



**“POMORIE LAKE – CONSERVATION,
RESTORATION, AND SUSTAINABLE MANAGEMENT”
PROJECT GEF MSP TF 054774**



THE PROJECT

"Pomorie Lake – Conservation, Restoration, and Sustainable Management" project aims at securing long-term preservation of the ecosystem complex in the area of the coastal lagoon.

THE SITE



The project was developed by a team of Green Balkans NGO, being natural continuation of the systematic conservation activity in this region implemented by the Organization since 1996. The innovatory approach combining the efforts of a non-governmental organization (Green Balkans NGO), local and state authorities (Pomorie Municipality and the Ministry of Environment and Water), and the private business was intended to provide long-term sustainable management of the complex of protected areas in the region of the Pomorie Lake.

In 2004, the Global Environmental Facility (GEF) approved the project proposal. The implementation of the project activities was launched in February 2005. The initially fixed project duration was four years. However, due to the delayed start of the project activities this duration was extended for another year.

The realization of this project was a significant investment in the preservation of the globally significant biological diversity of the Republic of Bulgaria, contributing to the fulfillment of numerous international commitments undertaken by the country, such as: Convention on Wetlands of International Importance, Convention on Biological Diversity, Convention on the conservation of European wildlife and natural habitats, Convention on the Conservation of Migratory Species of Wild Animals, etc.

Also, the project proposal contributed to the fulfillment of the national commitments related to three EU directives: Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora, Council Directive 79/409/EEC on the conservation of wild birds, and the Water Framework Directive.

The project was financed through a grant provided by the Trust Fund of the Global Environmental Facility administered by the World Bank, amounting to \$ 863,100, as well as co-funding provided by Green Balkans NGO.

The global environmental goal of the project was securing the sustainable management of the protected area through a combination of activities for biodiversity conservation and restoration and sustainable natural resource use.

The main project components involved:

- Developing a Management Plan of the protected area;
- Implementing restoration activities for biological diversity and natural resources;
- Implementing a program for Public Relations and international cooperation.

The main activities implemented within the project included:

- Developing technical design solutions and physical rehabilitation and repair activities to improve the hydrological balance of the lake through restoration of the drainage system protecting the lake from freshwater inflow and the canal connecting the Pomorie Lake to the Black Sea;
- Developing a technical design and restoring habitats for breeding of threatened bird species through reconstruction of an eroded embankment into a new habitat for rare birds;
- Constructing an administrative building with a visitor's center for the protection of the Pomorie Lake;
- Implementing an environmental education program in the Pomorie schools;
- Implementing a program for public relations and popularization of the Pomorie Lake and the development opportunities it provides;
- Establishing partnerships with other wetlands in Bulgaria and abroad.



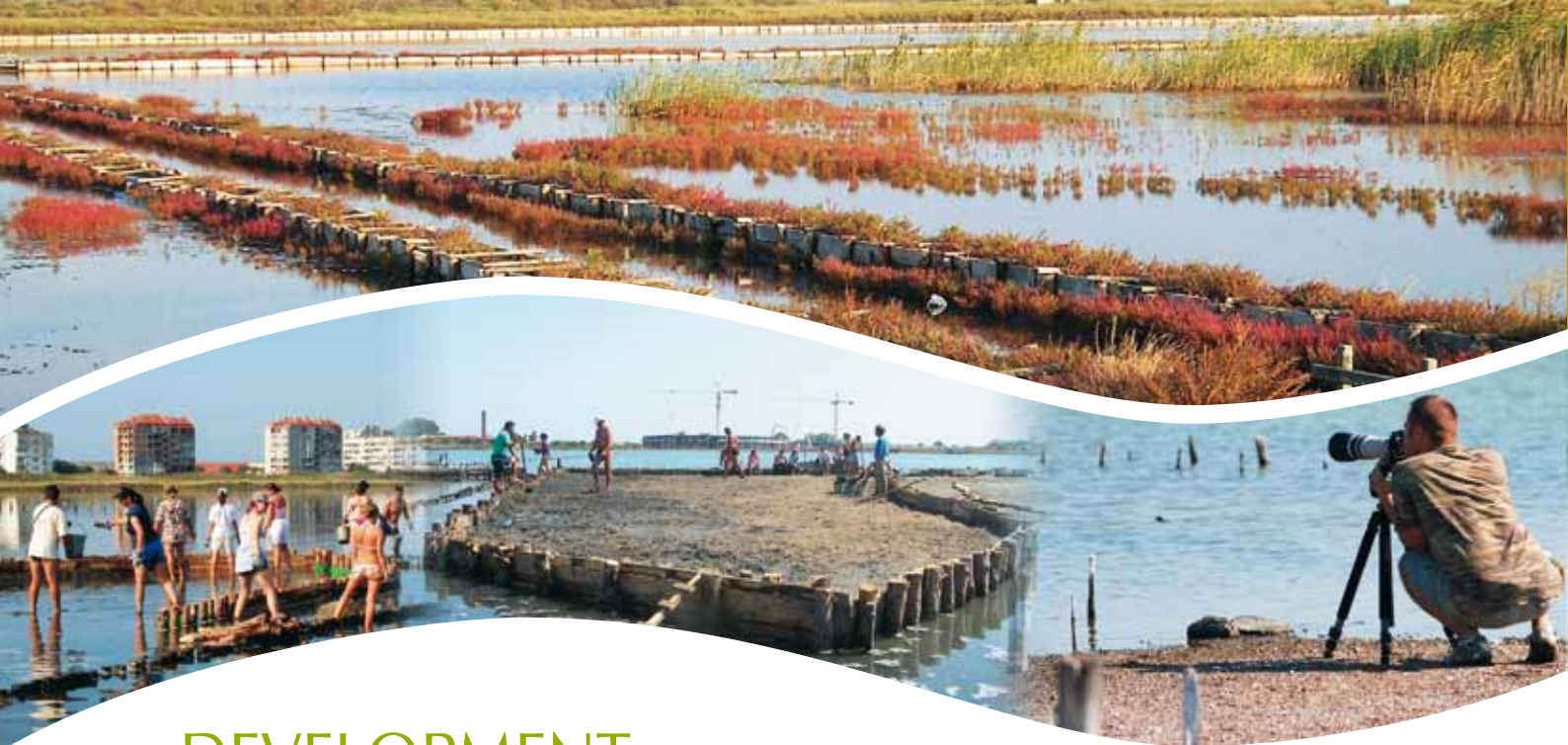
The Pomorie Lake is a natural hyper saline lagoon situated along the Bulgarian Black Sea coast north of Pomorie. The high salinity (more than twice higher than that of the Black Sea) has created unique environment supporting various animal and plant species. The sand strip separating the lake from the sea is notable for the sand dunes and the specific vegetation (*Euphorbia peplis*, *Eryngium maritimum*, *Amophylla arenaria*, *Trachomitum venetum*, etc.). The banks of the lake are overgrown with a narrow strip of reed, including bulrush in some places. The saline basins and the salt pans provide conditions suitable for development of *Salicornia europaea* – specific for salt lakes.

The high salinity of the lake water does not allow for great diversity of fish species. There is only one resident species – Caucasian Goby, while migrating species include Mullet, Little Mullet, Golden Grey Mullet, and Boyer's Sand Smelt. The existence of a sea-lake connection is of crucial importance for their migration. In the past, this connection was provided through the sand strip between the lake and the sea. Later on, this connection was interrupted by a protective stone embankment. Nowadays, the only direct connection between the Pomorie Lake and the Black Sea is provided through an open 500 m canal in the southern part of the lagoon, being the only place allowing for fish migration.

The area of the lake and the adjacent territories harbor a total of 17 amphibian and reptile species, many of which rare and globally threatened, such as Iberian Tortoise,

Hermann's Tortoise, European Pond Tortoise, Three-lined Lizard, Crimean Lizard, Spotted Newt, etc. Mammals are represented by a total of 31 species, including the world's smallest mammal – Etruscan Shrew. The nine bat species found in the area are subject to protection under the Bulgarian and the international legislation.

Among all resources of the Pomorie Lake, birds are of greatest diversity. By 2009, according to Green Balkans' latest surveys, a total of 268 species (breeding, wintering, migrating) have been found in this region, as many of them are rare and threatened, such as Pygmy Cormorant, White-headed Duck, Red-breasted Goose, Dalmatian Pelican, Ferruginous Duck, Sandwich Tern, etc. The lagoon is situated on Europe's second biggest migration route - Via Pontica, and every year more than 250,000 Storks, Pelicans, Geese, and Raptors migrate above the lake on their way to Africa and back. Fifty-seven bird species breed in the area of the lake, which is one of Bulgaria's most important breeding sites for the following species: Sandwich Tern (*Sterna sandvicensis*), Avocet (*Recurvirostra avosetta*), Black-winged Stilt (*Himantopus himantopus*), Kentish Plover (*Charadrius alexandrinus*), Common Tern (*Sterna hirundo*), Little Tern (*Sterna albifrons*), and Shelduck (*Tadorna tadorna*). The Sandwich Tern colony breeding on the artificial islands built and maintained by Green Balkans' volunteers numbers 1,500 pairs, being the biggest Sandwich Tern colony on the Balkan Peninsula.



DEVELOPMENT OF POMORIE LAKE MANAGEMENT PLAN

One of the most important project components was the development of a Management Plan for the protected area. This task is of particular significance for the maintenance and preservation of the complex of protected natural ecosystems, since it determines and prioritizes the activities that should and could be implemented within the complex. The combination of four types of protected areas according to the national and the international legislation (Protected Site, Ramsar Site, SPA, and pSCI), as well as their partial overlapping, called for an integrated approach to the development of the Management Plan.

The elaboration of the Management Plan was a long process that involved gathering of huge volumes of information regarding the biotic and abiotic components, implementation of field studies, meetings and interviews, identification of regimes and zones, and outlining of various management activities. This is a pilot Management Plan and one of the first documents in the Bulgarian practice intended to apply modern approaches to secure biodiversity conservation and sustainable management, as well as complex and synchronized management of several protected natural areas. In the course of work the regulation underwent significant changes, such as enactment of a Decree on the Development of Management Plans of Natura 2000 Sites, which resulted in further expansion of the scope of work. The development of the Management Plan involved more than 40 recognized experts in various fields of science and nature conservation. A final public discussion, involving different stakeholders, was carried out prior to the submission of the Integrated Plan to the Ministry of Environment and Water.

RESEARCH AND MONITORING

The monitoring of the biological diversity and the hydro-chemistry of the lake's water was one of the main activities implemented in a systematic and methodical manner throughout the project lifetime. Specific equipment was purchased, including binoculars, GPS devices, a spotting scope, a device for measuring the hydro-chemical indicators of the water (oxidation, salinity, pH, temperature). A lot of data regarding the variation of the water level was gathered through the water gauge installed within the project. The location of the birds' nests in the Pomorie Lake was identified and mapped. Field studies concerning the rest of the animal groups, higher plants, and natural habitats were also carried out. The whole volume of information was of particular importance for the planning of activities related to the management of the complex of protected natural areas. A data base was established, compiling the entire information gathered during the research and monitoring activities. After the completion of the project and the development of the Management Plan, the monitoring remains an important activity, which will secure the information needed for the management of the wetland.

RESTORATION

The physical restoration of the hydrological balance of the lake was identified as one of the most important project activities by all stakeholders and the scientific community as early as the development of its initial concept.



Therefore, the team studied various options for restoration or change of the existing hydro-engineering facilities – the fresh water outflow system (consisting of an open canal, a pump station, and a pressure pipeline) and the sea-lake connection canal. The two facilities were in poor condition; therefore, the team elaborated technical design solutions for their restoration. During the development of the design of the freshwater outflow system, the team found out that the existing underground pressure pipeline was cut and damaged. This resulted in unexpected increase in the costs of the restoration activities, exceeding considerably the project budget. At the same time, thanks to the regular monitoring of the hydro-chemical indicators, it was found out that the system of existing embankments in the lake was functioning properly, preventing fresh water from flowing into the main part of the lake, used for salt and mud extraction. All these resulted in a decision to postpone the restoration of the system until funding was available.

The main facility maintaining the hydrological balance of the lake is the sea-lake canal situated in the southern part of the lake and running across the urban part of Pomorie. A bigger section of the canal was to be opened according to the new technical design. This was done by the removal of the non-used part of the railway infrastructure of Pomorie. This opening was intended both to secure more lighted area, which is of key significance for fish migration, and provide better accessibility needed for its future maintenance. The restoration was successful and the results immediate: stabilized hydrological balance without great amplitude of the water level (the amplitude varies as follows: 58 cm in 2007, prior to restoration, 30 cm in 2008, and 25 cm in 2009); improved fish migration; sufficient water column above the stocks of medicinal mud; sufficient inflow of seawater needed for the production of salt. The restoration was unanimously evaluated as extremely useful and successful by all stakeholders, as well as by the local people, especially those living near the facility.

An extremely innovative approach was applied in the technical design of the restoration of habitats of threatened water birds. A project design was developed after the examination of the related international experience and considering the peculiarities of the region. The technical design provided for reconstruction of a section of the eroded embankment No 1 of the lake into a stable island, reinforced with geo-web and natural substrate suitable for breeding of birds. Unfortunately, due to the delayed provision of the necessary documentation by the local authorities, Green Balkans and the donor decided to reallocate the financial resource to the construction of an administrative building with a visitor's center. Later, the project team developed a project proposal to Operational Program "Environment" 2007-2013 (OPE) for the realization of this activity and got the Program's approval.

Throughout the project lifetime, Green Balkans' volunteers continued the well-established practice for maintenance, enhancement, and enlargement of the small islands harboring the biggest Sandwich Tern colony on the Balkan Peninsula, as well as other protected species, such as Avocet, Little Tern, and Common Tern. The results of the restoration activities were extremely successful - in 2009, the Sandwich Tern colony reached 1,500 pairs.

THE VISITOR'S CENTER

PUBLIC RELATIONS PROGRAM

THE BENEFITS



An administrative building with a visitor's center was built to secure sustainability and successful implementation of the activities envisaged in the Pomorie Lake Management Plan. The launch of the construction works was delayed due to a variety of administrative difficulties on the part of the local authorities, such as the allotment of a suitable plot for the visitor's center. This multifunctional building is intended to provide a working space to the unit in charge of the wetland conservation, including the maintenance and restoration of the biodiversity within the Protected Site, the Ramsar Site, and the two Natura 2000 sites.

Besides, the team and the visitor's center will offer various education and information services aimed at popularizing the saline lagoon, developing eco-tourism, and mobilizing additional support and resources for the protection of the wetland.

The additional funding made available under Operational Program "Environment" 2007-2013 will secure the center's furniture and equipment, as well as the production of an exhibition. In addition, this OPE-funded project provides for the establishment of a botanic path and a birding route, offering opportunities for observation of the interesting plant and bird species inhabiting the wetland.

The program was developed in three areas of activity: environmental education program in the schools of Pomorie, popularization of the Pomorie Lake at national and international level, and exchange of national and international experience.

The environmental education program was funded through another project supported by the Embassy of the Kingdom of the Netherlands in Bulgaria. The program involved numerous thematic lectures and field activities, such as afforestation actions, monitoring, visits to other protected areas, and celebration of international nature conservation holidays, etc.

Good relations with the administration of Po Delta Park, Italy, were established through a project for exchange of experience funded by the European Commission. Representatives of the stakeholders were organized in a business trip to the Po Delta lagoon, and later on, the Italian experience was transferred to Bulgaria through the implementation of "The Magic of the Pomorie Lake" EcoFest in 2008 and 2009. This event gathered lots of nature-lovers both from Bulgaria and abroad, and contributed significantly to the popularization of the Pomorie Lake natural resources. Green Balkans NGO plans to turn this EcoFest into a traditional event, expanding its scope and promotion.

The benefits of the project are indisputable, as acknowledged by all stakeholders. The improved water regime of the lake favors both biodiversity (migration of fish, breeding of birds, etc.) and the related human activities. The rehabilitation hospitals and the SPA hotels using the stock of the unique medicinal mud can rely on the good storage and regeneration of this valuable resource. Sufficient inflow of seawater – the main material needed for the extraction of salt, has been secured for salt-producers. The developed Management Plan and the constructed Visitor's Center will provide a long-term institutional framework for conservation and sustainable management of the complex of protected natural areas and will support the Government and the Ministry of Environment and Water in the fulfillment of Bulgaria's commitments for preserving the wetlands and the biological diversity. The implemented conservation activities for restoration of breeding habitats of rare bird species and the decreased disturbance secured stable and multiple increase in the numbers of the species' populations, which is a direct contribution to biodiversity conservation.

The environmental education program was highly praised by local teachers and educational supervisors, as well as by the international experts. For its main participants – the kids, this program brought new knowledge, interesting and useful out-of-class activities.

The two editions of "The Magic of the Pomorie Lake" EcoFest contributed to the popularization of the Pomorie Lake

as an important site for environmentally friendly eco-tourism and mobilized broad local and international support.

Good partnerships were established at local level, involving Pomorie Municipal Council, Municipal Administration, salt producers, mud users, representatives of the tourist sector, schools, etc. In addition, the numerous contacts established at international level involved foreign institutions and partners, thus securing exchange of knowledge and experience and application of good practices for wetland management and conservation.

The project team expresses their gratitude to the World Bank team (Sofia), and in particular to Mr. Florian Fichtl and Mrs. Anna Georgieva for their dedicated support! We extend our thanks to the officials of the Ministry of Environment and Water, the National Nature Protection Service, and the Regional Inspectorate of Environment and Water – Burgas for their expert assistance, the Mayor, the Chair and the Members of the Municipal Council for their time, helpful advice and decisions concerning the project realization!

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