



Best LIFE Nature projects 2014

BEST LIFE NATURE
PROJECTS



LIFE Nature

Environment



EUROPEAN COMMISSION ENVIRONMENT DIRECTORATE-GENERAL

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The contents of the publication "Best LIFE Nature Projects 2014" do not necessarily reflect the opinions of the institutions of the European Union.

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Foreword



Photo: Naturvårdsverket

Josefin Olsson

Policy Implementation
Department
Swedish Environmental
Protection Agency

This is the seventh year that the LIFE Nature Best Awards have been granted to the most exemplary projects financed within the framework of the European Union's LIFE programme. To increase the profile of the awards, this year they were presented alongside the winners of the LIFE Environment Best Awards at a ceremony at EU Green Week in Brussels.

It was a great honour to be asked to coordinate the process by which the National Focal Points of the Member States selected the 'Best of the Best' LIFE Nature projects. For the second year in a row, the winners included LIFE Information and Communication (LIFE INF) projects with a nature conservation theme, as Dirk Schaap explains below. We would like to thank our fellow National Focal Points for their contribution. The "Best of the Best" projects - from Bulgaria, Hungary, Romania and Spain, as well as a Greek LIFE INF project - demonstrate exemplary ways of using LIFE funding to restore habitats, conserve species and support biodiversity, in line with the goals of EU nature and biodiversity policy.



Photo: European Commission

Dirk Schaap

LIFE Information &
Communication "Best of the Best"
coordinator 2014
Netherlands Ministry of
Infrastructure and the
Environment

As National Focal Point for the Netherlands, I had the privilege of coordinating the selection process for completed LIFE Information & Communication (LIFE INF) projects. LIFE INF projects with a nature conservation theme were assessed according to the following criteria: nature conservation impact; relevance to environmentally relevant issues; quality of communication actions; multiplier effect; networking activities; innovative campaigning methods; impact on the target group; and their regional, national, or international impact.

Amongst the many outstanding projects, we identified four deserving of special recognition. We selected one "Best of the Best" project: a far-reaching awareness and education campaign about marine mammals in Greece. In addition, the three "Best" projects successfully communicated important messages about sustainable salmon fishing (Finland), the Natura 2000 network (Czech Republic) and alternatives to invasive alien plant species in horticulture (Belgium).

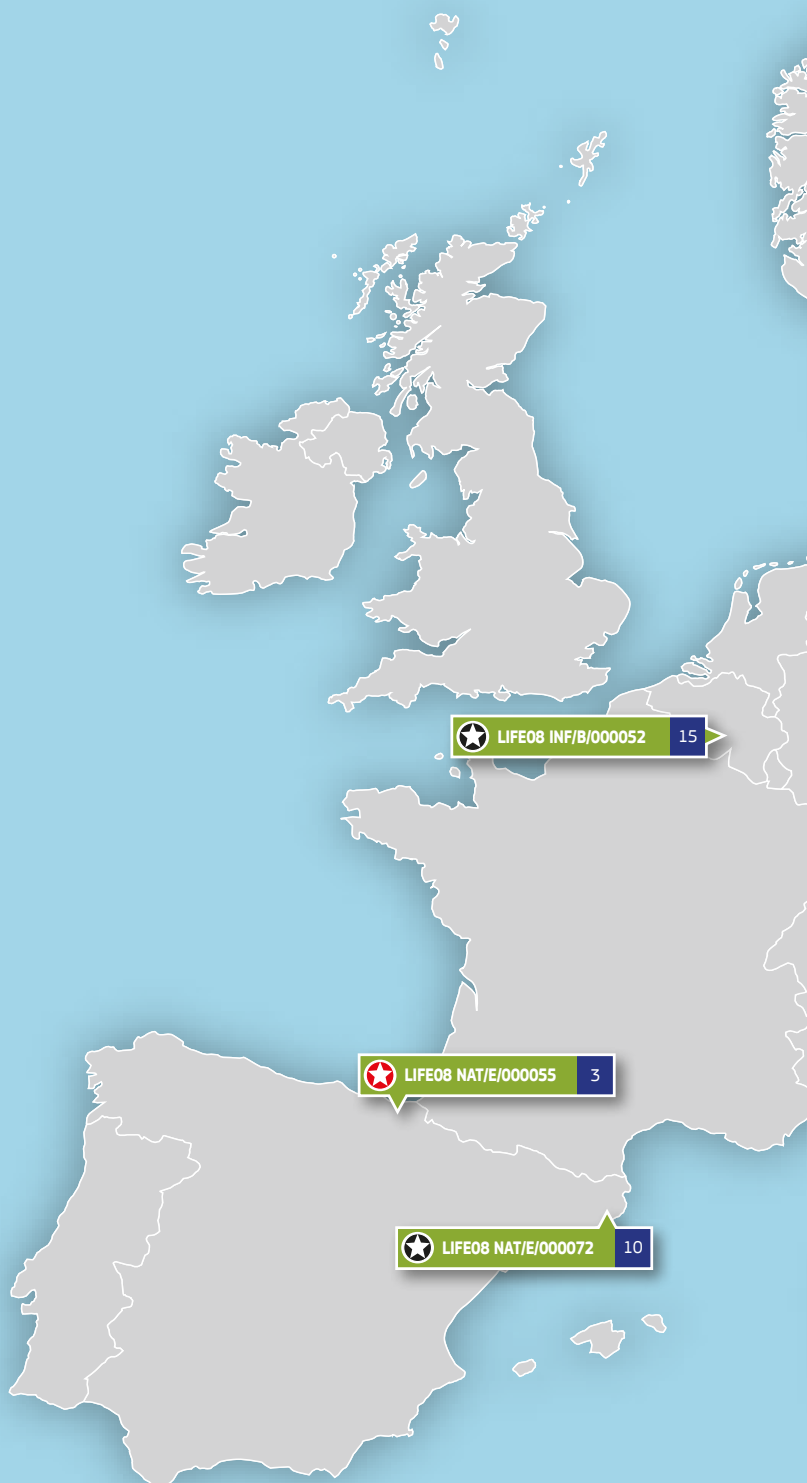
As well as having a profound impact in their own right, these projects serve as an example to those communicating nature conservation messages across the EU. More effective communication can multiply the impact of every euro spent on nature conservation, helping to safeguard the future of our natural capital.

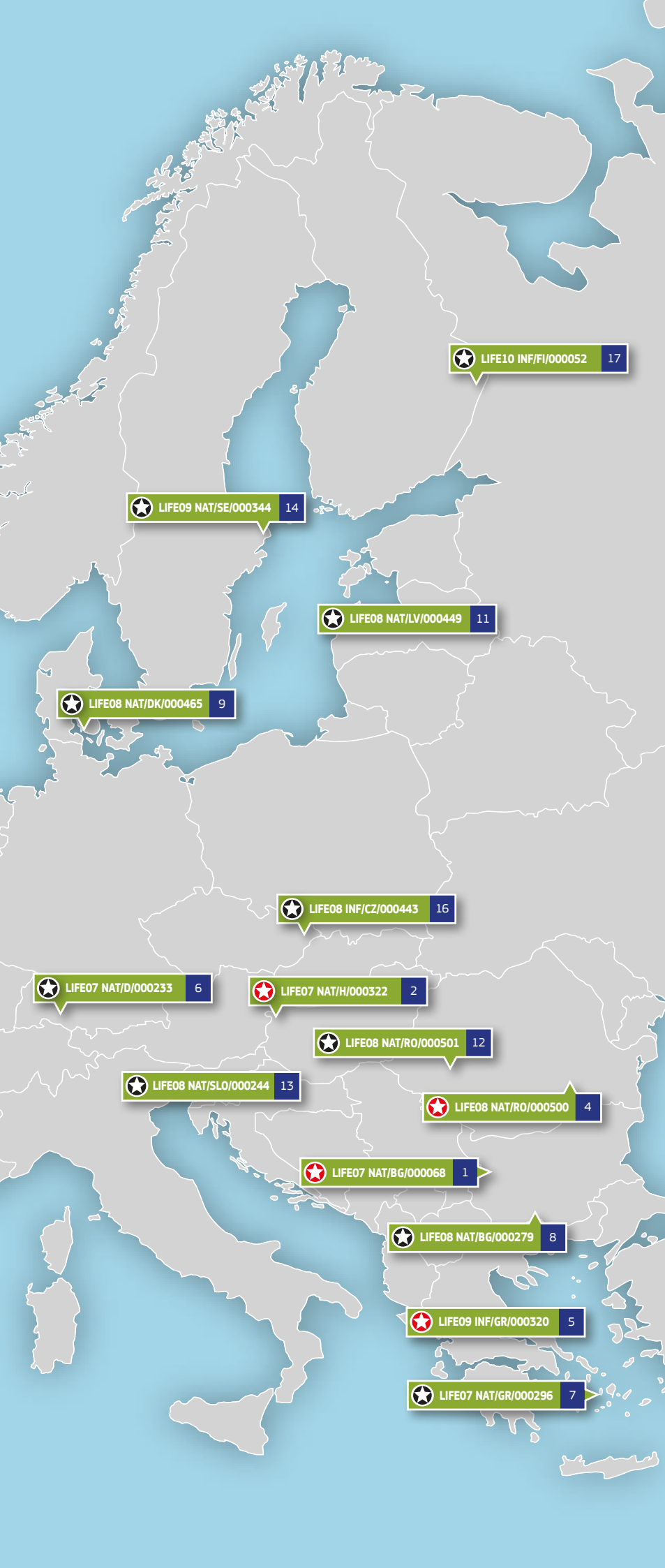


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LIFE NATURE BEST AWARD WINNERS 2014





BEST OF THE BEST PROJECTS

1 LIFE07 NAT/BG/000068

BSPB LIFE+ SAVE THE RAPTORS

Conservation of imperial eagle and saker falcon in key Natura 2000 sites in Bulgaria

4 LIFE08 NAT/RO/000500

URSUSLIFE

Best practices and demonstrative actions for conservation of Ursus arctos species in Eastern Carpathians

2 LIFE07 NAT/H/000322

CONVIPURSRAK

Conservation of Hungarian meadow viper (Vipera ursinii rakosiensis) in the Carpathian-basin

5 LIFE09 INF/GR/000320

Thalassa

Thalassa Campaign: Learn, Act, Protect/Awareness, Educational and Participation Campaign for Marine Mammals in Greece

3 LIFE08 NAT/E/000055

Estuarios del Pais Vasco

Restoration of habitats of Community interest in the Basque Country's estuaries



BEST PROJECTS

6 LIFE07 NAT/D/000233

ReHa Federseemoor

Restoration of habitats in the Federsee bog (ReHa Federseemoor)

12 LIFE08 NAT/RO/000501

CAPR

Conservation of Aquila pomarina in Romania

7 LIFE07 NAT/GR/000296

JUNICOAST

Actions for the conservation of coastal dunes with Juniperus spp. in Crete and the South Aegean

13 LIFE08 NAT/SLO/000244

SloWolf

Conservation and surveillance of conservation status of wolf (Canis lupus) population in Slovenia

8 LIFE08 NAT/BG/000279

BulPlantNet

A Pilot Network of Small Protected Sites for Plant Species in Bulgaria Using the Plant Micro-reserve Model

14 LIFE09 NAT/SE/000344

MIRDINEC

Management of the invasive Raccoon Dog (Nyctereutes procyonoides) in the north-European countries

9 LIFE08 NAT/DK/000465

TOTAL COVER HELNÆS

Restoring semi-natural habitat types to a total cover of site Helnæs

15 LIFE08 INF/B/000052

AlterIAS

Increase awareness to curb horticultural introductions of invasive plants in Belgium

10 LIFE08 NAT/E/000072

Riparia-Ter

Recovery of riparian habitats of the Ter river

16 LIFE08 INF/CZ/000443

INFOMS

Unified information and communication system for nature conservation in NUTS II Moravia-Silesia

11 LIFE08 NAT/LV/000449

Raised Bogs

Restoration of Raised Bog Habitats in the Especially Protected Nature Areas of Latvia

17 LIFE10 INF/FI/000052

Saimaan lohikalojen

Promoting sustainable salmon fishing practices on Lake Saimaa

The LIFE Best Awards

The LIFE Best Awards recognise exemplary projects that demonstrate good practice and the benefits of achieving results that can be replicated across Europe. The LIFE Nature Best Awards were presented at EU Green Week, whose theme this year was 'Nature – our health, our wealth'.



Photo: EC/Patrick Mascart

Winners of the LIFE Nature Best Awards 2014

The objective of the LIFE Nature Best Awards is to identify and raise awareness of those projects whose results, if widely applied, could have the most positive impact on the implementation of EU nature and biodiversity policy.

Where the winners come from

As Figure 1 shows, the 117 winners of the LIFE Nature Best Awards since their inception have come from 24 different EU Member States. Finland has had more winners (12) than any other country, closely followed by Spain (11) and Greece (10). Greece also ties first with Germany for most "Best of the Best" nature projects, with four apiece. All four countries are represented in the 2014 awards.

The selection of projects completed by the end of 2014 followed the procedure established in the first year of the awards (for projects completed in 2008). The external monitoring team (NEEMO) drew up a long list of candidates, based on project evaluations, followed by internal assessment of the most outstanding projects by the European Commission. From this list of "Best" projects, the National Focal Points jointly made a final selection of "Best of the Best" projects.

Project selection is based upon scoring of both short-term and long-term benefits. The former include conservation status improvement and short-term leverage effect; the latter: long-term sustainability, leverage effect, and regional/national/international impact.

Patricia Zurita, CEO of BirdLife International, presented the awards for the Best LIFE Nature projects. At the ceremony in

Brussels in June 2015, she praised the LIFE programme as a “catalytic fund that is making such a difference in terms of implementation of the [EU’s] nature directives.”

She said, “Tonight we are here to acclaim the exceptional work of 17 LIFE [Nature] projects from 13 different EU Member States. A wide range of species have benefitted from their work, from large carnivores to marine mammals, from raptors to reptiles, and smaller species that are easily overlooked [...] All of these are a huge, vital part of Europe’s rich biodiversity.”

Ms Zurita added that the importance of the habitats on which these protected species depend is brought home by the work of many of the evening’s winners: “The conservation of bogs, grasslands and other key habitats is not only good for nature, it is good for society thanks to the ecosystem services they provide: a source of material, cultural and spiritual sustenance.”

Five of the 17 projects were classed as Best of the Best. These were BSPB LIFE+ SAVE THE RAPTORS (pp. 7-9), CON-VIPURSAK (pp. 10-12), Estuarios del Pais Vasco (pp.13-16), URSUSLIFE (pp. 17-19) and Thalassa (pp. 20-23).

Citizens’ choice

Angelo Salsi, former Head of the LIFE Nature Unit (DG ENV) and now Head of the LIFE and CIP Eco-Innovation Unit, EASME, presented a plaque to the winner of the first LIFE Community Award for nature. The winner was chosen by



Angelo Salsi, Head of the LIFE and CIP Eco-innovation Unit, EASME, presents the first LIFE Nature Community Award to Ana Oregi Bastarrika, Minister of Environment and Territorial Planning of the Basque Government

public vote from the five “Best of the Best” projects. Estuarios del Pais Vasco received the most votes for its work to restore estuarine habitats in the Basque Country. The project’s actions to eradicate the invasive alien plant species sea myrtle (*Baccharis halimifolia*) are a valuable support for the implementation of the EU Regulation on Invasive Alien Species.

Mr Salsi took the opportunity to thank the people in the field carrying out LIFE projects. “They’re doing their best to make our Europe a much better place to live in [...] That’s where the real work is happening,” he said.

Fig. 1: LIFE Nature Best Project winners 2008-2014 by Member State

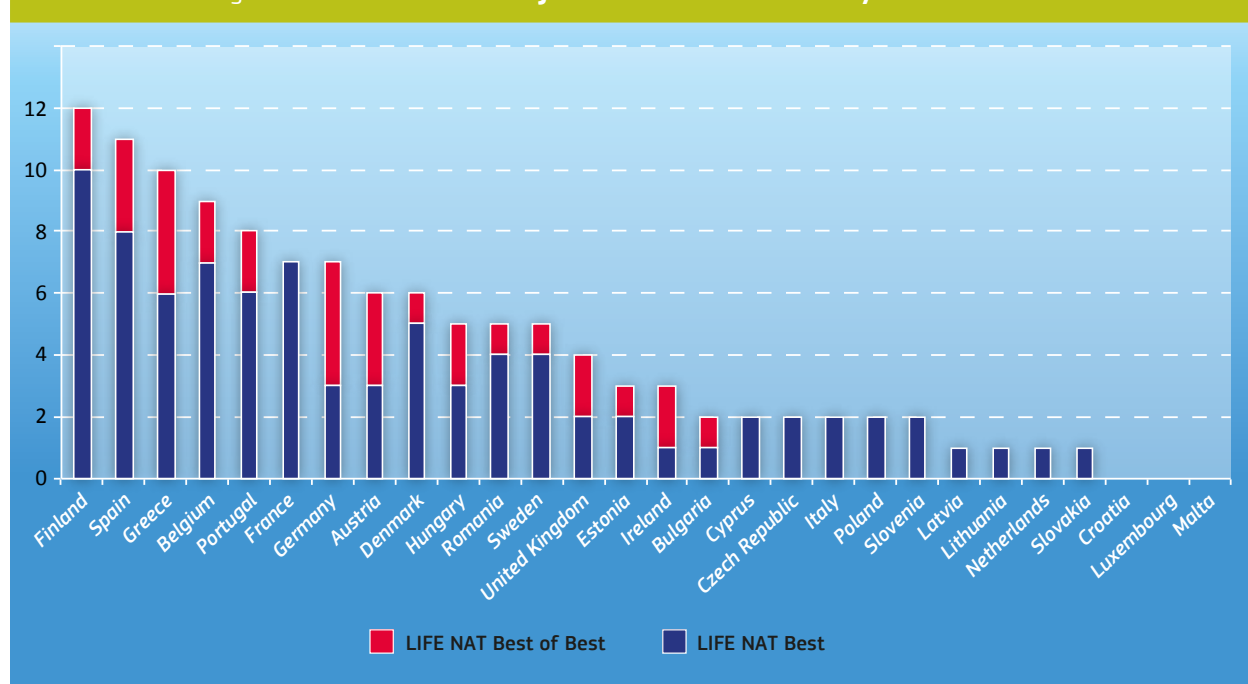




Photo: LIFE68 NATRO/000500/Despina Dragomir



BEST OF THE BEST PROJECTS

Bulgaria: Lifting the imperial eagle from the brink

A successful LIFE project has arrested the near terminal decline of the imperial eagle in Bulgaria by reducing threats, improving habitats and supporting novel ways of spreading the conservation message.



Photo: D. Gradinarov

Artificial nests and satellite tracking have helped improve the breeding success of the imperial eagle in Bulgaria

The imperial eagle (*Aquila heliaca*) is one of the rarest raptors in Europe. In Bulgaria, by 2007 there were just 20 breeding pairs, compared with an estimated near 2 000 pairs at the beginning of the 20th century. Widespread persecution (poisoning and shooting) of birds of prey in the 1960s and 1970s accelerated the decline. The imperial eagle, as a lowland inhabitant that is less wary of people than other raptor species, was particularly affected.

The project BSPB LIFE+ SAVE THE RAPTORS (LIFE07 NAT/BG/000068) was launched to improve the conservation status of the imperial eagle and the saker falcon (*Falco cherrug*), another raptor threatened with extinction in Bulgaria (see box). Project actions helped increase the number of breeding eagle pairs (to 25 by the end of the project, rising to 28 in 2015).

Early results influence direction

An important aspect of the project involved satellite tracking of imperial eagles. This helped the coordinating beneficiary (Bulgarian Society for the Protection of Birds - BSPB) improve its knowledge of the target species, particularly of wintering and breeding patterns. Tracking the birds' flight paths also reveals where they might experience persecution – 12% of tagged eagles were shot and 8% were poisoned. One young individual was believed to have been killed in Sudan, one of the southernmost areas of its range, which also stretches to Russia and the Baltic states in the north. Importantly, thanks to the satellite transmitters two poachers in Bulgaria who had killed eagles were sentenced and fined.





The tracking data proved invaluable from the early stages of SAVE THE RAPTORS. In fact, information about eagle movements led to a change in the focus of the project when the evidence showed that the majority of eagle fatalities were caused by collisions with electricity pylons. "Before the project we thought that it was shooting and poisoning, but then we realised that electrocution was the main cause of death," explains Stoycho Stoychev, the conservation director of the BSPB. In fact, the evidence from the project's tracking programme showed that up to two-thirds of young imperial eagles are electrocuted by overhead cables. As a result, BSPB "started to target the most critical sites," says Mr Stoychev.

This meant furthering an already established relationship with the electricity company that operates the mid-voltage power lines in south-east Bulgaria in order to insulate more poles than initially planned. The SAVE THE RAPTORS team was able to insulate 595 hazardous electricity poles within a 5 km radius of imperial eagle nests, nearly trebling the initial goal of 200 nests.

Moreover, the success of this collaboration has led the power company EVN Bulgaria Elektrorazpredelenie EAD and BSPB to develop a follow-up project, LIFE for safe grid (**LIFE12 NAT/BG/000572**). This foresees the insulation of more than 3 000 pylons and the rerouting of 50 km of cables underground in imperial eagles territories.

Habitat improvements

The imperial eagle population in Bulgaria has also been adversely affected by the impact of intensive logging of

A juvenile imperial eagle



Photo: Svetoslav Spasov

Saker story

Despite the best efforts of this LIFE project, the saker falcon is still extremely rare in Bulgaria. During the course of the project, it was observed only 64 times during the breeding season and the 50 aluminium and 30 wooden nesting boxes provided for the species were instead put to use by common kestrels, hobby falcons, ravens and buzzards.

single trees in lowland farming areas, which had reduced the number of suitable nesting sites. To address this problem the LIFE project planted around 6 000 poplar trees on 12.6 ha of land (some of which was purchased through the project). It also erected 37 artificial nests to meet immediate demand and help those juveniles that are inexperienced at nest building and for whom it is an energy-consuming process. Five of these nests are already occupied by young pairs breeding for the first time.

Imperial eagles feed on a range of prey from hedgehogs and hares to ravens and other smaller birds. The project specifically targeted its main hunting sites including open pasturelands, the habitat of the European souslik (*Spermophilus citellus*) – a small ground squirrel that represents a major source of food for the raptor. Much pastureland, however, has either been cultivated or abandoned over recent decades, adversely affecting the souslik and other wildlife. The project thus sought to maintain areas of pastureland through the purchase of flocks of sheep and a team of horses that are managed by the Fund for Wild Flora and Fauna, Bulgaria. Sheep farms were established in the regions of Sakar and Ponor totalling more than 700 sheep combined. Another partner, the Central Balkan National Park, cleared juniper trees from 50 ha of pasture land under its control.

Following meetings with government officials a new compensation measure was introduced for farmers who manage their land as pasture near eagle-breeding sites. So far around 20 farmers managing a total of 240 ha of agricultural land have applied for this subsidy, which is set at €324 per hectare. Moreover, the BSPB purchased 75.92 ha of riverside forests and pastures with souslik colonies for local farmers to manage in ways favourable for the imperial eagle.

Reviving visitor interest and local pride

The project supplemented these habitat improvement measures with the creation of three artificial feeding sites. The carcasses of local livestock and the remains of abattoirs are laid out for the eagles in fenced off enclosures to prevent jackals and wolves from feeding on them. At several of these sites, hides are being built as part of the After-LIFE



Photo: Svetoslav Spasov

The project has mobilised a network of volunteers to help guard eagles' nests during the breeding season

plan. Here, eager wildlife photographers will be able to take pictures of the imperial eagles feeding.

Such measures are part of the long-term strategy to encourage eco-tourism to the area.

Whilst a lack of official figures make it difficult to ascertain the exact number of visitors to the raptor regions, "tour operators tell us that there has been an incredible increase in the number of tours," says Svetoslav Spasov, the leader of the LIFE project. The owner of a hotel in Topolovgrad, near key breeding areas, has become an unofficial ambassador for the project, telling guests about the need for conservation and encouraging them to visit the town's imperial eagle exhibition centre. The centre, which was renovated under the project, welcomes foreign visitors and local schoolchildren alike, allowing them to learn about the endangered eagle, its feeding habits and flight paths.

The municipality of Topolovgrad, near the border with Turkey, continues to be a great supporter of the goals of the project, particularly due to the enthusiasm of Diana Georgieva, a former schoolteacher. She was instrumental in founding a festival of local produce – cheese, milk and wine – that fosters interest in the maintenance of pastureland and thus the conservation of imperial eagles. The festival has grown year on year; the third edition took place in September 2015.

Ms Georgieva taught at the town's school and some of her former pupils have also become involved in eagle conservation. From March to June, the BSPB organises a rota of guards for the breeding nests and a few ex-pupils have volunteered for this task in return for a small daily allowance. Volunteers are also coming to the project by less conventional routes. Mr Stoychev says that he asked one young chap to join its efforts after he misguidedly took a fledgling

from a nest and tried to care for it himself. He also mentions that someone who stole an egg to paint for Easter later participated in conservation measures.

These direct communication experiences were also matched by dissemination activities targeted at the media that helped raise the issue of raptor conservation on a national level, including a BSPB video on the imperial eagle. The project also trained around 400 teachers and 40 educationalists, as well as finding novel ways of communicating with young people, such as commissioning a graffiti artist to create a 20 m high mural on the front wall of a school building in Sofia.

Natura 2000 Award

The valuable work of the project has also been recognised at the annual Natura 2000 Awards. The BSPB won the 'Conservation' category in 2014 for its work 'Saving the imperial eagle from electrocution in Bulgaria'. A special awards presentation took place at the local produce festival in Topolovgrad.

Project number: LIFE07 NAT/BG/000068

Title: BSPB LIFE+ SAVE THE RAPTORS - Conservation of imperial eagle and saker falcon in key Natura 2000 sites in Bulgaria

Beneficiary: Bulgarian Society for the Protection of Birds/ BirdLife Bulgaria

Contact: Svetoslav Spasov

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Period: 01-Jan-2009 to 31-Dec-2013

Total budget: €2 046 000

LIFE contribution: €1 534 000





Hungary: Captive breeding helps in meadow viper conservation

LIFE's CONVIPURSAK project developed a captive breeding programme, restored vital habitat and raised awareness about the plight of the Hungarian meadow viper.



Photo: Bálint Halpern

CONVIPURSAK carried out captive breeding and release supported by habitat improvement actions to increase the Hungarian meadow viper population

Intensive farming practices and a decline in suitable grassland habitats have made the Hungarian meadow viper (*Vipera ursinii rakosiensis*) Europe's most endangered snake. Over the past half century it has disappeared from Austria, Bulgaria and Romania (though a new population was recently found in Transylvania) and numbers have been drastically reduced in Hungary, leaving just two small isolated populations in the country: at Hanság in north-west Hungary and Kiskunság in the plains between the Danube and Tisza rivers.

The plight of the species has been known for some time: it was granted protected status in Hungary in 1974. EU accession has given Hungarian organisations the opportunity to

access LIFE funds to support conservation work. As a result, the 2004-2007 LIFE project, HUNVIPURS (**LIFE04 NAT/HU/000116**), launched a captive breeding programme at the Hungarian Meadow Viper Conservation Centre, which was established on a small farm on newly restored habitat in Kiskunság. It also carried out an extensive habitat purchase and restoration programme.

The CONVIPURSAK project (**LIFE07 NAT/H/000322**) was set up to build on the successes of this initial project, increasing the population of Hungarian meadow vipers through continued captive breeding and direct release. The project also helped extend the viper's habitat by almost 400 ha, more than 80 ha of which was purchased and added

to the area controlled by the National Park administrations of Hanság and Kiskunság. On this land, project workers removed invasive alien plant species such as common milkweed (*Asclepias syriaca*) and tree of heaven (*Ailanthus altissima*) as well as trees from forestry plantations, in order to ensure the long-term continuation of grassland habitat for the Hungarian meadow viper. In cleared areas, the reseedling of grass also took place.

In total, the habitat reconstruction increased the area of continuous potential viper habitat to more than 1 600 ha in Hanság. At Kiskunság, the project purchased land in upper Peszéradacs meadows, the site of the main viper population. The CONVIPURSRÁK team drew up management plans for both of these park areas that included bans on the use of machinery and fertilisers, and obligations for tenant farmers to adopt extensive grazing practices.

Captive breeding

At the centre in Kiskunság, the work of breeding and tracking released individuals is continuing. Each new-born viper is photographed and the number of scales recorded. An ID card is then produced for each one, displaying its assigned number and visual markings.

A female viper can give birth on average to 10 offspring every year – however, the weight of the pregnant individual is measured and sometimes following several years of giving birth, the mother is unable to regain sufficient weight to produce a large number of young. In such circumstances,

the centre may decide not to mate the female the following year in order that she has greater time to bulk up again. But it depends on the individual; hence the centre keeps an updated database of the breeding history of the captured vipers. “Larger specimens are able to breed annually, so we pair them accordingly,” explains Bálint Halpern, who coordinated both LIFE viper projects.

The vipers are not released until they are two or three years old and fully grown in order to give them the best chance of survival. Moreover, they are released in “small groups so as not to attract the attention of foxes and badgers or harriers and buzzards,” says Mr Halpern. The target of 400 individuals released into the wild has now been reached (around 300 were released in the framework of the project).

Some of those released were implanted with radiotelemetry tags that allow the centre to track their movements and better understand the behaviour of the species. The tags are inserted surgically under anaesthesia a couple of months ahead of release. On release, the centre provides the snakes with an artificial burrow to aid their transition into their new surroundings. If such burrows were not provided, the released vipers would spend too long searching for burrows, increasing their exposure to the risk of predation from birds.

Mr Halpern and his team have nevertheless discovered through the radiotracking of individuals that the released vipers find the old burrows of rodents and rarely return to the artificially-created ones. Comparisons of movements

The captive breeding centre in Kiskunság

Photo: NEMO ELEGÉNC Évford





also show that individual vipers follow the established paths of other vipers, quite often spreading out in a radial pattern. Females often share the same burrows.

During the course of the project 43 released individuals were recorded among the 204 vipers detected, suggesting that the programme of reintroductions is working well. There is also evidence that these released vipers are reproducing.

Wide-reaching communication

A key aspect of the project and the ongoing work of the centre is the beneficiary MME BirdLife Hungary's cooperation with Budapest Zoo and the Schönbrunn Zoo in Vienna. Not only does Budapest Zoo provide the centre with several types of crickets to feed to the captured vipers, but it has also devoted exhibition space to the conservation needs of the species. The enticingly named 'House of Venom' at the zoo in Budapest allows visitors to learn about this native viper species on their doorsteps, see a few specimens up close and even touch one – well, the mounted embalmed body of one.

The zoo estimates that at least half of its annual one million visitors enter the snake house (which is also home to a

Komodo dragon). "It's quite an efficient way of doing communication, because when people come to the zoo they are open minded," enthuses Mr Halpern.

Not content with merely observing the enclosed individuals, interested parties and zoologists can arrange to visit the Conservation Centre at Kiskunság and see for themselves the conservation work that it is carrying out. To this end the centre introduced new education facilities under the recent LIFE project and now frequently welcomes school parties. Students also can help with the feeding and marking of the vipers. In this way, the project beneficiary is achieving its expressed goal of raising awareness of the endangered snake.

The project also produced two 25-minute documentary films, 'Aristocrat of Snakes' and 'Snake in the Hand', along with a 52-minute nature movie, 'Vipera Life, a serpent's tale', and a series of short films aimed at a general audience. Furthermore, the beneficiary gave more than 100 lectures across the country.

As a result of both LIFE projects, the future conservation status of the Hungarian meadow viper is looking more promising. In neighbouring Austria, land owners of viable habitats for the species have agreed to reduce the intensity of land use and the beneficiary is hopeful that reintroductions could begin within a few years. The CONVIPURSAK project team also visited known habitats in the Transylvanian region of Romania, resulting in 46 sightings, along with habitats of related subspecies of meadow viper in Moldova and France, and similar vipers in Ukraine and Croatia. The team were eager to further their understanding of how vipers are surviving.

Moreover, field studies of the viper's habitats in Hungary show that the restored grasslands are supporting Orthoptera (grasshoppers and crickets) and small mammals favourable for the species. The high diversity of Orthoptera – 50 species were found in the 10 known and potential habitats in Kiskunság – is a good indicator of the habitat quality, providing abundant food for the vipers.

A female viper can give birth to up to 10 offspring in one year



Photo: Bálint Halpern

Project number: LIFE07 NAT/H/000322

Title: CONVIPURSAK - Conservation of Hungarian meadow viper (*Vipera ursinii rakosiensis*) in the Carpathian-basin

Beneficiary: Magyar Madártani és Természetvédelmi Egyesület

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Period: 01-Jan-2009 to 31-Dec-2013

Total budget: €2 261 000

LIFE contribution: €1 670 000



Spain: Restoring estuarine habitats affected by invasive species

The **Estuarios del Pais Vasco** project removed extensive areas of an invasive plant species from three Natura 2000 network sites in the Basque Country. This enabled several habitats of EU importance to recover, benefitting native flora and migrating birds.



Photo: Basque Government – Department of environment and territorial policy

This LIFE project tackled the threat to estuarine habitats in the Basque Country from invasive alien plant species

Invasive alien species are a major threat to a range of habitats in the Basque Country. The most harmful of these is sea myrtle (*Baccharis halimifolia*), a native of the east coast of North America, which was introduced into Europe as an ornamental plant. This salt-tolerant shrub has successfully established in marshes, dunes, sea cliffs and other habitats all along the European Atlantic coast. It forms dense masses of vegetation that displace native flora, with implications for endangered species as well as reducing the capacity to deliver ecosystem services.

As part of its wider campaign against invasive species, the Department of Environment and Territorial Policy of the Basque Government initiated a LIFE project (**LIFE08 NAT/ES/000055**) to eliminate sea myrtle from three Natura

2000 network sites: the Biosphere Reserve of Urdaibai and the Lea estuary, both in Bizkaia province, and the Txingudi-Bidasoa marshes in Gipuzkoa province.

Building upon the findings of a pilot study in Urdaibai, the LIFE project demonstrated best practice methodologies on a large-scale to restore habitats affected by sea myrtle incursion; targeting six Annex 1-listed Habitats Directive habitats, including particularly vulnerable Mediterranean salt meadows. Furthermore, the project coordinated management efforts across the Basque Country, raised the awareness of the general public and other stakeholders about the problems caused by invasive plant species, and put in place a framework to further the project's objectives post-LIFE.





Specialist work

"Removing *Baccharis halimifolia* is specialist work, so it is not possible to use volunteers," says project manager Marta Rozas. "Very specific methods are required and the use of glyphosate herbicide means workers need permits. We worked with one forestry company throughout the project. They learned how to deal with this species, which is important for the continuation of the work in other areas." A team of five forestry workers did most of the shrub clearance in the Txingudi-Bidasoa marshes, with up to 35 working at Urdaibai.

The LIFE project's plan for eliminating the sea myrtle focused on preventing the female plants from producing seed. Flowering occurs from around September to November and the species is wind pollinated. "The male bushes have yellow flowers, and the female bushes have white flowers that appear about two weeks later," says the project's technical coordinator Estela Beteta, of associate beneficiary Ihobe. "It's one of the most productive plant species. Each female adult plant can produce up to one and a half million seeds. The seeds are very small and have a white tail. Most of them stay around one hundred metres from the plant, but they can travel up to five kilometres. On windy days, when there were big patches before the project, you could see seeds in the wind and it looked pretty impressive." This rain of seeds has now stopped in the project areas.

At the Bidasoa Islands in the Txingudi estuary, members of the LIFE project team explain the methodology used at all the sites. "These two Islands are one of most important project sites," says Ms Rozas. She holds up a picture to compare with the view across the water. The change in the landscape is dramatic. A dense thicket of 4 m high bushes all along the shore has been replaced by a mosaic of restored habitats, including reed beds.

Cutting and uprooting

On stepping ashore from the boat on one of the Bidasoa Islands, the scale of the work becomes evident. "In the first year, the trees were cut and a diluted herbicide was applied by brush to all the stumps," says Ms Beteta. Dead branches are piled up in some of the low-lying areas. Chemicals are necessary because of the high rate of regrowth. "The University of the Basque Country did experiments to prove the level of danger from the glyphosate herbicide used was low, with no risk to flora or wildlife," adds Ms Rozas.

The vast seed production means that there are a lot of seeds in the soil. "In the second year, the seeds germinated and formed very dense stands of little plants over the whole island. These were pulled out by hand," says Ms



Photo: Basque Government - Department of environment and territorial policy

Sea myrtle (Baccharis halimifolia) forms dense masses of vegetation that displace native coastal flora

Beteta. "When pulling the seedlings, it is very important to take out the whole root because if a little piece remains it can regrow. If the soil is dry it is difficult to do this, but if the soil is wet it is easier. So it is recommended to pull seedlings during the winter or on rainy days." If the seedlings are left to grow into their second year they are much more difficult to pull out, because of vigorous horizontal root growth.

Sea myrtle seed has a high germination rate and is viable for one or two years, with a small amount viable for longer. Therefore, a further year of seedling pulling was usually carried out. Vigilance is required for several years, however, as a few germinating plants can re-establish a new population. The plants grow quickly, gaining 30 to 40 cm annually, and reach sexual maturity in two years.

Restoring habitats and ecosystem services

After the seedlings are removed, bare patches of soil remain. Native species return in most cases, as they are present in the soil's seed bank. Ms Beteta points out at one location: "The first native species re-establishing here is orache (*Atriplex prostrata*), which colonises bare soil and so is the first stage of the natural restoration. Reeds are colonising the wetter bare soils." Other Key species for habitat recovery, such as sea rush (*Juncus maritimus*), common reed (*Phragmites australis*) and sea couch (*Elytrigia atherica*), have good recolonisation ability.

In areas where natural regeneration is weaker, however, the project planted around 9 500 seedlings of native shrubs and trees. Jon Zulaika, of the Provincial Council of Gipuzkoa, is carrying on the work, post-LIFE, on the islands, including the planting of seedlings in green protective sleeves. He points out French tamarisk (*Tamarix gallica*), the species most commonly planted here, and other species, including oak on higher and drier ridges.

Dense stands of sea myrtle cause a build-up of sediment, due to plentiful branching from low on the stem. In the marshes, this makes the land drier and less saline because the tide does not wash over it as much. This has a negative impact on habitat characteristics, biodiversity and other ecosystem services such as water regulation, with implications for flooding elsewhere in the estuary. Recovering habitats therefore also helps maintain the essential goods and services that the ecosystem provides.

"We calculated that during the project, in the three sites, we have cut more than 500 000 adult plants and have taken out five million seedlings," says Ms Beteta. "In the project areas, we treated 780 hectares in total."

An oasis for migratory birds

Changes in vegetation structure caused by invasive plants have a negative impact on migratory birds. In addition to sea myrtle, problem species include pampas grass (*Cort-*

deria selloana), saltmeadow cordgrass (*Spartina patens*) and pokeweed (*Phytolaca americana*). "We are on the border with the Pyrenees here," says Ms Beteta, pointing to mountains on the skyline. "Birds come from the north and pass here going to southern Spain and Africa, so a lot of bird species, around 250 every year, cross this area. It is very important for resting, nesting and breeding."

The endangered species particularly benefitting from the project's activities in the three areas include the aquatic warbler (*Acrocephalus paludicola*), which needs well-conserved reed beds, and Eurasian spoonbill (*Platalea leucorodia*). "Through the bird monitoring work at Txingudi, we know that the situation for birds on the two islands in the estuary is better than five years ago. There are more species and also a greater number of birds," says Ms Rozas.

LIFE Community Award

The Estuarios del Pais Vasco project won the very first annual LIFE Nature Community Award, at Green Week 2015 in Brussels; being chosen by the public vote amongst the Best of the Best projects featured in this brochure. The project team attribute this success to a campaign of mobilising supporters' votes, but mainly to their effective dissemination activities that raised the awareness of people throughout the Basque Country to the threats posed by invasive plant species. Various actions were targeted at the general public, local authorities and specialists, including a touring exhibition, on-site

The project cut more than half a million invasive sea myrtle plants and removed over five million seedlings

Photo: NEEVO EEE/G/Almhoa Darquistade





information panels, leaflets, educational visits to schools, lectures at the University of the Basque Country, and a technical symposium.

The LIFE project set up the 'International Commission for monitoring and exchange of expertise on *Baccharis halimifolia*', with representatives from the Basque Country regions, local administrations and France. "This is one of the most important results of the project," says Ms Beteta, "that we managed to involve further administrations and that they are now working with *Baccharis halimifolia* in other sites along the coast. The lessons learned during the project are now being applied in other places."

Arising from the International Commission was a technical manual on the control of sea myrtle, which outlined control methods for use worldwide. "Now we are producing post-LIFE a smaller publication especially for local authorities and forestry workers," says Ms Beteta. "The methodologies are expensive to implement, so it is very important to show how to apply them properly."

"Today it is not possible to buy *Baccharis halimifolia* at garden centres in Spain, because under Spanish law it is regulated as an invasive exotic species," says Ms Rozas. "In France, however, the plant is still cultivated in gardens." The project team is confident that sea myrtle will be one of the species covered by the new 'EU Regulation on Invasive Alien Species'. This will harmonise the legal situation across the EU and help in coordinating international efforts to manage this invasive species.

Dead sea myrtle branches and native species planted at Txingudi



Actions after LIFE

One of the other areas where the project's methods are being implemented is the coastal cliffs of the Jaizkibel Natura 2000 network site, in two priority for conservation habitats listed in the Habitats Directive: 'Dry Atlantic coastal heathers with *Erica vagans*' and 'Calcareous fens with *Cladium mariscus*'. These have recently been cleared of sea myrtle.

Bare soil areas are recovering naturally, helped by replanting. "Seed from the heather was collected, heated to 70-80°C for around three hours to simulate the fires that naturally stimulate germination, and the seedlings grown in our nurseries," explains Mr Zulaika.

Similarly, the nursery operated by the Provincial Council of Gipuzkoa has grown sawtooth sedge (*Cladium mariscus*) and the seedlings used on the Bidasoa Islands. The city authorities of Irun and Hondarribia are also collaborating in this pilot project. Meanwhile, plant nurseries operated by local authorities in other Basque regions are also being used to propagate native species for replanting.

"Unlike clearing *Baccharis halimifolia*, replanting can be done by volunteers," says Mr Zulaika. Parties of students have been planting sawtooth sedge alongside a stream that runs down a ravine to the sea, for example. A small dam has been installed to raise the water level, to encourage the small seedlings to establish.

The project has reduced the capacity for sea myrtle to spread along the Basque coast, and has mapped its distribution in other Basque Country estuaries to help prioritise future work. "One of the most important project outcomes has been to establish collaborations between the Basque government, regional and city authorities," concludes Ms Rozas: "Effective coordination and greater awareness within all these authorities will ensure that *Baccharis halimifolia* is controlled at the regional level."

Project number: LIFE08 NAT/E/000055

Title: Estuarios del Pais Vasco - Restoration of habitats of Community interest in the Basque Country's estuaries

Beneficiary: Department of Environment and Territorial Policy, Basque Government

Contact: Marta Rozas Ormazabal

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Website: www.euskadi.net/life_estuarios

Period: 01-Jan-2010 to 31-March-2014

Total budget: €1 853 000

LIFE contribution: €926 000



Romania: Learning to live with brown bears

URSUSLIFE helped maintain the population and conservation status of the Carpathian brown bear in Natura 2000 sites in three counties in Romania, mapping bear presence and habitats and taking practical steps to reduce coexistence conflicts.



Photo: Berde Lajos

This bear cub was injured when it was hit by a train. URSUSLIFE mapped potential hotspots for collisions and bear-human conflict in three counties of Romania

Romania is home to an estimated 40% of the total EU brown bear (*Ursus arctos arctos*) population. Around one-third - between 1 500 and 2 300 - of those bears are found in the mountainous counties of Vrancea, Covasna and Harghita in the south-eastern Carpathians. The Environmental Protection Agencies of the three counties joined forces with two NGOs (Association for Biodiversity Conservation and Association for Conservation of Natural Values) to deliver a highly successful LIFE project that built on the earlier work of the Vrancea Environmental Protection Agency - including the LIFE projects Vrancea 30/11/2005 (**LIFE02 NAT/RO/008576**) and Carnivores Vrancea II (**LIFE05 NAT/RO/000170**), which focused on brown bear, wolf and lynx conservation..

"We have learned from the first two projects: it's a natural growth," says project administrator Ioan Mihai Pop, "We wanted to enlarge the area in which we were working, but

there was too much work involved in dealing with three large carnivores across three counties. "We asked which is the most problematic from an administrative point of view and we assessed it was the bear," recalls Mr Pop. The brown bear thus became the focus of the URSUSLIFE project (**LIFE08 NAT/RO/000500**), which carried out a number of targeted actions as part of its wider objective of brown bear conservation. One of the most important of these was identifying a new method to estimate the size of the bear population.

How many bears?

The URSUSLIFE team produced a set of 'Guidelines for estimating the brown bear population size'. Targeted at wildlife managers, they focused on non-invasive methods that gave a realistic idea of population abundance, such as monitoring of presence signs on road transects, camera trapping and monitoring of females with cubs. During the project, pres-

ence signs were recorded across 850 km of transects and more than 360 camera traps were set (these were active for 1 800 days in total). The Guidelines were approved by the Romanian Ministry of Environment and Climate Change and are now being incorporated into a national action plan being developed under the auspices of an ongoing LIFE project (LIFE FOR BEAR - **LIFE13 NAT/RO/001154**). “We tried to include measures in the guidelines that are not too complicated...taking the good parts of the existing method and improving it,” explains Mr Pop.

Tackling habitat fragmentation

Another aspect of URSUSLIFE focused on methods for preventing the degradation and fragmentation of brown bear habitat. Relevant field data were collected and centralised in a GIS database and core bear areas mapped. With this baseline information, the project was able to use spatial modelling to identify potential ecological corridors between these core habitats. Eleven areas were identified as priority sites for action in future conservation or restoration of ecological connectivity. These corridors were correlated with the road and railway network in order to generate complex maps representing the cumulative effect of ecological barriers. These were used to highlight the potential threats to the connectivity of the Natura 2000 network sites in the project and other areas of high quality habitat. Simpler versions of the maps raised public awareness of the threats bears face.

The project installed 124 non-lethal systems for protecting livestock and crops from bear damage. Increased use of electric fences by farmers not participating in the project showed the power of good example



Mapping bear dens

Another important action to reduce bear mortality involved mapping bear dens. The project recorded a total of 76 dens and 64 den areas in a GIS database, allowing the data to be correlated with other GIS models. “If someone wants a logging permit, we can look at the maps and see if there is a den. If there is a den, the permit is refused,” explains Mr Pop. The maps also help game managers avoid disturbing bears during hibernation.

Analysis of the data showed a significant increase in habitat fragmentation. This has informed a ‘Practical guide for preventing brown bear’s habitat degradation and fragmentation and ensuring the connectivity of Natura 2000 network sites in Romania’ that was published by the project.

Preventing bear-human conflict

The project installed 124 protection systems (some 30 per year) around sheepfolds, cattle farms, crops and beehives. The systems - consisting of an electric fence, plus audio, visual or olfactory deterrents - were a demonstration action to encourage other farmers to adopt such non-lethal methods of reducing bear damage.

“Bears have seasonal movement related to the distribution of food resources,” explains Mr Pop. “In the summer they stay up in the mountains; in the autumn they reside in the beech and oak forests lower down. The transition area in between is typically where conflicts occur. There are plums and other fruit, corn, animals they can eat; they can escape if they have to, the forest is close. The transition areas are very good places to get fat for the winter.”

Each installed system was monitored and instances of bear damage recorded to optimise the protection of apiaries, crops and livestock. Results fed into a methodology for the implementation of protection systems, published by the project.

“In almost all the areas in which we put electric fences, in the next year another farmer got at least one electric fence. It was the power of good example,” says Mr Pop. “The hard part was persuading farmers to return the fences!” The URSUSLIFE team is expanding use of protection systems in the ongoing project WOLFLIFE (**LIFE13 NAT/RO/000205**). It is also lobbying the Romanian government to support a nationwide protocol for their use.

To complement the protection systems and ensure bear-human coexistence, the project established a team for the analysis of risks raised by the presence of bears in inhabited areas. This Risk Assessment Team (RAT) was called in 52

Bear scare

Ioan Mihai Pop highlights the challenge of relocating 'problem' bears: "We put in this cage the first female that we trapped during the URSUSLIFE project, in 2011. One female and two cubs in the same cage. We were driving them through the city and they were making a lot of noise and everybody was wondering what was going on. The cubs were fighting because it was such a small space and the vehicle was rocking like a boat!"



Silviu Chiriac shows the cage in which injured or 'problem' bears are transported to the bear rehabilitation centre in Lepsa village

times across the three counties because of damage caused by bears. Lessons from the cases investigated informed a Methodology for assessing risks related to bear presence.

The RAT also worked closely with the Animal Mobile Rescue Unit (ARMU) established by the 2005 LIFE project, Carnivores Vrancea II to relocate 'problem' bears and rehabilitate injured ones. During URSUSLIFE, ARMU expanded its range to cover the three counties where the project worked. At RAT's request ARMU relocated a total of nine bears away from inhabited areas. The rescue unit also intervened in 17 cases of bears captured in illegally-placed snares.

Injured adult bears are taken to a bear rehabilitation centre in Lepsa village and released back into the wild as soon as they are fit enough. "Usually after one day," explains URSUSLIFE project manager, Silviu Chiriac. Orphaned or abandoned cubs are taken to a Centre for Orphan Bear Rehabilitation run by the Association for Nature Values Conservation. Thanks to LIFE, the capacity and effectiveness of this centre has been increased. A total of 37 orphaned or abandoned bear cubs were 'rewilded' by this rehabilitation centre during URSUSLIFE. For rehabilitation to be a success you have to ask "does the bear you have put back into the population behave like a 'real'

animal? Is it reproducing?," explains Mr Pop. "Several females that have been taken to the centre have been observed with cubs since they were rehabilitated," he says.

Bear-friendly products

To lessen negative attitudes toward bears and Natura 2000 amongst local people, the project established a 'bear-friendly' label to promote local products made in peaceful coexistence with brown bears.

"We want to help the people from this area add value to their activities and this was the solution: to join the bear with pastoral activity," explains Mr Chiriac. Makers of crafts, clothes, cheese and other produce participate in the scheme. "These are all local suppliers who make the products to order. It's artisanal: you telephone and they make it," he says.

Many awareness-raising activities focused on young people, with good results. More than 2 000 children took part in a picture competition run by the project, for instance. Attitude surveys of local people were conducted at the start and end of URSUSLIFE. The result was "an improvement in the area in which we worked intensively on communicating with the public," says Mr Pop.

Lessons and legacy

The project's actions improved coexistence and have led to a slowdown in the decline of the brown bear population and an expansion of brown bear habitat in Romania. Guidelines and methods are now being implemented more widely. "With our experience in rehabilitating animals people call us from other NGOs, other environmental protection agencies. If they have problems with lynx, deer, bears or whatever, they ask us what they should do," notes Mr Pop. The project team has also applied lessons from LIFE to a transboundary large carnivore conservation project with partners in Hungary and Ukraine. Lessons from URSUSLIFE are also being applied in its own work on WOLFLIFE, such as the need to involve hunters more in conservation activities.

Project number: LIFE08 NAT/RO/000500

Title: URSUSLIFE - Best practices and demonstrative actions for conservation of *Ursus arctos* species in Eastern Carpathians, Romania

Beneficiary: Vrancea Environmental Protection Agency

Contact: Silviu Chiriac

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Website: www.carnivoremari.ro/lifeursus

Period: 15-Jan-2010 to 20-Dec-2013

Total budget: €515 000

LIFE contribution: €386 000





Greece: Spreading the word on marine mammals

LIFE Thalassa successfully combined awareness raising, environmental education and participatory actions to engage people in efforts targeting the protection of marine mammals in Greece.



Photo: Frédéric Larrey/Thomas Ro

A Mediterranean monk seal swimming in the sea off Greece

Thalassa was a sea goddess in Greek mythology, and is the Greek word for “sea”. It is also fittingly, the abbreviated title of the LIFE Information and Communication (INF) project addressing marine mammals (whales, dolphins, porpoises and monk seals) and their natural habitats in Greek seas.

Fourteen different threatened or critically endangered European marine mammal species, included in Annex IV of the EU Habitats Directive, have been recorded in the Greek seas. Of these, nine species are especially significant, as they live permanently in these waters. They include the Mediterranean monk seal (*Monachus monachus*), the bottlenose dol-

phin (*Tursiops truncatus*), Risso's dolphin (*Grampus griseus*), Cuvier's beaked whale (*Ziphius cavirostris*) and the sperm whale (*Physeter macrocephalus*).

The long-term viability of the populations of the targeted seals and cetaceans, however, is in imminent danger from human-related activities (see box). The most notable threats are from illegal fishing, collisions with ships (both intended and accidental), and ingestion of solid debris. The dangers vary according to the species type. Latest scientific data for Mediterranean monk seals, for instance, indicates, the two main environmental problems are accidental entanglement in fishing gear (bycatch) and deliberate killings.

Human-related threats

In the last two decades, 1 460 cetaceans have been reported stranded on the Greek coasts, and a total of 147 animals have died due to human activities:

Thirty-one Cuvier's beaked whales died as a consequence of the extended use of military low frequency sonar; whereas for dolphins the cause of death was accidental entanglement.

For eight sperm whales, the cause of death was collision with large vessels. Another study, on the stomach content of seven cetaceans, showed that two animals died from the ingestion of plastic bags and debris.

Source: MOM website, www.mom.gr

The LIFE Thalassa project (**LIFE09 INF/GR/000320**) sought to increase awareness amongst the Greek population about marine mammal species, their importance for marine ecosystems, the imminent threats they face, and the conservation actions necessary to ensure their long-term viability. It also aimed to establish a more active and environmentally-friendly attitude and behaviour amongst the target audiences and key stakeholders, to better manage the marine environment.

'Learn, Act, Protect'

The "Thalassa Campaign, Learn, Act, Protect" was coordinated by MOM/ the Hellenic Society for the Study and Protection of the Monk seal. The non-governmental organisation was established in 1988, by a team of scientists from the University of Athens, including Panagiotis (Panos) Dendrinis, MOM's general coordinator, and the project's scientific advisor. The NGO's work involves research, drafting and implementing conservation strategies and management plans for the species, lobbying for the establishment of protected areas, surveillance and the guarding, rescue and recovery of injured seals. The World Wide Fund for Nature (WWF) Greece was an associated beneficiary of the project and there were two further partner organisations, the Pelagos and Tethys research institutes.



Photo: P. Dendrinis/MOM

LIFE Thalassa has helped increase awareness of the striped dolphin (Stenella coeruleoalba) and other marine mammals amongst the Greek population

Thalassa was "the first organised information campaign in Greece about all marine mammals," says Mr Dendrinis, explaining that this is especially significant, because unlike many other countries, Greece doesn't have a long tradition of dealing with such species. "We wanted the general public to know more about the marine mammals. People knew in general that there were seals and dolphins, but, they didn't know, for example, that there are these different species of whales and dolphins and that some of them are resident species, that is, they live all their lives in Greek waters," he notes.

Key target audiences

The project ran from September 2010 to December 2013. Its two main target audiences were 18-35 year-olds and schools and schoolchildren and their teachers. Numerous campaigning tools were produced for both the groups. An Internet campaign was at the heart of the awareness actions targeting

'Hope' for recovery of monk seals

Researchers in Greece, the main stronghold of the Mediterranean monk seal, a species classed as 'critically endangered' by the IUCN, have been involved in the gathering of scientific data for the species. According to MOM's Panos Dendrinis (a marine biologist and monk seal expert), there is "hope" for the monk seal, which was last assessed in 2008 (IUCN, 2010): "At the moment its conservation status remains 'critically endangered', but we have evidence that the Mediterranean monk seal is recovering in Greece, and

that its population is expanding to other eastern Mediterranean countries," he says.

There were thought to be around 300 individual monk seals in Greek waters, he notes, explaining that the latest data, however, indicate there has been a "slight increase in recent years". "More and more animals are appearing near human settlements, which means we have more information about them," he says, adding: "The situation is still fragile of course. But, there is hope for these animals."





18-35 year-olds. This involved the development of material for a range of still novel (in 2010) social media channels, including a Facebook page, blog, YouTube and Vimeo channels, and Flickr and Twitter accounts. "This age group is more open to new ideas, so this kind of communication and information campaign is more effective," comments Mr Dendrinou.

In addition, the project developed awareness-raising tools for the wider Greek public. These included: leaflets, print ads, two TV and radio spots, a documentary and information videos, posters and banners, and at the heart of the campaign, the project website. Thalassa also published eight issues of an e-newsletter, printed hundreds of T-shirts and distributed promo material at outreach events, including two project open days.

To reach the other main target group, children in nursery and primary schools, high school students and their teachers, the project developed an environmental education campaign. This included an educational 'Thalassa Kit' and a dedicated student's 'Thalassapedia' website. "When we started we went into many schools in Athens and throughout Greece and on the islands," says Mr Dendrinou. "Many of these students are now adults and it seems this educational campaign has played an important role in helping people to accept marine mammals – that they can happily live alongside us, and that we must do something to protect them," he adds.

The Thalassa campaign also targeted authorities and decision-makers from the local to the European level, including members of the Greek Parliament and Greek Members of the European Parliament. Here, the tools developed included a Greek marine mammal conservation handbook, factsheets



Photo: MOM

An environmental education campaign targeting young children has played an important role in increasing acceptance of marine mammals

for the MPs and MEPs, and an electronic 'capacity-building kit'. The project organised seminars in 22 cities in Greece (plus one in Brussels), attracting 1 000 attendees from merchant, marine and navy academies, local and port police authorities, veterinary and fishery services and municipalities, as well as politicians.

The project targeted key stakeholder groups. Accidental entanglement with fishing lines is a major cause of dolphin mortality



Photo: V. Paravas/MOM

Raised awareness

To assess the impact of the project, the Thalassa team conducted 'before' and 'after' public opinion surveys in 2010 and 2013. The latter poll showed greater awareness amongst the Greek public of the existence of the marine mammals and need for their protection, compared with the start of the project. For instance, awareness of the existence of the nine resident marine species rose from 82% to 84%. Amongst the main target group, (18-35 year-olds), there was a "clear improvement" with awareness rising from 80% at the start, to 91% in 2013. Moreover, following TV and radio spots depicting the bottlenose and Risso's dolphins, awareness jumped from around 13% to 35%.

The polls also highlighted an improvement in people's knowledge of the threats faced by the species. For example, awareness of the problem of collisions with boats rose from 47% to 56%, and of the dangers from ingestion of plastic bags and other rubbish from 83% to 91%. Both of these issues were highlighted in the Thalassa print media campaigns. Some 80% of those polled said they would stop consuming fish that are smaller than the legal size (up from 71% at the start of the project); whilst 77% said they would avoid throwing rubbish into the sea (compared with 70% in 2010).

Public opinion sea-change

Meanwhile, in spite of the upheavals that have taken place in Greece since the LIFE Thalassa proposal was drawn up (2009), Mr Dendrinis says that awareness of, and support for, these animals is growing. Admittedly, he says, "On some of the islands now [i.e. those at the forefront of the EU migrant/refugee crisis] you may encounter some negativity, as they face bigger issues..." In general, however, he is optimistic, observing that Greek society is "becoming much more open" towards marine conservation. A number of factors have played a part in this, he says, citing, for example, environmental educational programmes (for raising aware-



Photo: P. Dendrinis/MOm

The project beneficiary focuses significant resources on the recovery of injured seals

ness globally on environmental issues), and also attributing a part of the public's sea-change to Thalassa's work.

Finally, he expresses his appreciation of the support for nature conservation work in Greece provided by the LIFE programme over the past two decades, and believes that winning a Best of the Best award will benefit MOM both internally and externally: "This is very positive for us. It's recognition for all the people who have worked on the project. It will also, hopefully, help us to secure more partners and funding opportunities in future."

*“We share the same home,
let's learn to live together”*

Thalassa campaign slogan

Did you know?

- The Mediterranean monk seal looks like it has a permanent liquid mask around its eyes, because physically the species is not able to lead [channel] its 'tears' from the edge of the eye to the nose
- The bottlenose dolphin can jump over the water surface to a height that equals three times its length (i.e. up to eight metres)
- The sperm whale's brain weighs eight kilos and is the largest in the animal kingdom

Source: Layman's report LIFE09 INF/GR/000320

Project number: LIFE09 INF/GR/000320

Title: Thalassa - Thalassa Campaign: Learn, Act, Protect/Awareness, Educational and Participation Campaign for Marine Mammals in Greece

Beneficiary: MOM/Hellenic Society for the Study & Protection of the Monk Seal

Contact: Panagiotis Dendrinis

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Website: www.thalassa-project.gr

Period: 01-Sep-2010 to 31-Dec-2013

Total budget: €1 343 000

LIFE contribution: €667 000





Photo: LIFE08 NAT/SLO/00024/White Wolf



BEST PROJECTS

Germany: Protecting bogs and Bronze Age heritage

The ReHa Federseemoor project has rewetted drained bog areas in south-west Germany with multiple benefits for species, habitats, local heritage and climate change mitigation.



Photo: Jost Einstein

Re-naturalising the Wildes Ried

The Federsee bog covers a 2 920 ha area of Baden-Württemberg, making it the largest bog in south-west Germany. Home to rare animal and plant species - including more than 10 species of orchid - the Natura 2000 network site contains all fen ecosystem stages, from open lake to large lowland fen complexes and raised bog areas, as well as other habitat types listed in the Habitats Directive.

The LIFE ReHa Federseemoor project (**LIFE07 NAT/D/000233**) set out to improve the conservation status of Natura 2000 site habitats by rewetting drained areas of the bog, with the twin goals of habitat restoration and carbon sequestration. By the end of the project it had succeeded in covering more than 200 ha of moorland with water again.

In the northern part of the bog, the Nördliches Federseeried, some 15 km of drainage ditches were completely filled in, whilst a further 16 km of ditches were closed using selectively-inserted peat plugs, permanently rewetting around 100 ha. In the same area, the project team reshaped a 2.1 km stretch of two streams - the Seekircher Aach and Brasenberger Bach - transforming them from canalised waterways to near-natural meandering condition. Some 72 ha was re-naturalised through water-logging in the Wildes Ried.

Renaturalisation plan takes off

One of the key project actions saw the re-naturalisation of an airfield for gliders that was located in the southern part



Photo: Kerstin Wernicke

The project carried out restoration work in all weather

of the bog. The project purchased the 10 ha site and then set about removing the runway, demolishing hangars and other buildings and restoring all areas (clearing trees and shrubs and covering gravel sites with peat). As a result of this work, which took place during 2009 and 2010, by 2014 the first typical wetland plants were reappearing on the site.

The permit for rewetting this area was delayed after objections from a nearby landowner, but it was finally granted two days before the end of the project. This allowed remaining ditches to be blocked in April 2014. The main ditches had already been blocked and fish passes constructed for the European weather loach (*Misgurnus fossilis*). It took a lot of work to persuade agricultural land users that re-flooding the area was the best way forward. "Creating transparency through regular meetings and publicity work and taking the time to talk to people was crucial," says project manager Stefan Schwab.

The newly rewetted area of some 15 ha includes a privately-owned area, bought decades ago by the Forschner family to protect Bronze Age archaeological finds. As a result, the project saw close collaboration between the project team and archaeologists to ensure that no digging took place in archaeologically-sensitive areas. This meant that no sites were damaged during the project, which contributed to the area becoming a UNESCO World Heritage site in 2011. In fact, the raised water levels are actually helping to preserve Bronze Age relics in the peat layers from mineralisation, something that has made more stakeholders and the wider local community accept large-scale rewetting measures.

Other actions included the restoration of a chalk spring fen in the Federsee nature reserve, leading to increased numbers of targeted mollusc species (*Vertigo angustior* and *Vertigo geyeri*). The project removed vegetation and the upper degraded peat soil layer at some sites, before spreading

seeds from nearby, non-degraded areas of the Federsee to initiate the growth of typical wetland habitat vegetation. Ongoing monitoring will identify the most suitable seed donor sites. Invasive alien plants such as Canadian goldenrod (*Solidago canadensis*) and Himalayan balsam (*Impatiens glandulifera*) were removed from all areas in which the project worked. Ongoing management of restored areas has been secured through grazing agreements with farmers, which are continuing post-LIFE.

Wetland species return

Protected wetland bird species are already taking advantage of the habitat improvements. Significant numbers of common snipe (*Gallinago gallinago*) and Eurasian curlew (*Numenius arquata*) have been observed for the first time in many years. Ruffs (*Philomachus pugnax*) and a corncrake (*Crex crex*) were other new visitors, whilst 2014 saw four pairs of breeding lapwings (*Vanellus vanellus*), for the first time in decades.

A new viewing platform constructed by the project will allow more visitors to enjoy these and other such new arrivals, while having less impact on the ground.

The white stork (*Ciconia ciconia*) is one of the bird species making use of the habitat restored by the project



Photo: Josef Einstein

Project number: LIFE07 NAT/D/000233

Title: ReHa Federseemoor – Restoration of habitats in the Federsee bog (ReHa Federseemoor)

Beneficiary: Regierungspräsidium Tübingen

Contact: Stefan Schwab

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Website: www.nabu-federsee.de/index.php?page=111

Period: 01-Jan-2009 to 31-Mar-2014

Total budget: €1 305 000

LIFE contribution: €652 000



Greece: Conserving coastal dunes with junipers

The combination of new and traditional solutions is helping to preserve protected coastal habitats in Greece.

“Don’t cut juniper tree branches... collect your rubbish... walk on established paths... avoid lighting fires ...” These direct, common-sense messages form part of the code of conduct produced by the JUNICOAST project (LIFE07 NAT/GR/000296), which focused on the conservation of coastal dunes with juniper species (*Juniperus spp*) in Greece.

The project, which was coordinated by the Mediterranean Agronomic Institute of Chania (MAICh), promoted the long-term future of this priority for conservation habitat in coastal areas of Crete and the South Aegean. This particular habitat typically comprises juniper species of different forms whose vegetation may overlap with other coastal habitat types. Special ecological conditions make coastal dunes with juniper species important in terms of biodiversity, since they host several rare or endemic flora and fauna species.

In recent decades, this habitat has become increasingly threatened by human activity such as unsustainable recreational activities, fire and wood cutting (often linked to a lack of awareness), as well as problems of restricted natural regeneration.

Lack of conservation measures

Until the LIFEJUNICOAST project, there were no active measures to improve the conservation status of the habitat in Crete and the South Aegean. Significantly, there was also a lack of

knowledge amongst local communities and business sectors, e.g. tourism, of its value and of the threats to its continued survival.

Thus the project’s main aims were fourfold: to contribute to the consolidation and dissemination of a knowledge base for the protection, restoration, monitoring and evaluation of coastal dunes with junipers; to better understand, quantify and halt the natural and anthropogenic threats; to design and implement steps for protection and long-term restoration; and to provide support for better environmental governance in 17 selected Natura 2000 network sites through stakeholder involvement and training.

As well as the beneficiary and partners – including the Department of Botany of the University of Athens (NKUA) and the forestry units of Chania and Lasithi – JUNICOAST also involved an independent scientific committee and a consortium of local stakeholders and community groups. The former included academics as well as hospitality/tourism professionals from Greece, Malta and Ontario, Canada who met four times over the course of the project. Their role was to evaluate the scientific actions and findings. In addition, the project arranged regular meetings with different stakeholder groups, representing particular economic sectors and the general public.

Work began in Crete to collect baseline data such as: land form and land degradation processes in dune systems; dune system plant community composition and structure; and the composition and structure of plant populations. The project also began mapping habitats, carried out visitor impact assessments and began stakeholder consultations. The JUNICOAST partners established long-term monitoring protocols and indicators and succeeded in establishing governance structures and the legal status of the protected habitat.

Targeting the main threats

Following this preparatory work, the project carried out conservation measures in Crete, targeting the main natural and anthropogenic threats to species typical of the habitat. In parallel, the project implemented national information and

Project information board and boardwalk on the island of Gavdos





Photo: Ilektra Remoundou

Coastal dunes with *Juniperus* spp on the island of Naxos

training workshops, public awareness and environmental education campaigns to promote the conservation of the habitat in the South Aegean. Awareness-raising activities extended as far as site visits for school groups and novel ways of engaging local communities and visitors in habitat conservation. For example, a code of conduct encouraged the idea of collecting rubbish and placing it in bins provided outside of the habitat boundaries. Project workers engaged in on-site dialogue with campers to dissuade them from camping in sensitive areas. Another innovative dissemination activity was a bilingual (English-Greek) video and book designed to engage young children by telling the story of the journey of an anthropomorphic grain of sand on coastal dunes with juniper.

Cretan and national successes

JUNICOAST was successful at both regional and national levels. The preparatory actions provided important insights, for instance, into the geomorphology of coastal dunes in Crete and of the dune system plant communities and *Juniperus* spp.

population composition and structure. The nationwide public relations campaign should help in the conservation of this priority habitat throughout Greece.

The project conducted the first in-depth description and characterisation of coastal dunes with junipers in four Natura 2000 sites in Crete, significantly increasing knowledge of the habitat in the process. It also implemented the first conservation and dissemination actions in the context of a specific geographic area. The initiatives at all four sites included demarcation of the habitats, waste removal, enhancement of juniper regeneration and the restoration of the floristic composition and structure of the target habitat on 239.31 ha.

George Kazakis, the project manager says that recognition as a Best LIFE Nature Project is “a reward for all the partners of the project and all those who directly or indirectly contributed to its implementation and its successful completion. It is confirmation that our objectives and management system were relevant and valid.”

Small fence to protect *Juniperus* individuals and to enhance *Juniperus* regeneration



Project number: LIFE07 NAT/GR/000296

Title: JUNICOAST - Actions for the conservation of coastal dunes with *Juniperus* spp. In Crete and the South Aegean (Greece)

Beneficiary: Mediterranean Agronomic Institute of Chania

Contact: George Kazakis

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Website: www.junicoast.gr/

Period: 01-Jan-2009 to 31-Aug -2013

Total budget: €1 501 000

LIFE contribution: €1 126 000



Bulgaria: Engaging local support for plant flora network

BulPlantNet successfully demonstrated the plant micro-reserve model in Bulgaria for the first time. Many experts as well as local people helped to develop this network of small protected sites.



BulPlantNet pioneered the application of the plant micro-reserve concept in Bulgaria

Plant micro-reserves (see box) are areas of less than 20 ha that are of high nature value in terms of either plant richness or the presence of rare species. A preliminary analysis of the state of Bulgaria's threatened and rare plants revealed 299 species in need of urgent conservation action that fulfilled the requirements for conservation in a micro-reserve.

With this in mind, the BulPlantNet project (**LIFE08 NAT/BG/000279**) ran from 2010-14. It was coordinated by the Institute of Biodiversity and Ecosystem Research of the Bulgarian Academy of Sciences (the project beneficiary) and also involved other researchers and experts, various stakeholders and NGOs, as well as representatives of local communities. Its overall goal was to halt species loss and to promote conservation of plant biodiversity, with a particular focus on the country's endemic (flora) plant species - or those of European interest - with fragmented populations and located outside existing protected areas.

To achieve this, the project aimed to test the plant micro-reserve concept through the designation of a network of small protected sites targeting a total of 47 plant species. Other aims were: to draft action plans for the target plant species; to implement in-situ and ex-situ conservation; to develop a long-term strategy for the sustainable development of the network; and to increase overall awareness and engagement of the value of conserving biodiversity in Bulgaria.

Plant micro-reserves

The concept of a 'plant micro-reserve' (PMR) is an approach for in-situ conservation of small areas rich in endemic, rare and endangered plant species that are located outside existing protected areas (e.g. Natura 2000 network sites). The idea originated with support from LIFE in Valencia, Spain in the early 1990s.



The project involved ex-situ cultivation of target plant species. Seeds of selected species have been stored at the national gene bank

Twice as many reserves as planned

The project was very successful. At the end of the project period (March 2014) it had selected, inventoried and monitored 62 small sites for the conservation of the 47 selected species, and submitted 62 proposals for the designation of these sites to the Ministry of Environment and Water. From these, 58 have been officially designated as small protected sites (micro-reserves) under Bulgarian legislation and incorporated into the Natura 2000 network. This is almost double the initial target of 30 sites.

The beneficiary also succeeded in drafting action plans for the next 10 years for each of the target plant species (47 action plans, covering a total area of 1 006.6 ha). These have been officially endorsed by the ministry and the 47 plant species are now included in the national biomonitoring system – enabling the implementation of appropriate measures in the event of adverse impacts. Seeds of selected species have also been deposited for ex-situ conservation at the national gene bank in Sadovo.

A team effort

According to project manager, Dimitar Peev, teamwork was crucial to establishing the new network of small protected sites. “Many people were involved in its creation: researchers, experts from the ministry and its regional inspectorates, local forestry units, members of NGOs, local mayors and other people who helped us in various ways.”

To facilitate the creation of the network, the project organised numerous meetings between experts, local decision-makers and communities, supported by a print and online communi-

cation campaign and some 80 noticeboards informing people about the plant species.

Prof. Peev believes the support of local communities is of, “crucial importance” for nature conservation. “Without their understanding and involvement, our network would have been much less effective in the preservation of plant biodiversity. The good will and help of local stakeholders is also extremely important both for the establishment and the persistence of the network of small protected sites,” he says, adding that the project encountered unexpectedly high interest, welcome and readiness to help from local communities. “We are deeply grateful for this support,” he affirms.

The long-term outlook for the plant network is good: “The small protected sites (micro-reserves) are legally protected. They continue to be subject to monitoring,” says Prof. Peev. There is also potential to enlarge the network, both within Bulgaria – through the possible inclusion of other endangered plant species found in the country that meet the criteria of the PMR concept – and in the other countries in the Balkan region, whose flora has evolved in similar conditions.

*Thanks to the project, 58 micro-reserves have been created and officially designated as small protected sites, helping to conserve 47 endemic plant species such as *Astracantha thracica**



Project number: LIFE08 NAT/BG/000279

Title: BulPlantNet – A Pilot Network of Small Protected Sites for Plant Species in Bulgaria Using the Plant Micro-reserve Model

Beneficiary: Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences

Contact: Prof. Dimitar Peev

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Website: http://life-s-kay.com/en_home.php

Period: 01-Jan-2010 to 31-Mar-2014

Total budget: €504 000

LIFE contribution: €228 000



Denmark: Securing the long-term future of priority habitats on Helnæs

The project carried out vital restoration measures in Denmark for five habitat types identified as being in danger of further deterioration.



An aerial view of target habitats on Helnæs

Helnæs, an island off the south-western coast of Funen, Denmark, is home to several priority for conservation habitats, including those located in the Natura 2000 network site of *Maden på Helnæs og havet vest for*, which stretches from the Bobakkerne hills to the north to Helnæs Made in the south. These semi-natural habitats, which are listed in Annex I of the Habitats Directive, were in need of restoration, however, and the TOTAL COVER HELNÆS project (**LIFE08 NAT/DK/000465**) was set up to focus on a 340 ha area.

The habitat types targeted by the project were species-rich *Nardus* grasslands on silicious substrates in mountain areas (and submountain areas in Continental Europe); *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinia caerulea*); alkaline fens; Atlantic salt meadows (*Glauco-Puccinellietalia*

maritimae) and semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*). These habitats have an unfavourable conservation status and are threatened by the overgrowth of trees and shrubs and fragmentation.

The first goal of the project was to increase the size of these habitats in the Natura 2000 site, which it achieved with the addition of nearly 70 hectares (from 66 ha to 135 ha). Such habitat restoration measures were moreover shown to benefit the flora and fauna these habitats support, in particular the fen orchid (*Liparis loeselii*), which, as its name suggests, grows in fens, bogs and dune slacks. Habitat for this yellow-flowering plant increased from 1 ha to 8-10 ha, a result that led to a significant increase in the size of bird populations observed in the area.



The project also improved or created habitats for the northern crested newt (*Triturus cristatus*) and natterjack toad (*Bufo calamita*) – for example, it established 23 ponds, eight more than foreseen. The natterjack toad population was further strengthened by the release of a large number of young individuals in August.

Management and restoration

In order to carry out its planned actions, the project purchased 75 ha of land and secured long-term agreements for a further 9 ha. Such agreements were often secured through a land consolidation process in which owners of land within the Natura 2000 site were compensated with areas outside the Natura 2000 network. This land swap process represented one of the greatest challenges of the project, says Annita Svendsen, the project leader, but, “the implementation of sustainable land management in the area is helping secure the long-term future of the habitats.”

Restoration work included actions to improve hydrological functioning on 60 ha at Helnæs Made. To manage project sites, 30 km of fencing was either erected or restored. These fences enable grazing to take place on 240 ha by a herd that includes five cows purchased with LIFE funds. Amongst the area being grazed is 21 ha of land that the project team cleared of trees, bushes and alien species (*Rosa rugosa*) to allow typical vegetation to recover.

The project actions have helped improve the connectivity of the habitats on the site and thus the species targeted by the project. Such restoration also helped fulfil some of the goals of the Water Framework Directive: the nitrogen output into the Little Belt strait was reduced by around 6 tonnes per year, and carbon dioxide emissions from the Helnæs Made area have been eliminated due to the raising of the water level. The increased water might even increase the formation of peat in the area in future and thus allow it to function as a CO₂ sink.

The project helped boost natterjack toad numbers through habitat improvements and restocking



Photo: Bert Wiklund Foto

Mowing helps restore the integrity of restored grassland habitats

The project has also delivered long-term benefits for the fen orchid, in the form of management guidelines for the species, produced in collaboration with Aarhus University. These are the first such guidelines and will be useful for the management of areas containing the fen orchid both at Helnæs and elsewhere.

Natural capital

TOTAL COVER HELNÆS has shown how robust cattle breeds (e.g. Highland cattle) can improve the cost-effectiveness of grazing, particularly in winter. This has encouraged cooperation between nature conservation authorities and Highland cattle breeders that is expected to increase opportunities for grazing of the project area. Indeed, one of the demonstration values of the project has been to increase awareness amongst the local farming community of the opportunity to access a range of agri-environmental subsidies to sustain the long-term management of the project areas.

The project areas are some of most visited sites in western Funen and their conservation presents new opportunities for green tourism. For instance, two conference centres on the island highlight this natural heritage in their marketing material.

Project number: LIFE08 NAT/DK/000465

Title: TOTAL COVER HELNÆS – Restoring semi-natural habitat types to a total cover of site

Beneficiary: Nature Agency/Naturstyrelsen

Contact: Annita Svendsen

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Website: <http://eng.naturstyrelsen.dk/nature-protection/nature-projects/life-helnaes/>

Period: 01-Jan-2010 to 30-Jan-2014

Total budget: €2 530 000

LIFE contribution: €1 265 000



Spain: Coordinated river conservation in the Ter basin

Four years of well-designed and delivered habitat recovery actions around Spain's Ter river have been recognised by the LIFE Nature Best Awards. The Ter is the longest river in the Pyrenees-Mediterranean hydrographic network.



Photo: Consorci del Ter

One of the new lagoons that the project created in the Ter basin

The LIFE Riparia-Ter project (**LIFE08 NAT/E/000072**) holds interesting demonstration value because the majority of natural European landscapes can be found along the Ter basin in Catalonia (see box). It takes in a wealth of landscapes thanks to the river's geography, range in altitudes (some 2 400 m difference in elevation between lowest and highest points), and wide variation of microclimates. The basin stretches across a region where landscapes characteristic of three important biogeographic regions meet - the Continental, Mediterranean and Alpine.

Some 60 local authorities were involved in LIFE Riparia-Ter, which boosted their ability to conserve wildlife that relies on different parts of the Ter river basin. Part of the reason for the project's accolade as a Best LIFE Nature initiative can thus be attributed to its success in coordinating territorial-scale approaches to nature conservation.

Ponç Feliu, from the coordinating beneficiary, Consorci Alba-Ter, notes that the Riparia-Ter project has improved riparian forests that, for a variety of reasons, had been badly damaged in recent decades. "We have also been able to create

new small marshes and lagoons that have helped many endangered species such as amphibians, birds, water plants and pond turtles," he says.

Beneficial impact

Four main sites were targeted for LIFE support within the basin, all of which are designated part of the Natura 2000 network. The project actions concentrated on restoring the conservation status of riparian habitats and establishing long-term measures that will better harmonise use of the river basin by humans and nature.

A good example of such sustainable development practice saw LIFE co-finance being used to help re-establish vigorous, well-structured riparian woodlands. Native species typical of riverside habitats were given priority, especially those species that provide food, shelter or nesting sites for wildlife.

Treatment of the woods and riverside also took account of the existing plant communities and their condition, the presence of dead wood, plus the presence of urban areas and infra-



structure. Actions in alluvial forests included selective logging, tree thinning, scrub clearance, grazing management and control of exotic species, as well as managing human access to areas determined to be most at-risk of damage by vehicles or people.

Removing unwanted guests

Much of the project's efforts were invested in controlling invasive alien species. An in-depth study assessed the most effective and economically-viable methods for tackling such species. These methods were then put into practice to remove invasive box elder (*Acer negundo*), tree of heaven (*Ailanthus altissima*), black locust (*Robinia pseudoacacia*), Japanese privet (*Ligustrum japonicum*) and giant cane (*Arundo donax*) so that riverside habitats could recover.

Although the project produced good results in mitigating threats from invasive species, its endeavours highlighted the fact that this type of nature conservation work can be relatively costly. Management systems are required that both train and secure commitments from the necessary stakeholders. Protocols developed for these techniques in controlling invasive species are available on the project's website.

Improvements to the river basin's riparian woodlands saw more than 7 000 specimens of native trees being planted, enabling them to recover areas that had been colonised by invasive species. Supplementary planting also encouraged denser growth in other deteriorated areas. It was necessary to obtain certified native seedlings, to guarantee optimum adaptability and survival, and these were collected in nearby areas. Around 500 students from local municipalities took part in the tree-planting activities.

Overall, the project led to the recovery of 75 ha of intended river forest habitats. Forest management and the control of invasive alien species also benefitted other habitat types in the area, such as holm oak woods, pine woods and dry meadows.

In addition to this concrete conservation work, "the project had a very important focus on raising stakeholder awareness through

A river basin rich in biodiversity

The Riberes del Baix Ter Natura 2000 network site covers nearly 13 km² along 74 kilometres of the Ter river. It encompasses some important examples of riparian woodland and river habitats and is also a vital area for the shelter and nesting of endemic birds.

Key habitats include alluvial forests of alder (*Alnus glutinosa*), white willow (*Salix alba*) and white poplar (*Populus alba*) and temporary Mediterranean ponds. These are home to protected species such as the European otter (*Lutra lutra*), European pond turtle (*Emys orbicularis*), stag beetle (*Lucanus cervus*), western spadefoot toad (*Pelobates cultripes*), Iberian chub (*Squalius pyrenaicus*), European eel (*Anguilla anguilla*), black-crowned night heron (*Nycticorax nycticorax*), little bittern (*Ixobrychus minutus*), lesser spotted woodpecker (*Dendrocopos minor*), common kingfisher (*Alcedo atthis*), and barbel (*Squalius laietanus*).

Photo: Consorci del Ter



talks, exhibitions and other actions," says Mr Feliu. "These involved many local municipalities, towns, cities, schools and NGOs."

The benefits of this stakeholder engagement were clearly demonstrated after a fire broke out on one of the river islands towards the end of the project, destroying much of the work done. With the support of volunteers and the local community, the works were successfully continued beyond the duration of the LIFE funding.

The project recovered some 75 ha of river forest habitats



Photo: Consorci del Ter

Project number: LIFE08 NAT/E/000072

Title: Riparia-Ter - Recovery of riparian habitats of the Ter river

Beneficiary: Consorci Alba-Ter (Alba-Ter Consortium)

Contact: Ponç Feliu

Email: gerencia@consorcidelter.cat

Website: www.liferipariater.com/

Period: 01-Jan-2010 to 31-Dec-2013

Total budget: €929 000

LIFE contribution: €465 000



Latvia: Restoring raised bog habitats

This wide-ranging project is bringing degraded raised bogs back to life in four Natura 2000 network sites. The very successful restoration measures are already starting to produce results.



Photo: Māra Pakalne

The Rožu Mire, one of the protected areas where the project restored degraded raised bog habitats

Bogs are one of Europe's rarest and most threatened ecosystems. Several bog and mire habitats are listed as priority for conservation in Annex I of the Habitats Directive. They store large amounts of water, thanks to several mire plants and peat moss (*Sphagnum*). The latter can absorb large volumes of water and act as a carbon sink by taking in CO₂ and depositing it in the peat layer as it decays. There are 36 known species of *Sphagnum* in Latvia.

Active raised bogs are important habitats for other plant species and birds occurring throughout Latvia. However, because of drainage for peat extraction, forestry and land reclamation, thousands of hectares of these important habitats dried out and were destroyed in the early and mid-20th century, resulting in the disappearance of many bird species.

The Raised Bogs project (**LIFE08 NAT/LV/000449**) was implemented by the University of Latvia in collaboration with the Latvian Fund for Nature and the Association of Documentary

Film and Photography ELM MEDIA. Bringing together botanists, zoologists, hydrologists, geologists, cartographers and building engineers, the project aimed to restore some of these raised bogs and to re-establish a healthy habitat for bird species such as the boreal owl (*Aegolius funereus*), the white-fronted goose (*Anser albifrons*), and the crane (*Grus grus*).

Raising the groundwater level

Building almost 150 dams to block the drainage ditches was an essential part of the restoration process. The dams brought the groundwater, which was measured twice per month at 63 monitoring wells, up to a new stable level. Changes in the hydrological regime of the mire could already be observed at all four project sites during the first vegetation season after the dams were built in 2012. Formerly dry ditches filled up with water and cotton grass (*Eriophorum vaginatum*) and feathery bog-moss (*Sphagnum cuspidatum*) recovered more and more ground. Ultimately, the project successfully restored a total of



488 ha of raised bog habitat, exceeding its original target by nearly 200 ha.

The four Natura 2000 sites where works were carried out include the Aizkraukle Mire, which is part of the 1 532 ha Aizkraukle Mire and Forest Nature Reserve, established in 1999. Raised bog and transition mire takes up almost half of the area. Pristine broadleaf forests with lime and ash trees grow on undisturbed mineral soil islands. The surrounding mire provides a stable microclimate for many rare species of bryophytes, invertebrates and birds that are sensitive to changes in growing conditions.

The Aklais Mire covers 2 003 ha and encompasses a variety of habitats such as raised bog, dystrophic bog lakes, bog woodlands, fens, transition mires and several natural forest habitats. The mire is home to numerous protected species of plants, including eight bryophytes and one lichen species, as well as rare bird species such as the crane (*Grus grus*), black grouse (*Tetrao tetrix*), western capercaillie (*Tetrao urogallus*), and European golden plover (*Pluvialis apricaria*).

The 991 ha of the Rožu Mire, given protected area status in 1987, is largely made up of raised bog habitats, which feature plant species such as feathery bog-moss, round-leaved sundew (*Drosera rotundifolia*), white beak sedge (*Rhynchospora alba*), bog rosemary (*Andromeda polifolia*) and cranberry (*Vaccinium oxycoccos*) and birds such as the European golden plover, wood sandpiper (*Tringa glareola*) and osprey (*Pandion haliaetus*).

The fourth site project was the Melnais Lake Mire, a 317 ha reserve near Latvia's capital city Riga. The mire today covers only a fraction of its original area, the majority of which fell victim to peat extraction that still continues close to the border of the nature reserve. Melnais Lake in the middle of the reserve is surrounded by natural bog vegetation such as feathery bog-moss, Rannoch-rush (*Scheuchzeria palustris*) and crowberry (*Empetrum nigrum*). Some 17 bird species included in Annex 1 of the Birds Directive have been spotted on the reserve, which is a resting spot for many species during migration.

To ensure the continued and sustainable conservation of the sites, the Raised Bogs project team developed management plans and regulatory documents for all four mires, which were approved by the Latvian government.

Melnais Lake Mire restoration area



Photo: Māra Pakalne



A drainage ditch in Rožu Mire after restoration

Getting the public involved

The project implemented extensive awareness-raising measures, producing five booklets as well as a 244-page book on raised bog management in Latvia. The team organised 10 seminars, targeting different stakeholder groups and produced a documentary film called, *Mires uncovered*. A photo exhibition entitled *Secrets of the mires* travelled to 30 libraries and schools around Latvia, informing citizens about the value of mires and raised bogs as well as the Natura 2000 network and LIFE projects.

"For Latvia and its raised bogs, the LIFE programme is a very positive influence," says project manager Dr Māra Pakalne of the University of Latvia. "LIFE has granted me as well as other colleagues the opportunity to study mires. Without EU-financed projects, the possibilities for mire research and restoration in Latvia are rather limited, although they are a priority for conservation habitat in Europe."

Conserving and restoring this valuable habitat can also serve as a model on which to build raised bog restoration projects in other countries where raised bogs have been all but lost.

Project number: LIFE08 NAT/LV/000449

Title: Raised Bogs - Restoration of Raised Bog Habitats in the Especially Protected Nature Areas of Latvia

Beneficiary: University of Latvia

Contact: Dr Māra Pakalne

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Website: www.purvi.lv/en/

Period: 01-Feb-2010 to 31-Aug-2013

Total budget: €727 000

LIFE contribution: €545 000



Romania: Conserving the lesser spotted eagle

The CAPR project helped protect nests in several key breeding sites and cut deaths due to electrocution by power lines, thus improving the conservation status of this rare raptor.

The lesser spotted eagle (*Aquila pomarina*) breeds mostly in central, eastern and south-eastern Europe. The worldwide decline of the species is closely linked to the degradation of its nesting habitat; in the EU, the lesser spotted eagle is listed in Annex I of the Birds Directive. Romania is one of the most important nesting grounds for this eagle; the country hosts an estimated 2 000 pairs, representing 22.2% of the EU population.

The aim of LIFE's CAPR project (LIFE08 NAT/RO/000501) was to stabilise the lesser spotted eagle population in Romania and establish the conditions for maintaining a favourable conservation status in the long term. Work began in 2010 and was carried out by the Sibiu Environmental Protection Agency along with its partners, the Milvus Group (a bird and nature protection association) and the Romanian Ornithological Society.

The team implemented management measures at three key Natura 2000 sites. These included the development of buffer zones, setting up barriers on forest roads and diverting tourist paths to protect nesting areas. The project also repaired some nests and even built artificial ones, whilst a number of power lines were insulated to reduce bird deaths caused by electrocution.

Key threats to species

The main threats to the eagle's survival in Romania come from aggressive forestry practices and electrocution by power lines in nesting or breeding areas. The species prefers to nest in mature deciduous forests (generally oak), near pastures, wet plains and agricultural lands large enough for it to find food.

Human activity nearby tends to interrupt the nesting process and cause the birds to abandon their nesting ground; forestry work also reduces the available area of favourable habitat. Other activities such as construction at the edge of the forest, the use of off-road vehicles and illegal grazing can cause disturbances, whilst hunting, poisoning, nest destruction and egg harvesting reduce the number of birds.



Photo: Sebastian Bugariu
A juvenile lesser spotted eagle

A further threat to the lesser spotted eagle comes from changes to its feeding habitat. The species mainly eats meadow mice but occasionally feeds on frogs, lizards, snakes, crickets and large green grasshoppers. Habitat changes include the conversion of arable land to monocultures, the cultivation of unfavourable crops (such as corn and rapeseed) instead of those which encourage the bird's prey (e.g. oats, barley and wheat), the emergence of fallow land with invasive species, and the disappearance or degradation of pastures.

Targeting nest disturbances

The CAPR project targeted 12 Natura 2000 network sites (SPAs) across Romania, covering 853 627.9 ha of land and containing 26.6% (532 pairs) of the country's population



Preparing an artificial nest

of the lesser spotted eagle. The most important conservation work was carried out at three key breeding sites in the centre of the country - Dealurile Târnavelor-Valea Nirajului, Podișul Hârtibaciului and Piemontul Făgărașului.

The project team identified 805 nests of raptor species at these sites, of which 72 were occupied by lesser spotted eagles. This survey work was carried out from autumn to spring when the birds were wintering in Africa to avoid disturbing them: it had to be done annually as they change nests or build new ones every year. Lesser spotted eagles were also observed when they were hunting or gathering building materials for their nests; identifying the places where they left or entered the forest meant the locations of new nests could be established.

CAPR created buffer zones in 82 areas in cooperation with forest owners and/or managers to protect the identified nests, marked out by inscribed plates attached to trees. In most cases, these proved effective at restricting forestry activities close to the nests and have been integrated in the management plans of the SPAs. The team also installed 20 barriers on forest roads in the three sites, restricting access during the nesting season and protecting 23 nests, as well as diverting some tourist paths and installing 100 warning plates on tourist trails which helped protect 26 nesting grounds.

Other protection measures

During the project, harsh winter weather damaged a number of nests whilst some trees collapsed. Consequently, the team repaired and stabilised 116 natural nests and mounted 101 artificial nesting platforms (made of metal and disguised with branches) at several locations in the three main sites. Another innovative project action involved the insulation of 1 286 medium-voltage power lines in the key breeding sites. This measure proved to be a great success, reducing bird mortality due to electrocution by 90%.

As well as reducing disturbances, the project *cut direct persecution* of lesser spotted eagles in the 12 SPAs and helped improve the sites' conservation status. Awareness-raising activities included informing over 1 000 landowners in Romania about lesser spotted eagle protection and the importance of species-friendly pastures and other management activities. The project also engaged with more than 2 000 students in schools near the three key SPAs, as well as over 350 stakeholders such as local authority employees, foresters and hunters.

Action plans

One of the most significant outcomes of the project was its publication of habitat management guidelines and a National Action Plan for the lesser spotted eagle. "The first National Action Plan with concrete conservation and monitoring actions for the species was developed and approved by the Ministry of Environment as part of our project," explains project manager, Camelia Proca. "This represents a commitment of the Romanian government to ensure the favourable conservation status of *A. pomarina* is maintained as well as to allocate the necessary funding for this purpose."

The project's findings have fed into an update of the European Action Plan for the lesser spotted eagle, carried out in cooperation with a Slovakian LIFE project for the conservation of the species (**LIFE09 NAT/SK/000396**). The updated plan is due to be published in late 2015.

Project number: LIFE08 NAT/RO/000501

Title: CAPR - Conservation of *Aquila pomarina* in Romania

Beneficiary: Sibiu Environmental Protection Agency

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Period: 01-Jan-2010 to 31-Dec-2013

Total budget: €1 884 000

LIFE contribution: €1 413 000



Slovenia: Finding practical ways to live with wolves

SloWolf was the first large-scale project on wolves in Slovenia. It addressed a number of factors important for the continued existence of wolves there. The results have provided a firm foundation for their successful conservation in the future.

The forest covering a large part of southern Slovenia is one of the largest, non-fragmented tracts of forest in central Europe. It is also one of the few places where the brown bear (*Ursus arctos*), the Eurasian lynx (*Lynx lynx*), and the wolf (*Canis lupus*) still co-exist. The area provides high-quality habitat for wolves and as such is especially important for their long term conservation and potential connection with the Alpine population.

The wolf has lived in Slovenia's forests for hundreds of years. In the late 20th century its controversial relationship with humans almost led it to the brink of extinction. Since the implementation of conservation measures and growing pressure from conservationists in the 1990s, however, the population is growing again. The continued existence of the species depends on a number of factors. The main challenge, though, is balancing the needs of the wolf with those of humans and changing human attitudes towards wolves.

Raising knowledge and finding solutions

Before the project SloWolf (**LIFE08 NAT/SLO/000244**) little was known about the wolf population in Slovenia. During the project a number of wolves were tracked to find out more information; the project implemented activities directly address-

Documenting wolf mortality enabled the project to better target actions designed to reduce conflicts between wolves and humans



Photo: Miha Krofel



Photo: Miha Krofel

*A wolf (*Canis lupus*) in Slovenia's rich Dinaric forests, site of the SloWolf project*

ing the most pressing issues regarding wolf conservation, working in close cooperation with important stakeholders. The SloWolf team also succeeded in improving national legislation concerning wolves. "The aim was to better the long-term conservation status and management of the wolf population and its main prey and habitat in Slovenia," explains project manager Aleksandra Majić.

In total, there were four main areas of focus for the project activities. Each one produced excellent results. In terms of numbers, the surveillance of the wolves was perhaps the most impressive. Seven wolves were fitted with GPS telemetry collars and the team trained local hunters and other volunteers to track them. Over three consecutive winters 65 snow-tracking sessions were organised and more than 2 230 km of forest roads were checked for wolf tracks, 171 km of which were followed, enabling the collection of 185 genetic samples. The samples provided the first reliable, precise and objective estimate of the size of the wolf population in Slovenia. Between 42 and 50 wolves were recorded in

Slovenia living in 8 to 11 wolf packs for each project year. The territories of four of the packs also stretched into Croatia. The population remained stable over the three years of monitoring.

The information gathered from the monitoring formed the basis for the creation of the first Action Plan for the Conservation of Wolves in Slovenia during the project. According to Ms Majić the plan was one of the most challenging parts of the project but one of the most successful activities too. "It was prepared by 57 participants from 21 governmental and non-governmental organisations with very different backgrounds and agendas," she clarifies. It was officially accepted by the Slovenian government in February 2013 – a very proud moment for the SloWolf team. The plan was revised at the end of the project and will ensure that the activities initiated in the project continue in the long term.

The project also worked to increase the acceptance of wolves in Slovene society. Currently, there is a split in attitudes of people towards wolves: Hunters and farmers, in particular, dislike wolves because they threaten livestock and other fauna, whereas the general public increasingly see them as a symbol of wild, unspoiled nature. The project targeted both groups with different activities. A targeted public awareness and education campaign based on a knowledge-gap analysis was carried out. Here, particular emphasis was placed on transparent communication with different media. This generated considerable positive media attention regarding wolves, providing the public with correct and reliable information about the animal.

Training, best practice examples and communications material informed farmers, hunters and agricultural advisors about how to manage wolves more positively with less damage to other fauna. Particular focus was put on demonstrating the benefits of wolf-friendly farming: Eight livestock breeders were given high electric fences and guard dogs to protect sheep. Within the first two years of these measures being introduced the compensation paid for damage to livestock was reduced by nearly €200 000. "All of these activities led to a decline in the national annual culling quota during the project and in 2014 it was even reduced to zero," notes Ms Majić proudly.

Laying foundations

Over the four years that it was funded, SloWolf produced a considerable amount of new knowledge about wolves in Slovenia and provided a number of practical solutions that are already having a positive effect on the species and its conservation. The Action Plan for the Conservation of Wolves will hopefully secure a large number of the activities implemented for years to come.

A particular success has been starting to slowly but surely change people's attitudes about wolves. "One of our studies



Photo: Miha Krofel

Local hunters helped collect non-invasive samples that allowed the project to develop an accurate estimate of Slovenia's wolf population

showed that a large percentage of people living in areas populated by wolves support their conservation and wish for a better coexistence," says Ms Majić. "Many, however, are still afraid of wolves." This fear is already being counteracted by knowledge and project partners have already seen an increase in positive opinions about the wolf since the project began. People are really beginning to realise the importance of a peaceful wolf-human co-existence if the species is to survive in the long run.

Project number: LIFE08 NAT/SLO/000244

Title: SloWolf – Conservation and surveillance of conservation status of wolf (*Canis lupus*) population in Slovenia

Beneficiary: University of Ljubljana, Biotehniška fakulteta, Oddelek za biologijo

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Period: 01-Jan-2010 to 31-Dec-2013

Total budget: €1 018 000

LIFE contribution: €722 000



Sweden: Managing invasive raccoon dogs to protect native biodiversity

The MIRDINEC project established an early warning system for the raccoon dog, which has played a vital role in slowing down the dispersal of this invasive predator species from Finland and Germany into Sweden and Denmark.

The raccoon dog (*Nyctereutes procyonoides*) is native to eastern Asia. It was introduced into the western parts of the former-Soviet Union from the 1930s onwards to establish a population of this fur-producing species in the wild, from where it became established in Finland and large parts of Europe. It has recently moved into Sweden and Denmark.

Raccoon dogs are a direct threat to species and habitats protected by the Birds Directive and Habitats Directive, especially ground-nesting birds and amphibians in wetland areas. During the spring, in particular, their diet can largely consist of the eggs and chicks of wetland or shoreline bird species. The raccoon dog is also one of the most important vectors of rabies in Europe, and is a carrier of a range of diseases that can infect native mammal species. Urgent measures were therefore required to stop a population explosion of raccoon dogs in Scandinavian countries.

The MIRDINEC project (**LIFE09 NAT/SE/000344**) started in 2010 with the aim of preventing the spread of the highly mobile raccoon dog from Finland and Germany into Scandinavia, and halting the loss of biodiversity caused by this invasive species. The international partners established a combined early warning and monitoring system (EWS), which complemented the project's innovative culling and management programme.

Dr Fredrik Dahl from the Swedish Association for Hunting and Wildlife Management (SAHWM), the project's coordinating beneficiary, is also associated with the Swedish University of Agricultural Sciences (SLU), the partner responsible for the scientific part of the project. He describes the EWS as consisting of permanent game cameras directed at scent lures, placed in a systematic and objective system on the main immigration routes. The project team installed cameras every 2.5 km, based on knowledge of the home range of raccoon dog couples (700-900 ha), with a particular

concentration along known migration routes close to the Sweden-Finland border.

Modelling populations

The data from EWS-detected animals coming into Sweden was used to develop population models, which enabled the success of project actions to be evaluated. "It has worked well and been very valuable," believes Dr Dahl. "Not many new raccoon dogs are detected today [2015] by the initial EWS system due to the success of the project." The EWS continues to be used as a monitoring system, giving an important measure of the species' population development, and has been improved as the cost of the technology falls. "In Sweden, the warning system has been expanded with a system of MMS cameras, which automatically send photos of raccoon dogs directly to the mobile phones of field staff. We capture almost all of the raccoon dogs we get pictures

*The raccoon dog (*Nyctereutes procyonoides*) is an invasive alien predator with the potential to cause significant damage to Sweden's native biodiversity*



Photo: NEEMO, EEGingna Racinska

of,” says Dr Dahl. The project also demonstrated the potential of the EWS for use with other invasive alien species, including the completely unrelated raccoon (*Procyon lotor*).

Raccoon dogs were systematically captured in Finland, Sweden and Denmark during the three-year MIRDINEC project, with a total of 1 401 animals being captured and/or killed, including those culled by the project and by hunters. However, around 170 captured animals were sterilised, tagged and fitted with GPS/VHF transmitters before being released; these ‘Judas’ animals led the project team to other animals, which were humanely eradicated. This was the first time the Judas animal technique had been used with an invasive predator species. A LIFE Platform Meeting on Invasive Alien Predators was organised by the project to encourage the transfer of this and its other innovative methods.

The rapid response system afforded by MMS cameras with scent lures, set up in response to public observations, is now also used in Norway, along with the Judas technique on captured animals, following the success of these methods in Sweden and Denmark.

Activities to raise awareness amongst the hunting community and the general public contributed greatly to the MIRDINEC project’s overall success. SAHWM led the way in developing citizen science networks in Sweden and Denmark that enabled hunters and members of the public to report raccoon dog sightings. The project received 3 234 observations in Sweden and Denmark (autumn 2010 to 2013), for instance, of which 852 were confirmed as raccoon dogs by the project team. This cooperation is ongoing.

Anaesthetising a captured raccoon dog



Photo: NEMO EEG/Justin Toland



One of the traps used to humanely capture raccoon dogs

Help from hunters

“Most of the captured and culled raccoon dogs are today a result of the cooperation with the public and the hunters,” explains wildlife biologist P-A Åhlén from SAHWM. “In Sweden, we got 727 tips from the public during 2014, out of these 66 were confirmed as raccoon dog and 59 were captured or culled. In Finland the hunters are even more involved and there the majority of the culled raccoon dogs close to the Swedish border are culled by hunters voluntarily involved in the project.” The project also trained Finnish hunters to use new techniques, such as trap alarms, cameras and scent lures.

The project succeeded in slowing down the spread of the raccoon dog from Finland and Germany into Scandinavia. Looking at the recent data, Dr Dahl concludes: “In Sweden the population is decreasing, in Finland the population close to the Swedish border is decreasing, and in Denmark the population is stable and confined. It is very likely that the raccoon dog populations in Sweden and Denmark would have been out of control today if it had not been for the project.”

Project number: LIFE09 NAT/SE/000344

Title: MIRDINEC - Management of the invasive Raccoon Dog (*Nyctereutes procyonoides*) in the north-European countries

Beneficiary: Swedish Association for Hunting and Wildlife Management

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Period: 01-Sept-2010 to 31-Aug-2013

Total budget: €5 318 000

LIFE contribution: €2 659 000



Belgium: Preventing the spread of invasive ornamental plants

The AlterIAS project drew up a voluntary Code of Conduct with the horticulture sector in Belgium to encourage the use of native ornamental species and prevent the spread of invasive alien plants.

Europe's biodiversity is threatened by the spread of invasive alien species (IAS), many of which have been introduced by the horticultural industry. In Belgium, a LIFE Information and Communication project has pioneered a national approach to stop invasive terrestrial and aquatic plant species from being planted in nurseries, parks, gardens and other green areas. The AlterIAS project (**LIFE08 INF/B/000052**) worked in partnership with the horticulture sector to develop a voluntary Code of Conduct.

Invasive ornamentals are a particular problem in Belgium. To find out just how big, at the start of the LIFE project the AlterIAS team conducted a survey of 67 nursery workers and 146 catalogues. This revealed that the majority (70-90%) of plant species blacklisted by the Belgian Platform on Biodiversity were commercially available in the country. Indeed, of the 55 invasive alien plant species available in nurseries, 31 were on the black list. Whilst 32 of the plants were considered of economic value, 44% of the nursery workers surveyed said that these invasive species represented less than 5% of their total sales.

Recognising this as an opportunity, the AlterIAS team entered into 10 months of consultations with the horticulture industry, authorities responsible for the environment and the scientific community. The outcome was agreement on a voluntary Code of Conduct for restricting the sale of these species. The code emphasises that nurseries should stay informed about invasive plants in Belgium, disseminate information on invasive plants, promote non-invasive plant alternatives and support the early detection of new invasive plants. It also includes a list of those invasive species that should no longer be sold.

The project then asked horticulture professionals to subscribe to the Code of Conduct. Those doing so gained the right to use a label signifying that they have adopted good practice in this area. At the end of the project, 1 027 part-



Photo: Mathieu Halford

Tall goldenrod (Solidago gigantea): one of the invasive alien plant species targeted by the Code of Conduct for ornamental plants

ners (signatories) had subscribed to the Code of Conduct, including 243 nursery workers, 28 landscape architects, 52 garden contractors, 151 managers of public green spaces, six botanical gardens and 478 amateur gardeners. Furthermore, by 2014 nearly 200 garden centres and other selling points had adopted the code.

The new consensually-agreed black list of species has led to the withdrawal of 28 species (20 terrestrial and eight aquatic plants) from selling lists, more than half of the invasive species previously available in nurseries. Of these 28 species, 20 are on the black list and eight on the watch list of the Belgian Platform on Biodiversity. Together they represent around 44% of all invasive plants listed for Belgium.

To help fill the gap in the market left by the withdrawal of invasive species, the project carried out market research

into commercially-viable alternatives, resulting in the production of a brochure of non-invasive plants. These species were presented as having similar ornamental functions to the withdrawn species – i.e. serving as border plants, groundcover and climbing plants. The brochure proved to be especially popular with amateur gardeners. With the help of landscape architects, the project created two gardens to demonstrate mixed borders with native plants.

Promoting the code

The project launched an extensive general awareness campaign to promote the Code of Conduct and its good practices, distributing DVDs, printed material and achieving good media coverage of its work. Horticulture specialists were reached through a presence at trade events, tailored information sessions and two international workshops.

As a result, by the end of the project horticulture professionals were much more aware of the ecological impacts of invasive plants. The number of those surveyed who reported awareness of the negative impact on biodiversity of IAS had increased by 17%. The project also led to the list of invasive plants in Belgium increasing from 17 in 2010 to 28 species in 2013. Such increased awareness should help nursery workers identify new invasive plants becoming established in natural habitats that are not currently on existing lists. These can be reported on a factsheet contained in the Code of Conduct.

The code represents a stronger and more effective voluntary tool than those adopted in other European countries because it operates on a subscription basis. “Without this subscription element you just have a document on a website and don’t know the number of horticultural professionals who have adopted it,” explains Dr Mathieu Halford of the project’s coordinating beneficiary in Gembloux, GxABT.

Watermilfoil (Myriophyllum) being removed from a pond. AlterIAS increased awareness of the threat to native species posed by invasive ornamentals



Photo: Renais



Photo: Mathieu Halford

The project produced a brochure outlining alternatives to invasive plants for horticulturalists and gardeners

This approach may be a first step towards increasing self-regulation within the horticulture sector.

The AlterIAS approach to stopping the introduction of IAS at source is readily transferable, and the project has already been contacted by interested stakeholders from around Europe and as far afield as Canada. The coordinating beneficiary was invited to the head office of the European and Mediterranean Plant Protection Organisation (EPPO) in order to evaluate the feasibility of transferring the Belgian approach to other EU Member States.

The project team has also focused on ensuring that the Code of Conduct will continue to be adopted in Belgium. “We have gathered federations and associations to see who can take charge of the code in the future, so it will still be operational once the project is over; and the online registration process will continue so the number of partners can continue to increase. There is also a revision process that is planned every three years,” says Dr Halford.

Lessons from this project, particularly about the importance of stakeholder buy-in, can help in the implementation of the new EU Regulation on Invasive Alien Species.

Project number: LIFE08 INF/B/000052

Title: AlterIAS – Alternatives to Invasive Alien Species

Beneficiary: Université de Liège, Gembloux Agro-Bio Tech (GxABT)

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Period: 01-Jan-2010 to 31-Dec-2013

Total budget: €1 011 000

LIFE contribution: €501 000



Czech Republic: Improving acceptance of Natura 2000

The INFOMS project raised awareness amongst a range of stakeholder groups of the value of nature conservation and the Natura 2000 network. Appreciation of the natural beauty of the once heavily-industrialised Moravian-Silesian Region could have socio-economic benefits.



A field excursion to a Natura 2000 site in the Moravian-Silesian region. The INFOMS project raised local awareness of the network and the value of the region's natural capital

The expansion of the Natura 2000 network of protected sites into the Czech Republic has met with instances of resistance by municipalities, landowners and land administrators. Recognising this issue, the government of the Moravian-Silesian region, located in the easternmost part of the Czech Republic bordering both Poland and Slovakia, developed a LIFE Information & Communication project to improve understanding about the benefits of Natura 2000 and increase acceptance of the network.

The INFOMS project (**LIFE08 INF/CZ/000443**) delivered a series of awareness-raising actions over a four-year period (2010-2013). "We provided our target audiences from landowners and public administration services with information tools to help them improve management of Natura 2000 network sites," explains project coordinator Roxana

Machackova. She notes that INFOMS has helped change perceptions within the region: "During the project we found that people were surprised that their area had such environmental assets of EU importance. They were aware of the environmental damage that could be caused by human activity (like motocross which is popular here) but they were not aware of the legal consequences from such damage until we informed them."

The project's multi-faceted campaign produced a series of high quality materials - books, pamphlets, leaflets, newsletters, videos, interpretation boards, and web content - that were used to communicate carefully constructed messages about, firstly, the existence of important wildlife species and habitats in the region; and, secondly, about the relevance to everyone of caring for the region's nature. For instance, the



The project developed a series of nature trails, leading to increased opportunities for eco-tourism

project sought to explain the links between nature and commercial land uses, such as agriculture or forestry.

Promoting nature areas as places to visit and enjoy was seen as a useful mechanism for getting people to better understand the benefits that a healthy environment can offer. Their interest piqued by this ecosystem service, visitors were then informed about what they should do to limit habitat damage, and about the threat posed by invasive alien species and action being taken to prevent their spread.

A network of nature trails was developed in order to further increase appreciation of the region's natural capital. The paths opened up access to many previously low profile sites, which let local people and visitors see for themselves the rich diversity of Moravia-Silesia's flora and fauna. The new and reconstructed paths also indirectly support green tourism in an area better known for its industrialised past.

Nights of the roundtable

Additional communication work centred on building capacity for territorial techniques in ecological management, in particular by addressing concerns about the impact of Natura 2000 site designation amongst different stakeholder groups.

Billboards such as this one formed part of the project's comprehensive communications campaign



Some 16 different roundtable meetings were organised by the LIFE project to tackle misconceptions about the Natura 2000 network and bring people on board with the communication campaign.

Conflict resolution skills helped facilitate this process and successes emerged as more key stakeholder groups became more supportive of nature conservation.

The project succeeded in reaching a broad spectrum of target groups, from the general public to landowners, national, regional and municipal authorities, environmental organisations and experts, teachers and school children, managers and visitors of libraries and information centres, and public and private sector companies.

One of the most important - and potentially most hostile - groups targeted was motocross riders, who have been using forests and fields hosting protected wildlife for rallies. Their actions are potentially detrimental to conservation efforts and so the project developed information specifically aimed at this interest group.

A combination of such targeted actions and the project's wider communication campaign led to some notable achievements. Surveys carried out before and after the information campaign against illegal motocross and the awareness campaign on Natura 2000 show increasing recognition of nature protection issues and increasing engagement of various stakeholders.

As a consequence, reports Ms Machackova, "In the last year of the project 14 new protected areas were designated relatively painlessly." This lack of opposition demonstrates the effectiveness of using information well to resolve historical conflicts between nature conservation stakeholders. Lessons from the INFOMS project can be of use to those working to increase acceptance of nature conservation in general, and the Natura 2000 network in particular, in other areas of the EU.

Project number: LIFE08 INF/CZ/000443

Title: INFOMS - Unified information and communication system for nature conservation in NUTS II Moravia-Silesia

Beneficiary: Moravskoslezský kraj - Krajský úřad

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Period: 01-Jan-2010 to 31-Dec-2013

Total budget: €788 000

LIFE contribution: €357 000



Finland: Promoting sustainable salmon fishing

Several species of the Salmonidae family in Finland are under threat. The 'Saimaan lohikalojen' project gave a boost to conservation efforts by raising awareness of their plight.

Lake Saimaa in south-eastern Finland – one of the country's nearly 190 000 larger lakes – is home to several salmonid populations, which the Finnish environmental administration classified as threatened in 2010. Whilst the IUCN considers the species of least concern, the local populations of grayling, Arctic char, freshwater brown trout, and landlocked salmon (see box) have been decimated by deteriorating water quality, the disappearance of natural spawning places, and long-term changes in weather conditions. In addition, Lake Saimaa, which has a surface area of 4 400 km² is intensively fished by some 100 000 people, using gillnets, long lines and trolling¹.

Although successful fisheries management and earlier fish farming mean the species are not at the brink of extinction, further measures were deemed necessary to secure the long-term genetic diversity of the populations in question. Previous restocking efforts did not have the desired impact: out of an 80 000 two-year-old landlocked salmon smolts introduced into a nearby river each year, very few come back to spawn – 50 to 80 adult fish each year on average – and sometimes as few as four. The minimum number needed to maintain genetic diversity is 150-300 individuals.

With this aim in mind, the Centre for Economic Development, Transport and the Environment (ELY) secured LIFE funding for an Information & Communication project to promote the sustainable fishing of the four target species. Actions targeted professional and recreational stakeholders in 20 fishery districts, 44 joint ownership organisations and 18 fishing clubs, as well as fishing industry advisory bodies and fishing associations.

In addition, the project emphasised the key role of individual fishermen and women in tackling this problem, animating them to follow a set of instructions for a more sustainable exploitation of the local fish populations.



Photo: Janne Koivuselkä

A fisherman with a freshwater brown trout, one of the species targeted by the project

'How-to' fish sustainably

These instructions include choosing lures and bait holders with fewer hooks to facilitate the release of undersized specimens as well as the use of fishing pliers and a knot-free, rubber-coated landing net to help fish survive the release. The project also recommended avoiding the use of gillnets with dense mesh size, enabling undersized fish to slip through.

An important part of the guidance stressed the need to release specimens of landlocked salmon and freshwater brown trout with an intact adipose fin – a soft, fleshy fin on the animals' back behind the dorsal fin, which is often clipped in hatchery-raised fish to mark them – regardless of their size. These intact fish are wild and thus vital to genetic diversity.

Combining research information, species-specific strategies and management plans in an easy-to-understand way, the campaign encompassed the publication of numerous brochures and other information material. The project spread

¹ A technique that involves drawing one or more baited fishing lines slowly through the water, often behind a boat.

Target fish species

Grayling (*Thymallus thymallus*) – conservation status: near threatened. The non-migratory grayling reproduces and lives in areas with flowing water or on the rocky shore waters of lakes.

Arctic char (*Salvelinus alpinus*) – conservation status: critically endangered. This species lives in lake basins and reproduces in near-shore waters with rocky or gravel bottoms.

Freshwater brown trout (*Salmo trutta m. lacustris*) – conservation status: endangered. This trout reproduces in streams. Once past fry stage, it migrates to lakes to feed.

Landlocked salmon (*Salmo salar m. sebago*) – conservation status: critically endangered. See freshwater brown trout.

A grayling being released into Lake Saimaa



Photo: P-K ELY-keskus



Starting a dialogue with stakeholders contributed to the project's success

Agriculture and Forestry, which took many of the project's recommendations on board. Whilst currently most decisions pertaining to fishing still lie with local landowners (or rather, lake owners), the new legislation, set to come into force at the beginning of 2016, will shift that power to the authorities, allowing for greater coherence and control.

Without support from the LIFE programme, this project would not have been possible on as large a scale, says Veli-Matti Kaijomaa of the ELY Centre: "We have been collaborating with a number of Finnish partner organisations for a long time to keep these species alive. However, our resources are limited. So, we felt that we needed an additional impulse to really make progress. The LIFE programme gave that impulse."

Since 'Saimaan lohikalojen' began its work, the knowledge about endangered fish species and sustainable fishing has clearly increased – a fact corroborated by surveys of the fishing community before and after the campaign – and so has the discussion about these issues. Even now after the LIFE funding has ended, the former project team is working to keep the debate alive, putting the educational and awareness-raising materials and the knowhow accumulated during the project to use in related tasks associated with fisheries management and various public events.

the word amongst stakeholders through more than 100 meetings, seminars and discussion events, participation in dozens of fairs and exhibitions and by being present at trolling competitions and fish markets. In 2012, the project held a 'lure design competition', which sought to optimise the sustainability of lures for salmon fishing. All in all, these communication efforts were a great success, raising awareness of the issues amongst stakeholders and the general population alike, thanks – in part – to extensive coverage by the media.

Moreover, the project prepared 60 fishing plans, specific to regional circumstances and local requirements, in cooperation with the fishery districts and joint ownership organisations concerned. Negotiations and action proposals for fishing arrangements have brought sustainable fishing in the Vuoksi River basin, which stretches from Lake Saimaa to Lake Ladoga in north-western Russia, marking a significant step forward.

Contributing to new legislation

Most importantly, the project's work informed the ongoing reform of the national Fishery Act in the Finnish Ministry for

Project number: LIFE10 INF/FI/000052

Title: Saimaan lohikalojen - Promoting sustainable salmon fishing practices on Lake Saimaa

Beneficiary: Centre for Economic Development, Transport and the Environment (Pohjois-Karjalan elinkeino-, liikenne- ja ympäristökeskus)

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Period: 01-Oct-2011 to 30-Jun-2014

Total budget: €362 000

LIFE contribution: €181 000



Available LIFE Nature publications



LIFE Nature brochures

LIFE and freshwater fish (2015 – 68 pp. - ISBN 978-92-79-44027-4)

LIFE and Invasive Alien Species (2014 – 80 pp. - ISBN 978-92-79-38307-6)

Long-term impact and sustainability of LIFE Nature (2014 – 60 pp. - ISBN 978-92-79-34698-9)

LIFE and human coexistence with large carnivores (2013 – 76 pp. - ISBN 978-92-79-30401-9)

LIFE managing habitats for birds (2012 – 80 pp. - ISBN 978-92-79-27587-6)

LIFE and invertebrate conservation (2012 – 56 pp. - ISBN 978-92-79-23822-2)

LIFE preventing species extinction: Safeguarding endangered flora and fauna through ex-situ conservation (2011 – 60 pp. - ISBN 978-92-79-20026-7)

LIFE and European Mammals: Improving their conservation status (2011 – 60 pp. - ISBN 978-92-79-19266-1)

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A number of printed copies of certain LIFE publications are available and can be ordered free-of-charge at:
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LIFE "L'Instrument Financier pour l'Environnement" / The financial instrument for the environment

The LIFE programme is the EU's funding instrument for the environment and climate action

Period covered 2014-2020

EU funding available approximately €3.46 billion

Allocation of funds Of the €3.46 billion allocated to LIFE, €2.59 billion are for the Environment sub-programme, and €0.86 billion are for the Climate Action sub-programme. At least €2.8 billion (81% of the total budget) are earmarked for LIFE projects financed through action grants or innovative financial instruments. About €0.7 billion will go to integrated projects. At least 55% of the budgetary resources allocated to projects supported through action grants under the sub-programme for Environment will be used for projects supporting the conservation of nature and biodiversity. A maximum of €0.62 billion will be used directly by DG Environment and DG Climate Action for policy development and operating grants.

Types of projects Action Grants for the Environment and Climate Action sub-programmes are available for the following:

- > "Traditional" projects – these may be best-practice, demonstration, pilot or information, awareness and dissemination projects in any of the following priority areas: LIFE Nature & Biodiversity; LIFE Environment & Resource Efficiency; LIFE Environmental Governance & Information; LIFE Climate Change Mitigation; LIFE Climate Change Adaptation; LIFE Climate Governance and Information.
- > Preparatory projects – these address specific needs for the development and implementation of Union environmental or climate policy and legislation.
- > Integrated projects – these implement on a large territorial scale environmental or climate plans or strategies required by specific Union environmental or climate legislation.
- > Technical assistance projects – these provide financial support to help applicants prepare integrated projects.
- > Capacity building projects – these provide financial support to activities required to build the capacity of Member States, including LIFE national or regional contact points, with a view to enabling Member States to participate more effectively in the LIFE programme.

Further information More information on LIFE is available at <http://ec.europa.eu/life>.

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

Contact

European Commission – Directorate-General for the Environment – B-1049 Brussels (env-life@ec.europa.eu).
European Commission – Directorate-General for Climate Action – B-1049 Brussels (clima-life@ec.europa.eu).
European Commission – EASME – B-1049 Brussels (easme-life@ec.europa.eu).

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LIFE Publication / Best Nature projects 2014

