focus NATURE

Best LIFE Nature Projects 2009

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FOREWORD

Angelo Salsi
Head of the LIFE Nature (E3) Unit
Directorate-General for the Environment
European Commission

This is the second year that we have made a selection of LIFE Nature projects that have proven to be exemplary in their area of work.

Following an initial review carried out by its external monitoring team, the European Commission selected the 23 most outstanding LIFE Nature projects completed by 2009. The Member States and the external monitoring team then reviewed these 23 'best' projects to select a top five.

These five 'Best of the Best' (BoB) projects can be held up as models of what constitutes a successful, well-designed and well-executed LIFE Nature project.

The BoB projects have targeted a broad range of endangered species and habitats across several Member States – a fitting tribute to the diverse and wide-ranging work of LIFE Nature to improve the conservation status of endangered species and natural habitats, and to support the implementation of the Birds and Habitats Directives and the Natura 2000 network.

The BoB project activities included: widening of the river Lech in the Austrian Tyrol; Scottish salmon conservation; birdlife conservation in the Weidmoos SPA in Austria; habitat recovery for the Azores bullfinch; and natural grassland conservation in Sweden.

Julijana Lebez Lozej of the Slovenian Ministry of the Environment and Spatial Planning took on the delicate work of coordinating this selection process. I would like to thank her and other colleagues from the Member States and external monitoring teams who evaluated the contenders. I would also like to thank the project beneficiaries and their partners for their excellent work in favour of nature conservation.

The awards for the best LIFE-Nature projects were presented at a conference on the future of the LIFE programme in Brussels in May 2010.

The higher profile that the best LIFE Nature projects receive through these awards ensures that more people know about the LIFE programme and the projects it co-finances. I am confident that these awards will continue to grow in stature and range in the coming years.

CONTENTS

The "Best of" initiative

The EU Member States represented on the LIFE Committee and the European Commission's LIFE Nature Unit have announced the Best LIFE Nature Projects 2009. The results of the selection, as approved by the LIFE Committee members in the spring of 2009, are the 23 projects featured in this publication. These projects represent the most successful of the recently completed LIFE Nature projects, in terms of best practices and/or demonstration actions on nature conservation and the implementation of the Habitats and Birds Directives.

The LIFE Nature component of the LIFE programme co-funded a total of 1 028 projects between 1992 and 2007, with a total budget of more than €1 443 million. For the LIFE+ funding period, 2007-2013, a further 84 LIFE Nature projects have already been approved, representing a total investment of €224 million.

To help improve the dissemination of LIFE Nature project results, the LIFE Unit decided to identify and reward those best practice projects with the highest potential for transferability. This, second Best LIFE Nature Projects exercise, is the product of an identification and evaluation process based on a set of criteria developed by the LIFE external monitoring team in collaboration with the European Commission.

A total of 23 projects were selected as 'best' projects, with five awarded the title, 'Best of the Best' (see table). The projects selected were drawn from across the EU-27 and contribute to LIFE Nature's main objectives: supporting the implementation of the EU's Habitats and Birds Directives and the establishment and management of the Natura 2000 network of sites.

HOW WERE THE BEST PROJECTS SELECTED?

Scoring of completed LIFE Nature projects was initially launched in the summer of 2006. Since then, projects are technically assessed by the LIFE Unit's external monitoring team, provided by the Astrale consortium. For the current best projects exercise, the monitors ranked all the projects that had ended by December 2009 to produce a first list. The final selection was then undertaken by the Member States, under the coordination of Julijana Lebez Lozej of the Slovenian Ministry of the Environment and Spatial Planning. Projects were marked according to the following criteria:

- Short-term improvement in conservation status (max. 30 points)
- Short-term leverage effect (additional resources mobilised) (max. 10 points)
- Long-term sustainability of improved conservation status (max. 30 points)
- Long-term leverage effect (max. 20 points)
- Long-term regional / national / international impact (max. 10 points).

The actions of the selected projects range from the targeting of individual species listed in the Habitats or Birds Directive to Natura 2000-site-based projects (on a single or multiple sites) with actions targeting several species and habitats.

Species targeted by the Best Projects 2009 included the Atlantic salmon, crested newt, marsh fritillary and Crete and Cyprus endemic plants, and several birds species (seabirds, Lanner falcon, lesser white-fronted goose and Azorean bullfinch) , as well as several grasslands, forest, wetland and river habitats.

The 23 Best LIFE Nature projects 2009

Species	
★ Scottish Salmon	UK
CRETAPLANT	Greece
BALTRIT	Estonia
ASPEA	Denmark
Birds	
BIARMICUS	Italy
EAGLELIFE	Estonia
Anser-Eur	Finland
★ PRIOLO	Portugal
AQUILA HELIACA	Slovakia
IBA MARINAS	Spain
IBAMarinha	Portugal
ZEPA eléct. Aragón	Spain
Wetlands	
★ Tiroler Lech	Austria
★ WEIDMOOS	Austria
Albuera Extremadura	Spain
Donau-Ybbs	Austria
MEDPONDS	Greece
RRBI	Ireland
Grasslands	
★ Kinnekulle	Sweden
Vattajan dyyni LIFE	Finland
Forest	
Forest-Alp NATURA 2000	Romania
GreenBelt	Finland
Comanacy	Cyprus

★ "Best of the Best" projects

SPECIES

The European Union recognises the importance of safeguarding its most threatened species. In 1979, the Birds Directive was adopted, its aim to protect all wild birds in the EU, and in 1992, the Habitats Directive was adopted, extending the protection to some 1 200 threatened plant and animal species and to 220 habitat types. More recently, in 2006, a new EU Biodiversity Action Plan was designed to halt the loss of biodiversity, in particular species loss.

Several species included in the annexes of the Habitats and Birds Directives have been targeted by LIFE projects. The following pages highlight some projects whose actions have been selected as examples of best practice in conservation across the EU.

The wide-ranging 'Conservation of Atlantic salmon in Scotland' (CASS) project is one of the most significant initiatives of this kind undertaken in the United Kingdom. With an overall budget of more than €5.7 million (39% funded by LIFE Nature), it brought together 17 public and private sector partners to tackle a series of threats to the Atlantic salmon on eight key rivers in Scotland.

SPECIES

Partnerships to safeguard Atlantic salmon in Scottish rivers

The Annex II-listed Atlantic salmon (*Salmo salar*), the so-called 'king of fish', is widely distributed throughout the North Atlantic, including Europe. However, populations have shown a steady decline in many countries over the last fifty years. This has been attributed to habitat and water quality issues in freshwater, and also to changes in the marine environment. The situation has worsened considerably since the 1970s and catches of wild salmon have fallen by 80%. River pollution caused by industrialisation has severely damage local populations, as has the increased number of man-made obstacles such as dams and weirs, and the alteration of watercourses, which makes migration impossible..

The UK salmon population accounts for a large proportion of the total European stock, with Scotland considered a stronghold for the Atlantic salmon – a 'flagship species' serving as a useful indicator of water quality. The salmon is also economically important to Scotland – worth more than €100 million a year and generating some 2 000 jobs (source: Scottish government). Scotland has more than 300 salmon rivers, supporting many hundreds of populations, each of which is genetically distinct. But even in Scotland, where the water quality is generally good, the species is subject to many external pressures.

BEST OF THE BEST 2009-2010

The LIFE CASS project was launched in 2004 to tackle some of the freshwater threats that have led to a serious decline in salmon abundance in Scotland. These include over-exploitation from netting and angling, physical degradation of spawning and nursery grounds, the introduction of non-native stocks, and water

Improving and restoring access to rivers is crucial for the survival of salmon – removal of manmade river obstacles

pollution. Project partners included eight district salmon fishery boards – which collectively are responsible for roughly 40% of the wild salmon resource in Scotland. The initiative also brought together conservation agencies, the private energy company, Scottish and Southern Energy, and the Scottish government.

Aided by the administrative support of the government conservation agency, Scottish Natural Heritage (SNH), and the ground-level support of the fishery boards, the project's overall objective was to maintain the abundance and diversity of Atlantic salmon in Scotland. This was to be achieved by improving the natural freshwater habitats and management regimes through joint efforts and partnerships. It also aimed to raise awareness among stakeholders and the general public of the needs of the species.

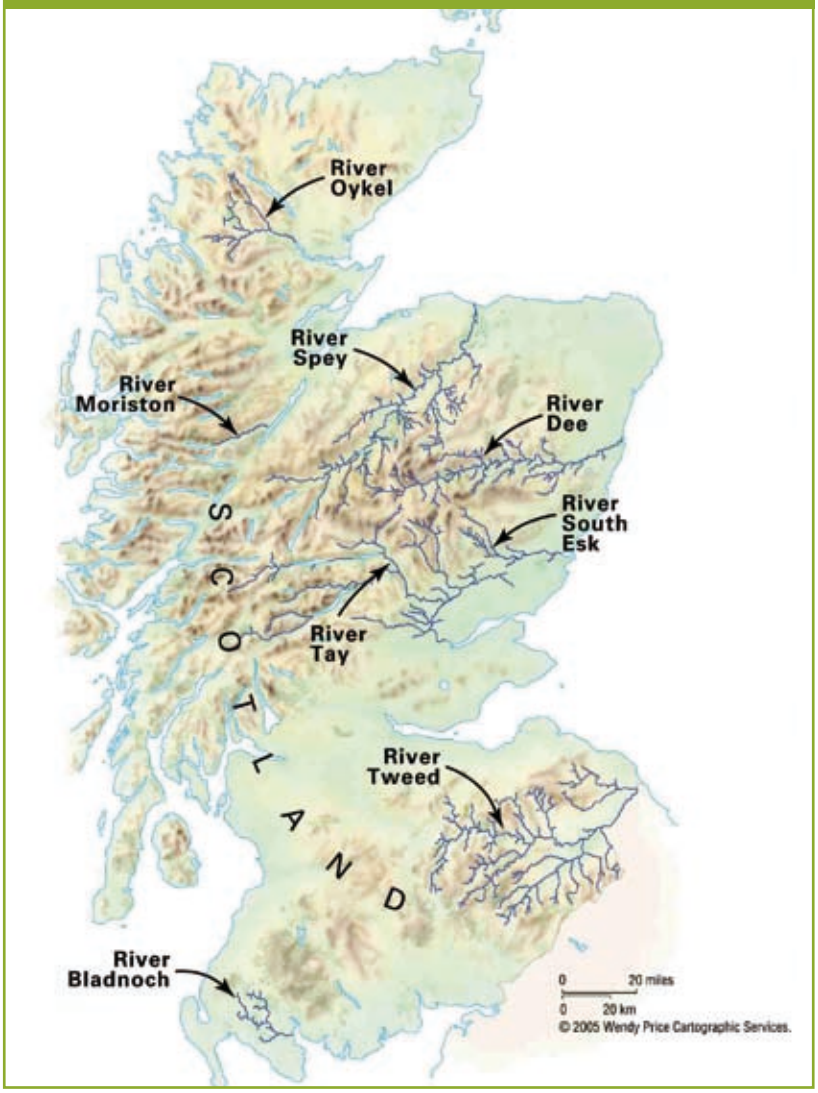
> *"... Working in partnership to safeguard and maintain the abundance and diversity of Atlantic salmon in Scotland by improving freshwater habitats, developing management guidelines, and demonstrating best practice in removal of key threats ..."*
>
> Project Mission Statement

Eight rivers (see map) were chosen to demonstrate how a range of problems could be resolved through consensus among all parties concerned. The rivers (all Natura 2000 sites) include some of the most famous salmon fishing rivers in the world, such as the Dee, Tweed, Tay and Spey.

Moreover selected rivers are in sites already achieving 'good ecological status' (according to the Water Framework Directive) and 'favourable conservation status' (according to the Habitats Directive). Andrew Wallace, chairman of the CASS project steering group (responsible for overseeing the CASS partnership) says that the project had two options: "To focus on what was good in order to protect it; or to focus on what was bad and try to restore it". The former strategy was taken, with the view that measures to protect and enhance the salmon on these rivers would also be adopted in other less favourable areas.

More than 200 practical actions were planned over the four-year project. These included the purchase or lease of netting rights to halt commercial salmon netting on the Oykel and Bladnoch rivers, improving and restoring access to rivers through the removal of 25 man-made obstacles and in-stream habitat improvement works to restore spawning and juvenile habitat. The project also aimed to address the problems of silting-up along eroded river banks through fencing and stabilising structures. In some rivers, it planned to introduce fish to newly restored sections. It would also use fish counters to provide more accurate information on the status of salmon in several sites.

Scottish rivers targeted by project actions



RESULTS

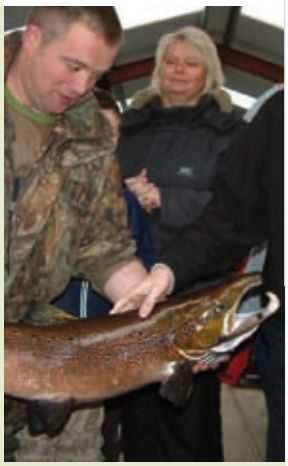
The results were impressive, and some areas performed better than expected. For example, the project aimed to improve 40 000 m^2 of degraded streams, but in fact restored more than 70 000 m^2. It also aimed to fence 52 km of riverbank

SPECIES

'KING OF FISH'

The Atlantic salmon (*Salmo salar*) – listed as in need of conservation in Annex II of the Habitats Directive – is an anadromous fish species (i.e. adults migrate from the sea to breed in freshwater). Spawning takes place in shallow excavations called 'redds', found in shallow gravelly areas in clean rivers and streams where the water flows swiftly. The young that emerge spread out into other parts of the river. After a period of 1-4 years the young salmon migrate downstream to the sea as 'smolts'. Salmon have a homing instinct that draws them back to spawn in the river of their birth after 1-3 years in the sea.

Unlike their Pacific cousins, Atlantic salmon do not automatically die following spawning, and some survive and make their way back to sea, where they can regain condition and repeat their spawning migration. The homing behaviour of Atlantic salmon has resulted in the formation of genetically distinct stocks between rivers and even within some individual rivers.



Atlantic salmon (Salmo salar)

to prevent uncontrolled grazing, but in fact around 80 km was actually fenced. Other goals such as removing 25 obstacles to migration, riverbank forest management and restocking of rivers were all achieved. The project also produced a guidance document on gravel extraction, which can lead to the removal of valuable spawning habitat in salmon rivers.

A major achievement was the development of a very successful partnerships and hugely improved relationships between the various stakeholders. Wallace says that this situation hasn't always existed "What started off as deep apprehension has been completely turned around and most people learnt a lot in the process – that's been a big positive aspect."

Preliminary results, reported as the project drew to a close (in the summer of 2008), showed that salmon were returning to some rivers, one of which, the Coy, a Dee tributary, had not seen salmon in some parts for more than 250 years.

'Salmon in the Classroom', an education awareness programme for schoolchildren

LESSONS LEARNT

The project has helped the partners to gain a better understanding of the technical issues involved in salmon conservation and to develop expertise in some crucial areas such as fish-passage installation, riparian work and in-stream work.

The capacity for general awareness-raising of issues affecting salmon has also increased through the dissemination of a wide range of information at different levels to different recipients. The partners have developed valuable project management skills and the work to help salmon has also had a direct positive influence on populations of the freshwater pearl mussel (*Margaritifera magaritifera*) – another Annex II-listed species – due to the symbiotic relationship between the two species.

The project also achieved some other important and lasting results: not only is the strong project partnerships developed through the project continuing, but the 'Salmon in the Classroom' project, an innovative education awareness programme for schoolchildren, is also continuing due to its popularity. Furthermore, benefits to the local economies are also likely to accrue in the long-term due to improvements of salmon stocks.

Biologist Bob Laughton of the Spey Fishery Board was responsible for implementing some of the CASS measures to restore or improve access on 43 km of the River Spey and its tributaries. Like Wallace, he is upbeat about his experiences: "Technically, we learnt a lot," he says, adding that knowledge of project management and co-operation with local stakeholders has been greatly enhanced: "At the start, working relationships were poor. This has been transformed," he says.

Finally, another positive outcome for this "Best of the Best" LIFE Nature winner is that monitoring carried out during the project is continuing. For example, equipment linked with fish counters installed at strategic points (see pictures) is providing clear images and accurate counts of the salmon run (also for brown trout and sea trout). Overall, says Laughton, the (upstream) salmon counts for 2009-10 are looking "very positive".

Project number: LIFE04 NAT/GB/000250

Title: Conservation of Atlantic salmon in Scotland (CASS)

Beneficiary: Scottish Natural Heritage

Contact: Andrew Wallace

Email: a.r.wallace@btinternet.com

Website: www.snh.org.uk/salmonlifeproject

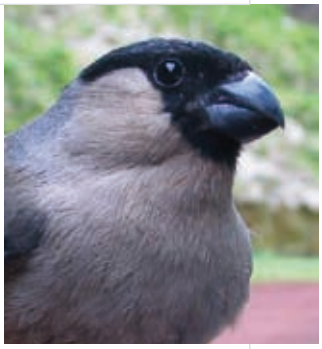
Period: Feb-2004 to July-2008

Total budget: €5 746 000

LIFE contribution: €2 348 000

SPECIES

Recovering Azores bullfinch from the brink of extinction



Endemic to the island of São Miguel in the Azorean archipelago, the Azores bullfinch is one the most endangered birds in Europe. A LIFE project has succeeded in recovering native laurel forest habitat by eliminating invasive plants. The project was crucial for preventing the certain extinction of the species.

BEST OF THE BEST 2009 2010

The Azorean island of São Miguel is the only place in the world where you can find the Azores bullfinch (*Pyrrhula murina*). Known by the locals as priolo, it lives between the Serra da Tronqueira and the Pico da Vara, in the Nordeste and Povoação municipalities on the east side of the São Miguel Island. This area covers about 6 000 ha and is a Natura 2000 site, classified a Special Protection Area (SPA) for birds.

The Azores bullfinch is dependent on the native island laurel forest (*Laurissilva*) habitat. It feeds on diverse plants and flowers throughout the year. Significantly, the species appears entirely dependent on native plants for food during certain months of the year. For example, in winter it is dependent on native plant species such as Azorean blueberry (*Vaccinium cylindraceum*) and ferns, such as tree fern (*Culcita macrocarpa*).

Considered a plague by orange producers in the 19th Century, this bird has long since been subject to persecution: the destruction of its main habitat – Laurissilva forest - led to the near extinction of the species. As a result, the bird's numbers fell sharply to 300 to 400 individuals, according to 1990s estimates. The loss of natural habitat was due to the conversion of the original forest into pastures and Japanese red cedar (*Cryptomeria japonica*) plantations. In addition, the habitats were heavily disrupted by plant species invasions, in particular the yellow ginger lilly (*Hedychium gardneranum*), the Madeiran sweetpepperbush (*Clethra arborea*), the Australian cheesewood (*Pittosporum undulatum*), the Chilean gunnera (*Gunnera tinctoria*) and the Australian Blackwood (*Acacia melanoxylon*). As a result, the species was classified as 'critically threatened' by the IUCN, and is one of the most endangered bird species in Europe.

Sociedade Portuguesa para o Estudo das Aves (SPEA), a Portuguese Birdlife partner proposed a LIFE Nature project that aimed to urgently restore the bullfinch's habitats and recover the species from the brink of extinction.

ELIMINATING INVASIVE PLANTS

One of the main project actions was to restore and enlarge the bullfinch's habitat, which was affected by the uncontrolled spread of several invasive plant species. In mainland Europe, habitats are normally affected by one plant species that invades a habitat by displacing native species. In the Azores, several invasive plant species are taking over the

Laurissilva forest, Azores bullfinch habitat

Laurissilva forest habitat, creating new communities, displacing the endemic flora and disrupting the native habitats. As the bullfinch is highly dependent on native plants for feeding, the project's action of controlling these invasive plants was extremely important for the long-term survival of the bird.

This action represented one of the project's major tasks and challenges, and required significant human and logistic support. Due to the skills needed to fulfil the task, the project trained a professional team, prior to going into the field, on plant species identification and how to safely apply herbicides and different invasive plant elimination protocols.

About 230 ha of natural habitat was restored through the simultaneous application of different herbicides and physical elimination of the invasive plants. This action was highly dependent on weather, the nature of the terrain and the density of invasive plants.

The Natura 2000 site, SPA Pico da Vara/Ribeira do Guilherme, is largely covered by *Criptomeria japonica* plantations, used for timber production. To restore these forested areas, an experimental action was carried out on 10 ha. On this area, *Criptomeria* was removed and more than 30 000 native plants species were planted.

Re-plantating of the restored areas took into account the Azores bullfinch's food requirements and the composition of the habitat. The project built a new greenhouse in the Nordeste's Forestry Services Nurseries, a partner in the project, to boost the production of native plants. The species grown at the nurseries were Azorean blueberry (*Vaccinium cylindraceum*), Azorean plum (*Prunus azorica*), laurustinus (*Viburnum tinus subsp. subcordatum*), Azorean holly (*Ilex azorica*), Picconia azorica, buckthorn (*Frangula azorica*), Azorean heather (*Erica azorica*), Azorean cedar (*Juniperus brevifolia*) and laurel (*Laurus azorica*). These native species were also planted in areas where alien species had been eliminated. By the end of the project, 230 ha of native forest was in the process of clearing invasive plant species, and more than 65 000 specimens of native species grown in the nurseries were planted.

Demonstration fruit tree orchard designed to increase the interest of farmers on this beneficial activity for the species

Moreover, the project created a demonstration fruit tree orchard to increase the interest of farmers in this alternative activity. Since the plantation of the "Priolo's orchard" in January 2005, Azores bullfinches have been seen in the orchard benefiting from the available fruits and flowers. There is also a demand from local owners for information on creating new orchards. This has an economic added value and is a land enrichment opportunity, which associated with the conservation of the Azores bullfinch, may also contribute to the conservation of native habitats.

ENLARGING THE NATURA 2000 SITE

Another result of the project was the proposal to enlarge the Natura 2000 site, SPA Pico da Vara/Ribeira do Guilherme. Its original area covered 2 115 ha. However, the site did not cover the complete distribution range of the Azorean bullfinch, as the species was also found in some middle and high altitudinal laurel forests that were not included in the initial SPA. Therefore, the project proposed the inclusion of these areas. This was legally approved by the Azorean regional government in April 2005, resulting in the tripling of the SPA area to 6067 ha.

At the same time, an SPA management plan was legally approved. This plan, which was developed in partnership with the project beneficiary (SPEA) and the environment department of the regional government (SRAM), aims to ensure that the measures implemented by the project will continue after the project ensuring the long-term management of the species habitat.

MONITORING THE SPECIES AND HABITAT

The project carried out extensive monitoring of the evolution of the birds numbers and the progress of the elimination of the invasive plants and recovery of native habitat.

SPECIES

The population survey was carried out on a yearly basis over the entire potential distribution range of the species. The Azores bullfinch population estimated from these counts was relatively stable between 2002 and 2005, but increased significantly in 2005 and 2006 (see figure 1).

The combination of a favourable breeding period in the summer of 2005, a low mortality rate, thanks to a short winter, and the habitat management actions of the LIFE project contributed to this population increase. The population decline in 2006/2007 is not significant. The current estimates suggest a population of some 500-800 individuals. The main project action that promoted this significant recovery of the species was the elimination of invasive plants and the planting of native species, which boosted the food supply.

RAISING AWARENESS OF *PRIOLO*

The project raised public awareness through tools such as a website (in four languages), electronic and printed information, educational material and activities, and media activities. The project targeted schools, planned and attended several scientific conferences, and helped with the setting up of a scientific workshop on priolo's conservation. Moreover, the project created a mobile exhibition of photographs of the Azores bullfinch and its habitat, and opened more than 20 km of temporary and permanent trails to facilitate access to areas restored by the project. At international level, the project had a stand at the British Birdwatching Fair (BBF), considered to be the biggest international event for ornithological tourism, in 2007 and 2008. This was an important opportunity to highlight the value and importance to the local economy of the Azores success as a bird-watching destination.

In addition, BirdLife International (a partner of the beneficiary) selected the priolo for its 'Species Champions' campaign, and in 2008 the project received €3 000 from the Portuguese Banco Espirito Santo Biodiversity Award Scheme.

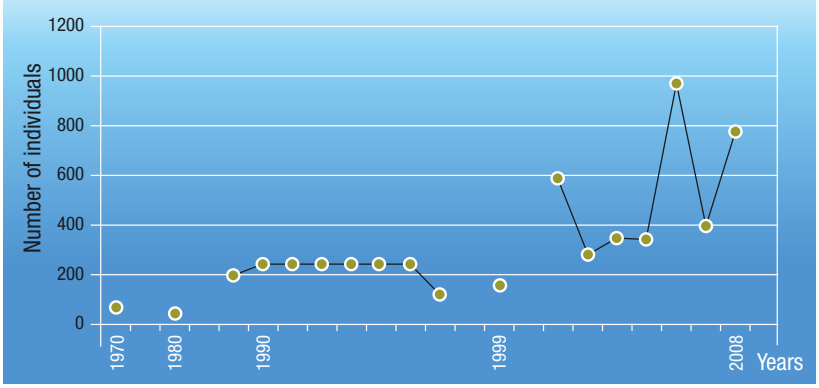
Finally, the project trained 23 Portuguese and foreign staff in the study of the Azores bullfinch and its natural habitat. This was an important contribution to the understanding of the species and research undertaken resulted in two master's theses and a PhD on biodiversity, conservation and restoration of natural habitats.

LIFE AFTER LIFE

The project beneficiary is currently running a follow-up LIFE+ project on the "Recovery, conservation and sustainable management of Tronqueira/Planalto dos Graminhais" (LIFE07 NAT/P/000630) on the conservation of bullfinch and laurissilva habitats. The project also focuses on other habitats in the SPA that are classified as priority under the Habitats Directive and in great danger of destruction due to the expansion of invasive alien plant species. Although not fully dedicated to bullfinch conservation, this LIFE+ project will certainly benefits the species, increasing the area of suitable habitat.

The estimated population of the bullfinch in 2003, when the project was first launched, was just 120 pairs. By the end of the project this number had increased to 500-800 pairs and more than 230 ha had been restored. This achievement represents a significant improvement in the long-term conservation of the species and has resulted in its status on the IUCN Red List being revised from 'critically endangered' to 'endangered'.

Figure I: **Evolution of the number of individuals of Azores bullfinch**



At the end of the project the bullfinch population had improved from 120 pairs to 500-800 pairs

The project actions resulted in the downgrading of the species' IUCN Red List status from 'critically endangered' to 'endangered'

Project number: LIFE03 NAT/P/000013

Title: PRIOLO - Azores bullfinch habitat recovery in Pico da Vara/Ribeira do Guilherme SPA

Beneficiary: Sociedade Portuguesa para o Estudo das Aves

Contact: Joaquim Teodosio

Email: spea@spea.pt

Website: www.spea.pt/ms_priolo

Period: Oct-2003 to Nov-2008

Total budget: €2 844 000

LIFE contribution: €1 706 000

SPECIES

Protecting HNV grasslands and raptors in Tuscany

Building on an earlier LIFE Nature project in the same SCI/SPA mountainous area of southern Tuscany, this Italian project has successfully implemented a series of measures for the long-term conservation of high nature value (HNV) grasslands and birds of prey.

Monte Amiata is a massif in the southern part of Tuscany, between the provinces of Siena and Grosseto. Its western slopes are included in the Natura 2000 site, Mt. Labbro and the Upper Albegna Valley, an area of more than 6000 ha, where a previous LIFE Nature project **(LIFE99NAT/IT/006229**) was implemented from 1999-2003. This earlier project aimed to improve a wide range of habitats, such as the priority habitat semi-natural dry grasslands on calcareous substrates, and the *Juniperus communis* formations on heaths or calcareous grasslands, as well as several species of EU importance, such as *Triturus carnifex*, *Testudo hermanni*, and several bat species.

One of the outcomes of the project was the designation of the site as a Special Protection Area (SPA) for birds, due to the presence of several nesting raptors, such as the lanner falcon (*Falco biarmicus*), honey buzzard (*Pernis apivorus*), peregrine falcon (*Falco peregrinus*), short-toed eagle (*Circaetus gallicus*) and Montagu's harrier (*Circus pygargus*).

The main aim of the more recent LIFE 'Biarmicus' project was to extend these actions to other areas within the Natura 2000 site and to implement a series of measures for the long-term conservation of its rare grassland habitats and birds of prey. One key measure, in particular, was the reintroduction of the red kite (*Milvus milvus*), with individuals from Corsica and Switzerland. The project, which was run by the Amiata Grosseto mountain community, carried out a series of specific habitat conservation measures, including the removal of invasive alien species from the priority semi-natural dry grasslands and improvements to the calcareous grasslands. As well as preserving 70 ha of these important grassland habitats, the project also created wide feeding areas for the raptors.

MONITORING AND SURVEILLANCE

Conservation of the targeted birds of prey was achieved through a combination of monitoring and surveillance of their most important nesting sites, making power lines safe (over 4.6 km), the creation of feeding areas, and the restoration of nesting sites. A breeding centre for red kite was also created in order to support its restocking. Other actions included the restoration and the creation of 10 small ponds for amphibians such as the rare yellow-bellied toad (*Bombina pachypus*). In addition, the beneficiary carried out an extensive public awareness-raising campaign targeting the area's different land users: farmers and the local communities, schools, tourists, hunters, etc. Nature trails were also constructed in order to increase people's knowledge and appreciation of the area.

Finally, the reintroduction of a red kite population in Tuscany was started with the release of five individuals in August 2007 and a further 20 birds in 2008. Unfortunately, three of these birds have subsequently died (electrocuted by power lines). Despite this, a stable population of some 16 individuals has been established in the area. The reintroduction was achieved thanks to successful networking with several European nature conservation boards, NGOs and scientific experts.

Nature trails offer great opportunities to view the nesting raptors in the SPA

A new LIFE project started in 2010 (**LIFE08 NAT/IT/000332** 'Save the Flyers') and involves the Parco Naturale Regionale Gola della Rossa e di Frasassi (Regione Marche). It aims to establish two viable populations of red kite in central italy.

Project number: LIFE04 NAT/IT/000173

Title: Protection of habitats and raptors in Mt. Labbro and Upper Albegna Valley

Beneficiary: Comunità Montana Amiata Grossetano

Contact: Aldo Coppi

Email: a.coppi@cm-amiata.gr.it

Website: www.lifelabbroalbegna.it/indexlife2.htm

Period: Oct-2004 to Sep-2008

Total budget: €1 109 000

LIFE contribution: €444 000

SPECIES

A Finnish project to protect the lesser white-fronted goose focused on its flyways and breeding sites in several countries. Based on monitoring activities carried out by the project, several key action plans were drawn up.

Improving flyways of the lesser white-fronted goose

Several European migratory bird species, including the lesser white-fronted goose (*Anser erythropus*), are threatened by the degradation of breeding grounds and the loss of staging and wintering sites. While some species have winter or breeding stages outside the EU, these are covered by the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA).

The lesser white-fronted goose breeds in the tundra zone (low-arctic and forest), from northern Fennoscandia to eastern Siberia. Currently, there are 20-30 breeding pairs in the EU flyway. Its nesting habitat is typically open tundra, and it feeds in the breeding season on sedge marshes or mires around lakes.

During migration, the species stops over on coastal meadows (Finland and Estonia) and natural steppes (Hungary). It also uses agricultural land due to changes in its natural staging habitats. A key staging site for the autumn migration of the Fennoscandian population is the northern part of the Kanin Peninsula (north-western arctic, Russia). Here, the population divides into two parts for the winter: more than half of the Fennoscandian geese follow the European migration route from Kanin via the Baltic States to Hungary, and then further south to the wintering sites in northern Greece and westernmost Turkey (e.g. the Evros Delta area).

EUROPEAN ROUTE

The Finnish LIFE project focused on the conservation of the population that takes the European migration route. The ultimate objective of the project was to stop the decline of the Fennoscandian population, which has been mostly brought about by hunting and poaching. The lesser white-fronted goose closely resembles the white-fronted goose (*Anser albifrons*), which is an important game species in most countries in its range.

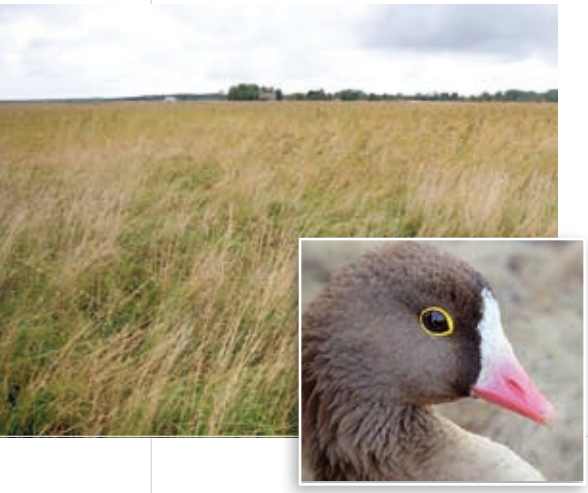
A satellite tracking study revealed a previously unknown 'loop migration' route from the Fennoscandian breeding grounds to moulting sites of non-breeding birds in Siberia and back to the wintering sites in Greece via Kazakhstan, southern Russia and Ukraine. Several major staging sites were discovered.

As a result of the habitat management actions, the lesser white-fronted goose started to use sites that were restored and managed by the project in the Hortobágy National Park, Hungary, and in the Matsalu National Park, Estonia. By the end of the project, at Hortobágy, the goose only used the sites within the national park that had been restored.

National action plans for the lesser white-fronted goose, which were drawn up by the project, were adopted by the national authorities in Norway, Finland and Estonia. In Norway, implementation of conservation actions proposed in the national plan began during the project: hunting of all geese is now banned in the autumn staging area in the Inner Porsangen Fjord area and control of the red fox (*Vulpes vulpes*) population in the core breeding area started in 2007.

The LIFE project played a key role in drawing up an International Species Action Plan for the conservation of the western Palearctic population of the lesser white-fronted goose, which was adopted by AEWA in 2008. According to the project beneficiary, WWF Finland, it is too early to assess the conservation impact of the public awareness campaigns, but in Estonia and Hungary, co-operation with hunters' associations has been good both at national and regional levels.

The lesser white-fronted goose started to use sites that were restored and managed by the project



Project number: LIFE05 NAT/FIN/000105

Title: Conservation of *Anser erythropus* on European migration route

Beneficiary: WWF Finland

Contact: Jari Luukkonen

Email: jari.luukkonen@wwf.fi

Website: www.wwf.fi/english/finland/lesser_white_fronted

Period: Apr 2005 to Mar 2009

Total budget: €1 097 900

LIFE contribution: €749 025

SPECIES

The EAGLELIFE project adopted a nationwide approach to improving the conservation prospects in Estonia of three rare European bird species: the black Stork (*Ciconia nigra*), the lesser spotted eagle (*Aquila pomarina*) and the greater spotted eagle (*Aquila clanga*).

Conserving eagle and black stork populations in Estonia

The forests and wetlands of Estonia are home to important European populations of the three bird species, all of which are listed as priority for conservation under Annex I of the Birds Directive. The country has around 500-600 pairs of the lesser spotted eagle, an estimated 100-115 pairs of black stork, and 20-30 pairs of the greater spotted eagle – the latter is considered one of Europe's most endangered bird species.

All three species are threatened by changes in rural land use in the country that have limited nesting sites by reducing natural old forest. Land-use changes have also caused disturbances during the nesting period and degraded feeding grounds. For example, numbers of black storks nesting in Estonia have halved during the past 20 years; and the numbers of the critically endangered greater spotted eagle have also dropped sharply. The fact that many nesting sites are unknown also means they remain unprotected. These factors are exacerbated by a lack of public interest and awareness of the need to conserve these birds.

The EAGLELIFE project was launched in 2004 to improve the conservation status and to aid the long-term survival prospects of the target species in Estonia. Run by the Estonian Ornithological Society (a Birdlife International partner since 2000) in co-operation with landowners, its primary focus was to preserve and restore the main habitats for the birds. The project also targeted an increase in public awareness of the need for conservation and used a variety of communication tools, including onsite webcams, to actively involve the public in the conservation work.

Old forest habitat around black stork nest sites were acquired

RESULTS

The project adopted a nationwide approach to improving the conservation status of each of the targeted bird species. More than 230 new nest sites were registered over the course of the project: 185 for the lesser spotted eagle; seven for the greater spotted eagle; and 45 for the black stork. Unfortunately, the overall trend for the greater spotted eagle is still negative, because of natural cross-breeding with the lesser spotted eagle.

More than 2 850 ha of targeted floodplains were restored to enhance feeding grounds for the eagles and just under 77 ha of old forest around black stork nest sites were successfully acquired to ensure their high conservation status. Further foraging areas were also provided for black storks by clearing the banks of some streams.

A key factor in improving the conservation status of the species was the establishment of micro-reserves around nest sites located outside the existing nature conservation areas. More than 5 500 ha of land became micro-reserves, many of which have now been included in the Natura 2000 network.

Finally, the project also created or updating action plans for the targeted species for the period 2009-2013. These plans define key actions and nature conservation obligations for the species.

Project number: LIFE04 NAT/EE/000072

Title: Arrangement of spotted eagles and black stork conservation in Estonia

Beneficiary: Estonian Ornithological Society

Contact: Urmas Sellis

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Website: www.kotkas.ee/ENG/alcp.html

Period: Apr-2004 to May-2009

Total budget: €847 000

LIFE contribution: €635 000

SPECIES

Conservation of endangered Cretan flora

Plant micro-reserves (PMRs) were established by a LIFE project on Crete as a conservation measure for seven rare species. Modelled on PMRs in Spain, the success of the project demonstrates how this methodology can be transferred to other plant-rich Natura 2000 sites in Europe.

The Mediterranean bio-geographical region is the most bio-diverse in the EU, boasting a high number of endemic flora on the islands and mountains of the Mediterranean Sea. Crete is particularly rich in plant life. However, its plants are subject to threats, primarily from human activities, such as tourism, farming (including the grazing of farm animals), uncontrolled access to important habitats, fires, and habitat modification through deforestation, drainage and climate change.

Crete has 14 plant species included in Annex II of the Habitats Directive – eight of these have priority conservation status – and the Greek authorities proposed 38 Natura 2000 sites that include populations of these plant species. As part of the LIFE project, the University of Athens, in collaboration with the Mediterranean Agronomic Institute of Chania (MAICh) and the Region of Crete through the Forest Directorate of Chania, established a pilot network of PMRs in western Crete (the prefecture of Chania) to support the conservation of six endemic priority plant species (*Androcymbium rechingeri, Anthemis glaberrima, Bupleurum kakiskalae, Cephalanthera cucullata, Hypericum aciferum, Nepeta sphaciotica*) and one priority habitat (Palm groves of Phoenix) found in four of these Natura 2000 sites.

As the distribution range of the targeted species was so narrow, the PMR was considered to be the most appropriate conservation and management tool. This approach was first tested in 1994 in Valencia and had already been successfully applied as part of other LIFE projects. The Crete project established a network of seven PMRs in small land parcels (less than 20 ha) through fencing, the hiring of wardens and the installation of signs and boards.

PROJECT ACTIONS

A detailed inventory and mapping was carried out for each PMR, which recorded the location and density of each species. This information was then used to develop a management plan for each PMR area, all of which were already in public ownership. Long-term monitoring plans were also drawn up for each species in order to determine the factors that affect their conservation. Some of the parameters monitored included: climate conditions; soil characteristics; interaction with other plants; the presence of animals; and human activities. The project established permanent monitoring plots, with meteorological and environmental sensors and, in collaboration with the Chania Forestry Service, also hired a warden to guard each PMR.

The project also collected seeds of target species in order to study their germination and assess their viability. The seeds are currently stored in the MAICh Seed Bank, and seedling nurseries were established in the MAICh Botanical Garden and in the Alpine Botanical Garden at Omalos (mountains of Lefka Ori). These seeds and plants can be used to restore and reinforce the natural populations of the target species. The visitor centre established at MAICh and the information centre of the Forest Directorate of Chania (at Omalos) continue to disseminate the project's goals and results as well as to enhance the environmental awareness of inhabitants and tourists alike.

As a result of the project's actions, the long-term conservation of two target species (*B. kakiskalae* and *C. cucullata*, particularly threatened by grazing) has improved, as both species benefited significantly from the fencing actions. Moreover, the project defined the legal status of PMRs in Greek law, along with the Natura 2000 sites. The proclamation of the PMRs as "wildlife refuges" was recently officially approved (2009) by the regional authority of Crete.

Project number: LIFE04 NAT/GR/000104

Title: A pilot network of plant micro-reserves in western Crete

Beneficiary: National and Kapodistrian University of Athens

Contact: Prof. Costas Thanos

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Period: Sept-2004 to Dec-2007

Total budget: €787 000

LIFE contribution: €591 000

The Carpathian basin (Slovakia and Hungary) is one of the last remaining strongholds of the Imperial Eagle (*Aquila heliaca*) in Europe, outside Russia. Following a sister project in Hungary, this Slovak LIFE Nature project has taken significant steps towards ensuring the long-term survival of this noble raptor.

SPECIES

Conservation of the Imperial Eagle in the Slovak part of the Carpathian basin

There are just 400-500 breeding pairs of Imperial Eagle in Europe, making it one of the continent's most endangered birds of prey. Some 40 of those pairs are found in Slovakia, primarily in the south-east of the country. This LIFE Nature project sought to improve conditions for the endangered raptor in Slovakia, working in close co-operation with a similar LIFE project in Hungary (**LIFE02 NAT/H/008627**).

The main objective of the project was to conserve the existing population of the imperial eagle in the Carpathian basin, encourage range expansion and increase productivity through reducing mortality and factors limiting expansion and productivity.

Prior to designating any specific conservation actions, the project sought to gain a better understanding of the species using satellite and radio-tracking data and DNA fingerprinting. The effects of changing land-use practices were also evaluated, and habitat management guidelines prepared by the Hungarian LIFE project were adapted to conditions in Slovakia.

One of main threats to the eagle was identified as the risk of electrocution of young birds from 22 kV power lines. As a result, some 850 km of power lines were insulated within the eagle's habitat, more than twice the length originally foreseen. The support and co-operation of the three utility companies, ZSE, VSE and SSE, was crucial in achieving this result. Nationwide monitoring of birds being electrocuted by power lines was carried out in April 2005 and the Slovak Law of Nature Protection was amended to provide protection against this in future.

Protected zones were established around each active nest to eliminate disturbance; the most endangered nests were guarded against the threat of robbery. A total of 121 protected zones around active nests were established between 2004 and 2007, in co-operation with the relevant local authorities. The protection of 10 nests was also negotiated directly with landowners or users.

In some areas artificial nests were built (45 in total) and eight natural nests were reconstructed to increase the chance of breeding success. Once hatched, chicks were ringed and micro-chipped and blood samples were taken.

To further aid the conservation of the Imperial Eagle, its main prey, the European ground squirrel (*Spermophilus citellus*) – called 'suslik' in Slovakia - was reintroduced in four areas. In all, 892 susliks were released by the project.

SUCCESS NOW AND PROTECTION FOR THE FUTURE

The co-ordinated approach of the project led to extremely encouraging results. By mapping all potential and known breeding territories of the Imperial Eagle from 2004-2007, 13 new territories were found. Furthermore, during the project, the known population increased by 11 breeding pairs (from 34 pairs in 2003 to 45 in 2007).

The project also led to the designation by the Slovak government of five special protection areas (SPAs) for the Imperial Eagle (Malé Karpaty, Tríbeč, Ondavská rovina, Košická kotlina and Slanské vrchy). The beneficiary was closely involved in the designation of these areas and its recommendations and comments were incorporated into the final version of the SPA designation documents.

Extensive dissemination activities were undertaken in a bid to ensure suitable long-term habitats for this majestic bird of prey. These included an exhibition, a short film, numerous newspaper articles, stakeholder lobbying and the promotion of conservation-oriented agri-environment and forest-environment schemes.

Project number: LIFE03 NAT/SK/000098

Title: Conservation of *Aquila heliaca* in the Slovak part of the Carpathian basin

Beneficiary: Ochrana dravcov na Slovensku (Raptor Protection of Slovakia)

Contact: Mgr. Lucia Deutschová, Jozef Chavko

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Website: http://www.dravce.sk/web/en/projekty-life, http://www.dravce.sk

Period: Oct-2003 to Aug-2007

Total budget: €492 000

LIFE contribution: €369 000

SPECIES

Identifying Spanish IBAs

A Spanish LIFE project provided guidelines for the implementation of the Birds Directive in the marine environment. It carried out extensive surveys resulting in an inventory of marine IBAs that will help identify future marine SPAs.

Seabirds, in their offshore marine habitat, are under threat as a result of increasing pollution, fishing activities, marine transport and depletion of food sources. Implementing the Birds Directive in the marine environment must entail the delineation of sufficiently large and numerous Special Protection Areas (SPA) for the conservation of threatened species listed in Annex I of the Birds Directive.

The lack of scientific knowledge and the high cost of offshore research and surveying, however, present difficulties in extending the Natura 2000 network offshore. But one LIFE project (LIFE04 NAT/ES/000049) identified the most suitable areas for marine birds that can later be proposed as SPAs in coastal and pelagic areas in Spain.

The project beneficiary was the Spanish Birdlife association, which worked in co-operation with its Portuguese counterpart that was carrying out a similar project in Portugal (LIFE04 NAT/P/000213) at the same time. In 2005, the projects organised two international seminars in Lisbon and Barcelona that looked at defining practical and methodological parameters for marine IBA determination and the subsequent implementation of Natura 2000 in the marine environment.

DEFINING A METHODOLOGY

The project carried out a wide range of monitoring actions, including:

- Aerial and marine census of seabirds;
- Satellite and data-logger tracking of individual birds;
- Radio-tracking of the smaller seabird species;
- Oceanographic characterisation of the marine environment (salinity, chlorophyll, temperatures, currents etc);
- Analysis of fishing activity and other human interactions.

The project led to the identification of 42 marine IBA

All data was analysed and correlated in order to sketch out the coastal and offshore distribution patterns of seabirds. Maps were produced that show areas of interaction with human activities and correlations with ecological and oceanographical data. These maps helped in identifying possible IBAs, identifying specific threats and in making particular recommendations.

An important result of the project was the creation of a methodology for defining future marine IBAs. This approach has now been adopted by members of BirdLife International and has been applied in countries such as Argentina, the Baltic Countries, Greece, Malta, Peru, South Africa, the USA and New Zealand. It has become a an international reference for the protection of marine sites for birds.

Field work has laid the foundations for the first comprehensive study of important bird areas at sea along the Spanish coastline. In fact, the Spanish government applied the project's results in its decision-making process for locating offshore wind farms and it is supporting Spanish regions on the designation of marine SPAs. Numerous meetings were held with the different administrations to ensure the correct understanding of these IBAs and to promote the adoption of these areas as a final SPA network proposal.

The final methodology has led to the identification of 42 marine IBAs, which encompass 42 883 km^2 (about 5% of the Spanish marine waters). These IBAs provide habitats for some 27 different seabird species, including 16 species from Annex I of the Birds Directive. Four additional areas (covering 25 000 km^2) of importance to sea bird conservation have also been identified outside the Spanish jurisdictional waters, highlighting the need for wider international co-operation. The project information has been compiled in a high quality book entitled: *Áreas Importantes para la Conservación de las Aves (IBA) Marinas en España*.

Project number: LIFE04 NAT/ES/000049

Title: Important Bird Areas for seabirds (marine IBAs) in Spain

Beneficiary: Sociedad Española de Ornitología, SEO/BirdLife

Contact: Alejandro Sánchez Pérez

Email: lifemarinas@seo.org

Website: http://www.seo.org/programa_intro.cfm?idPrograma=32

Period: Oct-2004 to Oct-2008

Total budget: €1 092 000

LIFE contribution: €780 000

SPECIES

This LIFE Nature project restored habitats used by the great crested newt in Estonia and Finland, drawing on the lessons learned from earlier restoration activities in Denmark.

Protecting the great crested newt in the Eastern Baltic

The great crested newt (*Triturus cristatus*) is widely found across Europe but has suffered from habitat decline over large parts of its range and, as a result, is listed in Annex II of the Habitats Directive. The problems it faces include the loss of ponds and other small bodies of water, overgrowth of freshwater habitats and the introduction of fish that feed on newt eggs and larvae. For hibernation, the newt is dependent on terrestrial habitats that can be adversely affected by commercial forestry and intensive agriculture.

Estonia and Finland are home to small and isolated populations of the newt along the north-eastern border of its range. The main aim of this LIFE project was to ensure the long-term viability of these populations and their specific genetic traits. Previous experience of habitat restoration for newts and other amphibian species in Denmark (along with the restoration of 12 'demonstration ponds' in Vejle County), would provide the basic model for the project actions in Finland and Estonia.

APPLYING THE LESSONS

The project adjusted the Danish habitat management and restoration techniques to the regional and local conditions found in Finland and Estonia. The main issue in Denmark is the impact of intensive farming, while in north-eastern locations it is the lack of appropriate management of semi-natural grasslands and forest habitats.

The project therefore concentrated on the restoration and protection of a network of suitable habitats, targeting 95-97% of the species' populations in Estonia and Finland. The main action was to ensure there were enough ponds for breeding. The LIFE project targeted the restoration or creation of some 240 small bodies of water in Estonia and another 28 in Finland.

As of December 2008, 240 ponds had been created in Estonia and 21 restored in Finland, as well as all 12 'demonstration ponds' in Denmark. Monitoring in spring 2008 showed that 127 ponds surveyed in Estonia had been colonised by the newt. All 12 of the Danish ponds had also been colonised, and new populations of the species were also found in Finland.

To safeguard hibernation and foraging habitats, the project restored the surrounding semi-natural grasslands and forests. In Estonia, this involved signing management agreements with a large number of private landowners for the implementation of restoration activities. As of the end of 2008, a total of 283 management agreements had been signed in Estonia and 523 ha of land was under conservation management. In Finland, where fewer landowners were involved, restoration activities had been carried out on 4.5 ha.

A further aim of the project was to use the experience gained to produce a best-practice guide and countrywide action plans for the great crested newt. A national action plan for Estonia for 2007-2012 was approved in August 2007 and is currently being implemented by the Estonian Environmental Board. Action plans have also been drawn up for 2007-2012 for Finland and Vejle County, Denmark.

Triturus cristatus – restoration of ponds was one of the main project actions

Finally, dissemination activities facilitated the involvement of experts from Latvia, Lithuania and the Netherlands to further the international scope of the project.

Project number: LIFE04 NAT/EE/000070

Title: Protection of *Triturus cristatus* in Eastern Baltic Region

Beneficiary: The Ministry of the Environment of the Republic of Estonia

Contact: Voldemar Rannap

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Period: Jun-2004 to Dec-2008

Total budget: €736 000

LIFE contribution: €368 000

SPECIES

The LIFE ASPEA project managed and restored some 300 ha of marsh fritillary habitats and, as a result, was able to curb the decline of this very rare butterfly in Denmark.

Easing pressures on Denmark's marsh fritillary population

Listed as a priority species in Annex II of the Habitats Directive, marsh fritillary (*Euphydryas aurinia*) butterfly numbers have declined dramatically in Europe. The species is assessed as "unfavourable-bad" across most of its European range[1]. In Denmark, where the species was once fairly common, fragmentation of its habitats and populations has reduced its presence to only eight small subpopulations – all located in northern Jutland. It is, therefore crucial to reverse this negative trend, if the butterfly is to continue to exist in the country.

The LIFE Nature project was led by the Danish Ministry of the Environment's Forest and Nature Agency. Its main objectives were to plan and support nature management for the benefit of the marsh fritillary, to map and follow the development of the species and to promote awareness about the need to conserve this very rare butterfly.

The main restoration works focused on strengthening the marsh fritillary's breeding habitats. This included encouraging extensive mowing, or extensive grazing (i.e. no supplementary feeding or use of fertilisers), supplemented by clearance of trees and shrubs. Actions to ensure favourable habitat conditions for the butterfly species also focused on maintaining conditions for its preferred larval food plant, the devil's-bit scabious (*Succisa pratensis*). This plant benefits from measures that balance overgrowing with the risk of overgrazing. The clearance work was also of value to many other listed species and habitat types, as well as having a significant and favourable impact on the landscape.

BOOSTING SURVIVAL

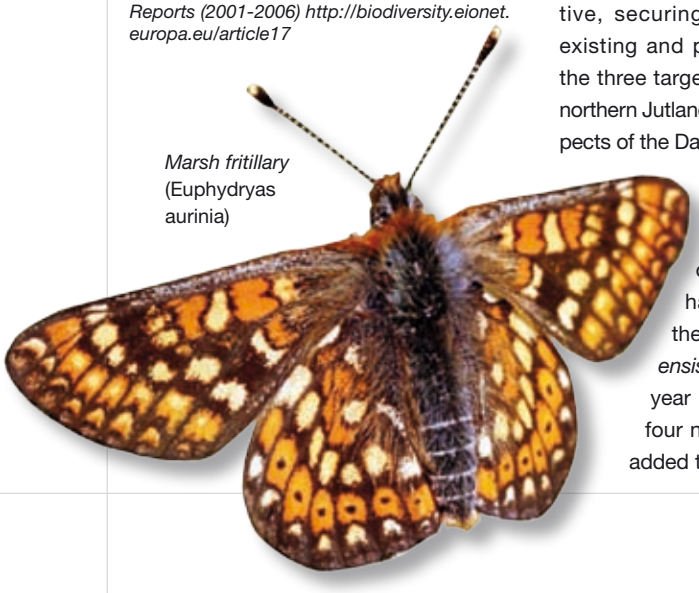
The project achieved its overall objective, securing more than 500 ha of existing and potential habitats within the three targeted Natura 2000 sites in northern Jutland – boosting survival prospects of the Danish population.

As a good short term indicator, the number of 'larval webs' (from hatched larvae) found on the lower leaves of *S. pratensis* has doubled in the four-year period of the project and four new subpopulations were added to the original 5 subpopulations. The project also improved the understanding of the species' ecology and dynamics, and distributed this information to around 500 landowners and civil servants responsible for carrying out nature restoration in the region.

Awareness-raising among local landowners and the general public was a key aspect of the project, as the long-term survival of the species depends on engaging these groups in the conservation process. In particular, the project held meetings and excursions promoting direct contact between landowners, NGOs, the general public, politicians and administration officers.

Finally, the project serves as a good demonstration of restoration followed by recurring activities such as grazing. The project's actions have also been included in a Code of Best Practices and a short final report, copies of which can be downloaded from the project website.

1 Habitats Directive - Article 17 Technical Reports (2001-2006) http://biodiversity.eionet.europa.eu/article17



Marsh fritillary (Euphydryas aurinia)

Project number: LIFE05 NAT/DK/000151

Title: Action for sustaining the population of *Euphydryas aurinia*

Beneficiary: Danish Forest and Nature Agency

Contact: Søren Kjær

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Website: http://www.hedepletvinge.dk

Period: Jan-2005 to Dec-2008

Total budget: €566 000

LIFE contribution: €283 000

A Portuguese LIFE project defined key criteria for marine IBAs in Portuguese waters that support populations of endangered bird species listed in Annex I of the Birds Directive. A key outcome of the project was a methodology for defining future marine IBAs.

SPECIES

Defining IBAs in Portugal

This project worked alongside its Spanish counterpart project (LIFE04 NAT/ES/000049) (see page 16) to produce a model that was then further fine tuned in consultation with its Spanish partner within Birdlife International. In 2005, the projects organised two international seminars in Lisbon and Barcelona that looked at the definition of practical and methodological parameters for determining marine IBAs and the subsequent implementation of Natura 2000 in the marine environment. Among the conclusions of these two workshops was a new definition of the four types of marine IBAs:

- Important feeding areas at sea;
- Areas with important regular concentrations of seabirds;
- Seaward extension of breeding colonies; and
- Migration hotspots where, due to the geographical position, seabirds fly in large concentrations during the migrating season.

Stakeholder participation was a major factor in the success of the project, which brought together information, advice and experience from all essential partners. This included institutions that allowed the LIFE team access to boats and planes for monitoring seabirds and collecting data. Crucial information was also made available and sourced from existing records held by different marine, conservation and other bodies. Access to satellite imagery was also valuable for determining the environmental parameters of marine habitats.

Various seabird tracking systems were tested and applied during the project and the introduction of new and lighter data-loggers made a useful contribution to the project's bird monitoring activity.

As a result of the project, IBA criteria were defined for Portuguese marine areas. The IBAs are important habitats for the following species in particular: *Pterodroma feae, Bulweria bulwerii, Puffinus assimilis, Oceanodroma castro, Sterna dougallii* and *Calonectris diomedea borealis*. Four IBAs were identified around the Portuguese mainland, two IBAs around Madeira, 11 IBAs around the Azores and nine other areas were classified outside the Portuguese Exclusive Economic Zone. It is hoped that confirmation of IBA status will lead to the designation of SPAs under the Birds Directive.

In 2008, the project won first prize in the Banco Espírito Santo Biodiversity awards, which were created with the aim of rewarding and supporting projects and initiatives for research, conservation and management of biological diversity in Portugal. A range of high-quality dissemination and guidance materials were produced and are available from the project's website.

Cory's Shearwater (Calonectris diomedea)

Photo: P.Geraldes

Project number: LIFE04 NAT/P/000213

Title: Important bird areas for seabirds in Portugal

Beneficiary: Sociedade Portuguesa para o Estudo das Aves - SPEA

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Website: http://www.spea.pt/MIBA/

Period: Oct-2004 to Oct-2008

Total budget: €1 515 000

LIFE contribution: €1 136 000

SPECIES

High voltage overhead power lines are a major cause of bird mortality within special protected areas (SPAs) in the Spanish province of Aragón. With the support of LIFE, significant steps have been taken to reduce the risk to birds, including six priority species for conservation.

Spain: **protecting priority birds from power lines**

Aragón hosts many important bird species associated with alpine, steppe and Mediterranean habitat types, including the following priority species for conservation: the bittern (*Botaurus stellaris*); lesser kestrel (*Falco naumanni*); bearded vulture (*Gypaetus barbatus*); Bonelli's eagle (*Hieraaetus fasciatus*); great bustard (*Otis tarda*); and little bustard (*Tetrax tetrax*).

This sparsely populated region of Spain has also developed an extensive network of high voltage power lines to export hydroelectric and thermal energy. However, high voltage lines (>1Kv) present a major threat to birdlife, either from electrocution or collisions. Incidents involving large raptors - such as Bonelli's eagle and the bearded vulture - are common in rocky areas with cliffs and escarpments, and in steppe-like areas there are many collisions involving the little bustard, lesser kestrel and other species such as the black-bellied sandgrouse (*Pterocles orientalis*). Aragon's wetland areas also incorporate large breeding populations and winter colonies of species (e.g. Ardeidae, Limicolae, Eurasian bittern) that are susceptible to collisions during their daily flights, often at dawn or dusk and at night.

Protected electric lines

Monitoring prior to the start of the LIFE project identified the need for interventions to protect birds from some 829 km of power lines, affecting 30 of Aragón's 50 SPAs.

TAKING ACTION TO REDUCE SPECIES MORTALITY

The Government of Aragón sought to work with the main electricity distribution and transmission companies in Aragon (ERZ-Endesa and REE) to introduce modifications to power lines and pylons owned by these companies and by private landowners. Cooperation agreements were signed with both ERZ-Endesa and REE in 2004 to allow remedial work to take place, whilst the infrastructure owned by "other proprietors" was altered through a series of contracts (made between 2006 and 2007) with authorised companies.

As a result, the LIFE project successfully modified 60 power lines along 325 km in 18 of Aragón's SPAs, whilst a further 18.3 km of overhead lines were dismantled and replaced by 5.9 km of buried power lines. These actions served to reduce the initial number of bird deaths by 87.7%, with the risk of electrocution reduced by 93.7% and collisions by 50%.

In addition to taking remedial measures, the LIFE project tackled the problems posed by power lines on a further two fronts: regulation and raising awareness.

With regard to the former, new regional regulations were introduced in Aragón in February 2005 (Power Line Act: Decree 34/2005) setting out the technical requirements for the installation of new overhead power lines (>1Kv) and for alterations to existing lines. The Power Line Act covers both general mandatory requirements (e.g. insulation of conductors) for the protection of birdlife, as well as specific measures aimed at preventing electrocution (such as accessible minimum safe distances for birds) and the risk of collision (e.g. removing lines that are no longer in use). The regulation includes a list of priority power lines that need to be modified in a set number of years. Implementation of the Act is being achieved via a series of coordination meetings and training courses for engineers. The project has also helped to fund adaptations of privately owned lines that would otherwise have been too expensive for their owners.

Awareness-raising actions included a web page, leaflet campaign, on-site information panels for the general public and a practical guide for developers, engineers and other construction professionals. These guides were developed in collaboration with the electricity companies. The good collaboration established with these private companies has also led to increased investment on their side.

Project number: LIFE04 NAT/ES/000034

Title: Adaptation of the electric power lines in the SPA of Aragon

Beneficiary: Government of Aragón

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Website: http://portal.aragon.es/portal/page/portal/medioambiente/medionatural/biodiversidad/proeuro/tendidos/

Period: Jan-2004 to Dec-2008

Total budget: €2 083 000

LIFE contribution: €1 250 000

WETLANDS

The Habitats and Birds Directives and the Water Framework Directive (WFD) are the main pieces of legislation assuring the protection of Europe's wetlands. The Natura 2000 network of protected sites and the integration of wetlands into future river basin management planning (under the WFD) are helping to guarantee the future conservation and sustainable use of these important ecosystems.

The LIFE programme has supported many projects whose actions have targeted wetland area within the Natura 2000 network. The following pages present a number of successful projects that have been selected as best practice examples on managing and/or restoring wetland habitats around the EU.

WETLANDS

Restoring the river Lech

A large-scale LIFE project to restore riparian habitats along the river Lech in the Austrian Tyrol benefitted a range of rare species. Extensive sections of the river were widened and trees removed to aid the growth of bushes and shrubs favoured by the target species.

The Lech valley is one of the most beautiful areas in the Alpine region and home to a Natura 2000 site of 41.4 km^2. The area is relatively close to nature and hosts a wide range of bird species. However, the construction of dams for flood protection and the practice of gravel extraction have radically altered the river in many parts in the last centuries. Such interventions have deepened the riverbed and lowered the water table. The river, which was up to 100 m wide in some parts, also narrowed in some sections.

As a result, flooding occurred less often and riparian pine tree forests prospered at the expense of more 'natural' shrubs, such as the German tamarisk (*Myricaria germanica*), which thrives on gravel banks. This more open habitat is home to the very rare pink-winged grasshopper (*Bryodema tuberculata*) and bird species such as the little ringed plover (*Charadrius dubius*).

To stop further erosion of the riverbeds and increase the bedload of the river, the regional governmental department responsible for environmental protection (Amt der Tiroler Landesregierung) began a LIFE project in 2000. Reinhard Lentner, project leader, says: "One of the first steps was to open up the dams to allow bedloads to follow the river without any blockages."

Measures were also taken on tributaries to the Lech. At Hornbach Sperre, actions carried out by the project have had a dramatic impact on the appearance of the river. A dam built 40 years ago, following the flooding of the village, has been removed and display boards clearly show the impact on the water levels and the widening of the river. "The dam kept the river in the middle [between the banks] and it dug in. They were too successful," explains Lentner.

The Hornbach action demonstrated an important feature of the project: the involvement of local authorities in fostering local acceptance of the project's aims. The water management authority (Bundeswasserbauverwaltung) and the

Widening of the river decreases the speed of the water flow and lessens erosion

Photo: Jon Eldridge

The project target site was a 6 km stretch of river

forestry and avalanche control authority (Forsttechnischer Dienst für Wildbach- und Lawinenverbauung Tirol) were project partners. "It was important to have these bodies involved because the local people trust them more than the conservationists," says Lentner.

MULTIPLE BENEFITS

Another key management consideration concerned the extraction of gravel from the river. Several companies extract and sell the gravel, but to minimise the impact of this, the project carried out research to determine where this practice is least detrimental to the river flow. The impact of gravel extraction was also lessened by the use of special traps that avoid the need to dig into the river bed. The gravel companies were amenable to changing location as extraction at the designated places was cheaper than where it was previously carried out. Gravel traps were also a necessary management measure in certain parts where flooding is not desirable.

Actions were also carried out on brooks and ditches. At Haeselgehr, drainage of pasture land through the construction of ditches led to the silting up of a small tributary stream. A popular measure of the project, which was widely supported by locals, was to restore this stream to its former condition and reconnect it to the Lech. The restored ecosystem offers valuable services to the community: cattle can now use the stream and no longer require artificial watering facilities, and fishing is possible. In fact, the removal of fish barriers was an integral part of the project. At Haeselgeher, for example, a tube tunnel was replaced with a small bridge to facilitate the movement of fish.

In this way the project adopted a holistic approach to river restoration, creating a mosaic of habitats of ecological importance. For example, small riverside

Management actions have widened the river considerably, and as a result the Johannesbrueke was nearly doubled in length.

ponds, which are home to a range of amphibians, and the highly endangered dragonfly species (*Coenagrion hylas*), were created or restored – around 40 in total. Measures were also taken to protect insects. For example, a total of 98 light bulbs in existing lamps were replaced by insect-friendly bulbs.

WIDE SCALE

The Tiroler-Lech project was particularly large in scale – the target site was a 6 km stretch of river. River restoration measures were also carried out on the Vils. Reinhard Lentner believes that restoration on such a scale was only possible due to the region's vast undeveloped areas. "Here we still have the opportunity to do this kind of work, but in many areas of Europe you don't, because there are constraints," he says.

Lentner adds, however, that his team seriously debated whether to remove the riparian forests that had become established as a result of the lack of flooding. However, the decision was taken to restore the banks to a more natural condition (around 10 ha of pine forest were removed but many hectares remain) and compensation was paid to foresters to improve conditions for bird species dependant on dead wood, such as the grey-headed woodpecker (*Picus canus*) and the white-backed woodpecker (*Dendrocopos leucotos*).

German tamarisk (Myricaria germanica) *thrives on gravel banks, a habitat restored and protected by the project's actions*

Photo: Jon Eldridge

At Johannesbrueke, such management actions have lead to a considerable widening of the river. The bridge crossing the river was only a half as long as it is now, according to Lentner. In fact, he says that the bridge, which was no longer resting on its pillars, was "one of the reasons that we wanted to carry out the project". The construction of a new section of the bridge was a necessary part of the project. Widening of the river decreases the speed of the water flow and lessens erosion.

Public awareness-raising initiatives carried out by the project included schools compeitions, training for nature guides and a time-lapse movie. Moreover, good co-operation among the beneficiary and its partners (including the WWF) was established. At Pflach, an observation tower was erected. The site is particularly interesting for birdwatchers as it features many of the different biotypes of a mature river system, according to Lentner. Here, small ponds were created and spruces removed to create a rich natural riparian habitat.

Project number: LIFE00 NAT/A/007053

Title: Tiroler Lech - Wild river landscape of the Tyrolean Lech

Beneficiary: Amt der Tiroler Landesregierung, Abteilung Umweltschutz

Contact: Reinhard Lentner

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Website: http://www.tiroler-lech.at

Period: Apr-2001 to Mar-2007

Total budget: €7 800 000

LIFE contribution: €3 870 000

Important management actions were carried out at the Weidmoos bird reserve near Salzburg (Austria) to safeguard the site's special habitat mix that has made it so attractive to a range of bird species.

WETLANDS

Preserving special habitat for birds near Salzburg

Described as a bird paradise, the former industrial peat extraction site of Weidmoos hosts more than 150 species, including some that are threatened with extinction in Europe. Following the end of decades of peat extraction in 2000, a mosaic of water, reed beds, and clumps of willow quickly formed, providing the ideal habitat for a range of species.

Most prominent are the 45 breeding pairs of the bluethroat (*Luscinia svecica*) – one of the largest breeding populations in Austria. Other Annex I bird species that are breeding or hibernating at the site include: marsh and hen harrier (*Circus aeruginosus and C. cyaneus*), spotted crake (*Porzana porzana*), little bittern (*Ixobrychus minutus*), ruff (*Philomachus pugnax*) and wood sandpiper (*Tringa glareola*).

Without management of the area, however, the site would turn into a forest landscape, and for this reason a LIFE project was initiated in 2003. The future of the 140 ha site was also threatened by growing recreational pressure and changing farming practices.

The project beneficiary, the nature protection department of the Salzburg regional government (Amt der Salzburger Landesregierung), wanted to maintain and optimise the breeding, resting and wintering areas for birds at Weidmoos and increase acceptance of the SPA among the local population. To facilitate this,

BEST OF THE BEST 2009-2010

The main aim of the project was to create a 'man-made wetland': drainage ditches were closed and clay dams were constructed

Photo: B. Riehl

Photo: B. Riehl

The project created around 30 ha of new water bodies and wet areas

it partnered with an association set up by hunters, landowners and mayors, to promote Weidmoos as an area of local heritage. In fact, project leader, Bernhard Riehl, says that the success of the project can be attributed to its roots in the community. Johann Griessner, the mayor of the nearest town, Lamprechtshausen, was actively involved in the project and is part of the nature sites' team of onsite wardens, which includes local hunters and nature enthusiasts. Members of the local community also helped with the removal of trees and scrubs.

OPEN AREAS

Before the start of the project, the regional government had acquired 80 ha of the former peat extraction site. With the help of LIFE funding, it acquired a further 22 ha and the right of use for an additional 16 ha. "The main idea was not to restore what we've lost (through peat extraction) but to create something new: a man-made wetland," says Riehl. For such a site to be sustainable, water levels in the site must be maintained, and for this reason, drainage ditches were closed and clay dams were constructed to create ponds.

Research using computer modelling was essential for predicting the effects that such measures would have on the amount of water in the site. "Models determined which ditches to close and where to create new clay dams," says Riehl. The project also called upon the expertise of former workers in the peat industry. Many of the bird species in the Weidmoos need an open landscape with areas of wetland and standing water. Monitoring efforts also concerned the water quality and the nutritional balance of the wetland.

In total, around 50 small dams were constructed, totalling around 2 500 m in length. Water levels were regulated through the integration of 28 overflow structures into the dams, leading to the creation of an additional 30 ha of new water bodies and wetland areas. The construction work was undertaken outside of breeding times and divided over two years to minimise the impact on bird populations.

The Weidmoos is an area of high biodiversity. At the site can be found:

- More than 150 bird species
- Around 300 plant species
- 480 species of butterflies
- 8 species of amphibians
- 5 species of reptiles

RECURRING MANAGEMENT

Experimental management of wet meadows, reed beds, bare land and bushy areas was also undertaken to optimise procedures for maintaining habitats over the entire SPA. The result of these measures is a more open landscape, interspersed with standing water and wetlands, which provides a better habitat for birdlife. Ongoing maintenance work, which is considered particularly important for the peripheral areas of the Weidmoos that are insufficiently irrigated or not irrigated at all, includes:

- Mowing around 30 ha of wetland meadows and reed beds, with different mowing dates between July and September specially adapted to the needs of the birds. The continuation of mowing is supported by agri-environmental schemes;

- Using the tracked excavators (originally used in peat cutting) to ensure the availability of vegetation-free areas, especially important for the bluethroats and several waders;
- Pruning or felling of individual trees and bushes to safeguard the optimal mix of tree cover and shrubs.

To combat the problem of visitor pressure, a new 1.5 km footpath was constructed to encourage people into the southern Weidmoos and leave other areas free from disturbance. Moreover, the project constructed a bog platform at the peat cutting site, bird observation hides and a 12-metre-high viewing tower. All of this construction work used regionally sourced FSC wood.

Photo: B. Riehl

A 12 m- high viewing tower, constructed as part of the project, offers visitors the opportunity to spot wide range of water birds that visit the site

Also as part of the project, a former peat-workers' hut was converted into an information centre, which allows visitors to find out more about the project's aims and the ecological importance of the site. Awareness-raising activities included the making of a short film, an official re-opening festival, school projects and various articles published in the press. Around 20 guided tours are given each year, according to Johann Griessner, the local mayor, who personally leads many of them. "The last one we ran was for kindergarten children, who were very interested in the different species of plants and birds here. It was highly motivating for me. It's important to bring nature closer to the children," he says.

The project organisers also wanted to give visitors to the site an idea of its history. Some of the tracks used to transport the cut peat away from the area have been kept, and some traditional stacks of cut peat 'bricks' and a dug-out pit can also be found near the visitor's centre.

Co-operation between the project partners – a nature conservation administration, two communities and a local NGO – was considered exemplary by the LIFE Programme monitoring team, who have highlighted the project as a best-practice example of incorporating stakeholders and achieving acceptance by local people.

Finally, the project has attracted much interest from conservation groups and authorities wishing to learn from the project's experiences. A neighbouring area, the Bürmooser Moor, also plans to carry out a similar management project, and visitors have arrived from across Europe and as far away as China. The Chinese group were particularly interested in the construction of the viewing tower. "They asked what it would cost to buy the whole of the Weidmoos, but we said that we did not want to sell it," jokes Griessner.

Johann Griessner, the mayor of the nearest town, Lamprechtshausen (left) with Bernhard Riehl, project leader

Photo: [illegible]

Project number: LIFE03 NAT/A/000010

Title: WEIDMOOS - Habitat management in the SPA Weidmoos

Beneficiary: Amt der Salzburger Landesregierung

Contact: Bernhard Riehl

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Website: http://www.weidmoos.at

Period: Apr-2003 to Sept-2007

Total budget: €1 210 000

LIFE contribution: €605 000

WETLANDS

Spain: **restoring the lagoons of Extremadura**

The wetlands of Extremadura in western Spain are rich in biodiversity. However, human activities threaten the fragile ecosystem of the Albuera lagoon complex. With the support of the local farming community, a LIFE Nature project took vital actions to safeguard this important habitat for the future.

The Albuera wetland in Extremadura is an important stopover point for migratory birds, as well as a significant breeding and wintering site. The high ornithological diversity (more than 40 Annex I Birds Directive species) is a result of the presence of different biological communities, in which species connected to different habitats converge. The wetland includes five habitats listed in the Habitats Directive, including three that are considered a priority for conservation: temporary Mediterranean lagoons, *Thero-Brachypodietea* steppes and *Limonietalia* saline Mediterranean steppes.

The La Albuera lagoon complex faces threats from a number of damaging activities, including overexploitation of aquifers, overgrazing and eutrophication. Moreover, silting processes and the use of temporary lagoons by private landowners for crop-planting and livestock when they were dry have led to the lagoons being treated as extensions of the surrounding agricultural land, thus destroying the original habitat.

The aim of the LIFE Nature project was to restore the La Albuera wetland habitats by stopping human activities that were leading to the silting up of the lagoons and by restoring the natural watercourses between the lagoons. These measures, it was hoped, would increase the biological diversity of the shorelines.

The project drew up a management plan for La Albuera. The challenge was to safeguard the conservation of its natural attributes, while also maintaining agricultural activity in the area. The management plan and project actions were designed in accordance with the results of in-depth hydrological and geological studies. These studies also helped to determine the connections between the lagoons and the catchment area of the river Valdegrana. This could potentially result in the lagoons being considered public property and, therefore, made subject to water regulations.

Project actions included restoring natural canals for consecutive filling of the lagoons, fencing off certain lagoons and restoring vegetation diversity to encourage bird species. An observation tower for bird-watching was also built.

Socio-economic studies were used to identify economic activities that could be carried out in the wetland area, while still respecting conservation aims.

THE VITAL ROLE OF AGRICULTURE

Persuading farmers to implement more sustainable management practices was crucial to the success of the project. For instance, after shorelines and the original connections between lagoons were restored, a deal was struck with local farmers to construct watering points for livestock in exchange for not allowing cattle to enter the lagoons. Land rental and purchase agreements were used to delay sowing and harvesting of crops on arable lands during the breeding period of the Great bustard (*Otis tarda*), little bustard (*Tetrax tetrax*), collared pratincola (*Glareola pratincola*) and stone curlew (*Burhinus oedicnemus*). Hunting was also regulated to ensure compatibility with habitat conservation.

Restored shores of Picatel lagoon

The effectiveness of the measures taken has been shown by an increase in the number of steppe birds (e.g. the above mentioned species and the black-bellied sandgrouse (*Burhinus oedicnemus*) and aquatic birds.

To continue this positive trend, long-term measures have been put in place. Under a new regional decree (3/2006), farmers in the area can now apply for grant aid for conservation of habitats. Together with the project's management plan, this should ensure suitable habitat management in the area in years to come.

Project number: LIFE03 NAT/E/000052

Title: Conservation and management of the SPA for Birds site of Community interest wetland "La Albuera" in Extremadura

Beneficiary: The Government of Extremadura

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Website: http://xtr.extremambiente.es/albuera/Paginas/index.html

Period: Jan-2004 to Jan-2008

Total budget: €554 000

LIFE contribution: €415 000

WETLANDS

Linking habitats to conserve Danube fish

An Austrian LIFE project involving two inter-linked interventions has helped improve the conservation status of endangered Danube fish species and restore riparian habitats for important wetland wildlife.

River Basin Management Plans (RBMPs) came into force in 2010 and now represent an essential environmental management tool of the Water Framework Directive. Integrated approaches are central to the RBMP initiative, which promotes joined-up planning and harmonised action in riparian habitats. Many different LIFE projects are actively involved in supporting such co-ordinated RBMP activities, and a good example of what can be achieved through linked-up wetland conservation work is demonstrated by the results of a recently completed LIFE project on the Danube, in Austria.

DANUBE DEVELOPMENTS

The Danube and its tributaries are one of the most important waterway systems in the EU, and a large number of natural hydrological features in the Danube basin have been altered to help strengthen their socio-economic potential. However, the impacts of these interventions can have negative effects on fish or other species that rely on the rivers for migration and spawning.

Austrian nature conservation partners involved in the development of the Danube RBMP had identified a programme of actions to help improve habitat conditions for protected fish species. As part of this wider RBMP programme, LIFE support was awarded to a river management project involving two inter-linked actions near the mouth of the Ybbs tributary in lower Austria. Both parts of the LIFE's 'Donau-Ybbs Linkage' project have been highly successful, leading to its nomination as one of this year's best LIFE Nature projects.

INTEGRATED LIFE OUTCOMES

Up to forty different fish species have benefitted from the project, which involved restoring natural habitat conditions at the mouth of the Ybbs and establishing a fish bypass around the Melk hydo-power station. The latter now enables fish to migrate once again along the Danube, past the station, and opens up a river continuum of 22 km on the Danube, plus 13 km on the Ybbs. These outcomes complement the actions of two other LIFE projects operating in the vicinity, which aim to improve habitat over a 90 km stretch of the river.

Endangered species, including zingel (*Zingel zingel*), streber (*Zingel streber*) and schraetzer (*Gymnocephalus schraetzer*), are among the fish that have already been recorded using the 2 km-long LIFE-funded bypass. High-tech engineering solutions ensure a dynamic flow of water through the meandering channel, which has been constructed from natural materials – some 5 000 willow trees were planted on the banks.

The new fish migration route is supplemented by the activity nearby at the mouth of the Ybbs to improve fish spawning areas. Here natural hydrological functions have been restored by removing infrastructure that previously controlled the Ybbs' merger with the Danube. Results from the project actions allowed the two rivers to re-create a natural confluence containing a diversity of habitat structures as the Ybbs branches into a number of distributaries separated by islands.

This new delta encompasses an enlarged habitat of about 9 ha, which has already been colonised as a spawning ground by Danube fish, including protected species like the Danube roach (*Rutilus pigus*). Common sandpiper (*Actitis hypoleucos*), kingfisher (*Alcedo atthis*), beaver (*Castor fiber*), and other important species that have also been observed using the restored river habitat.

By reconnecting migratory routes and restoring natural spawning grounds for endangered fish species, LIFE's Donau-Ybbs Linkage project demonstrates the type of synergies that can be achieved by co-ordinated planning of different conservation actions in EU river basins. This example of good practice in Austria is expected to be the first of many throughout Europe to result from RBMPs.

River hydrological functions have been restored by removing infrastructure

Project number: LIFE04 NAT/AT/000006

Title: Donau-Ybbs - Donau- Ybbs Linkage

Beneficiary: Amt der Niederösterreichischen Landesregierung, Abt Wasserbau – Bundeswasserbauverwaltung

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Website: www.life-donau-ybbs.at

Period: Jul-2004 to June -2009

Total budget: €3 150 771

LIFE contribution: €1 575 386

WETLANDS

Mutual management of priority Mediterranean pond habitats

Communication and co-operation were essential to the success of a LIFE project that aimed to conserve threatened pond habitats on the Greek island of Crete.

Climate change and socio-economic developments continue to exert pressures on water resources in the Mediterranean region. Drier, hotter weather conditions are already impacting on water supplies and intensive land-use systems have adversely affected the quality of the region's water sources.

These problems can be particularly acute in smaller wetlands such as Mediterranean Temporary Pond (MTP) habitats. MTPs receive priority protection under the Habitats Directive and provide important life support functions for a variety of species. However, due mainly to their dynamic hydrological characteristics, they remain vulnerable to external factors such as pollution and drainage.

MTPs are found in several Member States and a Greek LIFE project has achieved noteworthy conservation benefits for MTPs on Crete. The MEDPONDS project implemented many actions that can be transferred to other countries. One key outcome was an effective methodology for securing the support of initially sceptical land users for conservation activities. LIFE-funded actions in Crete helped change attitudes and convert problematic local farmers and tourist operators into core partners.

POND PRESSURES

Greek environmental bodies were concerned about the range of threats and risks to the protected pond habitats on Crete. Specific problems included: the effects on biodiversity of eutrophication associated with agriculture; altered natural hydrological functions caused by excessive drainage and over exploitation of water by local businesses; pollution from solid waste disposal; and insensitive use of the habitat by 4x4 vehicles, equestrian centres and other sporting organisations. MTPs are not always visibly attractive and this can also lead to their poor treatment.

MTPs support a range of species

MEDPONDS set out to tackle these MTP threats and reduce longer term risks to the priority habitat. Led by the Institute of Inland Waters at the Hellenic Centre for Marine Research, LIFE project involved an incremental approach, which recognised the importance of gaining support for the pond protection work from local residents and business in the four target sites.

HUMAN SOLUTIONS

Livestock breeders, hotel owners and arable farmers were identified as crucial stakeholders and the project team spent a considerable amount of time working with these groups to explain the extent of the habitat problems and encourage their participation in the conservation actions. Much of this work took place on an informal basis, as LIFE staff deliberately chose to meet land users in the familiar surroundings of local cafes where the community socialised.

This frequent and personal communication with the local inhabitants was an important factor in the project's success. A great deal of trust was built up between all the stakeholders during the LIFE project. Natural hydrological functions were restored, wildlife-friendly grazing regimes were established, water quality was enhanced, solid waste was removed from the ponds and awareness was raised about alternative waste management options. In addition, a network of eco-tourism trails and information facilities were constructed to boost the economic benefits for local business from their nature conservation ventures.

The overall impact of the LIFE interventions have been highly positive and the MEDPOND project is an excellent example of how Natura 2000 sites can be mutually managed by local communities and their respective environmental authorities.

Project number: LIFE04 NAT/GR/000105

Title: Actions for the conservation of Mediterranean temporary ponds in Crete

Beneficiary: Hellenic Centre for Marine Research - Institute of Inland Waters

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Website: www.life-medponds.gr

Period: Nov-2004 to Nov-2008

Total budget: €1 275 330

LIFE contribution: €956 250

Restoration activities carried out at active raised bog sites in Ireland, home to a significant area of this endangered habitat, have demonstrated good practice and protected a range of key species of flora and fauna.

Raised bog restoration in Ireland

The conservation status of active raised bogs is assessed as 'unfavourable-bad' in the Alpine, Atlantic, Continental, Macaronesian and Mediterranean regions. Lessons learned from a Scottish project (**LIFE92NAT/UK/013400**), which produced a detailed good practice restoration manual, formed the basis of a raised bog restoration project in Ireland.

The peatlands of mid-west Ireland are among the most important raised bog systems remaining in Europe. Habitat loss has mainly been caused by harvesting of peat for household fuel, electricity production and the horticultural industry. Some 2% of Irish raised bogs have also been converted to forestry. Much of this afforested raised bog is owned by Coillte Teoranta, the Irish Forestry Board.

'Restoring Raised Bogs in Ireland', which ran from October 2004 to September 2008, was the largest single bog restoration project to be undertaken in the country. Actions focused on the removal of forestry plantations within 14 pSCIs across five counties, which was in line with Coillte Teoranta's objective of managing 15% of its estate for biodiversity.

Within a total project area of 571 ha, the beneficiary removed almost 450 ha of plantations and blocked drains to restore raised bog habitat. The project created two dissemination sites – at Cloonshanville Bog near Frenchpark in Co. Roscommon, and Carn Park Bog near Baylin Village in Co. Westmeath - where restoration techniques were implemented and boardwalks installed in an effort to raise public awareness.

Restored raised bog habitat

CLOONSHANVILLE BOG

Conifer plantations were removed and drains blocked in three areas totalling 34 ha on the 240 ha SAC near Frenchpark. These actions took place on land neighbouring 152 ha of intact bog. The vegetation of this intact area is dominated by common heather (*Calluna vulgaris*), deer grass (*Trichophorum cespitosum*) and hare's tail cottongrass (*Eriophorum vaginatum*). Other common species include cranberry (*Vaccinium oxycoccus*), cross-leaved heath (Erica tetralix), bog asphodel (*Narthecium ossifragum*) and common cottongrass (*Eriophorum angustifolium*), as well as a large population of *Sphagnum pulchrum,* a rare species of peatmoss in Ireland. The SAC also contains 14 ha of bog woodland, an Annex I-listed habitat. Unlike plantation forests, these mostly birch woodlands (of which just 130 ha are left in Ireland) survive on the peatland margins.

Removal of trees and blocking of drains is a common feature of all raised bog LIFE restoration projects around the EU. Such actions result in an increase in the water level, which encourages more typical bog species. Typical bog species, such as peat moss (*Sphagnum pulchrum*) and cranberry have already reappeared on the restored areas but it will take 30-40 years for the project area to resemble the neighbouring high bog, to the benefit of such species as curlew and snipe, as well as many butterflies, frogs and newts.

Project number: LIFE04 NAT/IE/000121
Title: Restoring Raised Bogs in Ireland
Beneficiary: The Irish Forestry Board
Contact: Philip Murphy
Email: philip.murphy@coillte.ie
Website: www.raisedbogrestoration.ie/
Period: Oct-2004 to 30-Sept-2008
Total budget: €2 500 000
LIFE contribution: €1 875 000

GRASSLANDS

Grassland ecosystems hold an important part of Europe's biodiversity. They offer ideal conditions for a vast diversity of habitats and species, and are especially important for birds and invertebrates, providing vital breeding grounds. Grasslands are also the source of a wide range of public goods and services, ranging from meat and dairy products to recreational and tourism opportunities. Except for very limited areas of special natural grassland types, most European grasslands are maintained through grazing or cutting. However, changes in agricultural practices and land use pressures mean that grasslands are disappearing at an alarming rate and are nowadays among Europe's most threatened ecosystems.

The LIFE programme has supported several projects across the EU whose actions have targeted grasslands habitats. The following pages present a selection of some of the best projects dedicated to the restoration and management of grasslands habitats.

This ambitious LIFE project aimed to restore limestone grassland habitats by clearing afforested areas and reintroducing grazing. The project succeeded in creating the conditions for long-term management and conservation of these habitats in Kinnekulle (Sweden) with the participation of farmers and the local population.

Sweden: **Converting spruce plantations to grasslands**

Kinnekulle is a raised plateau in the Swedish province of Västergötland, on the eastern shore of Lake Vänern. Its highest point is 306 m above sea level. The area has a varied geology, composed of several different rock layers, with sandstone and limestone occurring most frequently. The characteristic flat summit and shape of the "mountain" was sculpted during the last Ice Age.

The region has seen human activity at least since the Bronze Age (3 000 years ago), as evidenced by various archaeological discoveries. The benign local climate, the varied geology and centuries of grazing and mowing have created the conditions for an unusual concentration of biodiversity. Traditionally, the landscape was characterised by large areas of hay meadows, open pastures and grasslands containing large ancient oaks and other deciduous trees spread out over the limestone pavements that favoured a very rich plant and animal life in a landscape that remained more or less unchanged until the 19th century.

As a result, the area has been included in the Natura 2000 network. No less than 17 habitat types included in Annex I of the Habitats Directive are to be found here, including nine priority habitats. These range from calcareous grasslands and natural grasslands on the thin soils of the limestone-layer, which constitute the largest area of "alvar" habitat on the Swedish mainland, to wooded pastures and deciduous

BEST OF THE BEST 2009-2010

Kinnekulle hosts about 200 species that are rare and threatened at the national level

and coniferous forests. Also found here are species included in the Habitats Directive, such as the lady's slipper orchid (*Cypripedium calcelous*), *Tortella rigens, Osmoderma eremita* and *Triturus cristatus*, as well as one bird listed in the Birds Directive: the red-backed shrike (*Lanius collurio*). Additionally, Kinnekulle hosts about 200 species that are rare and threatened at the national level.

With the modernisation of agriculture (mechanisation and use of artificial fertilisers) and the implementation of the land parcelling law at the end of the 1800s, many of the meadows and pastures were abandoned, converted to arable land or planted with spruce. The more unproductive soils were abandoned and as a result became covered with scrub vegetation and forests. Some of these areas have developed into rich deciduous woodlands. As a result, in Sweden, only 2 500 ha meadows remain, representing a loss of 99% of the original area.

Restored wooded grassland habitats by clearing and the reintroduction of grazing

In order to restore and maintain this important habitat, quick intervention was needed, based on boosting grazing by creating new pastures and structures to help sustain livestock (e.g. fences and barns for winter feeding), together with the creation of management tools that could guarantee the sustainability and conservation status of the area in the future. With the help of LIFE funding, the County Administrative Board of Västra Götaland proposed an ambitious project with the overall objective of restoring Kinnekulle and, maintaining a favourable conservation status of the Natura 2000 species and habitats at the site. These aims would be achieved through co-operation with landowners, the local community and other interested parties.

RESTORING LIMESTONE GRASSLANDS

One of the main objectives of the project was to restore open and wooded grassland habitats by clearing, fencing and re-opening for grazing and/or haymaking areas previously covered with trees, scrub or spruce plantations. The targeted habitats were mainly rupicolous calcareous or basophilic grasslands (6110*), semi-natural dry grasslands on calcareous substrates (6210), Nordic alvar (6280), Molinia meadows on peaty or clayey-silt-laden soils (6410) and Fennoscandian wooded pastures (9070).

It is not easy to convince landowners to change from an intensive forest production system based on spruce to an extensive grazing system, but LIFE funding created the opportunity for a radical change in land use. The first step was to convince the owners. This was done through continuous dialogue and meetings with the landowners, the Swedish Farmers association and the Swedish Forest Agency.

The target areas were eventually cleared of all young trees, shrubs, and spruce plantations. The majority of the clearing work was done in winter and carried out manually with chainsaws and brushcutters. The work was done by landowners, tenants and local contractors. The spruce logs were mainly delivered

for paper production, while stumps and other residues were turned into wood chips for home heating. Despite mild winters, rainy summers and two severe storms, the project achieved its objectives and more than 600 ha of land has been cleared.

With the first step accomplished, the project had to establish the conditions for the reintroduction of grazing livestock. To this end, more than 70 km of electric fence was erected and three sheds built to protect and provide feeding stations for some 250 cattle during winter.

The 1 540 ha covered by the project were defined as nature reserves (17 in total) under Swedish law, and are now subject to specific management plans. All the nature reserves are now included in the Kinnekulle Natura 2000 site. The County Administrative Board is responsible for managing these new nature reserves, but it is the landowners or tenants who carry out most of the management work.

The immediate reintroduction of grazing after clearing was crucial for the grasslands recovery

GRASSLANDS, FARMERS AND VISITORS BENEFIT

As a result of the project actions, the area of limestone grasslands and pavement (alvar) has more than doubled. The differences in the landscape before and after the restoration are notable (see pictures), especially in those areas where spruce plantations have, after only three grazing seasons, been converted to open grassland. As a result, some indicator species have now returned, such as the red-backed shrike (*L. collurio*).

“The immediate reintroduction of grazing after clearing was crucial for the success of the action,” believes Ulf Wiktander, who was in charge of the restoration work. Surveys indicate that plants not previously present at the site – early purple orchid, fragrant orchid, sandwort (*Arenaria gothica*) and thyme – have become established after restoration.

Kinnekulle is also a very important tourist destination with more than 100 000 visitors per year. The project created three new car parking areas, information signs and leaflets. New footpaths have made the nature reserves more accessible for visitors while also controlling access.

According to the project manager, Maria Thordarson, farmers have been supportive of the restoration work, which has created a new income stream for them: high-quality meat from herds grazing the project areas is now being sold in shops locally and in Stockholm as ‘Kinnekulle beef’.

The majority of grazing and hay cutting in the nature reserves is financed by agri-environmental subsidies. This guarantees both the habitat conservation and economic sustainability of the area. “Without LIFE financing it was impossible to kick-off this process, and at the same time make it sustainable after the project ended,” stresses Thordarson. Ulf Wiktander is now manager of the nature reserves. He can make use of the established partnerships and trust developed during the project and will continue to draw up contracts with farmers regarding clearing work, grazing etc. with the aim of gradually getting more pastures into the environmental scheme. “There is a continuous interest from farmers who want to join in the measures implemented by the project as they see the possibilities of production along with nature conservation,” emphasises Thordarson.

Project number: LIFE02 NAT/S/008484

Title: Kinnekulle plateau mountain - restoration and conservation

Beneficiary:
Länsstyrelsen Västra Götaland

Contact:
Maria.thordarson@lansstyrelsen.se

Email: philip.murphy@coillte.ie

Website: www.vanerkulle.se

Period: Nov-2001 to Sept-2007

Total budget: €5 730 000

LIFE contribution: €2 860 000

GRASSLANDS

Partnerships for sustainable sand dune conservation in western Finland

A Finnish LIFE project harnessed the support of local stakeholders, including agriculturalists and the country's armed forces, to improve and restore important sand dune habitats along the Ostrobothnian coastline.

Finland's Vattajanniemi sand dune habitats cover an area of approximately 1200 ha on the country's west coast and represent Europe's largest Natura 2000 sand dune site in the boreal vegetation zone.

Comprising a comprehensive series of dune development stages from submerged sand banks to inland dune habitats, and containing some 14 different (including six priority) habitat types, Vattajanniemi also experiences one of the fastest land-upheaval rates in Europe. As such, the habitat structures remain in flux with dune features shifting in response to natural factors such as wind and wave movements.

The sand dunes are used as a military training ground for around 200 days each year and other parts of the 12 km stretch of sandy coastline has long been popular with tourists.

The combined effects of these human and natural factors on the Natura 2000 site gave rise to concerns about the conservation status of Vattajanniemi habitats, which include coastal lagoons, fixed coastal dunes with herbaceous vegetation (grey dunes), transition mires and quaking bogs, embryonic shifting dunes, decalcified fixed dunes with *Empetrum nigrum*, and, among others, Fennoscandian wooded pastures.

A LIFE project was thus launched in 2005 to identify and implement a programme of co-ordinated habitat conservation actions in conjunction with the area's key military and community stakeholders.

COLLABORATIVE CONSERVATION

The project's partnership approach proved highly effective in securing successful outcomes for the sand dune habitats. Cooperation between regional nature conservation authorities, staff from the military training camps, tourists, and local businesses led to an agreed management plan for the dune complex. This overall conservation framework included detailed habitat restoration actions, requiring revised military and recreational activities within dunes, pastures, forests and mires.

All stakeholders complied with their conservation commitments and project led to significant habitat improvement. Agri-environment agreements were established to introduce environmentally supportive grazing regimes; open dune habitats were protected from over-growing; recreational pressures were reduced and a range of military actions were also revised.

Key outputs of the project include a 'code of conduct' that helps adjust, restrict and standardise military actions around the Natura 2000 site. Consequently, training decreased by 90% in priority sand dune habitats and by at least 50% in other habitats.

Firing stations and related military infrastructures were relocated, access to dunes was limited and the LIFE monitoring experts consider that this project has "vastly improved" awareness and understanding among the Finnish military of nature conservation needs. Military personnel were even directly involved in many of the project's habitat restoration actions.

Photo: Mikko Tiira

Restored dunes

Such LIFE legacies offer long-term benefits to the Vattajanniemi sand dunes and also hold useful demonstration value for other EU areas seeking to secure conservation agreements with military stakeholders.

Project number: LIFE05 NAT/FIN/000104

Title: Vattajan dyyni LIFE - Restoration of dune and coastal habitats in the Vattaja Military Area

Beneficiary: Natural Heritage Services of the National Board of Forestry in Finland

Contact: Kari Hallantie

Email: kari.hallantie@metsa.fi

Website: www.metsa.fi/sivustot/metsa/en/Projects/LifeNatureProjects/VattajaDuneLife/Sivut/VattajaDuneLife.aspx

Period: Apr-2005 to Mar-2009

Total budget: €1 807 330

LIFE contribution: €903 665

FORESTS

In recent decades, changes to the way Europe's forests are used – such as intensified silvicultural practices, the introduction of exotic species and increased uniformity – have reduced the environmental quality of these vital ecosystems, which cover 30% of the continent's land area.

The LIFE programme has supported many projects across the EU whose actions have targeted forest ecosystems. The following pages present a selection of some of the best projects dedicated to the restoration of forest habitats.

FORESTS

A very ambitious LIFE project laid the groundwork for the designation of 50 new forest, alpine and sub-alpine Sites of Community Importance (SCIs) in Romania. The project contributed significantly to the development of the Natura 2000 network in the country.

Blueprint for Romanian forest and alpine Natura 2000 sites

Forest, sub-alpine and alpine areas cover about 40% of Romania and include a range of rare and important European species and habitats. Recent changes in land ownership pose a major threat to the valuable forest habitats. Private as well as public landowners are subject to growing economic pressure and while public owners are under some obligations to preserve biodiversity, private owners often have little incentive. At the same time, both land abandonment and intensification of land use are progressively leading to significant losses of biodiversity on sub-alpine and alpine pastures.

Launched in 2005, the LIFE project targeted forest, sub-alpine and alpine areas across the whole of Romania, encompassing a total project area of 6.5 million hectares. Co-ordinated by the faculty of silviculture and forest engineering at the Transylvania University of Brasov, the project mainly sought to prepare for the designation of Romanian Natura 2000 sites for forests, sub-alpine and alpine habitats. The aim was to identify, map and describe potential SCIs according to the Habitats Directive.

Management measures and monitoring guidelines were prepared for these areas, targeting eight rare or endangered habitats in Romania (six forest habitats, an alpine meadow habitat and a sub-alpine scrub habitat with dwarf pine). To ensure local understanding and acceptance, the project team also implemented awareness-raising and training activities for key stakeholders and the general public.

Management measures and monitoring forest habitats

ECONOMIC AND SOCIAL BENEFITS

The potential economic and social benefits of the future Natura 2000 sites were demonstrated in two protected areas, the Rodna and Ceahlau national parks. These would serve as case studies, underlining the recreational and ecological value of the area as an alternative to intensified, uniform land use.

The project met its objectives and has contributed significantly to the development of the Natura 2000 network in Romania – both through its direct outputs and through influencing the whole Natura 2000 process through consultations with key stakeholders and lobbying of decision makers.

The main direct results included the successful acceptance and designation of 50 new SCIs (out of the 56 sites proposed by the project). The team also published a 'habitat manual' for forest, sub-alpine and alpine habitats of Community interest in Romania. Due to its scientific value, this manual has quickly become the main reference source for habitats in Romania. It received the annual award of the Romanian Academy in 2007.

Another important result was the carrying out and publication of threat studies and guidelines for the monitoring and management of target habitats. As well as being available from the project website (link below), these were distributed to key stakeholders across the country.

Finally, the project developed a system for compensation payments for private forest owners. This system has been recognised by the Romanian environment and agriculture ministries and now serves as a model for compensation schemes for all habitats.

Project number: LIFE05 NAT/RO/000176

Title: Priority forest, sub-alpine and alpine habitats in Romania

Beneficiary: Transylvania University of Brasov - Faculty of Silviculture and Forest Engineering

Contact: Ioan Vasile Abrudan

Email: abrudan@unitbv.ro

Website: www.lifenatura2000.ro/

Period: Jan-2005 to Jan-2009

Total budget: €933 000

LIFE contribution: €700 000

FORESTS

Habitat restoration in the Finnish Green Belt

Targeting mires and forests in eastern Finland, the Green Belt project carried out restoration measures in order to strengthen a network of sites containing important endangered habitats and species.

The project 'Natural Forests and mires in the Green Belt of Koillismaa and Kainuu' implemented conservation measures for forests and mires in 13 Natura 2000 sites in eastern Finland. These sites form part of the Fennoscandian stretch of the European Green Belt – an extensive network of forests, mires and fells in Finland, Russia and Norway. The close proximity of these sites to the Russian border is particularly important as they provide a vital stepping stone, allowing species that are still abundant in Russia to recolonise areas in Finland, once habitats have been restored to a favourable condition.

The project built on work already started by several other Finnish LIFE Nature projects targeting boreal forests and aapa mires. It restored 578 ha of boreal forests (mainly former commercial forests): 85 ha were restored by controlled burning and 492.6 ha by increasing decaying wood and the variability of the forests (e.g. creating small opening to boost the growth of deciduous trees in forests dominated by conifers). Fire-dependent insects invaded the burned areas very rapidly and several rare and threatened species were also found. Moreover, the project restored 390 ha of aapa mires and bog woodlands by filling and blocking ditches and by clearing excess trees. Some innovative methods use included the recreation of 'flarks', peat banks and former streams. These measures increased water levels and improved the hydrodynamics, retention and water quality of the mires.

Other restoration measures included the afforestation of almost 4 km of former forest roads and the restoration of 2 ha of a former gravel pit. Four eyries for the golden eagle (*Aquila chrysaetos*), which is listed in Annex I of the Birds Directive, were also constructed. These measures formed part of a plan that can serve as an example of best practice: the guidelines drawn up for the staff responsible for carrying out the plans were particular successful. Moreover, several innovative methods (e.g. different types of ring barking) were tested in several sites.

The project restored more than 570 ha of boreal forest habitat

The project's information campaign included the production of high-quality publicity material including a DVD on forest and mire restoration. Three photographic exhibitions were also organised over the course of the project. These explored themes such as the social impacts of restoration, meadow plants and species benefiting from the restoration of mires and forests. In addition, the project constructed a 6.7 km nature trail to Lentua that is already attracting more than 1 000 visitors a year. Furthermore, the project organised an international seminar, 'Fire and Forest', in Kajaani in November 2007. This event featured presentations by forest fire specialists from Nordic countries and Russia. A seminar report was published in February 2008.

Finally, the project team co-operated with Russian colleagues from the Kalevala National Park in the organisation of seminars on alternative (fire) habitat restoration and management methods. These meetings provided an opportunity to examine the results of ongoing restoration projects. In the coming years, flying squirrel populations will be surveyed in Russia's Paanajärvi National Park, and burnt forest habitats will be mapped in the planned Kalevala National Park in Russian Karelia to facilitate plans to recreate similar habitats in Finland.

Project number: LIFE04 NAT/FI/000078

Title: GreenBelt - Natural Forests and mires in the "Green Belt" of Koillismaa and Kainuu

Beneficiary: Metsähallitus, Pohjanmaan luontopalvelut

Contact: Arto Ahokumpu

Email: Arto.Ahokumpu@metsa.fi

Website: http://www.metsa.fi/sivustot/metsa/en/Projects/LifeNatureProjects/GreenBeltLife/Sivut/Introduction.aspx

Period: Jan-2004 to May-2008

Total budget: €1 174 000

LIFE contribution: €587 000

FORESTS

Cyprus: **conservation of unique flora and habitats**

The first LIFE Nature project to be undertaken in Cyprus aimed to conserve unique habitats and plant species in Europe, while also promoting the implementation of the Natura 2000 network.

Cyprus has a high diversity of habitats and species, ranging from semi-desert habitats to peat grasslands, and pine and oak forests in the mountains. This diversity is boosted by a varying landscape and relative isolation, which has resulted in a high rate of endemic species that occur only on the island.

But human activities in Cyprus have contributed to the depletion of the island's landscape and the degradation of its natural habitats. As a result, much of the flora of Cyprus – considered one of the richest in the eastern Mediterranean – is endangered. The main threats are road construction, agriculture, water extraction, tourism and forest fires.

A LIFE-Nature project was carried out by the Environment Service of the Ministry of Agriculture, Natural Resources and the Environment to secure the favourable conservation status of the country's unique habitats and species in five Natura 2000 sites. The project implemented a variety of conservation actions that targeted several habitats and species. For example, at the Troodos National Forest Park, the project focused on four priority and endangered habitats (*Pinus nigra ssp. pallasiana, Quercus alnifolia*, and serpentinophilus and peat grasslands). The two other important sites were Kavo (cape) Greko and Vouni Panagias, which are both rich in habitats listed in Annex I of the Habitats Directives and host a wide range of protected species.

Restored Troodos peat grassland habitat

The majority of the actions targeting endemic plants and habitats were, however, implemented in the Troodos Mountains SCI. The mountains are attractive during both summer, because of the fresher temperatures, and winter, because of the snow. However, visitors to the area posed serious threats and needed to be managed. The project erected fences around the priority peat grassland habitats to keep out people and vehicles, and it removed 20 picnic tables. Other actions included signposting, mapping of populations of endangered species, and seed collecting and planting.

As a result, the peat grassland area is now completely safe from trespassing and there are no longer visible signs of human activity. This has helped habitat recovery greatly. The *P. nigra* habitats have also benefitted from the fencing, and natural regeneration is already taking place with the help of the planted seedlings and reduced disturbance. Moreover, the restored *Q.infectoria* woodland is now the largest area of this habitat in Europe, and represents the most important area for the endemic *S.morrisii*.

The project also established guidelines for the drawing up of management plans for all of Cyprus's Natura 2000 sites. These guidelines were used to establish management plans for four Natura 2000 sites targeted in the project (Koilada Diarizou, Vouni Panagias, Troodos National Forest Park and Kavo Greko).

Overall, the project substantially contributed to the conservation of unique habitats and species in Cyprus and raised awareness about the Natura 2000 network and nature conservation issues in the country. At the same time, this first involvement of local authorities in a LIFE project greatly enhanced their capacity and laid the groundwork for the continuation of nature conservation activities in Cyprus.

Project number: LIFE04 NAT/CY/000013

Title: Conservation management in Natura 2000 sites of Cyprus

Beneficiary: Environment Service, Ministry of Agriculture Natural Resources and Environment

Contact: Christina Pantazi

Email: cpantazi@environment.moa.gov.cy

Website: http://life-natura-sites.cy.net

Period: Nov-2004 to Apr-2008

Total budget: €2 551 000

LIFE contribution: €1 531 000

Available LIFE Nature publications

LIFE Focus Nature brochures

LIFE improving the conservation status of species and habitats: Habitats Directive Article 17 report (2010 - 84 pp. - ISBN 978-92-79-13572-9)

LIFE and Europe's reptiles and amphibians: Conservation in practice (2009 – 60 pp. - ISBN 978-92-79-12567-6)

LIFE and Europe's grasslands: Restoring a forgotten habitat (2008 - 54 pp. – ISBN 978-92-79-10159-5)

LIFE and endangered plants: Conserving Europe's threatened flora (2007 – 52 pp. – ISBN 978-92-79-08815-5)

LIFE and Europe's wetlands: Restoring a vital ecosystem (2007 - 68 pp. – ISBN 978-92-79-07617-6)

LIFE and Europe's rivers: Protecting and improving our water resources (2007 – 52 pp. ISBN 978-92-79-05543-0 – ISSN 1725-5619)

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LIFE-Nature Projects 2006 compilation (2006 – 67 pp. – ISBN 92-79-02788-3)

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LIFE-Nature: communicating with stakeholders and the general public – Best practice examples for Natura 2000 (2004 – 72 pp. – ISBN 92-894-7898-5 – ISSN 1725-5619)

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Other publications

Nature & Biodiversity Projects 2009 compilation (2010, 91 pp. – ISBN 978-92-79-16139-1)

Nature & Biodiversity Projects 2008 compilation (2009, 87pp. – ISBN 978-92-79-13426-5)

Best LIFE Nature Projects 2007-2008 (2009 - 48 pp. – ISBN 978-92-79-13746-4)

Nature & Biodiversity Projects 2007 compilation (2009, 67 pp. – ISBN 978-92-79-12257-6)

Learning from LIFE: Nature conservation best practices (2008 - 68 pp. – ISBN 978-92-79-11635-3)

A number of LIFE publications are available on the LIFE website: *http://ec.europa.eu/environment/life/publications/lifepublications/index.htm*

A number of printed copies of certain LIFE publications are available and can be ordered free-of-charge at: *http://ec.europa.eu/environment/life/publications/order.htm*

The programme

LIFE+ "**L**'**I**nstrument **F**inancier pour l'**E**nvironnement" / The financial instrument for the environment

Period covered (LIFE+) 2007-2013.

EU funding available approximately EUR 2,143 million

Type of intervention at least 78% of the budget is for co-financing actions in favour of the environment (LIFE+ projects) in the Member States of the European Union and in certain non-EU countries.

LIFE+ projects

> **LIFE Nature projects** improve the conservation status of endangered species and natural habitats. They support the implementation of the Birds and Habitats Directives and the Natura 2000 network.

> **LIFE+ Biodiversity projects** improve biodiversity in the EU. They contribute to the implementation of the objectives of the Commission Communication, "*Halting the loss of Biodiversity by 2010 – and beyond*" (COM (2006) 216 final).

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Further information on LIFE and LIFE+ is available at http://ec.europa.eu/life.

How to apply for LIFE+ funding The European Commission organises annual calls for proposals. Full details are available at http://ec.europa.eu/environment/life/funding/lifeplus.htm

Contact

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LIFE Unit – BU-9 02/1 – B-1049 Brussels – Internet: http://ec.europa.eu/life

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