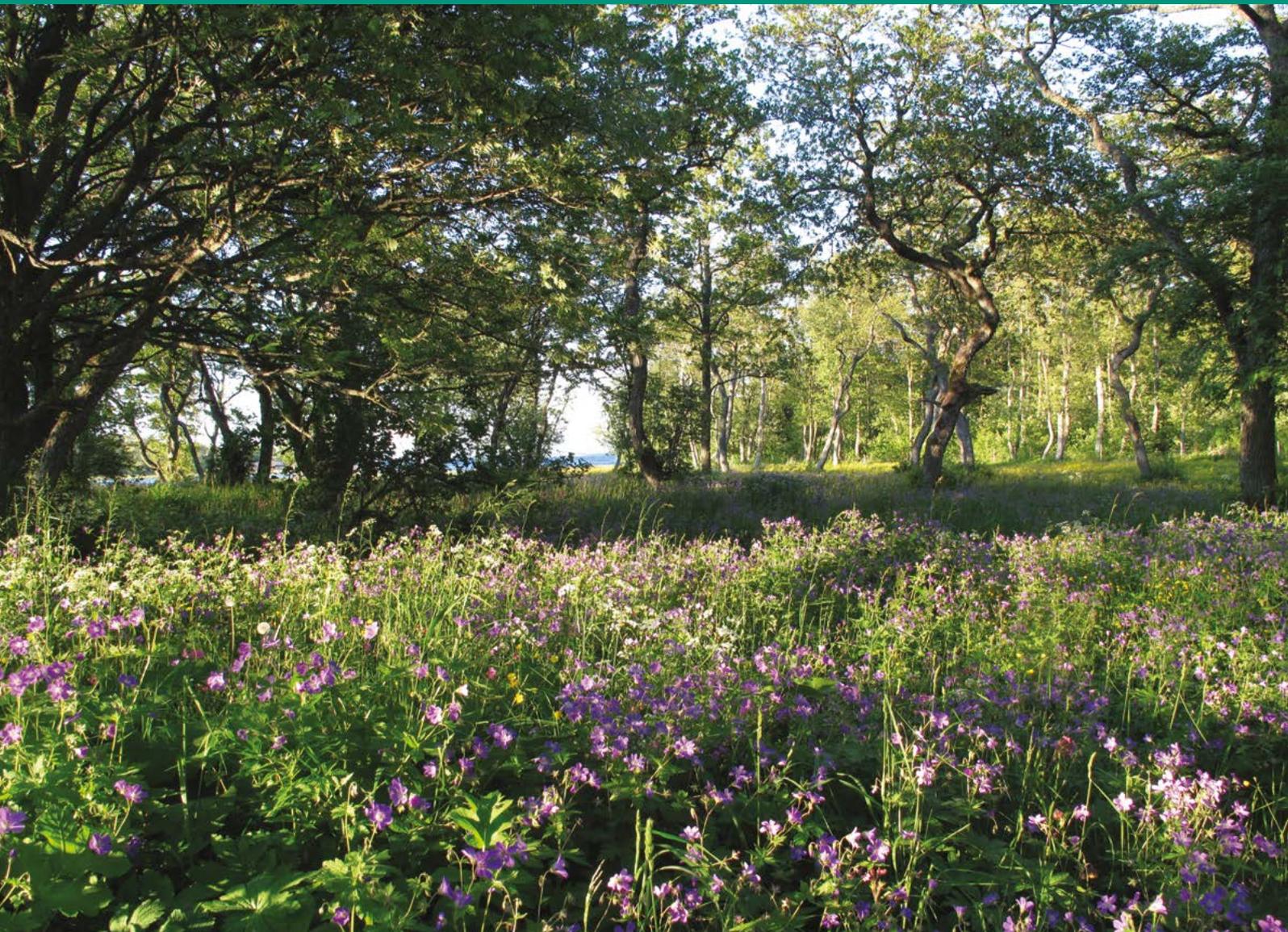


SPECIES-RICH LIFE

Richness of species in Finnish nature





Traditional slash-and-burn agriculture and cattle grazing are practiced on Telkkämäki heritage farm.

PHOTO: KAISA RAATIKAINEN

Species-rich LIFE

LIFE+ is the EU's funding instrument for supporting environmental and nature conservation projects. In Finland, the LIFE programme has significantly promoted the management of sites that are part of the Natura 2000 network. Natura 2000 is a European network of protected areas intended to assure the survival of valuable habitats and threatened species in the EU.

Species-rich LIFE focused on improving the status of habitats with the greatest biodiversity in Finland in protected areas belonging to the Natura 2000 network,

from the Archipelago Sea in the south to Kuusamo in the north. A total of over 1,000 hectares of habitats including meadows, forested traditional biotopes, herb-rich forests, and old-growth broadleaved forests inhabited by the White-backed Woodpecker were managed as part of the project in 2011–2016. At the same time, the living conditions of species typical of these habitats that are now under threat were improved.



- Species-rich LIFE was a LIFE+ Nature project.
- The project was coordinated by Metsähallitus Parks & Wildlife Finland, which manages the state's protected areas.
- Other project partners were WWF Finland and the Finnish Environment Institute.
- The project budget was EUR 3.6 million (50% granted by the European Commission, 50% national funding).
- The project covered a total of 64 Natura 2000 sites in Finland.
- This publication showcases the project's outcomes.

WHY IS HABITAT RESTORATION NECESSARY?

Setting aside protected areas is not always enough to safeguard threatened habitats and species. Help from humans is often needed to conserve or increase biodiversity in protected areas.

Habitat restoration means active measures taken to increase the ecological value of protected areas. Without management, the sites targeted by the Species-rich LIFE project risk losing their biodiversity value. Some of the most species-rich habitats in Finland were restored during the project.

For example, excessive growth of spruces in herb-rich forests has a negative impact on the living conditions of species characteristic of these habitats. Old-growth broadleaved forests with plenty of light are the preferred

habitats of White-backed Woodpeckers. Proliferation of spruces on these sites, however, gradually makes them unsuitable as a nesting environment for the species. Removal of spruces lets more light in, allowing herb-rich forest plants to flourish.

Semi-natural grasslands created by traditional farming practices are some of the most threatened ecosystems in Finnish nature. They cannot be preserved without continuous management, including annual grazing or mowing.



PHOTO: JUKKA MATTLAR

Highland cattle grazing in Archipelago National Park.



Vernal lush in a hazel grove.

PHOTO: HELENA LUNDÉN

Planning and implementation of habitat restoration in a traditional meadow

Species-rich LIFE project managed semi-natural grasslands covering 450 hectares on 32 different Natura 2000 sites. Local livestock farmers will graze most of the project sites, thus ensuring their continued management.

See the Figures for the different phases of the planning and restoration process. In order to succeed, the process requires cooperation between many different experts and actors.

1. A site left unmanaged for decades has become overgrown as trees and bushes spread to open areas.
2. To plan the management measures, different groups of species are surveyed and cultural heritage sites charted, and the further maintenance of the site is arranged with livestock farmers.
3. In the restoration phase, trees and shrubs are cleared and the site is fenced in. Forest worker, forest machine contractors, volunteers and many other partners participate in the work.
4. The site will be under continuous management. Grazing or mowing will keep the site open, and with continued management, its ecological value will gradually increase.



PHOTO: IKA ÖSTERBLAD



Grazing is the only practical method for preventing the overgrowing of extensive semi-natural grassland areas by trees and bushes.

PHOTO: MAIJA MUSSAARI

Grazing is a valuable part of conservation work

Without grazing livestock, the semi-natural grasslands of protected areas cannot survive. An estimated 20,000 animals are already grazing in Finnish protected areas – cows, sheep and horses. The majority of Species-rich LIFE sites will continue to be managed by their four-legged guardians in the future.

In the project LIFE funding was used to produce a management plan, carry out initial clearing and fence the site. To ensure

continued management, the project sought out farmers as partners. All parties benefit from the well-functioning cooperation. The management of semi-natural grasslands generates a direct income for the livestock farmers. Once threatened habitats and species are thriving, the protected areas meet their purpose with optimal efficiency, and visitors to the area can enjoy the beautiful, well cared-for landscapes of Natura 2000 sites.



PHOTO: CARINA JÄRVINEN

Monitoring data supports management

Habitat restoration involves long-term efforts. In order to reach the desired end result, the status of the sites must be monitored and management measures adapted as indicated by the development of the species composition on the site. This work will be supported by monitoring data

collected during the project. Metsähallitus Parks & Wildlife Finland and the Finnish Environment Institute will continue monitoring the sites even after the conclusion of the project.

Detailed vegetation monitoring data is collected in a managed semi-natural grassland site.

Species-rich deciduous forests need management

The lushest forest habitats, or herb-rich forests, are home to unique organisms adapted to this particular environment. Very few herb-rich forests, especially those with valuable hardwood trees, are left in Finland. In these small areas, spruces are gaining too much ground and blocking the light from herb-rich forest species that cannot survive without it. Deadwood, which is vital for many threatened species, is not available in great quantities today.

In Species-rich LIFE project, herb-rich forests covering a total area of 594 hectares on 35 different Natura 2000 sites were restored. While the most common restoration

measure was clearing spruces, various other types of felling techniques that favour valuable hardwood trees, aspens or other deciduous trees were also used.

The spread of invasive alien species is a growing problem that threatens the original species of protected areas also in Finland. Alien species were removed from the managed sites as part of habitat restoration. The most common alien species to be eliminated were the Himalayan Balsam (*Impatiens glandulifera*), which takes over herb-rich forests, and the Beach Rose (*Rosa rugosa*), which has a tendency to spread into open areas.

Invasive alien species Himalayan Balsam (*Impatiens glandulifera*) takes over herb-rich forests.



PHOTO: MAARET VÄÄNÄNEN

PHOTO: PÄIVI LEIKAS



Oak (*Quercus robur*) seedlings were planted in Nuukio National Park.

PHOTO: HANNA-LEENA KESKINEN



Critically endangered Red Helleborine (*Cephalanthera rubra*) is a beautiful orchid found in herb-rich forests on calcareous soil.

PHOTO: ANNA-RIIKKA IHANTOLA



Removal of Spruce (*Picea abies*) from herb-rich forest.

Many inhabitants of species-rich environments benefit from management

Habitat restoration aims at creating suitable habitat for endangered species. Many species groups, a number of which are protected under the EU Habitats Directive, benefit from habitat restoration.

On several project sites restoration measures were tailored to favour a focal species, for example the White-backed Woodpecker. Simultaneously the restoration measures also benefit numerous other species that depend on the same key resources as the woodpeckers.

Also in semi-natural grassland sites the restoration planning is often based on habitat requirements of a particular rare species. For example, the Clouded Apollo (*Parnassius mnemosyne*) butterfly larvae feed exclusively on Fumewort (*Corydalis solida*). Consequently, it is important to adapt grazing to a level that secures the thriving of Fumeworts.

WHITE-BACKED WOODPECKER

The White-backed Woodpecker (*Dendrocopos leucotos*) is a threatened species in Finland. Its population has declined by more than 90% since the late 1950s. This relatively large woodpecker species thrives in forests dominated by broadleaved trees with plenty of deadwood, preferably both on the ground and in upright trunks. The deadwood provides grubs and insects for the woodpecker's diet. The woodpecker favours forests with plenty of light and avoids areas overgrown with bushes

and spruce trees. Consequently, its habitat is mostly restored by removing undergrowth trees.

During this project, restoration of White-backed Woodpecker habitat targeted a total area of 82 hectares on eight Natura 2000 sites. White-backed Woodpeckers were observed in most of the restored sites, and on two sites, woodpecker nests were also confirmed during the project.

THE CLOUDED APOLLO

The Clouded Apollo (*Parnassius mnemosyne*), a threatened butterfly species, has disappeared from the greatest part of its range as there are fewer traditional meadows. The project restored Clouded Apollo habitat and a project partner, the Finnish Environment Institute, introduced butterflies to two new areas in Rekijoki and Porvoo. Successful reintroduction is the sum of many factors: for example, weather conditions in the years following the reintroduction must be favourable for the butterflies' reproduction and overwintering. Monitoring of the success of clouded Apollos in their new ranges will continue after the project.



PHOTO: HENNA KETTUNEN



PHOTO: MIKKO KUUSSAARI

FLAT BARK BEETLE

The flat bark beetle (*Cucujus cinnaberinus*), which lives on the decaying trunks of dead Aspens, is only found on two protected Natura 2000 sites in Finland. The species has become threatened as old and sturdy aspens are few and far between in commercial forests and also rare in protected areas. The plight of this beetle was alleviated by means of forest management techniques that favour Aspens in the beetle's current range, from where it will hopefully also spread to other conservation areas.



PHOTO: TEEMU RINTALA

SPECIES INVENTORIES

Information on species is an essential tool for the management, use and monitoring of protected areas. In the Species-rich LIFE project, the species of different taxa were inventoried and monitored. The surveys produced valuable information on the protected areas and ensured that the project measures were correctly targeted and addressed the special requirements of the species on each site.

PHOTO: LASSI KUJALA



Flying squirrel (*Pteromys volans*)

PHOTO: JUKKA MATTLAR



Northern Moonwort (*Botrychium boreale*)

PHOTO: TERHI RYTTÄRI



Wedgeleaf Saxifrage (*Saxifraga adscendens*)

PHOTO: MAIJA MUSSAARI



Crested Cow-wheat (*Melampyrum cristatum*)

PHOTO: MAIJA MUSSAARI



Six-spot Burnet (*Zygaena filipendulae*)

PHOTO: JARKKO KORHONEN



Sowerbyella imperialis



In semi-natural grassland site in Dävits, Kirkkonummi, restoration was first carried out by forestry machinery, and volunteers helped to clean up the landscape before grazing animals arrived.

PHOTO: PÄIVI LEIKAS

Effective results – together

"Doing something with your hands, spending time together with nice people and the joy of seeing an overgrown forest turning into a beautiful landscape."

This sums up a volunteer's memories of a habitat restoration camp. The project offered many possibilities for volunteers to participate in habitat restoration and,

for example, organised 15 volunteer camps in cooperation with WWF Finland. An astounding 1,100 person-days of habitat restoration work were completed during the WWF camps.

In addition, a new concept of volunteer work was created known as Senior Ranger activities. Active old-age pensioners, many of

whom are familiar with traditional methods of farm work, were invited to take part as volunteers. Sixteen Senior Ranger events were organised, and they attracted a total of 447 participants.

Communicating about habitat restoration is vital

Information about habitat restoration work and the species and habitats that benefit from it was spread both to the general public and professionals of the field. The project outcomes have been collected to a website, which also features permanent introductory pages for some semi-natural grassland sites. The website also includes links to videos about restoration of heathland by prescribed burning on Jurmo island in the Archipelago National Park and one of the Senior Ranger events.

www.metsa.fi/web/en/speciesrichlife

- The project was mentioned more than 300 times on different media.
- Good practices of habitat restoration were disseminated at training seminars on habitat restoration, which were attended by more than 90 professionals of the field.
- The project was also showcased internationally in publications and presentations.
- Nature trails that introduce visitors to habitat restoration were set up in Nuuskio and Teijo National Parks.
- On 19 habitat restoration sites that receive high numbers of visitors, permanent information signs were put up.



Collaboration of Metsähallitus Parks & Wildlife Finland, WWF Finland and volunteers was essential for restoring the magnificent heathlands on Jurmo Island.

PHOTO: MAIJA MUSSAARI

List of project sites of Species-rich LIFE

- 1 Tammisaaren ja Hangon saariston ja Pohjanpitäjänlahden merensuojelu-alue
- 2 Meiko-Lapträsk
- 3 Medvästö-Stormossen
- 4 Lohjanjärven alueet
- 5 Nuuksio
- 6 Mustavuoren lehto ja Östersundomin lintuvedet
- 7 Porvoonjoen suisto - Stensböle
- 9 Hiidensaari
- 10 Houtskarın lehdot
- 11 Ävensorın lehto
- 12 Seilin saaristo
- 13 Uudenkaupungın saaristo
- 14 Teijon ylänkö
- 15 Saaristomeri
- 16 Rekijokilaakso
- 17 Paimionjokilaakso
- 18 Kemiönsaaren kalliot
- 19 Vaisakko
- 20 Kolkanaukko
- 21 Mielas
- 22 Läpiän koivikkolehdot
- 23 Uuhiniemi
- 24 Vanajaveden alue
- 25 Vanajaveden lintualueet
- 26 Kaakkosuo - Kivijärvi
- 27 Vahervuori
- 28 Isojärvi - Arvajanreitti
- 29 Kärppäjärven alue
- 30 Västäräkinmäen niityt
- 31 Äpätinkangas
- 32 Niukkala
- 33 Linnansaari
- 34 Suurlahden lampialue
- 35 Haapasaari - Luhtanen - Majaluhta
- 36 Pyhäniemi
- 37 Anttilan tila
- 38 Kyyvesi
- 39 Pyhjärven alueen luontokokonaisuus
- 40 Puijo

- 41 Halmejoki - Karhonsaari - Potkunsaaari
- 42 Korsunmäki - Keinälänniemi
- 43 Kolmisoppi - Neulamäki
- 44 Laivonsaari
- 45 Telkkämäki
- 46 Kolin kansallispuisto
- 47 Huurunlampi - Sammakkolampi - Huurunrinne
- 48 Lapväärtin kosteikot
- 49 Merenkurkun saaristo
- 50 Luodon saaristo
- 51 Tegelbruksbacken
- 52 Oulanka
- 53 Syöte
- 54 Räkäsuo
- 55 Ison Kaitasen lehto
- 56 Pihlajavaaran lehto
- 57 Lauttolahden - Soidinvaaran kohteet
- 58 Martinselkonen
- 59 Perämeren kansallispuisto
- 60 Perämeren saaret
- 62 Laajalahden lintuvesi
- 63 Sipoonkorpi
- 64 Laukkallio
- 65 Evon alue
- 66 Sammalsuonpelto

