Natura 2000 Seminars

Atlantic Biogeographic Region

Case Studies

Lubos Halda - ILE-SAS
Roger Catchpole - Aspen International
**Introduction**

The case studies recorded below have been captured from the LIFE Project database to provide practical, site-based information relating to the management of Natura 2000 sites in the Atlantic Region. Approximately 200 potentially suitable case studies were screened from which a sub-set has been selected for inclusion in this document. The selection criteria were designed to provide a biogeographically representative sample that maximised the number of target habitats per project and the range of threats and pressures acting upon those habitats within the Atlantic Region. Five to ten projects per country was the intended target range but this has only been achieved for Germany, Belgium and Denmark. Currently no suitable case studies have been found for Portugal, in spite of the fact that a second phase of case study capture has been completed with the assistance of the Eurosite network. This has attempted to capture any projects relating to the management and restoration of the specified habitats irrespective of their funding sources. It is expected that Member States will suggest any further substitutions and additions up to the deadline for the finalisation of the documents for the Atlantic Region Seminar in December. It is envisaged that no further active capture of case studies will be undertaken by the contractor after the Atlantic Region Workshop.

**Project List**

**Belgium**

1. Habitat restoration of alluvial forests and heath in the "Stropers" area [LIFE06 NAT/B/000082]
2. Cx SCAILLE - Actions for the valleys and turf moors of Croix Scaille (Belgium) [LIFE05 NAT/B/000087]
3. PLTTAILLES - Rehabilitation of natural habitats on the Tailles Plateau [LIFE05 NAT/B/000089]
4. Liereman - Habitat restoration in Landschap De Liereman [LIFE04 NAT/BE/000010]
5. UITKERKSEPOLDER -Uitkerkse Polder: a surplus value for nature and people [LIFE03 NAT/B/000023]
6. ZENO – Zwindunes Ecological Nature Optimization [LIFE06 NAT/B/000087]
7. ICCI – Integral Coastal Conservation Initiative [LIFE96 NAT/B/003032]
8. FEYDRA – Fossil Estuary of the Yzer Dunes Restoration Action [LIFE02 NAT/B/008591]

**Denmark**

1. ASPEEA - Action for sustaining the population of *Euphrydryas aurinia* [LIFE05 NAT/DK/000151]
2. Dune Habitats - Restoration of Dune Habitats along the Danish West Coast [LIFE02 NAT/DK/008584]
3. Skjern River - Restoration of habitats and wildlife of the Skjern River [LIFE00 NAT/DK/007116]
4. Restoration of raised bogs in Denmark with new methods [LIFE05 NAT/DK/000150]
5. Restoration of Dune Habitats along the Danish West Coast [LIFE02 NAT/DK/008584]

**France**

1. Acrocephalus Bretagne - Conservation of the Aquatic Warbler in Brittany [LIFE04 NAT/FR/000086]
2. LIFE Marais - Conservation of the most remarkables habitats and species of the Poitevin Marshes [LIFE04 NAT/FR/000087]
Germany

1. Borstgrasrasen - Conservation and regeneration of Nardus Grasslands in Central Europe [LIFE06 NAT/D/000008]
2. Cuxhaven Küstenheiden - Large Herbivores for Maintenance and Conservation of Coastal Heaths [LIFE05 NAT/D/000051]
3. Lippe-Aue - Optimisation of the pSCI "Lippe flood plain between Hamm and Hangfort" [LIFE05 NAT/D/000057]
4. Westliche Dümmerniederung - Re-wetting of the Western Dümmer fen area [LIFE02 NAT/D/008456]
5. SPA Duesterdieker Niederung - Optimization of the SPA 'Düsterdieker Niederung' [LIFE00 NAT/D/007042]

Ireland

1. RPWHI - Restoring Priority Woodland Habitats in Ireland [LIFE05 NAT/IRL/000182]
2. Waterbirds - Restoration and management of the Murrough wetlands for Annex I Habitats and Waterbirds [LIFE03 NAT/IRL/000107]
3. RRBI - Restoring raised bogs in Ireland [LIFE04 NAT/IE/000121 now continues as LIFE09 NAT/IE/000222 “Demonstrating Best Practice in Raised Bog Restoration in Ireland”]
4. Blanket bog - Restoring Active Blanket Bog in Ireland [LIFE02 NAT/IRL/008490]

Netherlands

1. Engbertsdijksvenen - From Degraded to Active Raised Bogs: pSCI Engbertsdijksvenen [LIFE06 NAT/NL/000075]
2. Bargerveen - From degraded to active raised bogs pSCI Bargerveen [LIFE04 NAT/NL/000206]
3. 10GEMETEN - Tiengemeten, restoration of freshwater tidal area in the Haringvliet estuary, the Netherlands [LIFE04 NAT/NL/000202]

Spain

1. Dunas Laida - Dune regeneration on Laida beach (Urdaibai) [LIFE04 NAT/ES/000031]
2. Canal de Castilla – Wetland restoration and management: Canal de Castilla Special Protection Area [LIFE06 NAT/E/000213]

UK

1. STREAM - River Avon cSAC: demonstrating strategic restoration and management [LIFE05 NAT/UK/000143]
2. Glenurquhart catchment invasives project [SNH management project]
3. Dorset heaths - Combatting urban pressures degrading European heathlands in Dorset [LIFE00 NAT/UK/007079]
## Case Studies - Stage I Assessment

### Belgium

<table>
<thead>
<tr>
<th>Initiative Title</th>
<th>Habitat restoration of alluvial forests and heath in the “Stropers” area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Code</td>
<td>LIFE06 NAT/B/000082</td>
</tr>
<tr>
<td>Country/Countries</td>
<td>Belgium</td>
</tr>
<tr>
<td>Biogeographic Region(s)</td>
<td>Atlantic</td>
</tr>
<tr>
<td>N2K Site Name(s)</td>
<td>Bossen en heiden van zandig Vlaanderen: oostelijk deel</td>
</tr>
<tr>
<td>N2K Site Code(s)</td>
<td>BE250004</td>
</tr>
</tbody>
</table>

### Annex I Habitat(s)

- **4010** Northern Atlantic wet heaths with *Erica tetralix*.  
- **4030** European dry heaths.  
- **6210** Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (* important orchid sites).  
- **6410** *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*).  
- **91E0** Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*).  

**Start Date** 01-AUG-2006  
**Finish Date** 30-JUN-2010  
**Duration** 4 years  
**Funding Source(s)** LIFE

### Summary

The main objectives of the Stropersbos project were the protection, restoration and development of the different habitats of the Stropers pSCI. This aimed to benefit the flora and fauna of each habitat type and increase the area’s biodiversity.

The main priority of the project was to expand the mesotrophic alder swamp forest habitat by increasing groundwater levels and groundwater upflow to induce spontaneous development. The project also aimed to restore and develop other habitats such as European dry heath, Northern Atlantic wet heaths, inland dunes with *Corynephorus* and *Agrostis* grasslands, species-rich *Nardus*-grasslands on siliceous substrates and Moor-grass meadows on peaty or clayey-silt-laden soils.

The managers planned to convert coniferous forest to mixed deciduous forest and heath to create a more semi-natural landscape characterized by a high diversity of open and tree-covered habitats. Planned actions to achieve this were: thinning out of trees; cutting of non-endemic species; removal of acidic humus layer; formation of grazing units and construction of fences, cattle-grids, gates and watering places.

It was hoped that habitats with old acidophilous oak woods that grow on sandy plains would increase in area as a result of coniferous forest conversion measures. It was assumed that an increase in forest edges and forest diversity would boost insect life, leading to a consequent increase in numbers of bats living in the Stropers area.

### Outcomes

A management plan for woodland coppice management was developed for approval and the following habitat restoration actions were successfully implemented:

- Selective cutting and eradication with herbicide of black cherry (*Prunus serotina*) on 6.5ha;  
- 19.6ha of forest were cut and spontaneous regeneration removed on 1.5ha;  
- 7,589m of internal forest edges were created;
Installation of fences to define two grazing blocks and drinking water ponds; Grazing by sheep and ponies; and Pathways between banks to enable access for mechanical mowing after the restoration of water levels.

Additional measures also included the removal of top soil and cleaning of ditches. This combination of infrastructure works and specific habitat restoration actions strongly improved the hydrology of the Stropersbos habitat area as demonstrated by higher groundwater levels. This will enable the long-term natural restoration of mesotrophic alder swamp forest. It has also improved forest diversity.

Publication(s)

Main Beneficiary
Vlaamse Landschapschappen

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Summary
The overall objective of the project was to improve the quality of the two river valleys, restoring open landscapes and enhancing the connectivity between the currently fragmented habitats. The project planned to restore habitats on three Natura 2000 sites that had been extensively planted with conifers. The project foresaw the removal of 160ha of exotic conifer plantations from the peat zones on the plateau and along river valleys leading away from the plateau. This aimed to reduce habitat fragmentation.

Actions were planned to encourage the development of natural and semi-natural environments on the cleared areas and other peat zones. On some areas, the project aimed to restore bogs by clearing scrub, blocking drainage systems and digging ponds. To keep the landscape open, the project planned to introduce extensive grazing and initiate mowing.

To ensure continuous and long-term management of the restored sites, the
The project aimed to: purchase of key plots and create a nature reserves over 50ha in size; co-operate with local farmers over a wider area; and initiate a programme of activities for local populations to discover and take part in the management of the sites.

Outcomes

The project purchased 113ha for the establishment of nature reserves. This saw the protected reserves of the valley increase more than four-fold from the pre-project area of 35ha as well as a significant increase in connectivity. Exotic conifer plantations (mostly spruce) were removed from 60ha of public land and agreements were secured with around 120 private landowners for the removal and sale of trees from a further 114ha. An agreement was also reached with a municipality to avoid planting 27ha of new plantation.

Following the removal of trees, actions were carried out to restore 227ha of meadows and heathland. Key activities were windrowing of the remnants from the tree felling on 90ha, milling of remaining tree stumps over 62ha and the removal of turf and raking up of the soil across 20ha. Girldling of conifers on around 70ha was carried out to prevent seedling encroachment into areas of hardwood forest and clearings. Drains were blocked using clay plugs and low stone barriers were built to prevent excessive drainage and restore natural hydrology. Around 150 new ponds were created on the valley floors and in peaty areas. Specially purchased machinery was acquired for restoration mowing of wet meadows in the final year and grazing cattle were introduced on 15ha of meadow.

Publication(s)

- Layman report.

Main Beneficiary Réserves Naturelles RNOB

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Initiative Title PLTTAILLES - Rehabilitation of natural habitats on the Tailles Plateau

Project Code LIFE05 NAT/B/000089

Project Website http://old.biodiversite.wallonie.be/offh/LIFEPLTTAILLES/home.html

Country/Countries Belgium

Biogeographic Region(s) Atlantic

N2K Site Name(s)

1. Bassin inférieur de l’Ourthe orientale (Gouvy; Houffalize; La Roche-en-Ardenne)
2. Fagnes de Samrée et de Tailles (Houffalize; La Roche-en-Ardenne; Vielsalm)
3. Fanges des sources de l’Aisne (Manhay)
4. Haute vallée de l’Aisne (Erezée; La Roche-en-Ardenne; Manhay)

N2K Site Code(s) 1. BE34024B0, 2. BE34016B0, 3. BE34015B0, 4. BE34013B0

Annex I Habitat(s)

4010 Northern Atlantic wet heaths with Erica tetralix. 4030 European dry heaths 6230 Species-rich Nardus grasslands, on silicous substrates in mountain areas (and submountain areas in Continental Europe). 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae). 7110 Active raised bogs. 7140 Transition mires and quaking bogs. 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae).

Start Date 01-JAN-2006

Finish Date 31-DEC-2010
**Duration** 4 years

**Funding Source(s)** LIFE

**Summary**

The overall objective of the project was to enhance the connectivity of the habitats inside the project area and between the project area and other similar areas in Wallonia. The secondary aim was thus to establish the Plateau des Tailles as a base from which species can colonise suitable habitats in the region or re-colonise areas where local extinction has occurred.

To this effect, the project aimed to restore 13 habitat types of Community interest present on the plateau. The habitats were mostly open, such as *Nardus* grasslands, heaths, meadows and bogs, but also alluvial forests and bog woodland. The project would be implemented on four Natura 2000 sites covering an area of 2,800ha. The primary restoration objectives were to reestablish open areas and natural hydrology by removing trees and shrubs, filling in ditches, stripping topsoil, removing isolated trees to reopen bogs and heaths, and the creation of small ponds. The project also aimed to put in place long-term conservation management of some 600ha of land.

**Outcomes**

The purchase of land, the restoration of open areas and the encouragement of a more favorable water regime was particularly successful. Specific results of the project included:

- Purchase of around 86ha of land;
- Abandonment of coniferous forestry on 335ha;
- Approval of 52ha of new nature reserves on private land;
- Approval of 330ha of new nature reserves on public land;
- Anticipated cuts to conifer plantations on 332ha;
- Removal of plantations on 140ha of land without economic value;
- Sod-cutting of 31ha of land;
- 341km of blocked drains;
- 29 under road passages (230m nozzle);
- 364 ponds created;
- 15, 326km of dykes restored with 262m sheet piles;
- 150ha of deciduous forest restored;
- Initiation of mowing on 58ha of land;
- Installation of 100ha of enclosures for grazing.

**Publication(s)**

- Fiches détaillées des techniques de restauration hydrologique (Annexe 29 au rapport technique final).
- Layman report.

**Main Beneficiary** Direction Générale Opérationnelle "Agriculture, Ressources naturelles et Environnement" (DGO3) - Departement de l’Etude du Milieu Naturel et Agricole (DEMNA)

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**Initiative Title** Liereman - Habitat restoration in Landschap De Liereman

**Project Code** LIFE04 NAT/BE/000010
### Project Website

### Country/Countries
Belgium

### Biogeographic Region(s)
Atlantic

### N2K Site Name(s)
1. Arendonk, Merksplas, Oud-Turnhout, Ravels en Turnhout
2. Vennen, heiden en moerassen rond Turnhout

### N2K Site Code(s)
1. BE2101538, 2. BE2100024

### Annex I Habitat(s)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3130</td>
<td>Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea.</td>
</tr>
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</tr>
</tbody>
</table>

### Start Date
01-JAN-2004

### Finish Date
30-SEP-2010

### Duration
6 years

### Funding Source(s)
LIFE

### Summary
The Liereman project set out to restore the natural values of the De Liereman complex of habitats - from dry heathland on the hills to oligotrophic ponds in the bottom of the valleys - through a large-scale coordinated programme of action. The project sought to deliver a comprehensive management plan to reduce habitat fragmentation and start restoration works. Large conifer plantations would be cleared and a number of cottages removed from strategic locations to enable the natural redevelopment of heath. Locally, cleared areas would be sod-cut to restore the humid-depression fen vegetation of wet heath and, on the slopes, the rare Nardetalia vegetation. Filled and drained oligotrophic ponds would be restored. To support and enable these actions, the project foresaw the purchase of 132ha of land. The aim was that this initial investment should enable the beneficiary to start the long-term sustainable management of the site, including controlling visitor access to the more fragile areas.

### Outcomes
Based on the findings of a detailed hydrological survey, the beneficiary purchased over 143ha of land – mainly pine plantations or agricultural land - for habitat restoration. This exceeded the original target of 132ha and helped reduce fragmentation.

The implementation of a management plan led to the following restoration actions:

- Removal of trees and litter layer (with sod cutting) - 45ha;
- Removal of invasive aliens (*Prunus serotina*), deep mowing and sod cutting - 53ha;
- Sod cutting - 57ha;
- Removal of the topsoil layer/intensive mowing and grazing to reduce the dominance of *Holcus lanatus* - 22ha;
- Digging of two retention basins to reduce the frequency of flooding;
- Relocation of the Lintloop through dam construction and dredging;
- Restoration of five oligotrophic ponds;
- Thirty-four cottages were demolished and removed;

The project also introduced extensive grazing over 131ha, intensive mowing over 83ha and small-scale mowing over 10ha. Tree saplings were removed from 15ha to control regeneration. The success of the management actions was shown by the return of important fauna and flora, including the natterjack toad (*Epidalea calamita*), European nightjar (*Caprimulgus europaeus*), *Drosera* spp. and *Ranunculus ololeucos*.

The project has led to the Flemish Region agreeing to conduct a complementary
### Initiative Title
UITKERKSEPOLDER - Uitkerkse Polder: a surplus value for nature and people

### Project Code
LIFE03 NAT/B/000023

### Project Website

### Country/Countries
Belgium

### Biogeographic Region(s)
Atlantic

### N2K Site Name(s)
Polders

### N2K Site Code(s)
BE2500002

### Annex I Habitat(s)
- **1310** Salicornia and other annuals colonizing mud and sand.
- **1330** Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*).
- **3150** Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation.
- **7230** Alkaline fens

### Start Date
01-APR-2003

### Finish Date
31-MAR-2009

### Duration
6 years

### Funding Source(s)
LIFE

### Summary
Building on the achievements of its predecessor, this second LIFE-Nature project focused on the purchase and restoration of around 120ha of deteriorated grassland. Objectives aimed to: convert arable fields to saline grasslands; reproduce original micro-topography and ditch patterns; excavate pools; and prepare grazing infrastructure. As this district is a major tourist area, the project also aimed to make good use of latent social and economic opportunities that were potentially available from the nature reserve.

### Outcomes
The project was completed successfully and achieved its aim of adding conservation value to the Uitkerkse Polder.

Land acquisition increased the coverage of protected areas within the Polder’s nature reserve by 156ha, of which 139ha (exceeding the project target of 130ha) was co-financed by LIFE. This extension of the nature reserve helped to improve habitat management by reducing fragmentation and allowing for an optimal management of large, coherent blocks of land.

Following land purchases, practical start-up restoration and conservation works were undertaken on more than 100ha. This resulted in the creation of a large network of marshes and salty grasslands, comprising ditches, ponds, restored reed-banks and new naturally shaped canal banks. Impacts of these improved habitat features on breeding, resting and wintering birds have been monitored closely by the beneficiary and have resulted in significant increases in the density and breeding successes of many bird species.

### Publication(s)
- After-LIFE Conservation Plan (NL).
- Layman report (EN).
<table>
<thead>
<tr>
<th>Initiative Title</th>
<th>ZENO – Zwindunes Ecological Nature Optimization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Code</td>
<td>LIFE06 NAT/B/000087</td>
</tr>
<tr>
<td>Country/Countries</td>
<td>Belgium</td>
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<tr>
<td>Biogeographic Region(s)</td>
<td>Atlantic</td>
</tr>
<tr>
<td>N2K Site Name(s)</td>
<td>1. SCI Duingebieden inclusief Ijzermonding en Zwin 2. SPA Het Zwin</td>
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<tr>
<td>N2K Site Code(s)</td>
<td>1. BE2500001, 2. BE2501033</td>
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<tr>
<td>Annex I Habitat(s)</td>
<td>2190 Humid dune slacks. 2130 Fixed coastal dunes with herbaceous vegetation (&quot;grey dunes&quot;). 2120 Shifting dunes along the shoreline with <em>Ammophila arenaria</em> (&quot;white dunes&quot;). 1330 Atlantic salt meadows (<em>Glauco-Puccinellietalia maritimae</em>).</td>
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<tr>
<td>Start Date</td>
<td>31 December 2006</td>
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<tr>
<td>Finish Date</td>
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<tr>
<td>Duration</td>
<td>4 years</td>
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<td>Funding Source(s)</td>
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**Summary**

The site, known as the Zwindunes and Polders at Knokke, has an area of 222 ha and was, until 1872, part of the tidal flood plain of the Zwin. It consists of a large fossil beach plain that is enclosed by dunes and dikes. The fossil beach plain offers a typical set of environmental gradients for transition zones between sand dunes with fresh groundwater and clayish polders with brackish groundwater. During the 20th Century the natural character of the site was severely degraded by human interventions: the leveling of the microrelief of low dunes and creeks of the fossil beach plain to create an airfield and a horse jumping arena; the drainage of the groundwater; regular application of manure for agricultural purposes; and pine afforestation of some areas. The remaining natural value disappeared through scrub encroachment.

The site was purchased by the Flemish Region in 2002 and a management plan was elaborated and approved in the following years. The main actions prescribed by the management plan were to be implemented in the LIFE Nature project ZENO. The restoration of a more natural groundwater regime and the microrelief were the two main elements of this project.

**Outcomes**

- The microrelief of the fossil beach plain was restored and the drainage system removed to restore a more natural groundwater regime. Where sods were cut and soil was moved the habitats 1330 Atlantic salt meadows (2 ha) and 2190 Humid dune slack (6 ha) appeared again.

- Scrub and artificial pine plantations were partially removed to restore 2190 Humid dune slack (14 ha), 2120 white dune (2 ha) and 2130 grey dune (12 ha) habitats and 30 pools were excavated over the whole site to provide aquatic habitat to *Triturus cristatus* and *Hyla arborea*. This action has turned out to be very succesful.

- Grazing by large herbivores (cattle, horses, sheep and goats) was reintroduced over nearly the whole site. Grazing should restore and maintain 2130 Grey dune in a good status of conservation over an area of 80 ha.

To raise the awareness of the nature restoration and management works among the local population, an information evening and guided visits to the site were organised. Leaflets were also distributed and information boards were placed at key locations. A temporary exhibition also took place in the tourism office of the municipality.
Finally to enable an exchange of knowledge among site managers an international workshop about nature management in transition zones between dunes and salt marshes or dunes and polders took place on the site.

### Publication(s)


### Main Delivery Body/Beneficiary

Agency for Nature and Forests of the Flemish Government

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### Initiative Title

ICCI – Integral Coastal Conservation Initiative

### Project Code

LIFE96 NAT/B/003032

### Project Website


### Country/Countries

Belgium

### Biogeographic Region(s)

Atlantic

### N2K Site Name(s)

1. SCI Duinengebieden inclusief IJzermonding en Zwin (on land)
2. SCI Vlaamse Banken (at sea)
3. SPA Westkust (on land)

### N2K Site Code(s)

1. BE2500001, 2. BEMNZ0001, 3. BE2500121

### Annex I Habitat(s)

- **2190** Humid dune slacks.
- **2130** Fixed coastal dunes with herbaceous vegetation ("grey dunes").
- **2120** Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes").
- **1130** Estuaries.
- **1330** Atlantic salt meadows (*Glaucoc-Puccinellietalia maritimae*).
- **1310** Atlantic salt marshes (*Salicornia* and other annuals colonizing mud and sand).

### Start Date

1 January 1997

### Finish Date

31 December 2001

### Duration

5 years (initially 4 years, extended with 1 year)

### Funding Source(s)

LIFE

### Summary

The global aim of the ICCI – Life project was the conservation and the restoration of the Belgian western coast as one coherent ecological entity including its marine as well as its terrestrial component. This focussed on the restoration of...
the natural processes and biodiversity that are linked with the transitions between shallow sea, sandy beach, tidal salt marshes, coastal dunes and polders. Flemish regional and Belgian federal agencies, the Nature Division (now Agency for Nature and Forests) and the Management Unit for the Mathematical Model of the North Sea and the Scheldt-estuary (MUMM), joined forces with the conservation NGO’s Belgische Natuur en Vogelreservaten (BNVR, now: Natuurpunt) and World Wide Fund for Nature (WWF) to elaborate and implement the LIFE Nature project ICCI. The project consisted of concrete nature restoration and management works, land purchase of dunes, management planning, scientific monitoring, raising public awareness and stimulating the conservation policy. The restoration of the Yzer estuary was its most successful action.

Outcomes

Restoration of the listed Annex I habitats over an area of 50 ha was achieved by demolishing a former military harbour and excavating artificially raised areas at the Yzer estuary.

Restoration of 30 ha of humid dune slack and grey dunes was achieved by the removal of scrub and artificial poplar plantations. The excavation of ponds for *Triturus cristatus* and *Epidalea calamita* also occurred, followed by the start of grazing by large herbivores in the nature reserves De Westhoek, Houtsaegerduinen and Ter Yde.

The Flemish region and the BNVR purchased 20 ha of dunes, including an important part of the fossil dune site “De Schuddebeurze” The project initiated the intensified purchase policy of coastal dunes by the Flemish Government.

A management plan was produced for the Nature Reserve Hannecartbos in the frame of a site perspective for the Ter Yde dunes, that provided the basis for the LIFE Nature project "FEYDRA". A manual for the rescue of stranded marine mammals and seabirds by the MUMM was also produced as well as an awareness-raising brochure ‘De Westkust, een brok natuur om (van) te houden’ by WWF.

Publication(s)


Main Delivery Body/Beneficiary

Nature Division - now Agency for Nature and Forests of the Flemish Government

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Initiative Title FEYDRA – Fossil Estuary of the Yzer Dunes Restoration Action
Project Code LIFE02 NAT/B/008591
Country/Countries Belgium
Natura 2000 Seminars

**Biogeographic Region(s)**: Atlantic

**N2K Site Name(s)**: Duingebedien inclusief Ijzermonding en Zwin

**N2K Site Code(s)**: BE2500001

**Annex I Habitat(s)**
- **2190** Humid dune slacks.
- **2130** Fixed coastal dunes with herbaceous vegetation ("grey dunes").
- **2120** Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes").

**Start Date**: 1 January 2002

**Finish Date**: 31 December 2005

**Duration**: 4 years

**Funding Source(s)**: LIFE

### Summary

The project area of FEYDRA is situated in the former medieval estuary of the Yzer river at Oostduinkerke and Nieuwpoort. It consists mainly of a former tidal beach plain that was cut off from the sea by the formation of dunes during the 14th Century. The actual relic of that dune system is strongly fragmented by roads and urbanisation, was partially planted with poplars and elders, is subject to encroachment by scrub and to desiccation as a result of drainage.

The FEYDRA project aims were the restoration of a more natural groundwater regime of the whole Ter Yde dune system (264 ha) in order to restore the habitat 2190 humid dune slack and the aquatic habitats of *Epidalea calamita* and *Triturus cristatus*. It also aimed at the direct restoration of several dune habitats by the removal of buildings, artificial plantations and (mainly Hippophae) scrub.

### Outcomes

The following actions were carried out:

- The removal of eutrophic sludge from the dune rivulet, followed by the damming up of that rivulet (that initially drained the groundwater of the dune system) resulted in a more natural groundwater regime;

- The restoration of 6 ha of calcareous marshland on the fossil beach plain (habitat 2190) by the removal of 6 ha of degraded artificial poplar and elder woodland;

- The restoration of 5 ha of humid dune slack and grey dune by the demolition of a derelic water purification plant;

- The restoration of 2.5 ha of humid dune slack and grey dune and of 2 ha of white dunes by the removal of scrub.

The importance of the site and the need for restoration and management was communicated through an information evening, the publication and distribution of leaflets, a temporary exhibition at the local visitor center and information boards at key locations.

Exchange of knowledge took place during the international conference Dunes & Estuaries in 2005 at Koskijde.

### Publication(s)

### Conference on Nature Restoration Practices in European Coastal Habitats


<table>
<thead>
<tr>
<th>Main Delivery Body/Beneficiary</th>
<th>Agency for Nature and Forests (former Nature Division) of the Flemish Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name</td>
<td>Hannah Van Nieuwenhuyse &amp; Jean-Louis Herrier</td>
</tr>
<tr>
<td>Contact Email</td>
<td><a href="mailto:Hannah.vannieuwenhuyse@lne.vlaanderen.be">Hannah.vannieuwenhuyse@lne.vlaanderen.be</a> <a href="mailto:Jeanlouis.herrier@lne.vlaanderen.be">Jeanlouis.herrier@lne.vlaanderen.be</a></td>
</tr>
<tr>
<td>Contact Telephone</td>
<td>0032 2 553 81 14</td>
</tr>
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</table>

### Denmark

**Initiative Title**
ASPEA - Action for sustaining the population of *Euphydryas aurinia*

**Project Code**
LIFE05 NAT/DK/000151

**Project Website**

**Country/Countries**
Denmark

**Biogeographic Region(s)**
Atlantic

**N2K Site Name(s)**
1. Hirsholmene, havet herfor og Ellinge Ås udløb
2. Kærgård Strand, Vandplasken og Liver Å
3. Lundby Hede, Oudrup Østerhede og Nibe Randby Hede
4. Nibe Bredning, Halkær Ådal og Sønderup Ådal
5. Store Vildmose

**N2K Site Code(s)**
1. DK00FX113, 2. DK00FX115, 3. DK00FX127, 4. DK00FX123, 5. DK00FX120

**Annex I Habitat(s)**
- **1330** Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*).
- **2130** Fixed coastal dunes with herbaceous vegetation ("grey dunes").
- **2190** Humid dune slacks. **4010** Northern Atlantic wet heaths with *Erica tetralix*. **4030** European dry heaths. **6230** Species-rich *Nardus* grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe). **6410** *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). **7110** Active raised bogs. **7140** Transition mires and quaking bogs. **7230** Alkaline fens.

**Start Date**
08-JAN-2005

**Finish Date**
31-DEC -2008

**Duration**
3 years

**Funding Source(s)**
LIFE

**Summary**
The overall objective of the LIFE-ASPEA project was to bring a threatened and isolated population of marsh fritillary (*Euphydryas aurinia*) in Denmark into a favourable conservation status. In order to reach this objective, the project aimed to preserve and strengthen existing subpopulations through a range of conservation measures. It will create opportunities for the establishment of at least three new subpopulations from the existing localities through restoration of potential habitats and raise awareness of the species amongst land users to ensure appropriate management of its habitats in the future.

**Outcomes**
The project achieved its overall objective of attaining favourable conservation status for this species through appropriate habitat management of more than 500 ha of existing (and potential) marsh fritillary butterfly habitats. Favourable condition was achieved at three Natura 2000 sites, significantly boosting survival prospects of the population in northern Jutland. Awareness-raising among the...
involved landowners as well as the general public formed a substantial part of the project. This was important for the success of this project. The project activities have since been included in a Code of Best Practice.

**Publication(s)**

**Main Beneficiary**
Danish Forest and Nature Agency

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**Initiative Title**
Dune Habitats - Restoration of Dune Habitats along the Danish West Coast

**Project Code**
LIFE02 NAT/DK/008584

**Project Website**
http://www.skovognatur.dk/Emne/Naturbeskyttelse/Naturpleje/LIFE/Afsluttede/Klithede/Restorationdune.htm

**Country/Countries**
Denmark

**Biogeographic Region(s)**
Atlantic

**N2K Site Name(s)**
1. Holtemmen, Højlsande og Nordmarken,
2. Svinlkøl Klitplantage og Grønne Strand,
3. Løgskær Bredning, Vejlerne og Bulbjerg,
4. Klitheder mellem Stenbjerg og Lodbjerg,
5. Lild Strand og Lild Strandkær,
6. Ejstrup Klit og Evangds Bakker,
7. Råbjerg Mile og Hulsig Hede,
8. Ålavd Klithede og Føhrby Sø,
9. Blåbjerg Egekrat, Lyngbos Hede og Hennegårds Klitter,
10. Kallesmærsk Hede, Grærup Langsø, Fiilsø og Kærgård Klitplantage
11. Vadehavet med Ribe Å, Tved Å og Varde Å vest for Varde

**N2K Site Code(s)**
1. DK00FX118, 2. DK00FX121, 3. DK00EY124, 4. DK00EX265, 5. DK00EX266, 6. DK00FX274, 7. DK00FX005, 8. DK00EX017, 9. DK00AX172, 10. DK00AX173, 11. DK00AY176

**Annex I Habitat(s)**
2130 Fixed coastal dunes with herbaceous vegetation ("grey dunes"). 2190 Humid dune slacks. 3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae). 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation. 4010 Northern Atlantic wet heaths with Erica tetralix. 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae).

**Start Date**
01-NOV-2001

**Finish Date**
31-OCT -2005

**Duration**
4 years

**Funding Source(s)**
LIFE

**Summary**
This project aimed to secure a more favourable conservation status of Danish dune habitats. The project planned restoration actions across an area of 5,675ha, covering 65 percent of the national sand dune resource. It sought to develop a strategic approach, building on previous LIFE-Nature projects where different conservation techniques would be refined and monitored. The experiences gained and lessons learned would then be shared with similar LIFE projects in other countries, most notably Latvia and the UK. It ultimately aimed to produce a guidance document on best practice in the management of these fragile habitats. The project planned to use different techniques on areas suffering varying levels of scrub encroachment to restore dune heath areas and other priority habitat types. It aimed to secure viable populations of primarily Epidalea calamita and Rana arvalis along the Danish west coast in the project.
area where decalcified fixed dunes with a mosaic of humid dune slacks occurred.

Outcomes

This large-scale project has succeeded in improving the conservation status of the dune heath areas and other priority habitat types. 38ha of land was purchased from private land owners and the breeding sites for key herpetofauna, primarily *Epidalea calamita* and *Rana arvalis*, were improved. The methodologies and best management practice identified in the project supported the production of detailed monitoring reports and management guidelines. These have already been used in other dune heath areas. Plantation and mosaic burning methods have attracted international interest which has led to active co-operation and knowledge transfer with Dutch and Swedish authorities. The project cleared 388ha of plantation, 516ha of dense overgrowth and 4,972ha of tree encroachment. Grazing, burning and cutting was carried out on 2,909ha. However, the project found that grazing agreements were difficult to secure because of restrictions imposed by the CAP which made farming in these agriculturally marginal areas uneconomic in the absence of subsidies. Drainage trenches were blocked in three project sites to retain surface water for longer in the summer to prevent invading trees and create more natural conditions. Public awareness and understanding of the conservation value of these habitats was increased through the project website, video and a booklet made available in Danish and English.

Publication(s)

- "Klitheden i Danmark - Danish Dune Habitats".
- DUNE HEATH MANAGEMENT BEST PRACTICES MANUAL.
- After-LIFE Conservation Plan.
- Layman report (EN).

Main Beneficiary Ministry of the Environment, The Danish Forest and Nature Agency

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Initiative Title Skjern River - Restoration of habitats and wildlife of the Skjern River

Project Code LIFE00 NAT/DK/007116

Project Website http://www.SkjernEnge.dk

Country/Countries Denmark

Biogeographic Region(s) Atlantic

N2K Site Name(s) Ringkøbing Fjord og Nymindestrømmen

N2K Site Code(s) DK00CY163

Annex I Habitat(s) 3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation. 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Calitricho-Batrachion vegetation.

Start Date 01-JAN-2001

Finish Date 31-DEC-2004

Duration 3 years

Funding Source(s) LIFE

Summary

The main aim of this project was to restore key areas of conservation value in the Natura 2000 network that were identified in a land use plan that was created through a previous LIFE project. This involved restoring 875ha of river valley and the improvement of biological diversity over 1,600ha through the reintroduction of grazing. River valley restoration aimed to restore natural river dynamics over a 20km stretch through heavy-duty construction works. Once restored, appropriate management measures will be implemented to encourage the return of wild fauna. The following targets were adopted:

- Improve habitat for Annex I bird species such as *Recurvirostra avosetta*, *Philomachus pugnax*, *Sterna sandvicensis*, *Chlidonias niger*, *Sterna hirundo*, *Circus aeruginosus*, *Alcedo atthis* and *Porzana porzana*.
### Outcomes

The main project objectives have been reached and the expected nature conservation benefits have been met. The construction of more than 20 km of new riverbeds in the eastern part of the project site has been successfully carried out. By the end of project, about 1,200ha of grassland were established, which was less than the original target of 1,600ha because of a greater than anticipated area of restored wetland.

SPA designation threshold was reached in the restored areas. In 2002: *Botaurus stellaris* (4 breeding pairs); *Recurvirostra avosetta* (85 breeding pairs); *Sterna hirundo* (1 breeding pair), *Porzana porzana* (7-9 breeding pairs); and an increased number of *Philomachus pugnax* migrants. In 2000 none of these birds were breeding in the area. Additionally it has become a roosting location for *Anser brachyrhynchus* (1,780 individuals in spring 2003 and around 2,000 individuals in autumn 2002 and 2003) representing 0.7% of total European winter population (> 290,000 individuals). The designation of the new SPA took almost two years and was successfully completed in August 2006.

A new shallow lake, Hestholm Lake, of around 5km² was created.

The project has also benefited some Annex II species, such as water plantain (*Luronium natans*), otter and salmon. A management plan for the long-term sustainability of the site, over the period 2005-2020, was produced which supported a proposal for the establishment of a National Park on the Skjern River. Progress in the formal establishment of the National Park is expected by the end of 2006.

Recreation facilities were established in the project area which has attracted an increased number of visitors (approximately 350,000-400,000). More specifically a system of 17km of trails and 3 observation towers or hides were created. Compensation payments to private landowners were made to improve public access (approx. €20,000). An analysis by the Royal Danish Agricultural University in 2002, concluded that the project represented a good public investment and that the overall cost will be compensated by the associated economic opportunities that have been generated through this work.

### Publication(s)

- The Skjern River - history of the river valley, major projects, the new landscape and the nature, visiting the valley.
- Drift- og plejeplan for Skjern Enge - vest (management plan, in Danish).
- Drift- og plejeplan for Skjern Enge (management plan, in Danish).

### Main Beneficiary

Skov- og Naturstyrelsen, Danish Forest and Nature Agency

### Contact Information

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- **Telephone**: +45 394 72 000

### Initiative Title

Restoration of raised bogs in Denmark with new methods

### Project Code

LIFE05 NAT/DK/000150

### Project Website

[http://www.naturstyrelsen.dk/Naturbeskyttelse/Naturprojekter/Projekter/Fjord](http://www.naturstyrelsen.dk/Naturbeskyttelse/Naturprojekter/Projekter/Fjord)
<table>
<thead>
<tr>
<th>Natura 2000 Seminars</th>
</tr>
</thead>
<tbody>
<tr>
<td>andet/Hoejmoser/ or <a href="http://www.raisedbogs.dk">www.raisedbogs.dk</a></td>
</tr>
</tbody>
</table>

Country/Countries: Denmark

Biogeographic Region(s): Atlantic and Continental

| N2K Site Name(s) | 1. Rold Skov, Lindenborg Ådal and Madum Sø.  
2. Brandstrup Mose.  
4. Kongens Mose and Draved Skov  
5. Storelungen  
6. Forests and lakes South of Brahetrolleborg  
7. Svanemosen |

| N2K Site Code(s) | 1. DK00FX126, 2. DK00EX138, 3. DK00DZ153, 4. DK009X061, 5. DK008X193, 6. DK008X194, 7. DK008X337 |

Annex I Habitat(s): 7110* Active raised bogs.

Start Date: 10/1/2005

Finish Date: 31/10/2011

Duration: 6½ years

Funding Source(s): Life Nature

Summary

Active raised bogs in Denmark have been under great pressure and more than 90% has now been lost. Apart from one relative large active raised bog (Tofte Mose, Lille Vildmose) the raised bogs or Danish pSCIs are small and threatened by desiccation caused by former draining and peat excavation, tree encroachment and nutrient enrichment from atmospheric deposition of N or from inundation of surface water from neighbouring agricultural areas. In most areas the cover of *Sphagnum* is not dense enough to secure peat formation or peat accumulation. The conservation status of this habitat in Denmark is currently evaluated as unfavourable. This project has chosen seven proposed Sites of Community Importance to cover the variation in respect of threats, size, history of their management and surrounding landscape.

Outcomes

- 384 ha has been hydrological restored;
- 275 ha overgrowth have been cleared;
- Different types of machinery have been tested;
- A new monitoring system has been developed;
- Restoration methods have been tested for:
  - blocking drains and ditches
  - clearing trees and re-growth

Publication(s)

For reports see:

http://www.naturstyrelsen.dk/Naturbeskyttelse/Naturprojekter/Projekter/Fjordlandet/Hoejmoser/Download/

Please note that “Technical Final Report“ is not yet available for download (May 2012)

Main Delivery Body/Beneficiary: Danish Nature Agency

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Initiative Title: Restoration of Dune Habitats along the Danish West Coast

Project Code: LIFE02 NAT/DK/008584

Project Website: No longer active, see publications section.

Country/Countries: Denmark

Biogeographic Region(s): Atlantic and Continental

<p>| N2K Site Name(s) | 1. H2 Råbjerg Mile and Hulsig Hede |</p>
<table>
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<tr>
<th>N2K Site Code(s)</th>
<th>1. DK00FX005, 2. DK00FX118, 3. DK00FX121, 4. DK00EY124, 5. DK00EX017, 6. DK00AX172, 7. DK00AX173, 8. DK00AY176, 9. DK00EX265, 10. DK00EX266, 11. DK00FX274</th>
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<tr>
<td>Annex I Habitat(s)</td>
<td>2130* Fixed coastal dunes with herbaceous vegetation (“grey dunes”).</td>
</tr>
<tr>
<td>Start Date</td>
<td>1/1/2001</td>
</tr>
<tr>
<td>Finish Date</td>
<td>31/10/2005</td>
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<tr>
<td>Duration</td>
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<td>Funding Source(s)</td>
<td>Life NATURE</td>
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**Summary**

The Danish coastline bordering the North Sea is characterized by its long stretches of white sandy beaches and extensive dunes. Substantial tracts are also of international conservation importance. However, these dune systems have suffered from an array of problems over the years, associated with inappropriate land use and over-stabilization. The most serious threat has come from the large-scale invasion of non-native species such as *Pinus mugo* and *Pinus contorta*. This was further exacerbated by the inability of the dunes to function as natural dynamic systems and of the vegetation to cope with increasingly large amounts of ammonium deposition.

This project aimed to regain the more favorable conservation status of Danish dune habitats. The project planned restoration actions on a total area of 5,675 ha - covering 65 percent of the total sand dune FFH resource in the country. It sought to develop a strategic approach, building on previous LIFE-Nature projects and refining and monitoring different conservation techniques. The project planned to use different techniques on areas suffering different levels of overgrowth to restore dune heath habitats, including the priority habitat types: fixed coastal dunes with herbaceous vegetation (‘grey dunes’) (2130*) and decalcified fixed dunes with *Empetrum nigrum* (2140*).

**Outcomes**

This large-scale project has succeeded in improving the conservation status of both 2130* and 2140*. Breeding sites for *Epidalea calamita* and *Rana arvalis* were improved. The project cleared invasive vegetation and non-indigenous trees to encourage the restoration of dune heath habitats. More specifically:

- 37.8 ha of key land was purchased from private land owners;
- 388 ha of plantations were cleared;
- 516 ha of dense overgrowth was cleared;
- 4972 ha of tree encroachment was cleared;
- 2,909 ha were improved by Grazing, burning; and
- 3 project sub-areas were restored to natural hydrology.

**Publication(s)**

- First progress report, 2003
- Laymans report

**Main Delivery Body/Beneficiary**

Danish Nature Agency (then: Forest and Nature Agency) with 7 partners

**Contact Name**

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<table>
<thead>
<tr>
<th>Initiative Title</th>
<th>Acrocephalus Bretagne - Conservation of the Aquatic Warbler in Brittany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Code</td>
<td>LIFE04 NAT/FR/000086</td>
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<tr>
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<td>France</td>
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<td>Biogeographic Region(s)</td>
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<td>N2K Site Code(s)</td>
<td>1. FR5310056, 2. FR5310071, 3. FR5310094</td>
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</table>
| N2K Site Name(s)  | 1. Baie d’Audierne  
2. Rade de Brest : Baie de Daoulas, Anse de Poulmic  
3. Rade de Lorient |
| Annex I Habitat(s)| 1310 Salicornia and other annuals colonizing mud and sand. 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae). 2190 Humid dune slacks. |
| Start Date        | 01-JAN-2004                                                                  |
| Finish Date       | 30-APR -2009                                                                 |
| Duration          | 5 years                                                                       |
| Funding Source(s) | LIFE                                                                           |

**Summary**

The main objective of this project was to increase the area of favourable habitat for migrating aquatic warblers in the Atlantic coastal marshes of France. Two specific aims of the project were: 1) The ecological maintenance or rehabilitation of three important stopover marshes in Brittany, all known to be important staging areas for aquatic warblers; and 2) The promotion of the management know-how acquired during the project. Further project actions would include: improving knowledge about the species and its habitat through radio-tracking; producing an inventory of additional spring migratory stop-over sites; protecting the most important stop-overs by controlling management and property status on 30ha, through management agreements or land purchase; managing 265ha of marshes to optimise structure for warblers - dredging and digging ditches, installing gates and hydrological management; promoting the importance of these zones among the local population (through films, meetings, brochures and activities for the general public and schoolchildren); and organising technical workshops and publishing management guidelines.

**Outcomes**

The project acquired 40ha of marsh suitable for aquatic warblers, exceeding the initial objective of 10ha, as well as a further 13ha through other funding sources. Other outcomes include:

- Long-term management agreements on 2 sites;
- Flood restoration of 270ha over the three project sites;
- Repetitive reed bed cutting to restore 47ha of wet meadows;
- Installation of fences along 2.8 km of land to enable grazing;
- Control of invasive species (Pampas grass, Baccharis, Japanese knotweed, willows) 30ha on each of the three sites;
- Long-term management plan to regulate water levels;
- Improved knowledge of aquatic warbler habitat requirements;
- Radio-tracking and ringing to identify major stop-over sites;
- A regional strategy for the conservation of the aquatic warbler;
- Discovery of a new wintering site in Senegal;
- Technical guidebook for site managers;
- Request from the French Ministry of Ecology to produce a National Action Plan for this species;
- Support for the development of action plans ("Document d'Objectifs") for the three Natura 2000 sites;
- A campaign to raise awareness among local inhabitants, schoolchildren.
and other stakeholders that involved 1,400 schoolchildren and 1,800 members of the general public;

- A movie, which was awarded the "Prix du parc interrégional du Marais Poitevin" during the 23rd bird film festival in Ménigoute, France (November 2007); and
- A seminar with 80 participants, including 20 experts working on the conservation of aquatic warblers in other countries.

### Publication(s)

- Écologie et gestion des habitats du Phragmite aquatique en halte migratoire: recueil d'expériences
- Première zone d’hivernage du Phragmite aquatique Acrocephalus paludicola découverte en Afrique
- Layman report (EN)

### Main Beneficiary

Bretagne Vivante - SEPNB

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<table>
<thead>
<tr>
<th>Initiative Title</th>
<th>LIFE Marais - Conservation of the most remarkables habitats and species of the Poitevin Marshes</th>
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<tbody>
<tr>
<td>Project Code</td>
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<td>N2K Site Code(s)</td>
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<tr>
<td>Annex I Habitat(s)</td>
<td>3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation. 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae).</td>
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<td>Start Date</td>
<td>15-JUL-2004</td>
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**Summary**

The objective of this LIFE Nature project was to improve the conservation status of the Marais de Poitevin Natura 2000 site, and of its species and habitats, through the following actions: Restoring 317ha of natural grasslands and 10.3km of the hydrographic network; purchasing 65ha of land to carry out specific species/habitat restoration works; improving knowledge of the marsh and its species, in order to improve management techniques; drawing up a management plan for 1,700ha of marshes used as a collective pasture; setting-up a technical protocol to convert cultivated lands into grasslands; implementing an existing action plan for the European otter; and carrying out an awareness campaign at local, national and European level about the ecological value of the site.

### Outcomes

Most of the initial objectives were met: The project restored 384ha of habitats (wetlands, reed beds, sand dunes, humid forest) and 13km of ditches. The restoration works have already had an impact on some species, e.g. nesting birds were found in greater numbers on some wetlands immediately following the restoration activities. The project also acquired 54ha of land with LIFE support (plus an additional 5ha through other funding), including 6ha of humid forest and 48ha of wetlands.

Ecological inventories were completed for 3,515ha of land, leading to an
improved knowledge of the species present as well as an assessment of the effects of the management activities carried out throughout the duration of the LIFE project. A technical protocol was produced to assist farmers with arable reversion. The project also contributed to the implementation of action plan for the European otter with the identification of locations where road casualties occur most and the subsequent construction of two otter ledges in order to reduce the number of road casualties.

A significant outreach campaign was supported by the development of 47 different communication materials and the erection of 43 display boards. More than 14,000 people took part in communication activities (school activities, training courses, open days etc.). The project also extended and strengthened the partnership among local stakeholders, with the involvement of 80 different organisations (associations, universities, local councils).

| Publication(s) | • Recueil d’expériences - Les communaux du Marais poitevin.  
• Implanter une surface en herbe en Marais poitevin: Guide technique pour répondre à des enjeux économiques et environnementaux  
• After-LIFE Conservation Plan (EN)  
• Layman report (EN) |

| Main Beneficiary | Syndicat Mixte du Parc Intermésial du Marais Poitevin |
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| Contact Email | parc.marais.poitevin@wanadoo.fr |
| Contact Telephone | +33 5 49 35 15 20 |

### Germany

| Initiative Title | Borstgrasrasen - Conservation and regeneration of Nardus Grasslands in Central Europe |
| Project Code | LIFE06 NAT/D/000008 |
| Project Website | http://www.life-arnika.eu/ |
| Country/Countries | Germany |
| Biogeographic Region(s) | Atlantic/Continental |

| N2K Site Name(s) | 1. Closenbruch  
2. Etangs de Longchamps et de Noville (Bastogne; Bertogne; Houffalize)  
3. Feuchtgebiete und Heiden des Hohen Westerwaldes  
4. Gerolsteiner Kalkeifel  
5. Haute-Sûre (Fauvillers; Légilise; Neufchâteau; Vaux-sur-Sûre)  
6. Hochwald  
7. Hofberg bei Reitscheid  
8. Idarwald  
9. Löstertal  
10. Obere Kyll und Kalkmulden der Nordeifel  
11. Ruwer und Seitentäler  
12. Söterbachtal  
13. Süddeutsch des Nohfeldener Rhyolith-Massivs  
14. Vallée de l’Emmels (Amel)  
15. Vallée de l’Ulf (Burg-Reuland; Gouvy)  
16. Vallée de la Holzwarche (Büllingen)  
17. Vallée de la Tretterbaach  
18. Vallée supérieure de la Sûre / Lac du barrage  
19. Vallées de la Sûre, de la Wiltz, de la Clerve et du Lellgerbaach  
20. Wadrilltal  
21. Weicherange - Breichen |
Natura 2000 Seminars

22. Weisselfberg
23. Wiese nö Reitscheid
24. Wiesen bei Wadrill und Sitzerath
25. Wiesenkomplex bei Eisen
26. Wiesenlandschaft bei Überroth
27. Wilwerdange - Conzeffenn
28. westlich Otzenhausen

N2K Site Code(s)

Annex I Habitat(s)
4030 European dry heaths. 6230 Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe). 6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis).

Start Date 01-OCT-2006
Finish Date 30-SEP-2010
Duration 4 years
Funding Source(s) LIFE

Summary
This project aimed to restore the conservation status of species-rich Nardus grasslands in Germany, Belgium, and Luxembourg. Over 30 different sites were identified for restoration support from the LIFE project. Cooperation between nature conservation stakeholders in the different countries was a vital part of this project.

Outcomes
The project achieved its objectives. It successfully improved the conservation status of species-rich sub-mountainous Nardus grasslands in the three target countries and also improved the connectivity of these priority habitats in the countries' border areas. Long-term management schemes were also designed to help safeguard the Nardus grassland sites. Public relations actions carried out by the project were considered to demonstrate good practice and were effective in raising awareness about the habitat’s management requirements. Innovation was introduced in the form of a geo-caching trail.

Tangible results included: habitat management plans for 34 project sites; 78ha of land purchased and leased; 159ha of invasive bushes and shrubs removed; 126ha of land previously covered by thick grass layers were mulched to facilitate rehabilitation of Nardus species; 30km of fencing was installed to control and manage livestock grazing on the project sites; hay seeds were sown over 70ha; multi-lingual project web-site (EN, DE, FR) was created; a portfolio of multi-lingual and different publicity material was published; a large international workshop was organised; several nature trails were created; and a number of guided excursions took place.

Publication(s)
- Layman report

Main Beneficiary Naturlandstiftung Saar
Contact Name Axel DIDION
Contact Email didion@nls-saar.de
Contact Telephone +49 681 954 1518

Initiative Title Cuxhavener Küstenheiden - Large Herbivores for Maintenance and Conservation of Coastal Heaths
Project Code LIFE05 NAT/D/000051
Project Website http://www.life-kuestenheiden.niedersachsen.de
Country/Countries Germany
Biogeographic Region(s) Atlantic
N2K Site Name(s) | Küstenheiden und Krattwälder bei Cuxhaven
---|---
N2K Site Code(s) | DE2117331

Annex I Habitat(s) | 3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*), 4010 Northern Atlantic wet heaths with *Erica tetralix*, 6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*), 7110 Active raised bogs, 7140 Transition mires and quaking bogs.

Start Date | 01-OCT-2005
Finish Date | 30-SEP-2009
Duration | 4 years
Funding Source(s) | LIFE

Summary
The project aimed to improve the conservation status of coastal heaths and coppiced woodland in a Natura 2000 site near Cuxhaven. The project sought to restore open habitats and reduce threats such as overgrowth, invasion of alien species (particularly black cherry - *Prunus serotina*) and human disturbance.

In order to maintain and improve habitat quality, the project intends to initiate a large herbivore grazing management system using species such as Heck cattle, wild horses (*Equus przewalskii*) or European bison (*Bison bonasus*). This would suppress invasive scrub and pioneer grass species. It is hoped that this would lead to the establishment and maintenance of an extensive open coastal heath landscape either with no or very few trees.

Forestry measures will be implemented to convert monocultural coniferous forests to mixed deciduous and coppiced woodland. Nine small water bodies will be revitalised or established.

More considerate use of the area by visitors and recreational users will also be encouraged through the installation of a nature trail, an observation platform and information panels.

Outcomes
The project was successfully completed in September 2009, achieving all its major objectives. The main target of establishing a large herbivore grazing scheme has been implemented on an area of approximately 300ha. Additionally 80 ha of coniferous woodland has been converted to deciduous woodland and 9 small water bodies have been restored or created.

The first results of the detailed monitoring of the effects of grazing on the grassland habitats are very promising. The elimination of *Prunus serotina* with Heck cattle has proved to be very successful, while other woodland species, such as *Crataegus* spp. and *Pinus* spp. have also been successfully controlled through grazing.

The implementation of the project has generated valuable stock management insights for use in other similar projects and represents best practice for the use of these large herbivores as management tools for the restoration of coastal heaths and dry grasslands.

Upon completion of the project, the site was taken over by the federal trust “Deutsche Bundesstiftung Umwelt” (DBU) as it is a site of national importance (“Nationales Naturerbe”). The DBU has drawn up a long-term management plan for the site based on the knowledge gained and lessons learned from the LIFE project.

Publication(s)

Main Beneficiary
Land Niedersachsen, Niedersächsisches Ministerium für Umwelt und Klimaschutz

Contact Name
Renate THOLE
### Initiative Title: Lippe-Aue - Optimisation of the pSCI "Lippe flood plain between Hamm and Hangfort"

**Project Code**: LIFE05 NAT/D/000057  
**Project Website**: [http://www.life-lippeaue.de](http://www.life-lippeaue.de)  
**Country/Countries**: Germany  
**Biogeographic Region(s)**: Atlantic  
**N2K Site Name(s)**: Lippeaue zwischen Hangfort und Hamm  
**N2K Site Code(s)**: DE4213301

#### Annex I Habitat(s)

- **3150** Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation.
- **3260** Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation.
- **91E0** Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae).

**Start Date**: 08-JAN-2005  
**Finish Date**: 31-JUL-2010  
**Duration**: 5 years  
**Funding Source(s)**: LIFE

#### Summary

The project aimed to restore the natural river and floodplain dynamics in the pSCI. Along a 5,500m section of the River Lippe, the river bank reinforcement would be removed in order to promote the re-instatement of natural erosion and sedimentation processes. Additionally, a 585m stretch of a small side stream will be renaturalised. As a result, new natural river habitats would be established and the frequency of flooding would be increased on 110ha of land. Several weirs and small barriers in the River Lippe were planned to be removed, to facilitate the migration of Atlantic salmon (**Salmo salar**), river lamprey (**Lampetra fluviatilis**) and asp (**Aspius aspius**). On 40ha of wet grasslands, the restoration of the natural hydrology would be achieved by blocking ditches, and 2.6ha of arable land would be converted into grassland. For the general public, a nature trail and an observation tower would be created, along with guided access to the nature area.

#### Outcomes

The project achieved all the main objectives. Taken together, the planned actions restored 17km of the river Lippe floodplain in an area close to a large city. New oxbows, flood channels and shallow ponds were created and the bank stabilisations at the river Lippe were removed as originally planned. As a consequence, natural alluvial habitats for a significant number of threatened species have been created. Lease contracts have been signed to ensure that the grasslands are managed to promote the development of typical floodplain meadows and increase the occurrence of rare bird species. Local authorities have accepted responsibility for the maintenance of the new conservation infrastructure, such as the observation tower and the nature trail. They will also continue the public relation activities.

#### Publication(s)


**Main Beneficiary**: Stadt Hamm, Umweltamt  
**Contact Name**: Oliver Schmidt-Formann  
**Contact Email**: schmidtformann@stadt.hamm.de  
**Contact Telephone**: +49 2381 177137

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### Initiative Title: Westliche Dümmerniederung - Re-wetting of the Western Dümmer fen area

**Project Code**: LIFE02 NAT/D/008456  
**Project Website**: [http://www.life-duemmer.niedersachsen.de/](http://www.life-duemmer.niedersachsen.de/)
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<thead>
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<td>Annex I Habitat(s)</td>
<td>3150 Natural eutrophic lakes with <em>Magnopotamion</em> or <em>Hydrocharition</em>-type vegetation. 3260 Water courses of plain to montane levels with the <em>Ranunculion fluitantis</em> and <em>Callitricho-Batrachion</em> vegetation. 91E0 Alluvial forests with <em>Alnus glutinosa</em> and <em>Fraxinus excelsior</em> (<em>Alno-Padion, Alnion incanae, Salicion albae</em>).</td>
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<td>5 years</td>
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<tr>
<td>Funding Source(s)</td>
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**Summary**

The project aimed to stop the drying of the peaty soil, or at least slow the process down, through the use of adjustable weirs to modulate water levels. The LIFE project would provide the funds to make it possible to purchase the remaining land sections still needed in the western Dümmer to achieve the overall restoration of the area. Weirs and ditch closures will be built with the beneficiary's own funds. The successful co-operation between the previous LIFE project and local agriculture will be continued. A lease-back arrangement for conservation land with land-use stipulations permits the wetlands to be exploited economically (for hay production and grazing) while improving their ecological value. The current LIFE project will provide the farmers with machinery more suited for use on wet soils. Without such long-term management these areas would eventually become overgrown by scrubby alder woodlands that are less favoured by migratory birds.

**Outcomes**

After rewetting of 1,000ha in the first project this project rewetted a further 1,200ha of land which corresponds to the target set in the proposal. In addition, 28 adjustable weirs and 14 overflow weirs were also installed. As a result of the project, the water levels in the 44km of drainage ditches can be controlled and adjusted to levels that were typical for the area before dykes were built. Peat mineralisation (which has led to a decline of the peat soil of 1-2 cm per year before the re-wetting of the soils) can now be stopped. Moreover, the first positive effects on breeding and resting birds have been detected with increases in the populations of black tern, osprey, black-tailed godwits, redshanks, snipes, lapwings and various meadow bird species. Intensive co-operation with more than 140 local farmers has been a key result of the project. Local participation is a prerequisite for the restoration and further development of suitable habitats for water, wading and meadow bird species. Blocking access to 20.7km of pathways in the southern part of the project area has created more than 1,000ha of "quiet zone" that protects bird species that are sensitive to disturbance and contributes to the area's conservation value. More than 100km of fences have been installed and special machinery, such as a baler and a baler trailer, were acquired. Local farmers can borrow these machines without charge. This has substantially raised the acceptance of the project among the farmers.

**Publication(s)**

- Layman report (EN)

**Main Beneficiary**

Umweltministerium Niedersachsen

**Contact Name**

Renate THOLE

**Contact Email**

Renate.Thole@mu.niedersachsen.de

**Contact Telephone**

+49 511-1203280

**Initiative Title**

SPA Duesterdieker Niederung - Optimization of the SPA 'Düsterdieker Niederung'

**Project Code**

LIFE00 NAT/D/007042

**Project Website**

http://www.biologische-station-st.de/bsst/startseite/life-projekt.html

**Country/Countries**

Germany

**Biogeographic Region(s)**

Atlantic
| N2K Site Name(s)       | 1. Mettinger und Recker Moor  
|                       | 2. Vogelschutzgebiet ‘Düsterdieker Niederung’ |
| N2K Site Code(s)      | 1. DE3612301, 2. DE3612401 |
| Annex I Habitat(s)    | 4010 Northern Atlantic wet heaths with *Erica tetralix*  
|                       | 4030 European dry heaths  
|                       | 6410 *Molinia* meadows on calcareous, peaty or clayeysilt-laden soils (*Molinion caeruleae*).  
|                       | 6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*).  
|                       | 7140 Transition mires and quaking bogs. |
| Start Date            | 01-JUL-2001 |
| Finish Date           | 30-APR-2007 |
| Duration              | 6 years |
| Funding Source(s)     | LIFE |

**Summary**

This LIFE project therefore sought to buy large, continuous tracts of land on which to carry out urgent modifications to re-wet habitats and restore natural hydrological function. This was necessary because the re-wetting of the Düsterdieker Niederung's meadow landscape would require changes of land use that would negatively impact existing landowners. The purchases and work were implemented in accordance with the detailed hydrological plan for the area. The planned project area was divided into three distinct zones. Zone 1 was a flat grassland with long rows of trees with commercial farmers, which the project aimed to re-wet. Zone 2 had a mixture of habitats and land use, while zone 3 was a concave area made up of gentle slopes around an open fen grassland bisected by ditches. The project sought to regulate water levels in these zones to avoid the extremes of wetness or dryness that have previously prevented the establishment of stable habitats or land uses. Eventually, the project aims to achieve permanently wet grasslands with scattered reed beds and fens on the re-wetted areas. The whole area will then be managed by means of agri-environment contracts with local farmers. This would provide improved habitats for valuable species and increase their numbers.

**Outcomes**

The LIFE project achieved promising results in terms of the hydrology and occurrence of bird species in the target area. However, perhaps the greatest achievement of this project was the successful dialogue with local farmers to overcome their concerns about the effect of the restoration measures. Major problems arose at the beginning of the project since dialogue with landowners had not previously revealed the opposition from leaseholders of the land who feared for their livelihood. A mediation process led to an agreement on land use, taking into account the interests of the farmers and nature conservation. This resulted in zone 2 being removed from the project and the selection of an alternative site at Recker Moor (zone 4). Purchases were also limited to 94% of the target area of zone 1 and only 59% of the target area of zone 3. In spite of these changes 85% of the target area had re-wetting measures implemented, including 100% of zone 1.

Construction works were carried out on the water inflow system, including diverting and re-shaping the main feeder stream (the Westerbecker ditch), section by section. Other large feeders and drains were fitted with controllable sluices, while smaller drains were permanently dammed or even filled in completely. To improve the habitats, nesting facilities were also introduced and a 10kV cable was moved underground. Around 122ha of raised bog were positively affected by re-wetting conservation measures. Trees and bushes were removed from 140ha, 4.5km of peat dams were strengthened and an area of 64ha of grassland was managed. Hunting facilities and roads were also removed. Increases in the populations of *Motacilla flava*, *Anthus pratensis* and *Emberiza schoeniclus* have been noted in zone 4.

**Publication(s)**

- *Das Vogelschutzgebiet Düsterdieker Niederung.*
- *Das Nahrungsangebot für Wiesenvögel im Feuchtgrünland - Einfluss der Bewirtschaftung und Konsequenzen für den Vogelschutz* (excerpt of
### Ireland

<table>
<thead>
<tr>
<th>Initiative Title</th>
<th>RPWHI - Restoring Priority Woodland Habitats in Ireland</th>
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**Summary**

The LIFE project’s main objective focused on restoring 551ha of alluvial woodland, yew woodland, bog woodland, and woodland with limestone pavement. The project covered nine Natura 2000 sites, owned and managed by the beneficiary, located in nine different counties across Ireland. The diversity, quantity and quality of the areas make them sites of considerable national and European significance.

The project aimed to improve the conservation status of the sites and to restore the natural vegetation, as far as possible. The principal protective and restorative actions of the project included removal of exotic species; planting of native and habitat specific species; and installation of fences, dams and dip wells.

Other project goals aimed to encourage co-operation between NGOs and statutory bodies involved with protecting the Irish natural environment, making results available for a broad group of stakeholders. Long term management was anticipated to be carried out by the beneficiary as an ongoing activity.

**Outcomes**

The project achieved its objectives to restore 551ha of priority woodland habitats. Works involved removing non-native trees and invasive exotic shrubs as well as reinstating natural water regimes to promote natural regeneration of the habitat. Targeted areas are already beginning to show signs of recovery with a return to woodland habitat. The end of project monitoring indicates that the sites are generally improving although some locations are proving more responsive than others, based on existing ground conditions, and to some extent the surrounding vegetation.

On many of the sites, the presence of rare habitats was previously unknown and the project led to a significant increase in national coverage of managed priority woodland habitats. Three of the sites were LIFE Project Demonstration Sites, where project work primarily involved public awareness and education over the four-year period.
The project exceeded its targets for removal of non-native conifers (by 202%) and removal of non-native broad-leaves (by 182%). Targets were achieved for removal of exotic invasive shrubs and only 60% of the expected fencing or boundary wall repair works were actually required.

This project excelled at dissemination and the beneficiary and other stakeholders now recognise the importance of sustaining the project in order to ensure the future for priority woodlands in Ireland.

<table>
<thead>
<tr>
<th>Publication(s)</th>
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<tbody>
<tr>
<td>• Layman report, 2009 Editor, 16 pp.</td>
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<table>
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<tr>
<td>Coillte Teoranta - The Irish Forestry Board</td>
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<table>
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<tr>
<th>Contact Name</th>
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<tbody>
<tr>
<td>Sean QUEALY</td>
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<table>
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<tr>
<th>Contact Telephone</th>
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<tr>
<td>+353 57 8678516</td>
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</table>

Initiative Title: Waterbirds - Restoration and management of the Murrough wetlands for Annex I Habitats and Waterbirds

Project Code: LIFE03 NAT/IRL/000107

Country/Countries: Ireland

Biogeographic Region(s): Atlantic


N2K Site Code(s): 1. IE0002249, 2. IE0004085, 3. IE0004128

Annex I Habitat(s): 1130 Estuaries; 7230 Alkaline fens.

Start Date: 01-JUL-2003

Finish Date: 30-DEC-2007

Duration: 4 years

Funding Source(s): LIFE

Summary:
The project aimed to restore and manage wetland habitat to create more suitable conditions for Annex I birds and improve the integrity of the largest wetland complex on the east coast of Ireland. Other funding sources will be used to purchase a 89ha site within the Murrough Wetlands pSCI for the restoration of Annex I calcareous fens and for positive management for the Annex I bird species such as Anser albirostris flavirostris, Cygnus cygnus, Alcedo atthis and Egretta garzetta. Following restoration, it was expected that the project area would support Annex I birds in sufficient numbers for the Kilcoole Marshes SPA to be expanded. In addition to consolidating the site through land purchase, improved habitat would be delivered through seasonally raising water levels, implementing a seasonal grazing regime, scrub control and clearing and reprofiling the drainage ditches. Through interpretation and controlled public access, the project aimed to increase awareness of the conservation value of the wider area and the value of the Natura 2000 designation. It also sought to demonstrate the potential for economic benefits for local communities through environmental designations.

Outcomes:
The project was established with two key objectives in mind: to restore and manage priority fen habitat and to improve conditions for a number of Annex 1 waterbird species. The main problem with the site was that large areas of the priority fen habitat had been drained and planted with exotic conifers. As a result, the project removed the trees and established a system of water level management that has restored the water table. Areas of scrub that had encroached on to the fen area were also removed, and local breeds of ponies...
Natura 2000 Seminars

used to control coarse grasses and open up the turf. As the water level has risen, the need for ongoing removal of scrub has been reduced, but the ponies will remain as a key management tool. The project established a number of habitats to attract overwintering species, in particular white fronted geese (*Anser albifrons*). These habitats include seasonally flooded grasslands, grazed by cattle in summer, and land planted with forage crops. The habitat restoration and management has provided optimum conditions for little egrets (*Egretta garzetta*), which are now present at the reserve all year round as well as a kingfisher (*Alcedo atthis*) breeding population. Access has been improved to the reserve by installing all-weather boardwalks and a hide for bird watching. A large number of leaflets were produced, and four signboards were also installed around the reserve. A repeat survey of the local population found an increase in conservation awareness and appreciation of the Natura 2000 network.

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<th>Publication(s)</th>
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</tr>
<tr>
<td>Contact Name</td>
<td>Oran O’SULLIVAN</td>
</tr>
<tr>
<td>Contact Email</td>
<td><a href="mailto:oosullivan@birdwatchireland.ie">oosullivan@birdwatchireland.ie</a></td>
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| Start Date          | 01-OCT-2004                                   |
| Finish Date         | 30-SEP-2008                                    |
| Duration            | 4 years                                       |
| Funding Source(s)   | LIFE                                          |

**Summary**

This LIFE Nature project aimed to restore 571ha of raised bog on 14 sites in the central plain of Ireland to a favourable conservation status. Furthermore, by extending the area of raised bog, the project sought to enlarge the area free from the effects of afforestation and thus increase the likelihood of recolonisation with Annex 1 habitat types. The project intended to target the effects of the cutting of turf from peatland for fuel and damage from trespassing livestock. It also planned to reduce hazard risks for adjoining landowners and the
risks of fire damage to the project sites, notably through vegetation clearance on vulnerable high risk perimeter areas. The project hoped to have a demonstration role, particularly for forest managers, showing effective techniques for bogland restoration on afforested sites, principally tree removal and drain blocking. Dissemination of the project results both nationally and throughout the EU would also hope to increase current knowledge in the area of afforested bogland restoration.

Outcomes

The project achieved all its objectives and milestones. The project removed trees and shrubs from 450ha of targeted bogland. The project also blocked drains on 427ha of cleared or open bog to elevate water levels and restore the natural hydrological balance of the peatland. Although the project was not able to block some perimeter drains, the accomplished actions still achieved the targets of restoring 571ha of raised bog on 14 sites to a favourable conservation status and extending the area of raised bog by almost 450ha. The project also erected 7,775m of fencing around 320ha of carefully targeted bogland to exclude trespassing livestock. Maintenance actions were continued throughout the project to tackle naturally regenerating vegetation and consultations undertaken to control of turf-cutting rights. The project has developed links at local and national levels that are likely to continue the work of the conservation efforts in the future. The project has promoted outcomes through a website and information panels on the project site.

Publication(s)

- After-LIFE Conservation Plan
- Layman report

Main Beneficiary

Coillte Teoranta - The Irish Forestry Board

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Initiative Title

Blanket bog - Restoring Active Blanket Bog in Ireland

Project Code

LIFE02 NAT/IRL/008490

Project Website

http://www.irishbogrestorationproject.ie

Country/Countries

Ireland

Biogeographic Region(s)

Atlantic

N2K Site Name(s)

1. Pollagoona Bog
2. The Twelve Bens/Garraun Complex
3. Killarney National Park, Macgillicuddy’s Reeks and Caragh River Catchment
4. Owenduff/Nephin Complex
5. Bellacorick Bog Complex
6. Glenamoy Bog Complex
7. Carrowmore Lake Complex
8. Croaghonagh Bog
9. Dunragh Loughs/Pettigo Plateau
10. Ox Mountains Bogs
11. Slieve Bloom Mountains SPA
12. Cloghernagore Bog and Glenveagh National Park
13. Connemara Bog Complex

N2K Site Code(s)

1. IE0000126, 2. IE0002031, 3. IE0000365, 4. IE0000534, 5. IE0001922, 6. IE0000500, 7. IE0000476, 8. IE0000129, 9. IE0001125, 10. IE00004160, 11. IE0002047, 12. IE0002034

Annex I Habitat(s)

3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea. 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation. 4010 Northern Atlantic wet heaths with Erica tetralix.

Start Date

01-JUL-2002
### Summary

The overall aim of this project was to demonstrate that the restoration of suitable active blanket bog sites is a management option on afforested peatlands. Using its own land, the Irish Forestry Board (the project beneficiary) aimed to restore up to 2,000ha of blanket bog on 20 sites to a favourable conservation states. It will extend the area of blanket bog by means of tree removal, so that the area free from the impacts of afforestation would be enlarged by up to 1,000ha, thereby increasing the likelihood of recolonisation of Annex II species. Meeting this overall objective will be further facilitated by the blocking of drains on approximately 1,500ha of land and by fencing some 550ha of open bog as well as the removal of naturally regenerating trees from key areas. Actions will include fencing to gain control of grazing on open bog areas, ditch blocking to restore the integrity of the bogs' hydrological systems, cutting of forest plantations on 500ha of bog and removal of naturally regenerated trees. Special emphasis will be given to sites in County Mayo, where the full range of bog types occurs, from lowland to mountain blanket bog. Five sites were selected as demonstration sites where there will be a focus for increasing public awareness through demonstration days, interpretation and boardwalk access.

### Outcomes

The project met most of its targets - achieving 97% of tree removal, 99% of dam installation and 105% of fencing targets. Broader objectives were also met. These included the demonstration and interpretation of the techniques of bog land restoration and dissemination of the project results both nationally and internationally. Other project successes included the initiation of the recovery of blanket bog vegetation at all sites and the use of the windrowing technique as an ecologically effective and cost-effective way of clearing vegetation.

Dissemination of the information to a wide range of stakeholders was undertaken and the project website contains a great deal of useful information. 20,000 project brochures have been widely distributed and the Layman’s Report is also available from the website. The five demonstration sites were established under the project that will continue to be available for education and dissemination purposes after the end of the project. The beneficiary also produced an informative DVD.

### Publication(s)

- After-LIFE Conservation Plan
- Layman report

### Main Beneficiary

Irish Forestry Board

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### Netherlands

<table>
<thead>
<tr>
<th>Initiative Title</th>
<th>Engbertsdijksvenen - From Degraded to Active Raised Bogs: pSCI Engbertsdijksvenen</th>
</tr>
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<tr>
<td>Project Code</td>
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<td><a href="http://www.staatsbosbeheer.nl/Nieuws%20en%20achtergronden/Dossiers/Natuurherstel/Projecten%20Natuurherstel/LIFE%20Engbertsdijksvenen.aspx">http://www.staatsbosbeheer.nl/Nieuws%20en%20achtergronden/Dossiers/Natuurherstel/Projecten%20Natuurherstel/LIFE%20Engbertsdijksvenen.aspx</a></td>
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<tr>
<td>N2K Site Name(s)</td>
<td>Engbertsdijksvenen</td>
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<tr>
<td>N2K Site Code(s)</td>
<td>NL930006</td>
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<tr>
<td>Annex I Habitat(s)</td>
<td>4010 Northern Atlantic wet heaths with Erica tetralix</td>
</tr>
</tbody>
</table>
### Summary

The project aimed to conserve, restore and develop an active raised bog and its associated vegetation. This included wet and humid heath, priority habitat type bog woodland, grasslands and communities from humid to dry conditions, such as dry heath and oak-birch woodlands.

Other objectives covered the conservation of flora and fauna diversity, including rare and threatened species of European importance and the conservation of a historical-geological (archive) of intact, in situ, soil profiles. Recreation activities and their impact/importance to nature conservation in the area was also considered by the project.

### Outcomes

The on-site restoration measures have been carried out as planned and the project objectives have been exceeded in some instances.

Nine hectares of uncut raised bog have been actively managed as a core regeneration facility to secure ongoing sustainability of the bog reserve’s habitats. Within this core area a spontaneous increase and establishment of *Sphagnum* mosses has already started. Some 20 hectares of solid embankments have been established surrounding the regeneration core to protect its ecological integrity. Water management systems have also been put in place to route excess rain water off the raised bog and into the adjoining lower parts of the site, where this is helping new raised bog to form.

Eco-hydrological research indicates that LIFE project actions have been effective in terms of water retention and reduction of lateral streaming (seepage). The new embankments and weirs enable water levels to be controlled for the first time over the full site and studies, started during the project, will continue up until 2020 to identify optimum hydrological conditions, and associated factors, for supporting the bog habitats’ characteristic local wild-life species.

Information on the habitat management methods has been disseminated and stakeholder participation has been encouraged via a new De Pluus bird-watching hide on the north side of the raised bog. The LIFE project has been embedded within a strategic regional reconstruction plan for the Engbertsdijksvenen. The beneficiary is already implementing new conservation work to strengthen the results of the LIFE project by improving the raised bog and humid heathland conditions on a further 175 ha of land close to bog’s core regeneration area.

### Publication(s)

- Layman’s report
- After-LIFE conservation plan

### Main Beneficiary

Staatsbosbeheer Regio Oost

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### Summary

The main objective was to stimulate the natural formation of the raised bog, for which wet and nutrient-deficient conditions are necessary. For this reason, rainwater retention formed the crux of this project. Preliminary studies supported immediate implementation of restoration works. The project sought to construct dykes and water storage reservoirs on the northern edge of the Bargerveen. This would have a direct positive effect on the hydrology of 1,309ha within the entire 2,089ha Bargerveen site. The construction of dykes and water storage reservoirs would also provide protection against dehydration and internal eutrophication of the project area. The expected increase in water levels would re-wet the peat and allow active peat formation to take place, even during periods of low rainfall. By the end of the project, the beneficiary expected an increase of over 20% in the area of active raised bog, an increase of over 47% in the *Nardus* grassland and an increase of 67% in wet heathlands. Bargerveen is situated in the middle of the former peat colonies, an economically deprived district in the Netherlands. As eco-tourism is one of the most important sectors in the region (more than 100,000 people per year visit the bog), the beneficiary also planned to deploy the necessary dissemination actions to inform the visitors of the uniqueness of this area.

### Outcomes

Two basins to collect extra water were created in the north-west of Bargerveen: one high-water basin collects water from the Meerstalblok whilst a low-water basin collects water from the low-lying Amsterdamsche Veld area. These have extended the Bargerveen area by more than 40ha and provided additional habitat for water birds. Bird-watching hides have been erected and an extra walking route has also been laid out. Stronger embankments have been constructed on and along the edge of the Bargerveen to enable high water levels to be maintained in the area without the risk of the embankments slipping. The project has led to an increase in *Sphagnum* moss growth over a wider area and helped to create a nutrition-deficient environment. Long-term objectives to increase the number of target species have been set by the beneficiary up until the year 2023. At this point, the beneficiary is confident the project will be able to a significant increase in the biodiversity of this Natura 2000 site.

### Publication(s)

- After-LIFE Conservation Plan (EN)
- Layman report (EN)

### Main Beneficiary

Staatsbosbeheer Regio Groningen - Drenthe

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**Summary**

This project aimed to create a 660ha freshwater tidal landscape as part of a wider integrated landscape restoration project covering 700ha of an island. Three spheres would be created, where nature, recreation and the cultural remains of the history all have their place. Nature dominates the largest part called ‘the Wilderness’ (Wildernis). The central and easily accessible part demonstrates the richness of the ecology called ‘the Wealth’ (Weelde). These two spheres were part of the LIFE-project. The largest part of Tiengemeten, the Wilderness, is now directly connected with the Haringvliet estuary by a large tidal creek. The surrounding dyke will be lowered and at one point breached to connect the polder with the Haringvliet. High and low tide will give rise to expansive areas of reed beds scrub and smaller creeks. The middle part of the island is a little lower than the rest and here is the Wealth-part. The surface level of the Middenand Benedenpolder will be lowered even more in places so that shallow marshes can develop: dry in the late summer, but one large, open stretch of water in the winter. In the spring, mud banks would gradually come clear of the water and provide foraging habitat for spoonbills, egrets and waders. Additional target targeted species are the root vole (*Microtus oeconomus*). Additional target species of the project include the sturgeon (*Acipenser sturio* – to be re-introduced at a later stage), the corn crake (*Crex crex*) and the bittern (*Botaurus stellaris*). Tiengemeten was intended to become an island for nature-based recreation, popular in Rotterdam and the southern Netherlands.

**Outcomes**

The project was highly successful and achieved all its goals. Its main successes were the construction of the new visitor’s centre, the completion of the opening of the dams (and securitisation of the human settlements), efficient flooding of the island, and the social acceptance of the transformation of the 700ha of farmland into a tidal ecosystem. The project forms part of the wider Deltanatuur initiative to restore and create thousands of hectares of valuable habitats in the estuary and create an ‘ecological main structure’ in order to enhance or restore connectivity between large areas of nature. The Deltanatuur project aimed also to restore a more natural and important natural tidal regime.

The specific target on Tiengemeten was the restoration of freshwater tidal habitats. Before the Haringvliet was closed off from the open sea, there was a two-metre difference between high and low tide and the environment was saline. Since the closure the tidal range has shrunk to 30 centimetres and there is now a freshwater environment. The Haringvliet floodgates will be opened up gradually the coming years, allowing the tidal range to increase and allowing more exchange of salt and fresh water. This is a long-term project. The final scenario is not yet fixed but eventually the tidal range will go up to 60 cm and the ratio of salt to fresh water will increase. To manage this process a management plan, ‘Maatregelenplan Tiengemeten 2007-2024’, was drawn up as an ‘After Life conservation plan’.

**Publication(s)**

- Tiengemeten brochure (NL)
- After-LIFE Conservation Plan (NL)
- Layman report (EN)

**Main Beneficiary**

Dienst Landelijk Gebied

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Spain

<table>
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<tr>
<th>Initiative Title</th>
<th>Dunas Laida - Dune regeneration on Laida beach (Urdaibai)</th>
</tr>
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<tbody>
<tr>
<td>Project Code</td>
<td>LIFE04 NAT/ES/000031</td>
</tr>
<tr>
<td>Country/Countries</td>
<td>Spain</td>
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<tr>
<td>Biogeographic Region(s)</td>
<td>Atlantic</td>
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<tr>
<td>N2K Site Name(s)</td>
<td>Urdaibaiko Itsasadarra / Ría de Urdaibai</td>
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<tr>
<td>N2K Site Code(s)</td>
<td>ES0000144</td>
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<tr>
<td>Annex I Habitat(s)</td>
<td>2120 Shifting dunes along the shoreline with <em>Ammophila arenaria</em> (“white dunes”).</td>
</tr>
<tr>
<td>Start Date</td>
<td>01-MAY-2004</td>
</tr>
<tr>
<td>Finish Date</td>
<td>30-APR -2007</td>
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<td>Duration</td>
<td>3 years</td>
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<td>Funding Source(s)</td>
<td>LIFE</td>
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</table>

Summary

The dune regeneration on Laida beach project is part of the restoration of maritime dunes along the European Atlantic coasts and included the restoration of two habitats included in Annex I of the Habitats Directive: shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') and embryonic shifting dunes. These habitats favour the presence of Annex II species, such as the Schreiber's green lizard (*Lacerta schreiberi*) and several birds included in Annex I of the Birds Directive, such as the European nightjar (*Caprimulgus europaeus*), the merlin (*Falco columbarius*) or the pigeon-hawk (*Lanius collurio*). The overall objective was to regenerate the coastal dune ecosystem at Laida beach by means of bio-engineering methods and by raising awareness among the local population of the value and of the need to protect these ecosystems. Specific objectives were to:

- Restore 6ha of the coastal dune habitats by establishing dune belts;
- Achieve a cover of dune vegetation that would fix and help to regenerate the dune system;
- Minimize the impact of people on the dunes by establishing a perimeter enclosure;
- Disseminate the project’s actions and raise awareness of the importance of conserving dune ecosystems; and
- Monitor the evolution of the dunes in order to assess the actions and, where applicable, propose corrective measures.

Outcomes

The project was successful and has laid the foundations for the progressive biological recovery of the site over the coming years. The area of both the ‘shifting dunes with embryonic vegetation’ and ‘coastal shifting dunes with *Ammophila arenaria*’, has significantly increased as a result of the project. This exceeded original expectations and a total of 8.2ha was eventually restored. The analysis of the results obtained from the scientific monitoring have enabled the publication of good management guidelines to help ensure future conservation of the area. Protective perimeter fencing has provided excellent results and has led to very quick natural vegetation colonization. Finally, thanks to the project’s successful awareness-raising and educational activities, a good balance appears to have been achieved between the demands of dune regeneration and the intensive use of the beach. Interestingly, there have also been some economic benefits, as the increased publicity from the dissemination actions has boosted visitor numbers and led to an increase in sales for the shops and hotels of the area.

The main restoration actions were as follows:
1. Establishing dune belts - sand trappers (dry willow branches or wicker) were placed in perpendicular lines facing into the prevailing wind. These barriers helped to trap the sand to enable it to build up over time.

2. Recolonising the dune-system - sand trapping species were planted on accumulated sand, specifically European beach-grass (Ammophila arenaria) and sand couch (Elymus farctus).

3. Controlling public use - a perimeter enclosure was erected and notices regulating public access were posted.

4. Awareness and dissemination - environmental educational material was published and widely distributed by the project team in conjunction with specific information/publicity material on the beach itself.

5. Monitoring the evaluation of the dunes - geological and biological surveys were undertaken using aerial photos and topographic surveys of the beach that quantified the dynamics and evolution of the dunes that were being regenerated.

Publication(s)
- Seguimiento y evaluación sedimentológica del proyecto de regeneración dunar en Laida (Reserva de la Biosfera de Urdaibai) (ES)
- Seguimiento de hábitats singulares y de flora alóctona en la reserva de la biosfera de Urdaibai (ES)
- Seguimiento morfodinámico de la desembocadura del estuario del Oka (Reserva de la Biosfera de Urdaibai) (ES)
- Seguimiento de la colonización biológica de la duna de Laida (ES)
- Laidako Dunak eta hondartza berreskuratzea. Recuperación de la playa y dunas de Laida (EU/ES)
- Layman report (ES/EN)

Main Beneficiary
Departamento de Medio Ambiente y Ordenación del Territorio del Gobierno Vasco

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Initiative Title
Canal de Castilla – Wetland restoration and management: Canal de Castilla Special Protection Area

Project Code
LIFE06 NAT/E/000213

Project Website
http://www.lifecanaldecastilla.org/lifecanal/

Country/Countries
Spain

Biogeographic Region(s)
Atlantic

N2K Site Name(s)
1. LA NAVA-CAMPOS NORTE
2. LA NAVA-CAMPOS SUR
3. LAGUNAS DEL CANAL DE CASTILLA

N2K Site Code(s)
1. ES4140036, 2. ES0000216, 3. ES0000205

Annex I Habitat(s)
1310 Salicornia and other annuals colonizing mud and sand. 3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation.

Start Date
01-OCT-2006

Finish Date
30-SEP-2010

Duration
4 years

Funding Source(s)
LIFE

Summary
The project aimed to implement a programme for the recovery, management, and monitoring of 34 small wetlands located throughout the Norte and Campos branches of the Channel of Castilla including three SPAs and one SCI.

The project proposed to undertake actions to recover wetlands that have been seriously degraded and even drained in some cases in recent years. It also
sought to improve the management of helophytic vegetation to restore habitats suitable for the needs of species listed in Annex I of Directive 79/439EEC. In particular species such as the bittern (*Botaurus stellaris*) and aquatic warbler (*Acrocephalus paludicola*).

It was also proposed to enhance the appreciation of the wetlands of the Channel of Castile among the local community by producing publicity materials and organising environmental education and information activities. These actions were also intended to support local employment.

### Outcomes

The main outcomes were as follows:

- Six year management plan of the wetlands of the Channel of Castilla;
- Hydrological restoration of 14 wetlands;
- Habitat restoration in 30 wetlands - planting of 15,140 metres of riparian hedging and 109,087 trees and bushes in surrounding areas;
- Vegetation management in 14 wetlands including mowing of 14 ha.

### Publication(s)


### Main Beneficiary

Fundación 2001 Global Nature

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### Initiative Title

STREAM - River Avon CSAC: demonstrating strategic restoration and management

### Project Code

LIFE05 NAT/UK/000143

### Project Website

http://www.streamlife.org.uk

### Country/Countries

United Kingdom (England)

### Biogeographic Region(s)

Atlantic

### N2K Site Name(s)

1. Avon Valley
2. River Avon

### N2K Site Code(s)

1. UK9011091, 2. UK0013016

### Annex I Habitat(s)

3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation.

### Start Date

01-AUG-2005

### Finish Date

30-SEP-2009

### Duration

4 years

### Funding Source(s)

LIFE

### Summary

The overall objective of the project was to demonstrate the restoration of the River Avon Site of Community Interest (SCI) to favourable conservation status through a catchment-based approach and to integrate the management of the SCI with the adjacent Avon Valley Special Protection Area (SPA). In particular, the project sought to address issues that were identified by the River Avon SCI Conservation Strategy, produced through the LIFE in UK Rivers Project (LIFE99/NAT/UK/006088).

Specific objectives were to restore the watercourse habitat and conditions for associated species in the River Avon SCI and to demonstrate a range of innovative river restoration techniques appropriate to chalk rivers, for local, national and European audiences. The project also aimed to develop a coordinated management of the River Avon SCI and the Avon Valley SPA,
Six demonstration sites for river restoration were to be established throughout the River Avon. Innovative techniques and proven fish habitat enhancement methods would be combined to restore the favourable condition of the river’s ecology. Protocols would be developed to coordinate the management of the River Avon SCI and the Avon Valley SPA. Methods would be developed to protect fish species from entrapment in SPA ditch networks. A programme of ditch restoration would be developed to integrate the conservation objectives of the two sites.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>The project met its specific objectives by:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Implementing restoration works and demonstrating a range of traditional</td>
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<td></td>
<td>• and new techniques in different river habitats;</td>
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<tr>
<td></td>
<td>• Disseminating project experience to a range of local, national and EU audiences, working with the UKRRC and Living River;</td>
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<tr>
<td></td>
<td>• Producing best practice guidance on sluice operation, distributed to relevant landowners and operators in the SAC;</td>
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<tr>
<td></td>
<td>• Publishing ditch management and fish (including Atlantic salmon) exclusion measures and dissemination to relevant landowners in the SPA; and</td>
</tr>
<tr>
<td></td>
<td>• Improving stakeholder and public appreciation of the sites and species through use of a project website, workshops, leaflets, posters, media publicity, open days, sign and display boards and layman’s reports.</td>
</tr>
</tbody>
</table>

The conservation benefits of the project for the River Avon SAC and Avon Valley SPA are as follows:

- Physical features and geomorphological processes of the watercourse habitat were re-established at six river restoration demonstration sites in the River Avon SAC;
- Approximately 7km of river and banks were enhanced and woody debris introduced;
- An estimated 0.4ha of new spawning area for Atlantic salmon, bullhead and lamprey was created (Atlantic salmon are already spawning on the new gravel);
- SPA floodplain restoration works were prioritised to avoid damaging SAC fish species, and a new prioritisation process was created and applied to approximately 30% of the SAC/SPA; and
- Principles were developed for hatch operation to benefit SAC fish species and water level dependent habitat in the SPA.

| Publication(s) | • After-LIFE Conservation Plan, 2009, 23 pp. |

<table>
<thead>
<tr>
<th>Main Beneficiary</th>
<th>English Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name</td>
<td>Jenny WHEELDON</td>
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<tr>
<td>Contact Email</td>
<td><a href="mailto:jenny.wheeldon@english-nature.org.uk">jenny.wheeldon@english-nature.org.uk</a></td>
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<tr>
<td>Contact Telephone</td>
<td>+44 1380 737023</td>
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<table>
<thead>
<tr>
<th>Initiative Title</th>
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### Initiative Title

The Dorset Heaths LIFE project, which was run by a consortium of ten public and private organisations, introduced a new approach to conserving urban heaths. The approach was based on three themes. First, an education programme was developed for school children based on the UK government’s citizenship initiative. School children were taught about their roles and responsibilities as citizens. The intention was to introduce this education programme into the National Curriculum from September 2002. The second theme focused on

### Project Code

LIFE00 NAT/UK/007079

### Project Website

http://www.dorsetforyou.com/index.jsp?articleid=335886
http://www.dorsetforyou.com/339465

### Country/Countries

United Kingdom (England)

### Biogeographic Region(s)

Atlantic

### N2K Site Name(s)

Dorset Heaths

### N2K Site Code(s)

UK0019857

### Annex I Habitat(s)

4010 Northern Atlantic wet heaths with Erica tetralix; 4030 European dry heaths

### Start Date

01-JUL-2001

### Finish Date

30-Jun-2005

### Duration

4 years

### Funding Source(s)

LIFE

### Summary

The Dorset Heaths LIFE project, which was run by a consortium of ten public and private organisations, introduced a new approach to conserving urban heaths. The approach was based on three themes. First, an education programme was developed for school children based on the UK government’s citizenship initiative. School children were taught about their roles and responsibilities as citizens. The intention was to introduce this education programme into the National Curriculum from September 2002. The second theme focused on

### Outcomes

Outcomes are several-fold – the site is approaching its invasive species target, and the threat from upstream re-invasion has been minimised. All landowners and communities of interest have an awareness and active interest in ongoing invasive species reporting and management. Local people and other volunteers have been involved in workdays, local contractors have been skilled-up in a variety of methods of invasive species control (inc. chemical spraying, handpulling, grazing), the project lead becoming a recognised expert in invasive non-native species management, and the project has been the springboard for similar catchment based work elsewhere in the region.

### Publication(s)

Internal reports and publicity leaflets

### Main Delivery Body/Beneficiary

Scottish Native Woods (now Coille Alba)

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improving the fire services’ ability to tackle heathland fires more efficiently through specialised equipment, fire plans and additional surveillance. Finally, a community action programme was launched to create a volunteer wardens scheme made up of local inhabitants and to promote a range of activities: guided walks, fairs, arts and music and an interactive website on the heathland theme.

Using a three-pronged approach, the project improved the status of the sites by educating local communities and increasing their awareness of the sites and their value. This was carried out through schools and local community groups. The project also introduced greater vigilance towards fire-raising through employing wardens throughout the summer period, increased police presence and involving community groups in monitoring. Finally, the management of the sites was also improved through the construction of firebreaks and fences to protect particularly sensitive areas and to reduce soil erosion. Access to the sites for fire engines and other vehicles to tackle fires was also improved.

The project achieved all of its objectives. During the duration of the project the amount of fire-raising decreased, particularly in those sites that had been especially prone (it is difficult to really compare statistics over a fairly short period of time, as the level and severity of fires on heathland is largely dependent on weather). There was also a stabilisation in the populations of nesting birds that had previously been declining, a direct result of better habitat management.

Publication(s)

- Final seminar overview, 51 pp.

Main Beneficiary

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