

Layman's Report

ECOLOGICAL RESTORATION OF FOREST AND AQUATIC HABITATS IN
THE UPPER DÂMBOVIȚA VALLEY, MUNTII FAGARAS

Braşov – Romania

LIFE11/NAT/RO/823



LIFE + "ECOLOGICAL RESTORATION OF FOREST AND AQUATIC HABITATS IN THE UPPER DÂMBOVIȚA VALLEY, MUNTII FĂGĂRAȘ"

LIFE11/NAT/RO/823

<https://www.carpathia.org/ro/proiectul-life/>

Abbreviation: "CARPATHIA Restoration"

Goal: Development of restoration measures in a 20,000 ha part of the ROSCI0122 Făgăraș Mountains Natura 2000 site.

Beneficiary: Foundation Conservation Carpathia

Type of Organisation: NGO - Foundation

Total Budget: 5,835,248.00 €

EU Contribution: 2,917,624.00 € throughout LIFE+ Programme (50% of total eligible budget)

Project duration: 6 years (2012 - 2018)

Project manager: Barbara PROMBERGER-FÜRPASS

Natura 2000 Site: RO SCI122 Făgăraș Mountains

Target Habitat Types: direct impact on following habitats:

- (9410) *Acidophilous picea* forests,
- (9110) *Luzulo - Fagetum* beech forests with *Abies alba* and/or *Picea abies*;
- (4070*) *Pinus mugo* – *Rhododendron myrtifolium* associations;
- (91E0*) Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*.

Foundation Conservation Carpathia (FCC) has focused since its foundation in December 2009 on the development of a wilderness reserve in the upper Dâmbovița basin.

This project, a pioneering project for the conservation by restoring forests and alluvial habitats in Romania, has contributed to the main objective of the foundation to create a world-class wilderness reserve in the Southern Romanian Carpathians.

Acknowledgments

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We thank all those who helped the FCC team in field activities and with other tasks.

Photo copyright: Sandra Bartocha (cover, p. 9), Daniel Rosengren (p. 3), Dan Dinu (p. 4, 10, 11, 12, 13), George Soare (p. 7).

Graphic design: Dragoș Lazarin



Introduction

Until the middle of the last century, much of the Southern Carpathians remained in its original state due to the lack of accessibility of the long valleys and the steep slopes.

After 1950, when all forests were nationalised and the first forest management plans were elaborated, many of these virgin forests were cut and replaced by a second generation of trees, but the state forestry at least assured replanting and contiguous forest cover. In the Dâmbovița Valley, the situation of forests remained the same until 2004 when almost all forests have been restituted to the former owners and the timber cutting began. The land or standing timber was sold to logging companies, resulting in massive illegal clear-cuts and deforestation. Due to overhunting and poaching, a significant decrease of wildlife numbers, especially large carnivores, started during the 1990ies.

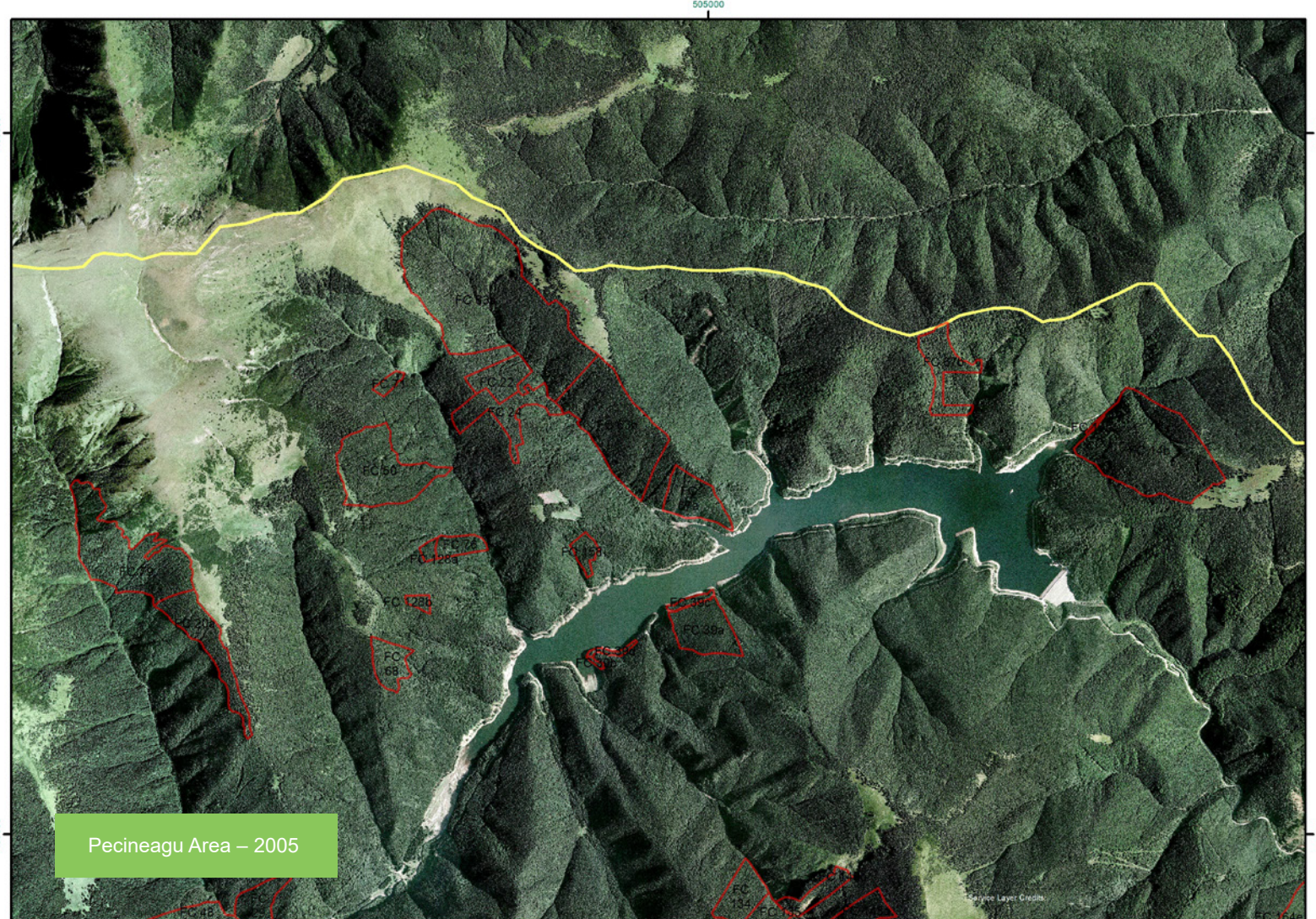


The challenge

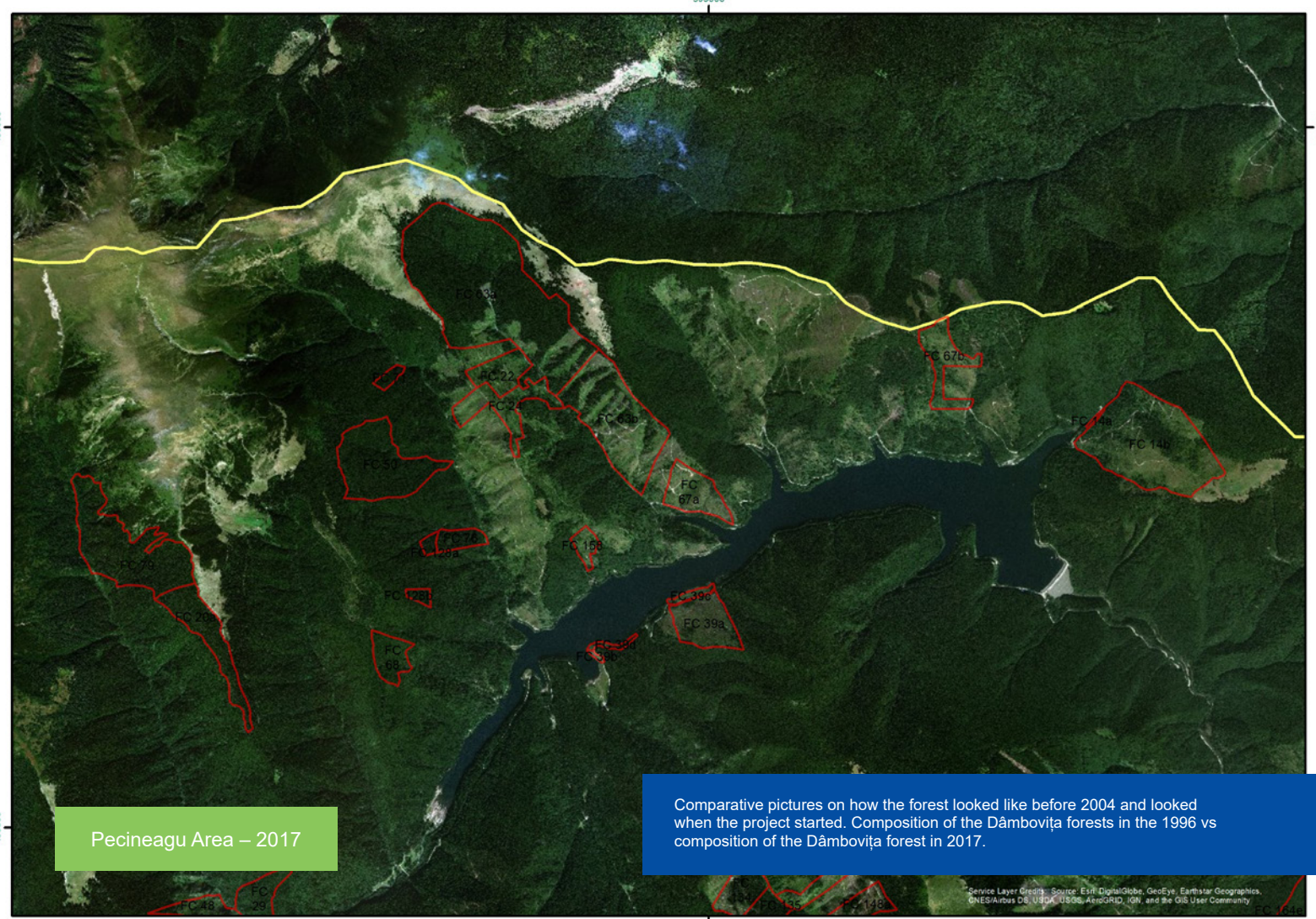
At the start of the project LIFE11/NAT/RO/823 - Carpathia Restoration, ca. 1.500 ha of forests from the project area have been clear-felled and most places have been abandoned without any reforestation.

A significant area of virgin forests has been lost and ecologically important tree species have been replaced by spruce. Also, forest management pushed these spruce plantations to the edge of the mountain streams and replaced the natural riparian forests (91E0* Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*) with a negative impact on the aquatic system due to a change of the soil's pH value, less organic input into the river system, and a lack of light and natural riverine vegetation. Many invertebrates and bird species, which depend on these trees (as populations of red-breasted flycatcher (*Ficedula parva*), ural owl (*Strix uralensis*), and white-backed woodpecker (*Dendrocopos leucotos*)) consequently decreased significantly in numbers.

Although we have managed to cease illegal logging in the project area almost completely, human activities remain the main threats for the habitats targeted project. With the current government's policy that is weakening existing control measures, the slow progress and poor results of the Catalogue of Pristine Forests, and the various legislative projects the government has submitted to weaken protected area management and the protection of high natural value forest, we believe that destruction of listed habitats might soon be a serious threat again.

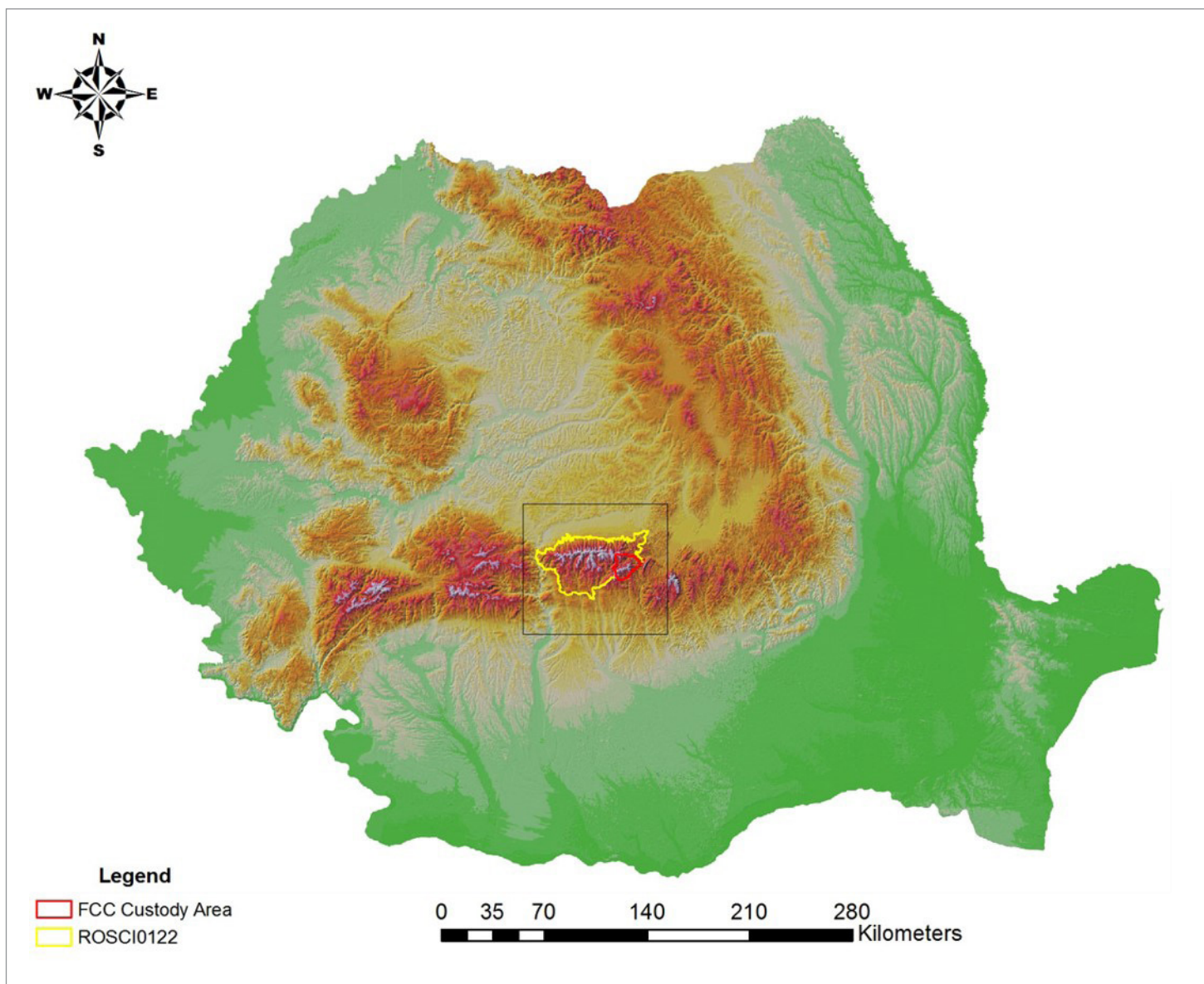


Pecineagu Area – 2005



Pecineagu Area – 2017

Comparative pictures on how the forest looked like before 2004 and looked when the project started. Composition of the Dâmbovița forests in the 1996 vs composition of the Dâmbovița forest in 2017.



Project area



Priorities and methods

A. Forest purchase

Since the inception of the project, we started with the idea to purchase forests and clear-felled areas for conservation and restoration, completely protect them once fully restored, and thus accelerate re-wilding processes in the upper Dâmbovița Valley.

B. Nurseries

Our purpose was to replant saplings of all tree species independently of their economic value, including those which have been drastically reduced in numbers and distribution due to forest management practices. As we could find saplings from natural regeneration for uprooting and replanting them only for a few species and since there are no saplings for sale other than spruce, we needed to create our own tree nurseries to produce these saplings. In order to provide efficiency and adaptation to forest conditions, we built nurseries both on surfaces with improved fertile soil and small surfaces inside the forest. In addition to the various nurseries, a

greenhouse was necessary for easier and faster cultivation of seedlings. We followed highest eco-standards and used no chemicals against weeds, fungi or insects. Consequently, saplings are better adapted and healthier, with no secondary effects on tree health in the future.

C. Restoration of the original forest composition on clear-felled areas

Over 1,500 ha of forests in the upper Dâmbovița Valley have been clear-felled during the period 2004-2012. Since neither logging companies nor land owners invested any resources into replanting, and the authorities didn't enforce the law, we decided to buy some of these clear-cuts in order to restore them with their original species composition. We had to identify the original mixture through a combination of information taken from the first forest management plans, field observations, and specialist opinion, all combined with a

forecast of climate change issues. Most saplings were produced in our own tree nurseries, beech and fir could additionally be rooted from nearby forests, where natural regeneration occurred in high densities, and re-planted again on the clear-cuts.

D. Restoration of the forest floor on badly eroded skidding tracks

During the clear-cutting, tracks were bulldozed into the slopes and used to drag logs down with tractors. In the following years, snow melt and heavy summer rains continued to deepen these skidding tracks and the top soil was washed down into the valley floors and the streams. In order to develop a restoration plan, we needed to execute an inventory of all existing tractor tracks including the magnitude of erosion problems. To restore the forest floor, we then needed to fill the trenches manually with leftovers from the cuttings, cover it with soil from the edges of the tracks via mini-excavators, and replant the recovered forest floor to stabilise the soil.

E. Rejuvenation

During the last centuries, forestry favoured spruce over other tree species and transformed mixed mountain forests dominated by beech into spruce monocultures, which are poor in species, have a negative impact upon the soils, and are vulnerable against insects and winds. In order to enhance biodiversity and to initiate a trend back towards the original ecosystem, we developed a plan to open small pockets in these spruce-monocultures and replant them with the missing species in order to kick-start the process towards a natural species composition again.

F. Restoration of riparian galleries

In this process of promoting spruce over the naturally occurring species, riparian habitats were also badly affected and spruce was often planted right to the rivers. Consequently, we developed measures to restore the alluvial vegetation along the mountain streams and to remove tree species not native to the site (mainly spruce plantations). Intact riverine woodlands were used as reference sites and as source for seeds and saplings. Alder, ash, and elm were the main species originally present and were used in varying proportions for the restoration of each site.

Results

01

Buying land for conservation

During the project period, we:

- acquired almost 300 ha of forests which have never been cut and where the natural tree composition and age structure is still intact. These forests are crucial for their valuable function as a repository of genetic material;
- acquired 358 clear-felled areas for restoration and 990 ha of managed forests for rejuvenation.

Purchasing them was the only possible measure to ensure conservation.

02

Restoring the land

Results:

- Three larger nurseries and five small nurseries in the forest were established and we produced the saplings for reconstruction and rejuvenation activities;
- We have produced a total of 454,000 saplings in our nurseries and we will keep producing saplings for other restoration sites in our project area;
- We planted a total of 1,126,060 saplings on 404 ha of clear-cuts;
- We restored the forest floor on a total of 23.66 km of eroded tractor tracks;
- We replanted over 62,000 saplings of beech, silver fir, and sycamore into a total of 405 ha of managed spruce monocultures;
- We restored the alluvial vegetation on 23.14 km river length on 46 ha surface.



03

Monitoring

A complex monitoring programme has been put in place that evaluated the effectiveness of our reconstruction and rejuvenation activities, based on data collected on structure and functions of the forest, vegetation diversity of plant composition and structure, increase and survival of species, natural regeneration, and occurrence of several species.

A sapling monitoring programme was based on data collected on nurseries production and on the survival and development of replanted saplings on the clear-cuts.

04

Other results

- No obvious signs of new erosion or soil erosion on the restored forest floor, neither on the older intervention sites nor on the newer ones;
- >90% of the saplings planted in 2013/2014 are growing;
- In general the forest shows signs of regeneration (50 %), only 10 - 15 % of saplings were lost due to climate. Regarding the indicator species in the project area: 4 white-backed woodpeckers, 2 three-toed woodpeckers, no red-breasted flycatcher, the number of otters is stable, clear signs of hazel grouse;
- The specific herb species of the 91E0* habitat, including *Telekia speciosa*, the most important species in the riparian habitats, are not present due to degradation of the habitat.





Communication of the LIFE project

The communication activities of the LIFE11/NAT/RO/823 were organised and carried out targeting the local and regional public, as well as the national and international scientific community.

The following activities were carried out to promote the project:

2 large permanent notice boards and 10 thematic boards

were mounted at the restoration sites

5,000 copies of a wilderness guide

with map addressing adults have been distributed mainly to local guesthouses and tourists;

2,500 copies of a children wilderness booklet

have been distributed and were also incorporated in the mobile school programme “Wild Kingdom” for schools around the Făgăraş Mountains.

Several excursions, workshops, and guided visits

with representatives from other protected areas, local and national authorities, forest services, etc.

Future

Priorities for future conservation actions will be in the fields of:

Forest protection

Continued purchase of forests for full protection in the current areas of Piatra Craiului National Park and the Dâmbovița and Lerești Valleys and extension into the rest of the Southern Făgăraș Mountains.

Restoration activities

Continue the work started during the project on replanting of clear -cuts and erosion work control, restoration of alluvial forests and of degraded alpine grasslands, removal of invasive species.

Wildlife

Extending the area of wildlife protection, re-introduction of missing species, and a functional wildlife management system.

Community outreach

Involving local communities in the work FCC is doing and making them realise that a Făgăraș Mountains National Park is in their own advantage, Monitoring public attitudes and believes through ongoing human dimensions' research.

Communications

Through regional, national and international media, Developing and implementing a social media campaign.

Development of a Conservation Enterprise Programme

Develop a conservation enterprise trust fund, develop conservation friendly businesses.



Priorities for future monitoring:

Continue to carry out most of the project's management activities

such as replanting and restoration of eroded soil and to monitor the existing plantations.

Identify indicators

that are capable of tracking the re-establishment of the forest natural eco-systems changes over an extended period of time.

Continue the monitoring activities

that have been started within this LIFE project and that have been integrated into FCCs general monitoring scheme:

- abundance of specialist bird species;
- cover and species diversity of the characteristic understory vegetation;
- fixed-point photography;
- abundance of European Otter;
- changes in local economy.



The content of this material does not represent the official position of the European Commission. For official information about the LIFE programme visit ec.europa.eu.

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