Nature & Biodiversity

LIFE

PROJECTS 2013
LIFE+ Nature & Biodiversity 2013: Commission funds 92 new projects in 25 countries with €133.9 million

The European Commission has approved funding for 92 new projects in 25 countries under the LIFE+ Nature & Biodiversity programme 2013. These projects will demonstrate new methods and techniques for dealing with a wide range of problems affecting species, habitats and biodiversity in Europe. The projects are led by ‘beneficiaries’, or project promoters, based in Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden and the UK. They represent a total investment of €233.9 million, of which the EU will provide some €133.9 million.

Background

LIFE is the EU’s financial instrument to support environment and nature conservation projects throughout the EU, and in certain non-EU countries. Since 1992, LIFE has co-financed some 4 100 projects, contributing approximately €3.4 billion to the protection of the environment. LIFE+ is the European financial instrument for the environment with a total budget of €2 143 billion for the period 2007-2013. The Commission launches one call for LIFE+ project proposals per year.

More information on each LIFE+ project is available at: http://ec.europa.eu/environment/life/project/Projects/index.cfm

Contact details for the relevant national authorities can be found at: http://ec.europa.eu/environment/life/contact/national-contact/index.htm
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<td>LIFE13 NAT/UK/000209</td>
<td>Protecting and restoring the Shiant Isles SPA through rat removal and safeguarding other seabird islands SPAs in the UK</td>
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<td>LIFE13 NAT/UK/000258</td>
<td>Conserving the Hen Harrier (<em>Circus cyaneus</em>) in northern England and southern and eastern Scotland</td>
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<td>LIFE13 BIO/UK/000315</td>
<td>Demonstrating wader population recovery through innovative site management and novel stakeholder engagement</td>
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<td>LIFE WADERS FOR REAL</td>
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<td>LIFE13 BIO/UK/000428</td>
<td>Implementation of integrated habitat networks to improve ecological coherence across the CSGN</td>
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<td>EcoCo LIFE Scotland</td>
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<td>LIFE13 NAT/UK/000443</td>
<td>Restoration of degraded lowland raised bogs on three Cumbrian SCI/SACs</td>
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<td>Cumbrian BogsLIFE+</td>
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<td>LIFE13 NAT/UK/000451</td>
<td>Restoring Humberhead Peatlands: LIFE+ Project</td>
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LIFE+ Wilderness Wetland Wachau

Project background

The Wachau Valley is one of the last free-flowing sections of the Austrian Danube, hosting several natural habitat types and species of Community interest. The area is, however, affected by a number of threats: the regulatory measures put in place in the 19th and 20th centuries have strongly separated the floodplain and the river, preventing regular flooding; the dramatic increase in sedimentation processes due to the construction of a power plant; the occurrence of invasive alien plant species; and massive direct alluvial and riparian forest destruction due to orchards and intensive forestry. These issues have led to habitat loss and degradation, which is having negative effects on the conservation status of a number of species.

Project objectives

The project aims to restore alluvial and riparian forests and to improve the conservation status of several species protected under the Habitat and Birds Directives. In order to achieve this aim, the project plans to:

• Establish the protection of the wilderness areas of the islands of Schönbühel and Pritzenau;
• Restore alluvial forests in areas currently used as orchards and dominated by non-native tree species;
• Create a free-flowing side arm in the area of Rührsdorf/Rossatz from remaining disconnected side arms;
• Improve the already existing side tributary system Rührsdorf/Rossatz through a new inflow from the Danube; a bridge for higher water discharge; and the creation of new gently sloping river banks;
• Create 20 ponds for amphibians;
• Get conservation contracts signed (partly through compensation payments) for 300 old trees;
• Support the population of white-tailed eagles through the installation of four artificial nests; and
• Increase public awareness and stimulate sustainable tourism activities through the installation of an educational trail in Rührsdorf/Rossatz.

Expected results

• The establishment of a wilderness area with around 50 ha of natural alluvial as habitat for bats and feeding habitats for the white-tailed eagle and black stork;
• Founding of two new protected areas on the islands of Pritzenau and Schönbühel;
• Creation of a 1.4 km-long free-flowing side arm;
• Improvement of the river dynamics of an existing side arm by introducing a new inflow/overflow area;
• Building around 2.8 km of new natural river banks (along side arms), gentle sloping gravel banks and steep river banks;
• Creation of 20 ponds as spawning areas for amphibians;
• Conservation of the black poplar through reforestation with saplings and restricting the use of 300 old trees;
• Installation of four artificial nests for white-tailed eagles; and
• Design and creation of a nature trail about alluvial forests.
Cross-Border heath restoration, inland dunes and pools, integrated invasive plant management

Project background

The project area covers 3,950 ha of the cross-border ‘Grenspark De Zoom – Kalmthoutse Heide’ nature reserve, which extends over the Dutch-Belgian border (and comprises 6,000 ha in total). The reserve contains continental dunes, dry and wet heath, ponds and woods. Human impact, such as nutrient enrichment of the soil, afforestation and soil desiccation, combined with a lack of nature management, disturbance by recreation and spread of invasive alien species has led to degradation of the reserve’s habitats. A previous LIFE project, HELA, targeted habitat improvements covering 460 ha in the reserve. This new project will build on the results of HELA and it will be aligned with a new long-term (2014-2029) management plan for the reserve.

Project objectives

The project’s main objectives focus on restoring and developing a number of degraded habitats, including dune grasslands, dry and wet heaths and freshwater habitats. Project actions also include the removal of invasive alien species (e.g. *Prunus serotina*, *Quercus rubra* and *Rhododendron ponticum*) including those that support oak woods hosting *Quercus robur*.

Habitat restoration will benefit numbers of breeding birds listed in the Birds Directive annexes (e.g. European nightjar, treelark, black woodpecker and honey buzzard). Numbers and distribution of other species are also expected to benefit from the project. These include the smooth snake, natterjack toad, and crested newt. A variety of nationally endangered species (e.g. dragonflies, butterflies, beetles and moths) will benefit as well.

Expected results

Anticipated outcomes from this project’s large-scale restoration and sustainable management of Annex I habitats include improvements to:

- 56 ha of inland dune with *Corynephorus* and *Agrostis* grasslands in mosaic with dry heaths with *Calluna* and *Genista*;
- 30 ha of oligotrophic waters of sandy plains and oligotrophic to mesotrophic standing waters;
- 33 ha of a mosaic of northern Atlantic wet heaths with *Erica tetralix* and depressions on peat substrate with *Rhynchosporion*; and
- 57 ha of a mosaic of several types of heathland habitats e.g. European dry heaths, dry sand heaths with *Calluna* and *Genista* and northern Atlantic wet heaths with *Erica tetralix*.

Other significant results:

- Removal of invasive alien species (*Prunus serotina*, *Quercus rubra* and *Rhododendron ponticum*) in an area of 60 ha and the prevention of their expansion on sandy plains;
- Increase in number of breeding pairs of several Birds Directive species;
- Increase in number and distribution of the smooth snake, the natterjack toad and the crested newt, as well as a wide range of nationally endangered species (e.g. dragonflies, butterflies, beetles and moths);
- Improved water quality, following the implementation of a water purification plant;
- Increased awareness among technical stakeholders and the general public about the area;
- Engagement of volunteers in site management; and
- Increased socio-economic potential of the site.
Connectivity of the Natura 2000 network across the Belgian-Dutch borders in the Meuse basin

Project background

This project’s area contains 40 Natura 2000 sites (covering 24,566 ha) in Belgium and the Netherlands, within the basin of the Meuse River and its tributaries between Andenne and the city of Maastricht. The river basin has supported highly species-rich habitats related to former pastoral systems. But these habitats have become extremely fragmented and are undergoing progressive qualitative and quantitative regression. The calcareous character of the bedrock is responsible for the presence of numerous caves and cavities that are used by bats during the winter months. Although knowledge about their populations’ status is still incomplete, it is known that the Walloon part of the project area still shelters reproductive populations of four highly threatened species: *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Myotis emarginatus* and *Myotis myotis*. These species are strongly dependent on grassland quality and structural diversity.

Project objectives

The project’s overall objective centres on restoring a mosaic of five threatened habitats in order to improve their conservation status and connectivity. The objectives will be achieved through the following project activities:

- Improving the conservation status of the five habitats (6210*, 6110*, 6230*, 6130 and 6510), both in terms of quantity and quality;
- Improving grassland ecological connectivity in the Natura 2000 sites and between them;
- Improving the efficiency of the implemented restoration actions by reinforcing knowledge concerning the distribution of habitats and testing of new restoration and management methods;
- Improving the conservation status of the four bats species whose conservation status are unfavourable or inadequate: *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Myotis emarginatus* and *Myotis myotis*.
- Developing exchanges of expertise among scientific partners, NGOs and public sector agencies in Belgium and the Netherlands; and
- Raising awareness among managers, scientists and the general public concerning bats and their conservation, particularly regarding their roosting and feeding requirements.

Expected results

- Restoration of 345 ha of habitats listed in Annex I of the Habitats Directive (6210*, 6110*, 6230*, 6130 and 6510);
- Establishment of infrastructure required for recurrent management after the end of the project;
- Reduced fragmentation levels and improved connectivity for the target habitats;
- Improved local expertise in terms of restoration and management of habitat 6210*; and
- The purchase of 129 ha of private land, which can therefore benefit from the nature reserve status.

These expected results also cover concrete actions that aim to benefit the four bat species targeted. Such outcomes include restoring 40 km of hedgerows, planting 500 fruit trees, creating 50 ponds, improving the quality of at least 10 nursery colonies, establishing a network of nursery roosts by equipping 15 additional unoccupied buildings, and raised awareness among the public and land managers concerning the value of grassland ecosystems for conservation of biodiversity (through leaflets, newsletters, information boards, thematic activities, and a website).

Beneficiary:

**Type of beneficiary**

NGO-Foundation

**Name of beneficiary**

Réserves Naturelles RNOB asbl

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**Name of contact person**

Joëlle HUYSECOM

**Duration of project:**

72 months (01/07/2014 – 30/06/2020)

**Total budget in euro:**

15,632,867.00

**EC contribution in euro:**

11,724,650.00

**Themes:** Biodiversity issues: Ecological coherence / Habitats: Freshwater - Rocky and Caves
Restoration and conservation of riparian forests of habitat type *91E0 in Natura 2000 sites and model areas in Bulgaria

**Project background**

The project targets the priority habitat type of Community interest 91E0*: Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae).

Even though this habitat is found all over Bulgaria, its total area accounts for only 0.5% of the country's overall forest area. These marginal and riparian forests create unique conditions that control and influence the transfer of energy, nutrients and sediments between the aquatic and terrestrial ecosystems.

Due to their accessibility and/or proximity to settlements, however, these riparian forests have experienced frequent disturbance by human impact, resulting in a continuous decrease of the habitat area. In recent decades, they have suffered from a wide range of detrimental actions including: clear fellings; transformation into arable lands or hybrid plantations for intensive production of timber; cleaning/correction of riverbeds; and infrastructure projects or activities (such as the construction of small hydropower plants and the extraction of inert materials). Such long-term adverse human impacts lead to degradation of the priority habitat and negative changes in its structure, composition, stability and functionality.

No real direct conservation activities have targeted this priority habitat to date in the project sites (with the exception of Srebarna Biosphere Reserve). According to the National Protected Areas Act of Bulgaria, several protected areas are located within or adjacent to the project sites, which preserve riparian forests, but none of these areas has a management plan.

**Project objectives**

The project's overall objective is improve the conservation status of the priority habitat: Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae), through activities in two Bulgarian sites of Community importance (SCI). These goals will be achieved by directly restoring and improving the quality of habitat type 91E0* in the two SCIs by applying a range of techniques and testing alternative forestry methods. The project also aims to improve the knowledge base and experience for the restoration and management of this habitat by compiling a manual, as well as building the capacities of the EFA, WWF and two of its regional directorates. Public awareness will also be increased, reaching out to local groups within the project area to secure support for the conservation of this target habitat.

**Expected results**

- Restoration of 50.2 ha of habitat 91E0* restored, with improved quality in two SCIs;
- Planting of 63 000 saplings of local tree species in 24.7 ha of the two SCIs;
- Removal of exotic species over 25.5 ha of the two SCIs;
- Higher levels of capacity and competence among stakeholders about restoration, management and maintenance of Bulgaria's riparian forests; and
- Enhanced public awareness by reaching directly 10 000 people and involving at least 80 (pupils and teachers) through various activities and communication tools.
Improving lowland forest habitats
for Birds in Cyprus

Project background

Conservation efforts for birds have been very infrequent in Cyprus to date. The project, however, will develop a new cooperation between the Game and Fauna Service, which is the competent authority for bird conservation, and the Department of Forests. The project addresses 11 Annex I species of the Birds Directive, through management measures in three Natura 2000 sites (Kavo Gkreko, Koshi and Potamos Panagias Stazousas).

Project objectives

The project aims to implement conservation/management measures that will substantially improve ecological conditions for selected bird species, listed in Annex I of the Birds Directive, found in three Natura 2000 sites in Cyprus. It also plans to demonstrate to Cypriot foresters and other stakeholders the benefits of adopting a more holistic forest management approach that addresses the needs of birds.

These goals will be achieved by: improving the availability of food in the project sites; improving the availability of permanent water sources during the long dry period; enhancing nesting conditions in the sites; reducing human disturbance through more awareness and limiting access in sensitive areas; restoring bird habitats in the sites; contributing toward combating bird crime through strict enforcement of legislation and implementation of an effective communication campaign; introducing practices during routine forest management that favour birds; and increasing public awareness on the need to conserve bird populations.

Expected results

- A change in the forest management policy to incorporate bird conservation measures;
- Improvement of the conservation status of 11 Annex I bird species in the three project sites – through an increase of the number of nesting pairs of breeding species by at least 10%;
- Reduction by 30% of the average number of bird trapping/killing incidents recorded in the project sites – through strict enforcement of legislation, planned patrolling, an awareness campaign and limiting access to trapping sites;
- An integrated management plan for the Koshi site;
- Assessment of the population size for all the targeted bird species;
- Creation of five traditional agricultural fields with an area of 10 000 m² in the three project sites;
- Installation of 200 nests, sowing of 30 000 m² with cereals/legumes, establishment of 12 watering points, two rainwater collecting aprons, and construction of 350 m of stonewalls;
- Construction of a weir in the driest of the project sites (Koshi) along the main gully;
- Removal of 6 000 trees/shrubs of alien/invasive species from Kavo Gkreko and Koshi;
- Restoration of 6 ha of five habitat types of Annex I (Habitats Directive) in the gaps created by the removal of alien species; and
- Public awareness activities including the production of a documentary on birds, organisation of bird-watching competitions among school children, workshops, and educational excursions.

Beneficiary:

Type of beneficiary
National authority

Name of beneficiary
Department of Forests, Cyprus

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26, Louki Akrita Street
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CYPRUS
Phone +357 22805503
Fax +357 22805542
Email ttsintides@fd.moa.gov.cy

Name of contact person
Takis TSINTIDES

Duration of project:
39 months (01/10/2014 – 31/12/2017)

Total budget in euro:
978,718.00

EC contribution in euro:
489,359.00

Themes: Species: Birds
To promote and enable the long term conservation of High Nature Value Farmlands in Cyprus

Project background

The growing recognition that the conservation of biodiversity in Europe depends on the continuation of low-intensity farming systems resulted in the concept of high nature value farming (HNVF). In the Mediterranean in particular, HNVF includes some of the most traditional agricultural crops such as cork oaks, olives, carob and vineyards. In Cyprus, carob groves and vineyards are among the crops that are inextricably linked with the economic and cultural character of the island. At the same time these crop systems, when farmed at low-intensity, support species of fauna and flora that are important at the national or European level, while providing a number of other ecosystem services. Despite their importance, these HNVF types on the island are now threatened by intensification, abandonment and lack of awareness about their role.

Project objectives

The objectives of the project are to:
- Conserve biodiversity in vineyards and carob groves with a strong focus on species listed in the Birds and Habitats directives;
- Support and promote sustainable agricultural practices that increase ecosystem services and conserve biodiversity in high nature value (HNV) farmlands;
- Identify strengths and weaknesses of current agricultural management practices with respect to biodiversity conservation in HNV farmlands;
- Identify strengths and weaknesses of biodindicators for evaluation of HNV farmlands in small-scale agriculture;
- Build a knowledge base for vineyard and carob grove HNV farmland in Cyprus; and
- Encourage stakeholder involvement and increase public awareness regarding HNV farmlands issues through active participatory learning.

Expected results

- Creation of a spatial database of HNV vineyard and carob groves in Cyprus;
- Completion of a list of indicator species that can be used to assess the effects of farming practices on biodiversity in Mediterranean ecosystems;
- Creation and restoration of biodiversity enhancing features in five vineyards and five carob groves including hedgerows, brush piles and carob groves;
- Assessment of three key ecosystem services – biological control, carbon sequestration, and soil formation – supplied by vineyards and carob groves;
- Production of a 40-page manual on sustainable farming practices for viticulture and carob growing;
- Training of 30 vineyard growers and 30 carob growers on the use of sustainable farming practices that promote biodiversity; and
- Establishment of two agrodiversity trails in historic HNV farmlands to inform the public, school and university students and farmers of the importance of biodiversity in agricultural landscapes.

Beneficiary:
- Type of beneficiary: University
- Name of beneficiary: Cyprus University of Technology
- Postal address: Arch. Kyprianos CY - 3036 Limassol CYPRUS
- Phone: +357 250 02186
- Fax: N/A
- Email: c.chrisostomou@cut.ac.cy
- Name of contact person: Charalambos CHRYSOSTOMOU
- Duration of project: 36 months (02/06/14 – 01/06/17)
- Total budget in euro: 575,520.00
- EC contribution in euro: 275,727.00
- Themes: Biodiversity issues: High Nature Value farmland

LIFE13 BIO/CY/001114 AGROLIFE
Project background

The 30 km long Skagen Odde in northern Denmark is one of the world’s largest headlands. On a national and European level, the headland contains one of the largest coherent areas of grey dunes and dune heath. This pristine nutrient poor and vulnerable headland forms an important part of Denmark’s natural heritage. However, the area faces a number of ongoing threats, such as a lack of natural hydrological conditions, invasive alien plant species (IAS), the degradation of sensitive areas due to traffic, and the loss of, and disturbance to, breeding areas for key animal species (including predation on nests).

Project objectives

The project will tackle all threats at local level, in order to significantly improve the conservation status of the wet and dry dune habitats 2130*, 2140*, and 2190 on the two northernmost Natura 2000 sites in Denmark (the terrestrial part of SAC: DK00FX112 and SAC/SPA: DK-00FX005). It also aims to create favourable conditions for the species, Botaurus stellaris and Tringa glareola.

Expected results

Using best practice techniques, the following project results are expected:
- The restoration of natural hydrological conditions, leading to an improvement in the conservation status on 1137 ha of habitat type 2190. This will be achieved through the closure of 44.1 km of ditches;
- The removal of tree encroachment on 1000 ha. Clear cutting of 12.24 ha of plantations, resulting in the development of the habitat types 2130*, 2140* and 2190;
- The mapping and subsequent clearing of the invasive plant species Rosa rugosa and Heracleum mantegazzianum from an area of about 200 ha;
- Scrapes on 22.7 ha in order to improve the breeding opportunities for Botaurus stellaris;
- The controlled mosaic burning of 500 ha, and the establishment of grazing on 200 ha;
- Decreased predation by Vulpes vulpes on the nests of Tringa glareola through the implementation of a predator control programme; and
- Increased public awareness of the value of wet and humid dune habitats and the necessity to restore them (via information and communication campaigns).
Restoration of Estonian alvar grasslands

Project background

Alvar grasslands are semi-natural grasslands with thin lime-rich soil on limestone bedrock. One third of all the alvar grasslands in Europe are found in Estonia. However, currently less than 30% of these are being managed annually (i.e. by animal grazing), which is necessary for the long-term survival of this habitat type. Unmanaged sites have become heavily overgrown with shrubs (mostly juniper, Juniperus communis) and trees (mostly Scots pine, Pinus sylvestris). In order to maintain the ecological connectivity and biodiversity of the country’s alvar grasslands, a minimum of 7 500 hectares needs to be subject to annual grazing. This is a target of the Estonian Nature Conservation Development Plan that will run until 2020.

Project objectives

The project’s main objective is to restore the most valuable, but currently overgrown, alvar areas on 2 500 ha of land and to create the right conditions for local farmers to manage these areas after the restoration. In order to achieve this aim, the project plans to introduce effective large-scale restoration methods and to create the necessary infrastructure for continuous management of the restored sites. The project also aims to directly involve private land owners and to raise awareness among the local community and the general public on the value of alvar areas and of the importance of managing them effectively.

Expected results

- The restoration of 2 500 ha of alvar meadows, ensuring that the tree and shrub coverage of the restored areas is no more than 40%;
- The signing of at least 300 long-term contracts with farmers, or local agricultural companies, to graze their cattle/sheep in the area annually, ensuring their continuous management;
- The local communities and the general public will be better informed about the value of the targeted habitat type, thanks to the project’s awareness-raising actions; and
- At least 40 farmers or agricultural companies trained in the management work required for the project areas.

Beneficiary:

Type of beneficiary
National authority

Name of beneficiary
The Environmental Board

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Name of contact person
Anneli Reinloo

Duration of project:
60 months (01/09/2014 – 01/09/2019)

Total budget in euro:
3,725,865.00

EC contribution in euro:
2,791,305.00

Themes: Habitats: Grasslands
Project background

Under Article 17 of the Habitats Directive, EU Members States are required to periodically report on the conservation status of Annex I natural habitat types and Annex II species that fall within their territory. The Finnish country report for the period 2001-2006 assessed the overall conservation status of 18 out of 19 Annex I natural habitats types in the boreal biogeographic region of Finland as being unfavourable-bad or unfavourable-inadequate (the only exception being habitat 1220). Urgent action is therefore required in order to increase the protection of nature and biodiversity in Finland.

Project objectives

The project aims to restore structural features that are important for the maintenance of biodiversity within habitats and increase the extent of the target habitats by restoring severely degraded areas. Activities will be carried out on Natura 2000 habitats where ecological characteristics are shaped by fire (fire-born habitats) or extreme solar radiation and luminosity (sunlit habitats).

The project also aims to improve the conservation status of several species protected under the Habitats and Birds Directives, such as *Pulsatilla patens* (a nationally endangered plant species restricted to esker forests in Häme region), and *Lanius collurio* and *Sylvia nisoria*, (two birds species that will directly benefit from restoration measures targeting their breeding habitat). It will focus on 69 Natura 2000 sites throughout Finland.

Expected results

- A detailed restoration action plan of practical conservation actions for 44 restoration sites (511 ha);
- Management plans for two Natura 2000 sites (7 267 ha) and fire continuum plans covering 40 000 ha for 16 project sites;
- Habitat restoration measures to improve the quality of Habitats Directive Annex I habitats carried out in the project’s 69 target sites;
- Controlled burning in 34 Natura 2000 sites (around 281 ha) leading to the restoration and extension of the western taiga (9010) forest;
- Restoration of 339 ha of sunlit habitats (28 sub-sites) and around 6.6 ha of Baltic sandy beaches (five sites) through the removal of invasive alien species;
- Removal of trees in 18 project sites (147 ha) to facilitate other restoration actions;
- Creation of new habitat patches for *Pulsatilla patens* in seven sites (eight ha), and the dispersal of species to the newly created habitat areas; and
- Restored areas at one site developed into quality nesting habitats for the insectivorous birds *Lanius collurio* and *Sylvia nisoria*.

Beneficiary:

- **Type of beneficiary**: National authority
- **Name of beneficiary**: Natural Heritage Services of Metsähallitus
- **Postal address**: Vernissakatu 4, FIN - 01301 Vantaa, FINLAND
- **Phone**: +358 205645068
- **Email**: jussi.paivinen@metsa.fi
- **Name of contact person**: Jussi PÄIVINEN

**Duration of project:**

72 months (01/08/2014 – 31/07/2020)

**Total budget in euro:**

4,062,410.00

**EC contribution in euro:**

2,031,206.00

**Themes:** Habitats : Coastal - Forests - Grasslands
Halting the decline of endemic Petrels from Réunion Island: demonstration of large-scale innovative conservation actions

Project background

Reunion Island hosts one of the most unique seabird communities in the world, including two endangered endemic petrels, the Barau’s petrel (Pterodroma baraui) and the Mascarene black petrel (Pseudobulweria aterrima). These species are in dire need of emergency conservation measures. They already benefit from national action plans, but the implementation of conservation actions suffers from ecological, technical and financial constraints, resulting in conflicts between nature conservation and socio-economic development. France has the sixth highest proportion of its endemic species threatened at the European level, although these species are mainly located in overseas territories where conservation efforts need to be stepped up to fully implement the EU Biodiversity Strategy by 2020.

Project objectives

The overall objective of the LIFE PETRELS project is to stop the loss of Reunion’s biodiversity by saving two endemic petrels from extinction. In order to overcome the technical and financial difficulties that hamper the adoption of appropriate conservation measures, demonstrative and innovative management strategies will be implemented. The aim is develop conservation tools that are adapted to the island’s urban context, in order to involve stakeholders in efforts to reduce threats to seabirds and to undertake conservation actions.

Expected results

- Reversal of the catastrophic trend of petrel populations in the Reunion National Park;
- Development of appropriate conservation management techniques, including the identification of breeding colonies and artificial breeding;
- Enhanced biological knowledge for both endemic petrel species;
- Control of the spread of invasive species, especially rats and cats, in the remotest areas of the island;
- Exchange and dissemination of the results to other nature conservation bodies;
- Consultations with local stakeholders; and
- Raised awareness of the need to protect these two species.
Conservation of the French populations of *Galemys pyrenaicus* and its populations on the French Pyrénées

**Project background**

The Pyrenean desman (*Galemys pyrenaicus*) is a small semi-aquatic mammal that was discovered in 1811. Its distribution worldwide is restricted to the north-western Iberian Peninsula and the Pyrenean mountain range, a habitat that is seriously threatened by fragmentation.

Since 2010, the DREAL Midi-Pyrénées in collaboration with the CEN MP has been carrying out an action plan for the protection of the desman. This five-year plan includes 25 actions to stop the French desman population decreasing and to develop operational conservation methods. The Pyrenean desman is listed in Annexes II and IV of the Habitats Directive.

**Project objectives**

This project will improve the desman's long-term conservation status in 11 Natura 2000 sites in three French regions. This will be achieved using innovative conservation techniques consisting of a range of activities: hydro-electricity production, waterworks developments, riverbank management and water sports.

The aim is to ensure that all Pyrenean aquatic habitat development and maintenance actions take the desman into consideration. The management methods, which will be applied to the entire French Pyrenees, will enhance the habitat’s hosting capacity (living conditions for the desman) and facilitate the ecological continuity of the area’s rivers.

**Expected results**

- Improved conservation status of 20% of the French desman population;
- Three study protocols tested (capture, footprint rafts and radio-tracking);
- Analysis of the evolution of six populations subjected to various stresses;
- Reproduction sites of the desman determined;
- An evaluation of the ecological impact of water sports;
- The purchase of five ha of land;
- Neutralisation of more than 400 black spots (i.e. likely to lead to desman mortality) along 120 km of river and 40 km of canals;
- Improvements to the hosting conditions of seven sectors (a minimum of 150 m);
- The creation and maintenance of seven experimental refuge areas;
- Regulation of water release on four dams; and
- Raised awareness of 100,000 fishermen, 60 fish farmers, 20,000 canyoning enthusiasts, hydro-electricity groups and river unions.

**Beneficiary:**

Type of beneficiary: NGO-Foundation

Name of beneficiary: Conservatoire d’Espaces Naturels de Midi-Pyrénées (CEN MP)

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Fax: +33 581608191
Email: melanie.nemoz@espaces-naturels.fr

Name of contact person: Mélanie Nemoz

**Duration of project:**

60 months (01/06/2014 – 31/05/2019)

**Total budget in euro:**

2,672,707.00

**EC contribution in euro:**

1,336,353.00

**Themes:** Species: Mammals
Reduction of the human threats affecting the bearded vulture

Project background

The bearded vulture is one of the most threatened species in Europe and is, as such, rated “critically endangered” by the IUCN. Reintroduced into the Alps in 1986, the species suffers from population fragmentation and resulting genetic isolation. In 2011, only 50 breeding pairs were left in France and 175 in Europe.

Thanks to recent reintroduction efforts the French population of the bearded vulture has increased over the last few years. The equilibrium, however, remains fragile and adult mortality could rapidly reverse this trend.

Project objectives

The LIFE GypHelp project aims to connect the Spanish bearded vulture populations to those of the Pyrenean Mountains, the Massif Central, the Causses and the Alps. The preservation of the species will be ensured by a reduction of mortality risks, the involvement of stakeholders and a European-wide promotion of the need for conservation.

Expected results

• Reduction in anthropogenic hazards, such as collision with aerial cables on 70% of the territory;
• Creation of ‘visualisation plans’ for 50% of the ski resorts and on the entire electric power lines network;
• Development of an application to centralise information about the species;
• Maintenance of the breeding productivity of the French alpine population;
• Strengthened expansion potential of the species by the introduction two new breeding pairs;
• Development of a preservation network and raised awareness among stakeholders;
• Increased ecological knowledge about the bearded vulture;
• Improved knowledge about poisoning and intoxication of the species; and
• Improved conditions of other endangered species, such as gallinaceous birds (an order of birds such as wildfowl or gamebirds) and raptors (birds of prey).
Dry forest conservation in Réunion island

Project background

Semi-xerophilous (semi-dry) forest is one of the most emblematic habitats of Reunion Island. Today only about 1% of its original area of 56 800 ha remains, scattered in small plots across the western coast (Mafate and Cilaos cirques) and the La Montagne mountain range. The main causes of this regression include heavy demographic pressure, loss of connectivity between relict areas, invasion by exotic species, decline of native species, such as the Reunion giant tortoise and day gecko, and the lack of awareness among the local population. Reunion National Park coordinated a previous LIFE project on semi-dry forests (LIFE07 NAT/F/000188 - COREXERUN), which committed the park and its partner to an ambitious conservation project to save the endangered forests. Results from that project pointed out the need for low-cost restoration of greater areas to guarantee long-term conservation success.

Project objectives

This LIFE Forêt Sèche project aims to preserve unique semi-xerophilic forest habitats on Reunion Island and to re-establish the connectivity between restored and relict plots. It will demonstrate that the long-term conservation of this habitat can be achieved at lower cost, with a reduction goal of 20%, by the implementation of innovative measures. To achieve this objective, a set of demonstration actions and innovative approaches will be implemented in a coordinated and integrated manner. These actions will serve to directly and indirectly promote cost-effective and sustainable conservation on a greater area of the semi-dry forest on Reunion Island.

Expected results

- Re-establishment of the original ecological continuum that allows for the preservation of the semi-xerophilous forest on Reunion Island;
- Development of new cropping techniques that reduce intervention costs by 20%;
- 45 to 50 ha of semi-xerophilous forest land restored and protected;
- 80 000 trees planted;
- Improvement of the conservation status of 10 highly threatened plant species;
- Restoration of the fauna-flora dynamic; and
- Identification of potential agents for biological pest control.

Beneficiary:
Type of beneficiary
Park-Reserve authority

Name of beneficiary
Parc National de la Réunion

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Name of contact person
Marylène HOARAU

Duration of project:
72 months (01/10/2014 – 30/09/2020)

Total budget in euro:
2,852,003.00

EC contribution in euro:
1,426,001.00

Themes:
Habitats: Forests / Biodiversity issues: Ecological coherence
Life + Nature Preservation of *Margaritifera margaritifera* and restoration of river continuity of the Upper Dronne River

**Project background**

Aquatic species are considered to be some of the most endangered species in Europe. This is certainly the case of the freshwater pearl mussel, whose population has declined by more than 90% across the continent. In France, the decline has been more dramatic and represents more than 99% of the population.

Currently, the population is estimated to be around 100,000 mussels in around 80 rivers. The upper Dronne River is home to the first French population of freshwater pearl mussels with about 15,000 mussels. The conservation problems and threats are related to a deterioration of the water quality, the clogging of the river by substrates and the breakdown of river continuity (the flow of the river is obstructed by man-made obstacles such as dams and weirs). The water quality of the upper Dronne River is good but can exceed 7 mg/L of nitrate (NO₃). This level is very close to the limit at which juvenile mussels can survive – 1.7 mg/L.

**Project objectives**

In the short-term, the Marga Haute-Dronne project aims to establish the best conditions for maintaining the population of freshwater mussels on the upper Dronne. The long-term goal of the project is to enable population growth to make the mussel population viable.

The river continuity will be restored by removing or finding other methods to get around the main obstacles to the river course: dams, weirs and pipelines. This will enable habitat restoration in the river and some of the main tributaries within the Natura 2000 area. The actions will also include the restoration of a population of wild brown trout, ensuring a sufficient number of fish hosts. Parallel to this action, a rearing facility will be set up to produce freshwater mussel juveniles in captivity. The production of juvenile mussels will help to strengthen the small population in the natural environment of the upper Dronne and to understand the impact trace metals has on it.

**Expected results**

- Restoration of the habitats on the main stream and tributaries of the upper Dronne;
- Creation of a rearing facility for freshwater mussels, aiming to produce 16,000 juveniles over the five years of the project; and
- An awareness campaign about the protection of the freshwater pearl mussel.
Functional rehabilitation of the Jura mountains peatlands of Franche-Comté

Project background
The Jura Mountains are one of the richest areas of bog in Western Europe. Across the whole range more than 400 peatlands cover a total of around 4 000 ha. Of these Jura peat bogs, 247 (covering 2 600 ha) are located in the region of Franche-Comté.

The beneficiary is deeply involved in peat bog conservation in Franche-Comté. It has already taken part in several related projects, including the LIFE project, ‘Tourbières de France’. Its focus area covers 53 sites, including 29 peatbogs, totalling an area of 1 220 ha.

In Franche-Comté, 162 peat bogs covering 2 050 ha are enclosed within Natura 2000 sites. These sites are exceptionally rich in biodiversity, hosting three plant species, eight invertebrates and a large diversity of habitats of Community interest. However, human activities, such as drainage and spruce plantation, that continued up to the 1970s have resulted in severe hydrological disruption of ecosystems, leading to the loss of 50% of the habitat.

Project objectives
The LIFE Tourbières du Jura project aims to improve the conservation status of habitats listed in the annexes of the Habitats Directive in the peat bogs of the Jura Mountains. It will develop conservation management plans and implement hydrology restoration and other supporting works on land accounting for 37% of the Franche-Comté Natura 2000 network.

Specifically, the project will restore the original hydrological state of around 60 bogs within 16 Natura 2000 sites. Interventions will include the restoration of stream banks, the blocking of drainage channels, tree felling and shrub clearing. The project will implement specific regeneration of zones affected by peat extraction and erect fences around sensitive areas.

Strategic areas of land will be purchased from private landowners in order to make it possible to implement appropriate conservation methods across the whole target area. The experience gained during this project will be passed on to other Natura 2000 sites, while communication activities will also be undertaken to raise public awareness of the need to protect these ecosystems.

Expected results
• Long-term rehabilitation of 60 bogs covering 625 ha and accounting for 37% of the whole Franche-Comté Jura Natura 2000 network;
• Restoration of 11 km of stream banks;
• Blocking of 16 km of drainage channels;
• Tree felling and shrub cleaning over 51 ha;
• Extraction zone regeneration over seven ha;
• Fencing of 950 m around sensitive areas;
• Purchase of 46 ha of private properties; and
• Definition of 10 management plans.
Conservation of the Giant Pearl Mussel in Europe

Project background

The giant European pearl mussel (Margaritifera auricularia), also known as grande mulette and Spengler’s freshwater mussel, was once a common species in Western Europe, where it thrived in large, slow-flowing rivers from England, Germany and Spain, in the watersheds of the Adour, the Rhône and the Po. However, today only a few populations remain in some French rivers and the Ebro basin in Spain. The causes of this decline include the morphological degradation of rivers, habitat destruction, water pollution, overfishing, water extraction activities, fragmentation of populations and the near-extinction of its main host-fish European sturgeon (Acipenser sturio); parasitic larvae must develop on the gills or fins of host-fish until becoming free-swimming juveniles.

Project objectives

The goal of the LIFE Giant Pearl Mussel project is the conservation of the critically endangered giant pearl mussel (Margaritifera auricularia) in France, specifically in the Charente, Vienne and Creuse rivers where up to 98% of the world’s giant pearl mussel population can be found. The project aims to use artificial breeding and restocking of rivers as the basis for the species’ long-term conservation in Western Europe. It will thus help implement French and Spanish National Action Plans for this species. Project actions also form part of the EU biodiversity strategy for 2020.

Expected results

- Extension of the survival time of captivity-bred giant pearl mussels from two to three months to one year and beyond, by improvements in artificial rearing techniques;
- Development of an innovative breeding technique using new feeding methods, a nursery for juveniles and the identification of alternative host fishes to European sturgeon for captive breeding;
- Reproduction and optimisation of rearing conditions in a controlled laboratory environment;
- Release of up to 2,000 viable individuals every year during the project’s duration; and
- Conservation of the Charente River’s giant mussel population, in order to provide a temporal window of survival for the species until an appropriate dam sediment management plan is implemented.
Conservation and restoration of alluvial forests and bog woodland in Brandenburg

Project background

The LIFE project is located in the north, north-west and south of Berlin and takes in 10 Natura 2000 sites located within three riverine systems. Bog woodlands are important stepping stones and hotspots of biodiversity habitats within the otherwise rather species-low environment. The limited occurrence of this habitat hinders its functionality and endangers its existence. During the last century the alluvial forests and bog woodlands in the valleys have been endangered by agriculture and commercial forestry activities. In addition, the modification of normal water flows has negatively influenced the natural hydrological dynamics and flood conditions in these alluvial habitats.

Project objectives

The project’s main aims focus on securing and restoring floodplains that include habitats of bog woodlands and alluvial forests, in three riverine systems in Brandenburg.

As the moorlands of bog woodlands depend heavily upon the stabilisation and re-establishment of natural hydrologic conditions, the project seeks to re-establish a near-natural water regime within the alluvial areas and forests, as well as the associated waterways.

In order to improve the conservation status of these alluvial forests, the project also aims to stabilise and increase the interdependence between the watercourse and its floodplain. Ultimately, this will cause the riverbed to rise and lead to a more natural frequency of flood overflows, which will better sustain the habitat’s long-term integrity.

Expected results

- Restoration, stabilisation and creation of 25 ha of bog woodlands and 130 ha of alluvial forests;
- Restoration of a near-natural water regime within the floodplains of the riverine systems to develop alluvial forests;
- Stabilisation and restoration of natural hydrological conditions within the moorlands of bog woodlands;
- Establishment of a land use system that is sensitive to nature conservation on valuable open-land habitat types;
- Support to eco-tourism development in cooperation with parks and local communities (i.e. creation of nature trails for visitors, visitor guidance and measures for boat users); and
- Raised awareness through the production of information material and information boards.
**Project background**

Large proportions of Germany’s oak or oak-hornbeam forests of the *Carpinion betuli* habitat are found in North Rhine-Westphalia (NRW). This project covers one of the two main sites of this habitat type in NRW. Due to the large extension of this habitat type, the project site is of national and European value.

Changes in natural hydrology patterns remain a key threat for this forest type. Therefore, it is of crucial importance to optimise the site’s hydrology by closing drainage ditches and raising the water level. Such measures should also help to stabilise populations of several endangered amphibian species.

**Project objectives**

The project’s main objective centres on conserving and developing oak-hornbeam forests, beech forests and lowland hay meadows in the targeted areas. The project also seeks to preserve and support woodland bird species (e.g. black, middle spotted and grey-headed woodpeckers) through the protection of dead wood and the management of suitable areas. The improvement of valuable water and wet habitats in the areas is also planned, in order to preserve and support the existing populations of warty newt, midwife toad and agile frog.

**Expected results**

- Protection and restoration of the natural water balance in the targeted areas via controls on drainage ditches covering 350 ha. This will improve the conservation status of oak-hornbeam forests;
- Ecological succession is supported on 34 ha of *Luzulo-Fagetum* beech forests, 8 ha of *Asperulo-Fagetum* beech forests, and 96 ha of oak-hornbeam forests. This will improve the connectivity between existing forests habitats;
- Introduction of coppice structures in combination with permanent protection and management of dead wood in 39 ha of oak-hornbeam forests. This will lead to an improved conservation status of woodpeckers;
- Acquisition of 123 private parcels of land (46 ha) with beech forests and oak hornbeam forest habitats;
- Restoration and connectivity of 20 patches of Nardus grasslands, Molinia meadows and lowland hay meadows (7.5 ha); and
- Restoration and improved connectivity of 25 spawning basins in order to benefit targeted amphibians (e.g. warty newt, midwife toad and agile frog).
Restoration and conservation of sloping and transition mires in low mountain range Hunsrück (area Hochwald)

Project background

The wooded landscape of the Hunsrück low mountain range in the German state of Rhineland-Palatinate hosts the severely endangered habitat type ‘Transition mires and quaking bogs’, as well as the priority habitat type ‘Bog woodland’. These key habitats are affected by various disturbances, such as afforestation with non-native tree species and drainage. Other habitat types of European interest, such as ‘Molinia meadows on calcareous, peaty or clayey-silt-laden soils’ and ‘Luzulo-Fagetum beech forests’ are degraded and in need of restoration. In addition, the degraded alluvium along the Thranenbach brook requires revitalisation, while conservation actions are also needed in alluvial forests.

Project objectives

The main objective of the LIFE Hochwald project is the regeneration and protection of transition mires and bog woodlands inside the Natura 2000 site Hochwald in the Hunsrück low mountain range. Additionally, the project seeks to restore ‘Luzulo-Fagetum beech forests’ in the adjacent areas on drier ground, and to develop the priority habitat type ‘Alluvial forests with Alnus glutinosa and Fraxinus excelsior’ along Thranenbach brook inside the Natura 2000 area Obere Nahe. The project also aims to initiate and develop the endangered habitat type ‘Molinia meadows’.

Expected results

• General improvement of the conservation status of the targeted habitat types in the long term;
• Up to 130 ha of non-native forests or woodlands removed in mires, bog forests and adjacent areas;
• About 140 ditch blockings constructed;
• Extensive re-wetting measures implemented that improve the hydrological status of peatlands on around 59 ha;
• Deconstruction of 4 000 m of roads;
• Coniferous forest stands removed in the valley of the Thranenbach, leading to the restoration of natural alluvium over 17 ha;
• About 7 ha of transition mires, 52 ha of bog woodland, 69 ha of Luzulo-Fagetum beech forests, seven ha of broad-leaved alluvial forests and 2 ha of Molinia meadows developed, initiated or regenerated;
• Enhanced habitat conditions for the characteristic species of these habitats; and
• Information campaigns leading to a better public awareness of the value of the targeted habitats and of the species they support.
Reintroduction of lynxes (*Lynx lynx carpathicus*) in the Palatinate Forest Biosphere Reserve

**Project background**

The Eurasian lynx (*Lynx lynx carpathicus*) disappeared from the Rhineland-Palatinate area in the 18th century. Nowadays the closest population of lynx to the Pfälzerwald/Palatinate Forest is a French population in the southern Vosges.

Monitoring in the Pfälzerwald has periodically identified individual lynxes. These are expected to originate from the Vosges population and have shown no sign of establishing a resident population in the Pfälzerwald. A programme of reintroducing lynx in the Pfälzerwald is therefore considered important in order to re-establish a population of the species in its formerly natural range in the Palatinate Forest.

Around 90% of the project area is public land and the relevant authorities all indicate their support for the reintroduction of lynx. Other key stakeholders (including civil society groups and hunters) are also supportive.

**Project objectives**

The project’s main aim is to re-establish a lynx population in the Palatinate Forest. This will be achieved through a reintroduction programme involving the release of 20 lynx (10 coming from Switzerland and 10 from Slovakia).

**Expected results**

- A reproducing population of lynx re-established in the project area;
- Close cooperation between German and French stakeholders (especially hunters, shepherds or other livestock owners) to establish self-contained, long-term acceptance of the lynx;
- Public acceptance of the lynx in the regions of Palatinate-Forest, Alsace and Lorraine;
- Scientific monitoring and evaluation of the reintroduction work;
- Development (and agreement by stakeholders) of a local plan for the lynx in the Palatinate Forest; and
- Completion and dissemination of new guidelines for ‘Wildlife Overpasses in Spatial Planning’ in order to increase the permeability of traffic infrastructure at the level of land-use planning in the Palatinate Forest, as well as in a larger range (e.g. in other low range mountains in Rhineland-Palatinate and possibly other federal states).
Conservation measures to assist the adaptation of *Falco eleonorae* to climate change

Project background

Eleonora’s falcon (*Falco eleonorae*) is a migratory falcon breeding in the Mediterranean and Atlantic islands off the northwest coast of Africa. The global population size is estimated at around 15,000 breeding pairs, with the vast majority – 12,360 pairs or 80% – breeding in Greece.

The first global census of the species (2004-6) showed that the population is stable but also provided valid indications for a northward shift in the species’ distribution in the Aegean. The reasons appear to be related to the constant raising of maximum summer air temperatures in the Eastern Mediterranean.

Project objectives

The LIFE ElClimA project aims to facilitate the adaptation of Eleonora’s falcon to ongoing and future climate change. It plans to implement a series of targeted conservation actions to improve the species’ breeding performance and the quality and availability of its foraging areas.

The project will conduct monitoring actions to provide an updated report on the species’ population and breeding status. It will assess the bird’s foraging behaviour and habitat quality, as well as the impact on these habitats of land use changes and climate change.

To improve the breeding performance of the target species, the project will construct artificial nests in important breeding areas. It will also help to eradicate rats from target islet complexes to reduce the significant levels of predation of falcon eggs and chicks. A key action for improving the quality and availability of food for the falcon will be the planting of fruit trees at identified stopover sites for passerines – thus improving the availability of prey. The project will also network with experts to identify emerging threats to the species and its habitats.

Expected results

- An update on population and breeding status of Eleonora’s falcon in key breeding areas;
- Identification and quality assessment of the main foraging areas in the species’ breeding and wintering areas;
- An update on passerine migration trends;
- An update on the potential impacts of ongoing climate change;
- Construction of 1,000 artificial nests on at least five islet complexes hosting 19% of the national breeding population;
- Rat eradication on at least two islet complexes with a total surface area of at least 705 ha, improving breeding habitat quality for six per cent of the species’ national breeding population;
- Plantation of at least 200 fruit trees over one ha at identified passerine stopover sites on Antikythera;
- Improved breeding success of the target species, including reduced egg losses and chick mortality; and
- A Good Practice Guide of climate mitigation measures to improve the quality of the falcon’s foraging areas.
Conservation of the European Roller (*Coracias garrulus*) in the Carpathian Basin

**Project background**

Birds of farmland and grassland habitats have the worst conservation status in Europe. The European roller (*Coracias garrulus*) is one such species whose population has declined due to agricultural intensification. Abandonment and reduced management of meadows and pastures, and the conversion of grassland to other land use, has resulted in lower quality foraging habitats. European roller is a secondary-cavities nesting species that is not able to create its own nest holes, except in loess and sand cliffs. The lack of suitable nesting sites seems to be the factor most limiting the recovery of its population, based on the experiences of previous conservation actions. Public awareness of the species is low across its breeding range, and there are no strategic management tools for its conservation.

**Project objectives**

The ROLLER LIFE+ project aims to improve habitat conditions for European roller in order to ensure its recovery. The project’s specific objectives are to:

- Create nesting opportunities in 17 Natura 2000 sites in Hungary, holding altogether 589-717 breeding pairs, and in 15 Natura 2000 sites in western Romania, holding 97-137 breeding pairs;
- Improve nesting and feeding habitats on three characteristic roller habitat types in three project sites;
- Demonstrate new management methods in key European roller habitats to promote their use;
- Decrease the number of mortalities caused by unsafe nesting opportunities and electrocution;
- Promote bird-friendly habitat management of Natura 2000 sites, especially the prevention of tree logging;
- Ensure sustainable and long-term conservation management of the species by the ‘Farmer for Rollers’ programme and the creation of a National Action Plan in Hungary; and
- Increase public awareness of European roller.

**Expected results**

- Increase of European roller breeding population in targeted Natura 2000 sites in Hungary by over 20% during the project – i.e. 707-860 breeding pairs by 2019;
- Increase of the population in the western Romanian project area by over 20% to reach 116-164 breeding pairs by 2019;
- 459 ha of new nesting and foraging habitat in different regions of Hungary;
- Training courses for target groups concerning insulation techniques for medium-voltage pylons in Hungary, and 1 000 pylons in Romania, to reduce bird electrocutions;
- Increase in the overall occupation rate of nest boxes to 45%, with a 25% occupancy expected in the case of artificial holes in Hungary;
- At least 18% of nest boxes occupied by rollers in western Romania;
- Migratory stop-over sites revealed in Hungary and Romania, and actions taken to minimise mortality factors on surveyed pathways; and
- Raised public and stakeholder awareness.
Securing prey sources for endangered *Falco cherrug* and *Aquila heliaca* populations in the Carpathian basin

**Project background**

Lake Fertő and the swamps of Hanság have a rich fauna, including threatened species listed in Annex I of the Birds Directive. Bird species in the national park and Natura 2000 network site include great bustard (*Otis tarda*) and several birds of prey; there are about 10 pairs of Saker falcon (*Falco cherrug*) and 6-7 pairs of Eastern imperial eagle (*Aquila heliaca*). A previous LIFE project (LIFE09 NAT/HU/000384) showed that rodents are a very important part of the diet of Saker falcon, with the European ground squirrel (*Spermophilus citellus*) accounting for more than 25% of the bird’s prey. A number of rodent species are also very important for the Eastern imperial eagle. However, rodent populations are decreasing, resulting in increased conflict between raptors and pigeon fanciers and hunters. Reasons for the loss of rodent habitat include fewer grazing animals on the land and the loss of grassland to urbanisation and solar power facilities. Also, farmers continue to kill rodent species indiscriminately as vermin.

**Project objectives**

This RAPTORSPREYLIFE project aims to reinforce ongoing efforts to strengthen the European core populations of Saker falcon and Eastern imperial eagle by stopping the decline of the existing small mammals’ populations that serve as their prey. The specific objectives are to:

- Act as a demonstration project to develop best practices for increasing the populations of raptor prey species;
- Increase public awareness of birds of prey, especially the importance of their small mammal prey; and
- Demonstrate how to adjust different nature conservation priorities when carefully considering the habitat demands of Southern birch mouse (*Sicista subtilis trizona*) and blind mole rat (*Nannospalax (superspecies leucodon*)), which are strictly protected species in Hungary.

**Expected results**

- A better understanding of the factors involved in the decrease of small mammal populations;
- The decrease in numbers of the main food sources of Saker falcon and Eastern imperial eagle stopped;
- A genetic and health survey started and gene banks established for small mammal species;
- The fragmented small populations of native rodents improved;
- Potential habitats reconstructed and about 2 000 European ground squirrel (*Spermophilus citellus*) reintroduced from strong viable populations, with fragmented populations connected by ‘stepping stones’; and
- European *Spermophilus citellus* Species Action Plan implemented.

**Beneficiary:**

- **Type of beneficiary:** Park-Reserve authority
- **Name of beneficiary:** Fertő-Hanság National Park Directorate
- **Postal address:** Rév-Kócsagvár H - 9435 Sarród HUNGARY
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- **Name of contact person:** Miklós VÁCZI

- **Duration of project:** 54 months (01/07/2014 - 31/12/2018)

- **Total budget in euro:** 2,881,243.00
- **EC contribution in euro:** 2,160,932.00
- **Themes:** Species: Birds

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**Securing prey sources for endangered *Falco cherrug* and *Aquila heliaca* populations in the Carpathian basin**

**Project background**

Lake Fertő and the swamps of Hanság have a rich fauna, including threatened species listed in Annex I of the Birds Directive. Bird species in the national park and Natura 2000 network site include great bustard (*Otis tarda*) and several birds of prey; there are about 10 pairs of Saker falcon (*Falco cherrug*) and 6-7 pairs of Eastern imperial eagle (*Aquila heliaca*). A previous LIFE project (LIFE09 NAT/HU/000384) showed that rodents are a very important part of the diet of Saker falcon, with the European ground squirrel (*Spermophilus citellus*) accounting for more than 25% of the bird’s prey. A number of rodent species are also very important for the Eastern imperial eagle. However, rodent populations are decreasing, resulting in increased conflict between raptors and pigeon fanciers and hunters. Reasons for the loss of rodent habitat include fewer grazing animals on the land and the loss of grassland to urbanisation and solar power facilities. Also, farmers continue to kill rodent species indiscriminately as vermin.

**Project objectives**

This RAPTORSPREYLIFE project aims to reinforce ongoing efforts to strengthen the European core populations of Saker falcon and Eastern imperial eagle by stopping the decline of the existing small mammals’ populations that serve as their prey. The specific objectives are to:

- Act as a demonstration project to develop best practices for increasing the populations of raptor prey species;
- Increase public awareness of birds of prey, especially the importance of their small mammal prey; and
- Demonstrate how to adjust different nature conservation priorities when carefully considering the habitat demands of Southern birch mouse (*Sicista subtilis trizona*) and blind mole rat (*Nannospalax (superspecies leucodon*)), which are strictly protected species in Hungary.

**Expected results**

- A better understanding of the factors involved in the decrease of small mammal populations;
- The decrease in numbers of the main food sources of Saker falcon and Eastern imperial eagle stopped;
- A genetic and health survey started and gene banks established for small mammal species;
- The fragmented small populations of native rodents improved;
- Potential habitats reconstructed and about 2 000 European ground squirrel (*Spermophilus citellus*) reintroduced from strong viable populations, with fragmented populations connected by ‘stepping stones’; and
- European *Spermophilus citellus* Species Action Plan implemented.
Transboundary cooperation for revitalization of riverine habitat complex in Drava region within Natura 2000 sites

Project background

Decreasing water levels in the River Old Drava have lowered water levels in a transborder oxbow lake in a Natura 2000 network site. Due to riverbed erosion, only high floods in the river can fill up the oxbow, but the frequency of these floods is very low. There are certain periods of low precipitation, for instance, that negatively affect ecological conditions; neither the Old Drava nor the Rinya stream that feeds into it can drive enough water into the oxbow. Decreased water level, along with abandoned angling infrastructure, endangers aquatic habitats and species listed in the Habitats Directive. Action is therefore required to modify the water regime in the Danube-Drava National Park.

Project objectives

The main objective of the LIFE Old Drava project is to contribute to the conservation and resilience of riparian habitats by improving the water regime, thereby preserving and enhancing biodiversity in and around an oxbow lake. Specific project actions are to:

- Raise the water level by constructing one or two bottom weirs, which will increase the average water level of the oxbow by 0.5-1.0 m, and to construct a new channel between the riverbed of the Drava and the upper section of the river;
- Restore habitat through discharge enhancement of the oxbow, and the stabilisation of sufficient water level with water retention structures that reduce the risk to species arising from low water periods;
- Harmonise human and nature conservation activities through campaigns, for example, targeting local anglers and requesting them to remove abandoned angling platforms and other litter from the oxbow;
- Contribute to improving transboundary nature conservation into the future; and
- Raise public awareness by various types of communicational tools.

Expected results

- As a result of improving water discharge, the average water level increased by 0.5-1.0 m;
- Increased water table positively affects about 176 ha of gallery forest, along with the oxbow lake, with all aquatic habitats in better condition and extremely low water level not endangering Natura 2000 fish and bird species;
- Abandoned angling platforms (around 30 of 117 total) removed, along with waste from the oxbow and gallery forest;
- Guidelines published in three languages, including recommendations for cross-border administrative criteria and requirements; and
- Around 15 000 people informed about the project, with local inhabitants’ knowledge about the floodplain’s natural value improved.

Beneficiary:

Type of beneficiary: Park-Reserve authority

Name of beneficiary: Duna-Dráva Nemzeti Park Igazgatóság

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Name of contact person: Tibor PARRAG

Duration of project: 48 months (01/06/2014 - 31/05/2018)

Total budget in euro: 834,985.00

EC contribution in euro: 623,674.00

Themes: Habitats: Freshwater
Sustainable land use management for the conservation of the freshwater pearl mussel

Project background

The catchments of the rivers Caragh and Blackwater in Kerry are important for a number of habitats and species, including the endangered freshwater pearl mussel (*Margaritifera margaritifera*). The conservation status of this species has, over the years, declined due to land mismanagement, with diffuse sediment and nutrient losses being the main causes. There is an urgent need to reverse this decline and improve the conservation status of freshwater pearl mussels in these rivers, by the development and implementation of effective and cost-efficient measures for reducing diffuse losses of sediment and nutrients from forestry and farming.

Project objectives

The LIFE Kerry project will target Natura 2000 network sites in southwest Ireland, within the Killarney National Park, which includes Macgillycuddy’s Reeks and the Caragh River catchment, and the Blackwater River site in Kerry.

The project’s objectives are to:
- Demonstrate effective conservation measures that will restore the freshwater pearl mussel to favourable conservation status in the Caragh and Blackwater catchments;
- Enhance awareness and understanding of the freshwater pearl mussel among local stakeholders;
- Demonstrate sustainable management techniques for farming and forestry in freshwater pearl mussel catchments; and
- Provide guidance for farming and forestry practices that support the conservation of freshwater pearl mussels.

Expected results

- An improvement in the condition of the habitat of the freshwater pearl mussel through a reduction in siltation and eutrophication;
- Increased recruitment of juvenile mussels to the population;
- Reduced losses of silt and nutrients from forest and farm project sites;
- Greater awareness and understanding of freshwater pearl mussels among the local community and key stakeholders;
- A school educational programme delivered to 12 national and five secondary schools in the project area;
- A well-designed and informative website;
- A pearl mussel tourist walkway;
- The successful implementation of approximately 25 farm and 10 forest management plans;
- The sustainable management of farm (2 500 ha) and forest (485 ha) drainage systems;
- The provision of 20 alternative drinking water facilities on farms;
- The establishment of 15 ha of native woodland;
- The management of 10 ha of existing broadleaf woodland;
- The conversion of 15 ha to native broadleaf woodland;
- The restructuring of 175 ha of commercial plantations into long-term retention woodland;
- The provision of at least 10 training workshops and 10 demonstration events to farmers, forest owners and other river catchment users;
- The distribution of four best practice guides for a diverse range of end-users involved in catchment management hosting over 10 million freshwater pearl mussels; and
- A report on the feasibility of local marketing initiatives and the establishment of a local supplier and consumer network.
Connecting and Restoring habitats for Hen Harrier, Merlin, Atlantic Salmon and Brook Lamprey in Duhallow, Ireland

Project background

The Mullaghareirk Mountains, West Limerick Hills and Mount Eagle, and the Blackwater River Natura 2000 network sites in southwest Ireland are important for numerous species, including hen harrier (*Circus cyaneus*), merlin (*Falco columbarius*), Atlantic salmon (*Salmo salar*), brook lamprey (*Lampetra planeri*), freshwater pearl mussel (*Margaritifera margaritifera*) and European otter (*Lutra lutra*). The conservation status of these species has declined due to habitat degradation and loss. The fish species have also greatly declined due to increased nutrient enrichment, channel degradation, siltation and the impact of invasive species. There is a clear need to reverse these declines, and to improve the conservation status of habitats and species.

Project objectives

The RaptorLIFE project aims to restore habitats and improve conservation status for fish and birds, in particular the four main project target species of hen harrier, merlin, Atlantic salmon and brook lamprey, in the Mullaghareirk Mountains, West Limerick Hills and Mount Eagle, and the Blackwater River Natura 2000 network sites. The project aims to do this through the development and demonstration of best management practices.

The project’s main objectives are to:

- Restore the hen harrier population and enhance habitats for a range of Annex I and Annex II species by restoring habitats across a range of land use types through integrated actions in important Natura 2000 network sites;
- Increase the quantity and quality of habitat for the targeted species by linking three designated sites, through direct local participation, the involvement of local stakeholders and participation in work schemes;
- Develop management prescriptions for an important winter roosting area; and
- Bring together the communities living in Duhallow with wildlife experts to address the conflict between landowners and hen harriers.

Expected results

- An improvement in merlin and other raptor nesting opportunities by the planting of 50 Scots pine trees;
- An enhancement of heather habitat by the flailing of 20 ha;
- An improvement of nesting opportunities for merlin by the placement of 30 nesting baskets;
- The development of a hen harrier friendly farm scheme with the local community over an area of 100 ha;
- The control of invasive species along 20 km of roadway in and close to the designated areas;
- The control of 126 km of invasive Himalayan balsam infested areas;
- The removal of 16 km of invasive Japanese knotweed from river banks;
- The removal of 5 ha of regenerating conifers;
- The treatment of 23 ha of riparian corridor through non-native coniferous plantation forests, specifically the removal of 8.3 ha of conifers and the coppicing of the remaining scrub; and
- The fencing of 28 km of river banks followed by the provision of 20 cattle drinks and 10 otter holts.
Project background

The project location is the vast coastal lagoon area of the ‘Sacca di Goro’ (situated in the province of Ferrara). The Natura 2000 site’s important coastal habitats and waterbird species are under threat from eutrophication of the lagoon waters, due to accumulation of underwater vegetation. Also, there is a lack of nesting sites for several species listed in the Birds Directive.

Project objectives

The project’s overall objective is the long-term conservation of the habitats and species of the delta coastal lagoon. This will be achieved by adopting integrated management techniques that seek to use to positive effect the dynamism of the lagoon and its constant sedimentary deposit. A further goal is the integrated management of the lagoon area, following an ecosystem and functional approach, in which both public authorities and private stakeholders are involved over the long term.

Expected results

- Improvement of the water circulation and the elimination of the eutrophication problems caused by macro algal bloom and subsequent degradation of the water;
- Change in the direction of the outer bank, which will now be oriented towards south/southwest, in order not to close off the sea water flow into the lagoon (as well as the excavation of sub-lagoon channels, this will guarantee a good circulation of water);
- Improvement of the hydraulic conditions allowing the conservation of the coastal lagoons over an area of around 1,000 ha (corresponding to around half of its extension), and the sandbanks, because of the negative impact of the eutrophication problems on the fauna of the lagoon/seabed, including the Adriatic dwarf goby (*Knipowitschia panizzae*) and Canestrini’s goby (*Pomatoschistus canestrinii*) (The dredged material will be used to expand the adjacent Mediterranean salt meadows); and
- Establishment of three hectares of nesting islets for the waterbird species – *Charadrius alexandrines*, *Sterna albifrons* and *Haematopus ostralegus*.

Beneficiary:

**Type of beneficiary**
Local authority

**Name of beneficiary**
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Paola MAGRI

**Duration of project:**
59 months (01/06/2014 – 30/04/2019)

**Total budget in euro:**
4,381,801.00

**EC contribution in euro:**
2,190,900.00

**Themes:** Habits: Coastal
Management of grey squirrel in Umbria: conservation of red squirrel and preventing loss of biodiversity in Apennines

Project background

The Umbria region is located in the heart of the Italian peninsula. It is threatened by the presence of the non-native Eastern grey squirrel (Sciurus carolinensis) that has spread since it was accidentally released in the city of Perugia in the early 2000s. The introduction of the grey squirrel in Europe is one of the most well-known and studied cases of invasive alien species (IAS). In Umbria the grey squirrel is linked to several types of human settlements, such as suburban areas with a high population density and the city centre. The grey squirrel is not considered a threat by the general public who see its presence in urban and suburban parks as positive.

Project objectives

The main goal of LIFE U-SAVEREDS is the conservation of the European red squirrel (Sciurus vulgaris) in Umbria and the biodiversity in the Apennine ecosystem. Another goal is to obtain a wide consensus from the public for management actions. These actions will involve capturing and eliminating grey squirrels, in accordance with animal welfare laws. Further goals include the removal of new grey squirrels by the creation of an ‘alien squirrel emergency team’ (ASET) on a national level and the production of a regional early warning system protocol.

Expected results

Management:
- Removal of at least 80% of the estimated grey squirrel population in Umbria;
- Restoration of at least two suburban red squirrel populations and an increase in density of populations in the areas where the species is disappearing due to the presence of the grey squirrel;
- A GIS-based map showing the detailed distribution of grey squirrels and their estimated population size in Umbria;
- A dynamic map that explains the trend of removal operations; and the
- Removal of a potential public health issue posed by grey squirrel: contact with this confident animal, living in high density city areas, could lead to an increased risk of disease (e.g. mycosis) in people with weakened immune systems.

Awareness and communication:
- Raising public awareness regarding the role of the native red squirrel in forest ecosystems and the threats posed by the grey squirrel to biodiversity; and
- Raising awareness on pet trade issues.

Dissemination:
- Producing a best practice tool for the early warning system and rapid response to new incursions by IAS;
- Providing technical alternatives to the use of non-selective systems for the control of rodents in urban areas, thus reducing the impact on non-target species and environmental contamination;
- The ASET will put the appropriate actions in place to be able to act rapidly regarding new non-native squirrels in Italy; and
- Creation of advanced communication and management strategies that can be applied to other IAS at local and national level.
Innovative silvicultural treatments to enhance soil biodiversity in artificial black pine stands

Project background

The decay of forest cover and soil erosion is a consequence of continual intensive forest exploitation, such as grazing and wildfires, over the centuries. From the end of the 18th century up to the mid-1900s, black pine plantations were established throughout the Apennines’ range in Italy to improve forest soil quality. The main aim of this reforestation was to re-establish the pine as a first cover, pioneer species. This was a preparatory step to the reintroduction of broadleaf trees, such as oaks and beech trees, and thus the reestablishment of mixed forest.

A series of thinning activities were planned by foresters when these plantations were designed. Many stands, however, remain ‘unthinned’, which over time has weakened the trees in the plantations. Alternative forms of regeneration have been and are being tested to improve the natural and artificial establishment of indigenous species. Thinning, however, remains the most common and one of the most successful regeneration methods used in pine forests.

Project objectives

The project’s main objective is to demonstrate the potential of an innovative silvicultural treatment to enhance the level of biodiversity in the soil of black pine stands. In particular, the project aims to evaluate the effects of selective thinning on soil biodiversity on young black pine stands. These effects will be compared to traditional thinning methods (selecting trees from below leaving well-spaced, highest-quality trees) and to areas of forest where silvicultural treatments (e.g. weeding, cleaning, liberation cutting) are not carried out.

Expected results

- Studies of the relationship between woodland structure and mycological, floristic, macrofaunal, meso-faunal and microbial diversity;
- Comparisons of different soil biodiversity components;
- Production of edible fungi related to silvicultural treatment;
- An analysis of wood production and its economic value related to silvicultural treatment;
- Analysis of the relationship between woodland stability and silvicultural treatment and its mechanical stability indices; and
- Guidelines for the silvicultural techniques proposed in this project.

Beneficiary:

Type of beneficiary
Research institution

Name of beneficiary
Consiglio per la Ricerca e la Sperimentazione in Agricoltura - Centro di Ricerca per la Selvicoltura

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Paolo CANTIANI

Duration of project:
60 months (02/06/2014 – 31/05/2019)

Total budget in euro:
1,549,975.00

EC contribution in euro:
768,594.00

Themes:
Industry-Production: Agriculture – Fisheries / Land-use and Planning: Forest management - Soil and landscape protection
Italian emergency strategy for fighting illegal poisoning and minimize its impact on bear, wolf and other species

Project background

The illegal use of poison is one of the main threats to two priority large carnivore species of the Habitats Directive – the brown bear (*Ursus arctos*) and the wolf (*Canis lupus*) – as well as to several scavenger raptor species.

Each year in Italy several cases of poisoning are reported, although it is thought these represent only the tip of the iceberg. In fact, the practice remains mostly undiscovered due to the fact that the carcasses of wild animals are rarely found, especially if they are of very rare species. Furthermore, cases of poisoning are not always reported. The use of poison baits also remains widespread: sometimes the poison targets are the protected species themselves. But at other times, protected species are caught up in, for example, local quarrels among truffle searchers or between truffle searchers and hunters. The use of poison baits is most common in areas frequented by the wolf and in the brown bear distribution area in the Apennines. The Griffon vulture (*Gyps fulvus*) is another common victim of poison.

Project objectives

The PLUTO LIFE project’s overall objective is to favour the conservation of the brown bear, wolf and scavenger raptors in Italy, by carrying out large-scale measures for preventing and fighting the illegal use of poison.

A cornerstone of the project is the use of anti-poisoning dog units (known by their Italian acronym NCAs) over a significant part of the country. Specifically, it aims to set up six units, run by the Italian forest service, together with two units covering the Gran Sasso-Laga national park. Each unit will consist of one dog trainer and two dogs. The eight NCAs will together operate over all of central and southern Italy, covering 11 regions in total. The units will carry out routine inspections in the areas most at risk, as well as urgent inspections once a poison carcass or bait is found, in order to clear the territory of other poison.

Expected results

- A 90% increase in the number of reports of wild animal poisoning cases received by the state forest authority on its ‘1515’ emergency telephone number;
- A 60% increase in interventions, as requested by other institutional bodies; and
- A 30% increase in detection of wild animal poisoning cases in the first two years after the NCA’s start up, and a 50% decrease in numbers within four years.
Strategy for the Natura 2000 Network of the Umbria Region

Project background

Italy's central region of Umbria hosts transitional areas located between the Mediterranean and Continental biogeographical regions. These areas are rich in biodiversity and include many endemic species. Such diversity is reflected in the 104 SCI and SPAs located in the region, accounting for more than 15% of its land surface. However, the conservation status of key habitats is considered poor or seriously affected by human pressure, and priority species remain threatened by a variety of factors.

Project objectives

The aim of the project SUN LIFE is to draw up a management strategy for the region’s entire network of Natura 2000 sites in order to safeguard their effective and sustainable management. The project aims to achieve and maintain favourable conservation status of habitats and species by identifying targeted conservation measures and restoring ecological connectivity and functionality. It also aims to identify possible sources of funding at European, national and regional level to ensure long-term benefits for Umbria’s Natura 2000 network.

Expected results

- Development of a financial plan for the management of the Natura 2000 network in Umbria for the period 2017-2023 and a strategy for the management of the network in Umbria;
- Updated regional ‘Prioritised Action Framework’;
- Guidelines for the conservation of biodiversity in the Natura 2000 network;
- The implementation of a monitoring programme for the Natura 2000 network; and
- Increased awareness on the value of the Natura 2000 network, among local stakeholders and young people, through communication campaigns.

Beneficiary:

Type of beneficiary
Regional authority

Name of beneficiary
Regione Umbria – Servizio Sistemi Naturalistici e Zootecnia

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Paolo PAPA

Duration of project:
36 months (01/10/2014 – 30/09/2017)

Total budget in euro:
2,344,702.00

EC contribution in euro:
1,162,503.00

Themes: Biodiversity issues: Ecological coherence
Recovering Endangered habitats in the Capo Carbonara Marine area, Sardinia

Project background

The project area covers three priority habitats – posidonia beds, coastal dunes and wooded dunes – all of which are under threat from a range of problems. For the terrestrial habitats (i.e. the coastal dunes and wooded dunes) the main threats come from high human pressure, due to mass tourism, and from the introduction of invasive alien species (IAS), as highlighted in the studies carried out by an earlier LIFE project, Providune. Other threats are the accumulation of waste, the cutting down of trees and branches and dune erosion. The site also includes the marine habitat, the underwater posidonia meadows, that are also under pressure due to high tourism, especially during the summer.

Project objectives

The project’s main objectives are to:
• Reduce and/or eliminate the threat to the target habitats due to the presence of invasive plant species;
• Apply best practices and actions to protect and restore the three priority habitats in the Natura 2000 site;
• Reduce and/or eliminate the anchorage threat to the underwater posidonia beds;
• Favour the reappearance of the spontaneous native vegetation on the priority habitats and in particular along the dune ridges;
• Restore and to recover the sensitive areas from the impacts of IAS on the priority habitats;
• Raise awareness among local people and stakeholders about the work; and
• Share knowledge and conservation skills with the administrative authorities about the integrated management of the sea and coastal systems for the long-term protection of these habitats.

Expected results

• Improvement in the conservation status of the three priority habitats;
• Identification of the IAS found in the posidonia beds and their distribution;
• Reduction by 15% of anchorage impacts on the posidonia beds;
• Restoration of 20% of the posidonia beds in the fragmented sites of repopulation;
• Reduction of the diffusion/presence of IAS in the areas;
• Production of plants from collected germplasm for the reintroductions in the coastal dunes and wooded dunes;
• Elimination of the IAS from 14 500 m² in coastal dunes and wooded dunes (6 000 m² for Carpobrotus sp; 8 000 m² for Acacia sp; 500 m² for Agave sp.); and
• Restoration of the eradicated areas of the coastal dunes and wooded dunes (14 500 m²).
Island conservation in Tuscany, restoring habitat not only for birds

Project background

Several habitat and species found on the islands of the national park are seriously threatened by alien animal species (e.g. rodents, feral cats, hedgehogs and game birds) and by alien plant species (e.g. Carpodetus spp., Eucalyptus camaludulensis). Control measures to eradicate these alien species are necessary in order to restore the natural island communities. Moreover, recovery actions are required to protect habitats, such as the only dune system in the whole archipelago.

Project objectives

The objectives of the project can be summarised as follows:
- Eradication of alien animal species in order to restore the natural island communities and/or to improve the breeding performances of autochthonous species;
- Direct restoration of endemic species communities by means of attraction devices for seabirds, passive translocation for sedentary species and habitat enlargement/restore;
- Eradication of invasive alien plants in Giannutri, Pianosa and the Montecristo islands;
- Fencing off key land plots in Elba and the Montecristo islands to protect them from pressures by alien ungulates (hoofed mammals); and
- Habitat management of the Lacona dune system using modern bioengineering structures.

Expected results

Pianosa and Montecristo:
- Increased productivity and population size of seabirds (Larus audouinii and Calonectris diomedea);
- Attracting new breeding species (e.g. Puffinus yelkouan and Haliaeetus Pelagicus);
- Improving habitat conditions for bird species breeding on the ground (e.g. Lanius collurio and Caprimulgus europaeus), reptiles, invertebrates and vegetation; and
- Restoration of natural habitats without reducing food resources for migratory raptors.

Giannutri:
- The protection of about 6 ha of coastal habitat (cliff vegetation, salt marshes and dry grasslands) through the eradication of Carpodetus spp; and
- Eradication of other alien plants in the areas that have been affected the most.

Pianosa:
- Protection of about 10 ha of habitats (Juniperus ma-torral and dry grasslands) by controlling Eucalyptus camaludulensis; and
- Re-establishing holm oaks in deteriorated pine forests.

Montecristo:
- Eradication of alien plants to recover 5 ha of deteriorated landscape around “Cala Maestra”; and
- Strengthening about 3.5 ha of four types of Annex I habitats;
- Managing the wild goat population in order to avoid excessive pressure on 45 ha of habitat; and
- New facilities to host and inform visitors about the local habitat management activities carried out under different LIFE projects.

Ripa Barata (Elba):
- Increased annual productivity of the population of Larus audouinii.

Lacona (Elba):
- Restoration actions for several Annex I listed dune habitats; and
- Protection of the dune system from erosion and excessive human activities.
Strategies to minimize the impact of free ranging dogs on wolf conservation in Italy

Project background

The widespread presence of stray dogs represents a threat to the grey wolf (*Canis lupus*) because of the increased possibility of genetic loss for the target species, predation of domestic animals (often attributed to wolves) and transmission of diseases that could weaken wolf populations. Moreover, the negative attitude towards wolves, considered responsible for sheep predations, has increased illegal killings.

Project objectives

The LIFE Mirco-lupo project’s overall aim is to improve the conditions for wolf conservation by combating threats associated with the presence of stray dogs.

Specific objectives are to:
- Neutralise the reproductive potential of the wolf-dog hybrids and of stray dogs present in the project areas;
- Increase the control system on the use of poison baits, and establish a system to control the widespread diffusion of poison in the project area, through transfer of best practices from the LIFE ANTIDOTO project;
- Reduce the potential sanitary risks for the transmission of diseases from dogs to the wolves;
- Increase awareness on the risk posed by stray dogs on the conservation of wolves;
- Creation of a national database on hybridisation;
- Reduce the negative attitudes towards wolves among stakeholders; and
- Develop a participatory approach in the management of the wolf-dog hybrids.

Expected results

- Sterilisation and release of all hybrids (at least 15 individuals);
- Reduction of potential transmission of pathogens from dogs to hybrids through the sanitary treatment of at least 300 dogs;
- Reduction of 70% of illegal wolf killings;
- Decreased presence and reproductive potential of stray dogs through 100 surgical sterilisations;
- Increased knowledge about the threat posed to wolves by stray dogs;
- Increased awareness among the public about the presence of the stray dogs and their negative impact on wolf conservation; and
- A long-term strategy (shared between regions) for the management of hybridisation.

Beneficiary:

**Type of beneficiary**
Park-Reserve authority

**Name of beneficiary**
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Willy REGGIONI

**Duration of project:**
63 months (01/01/2015 – 31/03/2020)

**Total budget in euro:**
2,885,921.00

**EC contribution in euro:**
2,089,118.00

**Themes:** Species: Mammals
Project background

The rare and endangered coastal dune areas targeted by this project are suffering from high human pressure due to mass tourism. This has resulted in the degradation, in particular, of Habitats Directive-listed priority coastal Juniper dunes and related habitats. The threats include uncontrolled visitor and vehicle access to the dune areas, a lack of knowledge about the value and importance of these fragile habitats, and a lack of planning and management which has led to the approval of unsuitable structures in the dune areas.

Project objectives

The project's goals are to:

- Apply the best possible practices and actions to protect the coastal Juniper dunes and related habitats, including wooded dunes;
- Establish a common approach for the long-term protection of the habitats;
- Decrease/eliminate the threats to the habitats in the areas identified; and
- Increase awareness among local people and stakeholders of the importance of these habitats.

Expected results

- A report on sedimentology and coastal-marine dynamics;
- A report on the flora and vegetation and on the conservation status of the targeted habitats;
- A map of the targeted habitats;
- Five types of habitat restoration actions carried out;
- Two types of dune protecting systems installed (to guard against trampling); and
- A complete database of coastal management, which will supplement an earlier database for southern Sardinia that was created by the LIFE+ Providune project.
WHALE protection from Strike by
Active cetacean detection and
alarm issue to ships and FErries
in pelagos sanctuary

Project background

The Pelagos Sanctuary for Mediterranean Marine Mammals is a special marine protected area in the northwestern Mediterranean Sea. It is located between Liguria, France and Sardinia and covers an area of around 90,000 km². The sanctuary is the most important breeding and feeding site for cetacean populations living in the Mediterranean Sea and thus crucial for their well-being. Distinct ecological and sea floor conditions in the sanctuary mean that primary production (the creation of organic compounds through photosynthesis or chemosynthesis) in the area is very high and supports a diversified food chain.

The unique seabed features in the area, such as canyons, attract a large number of sperm whales that often emerge near the coast. Major commercial, tourist and industrial sites are also located in the area and marine traffic (e.g. passenger, cargo and fishing boats) increases particularly during the summer, when the presence of sperm whales is higher. Collisions and injured animals are consequently frequent and have a very high negative impact on the species, whose Mediterranean subpopulation consists of just 2,500 mature individuals.

Project objectives

The project will develop an interference avoidance system aimed at detecting and tracking sperm whales; identifying threats to them; and preventing collisions and other risks by issuing warning messages in real time to ships in the area. A protocol for reducing the disturbance and impact risks will be drafted in cooperation with the local coast guard and agreed by all stakeholders involved. After receiving the warning message, ships will be invited to apply this protocol and the coast guard will supervise its application. The system is innovative because it prevents whales having an impact on ships by monitoring and tracking acoustically the animals underwater. This aspect is vital, considering sperm whales spend three quarters of their time underwater.

Expected results

- Increased public awareness concerning the threats affecting cetaceans in the Pelagos Sanctuary, and
- Implementation of a database of cetacean sightings that can be easily consulted and used for management, conservation and public dissemination purposes.

Beneficiary:

Type of beneficiary
University

Name of beneficiary
Università degli Studi di Genova

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Name of contact person
Mauro TAIUTI

Duration of project:
39 months (01/10/2014 – 31/12/2017)

Total budget in euro:
1,847,167.00

EC contribution in euro:
923,214.00

Themes: Habitats: Marine / Species: Mammals
Project background

The geographical position of Calabria at the extreme south of Italy, as well as its long coastline overlooking the Tyrrhenian and Ionian Seas, means that it has some of the richest biodiversity in Italy and Europe. It boasts 69 habitats of European Community interest, 18 of which are priority habitats, and has 185 marine and terrestrial Natura 2000 sites covering 19% of the region. This important biodiversity is, however, not always adequately managed and protected. This is particularly evident in regards to newly designated marine sites, whose conservation and fisheries management measures are being developed at European level.

Project objectives

The main goal of the PAN LIFE project is to prepare, on the basis of the approach of the Priority Action Frameworks (PAFs), concrete and operational measures for the Natura 2000 network. The strategy will include a financial plan that considers all sources of funding (European, national and regional) for the management of the Natura 2000 network and an updated list of priority actions to be carried out over the next decade. It will also look at integrating biodiversity conservation and management objectives into regional development and employment.

The needs of stakeholders from many sectors (agriculture, fisheries, forestry and the private sector) will be considered in the strategy. Citizen participation in the scientific monitoring of the regional Natura 2000 network will also be encouraged. This will be achieved through community-based monitoring, a system which aims to mobilise a large number of volunteers.

Expected results

- An effective contribution to the achievement of the objectives of the EU strategy for biodiversity;
- An integrated and efficient management of the regional Natura 2000 network;
- Involvement of all relevant stakeholder sectors (agriculture, forestry, tourism, fishery, environmental associations and the scientific community etc.) in the management of the network through a participatory process for the definition of the strategy;
- Assessment of the socio-economic value of the ecosystem services of the regional Natura 2000 network;
- Increase number of ‘green jobs’ to boost a sustainable development of the territory;
- The creation of a Natura 2000 monitoring system that involves citizens;
- Contribution to the development of integrated pilot projects concerning the implementation of the regional strategy for the Natura 2000 network management in Calabria for the next LIFE+ programme 2014-2020; and
- An increase in public awareness of Natura 2000 benefits and of its importance for the conservation of biodiversity through a regional communication campaign directed at citizens and stakeholders.
Conservation and management of *Barbus meridionalis* and *Barbus plebejus* in the Emilian tributaries of the Po River

**Project background**

Recent studies show a significant decline in native barbel populations (a species of fish) in the main and secondary rivers of northern Italy. The recent IUCN classification of Italian vertebrates raised the risk status of the *Barbus plebejus* to ‘vulnerable’ and of the *Barbus meridionalis* (sin. B. caninus) to ‘endangered’. Particularly the Emilian tributaries of the Po River have faced local population extinctions due to habitat alteration and fragmentation, river discontinuity and competition with alien species.

**Project objectives**

The project aims to preserve and restore the native populations of the *Barbus meridionalis* and *Barbus plebejus* in 14 Natura 2000 sites in the Emilia-Romagna region. The sites are distributed over a wide geographic area, from the Apennines to the Po River plain. Specifically, the project aims to:

- Create new native barbel populations and/or re-stock existing populations after evaluating the environmental suitability and composition of existing communities;
- Identify threats to the survival of the targeted species at local level and networking activities at interprovincial scale to safeguard their long-term management;
- Eradicate/control exotic barbus species; and
- Implement guidelines for the conservation and sustainable management of the targeted species for application at local and European level.

**Expected results**

- Ecological studies to assess the current situation and the relationships of the targeted species to their habitat;
- Monitoring plans to verify the presence of exotic species;
- Genetic characterisation of the different populations to define their molecular variability and their correct taxonomy, with particular reference to the definition of hybridisation events;
- Identification of the main environmental changes;
- Implementation of restoration work on at least seven sites;
- Refurbishment of three existing fish hatcheries;
- Reintroduction/restocking of the target species in all Natura 2000 sites where the species were previously present; and
- Agreements on anti-poaching and the sustainable management of water resources.
Conservation and Management of Priority Wetland Habitats in Latvia

Project background

Active raised bogs are highly important in the maintenance of global biodiversity, the storage of water and carbon, and the world’s climate system. Nevertheless, around half of all Latvian raised bogs have been negatively affected by human activities and invasive alien species. This includes bogs that are now located within specially protected nature areas, such as those covered by this project.

Human activities that have been particularly damaging to the raised bogs have been drainage, peat extraction, forest planting and land reclamation for agricultural and other uses. These interventions have tended to dry out the land and destroy the bog habitats. Fallen trees also damage the sites if not managed appropriately.

The invasion of the alien species *Heracleum sosnowskii* has particularly affected areas of the priority habitat ‘Petrifying springs with tufa formation (*Cratoneurion*)’ in the project area. The invasive species negatively impacts on the growth of bryophytes – such as *Palustrella commutata* and *Cratoneuron filicinum* – which naturally characterise this habitat.

Project objectives

The LIFE_Wetlands project aims to secure a favourable conservation status for priority bog habitats in protected sites in Latvia. It seeks to diminish the threats that cause problems for the habitats and restore conditions for their natural regeneration. It will also introduce good practices for the long-term protection and management of the sites.

The project will restore the hydrology of areas negatively affected by drainage and land reclamation interventions. It will principally block ditches with the aim of securing consistent waterlogging of the sites. It will also seek to guarantee their long-term maintenance and introduce specific management of the priority habitat ‘Transition mires and quaking bogs’.

Restoration of hydrology aims to enable the natural regeneration of raised bog habitats in the long term. To facilitate this process, the project will work to re-establish colonisation of the wetland area with essential *Sphagnum* species.

The project will engage local stakeholders with the the restoration and management activities and objectives. It will also promote good practice in the management of wetland habitats to a European audience.

Expected results

- Restoration of site hydrology over 501 ha of bog areas affected by drainage;
- An overall significant and sustained improvement in the condition of the active raised bog habitat (7110*);
- Conservation and management of 15 ha of ‘Petrifying springs with tufa formation (*Creteoneurion*)’ (7220*) and ‘Fennoscandian mineral rich springs and spring fens (7160*)’;
- Management of ‘Transition mires and quaking bogs’ (7140*) over 7 ha;
- Improvement in knowledge of best practice for management and restoration of active raised bog and petrifying springs with tufa formation habitats in the EU; and
- Practical involvement of local stakeholders, including schoolchildren and teachers in raised bog restoration.
Project background

The total population of lesser spotted eagle (*Aquila pomarina*) in Latvia at the end of the previous century was estimated at 2,800 to 5,200 breeding pairs. This represented roughly 45% of the total EU population and 24% of the population for the whole European continent.

The number of breeding pairs has decreased since 2000. During the past decade, the decline of the Latvian population is estimated to be at least 15% and studies show that this decline is continuing. Such losses in the Latvian population are of particular concern given the relative importance of this sub-population at European level.

The forestry sector is a major threat, leading to the destruction of nest trees and the general degradation of breeding habitats. The species is also being electrocuted by low and medium voltage power lines.

Project objectives

The main objective of the LIFE AQPOM project is to improve the conservation status of the lesser spotted eagle in Latvia, the key breeding ground for this species in Europe. Its primary approach will be to establish a network of Special Protected Areas (SPAs) designated for *A. pomarina* breeding grounds.

The project will update the 'Latvian national action plan for the lesser spotted eagle', which aims to establish the Latvian environment department will approve. It will also start its implementation, for example, by constructing artificial platforms and supports to guarantee the longevity of nest trees.

The project plans to introduce specific protection measures for individual pairs of lesser spotted eagle by creating micro-reserves around nest trees. To improve the connectivity of these protected nest sites, the project will work to interlink the existing Natura 2000 sites, creating a network of SPAs.

The project will address the specific problem of *A. pomarina* electrocution in the Natura 2000 site of the Kuja nature park – the area with the highest breeding density of the species within its global breeding range. This will involve reducing the threat to the birds of some aerial power lines by insulating them and moving other lines underground.

Expected results

- Adequate protection of breeding grounds provided to another 12.5% (500 pairs) of the Latvian breeding population – increasing the protected national population to 22.5%;
- Installation of 50 artificial supports/platforms to guarantee the longevity of nests;
- Improved connectivity between the protected breeding grounds; and
- Some 67.1 km of aerial power lines adapted to reduce their threat to the birds – including all the power lines in the Kuja nature park.

The project will inform key stakeholders – including the local population – about the conservation needs of the species and the protection of their breeding and foraging grounds. It also aims to carry out scientific evaluation and subsequent dissemination of the Latvian experience in protecting the species.
Restoration of proper hydrological conditions in Amalva and Kamanos bogs

Project background

The Kamanos and Amalva mires in Lithuania provide habitats for a significant number of threatened and rare species. Important habitats found within the two mires include active raised bog, bog woodland and Fennoscandian deciduous swamp woods. Both sites are protected as parts of sites of Community importance (SCIs) under the Habitats Directive and Special Protection Areas (SPAs) under the Birds Directive.

However, both sites have been heavily drained for forestry and agricultural uses since the 19th century. Altered hydrology has resulted in the weakening or total loss of important peatland ecosystem functions in different locations across the sites. This deterioration has had a negative impact on climate, water quality and biodiversity.

Project objectives

The WETLIFE 2 project aims to restore important habitats within the Amalva and Kamanos wetlands in Lithuania. Its primary goal for rehabilitating the targeted habitats will be to restore hydrological conditions. Such an approach will benefit rare and endangered species as well as safeguard the provision of ecosystem services provided by the mire habitats.

The project will implement direct restoration activities to restore the hydrology of targeted areas of bog habitat, principally by blocking drainage ditches. It will intervene to improve the quality of degraded bog and to raise water levels in previously reclaimed land to restore wetland habitats. It will also re-establish Fennoscandian deciduous swamp woods.

The project aims to restore the conditions for the natural regeneration of features typical of active raised bogs. To further support this aim, the project will work to develop more sustainable agricultural practices in the areas surrounding the core area of Amalva wetland. It aims to agree and sign land management contracts with farmers of surrounding land to facilitate significant expansion of the bog habitats.

Finally, the project will raise awareness among local stakeholders on the importance of peatland ecosystem services and their intrinsic and economic value to improve public co-operation and support for the aims of the project.

Expected results

- Blocking of drainage ditches affecting 670 ha of mire habitats at Kamanos;
- Direct restoration of 260 ha of degraded raised bog habitat;
- Rehabilitation of 210 ha of open bog habitats in Amalva wetland;
- Restoration of wetland in 40 ha of lag zone;
- Re-establishment of Fennoscandian deciduous swamp woods habitats in at least 90 ha of restored lag zone of Amalva bog;
- Long-term regeneration of active raised bog and bog woodland habitats over 700 ha;
- More sustainable management practices for over 30 ha of Amalva peatlands surrounding the core bog zone; and
- An increase of the bog area by 50% in five years thanks to land management contracts.
Installation of the bird protection measures on the high voltage electricity transmission grid in Lithuania

Project background

The spread and profusion of electricity power lines makes them a serious threat for a wide range of bird species, including up to seven per cent of the species of European conservation concern. Birds are at risk due to collisions with wires and electrocution. Based on the experience of other EU countries, high voltage power lines are the most significant threat, especially for heavy bodied and large soaring bird species. Preventing electrocution on power lines is possible, with the installation of electrocution-safe measures, although collisions cannot be completely eliminated.

Project objectives

The project aims to improve the conservation status of the migratory, wintering and some breeding bird species occurring in Lithuania, through a reduction in the negative impact of high voltage overhead electricity transmission lines on their populations.

Specific objectives are to:

• Reduce significantly bird mortality rates due to collisions with electricity lines by using special installations on the wires of high voltage electricity transmission lines;
• Reduce significantly white stork (Ciconia ciconia) mortality rates due to electrocution, through the installation of protective devices on the pylons of high voltage overhead electricity transmission lines;
• Support the breeding population of the common kestrel (Falco tinnunculus) and other falcons, through the implementation of supportive conservation measures;
• Evaluate the effectiveness of the conservation actions carried out through the establishment and implementation of a monitoring programme; and
• Increase public awareness of the problem of bird mortality due to high voltage electricity transmission lines.

Expected results

• At least 7 100 ‘spiral’ type and 1 500 high-visibility wire markers erected as bird flight diverters on at least 108 km of high voltage electricity lines in 18 selected sites;
• At least 6 000 ‘wishbone’ and 6 000 ‘saucer’ type installations erected on 1 200 utility poles in different areas of Lithuania for the protection of the white stork; and

Beneficiary:

Type of beneficiary
NGO-Foundation

Name of beneficiary
Lithuanian Ornithological Society

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Duration of project:
50 months (01/06/2014 – 31/07/2018)

Total budget in euro:
1,565,261.00

EC contribution in euro:
782,630.00

Themes:
Species: Birds
Conservation and management of species-rich grasslands by local authorities

Project background

The western ‘Gutland’ is a region that is crucial for species-rich grasslands in Luxembourg, and it still hosts many well-developed grasslands. However, these grasslands are threatened by the intensification of agricultural management and by strong urbanisation pressures. Such factors can cause habitat loss and increased uncertainty regarding the future condition of remaining grasslands. By means of contractual conservation management agreements (‘Biodiversity contracts’) many areas have been temporarily saved from intensification. Nevertheless, habitat loss continues and long-term solutions are needed that involve the purchase of grasslands, followed by subsequent restoration and improvement of their conservation status.

Project objectives

This project’s main objective focuses on protecting endangered grassland habitats as well as a number of animal species that depend on these habitats within 15 Natura 2000 sites in the western part of the ‘Gutland’ of Luxembourg.

These goals will be achieved by strengthening the Natura 2000 network via purchase of grasslands and subsequent restoration and improvement of their conservation status.

Expected results

- The purchase and restoration of at least 46.5 ha of grasslands ‘hydrophilous tall herb fringe communities’, transition mires and habitats that are necessary for a number of endangered species of the Birds and Habitats directives;
- The local population of the Geoffrey’s bat (Myotis emarginatus) is stabilised (and possibly enlarged), by improving the hunting grounds and migration structures;
- The conservation status of the crested newt (Triturus cristatus), which is actually found on about 70 sites in the region, is improved via proven conservation measures;
- The survival chances of the yellow-bellied toad (Bombina variegata), which is critically endangered in Luxembourg and is currently only found in two areas, are improved. The negative trend is reversed through creation of dynamic habitats; and
- Restoring dry grasslands for the bird species Anthus trivialis, Lullula arborea and Phoenicurus phoenicurus.
Restoration of calcareous grassland in eastern Luxembourg

Project background

A national habitat inventory carried out in 2013 revealed that the majority of the existing calcareous grassland sites in Luxembourg are in an average condition. According to this inventory, many of the previously known sites could no longer be considered as grassland, as they had been encroached by scrub and have succumbed to natural succession.

Among the most threatened communities are priority-rated, orchid-rich assemblages within calcareous grasslands. This includes endangered species such as those belonging to the genera *Ophrys* and *Orchis* and the field cow-wheat (*Melampyrum arvense*, classified as a priority species in Luxembourg) that are directly dependant on the condition of calcareous grasslands.

Another focal point is the calcareous grasslands (*Gentiano-Koelerietum*) that developed through extensive grazing. These are characterised by the presence of gentians (*Gentiana germanica* und *G. ciliata*) and junipers.

The importance of calcareous grasslands to conserving biodiversity is further emphasised by the numerous habitat types with which they are closely linked. The project area includes eight Natura 2000 sites in the southeast of Luxembourg.

Project objectives

The project's main objective centres on securing and restoring all calcareous grasslands that have been known to exist in southeast Luxembourg. This goal will be achieved by: improving the conservation status of grassland habitats through removal of moss and dead biomass; expanding the surface area of target habitats by clearing of scrub and removing non-native forestation; cross-linking habitat patches through extensification of adjacent farmland; and providing long-term protection through land purchases and management.

Special emphasis will be given to restoring the priority habitat 'orchid-rich calcareous grasslands' in order to help achieve national and European conservation objectives.

Expected results

- A total of 70 ha of dry grasslands restored through shrub clearance;
- Extensive land use practices are established on 45 ha through management contracts;
- Prevention of shrub re-colonisation over 85 ha via ongoing mowing;
- Planting of *Juniperus communis* at 19 sites;
- Acquisition of 10% of the project area within the core zones (31 ha); and
- Public awareness increased concerning the cultural and historical importance of calcareous grasslands (thus laying the foundations for their future protection).
Active protection of water-crowfoots habitats and restoration of wildlife corridor in the River Drawa basin in Poland

Project background

The rivers Drawa, Grabowa and Radew are among the most important places in West Pomerania for water crowfoot (*Ranunculus aquatilis*), an aquatic plant at the eastern periphery of its range. It is a defining vegetation of the Natura 2000 network habitat type ‘water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation’, which is listed in Annex I of the Habitats Directive. The lowland rivers characterised by this habitat type form one of the region’s most important wildlife corridors, but they are vulnerable to habitat degradation. In particular, barriers on rivers potentially impact fish and mollusc migration, and threaten the whole Drawa river drainage basin.

Project objectives

The objective of the LIFEDrawaPL project is the active protection of lowland rivers in West Pomerania, including the Drawa, Grabowa, Radew and Korytnica. The project aims to improve river habitats, with the construction of fish spawning grounds and the creation of optimal conditions for thick-shelled river mussel (*Unio crassus*) population development. The ultimate project goal is to positively affect biodiversity in the restored Drawa river wildlife corridor and its tributaries. The project’s specific actions, planned in Natura 2000 network sites and the Drawieński national park, include:

- Conservation and improvement of Habitats Directive Annex 1 listed vegetation and habitat in five Natura 2000 sites;
- Reintroduction of opposite-leaved pondweed (*Greenlandia densa*);
- Removal of existing barriers, and hydrotechnical structure adjustments, in order to make upper-river areas more accessible to migrating species, such as river lamprey (*Lampetra fluviatilis*) and Atlantic salmon (*Salmo salar*);
- Enhancement of natural river reproduction for river lamprey, Atlantic salmon, European bullhead (*Cottus gobio*), spined loach (*Cobitis taenia*) and thick-shelled river mussel; and
- Creation of educational tourism activities in the Drawa river drainage basin area.

Expected results

- Increase of 10% in water course habitat areas in the Radew, Grabowa and Korytnica rivers;
- Restoration of proper light conditions, by cutting shaded area to less than 70%, for water crowfoot in the project’s target rivers;
- Restoration of opposite-leaved pondweed in crowfoot river habitat on 18 river sectors;
- Reductions in river lamprey, Atlantic salmon, European bullhead and spined loach mortality to 80% below current levels in the Drawa river drainage basin;
- Increase of 10% in thick-shelled river mussel population in project rivers;
- Increased social awareness about ecology and sustainable development; and
- Measures to direct canoeists away from the most ecologically sensitive areas.
Diversification and development of the European bison population in north-western Poland

Project background

The European bison (Bison bonasus) is one of two extant species of bison, alongside the American bison. It once ranged throughout the lowlands of Europe, with the last wild populations, in Poland’s Bialowieza forest and the northern Caucasus, becoming extinct by 1927. They have since been reintroduced from captivity into several European countries, with all animals being descendants of the Bialowieza or lowland European bison. Today, in the West Pomeranian region, the population of European bison is small, isolated and of low genetic diversity. Furthermore, growth in the population takes place without a corresponding increase in the area of occurrence, with low social acceptance being a key factor blocking the growth and expansion of the population.

Project objectives

The LIFE-BISON-NW-PL project will address the problems of low genetic diversity and population growth of European bison in and between Natura 2000 network sites in northwestern Poland. The main objectives are to create a model for bison population management in an area of intensive human economic activity, and to increase the European bison population from the existing 110 to at least 190 individuals. The project will also initiate a corresponding increase in the area for bison habitat by at least 30%, with a decrease in the average seasonal bison density per area unit. The project’s specific objectives are to:

- Create a new herd of bison in between the existing ones and, as a result, to increase the genetic diversity of the population and facilitate genetic exchange between herds;
- Improve the European bison feeding basis in the expanded area;
- Create a bison support unit as a system tool for population management;
- Introduce measures to reduce bison damage to forests and crops;
- Improve the safety of animals through the dissemination of information on their current habitat areas; and
- Improve public awareness, so that friendly local community attitudes help the herds to develop, and to transfer such positive attitudes to new areas.

Expected results
- Increased European bison population by at least 80 individuals;
- Increased area in West Pomerania for bison by at least 30%;
- Provision of 277.25 ha of meadows, 48.49 ha of food plots and 2 ha of orchards for the European bison;
- Creation of 18 new feeders for bison and the renovation of the 10 existing ones;
- Creation of two storage points for bison food, ensuring the storage of large amounts of food without loss and its efficient loading and distribution; and
- Creation of the bison support unit – provided with the staff and equipment necessary to handle the European bison population in northwestern Poland during the project and after its completion.
Conservation of selected habitats and species in Ostoya Słowińska PLH220023 and Pobrzeże Słowińskie PLB220003 Stage I

Project background

Habitats in the Łupawa river and its floodplain in the Słowiński national park are being affected by river regulation, eutrophication of oxbow lakes, and disturbance of natural fluvial processes in shallow water riverbeds, all of which degrade areas where lamprey and other migratory fish spawn. A dam and power plant in Smoldzino also make fish migrations to upper river areas impossible. Furthermore, there is a need to restore nesting habitats of migratory bird species listed in Annex I and II of the Birds Directive; in particular, the polders around Lake Gardno require annual mowing and predatory American mink must be eliminated. Low awareness among the local community is reflected in poaching, walking off designated trails, habitat destruction, and pollution. The unmanaged impact of tourists and birdwatchers is an additional threat to the Gardno polders.

Project objectives

The LIFENaturaSlowinskaPL project aims to modernise the drainage system of the Łupawa river floodplain to help regulate water levels, depending on the habitat needs of fish and birds in the Słowiński national park. Specifically, the project aims to:

- Clear the Łupawa river wildlife corridor for migrating fish, including the construction of a fish ladder to negotiate the dam at the hydroelectric power plant in Smoldzino;
- Improve natural fluvial processes in distinctive habitats of the Łupawa river valley, along a 2.3 km long river section; and
- Develop appropriate habitats to ensure effective protection of wetland birds.

Expected results

- Water regime adapted to wetland birds and their needs (360 ha);
- Meadows (51 ha) periodically flooded by the Gardno Lake waters;
- Restoration of seven oxbow lakes in the Łupawa river valley;
- Restoration of lowland and sub-montane (in the upper course) river with Batrachion vegetation communities (along a section of 2.3 km) and a natural floodplain of the Łupawa river (20 ha) with typical vegetation, including priority alder-ash riparian forest;
- Ecological corridor of the Łupawa river ecosystem cleared for lampreys and other migratory fish (at least five species migrating for reproductive purposes);

- Increased environmental awareness of at least 1 000 inhabitants concerning Natura 2000 network sites (Ostoja Słowińska and Pobrzeże Słowińskie), and dissemination information about the project and the sites reaching 6 000 people; and
- A limiting of the visitor impact on 360 ha of the Gardno polders, through the construction of an observation platform with an educational chart.

Beneficiary:

Type of beneficiary
Park-Reserve authority

Name of beneficiary
Słowiński Park Narodowy

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Duration of project:
60 months (01/01/2015 - 31/12/2019)

Total budget in euro:
2,100,371.00

EC contribution in euro:
1,050,185.00

Themes:
Habitats: Freshwater / Species: Fish
Project background

Alkaline fens in southern Poland are of great ecological importance, and are listed in Annex I of the Habitats Directive. They contain many rare, extremely sensitive and endangered plant species, in particularly, those listed in Annex II of the Habitats Directive. However, the alkaline fens have been subject to a continuous process of degradation over the past few decades, due to drainage, eutrophication and intensive agricultural practices, among other factors. Therefore, there is an urgent need for action to protect the priority alkaline fens habitat and the species it contains.

Project objectives

The AlkFens_S_PLife project aims to maintain or improve the conservation status of the majority of alkaline fens in the south of Poland. It will contribute to the conservation of the full geographical and regional diversity of the habitat, especially small fens and fen-springs in the Carpathians and Lublin region. It will help conserve key localities of fen orchid (Liparis loeselii) and other rare plant species of alkaline fens. The strategic objective of the project is to stop habitat degradation processes, and to improve and to maintain the favourable conservation status of alkaline fens in southern Poland as a habitat for many unique plant species, particularly those listed in Annex II of the Habitats Directive. The specific objectives of the project are to:

- Prevent excessive drainage and to raise the water table in areas of alkaline fens;
- Inhibit mineralisation and eutrophication of the surface peat layer;
- Halt the loss of biodiversity in alkaline fens due to the expansion of species from habitats with lower humidity, such as grasses, trees and shrubs;
- Propagate alkaline fens protection methods within management plans based on scientific knowledge, with particular emphasis on hydroecologic aspects;
- Promote the protection of alkaline fens as the refuge of rare and endangered species, which can also serve as regional and local attractions;
- Create a group of people interested in the long-term protection of alkaline fens; and
- Encourage farmers and other stakeholders to apply extensive mowing in the future.

Expected results

- Building of more than 83 dams and the rebuilding of two existing dams;
- Removal of trees and shrubs on an area of approximately 51 ha;
- Mowing of 152 ha of mires and their restoration for extensive use;
- Purchase of around 3.17 ha of the most valuable alkaline fens plots;
- Creation of documentation and management plans for the creation and expansion of nature reserves, and hydroecological schemes;
- Preparation of full management plans for Natura 2000 network sites where alkaline fens occur; and
- Training of about 15 people to implement conservation measures on alkaline fens.
Project background

A range of peat bog habitat types in two Natura 2000 network sites in the Lubelskie province of eastern Poland – Lasy Janowskie and Uroczyska Lasów Janowskich – require protection under the Habitats Directive. These habitats and the species they contain are under threat as a result of the expansion of invasive trees and shrubs, leading to a loss of biodiversity and the drainage of the land.

Project objectives

The main objective of the LIFE Lasy Janowskie PL project is to provide comprehensive protection for the most valuable peat bog patches in a range of habitat types (e.g. active raised bogs and transition mires, quaking bogs, and depressions on peat substrates of the Rhynchosporion) in the Natura 2000 sites, Lasy Janowskie and Uroczyska Lasów Janowskich.

The project aims to halt the loss of biodiversity in these habitats as well as to raise and maintain groundwater levels in several habitats, such as bog woodlands where patches are at risk of dewatering and drying as a result of drainage ditches constructed in recent decades. Measures will be taken to preserve the habitats of animals and plants threatened with extinction, including capercaillie (Tetrao urogallus), pasqueflower (Pulsatilla patens), northern crested newt (Triturus cristatus) and European fire-bellied toad (Bombina bombina).

The project also aims to promote conservation methods in commercial forestry operations, foster community support for the idea of environmental protection, develop sustainable tourism in Natura 2000 sites and resolve human conflict with beaver (Castor fiber) conservation.

Expected results

- The conservation status of peatland habitats improved on 94 ha (104 patches), including the maintenance of species closely related to peat bogs such as Drosera rotundifolia, Drosera intermedia and Colias palaeno;
- The outflow of water from peat bogs and the process of peat decay on an area of about 150 ha stopped or significantly reduced by the construction of 33 sluice gates;
- The population decline of Tetrao urogallus in the Janowskie Forests halted by the removal of the alien black cherry (Prunus serotina) from 15 ha of land and by a reduction in the number of the capercaillie’s predators;
- Purchase of 30 ha of land will reduce conflicts caused by beavers;
- Two water reservoirs successfully restored to maintain habitats for species associated with aquatic ecosystems, and
- About 800 people participated in meetings and training activities to raise public awareness about nature conservation.
**Protection of valuable natural habitats in Ponidzie**

**Project background**

Located in the central part of the Niecka Nidzianska area of southeastern Poland, the Ponidzie region contains a differentiated geological structure and unique natural habitats. There are three landscape parks in the area (Nadnidzianski, Szaniecki and Kozubowski) and three sites protected within the Natura 2000 network: Ostoya Nidzianska, Ostoya Kozubowska and Stawiany. Social and economic changes, however, have led to the abandonment of farming and the subsequent degradation of valuable habitats and species.

**Project objectives**

The main aim of the project is to improve the conservation status of habitats in the Ponidzie region, especially those priority habitats listed in Annex I of the Habitats Directive: xerotherm turfs, thermophilic inland sand turfs, thermophilic oakwoods, and inland halophilic salty meadows, pastures and reed. The restoration and preservation of ecosystem mosaics will benefit populations of threatened plants and animals, including species listed in Annex II of the Habitats Directive.

A particular focus of the project will be on the flowering plant *Serratula lycopifolia* and the endemic thistle species *Carlina onopordifolia*. Another important aim of the project is to create a genetic reserve of the threatened plant species typical of the region. An indirect aim will be the restitution of pastures, which have not been cultivated in the area for several decades. This will allow not only the preservation of valuable habitats, but also a gradual improvement in the economic exploration of natural resources and restoration of some cultural patterns relating to grazing.

The project should also raise the awareness of local communities of the need to protect the valuable ecosystems of the Ponidzie region.

**Expected results**

- Proper conservation status achieved on 52.47 ha of xerotherm turfs, on 1.13 ha of thermophilic inland sand turfs, on 0.21 ha of inland halophilic salty meadows, pastures and reed, and on 7.7 ha of thermophilic oakwoods;
- Two stands of *Serratula lycopifolia* and four stands of *Carlina onopordifolia* will be preserved;
- Human pressure on valuable habitats will be reduced by streamlining the tourist traffic, as well as by pre-ventative actions such as patrols by authorities in the landscape parks; and
- Public awareness of local communities will increase through educational meetings, conferences and the dissemination of project results.

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**Beneficiary:**

**Type of beneficiary**

Park-Reserve authority

**Name of beneficiary**

The Holy Cross and Nida Landscape Parks Complex

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**Duration of project:**

54 months (01/06/2014 – 01/12/2018)

**Total budget in euro:**

1,161,649.00

**EC contribution in euro:**

580,824.00

**Themes:** Habits: Forests – Freshwater – Grasslands
Restoration of hydrological system in the Middle Basin of the Biebrza Valley. Phase II

Project background

The hydrological system in the Biebrza Valley was changed due to the digging of canals in the 19th century. Two major canals were excavated, the Woźnawiejski Canal and the Rudzki Canal, along with several smaller ones, such as the Łęg and Kapicki. The artificial canals resulted in dramatic changes in groundwater, annual flooding patterns and, subsequently, wetland ecosystems. Further change occurred due to extensive drainage activities during the 20th century. This has led to cessation of peat formation and degradation of peatlands, as well as negative changes in wildlife habitats. Therefore, it has become necessary to improve water conditions in the Biebrza Valley to protect endangered bird species and their wetland habitats.

Project objectives

The main objective of the project is to restore the hydrological system in the middle basin of the Biebrza Valley in north-eastern Poland, in the region of the Jegrnzia and Elk rivers, within two Natura 2000 network sites: Ostoja Biebrzańska and Dolina Biebrzy. The surface area of the project extends over 13,452 ha and contains the breeding territories of many rare and endangered bird species of European importance, including more than 20 priority bird species listed in the Birds Directive and six types of habitat listed in the Habitats Directive. The project’s specific objectives are to:

- Inhibit the degradation processes in hydrogenic habitats in the vicinity of the Rudzki, Woźnawiejski and Kapicki canals, and the Elk and Jegrnzia rivers;
- Improve natural wetland habitats, particularly for bird species;
- Reconcile the requirements of nature protection with the development of tourist activity; and
- Raise public awareness to promote more appropriate behaviour in nature reserves.

Expected results

- Improved integration of two Natura 2000 sites – Ostoja Biebrzańska and Dolina Biebrzy – with benefits for target habitats and species;
- Reconstructed water junction in Modzelówka village that enables the distribution of Elk river water in such a way that 80% of the flow is directed to the Rudzki Canal and the remaining 20% to the Elk river bed;
- Reduced outflow of water to raise the groundwater level and increase the humidity of wetland habitats in the vicinity of Kapicki Canal;
- Inhibition of peat mineralisation to suspend the degradation of peatlands and improve environmental conditions for wetland habitats and fauna in the project area (13,452 ha);
- Increased awareness of the need to improve degraded wetlands and the negative environmental impacts of agricultural intensification; and
- Optimally located tourist infrastructure to diminish the negative impacts of tourism on wetland habitats and species.
Conservation of nest zone protected birds in the selected Natura 2000 sites in the Lubelszczyzna region

Project background

Lubelszczyzna is one of the most diversified regions in Europe, with a highly fragmented mosaic of crops and habitats. The project will look at six important bird species in the region: the lesser spotted eagle, short-toed eagle, golden eagle, eagle owl, black stork and Tengmalm’s owl. These species occur in 16 Natura 2000 sites: Forest Janowskie, Solska mires, Forest Sandomierz, refuge Tyszowiecka, Sokołij Valleys, Valley Szyszły, refuge Nielicza, shooting Forests, Forest Parczew, Uroczysko Bridges-Zahajki, Poleania, Forest Lukowski, Valley of the Lower Bug, Tyśmienica Valley and the upper catchment Huczwa.

Project objectives

The main objective of the LIFEZONE project is to improve the nesting and foraging conditions for rare bird species in selected Natura 2000 areas in the Lubelszczyzna region, south eastern Poland.

This aim will be achieved by minimising the following threats: the disturbance of birds in nests; degradation of the suitable foraging areas for the lesser spotted eagle and short-toed eagle; mortality as a result of electric shock; lack of nesting trees and predation; lack of nesting hollows and nest predation of Tengmalm’s owl; poisoning; uncontrolled development of infrastructure and the lack of a strategy for protecting the species’ territory.

Expected results

- The telemetry data from the 18 lesser spotted eagles and two short-toed eagles;
- An inventory of the 200 nest zones;
- A comprehensive strategy for the target species in the Lubelszczyzna region;
- 75 platforms for eagle owls (40), lesser spotted eagles (20) and black storks (15);
- The restoration of 100 hectares of abandoned meadows;
- The installation of insulators on 100 electrical transformers of low and medium voltage;
- Location of 80 breeding boxes and predator guards for the Tengmalm’s owl;
- Monitoring of 200 known nests;
- Monitoring of the impact on local communities and public awareness;
- Promoting the project through various media;
- Organisation of 40 meetings with farmers and 200 sessions in schools; and
- At least 40 attendees at the final project seminar.

Beneficiary:

Type of beneficiary
NGO-Foundation

Name of beneficiary
Lubelskie Towarzystwo Ornitológiczne

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Duration of project:
48 months (01/09/2014 - 31/08/2018)

Total budget in euro:
703,653.00

EC contribution in euro:
351,826.00

Themes:
Species: Birds
Invasive species control through public participation

Project background

Following a decision by the municipality of Barreiro to create a local protected area for the Machada forest and Coina marshes, surveys of flora and vegetation were carried out. These identified the need to protect the native woods of Machada, including the plant species Euphorbia uliginosa that is under threat from the spread of various invasive acacia species. In the surrounding marsh areas the less aggressive ice plants (Carpobrotus edulis) also posed a threat to native vegetation.

Project objectives

The project is aiming to develop an alternative to the traditional models of invasive species control, combining a public component and strong support for volunteering. It also aims to take into account the experiences gained from other LIFE projects targeting invasive species control.

Specifically, it aims to show through its management model based on public participation that it is possible to achieve a better cost/benefit ratio, in terms of the allocation of resources and environmental impact, and also in terms of the social involvement in the control of invasive species.

As well as improving biodiversity, an important aspect of the project will be a strong dissemination campaign.

Expected results

The main expected result will be a social dynamic created by mobilising volunteers. It is expected that this will help to ensure the future sustainable management of the protected area.

It is also expected that the existing areas of marshland with their high biodiversity value will be better protected from scarcity of water by the elimination of competing alien species from target patches.

The main quantifiable expected results will include:

- Control of invasive species on 75 ha of Machada forest;
- Use of grazing to control invasive plants during the three final years of the project on an area of 10 ha;
- ‘Adoption’ of the more mature areas of native vegetation for management by groups of volunteers with the aim of creating mature cork oak woods in the future;
- Analysis of the impact of the various volunteer actions – including levels and types of action for each type of group and continued capacities;
- ‘Adoption’, improvement and protection of all the humid habitats with Ulex minor, Molinia caerulea and Erica ciliaris; and with Cheirolophus uliginosus, Pinguicula lusitanica, Erica erigena, Fuirena pubescens and Juncus rugosus;
- Improvement or construction of 10 km of nature trails;
- Monitoring studies on the conservation measures; and
- Numerous actions and activities to disseminate the outcomes, addressed at local stakeholders and the general public.
Conserving threatened habitats and species in Berlengas SPA through sustainable management

Project background

In 2011 the Berlengas Natura 2000 site (SPA) was enlarged to include a significant proportion of its marine area. Linked to this site extension, the Portuguese nature conservation agency (ICNF) launched an initiative to develop a management plan for the new area. Unfortunately, the baseline information proved to be insufficient and clear planned actions were lacking. As a result, a legally binding plan never materialised.

Project objectives

The project aims to establish a legally binding management plan with clear and measurable actions and targets for defined sites in the Atlantic coastal archipelago. The Portuguese government has joined forces with SPEA for this objective. Project goals will be achieved through the use of tailored versions of proven archipelago management methodologies. Outcomes will be ready to apply at local, regional, national and international levels.

Three key project phases are planned: first, understanding the main threats affecting seabird populations and endemic plant species on land and at sea (for seabirds) and defining actions to minimise/eradicate them, including a long-term monitoring scheme; second, promoting sustainable use of the recently created Berlengas Natura 2000 site (SPA), focusing on its three main economic activities (fisheries, recreational activities and tourism); and third, confirming the necessary monitoring framework for the completion and approval of the management plan.

Expected results

- Three endemic plant species mapped and monitored, including the impacts of introduced plant species;
- Assessment of Carpobrotus edulis (main invasive plant species), including its expansion range and the test of eradication methods at specific areas;
- At least two years of monitoring of breeding seabird species (Cory’s shearwater, Madeiran storm petrel, cormorant, common guillemot, yellow-legged gull, lesser black-backed gull), as well as the assessment of threats at land and sea, quantification of resources and monitoring costs;
- Cory’s shearwater, storm-petrel and common guillemot seabird populations fully assessed both at land and sea (distribution, fisheries interactions and predation);
- Number of artificial nests for Cory’s shearwater, storm-petrel constructed increased by at least 3%. Individual tracking of species and metal ringing (At least 25 Cory’s shearwater and 20 storm-petrels tracked each year, and alien mammal predators controlled and eradicated);
- Video monitoring of remaining nests for guillemot and live streaming of Cory’s shearwater on the project website;
- Assessment of population status of the yellow-legged gull and trends, impacts on other seabird and plant species and testing of new population control methods;
- Identification of human pressures and its relation to alien plants/mammals;
- At least 15% of the fishing fleet operating within the SPA monitored to assess by-catch levels;
- At least 25% to 50% of this fleet implementing mitigation methods by the end of the project; and
- Creation of a dedicated visitor centre in Berlengas island, improvement of visitor trails etc.
Conservation of the Saramugo (Anaecypris hispanica) in the Guadiana basin (Portugal)

Project background

The Iberian Peninsula is one of the most important biodiversity hotspots of European freshwater fish species. Most of these native species are endemic to this geographic region, and the majority of them are threatened. The saramugo (Anaecypris hispanica), a fish species, is included in this group of endangered species. It is listed as ‘critically endangered’ in the ‘Portuguese Red Data Book of Vertebrates’ and is included in Annex II and IV of the EU Habitats Directive.

The distribution range and population size of this species, however, has continued to decline over the past 40 years. This downward trend is increasing the risk of local extinctions and urgent action is needed to halt the species’ further decline.

Project objectives

The project’s main aim is to strengthen saramugo populations by improving its habitat. Actions foreseen include: updating knowledge of populations in the Guadiana river basin enclosed in Portuguese territory; rehabilitating shelter, feeding and reproduction habitats and their connectivity; promoting habitat suitability for the saramugo, in order to allow future reintroductions or population reinforcements with specimens reproduced ex situ (preserving intraspecific diversity); clarifying the potential impacts of co-existence with the invasive bleak (Alburnus alburnus) and testing barriers that could prevent bleak progression in areas of saramugo; reducing water pollution caused by livestock, in order to safeguard and improve water quality; and demonstrating techniques applicable to invasive alien species removal and expansion control, in order to reduce the impact of this threat.

The project will also assess techniques suitability for replication in other sites and will contribute to the long-term conservation of saramugo through the participation of landowners, farmers, livestock producers, and decision makers. It will also raise public awareness.

Expected results

• Updated conservation status of the species’ population throughout the project area;
• A coherent and homogeneous database (using GIS) of information regarding the target species;
• Clarification of the impact of coexistence with the bleak;
• Identification of devices (cross barriers, electric current, specific pheromones etc.) that could be used as tools to control the progression of the bleak;
• Removal of invasive alien species in at least three locations, repeated over the three years in areas where they constitute a threat to saramugo populations;
• Protection of the waterways from negative impacts associated with livestock, including promoting the rehabilitation of riparian vegetation;
• Rehabilitation of saramugo’s habitat through sediment removal in two areas and four km riverside gallery recovery;
• Implementation and testing one type of automatic device for the removal of invasive alien species;
• Workshop for sharing knowledge about exotic fish species control;
• Seminar to disseminate knowledge on the conservation of native fish and saramugo; and
• Good practices manual for the conservation and rehabilitation of saramugo’s habitat.
Conservation of the Spanish Imperial Eagle (*Aquila adalberti*) in Portugal

Project background

Currently, the Spanish imperial eagle (*Aquila adalberti*) is considered endemic to the Iberian Peninsula, as nesting is restricted to Portugal and Spain. The size of its reproductive population in the Iberian Peninsula is so small that there is a high risk of extinction (by simple demographic mishance and/or genetic deterioration) due to unpredictable environmental factors. In recent years, however, the population in Spain has recovered and opportunities have emerged to expand its breeding population in Portugal.

Project objectives

The project, LIFE IMPERIAL, aims to increase the population of the Spanish imperial eagle in Portugal and, thereafter, improve the overall Iberian population. A group of planned actions will establish a coherent network to reduce the main threats that are affecting the establishment of pairs in Portugal.

These actions include: promoting the maintenance and conservation of its habitat in order to enhance the species, natural recolonisation; improving the quality of breeding habitat for both existing (nine pairs) and new breeding pairs (at least three); increasing availability of prey species in specified areas; reducing mortality factors such as illegal activities (namely poisoning and/or electrocution by power lines); improving efforts by game managers, hunters, land owners, decision makers, bird-watchers, inspection and magistrate entities and others to help conserve the species and ensure its long-term prosperity in Portugal; raising awareness of the general public and stakeholders (including tourism operators and photographers) about the importance of Spanish imperial eagle conservation.

Expected results

Anticipated outcomes from the project include the following:

- The maintenance of nine existing breeding couples and the establishment of at least three new couples;
- Acquisition of a minimum of 12 trees/small woods supporting nests or with nesting potential;
- Installation of a minimum of 11 artificial platforms and reinforcement of five existing nests;
- Promotion of favourable management measures in territories established at 12 areas in four Natura 2000 network sites;
- Identification of the factors limiting the establishment of breeding couples at the project’s four Natura 2000 sites (SPAs);
- Production of a manual of best habitat management practices covering the conservation of imperial eagle;
- Increasing food availability in at least five territories of Spanish imperial eagle;
- Correction of 157 power line supports and six power line ‘disconnectors’ covering 25 km;
- Creation and approval (by the competent Portuguese authorities – ICNF) of the Spanish Imperial Eagle National Action Plan;
- Nine inspection actions/month made by each of the three created canine teams;
- Training course on illegal poisoning for technicians, SEPNA-GNR (‘nature’ police), ICNF and other agents;
- Iberian workshop on fighting against poison;
- Manual of procedures on the conduct of proceedings of unlawful acts against protected species; and
- Establishment of a stewardship network.
Implement best practices for in-situ conservation of the species *Canis lupus* in the Eastern Carpathians

**Project background**

The Carpathian Mountains are home to the second-largest population of wolf (*Canis lupus*) in the European Union. Wolves in this area, however, are threatened by a range of factors, including habitat fragmentation, poaching and conflict with hunters, weak institutional management, and negative public attitudes.

**Project objectives**

The overall objective of the WOLFLIFE project is to maintain a viable wolf population in the Carpathian Mountains. The project’s area covers the central and southern parts of the Eastern Carpathians, including 18 Natura 2000 network sites in which the wolf is protected. Data obtained during the project will form the basis for developing an effective action plan to maintain a viable wolf population, in line with EU policy regarding the conservation and sustainable management of large carnivores.

In order to achieve this, the project aims to:

- Improve the management of the wolf by drafting a participatory national action plan;
- Promote better coexistence between the wolf and local stakeholder groups, especially farmers and hunters;
- Prevent the decline of the wolf population by limiting poaching and improving habitat connectivity;
- Transfer the expertise gained through the project at regional and national levels, in order to ensure the development of adequate training for the conservation of the wolf;
- Reduce the damages caused by wolf; and
- Change the hostile public and stakeholder perception of the wolf through public awareness campaigns.

**Expected results**

- A National Action Plan for wolf management adopted by the Ministry of Environment and Climate Change;
- A standardised methodology for the assessment and monitoring of the Carpathian wolf population, which is accepted by all stakeholders at national level;
- Best practices for the increase of prey species’ populations adopted by 50% of the game units’ managers and administrators of Natura 2000 sites;
- Damages caused by wolves on livestock farms reduced by 80% in project pilot farms, by 30-40% in farms with traditional shepherd dogs and by 25% in the entire project area;
- Awareness raising campaigns reach about 10 000 people, increasing hunters and animal breeders’ tolerance towards the wolf and improving the acceptance of this species among the general public;
- At least 80% of complaints relative to damages caused by wolves are treated in a timely and professional manner, thanks to better trained inspectors and the availability of specialised equipment;
- Large numbers of feral dogs sterilised and vaccinated, leading to a reduction in the risk of wolves’ diseases spreading in the project area; and
- A GIS digital model developed, allowing localisation of the favourable and key areas for pup breeding, with at least 20 birth and rearing zones protected.
Recovery of the natural habitats of community interest from Hunedoara County

Project background

In the Poiana Rusca mountains, volcanic activity generated the cone-shaped Dealul Cetatii (Fortress Hill). This landscape has a rich biodiversity, with 375 identified important plant species, numerous species of rare fauna and several natural habitat types listed in Annex I of the Habitats Directive. However, these habitats have become heavily degraded. Beech forests and oak-hornbeam forests have decreased in area and become degraded due to the intensive development and the large-scale exploitation of mineral resources. Negative impacts on the priority habitat ‘Tilio-Acerion forests of slopes, screes and ravines’ have occurred due to the establishment of plantations of acacia, an invasive alien species that has led to changes in the flora composition of this habitat. This situation has been accentuated by illegal grazing and uncontrolled tourism.

Project objectives

The LIFE+ReHabHu project aims to return to a favourable conservation status the three natural habitat types of European Community interest in the Poiana Rusca mountains. To achieve this goal the project aims to:

- Restore ‘Medio-European beech forests of Cephalanthero-Fagion’ habitat located in a former bauxite quarry in Ohaba valley (7.11 ha), which was destroyed by mining activities before 1990;
- Restore ‘Dacian oak-hornbeam forests’ destroyed by the limestone quarry of Craciunesti (Magura Baitei) up to 1999, on an area of 11.04 ha;
- Return to a favourable conservation status the priority habitat type ‘Tilio-Acerion forests of slopes, screes and ravines’ affected by uncontrolled expansion of acacia plantations, uncontrolled tourism and illegal grazing activities; and
- Raise awareness among local communities and children in the region of the importance of conservation and restoration of the three forest habitat types targeted by this project.

Expected results

- Ecological reconstruction of 7.24 ha of the habitat ‘Medio-European beech forests of Cephalanthero-Fagion’;
- Ecological reconstruction of 11.04 ha of the habitat ‘Dacian oak-hornbeam forests’;
- Recovery of the favourable conservation status of 30.92 ha of priority habitat ‘Tilio-Acerion forests slopes, screes and ravines’; and
- Increased information and awareness of the importance of conservation and restoration of these natural habitats.
Conservation of Brown Bear (Ursus arctos) population in Romania

Project background

The Romanian Carpathians are the home to a stable population of brown bear (Ursus arctos), which represents around 35% of the total number of brown bears in Europe. With more than 6,000 individuals, this area supports nearly the entire bear population in Romania – only the Apuseni Mountains is home to another bear group with 250-300 individuals. However, brown bears in Romania face several threats, including habitat fragmentation due to new infrastructure. The area around Brasov, for example, is extremely important for the country’s road infrastructure and cuts through bear habitat.

Project objectives

The LIFE FOR BEAR project aims to protect the entire bear population in the Romanian Carpathians. Although parts of the Apuseni Mountains in Western Romania are not included, the migration corridor between the Carpathian and the Apuseni Mountains is included in the project area. The project area encompasses about 30% of Romania’s total land area. The project’s specific objectives are to:

- Update the brown bear population management plan in Romania, taking into account the new socio-economic environment;
- Enhance the brown bear’s conservation status in the area of Brașov-Prahovei Valley;
- Optimise waste management activities, in order to reduce the human-bear conflicts in the Brașov-Prahovei Valley area;
- Develop innovative techniques for bear population management and conservation, and for transferring good practice techniques to the stakeholders; and
- Improve local and national stakeholders’ attitudes towards conserving the brown bear population and promote Nature 2000 network objectives.

Expected results

- Knowledge base enhanced as a result of research conducted on different topics (e.g. a socio-economic analysis of stakeholders’ attitudes towards the brown bear population in Romania; an analysis of the human-bear conflicts at both national level and in the Brașov-Prahova Valley; research on the quality of the brown bear habitat in Romania);
- A revised Action Plan for the Conservation of the Brown Bear in Romania and a revised GIS database;
- A team of ‘bear conflict’ specialists;
- Problematic bears are relocated in the entire project area;
- Improved food offered to bears near conflict areas;
- A set of forest management measures as well as sheepfold, field, bee and farm protection techniques that are favourable for brown bears;
- Improved waste management system in the Brasov-Prahova Valley area;
- Implemented measures to control tourism are implemented; and
- Awareness among local stakeholders and the general public increased through promotion and dissemination actions.
LIFE Preserving of the Habitat
8310 from the Site Natura 2000
Cheile Nerei-Beusnita

Project background

The National Park and other important nature reserves in western Romania, including the Cheile Nerei - Beusnita Natura 2000 network site, have caves that provide the habitat for various protected species, especially bats. Despite being closed to the public, these caves are subject to a number of anthropic pressures as people enter the caves anyway – for example, in search of fossils. By digging the floors of galleries, they degrade or destroy formations, leading to changes in the microclimate and to increased bat mortality. Other threats to protected bat species include pollution from waste disposal (e.g. dead livestock) and water pollution.

Project objectives

The main objective of the LIFEPH8310SN2000CNB project is the preservation of the habitat type ‘Caves not open to the public’ and the protection of the fauna supported by this habitat.

More specifically, the project aims to:
- Rehabilitate 110 caves closed to the public that are currently degraded and polluted;
- Preserve 14 chiroptera species;
- Develop best practices for the management of the targeted habitat at regional, national and European level; and
- Raise awareness among 15 local communities and conservation groups about the value of caves and the biodiversity they support.

Expected results

- A favourable conservation status of the habitat type ‘Caves not open to the public’ in the project area (the Cheile Nerei - Beusnita Natura 2000 site);
- 110 degraded and polluted caves closed to the public reopened and cleaned, with their natural morphology and natural water level re-established;
- Protection fences installed at cave entrances;
- Bats returned to at least 22% of the rehabilitated caves that are now suitable as sheltering, breeding and hibernation sites;
- Monitored bat recolonisation of caves;
- Best practices for the mapping and management of ‘Caves closed to the public’ developed and the information collected in good practice guidelines for regional, national and European Union level; and
- Local communities and conservationists informed about the importance of the caves and bats, and the ecosystem services they provide.

Beneficiary:

Type of beneficiary
National authority

Name of beneficiary
Environmental Protection Agency Timis

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Duration of project:
54 months (01/07/2014 – 31/12/2018)

Total budget in euro:
849,430.00

EC contribution in euro:
424,715.00

Themes: Habitats: Rocky and Caves
Energy in the land - power lines and conservation of priority bird species in Natura 2000 sites

Project background

The problem of collisions with electricity power lines has been identified as a significantly negative threat to endangered bird species, including the lesser white-fronted goose (*Anser erythropus*), eastern imperial eagle (*Aquila heliaca*) and Saker falcon (*Falco cherrug*), in Slovakia. Prevention of such collisions has not been part of any conservation effort in the country to date. It is therefore extremely important to take action, especially in the breeding and feeding habitats of Annex I-listed species in the Birds Directive as well as in their wintering and roosting areas and migration routes.

Project objectives

The LIFE ENERGY project targets 10 bird species listed in Annex I of the Birds Directive, all of which breed in the 13 Natura 2000 project areas. These areas include highly important migration routes, feeding habitats and roosting places. The most important focus will be to prevent birds colliding with electricity power wires by installing bird flight diverters and restoring windbreaks.

Specifically, the project aims to:
- Reinforce conservation measures focused on the 10 priority bird species and their habitats;
- Formulate a conceptual solution to the problem of bird collisions with power lines and to prepare a strategic document;
- Strengthen cooperation with electric companies through the implementation of project activities; and
- Increase the number of European ground squirrel or suslik (*Spermophilus citellus*) in three areas. This species, listed in Annex II of the Habitats Directive, is a major food source for some of the targeted bird species.

Expected results

- Survey of the most dangerous power lines;
- At least 37 km of 22 kV power lines protected against bird collisions in western Slovakia, with flight diverters installed on at least 19 km of 22 kV power lines and 18 km of 110 kV power lines in eastern Slovakia;
- 500 trees are planted to restore suitable windbreaks and forest patches to ensure higher visibility of the power lines to birds;
- At least 250 individuals of different endangered bird species protected from collisions with power lines yearly;
- 60 aluminium nest boxes for *Falco cherrug* installed on high voltage pylons to replace the wooden nest boxes, and 40 artificial nests installed on trees for *Falco cherrug* and *Aquila heliaca*;
- Nesting populations of *Falco cherrug* and *Aquila heliaca* reach at least 40 pairs each in Slovakia by 2019;
- Population number of the prey species *Spermophilus citellus*, as well as the area of its colonies, tripled at two sites and doubled at one site;
- Professional care ensured for at least 250 disabled birds of protected species;
- A strategic document concerning birds and power lines agreed; and
- At least 2 000 people visit the mobile exhibition during the project period and at least 4 000 people visit the project web page yearly.
Project background

Inappropriate forestry and hunting practices, lack of active management and uncontrolled human leisure activities have resulted in the loss of living, feeding, breeding and wintering habitats of targeted species in the Kočevje municipality territory. Consequently, a significant decline in some species populations has been detected. Additionally, waste dumping in karst caves and unsustainable agricultural practices by local farmers are polluting underground karst habitats and underground water, resulting in degradation of cave habitats and a decline in the olm or proteus (*Proteus anguinus*) population.

**Project objectives**

The project's main objective is to re-establish favourable conservation status for five priority species listed in the Birds Directive (*Tetrao urogallus*, *Bonasa bonasia*, *Dendrocopos leucotus*, *Picoides tridactylus* and *Haliaeetus albicilla*), one priority species listed in the Habitats Directive (*Proteus anguinus*) and a priority habitat type listed in the Habitats Directive (caves not open to the public, 8310). By addressing the main causes of their decline, the project intends to upgrade existing management of Kočevsko Natura 2000 sites.

**Expected results**

- At least six contaminated karst caves cleaned and long-term access to the caves established;
- Improved underground water quality, thus improving the conservation status of habitat for *Proteus anguinus*;
- Improved habitat conditions for *Dendrocopos leucotus* and *Picoides tridactylus* as a result of increased concentration of deadwood and non-productive forest areas. (Thinning will occur on as much as 200 ha, and dead wood mass will increase by at least 1 200 m³);
- Disturbance in the habitat of *Tetrao urogallus* and *Bonasa bonasia* will be reduced by establishing 600 ha of ‘quiet zone’;
- Installation of 20 forest road barriers and 20 forest road signs to limit disturbance;
- Erection of 20 new ‘feeding’ fences to improve food supplies for target species;
- Removal of 10 anthills in *Tetrao urogallus* habitat and protected with steel bars against brown bear destruction;
- Removal of all hunting hides (18 in total) from *Tetrao urogallus* and *Bonasa bonasia* habitats;
- Reduction in predator populations;
- Establishment of a new winter feeding ground for *Haliaeetus albicilla* and the construction of physical barriers to prevent uncontrolled access;
- Modernisation of an existing trail to redirect visitors away from nesting and feeding sites; and
- Renovation of the ‘Eagle house’.

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**Beneficiary:**

**Type of beneficiary**

Local authority

**Name of beneficiary**

Municipality of Kočevje

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**Name of contact person**

Lili ŠTEFANIČ

**Duration of project:**

54 months (01/09/2014 – 28/02/2019)

**Total budget in euro:**

2,270,013.00

**EC contribution in euro:**

1,135,006.00

**Themes:**

Species: Birds

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**Conservation of Natura 2000 sites**

Kočevsko
Population level management and conservation of brown bears in northern Dinaric Mountains and the Alps

Project background

Conflicts between humans and brown bear (*Ursus arctos*) populations in Slovenia remain an ongoing threat to the conservation status of bears and steps must be taken to improve coexistence. Measures need to tackle such challenges as a lack of understanding of bears’ socio-economic and environmental value, inflated estimations of the risk of bear attacks leading to a lower tolerance of bears; and high traffic-related mortality, associated with the increasing fragmentation of its habitat as a result of growing traffic infrastructure and urbanisation.

Project objectives

The project’s main objective focuses on establishing a more strategic territorial approach to the conservation, management, and monitoring of brown bear populations in Slovenia. Other important aims include decreasing human-bear conflicts and promoting better coexistence between bears and humans. The ultimate goal is to encourage the natural expansion of brown bear from the Dinaric Mountains into the Alps.

Expected results

- Establishment of population-level management of brown bears across the Northern Dinaric Mountains and Alps covering four neighbouring countries (Austria, Croatia, Italy and Slovenia);
- Management plans for the core brown bear population in Slovenia and Croatia – conflict rates will decrease by at least 10% in core areas and over 30% in the selected conflict hot spots;
- Decreased number of livestock predations by at least 20% – damages experienced by livestock breeders, beekeepers or fruit farmers participating in the project will decrease by at least 80%;
- Decreased bear traffic mortality rates by at least 30% overall and at least 50% on mitigated road and railway sections;
- Reduced number of ‘problematic’ bears culled by at least 20% by the use of non-lethal solutions;
- Bear eco-tourism featuring at least 10 bear-friendly products and 30 ecotourism events with at least 10 tourists per event;
- Increased knowledge and attitude scores of local inhabitants by at least 10% from the first poll;
- Two new emergency teams for brown bears; and
- Awareness raising measures, leading to the improved understanding of management authorities, stakeholders and general public about causes for bear-human conflicts and associated solutions.
Integrated silvopastoral management plan: An innovative tool to preserve biodiversity and prevent wildfires

Project background

The project area is the Montserrat Mountain and surroundings in the Barcelona province. The area is mostly forest (64%) and covers 42,487 ha. Montserrat is an emblematic mountain in Catalonia. The mountain and its surroundings are a great natural resource and the mountain is also the location of a cultural, religious and spiritual pilgrimage centre, which is visited by both locals and tourists.

This area, however, has suffered from major forest fires in recent years and the risk of fire remains as a result of fuel load accumulation, the disappearance of crops and the decline of traditional forestry practice. Climate change has also increased the risk of wildfire.

Project objectives

The LIFE Montserrat project aims to:

• Develop ecosystem-based measures to increase the resilience and stability of forests against fires, and to improve the prevention of wildfires in the project area by creating and/or maintaining strategic areas to help prevent the spread, facilitate the extinction and decrease the intensity and extension of wildfires;

• Contribute to the conservation and improvement of biodiversity in the Montserrat area, with habitats and species of high conservation value. In particular, the project seeks to contribute to the conservation of the 16 threatened species that are found in the project area by maintaining and restoring some priority habitats, and improve the habitat of 121 species protected by the international, national or regional legislation by means of the recuperation of open habitats; and

• Contribute to biodiversity conservation by increasing connectivity through the creation of a mosaic of scrub, natural grasslands and forests that will link two Natura 2000 sites (Montserrat-Roques Blanques-Riu Llobregat and Sant Llorenç del Munt i l’Obac).

To meet these objectives, the project will implement an integrated silvopastoral management plan that will include a specific grazing management plan and a forest restoration plan. The total area covered by the project is 2,782.5 ha.

Expected results

The main expected results are:

• Promotion of the resilience and stability of forest of community interest (habitat 9540);

• Reduction of the fuel volume in strategic areas by grazing: diminishing 80% of fine combustible material on 2,782.5 ha;

• Minimised risk of forest fires by maintaining a mosaic type landscape;

• Reduction of the costs of fire extinction and of wildfire recurrence;

• Increased stakeholder awareness and involvement. More than 80 land stewardship contracts signed and 220 grazing permits awarded;

• Recovery of open habitats 6220* and 6420 among others;

• Recovery of abandoned farmland habitats: 246 ha (e.g. 126 abandoned olive tree plantations that can be immediately pastured);

• Increased survival rate and breeding success of Bonelli’s eagle (Aquila fasciata); and

• Increased number of threatened species (e.g. Alektoris rufo, Circus pygargus, Clamator glandarius and Corvus monedula).
Migratory fish recovery and improved management in the final stretch of the Ebre River

Project background

Anadromous (migratory) fish in the lower Ebre River and the Ebre Delta in Catalonia face several conservation challenges, including: insufficient river connectivity; water eutrophication and contamination; low availability of freshwater for the river and delta; inappropriate water temperatures; alien species; fisheries; and chemical pollution.

Project objectives

The LIFE MIGRATOEBRE project aims to restore the ecological connectivity of the Ebre River through mitigation measures to improve the river’s hydromorphology. The goal is to improve the long-term conservation of endangered migratory fish species in the lower Ebre River. It hopes to act as a demonstration project for ecological improvements of other major European rivers.

The project plans to adapt all the obstacles in the final stretch of the Ebre River to allow upstream and downstream fish migration. It aims to increase by more than tenfold the river spawning habitat available for European sturgeon (Acipenser sturio), twaite shad (Alosa fallax) and sea lamprey (Petromyzon marinus), as well as the distribution and growth area for European eel (Anguilla anguilla). It will thus restore the conditions for the natural recovery of healthy and sustainable populations of migratory fish species in the lower Ebre River and Delta within 20–30 years.

The project plans to fully engage and involve local communities and a network of nature managers, farmers, fishermen, anglers, water managers, electricity companies, tourism stakeholders, and regional and local authorities. Such engagement will result in the sustainable ecological management and long-term investment in the final stretch of the Ebre River. The project is also intended to initiate steps towards improving the connectivity of the Ebre with its main tributaries, such as the Segre and the middle Ebre basin.

Expected results

- Adaptation of all the obstacles in the lower Ebre – Xerta’s weir, Ascó’s weir, and Flix dam;
- More than tenfold increase in the available spawning area for European sturgeon, twaite shad and sea lamprey, and the distribution (and growth) area for European eel, making available 64 km of new river habitat in four years;
- More than tenfold increase in the presence of European eel (Anguilla anguilla) in the area upstream of the adapted river obstacles in four years;
- Presence of twaite shad (Alosa fallax) and sea lamprey (Petromyzon marinus) during the spawning period in the area upstream of the adapted river obstacles in four years;
- Presence of reproductive individuals of the European sturgeon (Acipenser sturio) in the area upstream of the adapted river obstacles within 20–30 years;
- Creation of a permanent group of volunteers (minimum 10 people) working on improved ecological management in the final stretch of the Ebre River; and
- More than 10 000 interested stakeholders engaged by the project.
Ecological restoration Garajonay National Park and its surroundings, after the great fire of 2012

Project background

On 4 August 2012, the island of La Gomera experienced the most ecologically damaging wild fire to affect the Canary Islands for several decades. The fire spread across more than 3,613 ha, burning over 32% of the total area of the seven Natura 2000 sites directly affected. Nearly 20% of the surface of Garajonay national park – a UNESCO World Heritage Site – was burned, totalling over 740 ha.

The wild fire had an extremely serious impact on the environment, resulting in the destruction of large areas of vegetation. It burned the largest area of laurel forest in the archipelago, including vast areas of ancient laurel forests of high ecological value. This ancient forest had already been identified as a priority habitat for conservation under Annex I of the EU Habitats Directive and large sections were protected within Garajonay national park.

The fire also resulted in a great loss of soil quality, caused a serious deterioration of water catchment functions and directly affected many populations of threatened species. Moreover, the fire adversely affected the natural hydrological cycle of the forests, on which the island depends for its water supply.

Project objectives

The LIFE GARAJONAY VIVE project aims both to develop the means to reduce the risk of wild fires in the Canary Islands and to support the natural regeneration of laurel forest habitats already affected by fire and their dependent species.

The project plans to improve our knowledge base on both these areas. On the basis of this initial research, the project team expect to draft strategies to prevent and tackle forest fires more effectively and to restore the targeted habitats.

In the implementation phase, the team aim to introduce measures to reduce the incidence of fires and facilitate the extinguishing of fires should they occur. Implementation of the habitat restoration strategy should at least cover the affected area of the Garajonay national park.

Given the fact that many fires – including the devastating 2012 one – were caused by (deliberate) human action, the project hopes to engage local communities on the island of La Gomera to raise their awareness of the impact and cost of wild fires to society and the natural environment.

Expected results

- A strategy to prevent and tackle wild fires in the Canary Islands;
- A strategy to support natural regeneration of affected laurel forest habitats;
- The implementation of restoration activities in at least the Garajonay national park;
- Improved public awareness of the threat to laurel forest ecosystems from forest fires;
- Long-term restoration of the affected priority habitats; and
- Long-term recovery of the affected populations of endangered species, improving their conservation status.

Beneficiary:

Type of beneficiary
Public enterprise

Name of beneficiary
TRAGSA

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Name of contact person
Miguel Ángel RODRÍGUEZ BERMÚDEZ

Duration of project:
52 months (01/09/2014 – 31/12/2018)

Total budget in euro:
1,511,494.00

EC contribution in euro:
755,747.00

Themes: Habitats: Forests
Conservation of habitat “9570 * 
Tetraclinis articulata forest” in the European continent

Project background

Forests of Tetraclinis articulata – a species of evergreen coniferous tree in the cypress family – are a priority European habitat. Its distribution area on mainland continental Europe is restricted to a population in the region of Murcia. Other European populations can be found in Malta and in the Spanish territory of Melilla on the African continent.

The Murcian population was estimated to be 8,455 individual trees, spread over 557 ha in four sub-population areas.

Project objectives

The LIFE-TETRACLINIS-EUROPA project aims to improve the conservation status and long-term sustainability of the priority habitat Tetraclinis articulata forests in the Cartagena mountains of Murcia, Spain. As well as increasing the surface area of the forest type, it aims to combat the genetic erosion of the tree populations and reduce future threats.

The project plans to reforest significant areas of Tetraclinis articulata as well as to carry out selective clearing of the competitor species Pinus halepensis and additional invasive species. Planting will be organised to improve the genetic diversity of local tree populations as well as to maximise the mitigation of climate change. To further prevent long-term genetic erosion of the species, the project will clear old artificial plantations of Tetraclinis articulata when their genetics are not appropriate.

To reduce the threat to forest areas from human activities, the team will work on both public awareness and control of public access and use of the forest. They plan to construct fences to control grazing and close inappropriate trails, while improving official trails and roads.

Finally, the project hopes to promote scientific research into the forest habitat to improve understanding of how best to conserve it in the long term. It will also introduce a specific programme to monitor its conservation status.

Expected results

- Reforestation of 49.8 ha of Tetraclinis articulata forest habitat with 25,420 individual trees;
- Improved genetic diversity – and therefore resilience – of the Tetraclinis articulata in the population areas;
- Clearing of Pinus halepensis from over 61 ha of forest distribution area to reduce ecological competition with Tetraclinis articulata;
- Clearing of additional invasive alien species from 0.88 ha;
- Clearing of around four ha of old artificial plantations of Tetraclinis articulata;
- 12.15 km of roads repaired;
- 6.82 km of trails closed;
- 13.43 km of official trails conditioned;
- 3.45 km of fences constructed;
- Improved biodiversity in the Tetraclinis articulata forest;
- Positive impact on the threat of climate change;
- Indirect reduction of the risk of fire to the target habitat; and
- Effective monitoring programme for the target habitat in Murcia.

Beneficiary:

Type of beneficiary
Regional authority

Name of beneficiary
Dirección General de Medio Ambiente - Consejería de Presidencia - Comunidad Autónoma de la Región de Murcia

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Name of contact person
Amador LÓPEZ

Duration of project:
48 months (01/06/2014 – 30/06/2018)

Total budget in euro:
1,544,168.00

EC contribution in euro:
1,065,109.00

Themes: Habitats: Forests
Restoration of Iberian elms (*Ulmus minor* and *U. laevis*) in the Tagus River basin

**Project background**

Elm groves are included in the EU Habitats Directive (subtype 2.3 of habitat 92A0). They have suffered degradation as a result of alterations to their habitat and the introduction of Dutch elm disease (DED) – leading to fragmentation and the risk of extinction for the European white elm (*Ulmus laevis*). Across Europe and America elm groves are seriously threatened.

**Project objectives**

The project aims to apply the knowledge and genetic resources generated over the 27 years of the Spanish Elm Breeding Programme and by the EU project RESGEN 78, ‘Conservation of Genetic Resources of European Elms’, to restore the ecological role and functions played by elm groves. Specifically, the project aims to:

- Reintroduce Iberian elms to riparian habitats of EU importance (Natura 2000 network sites) belonging to the Tajo (Tagus) River basin; and
- Integrate the conservation of Iberian elms and their biodiversity in the forest management plans and in the nature protection legislation.

In order to achieve these aims, the project plans to:

- Develop in vitro propagation techniques of seven Iberian elms (*Ulmus minor*) clones resistant to DED, allowing the use of these clones as forest reproductive material;
- Conserve the genetic resources of *U. laevis* by establishing a seed orchard in the Tajo River basin. This orchard would include individuals from the relict populations at Dehesa de Valdelatas and Tiétar Valley, both belonging to the Tajo basin;
- Further the selection and breeding of elms, in order to increase the genetic diversity of Iberian elms resistant to DED; and
- Achieve stable and representative communities of the elm grove habitat in natural areas for evaluating and controlling the environmental adaptation of the clones and seedlings planted.

**Expected results**

- The restoration of Iberian elms on 290 ha of riparian lands of the Tajo River basin. Around 9 000 native *U. minor* trees will be planted on calcareous soils, representing seven clones catalogued by the Spanish environmental administration because of their resistance to DED, along with 7 000 seedlings of *U. laevis* from two relict populations of the Tajo River basin, on siliceous soils;
- A comprehensive plan of action for integrating the Iberian elms in forest management plans and in the nature conservation legislation;
- Establishment of an *U. laevis* seed orchard in the agricultural experimental station of Valdecañas (Confederación Hidrográfica del Tajo) with 480 seedlings from two relict populations of the Tajo basin. In the future, this seed orchard will be included in the national catalogue of conservation units;
- At least 10 new *U. minor* clones resistant to DED through selection and breeding;
- A good ecological functioning of the restored communities, and socio-economic benefits in the action areas; and
- Increased public awareness of the importance of elm recovery as a key element of our natural and cultural heritage.
Preservation and improvement in priority habitats on the Andalusian coast

Project background

Andalusia is the second largest autonomous community in Spain, located in the very south of the country. It is a region with high biodiversity, notably its important coastal habitats. Some of these areas host threatened species and habitats, many of which are little known from a scientific point of view.

These coastal habitats threatened mostly by increased human activity, namely increasing habitation and a growing tourism sector. The fragmentation of the coastal habitats – which in many cases exist as islands – has been further exacerbated by encroachment due to urbanisation, industry, and intensive farming.

Other threats to these areas are alien invasive species, inappropriate public use and a general lack of awareness of the value of these habitats. Some habitat management efforts have also been inappropriate, including unsuitable reforestation programmes.

Project objectives

The Spanish project LIFE CONHABIT ANDALUCÍA aims to improve the conservation status of priority habitats present in Natura 2000 sites along the Andalusian coast. It will both restore and improve the long-term management of habitats to address the threats that affect them. It aims thus to contribute to the improvement of the conservation status of species of Community interest.

The project plans to undertake urgent restoration and management of 10 priority habitats in 15 Natura 2000 sites along the Andalusian coast. It will specifically target: inappropriate public access; waste; expansion of invasive species; habitat fragmentation; silvicultural work; and forest fires. Interventions will include the installation of fences, the management of car parks, the planting of target species and the removal of invasive species.

The project also aims to improve understanding and practice in management of coastal habitats in Andalusia. It will carry out studies of the specific problems affecting some priority habitats and develop a methodology to measure the conservation status of priority habitats. It aims to draw up good practice guidelines to improve forestry management in four priority habitats. This should be applicable to eight Natura 2000 sites, preventing fire damage and benefitting threatened flora species.

Finally, the project hopes to improve collaboration channels with local government bodies and different social and economic actors relevant to the management of coastal ecosystems in Andalusia, including local populations.

Expected results

- Planting of 40 850 target flora species across seven Natura 2000 sites;
- Removal of invasive species over 106 ha in 14 action areas across seven Natura 2000 sites;
- Improved conservation status of five priority coastal and dune habitats;
- Control of public access in eight Natura 2000 sites by installing 17 190 m of fences;
- Improved management of nine car parks across four sites to reduce ecological impact;
- Improved forestry management and fire avoidance practices to benefit targeted flora; and
- Increased local awareness of the environmental value of these ecosystems.
Sustainable management for conservation of Black pine (*Pinus nigra* subsp. *salzmannii var pyrenaica*) forests in Catalonia

**Project background**

The priority habitat (sub-)Mediterranean pine forests with endemic black pines (*Pinus nigra*) only occurs in a limited number of fragmented sites in medium and high mountain zones in southern EU countries. Spain hosts more than half the EU total of 169 sites. This forest habitat has suffered a great reduction of its distribution area during the past three decades, mainly due to forest fires.

In Catalonia, around 30% of this habitat was lost to fire between 1994 and 1998. Around two-thirds of this forest habitat in Spain (96.2 ha) is considered at very high risk of fire.

**Project objectives**

The LIFE+ Pinassa project aims to contribute to the conservation of (sub-)Mediterranean pine forests with endemic black pine (*Pinus nigra*) in Catalonia. It plans to deliver conservation actions with a strong demonstration potential over a total of 360 ha of habitat across 10 Natura 2000 sites.

The project aims to protect the few remaining areas of black pine with exceptionally mature trees, and high biodiversity and landscape quality. It will also regenerate over-exploited, damaged or destroyed areas of forest of different levels of maturity, aiming to create heterogeneous, stable areas of black pine forest.

The project also plans to increase the resilience of both new and old areas of black pine forest to both large fires and climate change. The project team will also seek to reduce other disturbances and regulate scientific and public use. The team also expects to develop planning and management tools as well as training aimed at managers and owners of forest sites.

**Expected results**

- Improved conservation state of existing stands of black pine with high ecological value over 39.6 ha, including 28 ha of forest in private estates with land lease;
- Improved biodiversity, heterogeneity, stability and resilience of intensively exploited mature forests over 68 ha;
- Improved structure, maturity and biodiversity of intensively exploited forests with an irregular structure over 48 ha;
- Improved biodiversity, heterogeneity, stability and resilience of young and dense stands of forest over 42.4 ha;
- Recovery actions of black pine forest stands destroyed by fire over 36 ha;
- Sylvicultural treatments in 65 ha of critical areas of forest leading to increased protection against large wildfires over 10 700 ha of black pine forest: 9 200 ha in the pre-Pyrenean and central region, and 1 500 ha in the southern region;
- Recreation of the natural dynamics associated with low intensity fires in mature stands of black pine over 21 ha;
- A web-based, GIS decision-support tool for habitat management of black pine forest;
- Technical material containing recommendations for appropriate habitat management;
- A system of biodiversity indicators for monitoring black pine forests; and
- Reduced conflict between the ecological, economic and social functions of black pine forests.
Actions towards the protection and conservation of iberian cyprinids of community interest

Project background

Cyprinidae are a large family of freshwater fish that comprise carp, true minnow and their relatives. Recent studies show a decline in the populations of some threatened endemic cyprinid fish species in the Duero and Tajo river basins.

In order of importance, the main reasons for this decline are the existence of obstacles in the river channel, the increasing presence of invasive species, the loss of habitats due to human interventions in the river channel, reduced water flow rates in the river and poor water quality.

Project objectives

The LIFE CIPRÍBER project aims to aid the recovery of endemic cyprinid populations in Natura 2000 sites in the southwest of the Salamanca province. It plans to tackle threats and restore habitats for these target species.

The project also plans to conduct studies to increase technical and scientific knowledge on the species, as well as to assess the impact of environmental pressures and how to eliminate them. Based on the results of these studies, the project will draft and implement a fish action plan, an action framework document and an action protocol against invasive species. Expected interventions include the removal of unused transversal barriers and other barriers to make both used and unused barriers passable to fish, and the restoration of river channels.

The project also intends to develop a captive breeding protocol for the use of native fish resources in the ichthyological centre of Galisancho. It will evaluate the results obtained to determine the feasibility and effectiveness of captive breeding as a conservation strategy to be applied elsewhere.

Finally, the project aims to deliver both fish and water resources management plans for post-LIFE implementation, to share knowledge with scientific groups and authorities involved in biodiversity conservation, and to raise public awareness.

Expected results

- A diagnosis of the pre-operational situation;
- An initial fish action plan;
- An action framework document;
- An action protocol for invasive species;
- Improved river continuity for fish through removal or amendment of transversal barriers and the restoration of 4 200 m of river channels;
- A captive breeding programme at the Galisancho research station to obtain an additional population for reintroduction in their natural environment;
- Improved conservation situation for the endemic cyprinid populations in the project area; and
- A post-LIFE water resources management plan and a fish species management plan.
In situ and Ex situ innovative combined techniques for coastal dune habitats restoration in SCIs of northern Spain

**Project background**

Sand dune ecosystems across Europe are facing threats and pressures from environmental and human factors – especially tourism and recreational activities in coastal areas. This project targets 10 Natura 2000 sites on the Cantabrian coast in the Atlantic bioregion of northern Spain.

**Project objectives**

The LIFE ARCOS project aims to improve the conservation status of the targeted Cantabrian coastal sand dunes. It specifically aims to restore coastal sand dune habitat within 10 Natura 2000 sites. It seeks thus to address some of the conservation priorities identified in the Priority Action Framework for Natura 2000 in Spain.

The project will draft and implement action plans to restore sand dune habitats across the 10 sites. Actions include the removal of invasive trees and plants and the protection of dune habitats from human disturbance. The team will plant native grass species to restore the natural dynamics of dune ecosystems.

To guarantee the long-term conservation of the crucial native grasses, the project will conserve the seeds of over 25 such plant species. It will develop protocols for plant cell cultures, which it will share with related ex-situ conservation projects. It will also develop germination protocols for several of the most threatened species and publish these on the relevant European database.

The project will deliver a monitoring plan for the conservation status of the restored sites. This will aim to be applicable to the other dune systems in northern Spain and, with only few modifications, to all the dune habitats in the Atlantic bioregion.

**Expected results**

- Action plans for restoration of the selected dune systems;
- Elimination of at least 250 *Pinus* trees from the dune system of Barayo;
- Elimination of invasive alien plants from around 120 ha of dune systems in repeated eradication campaigns;
- Protection of dune systems against human disturbance by placing 5 000 m of wooden walkways and rope fences;
- Planting of more than 500 000 plants of European beach grass (*Ammophila arenaria*) and sand-couch grass (*Elymus farctus*) to restore natural dune ecosystem dynamics;
- Restoration of at least 50 ha of Fixed coastal dunes with herbaceous vegetation;
- Restoration of at least 65 ha of shifting dunes along the shoreline with *Ammophila arenaria* and embryonic shifting dunes;
- Conservation of germplasm (seeds) of at least 28 native plant species to ensure their availability in restoration actions;
- Definition of cell culture protocols for at least 10 species that will be incorporated into the parallel ex-situ conservation project ‘Phoenix’;
- Development of germination protocols for at least 15 rare or threatened species and publication of obtained results in the online database of the European Native Seed Conservation Network (ENSCONET); and
- Organisation of courses, meeting and events on dune restoration.

**Beneficiary:**

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- **Name of contact person:** María Paz SUÁREZ RENDUELES
- **Duration of project:** 54 months (01/07/2014 – 31/12/2018)
- **Total budget in euro:** 1,327,816.00
- **EC contribution in euro:** 945,428.00
- **Themes:** Habitats: Coastal

**Themes:** Habitats: Coastal
Project background

The Miera River is located in northern Spain, flowing 41 km from the Cantabrian Mountains into the Bay of Biscay. It has a significant role as an ecological corridor in the region. Natura 2000 sites are located all along its course.

Project objectives

The LIFE Miera project aims to deliver a river basin management approach to the recovery of habitat types and species populations of Community interest along the full length of the Miera River.

The project will create, restore and improve the conservation status of a series of targeted habitats selected for their scarcity, ecological importance and/or representativeness in the Natura 2000 areas along the river, including: Sphagnum acid bogs; riparian forests; montane forests; coastal sand dunes; dry Atlantic coastal heaths; and estuaries.

Habitat restoration actions will include the planting of native species, removal of invasive species, cleaning up of waste, protection from human disturbance and adaptation of river barriers. Where appropriate the project will also deliver land stewardship and hunting agreements to ensure good habitat management.

The project will seek to improve basic knowledge of the population conservation status and habitat used by a number of targeted animal and plant species. These will be selected for their ecological, educational and socio-economic importance, including: Atlantic salmon, (Salmo salar), European otter (Lutra lutra) and European chain fern (Woodwardia radicans).

Expected results

The expected results include:

- Restoration of the following targeted habitat areas:
  - 100 ha of Atlantic acidophilous beech forests with ilex and sometimes also Taxus in the shrublayer (and another 100 ha improved);
  - 3 ha of Sphagnum acid bogs;
  - 6 ha of dune ecosystem; and
  - 10 ha of coastal heathland.
- Creation of the following priority habitat areas:
  - 3 km (approximately 2 ha) of alluvial forest – involving seven-metre deep intervention;
  - 2 km (approximately 1.5 ha) of Salix alba and Populus alba galleries – involving seven-metre deep intervention; and
- 3 new sub-populations of Woodwardia radicans.
- Removal of the following threats to priority habitats:
  - Alien species and dumped waste products in 60 ha of riparian forest; and
  - Invasive alien plants – groundsel tree (Baccharis halimifolia) and pampas grass (Cortadeira sell-oana) – from at least 4 ha of halophilic estuarine habitats.
- A river that is navigable by migrating fish – especially salmon – to reach their natural spawning areas through adaptation or removal of river barriers.
- Delivery of the following management tools:
  - Long-term land stewardship agreements with three local councils – San Roque de Riomiera, Vega de Pas and Espinosa de los Monteros – in two Natura 2000 sites, Montes de Valnera and Montaña Oriental; and
  - Hunting management agreements with hunting reserves.
Mediterranean monk seal conservation in Madeira and development of a conservation status surveillance system

Project background

The Mediterranean monk seal (Monachus monachus) is a critically endangered species. With less than 600 individuals throughout its distribution range, it is considered one of the most endangered mammals in the world. It is priority species of Community interest listed in Annexes II and IV of the Habitats Directive.

The species has two clearly differentiated populations. The Mediterranean one is mostly distributed in Greek and Turkish territory. The Atlantic population is divided into two isolated sub-populations: one in Africa (Mauritania and Morocco) and the other in Europe (Madeira).

Project objectives

The project LIFE Madeira Monk Seal aims to resolve known threats to the monk seal (e.g. especially from fishermen, tour operators and local inhabitants) and improve its long-term conservation in the Madeira region. It specifically seeks to address conflict between the habitat needs of the seal and human activities in coastal areas.

The project plans to draft and have formally adopted a new Monk Seal Regional Conservation Plan in the Madeira archipelago. It aims to increase the intervention capacity of Madeira’s natural park service, as the competent authority, to tackle threats or risk situations for the species. It will also directly intervene to restore and protect habitats used by the seal for reproduction and rest, including beaches and submerged or partially submerged sea caves.

The project plans to develop a new monitoring protocol and surveillance system for the monk seal. It will take non-invasive methodologies developed for monitoring high-density populations and adapt them for use with the scattered and low-density seal population. It will also establish well-defined indicators and base-line values for the monk seal’s demographic status and the different influences affecting it.

Expected results

- An official Monk Seal Regional Conservation Plan in Madeira;
- Increased capacity of the natural park of Madeira to intervene along the coastline to tackle threats or emergency situations for monk seal individuals;
- Surveillance systems, indicators and baseline values for monitoring of the monk seal and its habitat;
- Demonstration of the success and potential transferability of non-invasive monitoring methods for such scattered and low density populations;
- Improved protection and increased availability of high-quality terrestrial habitats used by monk seals;
- Better implementation of regional legislation for the protection of marine vertebrates;
- Improved attitudes and engagement towards monk seal conservation;
- Reduced threats and disturbances from fishermen, tourism operators, tourists and local inhabitants, including reduction of accidents and entanglements in marine debris and abandoned fishing gear; and
- Contribution to the International Action Plan for the Recovery of the monk seal in the Mediterranean and eastern Atlantic that is being developed by Portugal, Spain, Morocco and Mauritania in the framework of the Convention for the Conservation of Migratory Species (CMS/UNEP).
De-urbanizing and recovering the ecological functioning of the coastal systems of La Pletera

Project background

The Ter river reaches the Mediterranean sea in the municipality of Torroella de Montgrí. In the flood plain of the Ter estuary is a Natura 2000 network site centred on the La Pletera saltmarsh. The site is of high ecological importance due to the presence of brackish (salinity greater than freshwater but less than seawater) and hyperhaline (salinity greater than seawater) coastal lagoons. These have well-conserved halophilic (adapted to life in very high salt environments) and psammophilic (adapted to life in sand) plant communities. The saltmarsh also hosts the Spanish toothcarp (Aphanius iberus), a fish endemic to the Iberian Peninsula that is in danger of extinction. However, the saltmarsh is threatened by encroaching urban development and the presence of physical barriers.

Project objectives

The primary aim of the LIFE-PLETERA project is to carry out a comprehensive restoration of the La Pletera coastal lagoon system, in particular, to recover the ecological functions that have been altered by building works. The project’s specific objectives are to:

- Ensure that the ecological system can respond appropriately to predicted climate change impacts (e.g. rising sea levels and greater frequency of sea storms and other extreme weather conditions);
- Safeguard the ecological functions of the lagoon system in both the short and the long term;
- Disseminate information to show visitors and local residents the importance of conserving coastal lagoon ecosystems;
- Demonstrate best practice in restoring an altered or partially built-up natural space to recover its full ecological functions, even in areas as heavily affected by development pressure as the Mediterranean coast; and
- Increase the carbon fixation capacity of the target coastal ecosystem and thus reduce CO₂ emissions, as a result of replacing disused urban infrastructure and mounds of soil covered in vegetation by a system of coastal lagoons and adjacent flood belts.

Expected results

- A properly functioning coastal lagoon system with permanently flooded zones surrounded by corresponding wetland flood belts;
- An increase of 12 ha in salt-rich habitats related to coastal lagoons;
- A mosaic of four or five permanently flooded depressions linked during flooding, inhabited by colonies of Spanish toothcarp (Aphanius iberus), benefiting from the lack of permanent connection with the sea;
- A morphologically active coastal foredune (one km), which will prevent the formation of blowouts and be re-colonised with typical coastal dune vegetation, to protect the wetlands;
- Analysis of the carbon balance in the saltmarsh, with a comparison between the carbon fixation capacity of an altered coastal system and of a well-conserved system;
- Adaptation and reorganisation of visitor access points in order to safeguard the habitats from dangers caused by human activity; and
- A long-term functional coastal system that will act as a true buffer zone between the sea and the inland croplands.
Project background

After two decades of recovery, species of black vulture and other necrophagous birds (i.e. feeding on carrion) face a new threat, namely a lack of food. This has been caused by several factors, including the emergence of bovine spongiform encephalopathy (BSE), which provoked strict measures to prevent its spread; BSE also made it necessary to collect and dispose of sheep, goat and cattle corpses in central Spain. The management of by-products of hoofed animals from hunting has also changed in recent years to prevent the spread of disease, resulting in the reduction of the availability of food for scavenging species. Stricter health controls from farms, slaughterhouses and meat production facilities have also reduced waste food sources. In addition, the decline of extensive livestock grazing in recent years, particularly sheep, has reduced the available biomass for black vulture and other priority bird scavenger species.

Project objectives

The LIFE FEEDING SCAVENGERS project aims to protect black vultures in their natural habitats in central Spain, using feeding stations in locations that reduce interspecific competition. Specific project objectives are to:

- Construct a database of food availability spatial data, to help optimise the management of available biomass for its use by the black vulture and other necrophagous bird species;
- Make available enough food for black vulture and other species, in such a way that its spatial distribution benefits all of the wild scavenger bird species of Community interest in the project area of central Spain;
- Reduce the competition of the black vulture with other scavenger bird species with unfavourable conservation status, through a spatial distribution and accessibility to food that favours all species;
- Keep the reproductive success of target species within optimal parameters;
- Ease the re-colonisation of historic breeding areas for the black vulture;
- Complete a supplementary feeding point network to guarantee access to food for black vulture when necessary;
- Analyse causes where food is not eaten and suggest necessary corrections;
- Adjust feeding programmes in line with current legislation; and
- Reduce the existing conflict between scavenger species and livestock farmers.

Expected results

- A dynamic database, including the amount of animal remains potentially usable as food by the black vulture and other scavenger bird species;
- All extensive livestock farmers informed of the requirement to leave animal remains at protected areas;
- 10 mobile supplementary feeding stations;
- An annual balance between available animal biomass and the feeding necessities of the scavenger populations in the project areas;
- Reproductive success of target species kept within optimal range;
- Increased percentage of threatened black vulture, Egyptian vulture and black kite, in relation to the number of griffon vulture, throughout the project area; and
- Livestock farmers in the project area trained in techniques for feeding target scavenger bird species.
New approaches for the European mink Conservation in Spain

Project background

The European mink (Mustela lutreola) is listed in Annexes II and IV of the Habitats Directive as a priority species for conservation. During the past 15 years, the expansion of American mink (Neovison vison) has been confirmed as the main threat to the conservation of European mink in Spain. Control actions for American mink to date have not stopped its colonisation of new areas, so it is urgent to improve these techniques and protocols. Without the implementation of more effective conservation measures, European mink it is very likely to shortly become extinct in Spain.

Project objectives

The goal of the LIFE LUTREOLA SPAIN project is to improve the conservation status of European mink in Spain. To achieve this, the project will:

- Adapt and combine different techniques (e.g. mink rafts, camera traps, live-trapping) to improve detection and capture efficiency of both European mink and American mink;
- Eradicate American mink established within the range of the European mink and in identified risk areas in the Ebro valley and Mediterranean basins;
- Create a monitoring network for the early detection of American mink in the areas where they have the potential for invasion into European mink territories;
- Restore the population of European mink in the areas with major fragmentation, by means of population reinforcement following the eradication of American mink;
- Increase the distribution area of European mink by creating a new population, by the release of captive-born individuals;
- Create a monitoring network of European mink populations to assess the species’ conservation status;
- Improve the habitat conditions of European mink in the Ebro river in the province of Álava;
- Assess the threat posed by road infrastructure for the European mink in Álava; and
- Increase public awareness of the conservation of European mink.

Expected results

- Creation of an eradication protocol for American mink;
- Staff trained to implement American mink eradication protocols and to monitor both species of mink;
- Implementation of American mink and European mink monitoring networks;
- Elimination of American mink populations within the range of European mink in the Cantabrian basin (Basque Country) and in the Ebro basin;
- Elimination of isolated populations of American mink in risk areas for the European mink;
- Restoration of European mink populations in the Ebro basin and Cantabrian basin (provinces of Bizkaia and Gipuzkoa);
- Establishment of a new European mink population in the autonomous community of Aragon;
- Development of a protocol for early detection of American mink;
- Risk assessment completed for American mink farms situated within the range of European mink;
- Genetic analyses conducted for two captive populations of European mink;
- Experimental breeding between individuals from the two captive populations of European mink; and
- European mink habitat restoration in the province of Álava in public land acquired with project funds.
Restoration of lentic habitats and aquatic species of Community interest in high mountains of the Pyrenees

Project background

The area targeted by the project is in the Aigüestortes i Estany de Sant Maurici national park, a high-mountain landscape that includes the Natura 2000 sites of Alt Pallars and Aigüestortes. The park is also included in the RAMSAR network.

Perhaps the most notable features of the park are its water courses, with close to 200 lakes and countless streams. These provide important aquatic habitats, and are the main focus of the project.

Project objectives

LIFE LimnoPirineus aims to restore targeted aquatic habitats in the national park. The project will restore the ecological functioning of 19 high mountain lakes through the eradication – or significant reduction - of alien invasive fish species. It will establish new populations of targeted amphibian species - common frog (*Rana temporaria*), common midwife toad (*Alytes obstetricans*) and Pyrenean brook salamander (*Euproctus asper*) - in the lakes where non-native fish species have been removed.

It will intervene to protect and restore the quality of peat bogs and tufa-forming springs that are currently under pressure from tourism and livestock. Additional targeted restoration measures will include hydraulic restoration at one site and experimental recuperation of peat bog habitats in an area formerly occupied by a small dam.

Other interventions include: improving the conservation status of the habitat, natural eutrophic lakes and its floating water-plantain (*Luronium natans*), in the Natura 2000 site at Estanho de Vielha; and improving the European bullhead (*Cottus gobio*) population in isolated headwater streams, as well as the establishment of a second population.

Finally, the project will create a viable seed bank of significant species of the targeted habitats that will allow the recreation of the habitats in case of strong anthropogenic impacts.

Expected results

The main expected results include:

- The complete eradication of brown trout (*Salmo trutta*) and brook trout (*Salvelinus fontinalis*) in three areas;
- The complete eradication of *Phoxinus* sp. in two lakes in the Alt Pallars and a global reduction above 80% in two other sites;
- The restoration of the structural quality and ecological functioning of 19 high mountain lakes with the Annex I habitat, oligotrophic waters containing very few minerals of sandy plains, in six areas;
- An improvement in the conservation status of natural eutrophic lakes, and the species *Alytes obstetricans* and *Luronium natans* in the Estanho de Vielha;
- An improvement in the conservation status of Pyrenean desman (*Galemys pyrenaicus*), European otter (*Lutra lutra*), the lesser horseshoe bat (*Rhinolophus hipposideros*) and the Alpine Long-eared Bat (*Plecotus macrobullaris*) in Aigüestortes and Alt Pallars; and
- The establishment of new populations of *Rana temporaria* *Alytes obstetricans* and *Euproctus asper* in lakes currently occupied by alien fish – providing an overall improvement of these metapopulations.
Consolidation of a bear population in a fragmented management territory: Central Pyrenees

Project background

By 1990 native bears in the Central Pyrenees had become extinct. A reinforcement action with specimens of the same genetic strain from Slovenia was initiated in 1996. This project was funded and promoted by France, Spain and the EU, with support from the LIFE programme. However, the concerted actions were insufficient and the bear became extinct in the whole of the Pyrenees by 2004.

Since then, many efforts have been made and the population of bears has reached about 30 specimens, almost 90% of which live totally or partially in Catalonia. They enjoy areas of high quality habitat that have been mostly included in the Natura 2000 network.

Project objectives

The PIROSLIFE project aims to consolidate bear populations and strengthen their long-term conservation in the Pyrenees. It will develop measures to improve coordinated action between different administrative units in order to help support the co-existence of bear populations with human interests. It hopes to develop a management approach that can be an example to other territories.

The project plans to draft a 10-year Bear Action Plan (2014-2023) based on studies of the genetic and demographic structure of the bear populations. It will develop a network of bear habitat spaces with improved ecological connectivity within the Natura 2000 network. It will support this action by developing an administration network to coordinate monitoring and bear conservation across the Pyrenees.

One of the specific interventions of the project will be to introduce a male bear from a different territory and with good genetic variance into the resident population. The project will also draft a manual on how to carry out this sort of reintroduction.

Awareness-raising efforts will create a more positive attitude towards the bear, focusing on the possible eradication of risk of attack to livestock and beekeeping as well as danger to humans. It will define action rules to prevent and reduce conflict in zones of proximity to humans, including agreements with livestock owners and hunters.

Expected results

- A 10-year bear action plan for the Pyrenees;
- A cross-border network of connected spaces for the bear within the Natura 2000 network;
- A coordinated international administration network across different political and administrative units for bear conservation in the Pyrenees;
- Consolidation or increase in the bear population in the Pyrenees;
- A genetically strengthened population;
- A manual on how to successfully reintroduce male bears to a territory;
- Agreements with livestock owners and hunters;
- Totally eliminate bear attacks on livestock and apiculture; and
- Progress towards a climate of co-existence between bears and humans, including total acceptance of their presence and an appreciation of new opportunities for eco-tourism.
Strengthening associated biodiversity of habitat 92A0 and control of Invasive Alien Species in the Segura River

Project background

In the Almadenes and Cañaveros nature reserves of Murcia, biodiversity is seriously threatened by invasive alien species (IAS): *Opuntia maxima*, *Washingtonia filifera*, *Eucaliptus camadulensis*, *Roninia pseudoacacia*, *Phoenix canariensis*, *Arundo donax* among others. These IAS have colonised original habitats and pose a threat to riparian species. The problem of invasive species is compounded by pollution, direct land clearing for farming and a high incidence of fires. Urgent action is needed to restore original habitats and maintain biodiversity. The project area covers 550 ha of the Segura river basin.

Project objectives

The aim of the project is to recover and protect the riparian forest, mainly those areas dominated by willows and poplar (habitat 92A0) and associated habitats in the high stretches of the Segura river basin in Murcia (surrounding the municipalities of Moratalla, Calasparra and Cieza).

To achieve this aim, the project plans to:

- Create green infrastructure among the two natural riparian reserves of the region;
- Increase the area of riparian forest habitat in the project area and protect relevant flora and fauna species;
- Eliminate IAS;
- Create a land custody network for the Vega Alta;
- Use the latest technology to monitor IAS and detect forest fires;
- Publish a guide on how to eradicate IAS from streams in the region of Murcia; and
- Raise public awareness.

Expected results

- Detailed inventory and cartography of project areas;
- Detailed inventory of IAS;
- Establishment of monitoring stations;
- Definition of biodiversity and water quality indicators;
- Management plan for IAS in the project area;
- Establishment of a land custody network ‘Ripisilva-Segura’;
- Definition of the public water domain for 10 km;
- Establishment of a rapid alert system for IAS and fires, featuring smartphone apps;
- Progressive elimination of IAS;
- Increased area of riparian forest habitats;
- Improved water quality;
- Green infrastructure corridor (via habitat restoration);

Beniciary:
- Type of beneficiary: Regional authority
- Name of beneficiary: Confederación Hidrográfica del Segura
- Postal address: Plaza Fontes, 1
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  Phone +34 968965078
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- Name of contact person: Adolfo MÉRIDA ABRIL
- Duration of project: 60 months (01/09/2014 – 31/08/2019)
- Total budget in euro: 2,454,611.00
- EC contribution in euro: 1,221,168.00
- Themes: Biodiversity issues: Invasive species / Habitats: Forests

- Public infrastructure (recreational areas, informative panels and bird hides);
- Increased public awareness; and
- Dissemination of project results.
Reintroduction of burning in Boreal western taiga woodlands

Project background

Controlled burning can support the conservation of many sites of priority habitat type 9010 (*Western Taïga) and, to some extent, habitat 9060 (Coniferous forests on, or connected to, glaciofluvial eskers). Up until 150 years ago, 1% of the wooded area burned annually. Today less than 0.016% burns annually. The reduction in the frequency of fires is one of the major ecological changes that have taken place in woodlands since the 1800s.

Over time, fires have led to the development of pyrophilic organisms. We know today that some 40 insects and some 50 Fungi species are dependent on burned wood and burned ground for their survival. Hundreds of other species, such as flies, bees and crabronid wasps, also benefit from fires. Many of the organisms dependent on fire are rare and are on the Swedish Red List, and some of them are listed in the Habitats and the Birds Directives.

If these fire-dependent habitats and species are to survive, then the number of controlled fires in the wooded landscape must increase.

Project objectives

The main objectives of the LifeTaiga project include: transforming a significant proportion of western taiga (9010) in Sweden from unfavourable to favourable conservation status; developing suitable methods for controlled burning, as well as training and encouraging authorities, companies, organisations and contractors associated with controlled burning; promoting a dialogue and delivering good quality, easy-to-understand information to landowners, local residents, visitors and the general public on the issue of controlled burning; and developing mutual collaboration with Finland in relation to the management of the target habitat.

Expected results

- 120 controlled burning events on a total area of 2 060 ha in 89 different Natura 2000 sites;
- Fencing, creation of bare soil, and targeted actions on 18 of these Natura 2000 sites;
- Large areas (more than 30 ha) burned at eight sites, intermediate sized areas burned (10-30 ha) in 65 projects sites, and smaller areas (in general less than 10 ha) burned at 16 sites;
- Production of a database that will be used to refine methods of controlled burning;
- Development of information trails to highlight the ecology of controlled burning in specific Natura 2000 sites; and
- Implementation of awareness raising measures that facilitate the exchange of ideas among organisations and contractors, as well as reaching new target groups via a mobile app, QR-coded information signs and an interactive website.
Restoration of habitats rich in trees and shrubs

Project background

Skåne is traditionally one of Sweden’s most highly productive farming counties. It is also rich in biodiversity. Habitat conditions in the southern part of the county are particularly dependent on recurrent management by farmers, but changes in agricultural practices have had a negative impact on the quality of important biodiversity areas. Habitat degradation and fragmentation now represent significant threats to the long-term sustainability of key areas. Urgent remedial action is therefore required to improve the conservation status of grassland habitats.

Project objectives

The main aim of the BushLIFE project is to restore a favourable conservation status for several semi-natural grassland habitat types and create optimal conditions for associated species in a total of 629 ha in 18 Natura 2000 sites in the county of Skåne. The project also aims to increase the habitat quality and conservation status of three species listed in Annex II of the Habitat Directive, one species in Annex IV and one bird listed in Annex I of the Birds Directive.

Expected results

- 16 restoration plans produced for the project;
- Restoration of 325 ha through clearance of trees and bushes;
- Restoration of 15 ha by cutting woodland;
- Plantation of 254 ha with 20 190 trees, 2 310 bushes, and 500 metres of hedge;
- Restoration of 31 ha through prescribed burning;
- Restoration of 290 trees through veteranisation (a technique aimed at increasing the speed of aging in trees);
- Improvement of habitat quality by creating 37 large stumps;
- Increased survival and reproduction rates for the dormouse (Muscardinus avellanarius) through the placement of 700 artificial nests in suitable bushes; and
- Production of 214 information signs, 15 leaflets, a book and a film.

Beneficiary:

Type of beneficiary
Local authority

Name of beneficiary
County Administrative Board of Skåne

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Name of contact person
Johan NISS

Duration of project:
72 months (01/09/2014 – 31/08/2020)

Total budget in euro:
3,206,781.00

EC contribution in euro:
1,603,390.00

Themes: Habitats: Grasslands
**Triple Lakes – Catchment restoration and preventive action for aquatic habitats in a climate change perspective**

**Project background**

Aquatic ecosystems in the Jämtland area currently face significant physical, chemical, and biological pressures. The clearing of streams, dams and road culverts, along with the consequent siltation of lake and streambeds, affect habitat types 3210 (Fennoscandian natural rivers) and 3140 (hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.). Nutrients such as phosphorus and nitrogen are leaching from soils as a consequence of agriculture and forestry activities. Wastewater from treatment plants or private properties also increases the nutrient loads in local aquatic habitats.

Due to a locally high concentration of nutrients and sediment/organic matter input the reed *Phragmites australis* has increased in density and distribution. This means that spawning grounds and feeding areas for lake-dwelling fish are severely affected and their population sizes have decreased. Moreover, climate change also presents challenges for the habitats’ long-term future. Another problem is the unsustainable use of natural resources.

**Project objectives**

The project’s overall objective is to develop a model for adaptive catchment management for high conservation value aquatic ecosystems that takes into account climate change. This aim will be reached by implementing a programme of catchment enhancement measures to improve the status and resilience of aquatic Natura 2000 ecosystems.

Specific measures included:

- Eliminating and/or reducing the current threats to the morphology, hydrology and water quality in three large Natura 2000 lakes and their tributaries;
- Increasing the capacity of aquatic habitats to maintain favourable conditions and to contribute to a good ecological status;
- Strengthening ecosystem resilience with respect to the current and expected impact of climate change;
- Developing stakeholder involvement (participatory approach) through capacity building, demonstration and training activities, in order to stimulate a more sustainable use of land and water resources; and
- Drawing up an adaptive model for future catchment management.

**Expected results**

- Restoration of stream hydromorphology leading to an additional 275 000 m² of physically functioning bottom substrate;
- Elimination of migratory barriers, giving migratory species access to 59 km of stream habitat – resulting in more viable fish and invertebrate communities;
- Restoration of fish spawning areas leading to 8 800 m² of physically functioning spawning bottom substrate increasing the fish population size;
- Elimination of macrophytes contributing to the lake habitats’ restoration;
- Reintroduction of *Margaritifera margaritifera* in order to restore a typical and better balanced community of species;
- Dissemination and capacity-building activities, leading to raised awareness among land owners and other local stakeholders, and thus more sustainable use of land and water; and
- Project seminars and publications, providing an arena for the exchange of experiences among scientists and managers of adaptive catchment areas.
More water, more raised bogs in the Groote Peel

Project background

The National Park Groote Peel and Natura 2000 site (1,345 ha) in the south-east of the Netherlands has two habitat types requiring protection under the Habitats Directive: ‘Degraded raised bogs still capable of natural regeneration’ (658 ha) and ‘European dry heaths’ (115 ha). It is a core area for remnant raised bogs in Europe.

However, raised bogs have an unfavourable conservation status as a result of systematic desiccation and strongly fluctuating water levels caused by drainage and irrigation in adjacent agricultural areas, and a draining effect caused by the Eeuwselse Loop (a large waterway). Raised bogs are also threatened by eutrophication caused by nitrogen deposits, decaying organic matter and nutrients supplied by the Eeuwselse Loop. The nutrient-rich water favours species that are highly competitive with the original flora and fauna of the raised bogs. These threats can only be countered by large-scale systems-oriented measures.

Project objectives

The LIFE GP project aims to restore the eco-hydrological situation in Groote Peel National Park. It is aiming to improve the quality of the regenerative raised bogs and the species that depend on them – from an unfavourable to a favourable conservation status. As a result, the ecosystem is expected to become more resilient to the effects of climate change. Specifically, the project also aims to:

• Counter the nutrients from the Eeuwselse Loop by increasing water levels to improve the bog mosses’ competitiveness, and by relocating and isolating this waterway;
• Take measures to maintain and strengthen Groote Peel’s status as a core area for raised bogs and their associated species, by forming ‘stepping stones’ to facilitate exchange between the different flora and fauna species’ populations; and
• Directly benefit through habitat restoration several resident breeding birds listed in Annex I of the Birds Directive, including little grebe (Tachybaptus ruficollis), bluethroat (Luscinia svecica), spotted crake (Porzana porzana), black-necked grebe (Podiceps nigricollis) and stonechat (Saxicola rubicola), and also for wintering and migrating birds who use the area for resting and foraging, such as the tundra bean goose (Anser serrirostris), the white-fronted goose (Anser albifrons) and the common crane (Grus grus).

Expected results

• Increase in quality (from moderate to good) of the regenerative raised bogs habitat over approximately 631 ha in the long term (by 2030);
• Raised hydrologic level over a total area of 1,195 ha in order to regenerate bogs;
• Improved hydrological conditions in the Natura 2000 site;
• Benefits to the already varied and large bird populations, through improved breeding and foraging ground;
• Benefits to typical raised bog species, such as bog rosemary, white-faced darter and common lizard, and
• Revitalised ecosystem that is more resilient to external influences, such as weather extremes.
More water for wet habitat types in Drents-Friese Wold & Leggelderveld

Project background

The National Park Drents-Friese Wold & Leggelderveld (DFW & LV) is one of the largest nature reserves in the Netherlands, with a surface area of over 7,000 ha. It is home to woods, stream valley grasslands, wet heathland, fens, heather and shifting sands. The diversity of habitats within the park is rare in the Netherlands, and Europe as a whole. However, the continued existence and further development of the wet habitats, including those listed in Annex I of the Habitats Directive, is threatened by desiccation, acidification and eutrophication. These threats are to a large extent caused by drainage in a former agricultural enclave situated in the heart of the Drents-Friese Wold.

Project objectives

The aim of the LIFE project is to raise groundwater levels, in order to restore wetland habitat types in the DFW & LV Natura 2000 site. The project is part of a total package of restoration measures aimed at combating desiccation, acidification and eutrophication over the entire site.

The main objectives of the project are to:
- Purchase the last remaining land section in Oude Willem that is still being used for agriculture in order to stop drainage;
- Develop the former agricultural enclave in Oude Willem into a nature reserve, which will protect the source area of the Vledder Aa;
- Improve water management to enable habitat types to better resist the effects of atmospheric deposition; and
- Develop former agricultural land in Leggelderveld, Doldersumerveld and De Nul into a nature reserve.

Expected results

- Improved hydrological system on a regional and local scale, having a beneficial effect on around 1,750 ha of nature reserve, by transforming woodland, filling in ditches, and increasing the nature reserve area by around 360 ha at the expense of agricultural grassland;
- Improved quality of many habitat types, including species-rich grassland, active raised bogs, dry sand heaths, natural dystrophic lakes and ponds, and wet heaths, on a collective surface area of over 100 ha;
- Increased area covered by protected habitat types by around 90 ha within 15 years after the end of the project, including 63.5 ha of wet heaths, 1.5 ha of raised bogs and 7.5 ha of species-rich Nardus grassland;
- More than 50 ponds and raised bogs benefiting listed habitat types and species, including the little grebe;
- An additional 325 ha of habitat for the whinchat (Saxicola rubetra), red-backed shrike (Lanius collurio) and stonechat (Saxicola rubicola) and other protected species at Oude Willem, with bird species also benefitting from the transformation of former agricultural land in the Doldersumerveld, Wapservelden and Leggelderveld; and
- Essential protection for many species listed in the Birds Directive and the Habitats Directive, including the northern crested newt (Triturus cristatus) and floating water-plantain (Luronium natans).
Biotope improvement and development for Bittern and Great reed warbler in the IJsseldelta

Project background

The populations of several Birds Directive priority species have strongly declined in the Netherlands and north-western Europe in recent decades. This unfavourable trend applies to the Natura 2000 network sites of Zwarte Meer and Veluwerandmeren, both in the IJsseldelta region. At present these sites host many Dutch populations of targeted Birds Directive species, including the great reed warbler (Acrocephalus arundinaceus) and bittern (Botaurus stellaris). Based on both local and national trends it is clear that without additional measures, the Natura 2000 goal for the number of breeding pairs of great reed warbler will not be reached at Zwarte Meer and Veluwerandmeren. The main reason for this is an insufficient area of suitable breeding habitat in both Natura 2000 sites.

Project objectives

The key objective of the ‘A better LIFE for Bittern’ project is to improve and enlarge the area of reed beds in two Natura 2000 sites in the Dutch IJsseldelta: Zwarte Meer and Veluwerandmeren. The ultimate aim is to increase the population of bittern and great reed warbler by creating optimal biotopes. In addition to these two main target species, project actions will also focus on another four species listed in the Birds Directive: purple heron (Ardea purpurea), spotted crane (Porzana porzana), Savi’s warbler (Locustella luscinioides) and sedge warbler (Acrocephalus schoenobaenus), along with several other bird species associated with reed beds. Finally, the protected fish species, European weather loach (Misgurnus fossilis) and spined loach (Cobitis taenia), will also benefit from project measures.

Expected results

- Restoration of reed beds at Zwarte Meer, resulting in biotope improvement for bittern, great reed warbler and other bird species over 300 ha;
- Significant increases in the populations of target species at Zwarte Meer, namely bittern (seven breeding pairs), great reed warbler (40 pairs), Savi’s warbler (60 pairs) and sedge warbler (at least 165 pairs), with half of this expected to be achieved within the project period;
- An area of 34.7 ha Veluwerandmeren with new reed beds for the target bird species; and
- New reed beds that create a completely new habitat for reed bed birds, with expected colonisation by one or two breeding pairs of bittern and around 10 pairs of great reed warbler occurring by the end of the project period.
Protecting and restoring the Shiant Isles SPA through rat removal and safeguarding other seabird islands SPAs in the UK

Project background

The Shiant Isles Natura 2000 network site is a key site for seabirds. However, the site faces several threats, including the presence of invasive rats that predate important seabird colonies. When conditions were last assessed in 2008, both of the seabirds covered by the assessment – razorbill (Alca torda) and common guillemot (Uria aalge) – were classified as ‘unfavourable declining’. At present, few biosecurity plans exist for islands such as the Shiants, and no clear best practice guidelines are available.

Project objectives

The main seabird species targeted by the LIFE Shiants project are razorbill, Atlantic puffin (Fratercula arctica) and European shag (Phalacrocorax aristotelis). In addition, the project expects to benefit a range of other species, including European storm petrel (Hydrobates pelagicus) and Manx shearwater (Puffinus puffinus).

The main objectives of the project are to:
• Remove invasive rats from the Shiant Isles Natura 2000 network site, thereby eliminating a significant pressure on the existing seabird population;
• Promote the colonisation of the Shiant Isles by European storm petrel and Manx shearwater, for example, through the use of call playback;
• Protect the Shiants through improved biosecurity by establishing minimum biosecurity standards, producing a guideline document for island managers and carrying out training exercises across the country; and
• Build expertise within the UK (and elsewhere in the EU) in island restoration, thereby reducing reliance on expensive external contractors.

Expected results

• Eradication of rats from the Shiant Isles Natura 2000 network site;
• Increase of the populations of puffin, razorbill and European shag, with similar improvements in the status of other seabirds, including common guillemot, black-legged kittiwake (Rissa tridactyla) and northern fulmar (Fulmaris glacialis);
• Increase of the populations of other species found on the Shiants, including terrestrial and wading birds, invertebrates and plants;
• Increase in the rate of recovery of Shiant Isles’ Atlantic puffin, razorbill, European shag, and other seabird populations, as predicted by similar rat eradication projects elsewhere in the UK, with productivity at or above the level required to maintain stable populations by the end of the project (this level is 0.253 fledglings per pair a year for puffin, 0.500 for razorbill and 0.833 for shag);
• The establishment of Manx shearwater and European storm petrel on the islands for the first time in at least 100 years (through active attraction measures as well as rat eradication), with anticipated prospecting for nests in the first year after eradication and egg laying in year three; and
• The development of a minimum standard for biosecurity for important seabird islands around the UK, and the delivery of a training programme linked to this standard.
Conserving the Hen Harrier (*Circus cyaneus*) in northern England and southern and eastern Scotland

**Project background**

After several decades of recovery in the UK, the hen harrier (*Circus cyaneus*) – an Annex I-listed species in the Birds Directive – the population is currently declining. While the reason for this is not fully understood, it is clear that illegal persecution associated with commercial shooting of red grouse (*Lagopus lagopus scoticus*) is a significant factor. The decline is particularly serious in northern England and southern and eastern Scotland, where the hen harrier is nearing extinction as a breeding species. Other factors that are having a negative impact on breeding success include inappropriate land management, human disturbance and predation of eggs and young from nests. Recent analyses indicate that enough suitable habitat exists to support up to 2,650 pairs in the whole of the UK (compared to 630 pairs in 2010).

**Project objectives**

The LIFE project focuses on the protection of hen harriers from illegal persecution. The aim is to provide the conditions in which hen harrier range and population recovery can occur. The key priorities are to prevent the extinction of the hen harrier as a breeding species in northern England, and to arrest its decline in southern and eastern Scotland, as vital first steps towards a recovery that may take at least 10 years.

Data from preparatory activities will guide targeted conservation measures to protect hen harrier, as well as support law enforcement actions combating illegal persecution. Species protection work will be supplemented by habitat management and advisory work. Satellite tags will be fitted to nestlings to obtain accurate information on hen harrier movements and the nature of persecution outside the breeding season through the dispersal corridors to the wintering areas.

Specifically, the project aims to:

- Improve understanding of the movements of hen harriers in northern England and southern and eastern Scotland;
- Enhance protection of hen harriers at breeding sites and at wintering sites;
- Ensure that habitat availability does not limit harrier recovery;
- Raise public awareness of hen harriers; and
- Encourage recognition of the hen harrier as an iconic species of upland landscapes.

**Expected results**

- Suitable protection measures deployed at all breeding sites in England and at least 75% of breeding sites in southern and eastern Scotland;
- Identification of wintering sites within the project area and measures to protect them;
- Management work carried out at three key sites in northern England to ensure that the rate of hen harrier recovery is not limited by the availability of good-quality habitat;
- An assessment of the potential to apply novel technologies to other species protection projects;
- Between 5 and 15 pairs of hen harrier breeding successfully in northern England, and at least 35 pairs breeding in southern and eastern Scotland, in 2019; and
- Increased breeding range in the UK.

**Beneficiary:**

- **Type of beneficiary**: NGO-Foundation
- **Name of beneficiary**: The Royal Society for the Protection of Birds
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  UNITED KINGDOM
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- **Name of contact person**: Nick FOLKARD
- **Duration of project**: 60 months (01/07/2014 – 30/06/2019)
- **Total budget in euro**: 2,269,932.00
- **EC contribution in euro**: 1,134,966.00
- **Themes**: Species: Birds
Demonstrating wader population recovery through innovative site management and novel stakeholder engagement

Project background

The River Avon develops into a large calcareous lowland river south of Salisbury. The floodplain consists of humid, species-rich grassland, with ditches and some standing water usually persisting through the spring months. The traditional farming pattern of the valley reflects the propensity for winter flooding. In 1982, the Avon Valley constituted one of the top eight lowland wet grassland sites in England for breeding waders. It has historically supported nationally important populations of breeding northern lapwing (Vanellus vanellus), redshank (Tringa totanus) and common snipe (Gallinago gallinago).

However, numbers of breeding waders in the Avon Valley have decreased dramatically, with declines of 64% in lapwing, 75% in redshank and 97% in snipe recorded from 1982 to 2002. This is mainly due to the agricultural improvement of wet grassland habitats involving drainage, fertilisation of grass swards, increased livestock densities, and high rates of nest predation. Monitoring of lapwing breeding success over recent years has shown that it is currently too low for the maintenance of a stable breeding population.

Project objectives

The LIFE WADERS FOR REAL project seeks to reverse the decline of breeding waders in the river floodplain of the Avon Valley, part of which is designated as a Natura 2000 network site. To halt the decline of lapwing and redshank, in particular, urgent intervention is needed to improve breeding success. The objective of the project is to increase the breeding density of key bird species through a unique combination of habitat restoration in collaboration with farmers, and innovative actions that target, seasonally exclude and reduce predator numbers.

Expected results

- The drawing up and implementation of conservation plans for four ‘hotspot’ sites in the Avon Valley, involving around 1 000 m of new boundary ditches, 1 000 m of in-field wet-feature restoration, 1 000 m of anti-predator fencing, 500 m of electric fencing and five to six excluder cages;
- Increased lapwing breeding success above the level required for maintenance of a stable population (average of 0.7 chick fledged per pair per annum) at four ‘hotspot’ sites, each measuring at least 100 ha;
- Halted and partially reversed decline of lapwings from about 60 pairs to 80-90 pairs;
- Increased numbers of breeding redshank pairs, by 50% at the four ‘hotspot’ sites;
- Increased area of habitat suitable for nesting redshank by 20 ha, and ideally to increase the number of breeding pairs in the valley as a whole from 22 pairs to nearer 30 pairs;
- Creation of at least 20 ha of optimal habitat for breeding snipe, and an assessment for wider application of whether this is successful in enticing birds breeding in the New Forest (around 10 km away) to nest in the Avon Valley;
- Measured effectiveness and evaluated costs of various techniques for reducing predation on waders;
- Data collected on changes in wet meadow flora, invertebrates and wintering waterfowl, resulting from management for breeding waders;
- At least 30 farmers engaged in the project area, educating them on how to achieve wader management alongside farm operations through one-to-one discussions and literature written in lay terminology; and
- The trial, monitoring, evaluation, adaptation and implementation of the ‘Planning for Real’ approach for the sustainable delivery of conservation actions.
Implementation of integrated habitat networks to improve ecological coherence across the CSGN

Project background

Habitat fragmentation is recognised as one of the major challenges facing the conservation of habitats and species in a changing climate. The EU 2020 Biodiversity Strategy highlights that many ecosystems have been degraded by habitat fragmentation – resulting in diminished ecological coherence and potential reductions in ecosystem services. Both the EU Habitats Directive and the revised Scottish Biodiversity Strategy recognise the contributing effect of habitat fragmentation on ecosystem degradation, and the need to create a fully functioning, ecologically coherent network.

The Central Scotland Green Network (CSGN) area is Scotland’s most heavily fragmented lowland area, comprising just 13% of Scotland’s land area yet home to 70% of the population and most of its industry.

Project objectives

The objective of the EcoCo LIFE Scotland project is to deliver habitat management in the most beneficial places within the CSGN area to improve ecological coherence. It will implement a suite of concrete conservation activities to better connect habitats and increase their biodiversity, with improvements in quality and functionality across landscapes.

To do this, the project will develop a new mapping methodology – an ‘Ecological Coherence Protocol’ – to identify the most beneficial places for people and wildlife, and it will test its application through the implementation of habitat restoration activities at selected sites. The project will seek to deliver multifunctional benefits – for example, it will help reach the objective of the Water Framework Directive to ensure the good ecological status of water bodies and help implement the Floods Directive by taking coordinated measures to reduce flood risk.

The implementation of habitat management restoration to improve ecological coherence will also help fulfil biodiversity objectives and improve the resilience of habitats and species to changing climatic conditions.

Expected results

- Improved ecological coherence in the most beneficial places in the CSGN;
- Production of a project communication strategy and development of an ecological coherence protocol;
- A suite of ecological coherence maps to reflect four habitats (peatland, wetland, freshwater and open mosaic habitat), a suite of delivery projects across 12 management zones, and management plans/landowner agreements;
- At least 534 ha of restored peatland in at least eight individual sites;
- 53 ha of wet and dry grassland brought into positive management;
- At least 97 ha of wetland habitat brought into positive management;
- 22 ha of brackish lagoons enhanced for wildlife;
- Four islands created for breeding birds;
- One ha of wildflower meadow enhanced;
- Habitat enhancements to riparian zones, with connections made between two tributaries, re-instatement of natural river processes, creation of more natural channel forms (e.g. meandering), and reconnection of a river with the floodplain;
- Habitat connectivity and ecosystem function assessments; and
- Construction of public viewing facilities, promotional boards and dissemination events.

Beneficiary:

Type of beneficiary
NGO-Foundation

Name of beneficiary
Scottish Natural Heritage

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Duration of project:
48 months (01/09/2014 – 01/09/2018)

Total budget in euro:
3,132,695.00

EC contribution in euro:
1,566,344.00

Themes: Biodiversity issues: Ecological coherence
Restoration of degraded lowland raised bogs on three Cumbrian SCI/SACs

Project background

The area of relatively undisturbed lowland raised bog in the UK has diminished by about 94%, from 95 000 ha to 6 000 ha, over the past century. Up to 90% of lowland raised bogs have been modified, damaged or destroyed by past management activities, such as peat cutting, drainage, forestry or agriculture. Moreover, three quarters of the habitat area is in poor condition. The county of Cumbria in northwest England still has 5 480 ha of lowland raised bog, of which 1 178 ha is degraded. The project sites – Bolton Fell Moss, South Solway Mosses, and Roundsea Wood and Mosses – have been particularly damaged by large-scale commercial peat extraction and drainage of the outer margins of the bog for agricultural purposes. The result is that parts of the bogs are hydrologically impaired, denuded of natural vegetation and colonised by scrub and rhododendron.

Project objectives

The Cumbrian BogsLIFE+ project aims to restore degraded lowland raised bog in three Natura 2000 network sites. It will focus on two target habitat types – ‘Degraded raised bog capable of natural regeneration’ and ‘Active raised bog’ – and will demonstrate a range of techniques for the complete restoration of lowland raised bog habitats, including the restoration of natural hydrological systems and biodiversity. The long-term aim is to achieve favourable conservation status of Natura 2000 raised bog habitats on the Roundsea Woods and Mosses and South Solway Mosses sites by 2035 and on the Bolton Fell Moss site by 2039.

Specifically the project aims to:
- Restore 507 ha of degraded raised bog habitat leading to the direct improvement of 751 ha of habitat on three sites;
- Restore optimum water levels, combined with the re-introduction of Sphagnum mosses on worked-out peat extraction sites, to stimulate re-colonisation by peat-forming vegetation;
- Remove scrub and trees to allow sites to rewet and to control or eradicate invasive non-native rhododendron;
- Monitor the recovery process and disseminate best practice guidance associated with the restoration techniques.

Expected results

- Restoration of 507 ha of degraded raised bog habitat including the removal of 120 ha of scrub, woodland and plantation and the control and eradication of 84 ha of invasive Rhododendron;
- Water retention structures and other works over 193 ha of vegetated peat surfaces and 314 ha of milled peat surfaces raising water levels to around 10 cm above or below ground level;
- Sphagnum and protective mulches applied to 314 ha with 5-10% peat-forming vegetation re-established within the first five years;
- Recovery plan with baseline ecology and hydrology, post-operation monitoring and final survey, analysis of results and report;
- Socio-economic impact and ecosystem functions restoration reports;
- Dissemination of key messages and results; and
- Networks established with similar LIFE and non-LIFE projects.
Restoring Humberhead Peatlands: LIFE+ Project

Project background

The Humberhead Peatlands NNR, located northeast of Doncaster, Yorkshire, is the UK’s largest lowland raised bog complex. It is part of the Natura 2000 network, consisting of several sites in two neighbouring areas: Thorne Moors (including the Goole & Crowle Moors) and Hatfield Moors. These sites are breeding sites for European nightjar (Caprimulgus europaeus).

Over the years, however, large amounts of peat have been removed from the edges of the central areas of these moors, changing their topography. Peat-forming vegetation only grows if water levels are within +/- 20 cm of the peat’s surface. However, the topographic changes mean achieving such a hydrological balance is a challenge. Water needs to be more efficiently drained from the milled areas during peak rainfall, while there is also a need for terracing across the peatlands to retain water during dry periods. In some areas, on older peat cuttings, work is also required to remove scrub and raise water levels to around ground level.

Project objectives

The main objectives of the Restoring Humberhead Peatlands project are to:

- Carry out conservation actions to restore lowland raised bog habitats and to establish a stable water table within +/- 20 cm of ground level across 3 273 ha, thus enabling peat-forming vegetation to re-establish on degraded peat bog surfaces;
- Link up areas of good quality habitat by increasing the general quality of the moors, allowing species to move between quality patches;
- Create large areas of bog habitat in favourable condition, ensuring suitable conditions for key species despite increasingly varied climatic conditions;
- Increase the European nightjar population by 15% from the current population of 80-88 territorial males; and
- Monitor bog recovery by water-level, data-logging and recording the re-establishment of peat-forming vegetation, and assess numbers of breeding European nightjar and key invertebrates.

Expected results

- 234 ha scrub removed on Hatfield Moors and 338 ha of invasive birch and rhododendron scrub removed on Thorne Moors, enabling the water table to rise to within 20 cm of the peat’s surface and allowing peat-forming vegetation to re-establish, achieving favourable Natura 2000 site conditions;
- 65 weirs, 67 peat dams and 5 800 m of bunds installed on Hatfield Moors to establish hydrological control;
- 16 tilting weirs, 225 peat dams, 7 900 m of bunds installed, and 2 300 m peat ‘cliff’ re-profiled on Thorne Moors to establish hydrological control;
- Installation of an automatically operated pumping station on Thorne Moors to prevent flooding, which would prevent peat-forming vegetation from re-establishing;
- Changes to European nightjar feeding patterns and a 15% population increase from 80-88 males to 92-101 males;
- Assessment of invertebrate populations in response to restoration; and
- Installation of additional water-level, data-loggers to monitor water levels.
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