



# Project LIFE

“Sustainable Management of  
Wetlands and Shallow Lakes”

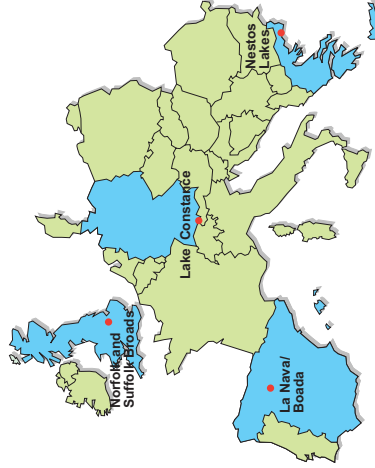


## “Sustainable Management of Wetlands and Shallow Lakes”

The project “Sustainable Management of Wetlands and Shallow Lakes” targets the development and restoration of wetlands. The project sites are the La Nava and Boada wetlands of Spain and the Nestos Lagoons in northwest Greece. The project was implemented from 2001 to 2004 and co-financed by the European LIFE–Environment programme.

### Endangered wetlands

Wetlands and shallow lakes are among the most endangered ecosystems on earth. These places are a priceless part of our cultural and natural heritage that offer a wealth animal and plant diversity, as well as a setting for leisure and recreational opportunities. In addition, they play an important role in processing and cleaning water. Since the beginning of the twentieth century, approximately 60% of European wetlands have been lost to drainage and transformation into farmland, as well as changes in land use. Many of the remaining wetlands are imminently threatened by the accumulation of nutrients and lowering of water tables.



The city councils of Fuentes de Nava and Boada de Campos own the lands that form the La Nava and Boada wetlands.



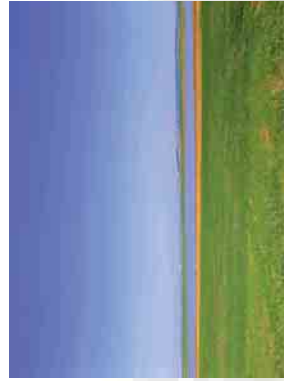
EPO, the Society for Protection of Nature and Ecodevelopment has worked for more than 15 years in the conservation of lakes and lagoons in the Nestos River delta. EPO is responsible for implementing the project in Greece.



AENAK, the Development Agency of Kavala Prefecture in Greece, are actively involved in the implementation of all the project measures in the Nestos.

### Project objectives and work areas

The primary aim of the project was to demonstrate that wetlands can be managed to improve their natural conservation values, benefiting local communities economically and socially. A key element of the project is the preparation and implementation of a management plan for wetlands in Spain (La Nava/Boada) and Greece (Nestos). Other goals of the project were to prepare an agricultural intensification plan and guide to good farming practices around the wetlands so that other wetlands can benefit from experience gained during the project. The project aims to favour the implementation of the European water policy and framework water directive and support other European directives like the nitrates (91/676/CEE) and urban waste water treatment (91/271/CEE) directives.



Boada wetland

The primary results sought during the execution of the project were:

Rehabilitation and stabilisation of water quality.

Development of management bases for sustainable water management in the three small communities and surrounding farmland.

Creation of buffer zones between the wetlands and farmland to reduce diffuse contamination by nutrients.

Reduction of water depletion by increasing extensive agriculture in the catchment area.

Integration of the sustainable use of wetlands in land use plans of communities and regional authorities.

### Project partners



#### Global Nature Fund (GNF)

The GNF is an international non-governmental non-profit organisation for the conservation of environment and nature located in Germany.



Fundación Global Nature Spain brought the La Nava wetland to life again in 1990 and did the same for Boada Wetland in 1998. At present, it is responsible for managing the Boada wetland and implementing the project in Spain.



Lake Constance Foundation (Bodensee-Stiftung), an international foundation for nature and culture, supplies its long experience in the field of sustainable tourism.



Broads Authority, located in East England, is the authority responsible for planning the development, conservation, navigation, and public use of the Norfolk and Suffolk Broads and has broad experience in wetland restoration and management.



Greylag flock

#### La Nava Wetland

The current La Nava wetland is located in the endorheic water basin of the same name. Years ago it was one of the most important wetlands of Spain, "Mar de Campos" (Sea of Campos), which had an extension of more than 3,000 hectares in years of good rainfall. Unfortunately, this steppe wetland was drained in the 1960s for farmland.

In 1990, the Fundación Global Nature promoted a project for the recovery of this wetland with the participation of the city council of Fuentes de Nava, which owned the land. At present, the Service of the Environment of Castilla-León is the public authority responsible for managing the wetland, which it leases from the city council.

The project has recovered 307 hectares of wetland, of which about half is kept as a steppe wetland and other half is dedicated to pasture used by local livestock owners.



La Nava wetland

#### Boada Wetland

This small steppe wetland, with an extension of 60 hectares, was also drained in the 1970s. In 1998 the Global Nature Fund undertook a recovery project and is currently responsible for managing the marsh. The lands of Boada Wetland belong to the city council of Boada de Campos, which is deeply involved in the recovery project.

La Nava and Boada are now two complementary wetlands that form one of the most important wetland complexes in Spain. During winter months, thousands of aquatic birds use the shallow waters of these wetlands to lie over; as many as 30,000 greylag geese have been counted. Waders, herons, spoonbills, and many insectivorous bird species use these areas during migration, whereas black-winged stilts, mallards, coots, or whiskered terns are some of the species that nest in the area. La Nava and Boada also have interesting communities of aquatic plants, some of them very rare or scarce in the rest of the Spanish territory.

Because of the extraordinary wealth and diversity of the avian fauna present in the area, it has been catalogued as a Special Protection Area for birds. The La Nava-Campos SPA, with an area of 84,790 hectares, includes 23 municipalities, among them Fuentes de Nava and Boada de Campos. Since November 2002, La Nava has been on the Ramsar List of Wetlands of International Importance. A short-term goal of the La Nava-Campos SPA is to be declared a protected natural area by the autonomous government as a *Nature Reserve*.



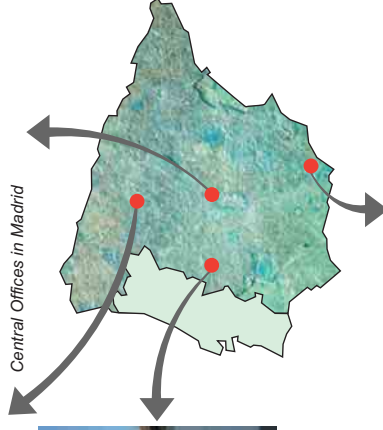
Tierra de Campos Environmental Study Centre



La Dehesa Study Centre



Central Offices in Madrid



Cumbres de la Galera Centre



Fundación 2001-Global Nature is a private organisation of national scope and educational and non-profit character that was constituted in 1993. The mission of the foundation is environmental conservation, protection, and management. The projects developed by the organisation contribute to the maintenance and recuperation of habitats and endangered species, technological innovation, and the recovery of traditional farming activities.

The foundation has four work centres. La Dehesa Study Centre (Cáceres) located in Monfragüe Nature Park, Tierra de Campos Centre (Palencia), Cumbres de la Galera Centre (Murcia) dedicated to the recovery of the spur-thighed tortoise, and the central offices in Madrid where all projects are coordinated.

As a non-profit educational foundation, the projects undertaken by the organisation have a major environmental education component consisting of courses, seminars, conferences, student exchanges, work camps, and the publication of investigational studies. More information about the Fundación Global Nature and its projects can be obtained by visiting the website.

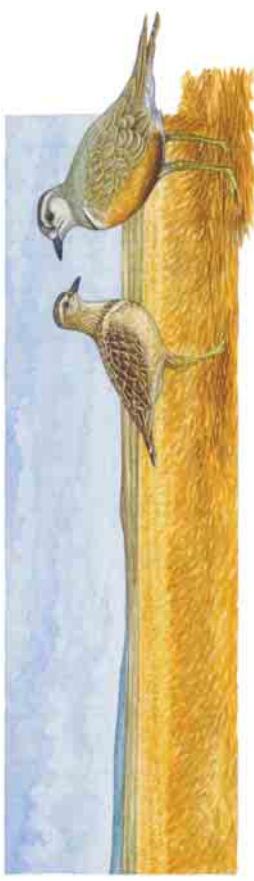
[www.fundacionglobalnature.org](http://www.fundacionglobalnature.org)

## Management plan for the La Nava and Boada wetlands



One of the development priorities of the Project LIFE-Environment "Sustainable Management of Wetlands and Shallow Lakes" contemplates the preparation of a proposal of Management Plan for the La Nava and Boada wetlands. Implementation of this plan is necessary, among other reasons, because the wetlands of La Nava and Boada are already listed in the Natura 2000 Network and the process of including them in the Castilla-León Network of Natural Spaces has already begun.

The management plan entails preparing a document in which management guidelines that take sustainable development into consideration are specified, that is to say, the realisation of activities that are in balance with environmental conditions. These environmental management plans are based fundamentally on identifying the activities that can have an impact on the environment and attempting to introduce corrective measures to eliminate or, at least, reduce this impact. At the same time, they try to identify other activities for social, economic, cultural and other types of development at these locations that do not have an unfavourable impact on the environment.



The Global Nature Fund has analysed the natural and socioeconomic resources of the area in order to diagnose its current status. This diagnosis has been examined through a participatory process of consultation with instrumental social agents, which has disclosed the problems, needs and potential of the area. This information was collected in order to develop a series of goals established by the guidelines of the management plan.

After establishing the objectives to be developed by the management plan, the so-called *Plan of Action* was developed, consisting of a series of specific proposals to be implemented in the municipalities of the study area.

Both phases have concluded and have received the endorsement of almost all the sectors implicated. The document has been submitted to the Service of the Environment, the agency responsible for the definitive approval and implementation of the plan.



## Monitoring of the water quality in Boada Wetland



*Eutrophication problems in La Nava*

Water is undoubtedly the most important and critical element to be controlled in a wetland. Analysis of the water of the Boada wetland is giving us information about the quality of the water that currently feeds the wetland. The water supplying the wetland contains a high concentration of nitrites from the farmland surrounding the catchment area. The accumulation of organic matter raises chemical and biochemical oxygen demand (COD and BOD). The low rate of water renovation in this endorheic river basin, together with the poor quality of the water feeding it, results in a wetland highly contaminated with organic matter.

Regular water analyses lead to the conclusion that the quality of the water feeding the wetland had to be improved to guarantee the future conservation of the wetland.

The project "Sustainable Management of Wetlands and Shallow Lakes" allowed periodic water analyses of the wetland and the sources of water that feed it.



*Water Analysis in Villarramiel*

## Conservation measures in the area surrounding the wetland



*Afforestation work*

The project LIFE-Environment contemplates the creation of buffer zones to act as plant filters around the wetland and in roads and stream banks. When planning this work we considered possible areas for receiving visitors, such as access roads. Other important aspects like the creation of a structural variety of habitats to favour the diversity of flora and fauna, and to prevent and control pollution originating from nitrates and phosphates used in farm work were also considered. Species native to the wetland were used for this intervention.

The area designated for these buffer zones was 36 hectares, 19 hectares in Boada Wetland and 17 hectares in La Nava Wetland.

Altogether, 16,460 trees and shrubs pertaining to 23 species were planted. The zones were formed by trees like the white poplar (*Populus alba*), black poplar (*Populus nigra*), smooth-leaved elms (*Ulmus minor*), or shrubs like hawthorns (*Crataegus monogyna*), wild roses (*Rosa sp.*), and others.



*Plantation of teasels in the La Nava area*

In areas adjacent to the wetlands where the Fundación Global Nature has acquired farm land, the land was left uncultivated and unforested to favour the appearance of fallow zones with natural vegetation. Finally, as an experiment, several fields were planted with teasels (*Cynara cardunculus*) as a species with a deep pivotal root system that can absorb many nutrients derived from farming and also retain sediment from runoff.



Sustainable tourism meets the current needs of tourists and the regions they visit, while protecting and promoting opportunities for the future. It is conceived as a path toward integral resource management to satisfy economic, social, and aesthetic needs while respecting cultural integrity, essential ecological processes, biological diversity, and the systems that sustain life.

The tourists that now come to Fuentes de Nava can enjoy a visit to the Tierra de Campos Environmental Studies Centre and Housing accommodations in an 18th century house, where they can stay and enjoy the company of the volunteers who come to co-operate in bird-ringing campaigns or the daily tasks of the centre. The tourists who come to our centre vary widely due to the different activities that the Environmental Studies Centre offers, such as bicycle trips through the wetlands to observe fauna and flora, environmental education courses, seminars, work camps and other. If tourists prefer more private or quieter accommodations, Fuentes de Nava has two rural hotels that recently opened where they can enjoy a pleasant stay.



Interpretative trail in Boada



Visitors to the wetlands

Also Fuentes de Nava has a Visitors Centre managed by the Castilla-León Government. It is located in a stately 18<sup>th</sup> century house and offers information of the cycles of the wetlands and their fauna and flora. A video camera placed in the middle of the wetland transmits real-time images and allows us to become familiar with and deepen our knowledge of different animal species.



La Nava visitor Centre



"Los Ánsares" bird hide in Boada

When visitors arrive at the wetland, they can use the two observatories located on the edge of the wetlands and two observation platforms where the different animal species present at any given moment be seen at a close distance without bothering them.

At present about 10,000 people visit Boada wetland each year. Various interventions have been made to facilitate visits and enhance visitors' experience of natural values, such

the preparation of a four-part interpretative route: "mud architecture", "farming", "steppe birds", and "the community of mammals, amphibians and reptiles".

At the end of the route is the "Los Ánsares" observatory situated at the edge of the Boada wetland, which provides an excellent vantage point for viewing the birds in the wetland.



Observation platform in the La Nava

## Agroenvironmental proposal for the wetland area



The community of Castilla-León is characterised by productive systems that are conditioned by the generally poor soil of the area and a climate with harsh winters and scant rainfall. For this reason, most agriculture is dry farming and farmers can maintain their fields with minimal labour, thus favouring the creation of an ideal habitat for certain animal species, particularly steppe birds.

The main productive farmlands are dedicated to growing grain crops like oats, barley or wheat. Other dry land crops found in local farmlands are sunflowers, peas, or sainfoin. Beets and alfalfa are the principal crops obtained from irrigated land.



Flock of bustards

Farming in Tierra de Campos, although it can be considered extensive, is not exempt from using large amounts of fertilisers and plant protection products that end up in the streams that feed the wetlands, thus causing eutrophication of the water and deterioration of the wetland.

Due to this problem, the Fundación Global Nature has prepared a proposal for applying agroenvironmental measures in area around the La Nava and Boada wetlands. This proposal has been made in the spirit of demonstrating how such financial tools can be used for the conservation and recovery of wetlands.

The agroenvironmental measures proposed are based on creating an unfarmed strip around the wetlands and the extensification of dry land farming where steppe and water birds feed.

## Divuligation of the project

The work of management, conservation and divulgation has been compiled in a 40-minute video and a website offering information about all interventions. This material can be found at

[www.livingwetlands.org](http://www.livingwetlands.org)



Another measure to publicise the project was to prepare a handbook describing examples of wetland management, conservation, and restoration. It is hoped that the manual will serve as an example for future interventions in places that have similar characteristics.

Members of the Fundación Global Nature have given 36 talks at the schools of the Tierra de Campos region, in which more than 300 children age 6 to 12 years have participated.

During the summer months of 2002 and 2003, five camps were organised in Fuentes de Nava. The main function of the work camps was to bring together young people of different origins and to introduce them to and raise their awareness of environmental issues through activities like workshops, talks, cultural excursions to villages in the Tierra de Campos region, and participation in monitoring work with wetland fauna.



Another objective of these camps is to disseminate the experiences, activities, and projects organised by the Fundación Global Nature, for the purpose of extrapolating these activities to the different places of origin of the participants.

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