



LIFE-Environment

DEMONSTRATION PROJECT

Living Lakes: Sustainable Management of Wetlands and Shallow Lakes

Project Description

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List of Content

	Page
1. Introduction.....	3
2. Problems	4
3. Objectives.....	5
4. Description of the project and the expected results.....	6
5. Project Partners and Responsibilities	9
6. Technology transfer, information and sensitisation	11
7. Dissemination plan	13
8. Timetable.....	15

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1. Introduction

Wetlands and lakes are among the most important and yet most threatened ecosystems in Europe. They are a precious part of our cultural and natural heritage, providing an extremely important resource for many human interests and activities, as well as being habitats that support a rich diversity of animal and plant life. Wetlands and lakes are able to absorb precipitation and subsequently release it gradually, while improving the water quality by storing nutrients and toxic substances in the plants and sediments. They are a source of renewable resources - such as reeds for construction, fish for human consumption and pasture for grazing livestock. They are also important for leisure and recreation activities.

The majority of the wetlands in Mediterranean countries such as Spain and Greece are extremely degraded in ecological terms. Almost all problems of water management are present: pollution and over-abstraction of groundwater, small communities and industries without waste water treatment systems, nutrient enrichment from intensive agriculture, conflicts concerning the use of water, lack of management, and lack of integration in local and regional land-use planning. The Global Nature Fund has won a grant of 520.000 Euro from the EU Life III programme to carry out a project of rehabilitation of wetlands in Spain and Greece. The degraded wetlands which will benefit from the project are Lakes La Nava and Boada in Spain, and the Nestos Lakes in north-eastern Greece. The model projects in Spain and Greece are located in rural areas populated by large numbers of small communities where such problems of water shortage and water quality are acute. They will provide the opportunity to work with local communities and demonstrate how wetlands can be managed sustainably in environmental, social and economic terms. This will be achieved by developing and implementing management plans for La Nava and Boada in Spain and the Nestos Lakes in Greece, using participatory processes to involve key stakeholders and local communities.

Such plans will include provisions for:

- Buffering these wetlands from nutrient enrichment via the catchment (e.g. use of fertilisers).
- Treatment of sewage effluent (e.g. phosphorus stripping) within the catchment.
- Restoration and preservation of the lakes using appropriate techniques and visitor management.

- A management plan for the sustainable long term extensive use of the surrounding agricultural land.
- Preservation of the biodiversity.

2. Problems

Since the beginning of the 20th century two thirds of European wetlands have been lost due to engineering construction works, draining and conversion to arable land, over-abstraction of groundwater and dumping of refuse.



Experts discovered that some of the tributaries to La Nava are highly contaminated with industrial waste water.

Furthermore, many have been degraded from nutrient enrichment, the main sources being sewage effluent and agricultural fertilisers. Such eutrophication interferes with the important ecological functions of water bodies, as well as jeopardising the use of water resources by man.

The implementation of the Nitrate Directive has been unsatisfactory in the majority of EU Member States and legal proceedings have been initiated against those that have not yet complied. Implementing the Urban Waste Water Treatment Directive has been more satisfactory and considerable investment programmes are in place in all member states to comply with its objectives. However, in the Southern EU Member States, 29% of the waste water is discharged untreated and only 43% receives secondary treatment. One of the biggest demands on water resources arises from modern agriculture, with its need for irrigation.

In southern European countries the water used for agricultural purposes has risen to 73%. In Spain 18% of the groundwater is destined for irrigation; the Spanish

government has declared 18 over-exploited hydrological units. Recommended actions to solve these problems include:

- Control of water abstraction.
- Reduction of phosphorus from main point sources (e.g. improved treatment of sewage effluents).
- Reduction of phosphorus and nitrogen from non-point sources (e.g. improved agricultural practices involving fertiliser application, creation of habitats to buffer nutrient run-off into wetlands).
- Techniques to promote re-establishment of aquatic plants in the water and the return of clear water conditions.

3. Objectives

The overall aim of this project is to demonstrate how wetlands can generally be restored and managed wisely in ways that are compatible with sustainable development. This will be achieved by carrying out two concrete projects for the sustainable management of wetlands in Greece and Spain:

- Applying ecological restoration techniques to two degraded wetlands in Nestos (Greece) and La Nava (Spain), respectively, to demonstrate how wetlands can be managed in ways that enhance their nature conservation values while benefiting the social and economic needs of local communities.
- Developing appropriate proposals for the extensification of the agricultural land in the catchment area in order to reduce negative impacts.
- Providing opportunities to demonstrate and spread good practice in wetland management through training courses, study tours and exchanges, using the Living Lakes network as a primary vehicle for such communication and all communication techniques to address a wide public and international experts.
- Establishing sustainable tourism activities as an alternative source of income with low water consumption.

4. Description of the project and the expected results

This project focuses on the protection of water and biodiversity through the conservation of lakes and wetlands. The experiences gained are transferable to other action fields. The two selected demonstration areas are typical for a



Workcamps with young people are one aspect of the measures.

great number of wetlands and shallow lakes in Europe. **La Nava** represents the landscape of steppe lakes, an ecosystem two thirds of which have been destroyed during the past 50 years. In Spain, in total 60 % of all wetlands have been spoilt. Steppe lakes are extremely important for fauna and flora because they are located in arid areas. Often they represent the only remaining natural ecosystem amidst intensive mono-cultures. Sustainable integration of the wetlands into the land development plans at local level is almost non-existent. The **Nestos** lakes are typical for other wetland areas in Europe. Like in the Nestos area most European wetlands are associated with low-lying coastal zones and riverine flood-plains. The Nestos Delta ecosystem is considered by the European Commission as one of the 10 most important wetlands in Europe. La Nava and the

Nestos wetland represent the most important and most common wetland ecosystems in Europe. Therefore, experiences gained from the management of these areas will provide important lessons for most wetland systems in Europe. The best practise guidelines for wetland management developed from the experiences made in these two representative areas will allow a broad application to other wetlands in the Community. The best practice guide as well as the other information materials will integrate comments of stakeholders and experiences from other

European wetlands. External inputs will come from the internet discussion forum, the participants of workshops, study tours, conferences and training courses. This will assure that the guidelines will address a wide range of issues including transferable strategies, methods and general principles that can be applied and be of wealth for the management of most European wetland areas.

The present project demonstrates sustainable management of wetlands and shallow lakes in the light of two demonstration sites. A sustainable use of the resource water is indispensable. In addition to end-of-pipe-solutions, the project focuses on preventive measures. The local NGOs contribute not only with their know-how in the project but also by scientific publications, monitoring, environmental education, PR-work etc. By integrating different levels and fields in this project (local and regional authorities, private businesses, NGOs, scientists) wide dissemination is guaranteed. The main focus of demonstration projects in the wetlands of La Nava (Spain) and the Nestos Lakes (Greece) will be as follows:

- Rehabilitation of contaminated wetlands and shallow lakes: Reduction of the nutrient loading, creation of appropriate conditions for the zoo-plankton (water flea), recovery of water plants and stabilisation of favourable conditions.
- Development of an appropriate concept for sustainable water management and waste water treatment of three small communities (< 1000 inhabitants) and the surrounding agricultural land.
- Combination of appropriate low-technology waste water treatment methods to purify the communal sewage and buffer zones between wetlands and lakes and cultivated land to reduce diffuse nutrient intake.
- Groundwater protection, improvement of quality and quantity of water and solutions for conflicting uses of water by promotion of extensive agriculture in the buffer zones.
- Integrated management of the wetlands and their buffer zones by converting intensive to extensive or organic farming. Reducing the over-abstraction of groundwater.
- Integrating sustainable uses of wetlands into the land use plans of communities and regional authorities.
- Exchange of know-how and experience from Lake Constance region (sewage treatment in constructed wetlands, use of moist meadows, extensive and organic farming, visitors' management in protected areas,

restoration of tributaries, land-use plans of communities) and Norfolk Broads (restoration and bio-manipulation of shallow lakes, management of lake and fen vegetation, visitors' and recreation management).

- Providing information to relevant stake holders in the demonstration projects like mayors, local municipalities, water management administration, farmers, hunters and fishermen associations, environmental and regional administration and NGOs during the period of the demonstration project (i.e. with training courses at Lake Constance and at the Broads).
- Sensitisation, information and spreading of the results to experts and persons involved (three workshops, specific publications, demonstration video) and to a wider public – locally, regionally and across Europe (International conferences, Internet-presentation, publications, media, activities for school classes).

As a result of the project an integrated management systems for the two representative wetlands in Spain and Greece will be developed and applied on more than 1.000 ha wetland zone in La Nava, Boada and the Nestos area.

Furthermore a concept for the extensification of 8.000 ha agriculturally used land is integrated into the management plan. In rural areas agriculture is responsible for 60 - 70 % of nitrate and 40 - 50 % of phosphate loads to lakes and wetlands. With the installation of buffer zones which work as “vegetated filter strips” it will be possible to remove Nitrogen and Phosphorus loads from concentrated effluents.



The lagoon La Nava offers a beautiful scenery in summer.

5. Project Partners and Responsibilities

Global Nature Fund

Beneficiary of the project. Launched the “International Living Lakes Network” in 1998.

Responsibilities: Project coordination. Information and involvement of experts and stakeholders (workshops, publication, video, Internet). Information of the public at local, regional, national and European level.

Fundación Global Nature España

The Fundación Global Nature España was the initiator of the rehabilitation of La Nava Lagoon in 1993 and Boada in 1998. Carried out a management project for La Nava from 1993 to 1997. Runs the La Nava Information Centre „Centro de Estudios Ambientales Tierra de Campos“.

Responsibilities: Co-ordination and realisation of the La Nava demonstration project. Responsible for the local coordination and implementation of the project in Spain.

EPO - Society for Protection of Nature and Ecodevelopment

The non-governmental organisation EPO is working in the Nestos Lakes and Lagoons in Greece since 1988 on sustainable management of wetlands, environmental education, eco-tourism and monitoring of fauna and flora. Main achievements are the declaration of the whole wetland complex as a National Park, the protection of the riparian forest of the Nestos river and the extensification of the agriculture around the lakes and the Nestos riverbed.

Responsibilities: Co-ordination and realisation of the Nestos Lakes demonstration project. Responsible for the local coordination and implementation of the project in Greece.

Broads Authority

The Broads Authority is a statutory agency responsible for the management of the Norfolk and Suffolk Broads, a 300 km² system of shallow lakes (broads), interconnected by rivers, and associated wetland habitats in England. Its functions include planning, development, conservation, navigation and recreation. It has expertise and 20 years

experience in the restoration and management of shallow lakes (including bio-manipulation of fish populations), fens and grazing marshes.

Responsibilities: Setting up and running the wetland management training course based at the new Freshwater Ecology Training Centre in the Norfolk and Suffolk Broads. Exchange of know-how and expertise via the demonstration projects.

Bodensee-Stiftung (Lake Constance Foundation)

Since 1994 working on demonstration projects for sustainable development in the Lake Constance region. Co-ordinator of the „Umweltrat Bodensee“, a council of 18 regional NGOs around the Lake (A, D, CH). Deals with issues like i.e. organic agriculture, transportation, sustainable tourism, visitor management, restoration of rivers, etc.

Responsibilities: Realisation of a training course at Lake Constance. Exchange of know-how and expertise on the occasion of demonstration projects. Editing of the manual and demonstration video.

Fuentes de Nava

Community of 800 inhabitants in Spain. Owner of a part of the area of the La Nava lagoon. Since 1991 involved in the rehabilitation and restoration of the lagoon and partner of Fundación Global Nature.

Boada de Campos

Small Community of 28 inhabitants in Spain. Owner of a part of the area of the Boada wetland, which belongs to the complex of La Nava. Since 1998 involved in the rehabilitation and restoration of the lagoon and partner of Fundación Global Nature.

AENAK

The AENAK Development Agency in Greece is authorised to dispose of the project area in the Nestos / Hrysoupolis region by the federal owner. AENAK has been collaborating with EPO for several years now and has been a counterpart of the Living Lakes programme from the beginning.

6. Technology transfer, information and sensitisation

Non-governmental organisations, communities and businesses in the Lake Constance region have gained rich experience in finding solutions for water management problems. In particular, the Lake Constance Foundation provides know-how in the following fields: extensive agriculture, organic farming, sustainable tourism and visitor management in protected areas, sustainable use of natural resources, environmental education for young people, restoration and management of water bodies and moist meadows. It is working closely with the BiCon AG, an environmental consulting company specialised in sewage treatment for local communities using individual or semi-collective treatment systems (e.g. reedbeds).

The Broads Authority has considerable experience and expertise in shallow lake restoration, particularly with respect to combating eutrophication by mud pumping, bio-manipulation and other techniques. It has also extensive experience in fen management, using grazing animals and specialised harvesting machinery, and the conservation of grazing marshes. It has also been involved in running wetland management training courses. The Lake Constance Foundation and Broads Authority are key partners of Living Lakes who will be instrumental in bringing their experience and expertise to bear on the demonstration projects, training courses, exchange programmes and promotion of promote good practice to a wide public of experts and interested people in wetland management in other regions of the EU.

The objectives will be achieved and made accessible by:

- Three workshops (in Greece, Spain and England) and a large final conference involving some 200 persons.
- Four training courses (seminars) with practical and theoretical elements (two at Lake Constance and two at the Broads), each lasting approximately 5 days.
- Detailed good practice guidelines (manual for experts) for the restoration, conservation and sustainable management of wetlands that are made available to a large number of specialists and people involved.
- Video documentation from both project locations.

- Dissemination of all outputs via the World Wide Web and the establishment of an open discussion forum on the Internet for experts and interested persons.
- Tools for stakeholder in European wetland areas and best practice guidelines.

All information and possibilities of exchange of experience will be provided for a wide public via Internet, publications and media. Growing the awareness of the local people in the demonstration areas and a broad population in Spain, Greece, England, Germany and Austria will be achieved by:

- Management plans for La Nava and Nestos Lakes, developed through participatory processes involving key stakeholders, including local communities.
- Good practice guidelines for wetland management and the purification of waste water of the three municipalities.
- Training courses in wetland restoration and management with some 100 wetland managers and decision-makers. Exchange visits and study tours involving some 500 persons.
- Dissemination of all project outputs to a wide public via conferences, events, media (including Internet).

In order to raise awareness among the local people and the wider public about the natural and cultural value of their wetlands and the need to conserve and use them sustainably, the following measures will be carried out:

- In total four international work camps in Spain and Greece for some 120 young people from La Nava, Nestos, the Broads and the “Wollmatinger Ried” (Lake Constance).
- Local school classes will be invited to visit the demonstration areas.
- Mobile exhibitions and information boards for visitors shown in the vicinity of the demonstration areas, providing information in the local language.
- Publicity and educational material (flyers and booklets) concerning the demonstration sites published in the local language.
- Educational puppet shows for children living in and around the areas concerned.
- Internet presentation, an environmental quiz and four organised trips for the media.

7. Public Relation and Dissemination

Übertragbarkeit

The examples of the Broads and La Nava prove that it is possible to restore degraded and completely drained wetlands and that technical knowledge does already exist. All wetlands and lakes in Europe have to face similar

problems that could be solved by practical standard solutions. Their importance as resting, breeding and wintering places for fauna and flora, especially for birds, must be seen at international level.



Press conference in Palencia introducing the project to the Spanish Media in November 2001.

Within the framework of the network Living Lakes the experience has been made that the exchange of know-how and the collaboration at international level represent an enormous motivation for the local stakeholders to solve the problems in their own area. International attention increases the importance of the region and facilitates the work of the persons involved. In order to maintain their image and position, they are keen to fulfil their role as a model project. In the current project the project partners of Germany and England have gained important experiences and know-how concerning waste water treatment, cleaning of polluted lakes, preservation of wetlands,

extensification of agriculture, environmentally friendly shipping, visitor's management, and sustainable tourism. All these experiences and know-how are transmitted to, discussed and if possible used in the project areas in Spain and Greece.

Target groups are all sectors and organisations with a stake in the use of wetland catchments, including:

- Community leaders, planners, developers (including engineers), local businesses, farmers, and statutory and voluntary bodies involved in water management, agriculture, nature conservation, tourism, leisure pursuits (e.g. fishing).
- Experts, decision makers (mayors, regional authorities, scientists, conservation groups) and multipliers like i.e. media, international organisations (UNEP/CMS, RAMSAR), institutions (universities) and authorities.
- Local people and wide public at European level (farmers, fishermen, hunters, country and rural women associations, young people and children associations etc.).

Measures and Instruments:

- Direct exchange on the spot between experts (from the Broads and Lake Constance) and the persons responsible for the management of wetlands as well as different stakeholders and lobby groups and interested public.
- Four public training courses containing theoretical and practical elements at the Broads and at Lake Constance.
- Four expert meetings.
- Lectures to be held on expert meetings (open to the public), documentations and articles in specialist journals.
- Video-Documentation as practical “guide” and manual for the management of wetlands.
- Internet presentation on a new website including an open discussion forum.
- Information leaflets and a mobile exhibition in the respective national language (with English abstracts).
- Environmental education programme for school classes, competitions and games of chance for children.
- International work camps for young people from Europe.

- Action events in the information centres and trips for journalists, reporters and media.

In view of the creation of jobs, jobs for the local people have priority. As a result of the conversion from intensive to extensive or organic agriculture ecologically sound work is developing without any loss of income. In the field of tourism, new jobs, especially for young people, may be created by natural and cultural tourism. Sound tourism also helps to sell the locally produced organic products. The evaluation of the project will be commissioned to an external institution.

8. Timetable

Aug. 2001	Kick off meeting with project team in Constance. Set up of the project structure and schedules, co-ordination of the PR work and internal communication.
Oct./Nov. 2001	First visit of the expert group from Lake Constance and The Broads to La Nava and Nestos.
Jan. 2002	Internet presentation of the project. Installation of an internal discussion forum. Second meeting of the project team.
from Jan. 2002	Information events for residents, farmers, decision makers and stakeholders.
May 2002	First training course at Lake Constance.
until Dec. 2002	Establishment of buffer zones and/or biological sewage treatment plants in the project areas.
April 2002	Litter Collection and Workcamp at Nestos.
June 2002	Proposal for extensive agricultural development for each region.
Sept. 2002	International Living Lakes Conference.
Sep. 2002	Workcamp at La Nava.
Oct. 2002	First training course at the Broads. Third project team meeting.

Nov. 2002	Exhibition in each of the two areas. Proposal for La Nava as a Ramsar-site.
Dec. 2002	Lobbying for agricultural extensification plan.
Oct. 02 – July 04	Exhibitions in the areas.
Nov. 2002	Second visit of experts to the project areas: Analysis of the current situation, control of the progress by means of indicators, suggestions for further steps to be taken.
Dec. 2002	Regional Living Lakes workshop in Hrysoupolis (Greece) with the project team and lobby groups from the demonstration areas, experts, media. Fourth project team meeting.
March 2003	Preparation and organisation of the second training course at Lake Constance.
May 2003	Second training course at the Broads. Fifth project team meeting.
July 2003	Realisation and installation of information panels.
Sep. 2003	Construction and installation of observation platform and educational trails in each area.
Sep. 2003	Second workcamp in Greece and La Nava.
Oct. 2003	International workshop at the Norfolk Broads. Participants: project team, stakeholders, lobby groups of the project areas, media.
April 2004	Regional workshop at La Nava with the project team and interested public, lobby groups, from the demonstration projects, experts, media. Sixth project team meeting.
Jan 2004:	Production and translation of the video-documentation and specialised publications.
May 2004	Third visit of the experts from Lake Constance and the Broads to the project areas, analysis of the current situation, control of the progress by means of indicators, propositions for the next steps and measures. Committee meeting for an interim evaluation of the project.
June 2004	Seventh meeting of the project team. Final evaluation of the project. Preparation of the final report.

July 2004	International Living Lakes Conference at Lake Constance to present the final results of the project. Participants: Living Lakes partners, experts, stake holders, lobby groups from the project areas, interested public, media.
July 2004	Eighth project team meeting. Evaluation of the final results of the project.
July 2004	Dissemination of best practice guide.
July 2004	Final Report.

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The EU LIFE III Programme

LIFE was set up by the EU in 1992. The aim of LIFE is to financially support exemplary projects in the three sectors LIFE-Environment, LIFE-Nature and LIFE-Third Countries. In the long term this will help the EU to improve its environmental policy as well as providing demonstration projects of good environmental practice to be copied by other industries, NGOs and public bodies. The first round of LIFE (LIFE I) ran from 1992 to 1995 and the second round (LIFE II) from 1996 to 1999 with a total budget of 450 million EURO. LIFE III is financed by the EU with a total budget of 640 million EURO for the period 2000-2004.

In total 103 projects out of a total of 832 applicants were chosen by the European Commission as worthy of the financial support of LIFE III during the application round 2000-2001. In Germany 64 projects applied for funding. 13 projects were finally granted funding with a total LIFE contribution of almost 9 million EURO. Of these projects 5 were private industry, 6 were public and 2 projects were run by NGOs.

Further details about LIFE can be found on the website:
<http://europa.eu.int/comm/life/home.htm>