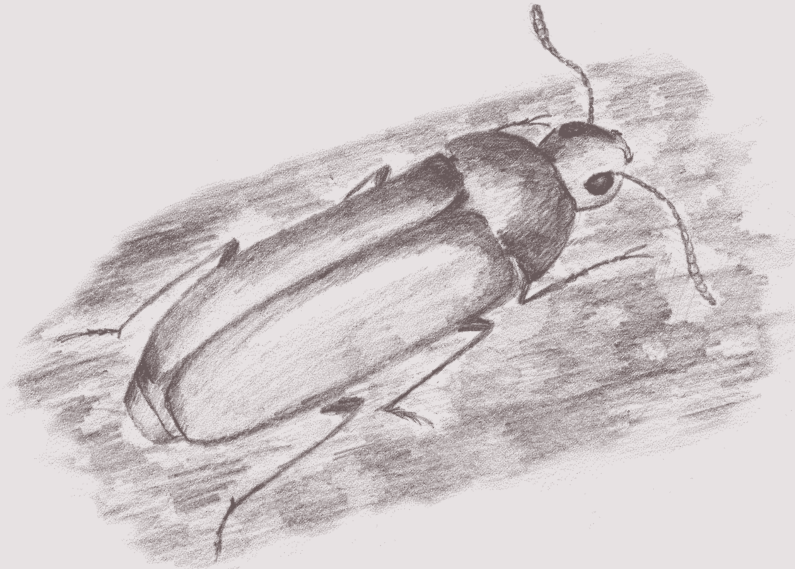
Photo: Juha Siekkinen

Valuable information from follow-up studies

Follow-up studies are conducted to find out how the various restoration measures help forests and mires return to their natural state. The collected data is used to establish methods that are the most effective ecologically and economically, and to identify erroneous practices early enough.

In areas of restored forest, changes in the vegetation and tree stand as well as species living in and on decaying and burnt wood are monitored. The progress of the reforestation of forest roads is also followed. In restored mires, attention is paid to the rate of decay of peat and changes in groundwater depth. The impacts of restoration are monitored by Metsähallitus and the Muhos Research Unit of the Finnish Forest Research Institute.

The success of the mire restoration measures cannot be confirmed until after years or even decades. On the other hand, the results of increasing decaying wood and controlled burnings can be seen relatively quickly. For example, several species dependent on forest fires arrived at the burnt area in Pahamaailma right after the flames had subsided. The most significant species encountered in the area was the endangered beetle *Phryganophilus ruficollis*, which is protected under the Nature Conservation Decree.



From the cinema to the nature trail

Since restoration is a rather new habitat management method, there is not much information available on the subject. Consequently, habitat restoration measures generate a lot of interest, as well as strong views. In order to give as true a picture of restoration as possible, a wide range of information must be provided on the methods and objectives.

As the name suggests, the Green Belt Life project was full of life throughout its operation! Habitat restoration was introduced in many ways through a variety of channels. This also brought the magnificent nature reserves covered by the project to public attention.

The project organised public meetings and discussions at various locations and was active in providing information on restoration measures. In the winter of 2007, an international Fire and Forest symposium was held in Kajaani, where presentations were given by a renowned group of Nordic forest fire specialists.

At the Kajaani symposium, a DVD produced for the project by Tekstivirta Ky, “A Change for the Better”, was presented for the first time. It discusses the reasons, objectives and methods of restoration in the Green Belt. The film is being shown at the Visitor Centres of Metsähallitus.

Those who enjoy the outdoors can head for the Lentua Nature Trail, constructed during the project. Located close to Kuhmo, the trail is 6.7 kilometres long. Along the trail, there are two beautiful rest spots and several boards with information on habitat restoration. The Petola Visitor Centre offers an environmental education package for teaching purposes, designed to be used on the Lentua Nature Trail.

Other outcomes of the project include leaflets, publications, photographic exhibitions and information boards set up at each restoration site, describing nature conservation and restoration methods with text and pictures.



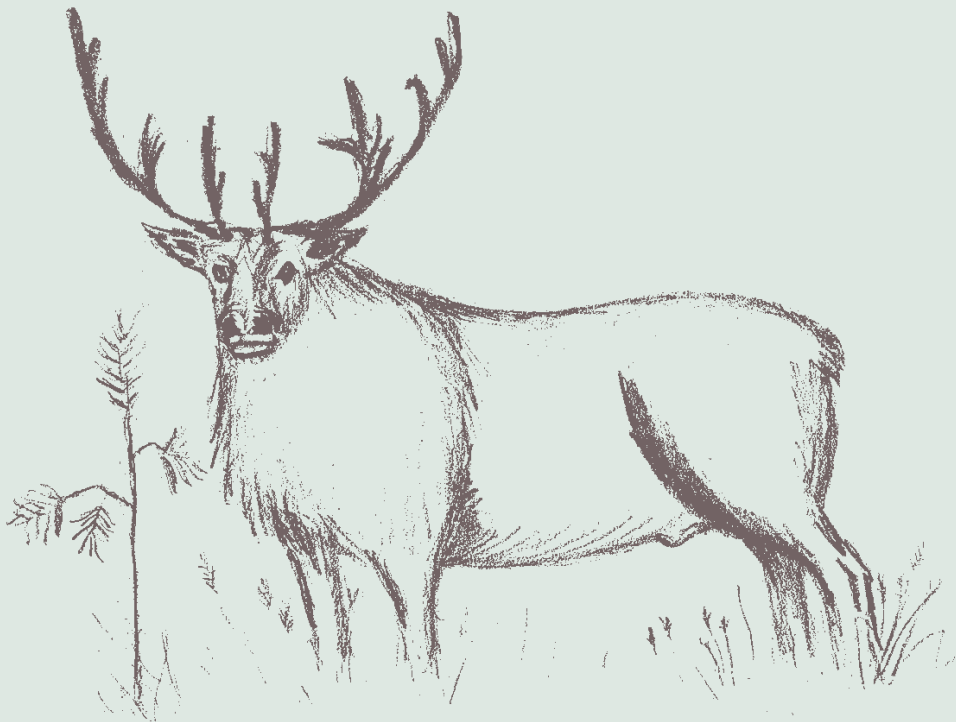


Photo: Hannele Kytö

Fruits of cross-border cooperation

The location of the project area in the Green Belt along the Finnish-Russian border enabled cross-border cooperation. The project sites are part of three twin parks of Metsähallitus: the Oulanka and Paanajärvi National Parks, the Kalevala Parks and the Friendship Nature Reserve. The project surveyed flying squirrel populations in the Paanajärvi National Park, examined the fire history of forests in the Kalevala National Park and participated in seminars and training events between the twin parks.

International cooperation activities also included visits made to forest fire areas in Sweden, and Swedish forest fire specialists were invited to pay a return visit to Kuusamo and Suomussalmi. Moreover, the project was introduced at a number of events as far away as in China.





Tracking flying squirrels in Paanajärvi.

Photo: Sanna-Kaisa Rautio

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