



LIFE + MC-SALT
ENVIRONMENTAL MANAGEMENT AND
CONSERVATION IN MEDITERRANEAN
SALTWORKS AND COASTAL LAGOONS



AFTER-LIFE Conservation Plan for the sites SCI Pomorie BG0000620 and SPA Pomoriysko ezero BG000152

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Green Balkans NGO

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AFTER-LIFE CONSERVATION PLAN FOR NATURA 2000 SITE SCI POMORIE BG0000620 AND SPA POMORIYSKO EZERO BG0000152



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The project is realised with the financial contribution of financial instrument LIFE+ of the European Union.



LIFE

MC-SALT

LIFE MC-SALT is an international project involving Italy, France and Bulgaria.

Coordinating beneficiary is l'Ente gestione parchi e biodiversità - delta del Po in collaboration with Comune di Cervia in Italy, Parco Naturale Regionale Molentargius Saline in Sardinia, Nature Park Camargue, Compagnie des Salins du Midi et des Salines de l'Est e la Tour du Valat in France and Green Balkans NGO in Bulgaria.

The project aims conservation of species and habitats in salinas. Specific for these is they depend on salinity gradient for optimal conditions.

All saltworks in the project are sites of the European ecological network Natura 2000. Pomorie Lake where two sites overlap – SPA Pomoriysko ezero and SCI Pomorie hosts one of the only two saltworks in Bulgaria.

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LIFE MC-SALT PROJECT

The main goal of the MC SALT project is conservation and maintaining of favourable conservation status of birds and habitats in 9 sites of the European ecological network Natura 2000 situated in Italy, France and Bulgaria. Coordinating beneficiary is L'ente Gestione Parchi e Biodiversità – Delta del Po from Italy and associated beneficiaries are Consorzio del Parco Naturale Regionale Molentargius-Saline from Italy, Parc naturel régional de Camargue, Tour du Valat and Compagnie des Salins du Midi et des Salines de l'Est from France and Green Balkans NGO from Bulgaria.

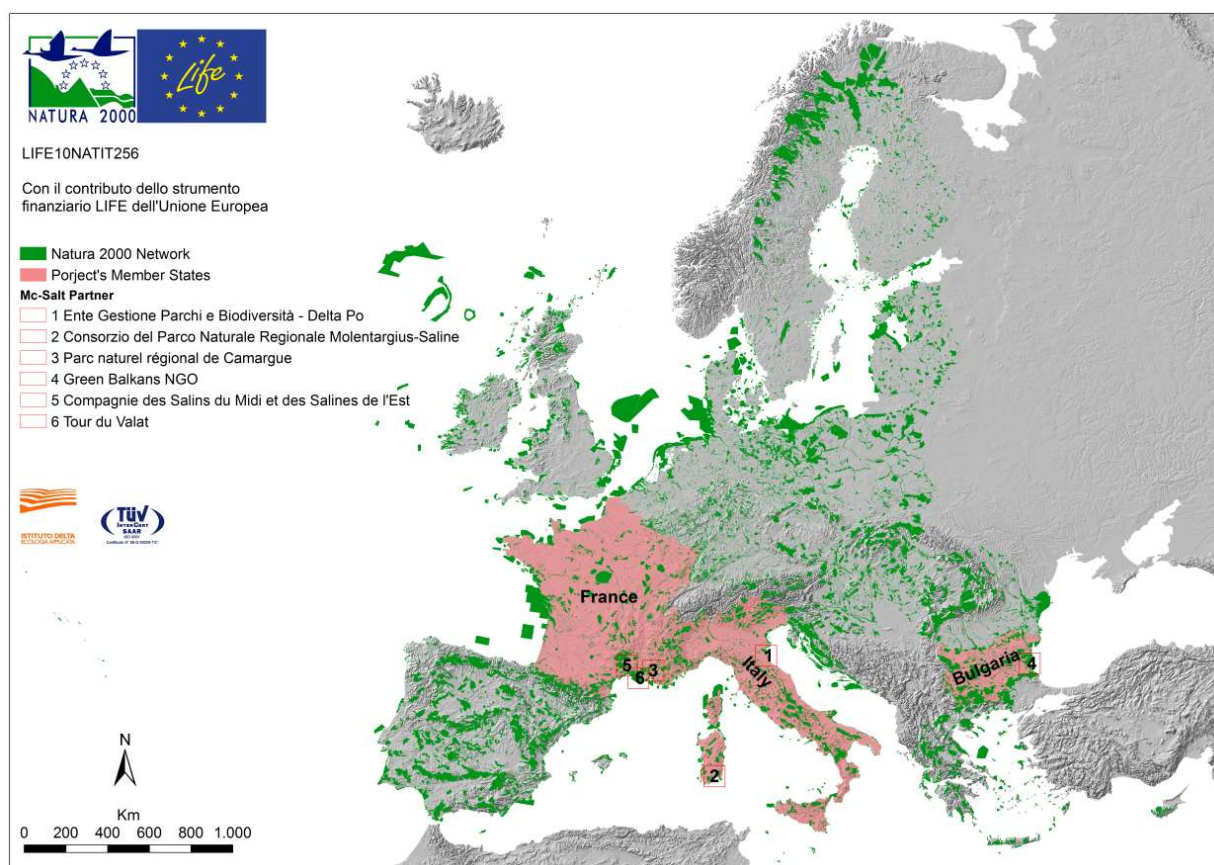


Figure 1: Natura 2000 ecological network in Europa and memeber states where the project activities take place.

Common characteristic of all Natura 2000 sites involved into the project is that all these host a salt work. Furthermore the hosted salt works are in a range of different salt production status, ranging from production interruption 25 years ago to still fully productive. In Molentargius site (Sardinia, Italy) salt production was interrupted 25 years ago, in Camargue (Provence Alpes Côte d'Azur and Languedoc-Roussillon, France) salt production was interrupted in 2010, in Comacchio (Emilia-Romagna, Italy) salt production was interrupted for 20 years and it has been restored in 2004 just for conservation purpose (to maintain salt gradient), in Cervia (Emilia-Romagna, Italy) salt production is still in use but artisanal, in Aigues-Morte (Provence Alpes Côte d'Azur and Languedoc-Roussillon, France) and Pomorie Lake (Bulgaria) salt production is still fully operative.

Pomorie Lake is a natural hyper-saline lagoon, part of the most important wetland complex along the Bulgarian Black sea coast – Bourgas wetlands. Lagoon's high salinity compared to the Black sea (more than 48‰) has led to the development of unique ultra-halide ecosystem with specific flora and fauna. Part of the lake is turned into salt pans for production of sea salt through evaporation. Due to its European and global important biodiversity the wetland is protected by national and international legislation - protected site according national legislation in 2001, Ramsar site 1229 in 2002, Important Bird Area (IBA) in 1997 and Natura 2000 site (SPA and pSCI) since 2007. The site contains 8 habitats of Community interest, including 2 with priority status, and these cover about 50% of the total site area: *1150 Coastal lagoons and *1530 Pontic salt steppes and salt marshes. Pomorie Lake is one of the most important wetlands in the region for water birds. In terms of nesting bird species of Community interest the lake is most important site in Bulgaria and the Black sea for the Sandwich tern (*Sterna sandvicensis*) holding the largest colony with 1500 pairs and nationally important nesting site for Avocet (*Recurvirostra avosetta*) with average 80 pairs, Black-winged Stilt (*Himantopus himantopus*) with average 50 pairs, Kentish Plover (*Charadrius alexandrinus*) about 15 pairs, Common Tern (*Sterna hirundo*) with average 60 pairs, Little Tern (*Sterna albifrons*), Mute swan (*Cygnus olor*) with 1-2 pairs and Shelduck (*Tadorna tadorna*) with 3-5 pairs.



Figure 2: Pomorie Lake

Main threats for the birds nesting at the site are direct destruction and degradation of nesting habitat and human disturbance. First is caused by erosion of salt works embankments and dikes. The second is a complex factor caused by waste disposal, light and noise pollution and disturbance related to construction of new resorts around the lagoon. To solve these problems following measures were planned: creation of nesting islets and platforms for Sandwich Tern (*Sterna sandvicensis*), Avocet (*Recurvirostra avosetta*), Black-winged Stilt (*Himantopus himantopus*), Kentish Plover (*Charadrius alexandrinus*), Common Tern (*Sterna hirundo*), Little Tern (*Sterna albifrons*), nesting rafts for ducks and nest boxes for Shelduck (*Tadorna tadorna*).

Main threats for the habitats of Community interest 92D0 Southern riparian galleries and thickets *Nerio-Tamaricetea* and *Securinegion tinctoriae* and 2120 Shifting dunes along the shoreline with *Ammophila arenaria* are invasive species *Amorpha fruticosa* and *Spartium junceum*. These are developing rapidly taking over lots of area and suppressing the plants typically associated to these habitats like *Eryngium maritimum*, *Cakile maritima*, *Medicago marina*, *Silene thymifolia*, *Stachys maritime* and *Trachomitum venetum*. Clearing of the invasive species was proposed as a measure to support normal development of the target habitats and plant communities.

CURRENT SITUATION

Monitoring of results from the conservation activities at Pomorie Lake have shown very positive developments. Created wooden platforms and islets have been occupied by birds almost immediately. Successful nesting and breeding of Common terns (*Sterna hirundo*) on these was recorded throughout the project duration. Number of breeding pairs varied with a peak of more than 100 pairs in 2014. In 2015 at least one of the installed nest boxes was used by a pair of Shelducks evidenced by found egg shells in front of the nest box. In spring and summer of 2016 in addition to Common terns the platforms and islets were occupied also by avocets (*Recurvirostra avosetta*) – about 25 pairs and Little terns (*Sternula albifrons*) – at least 3 pairs. All these have been created with the active participation of volunteers.

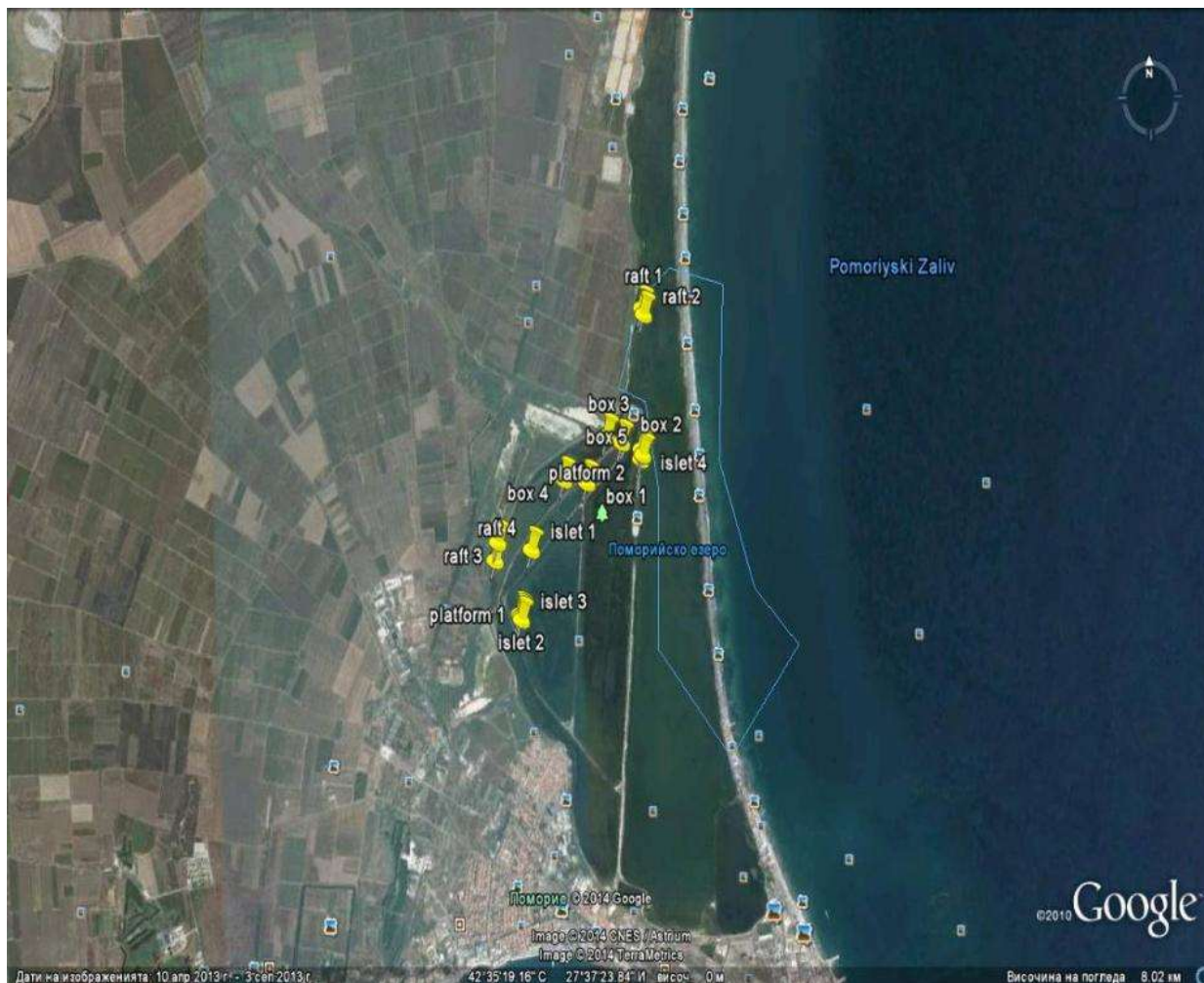


Figure 3: Situation of created platforms, islets and rafts and installed nest boxes for Shelducks

The role of the created islets and platforms was crucial for nesting birds at Pomorie Lake in 2014 and 2016 when human disturbance has caused abandonment by bird colonies of the large nesting island in the centre of the lagoon that is hosting largest share of breeding water birds. Due to lack of enforcement of regimes of protected area and SPA in 2014 fishermen and in 2016 kite-surfers caused disturbance during the breeding season with subsequent abandoning of occupied nesting site. Since the platforms and islets created within LIFE MC-SALT were situated in areas where the disturbance was less intensive these provided safe nesting sites for target species.

The created rafts were not that successful as no nesting of target duck species was registered but these were used only as resting and roosting site.

In addition the created platforms and islets have been used during spring, autumn and winter as roosting and resting sites by following species: Pygmy cormorant (*Phalacrocorax pygmeus*), Kentish plover (*Charadrius alexandrinus*), Black-headed gull (*Larus ridibundus*), Grey heron (*Ardea cinerea*) and Little egret (*Egretta garzetta*).



Figure 4: Occupied platforms and islets by terns and avocets

Removal of invasive plant species was carried out mechanically aiming to avoid use of herbicide. This method worked well against the *Spartium junceum* and partly for *Amorpha fruticosa*. Though during follow up monitoring some regenerated individuals of *Amorpha* have been found. During networking at a special workshop on invasive alien plant species new method by localized use of herbicide on cut surfaces was suggested. That was tested and applied successfully to assure complete eradication of the target alien species.



Figure 5: Removal of invasive alien plants

SWOT ANALYSIS

Strengths - Long term conservation for Pomorie Lake of Green Balkans NGO; - Great experience in conservation of species at habitats at the site; - Good knowledge of special characteristics of the site; - Pomorie Lake is protected area, Ramsar site and Natura 2000 sites (SPA&SCI); - Many volunteers have participated in the long term conservation program of Green Balkans NGO for Pomorie Lake.	Weaknesses - Lack of enforcement of existing protection regimes of protected area and SPA; - Continuing delay in approval of management plan for the site that is suggesting zoning, stricter protection regimes and designation of site manager; - Missing rangers for the Ramsar site even though state (Ministry of Environment and Water) is obliged to organize that according to national legislation; - Lack of interest and priority of nature protection by local municipality.
Opportunities - Regular monitoring at Pomorie Lake by Green Balkans NGO including for any threats and violation of protection regimes; - Interested stakeholders in protection of the site and enforcement of protection regimes have started a petition and may raise the issue up to EU-level; - Created partnerships within LIFE MC-SALT project have added experience, skills and knowledge on saline wetland ecosystems; - Raised profile of Pomorie Lake thanks to successful conservation measures for target water bird species.	Threats - Further resort and tourism construction and developments causing pressure over the site; - Continuation of non-enforcement of protection regimes of the protected area and SPA; - Changes in hydrological regime of the wetland due to unwise developments affecting existing system of canals.

AFTER-LIFE OBJECTIVES

In the Integrated management plan for SPA Pomoriysko ezero BG0000152 and SCI Pomorie BG0000620 developed in the period 2008-2009 with latest revision in 2014 an Action Plan for the period 2014-2018 has been drafted. Activities implemented within LIFE MC-SALT project were part of this action plan: eradication of invasive plant species and measures targeting bird species of high conservation concern.

Main conservation priorities are listed in the conservation objectives of decrees for designation of protected site Pomorie Lake and relevant Standard Data Forms of two NATURA 2000 sites - SPA Pomoriysko ezero BG0000152 and SCI Pomorie BG0000620. These are as follows:

1. “Pomorie Lake” Protected Site

Purpose of designation and subject of protection: conservation of Pomorie Lake, the salt-pans, and the adjacent coastal areas as a wetland of international importance and as a habitat of 63 bird species threatened with extinction. The activities prohibited within the protected site include:

- 1 Construction and any other activities changing the appearance of the site and the water regime of the lake;
- 2 Destruction of marsh vegetation and burning of reed;
- 3 Pollution of the lake water and the adjacent areas;
- 4 Hunting;
- 5 Disturbance of birds, destruction of nests, collecting of eggs, as well as ringing of chicks without prior permission of the Ministry of Environment and Water.

Activities allowed within the protected site:

- 1 Activities related to the production of salt and maintenance of the sea-lake canal;
- 2 Extraction of medicinal mud;
- 3 Stocking of fish species typical of the lake's ichthyo-fauna;
- 4 “Gard” and sports fishing in areas identified in a management plan. Pending the management plan becoming effective, these areas are determined by the Regional Inspectorate of Environment and Water in Burgas;
- 5 Construction of new dykes, as well as reconstruction and repair of the existing ones, after coordination with the Ministry of Environment and Water.

2. “Pomoriysko ezero” SPA BG0000152

According to the order, the Natura 2000 site was designated to secure:

- 1 Protection and maintenance of the habitats of the bird species listed under point 2 to achieve a favorable conservation status;

2 Restoration of the habitats of the bird species under point 2, whose nature conservation status needs to be improved.

According to this order, the subjects of protection are as follows

1 87 bird species under Art. 6, paragraph 1, point 3 of the Biological Diversity Act;

2 64 common migrant bird species under Art. 6, paragraph 1, point 4 of the Biological Diversity Act.

3. “Pomorie” SCI BG0000620

According to the Field Data Form, the Natura 2000 site was designated to secure:

- Preserving the area of the natural habitats, habitats of species, and their populations, subject to protection within the Natura 2000 site;
- Preserving the natural condition of the natural habitats, the habitats of species, subject to protection within the Natura 2000 site, including also the typical species composition, and environmental conditions;
- Restoring when needed, the area and the natural state of priority natural habitats, and habitats of species, as well as of populations of species subject to protection within the Natura 2000 site.

Important condition for achievement of the above conservation goals are approval of management plan for the site and designation of site manager to implement it. The first is pending for more than 6 years now but still number of important conservation activities have been completed to achieve set conservation goals: habitat for breeding bird species of high conservation concern was created and removal of invasive plant species to improve conservation status of target habitats.

Much higher problem is lack of manager and control of regimes listed in designation decrees for the protected site and SPA and low enforcement of these. Weak control and responsibility for respect of conservation regimes is a major threat for the site's importance for number of species and habitats of EU importance. Since September 2012 the state has transferred management of state-owned lands in the protected site to Pomorie Municipality but that has not improved situation since obvious lack of interest in nature protection and conservation of species and habitats by the municipal authorities. On the contrary opposing any conservation activities for species and habitats subject to conservation at the sites has been supporting the long-term goal for further developments around the site mainly in new resorts and intensive tourism use especially of the long sand spit representing longest beach within the municipality. The issue with lack of control and undermined breeding season of target bird species has led to raising the issue in the Parliament of Bulgaria and a Petition being initiated by citizens in 2016.

Changing strategic goals of the local municipality from short-term tourism development to long-term nature protection as sustainable basis for development of the region is key for conservation of the site.

The management plan has set the following **conservation goals**:

- In the core zone: conservation of natural characteristics of ecosystems and complex conservation of species, habitats and landscapes, support of important activities (traditional salt-production) for the biodiversity of the site;
- In the buffer zone: conservation of core zone and mitigating potential negative natural and anthropogenic impacts, restoration and maintenance of favourable conservation status of target species and habitats, creating conditions for regulate human activities with respect to conservation priorities;
- In the sustainable natural resource use zone: creating preconditions for sustainable socio-economic development of the region, related to the natural resources of the site, as well as for sustainable use of renewable resources, in conformity with the goals and objectives of the different protected areas; reducing the threats and regulating the access to core and buffer zones.

Specifically, the conservation activities implemented in LIFE MC-SALT project were the following:

1. Conservation of target bird species by creating suitable nesting habitat for these – islets and platforms for Sandwich Tern (*Sterna sandvicensis*), Avocet (*Recurvirostra avosetta*), Black-winged Stilt (*Himantopus himantopus*), Kentish Plover (*Charadrius alexandrinus*), Common Tern (*Sterna hirundo*), Little Tern (*Sterna albifrons*), nesting rafts for ducks and nest boxes for Shelduck (*Tadorna tadorna*);
2. Removal of invasive plant species *Amorpha fruticosa* and *Spartium junceum* for achievement of favourable conservation status of habitats 92D0 Southern riparian galleries and thickets *Nerio-Tamaricetea* and *Securinegion tinctoriae* and 2120 Shifting dunes along the shoreline with *Ammophila arenaria*.

For assuring sustainability of the results from these activities, following steps will be needed in the future:

1. Annual maintenance of the created nesting platforms and islets and eventually creating new ones at areas less affected by human disturbance – these will be continued as part of Green Balkans NGO's Long term conservation program for Pomorie Lake with the support of volunteers.
2. Regular monitoring of birds at the site and threats for these – that will be continued by Green Balkans NGO mainly through the staff of Pomorie Lake visitor centre.
3. Regular monitoring of habitats and threats for these by invasive plant species - that will be continued by Green Balkans NGO mainly through experts and support from the staff of Pomorie Lake visitor centre and volunteers.
4. Removal of invasive plant species threatening the target habitats – that will be part of Green Balkans NGO's Long term conservation program for Pomorie Lake with the support of volunteers.

FINANCIAL OUTLOOK

Activities described above are both part of the Action Plan in the Management Plan for SPA Pomoriysko ezero BG0000152 and SCI Pomorie BG0000620 and Green Balkans NGO's Long term conservation program for Pomorie Lake. Different sources of funding have been used through the years for implementation of similar activities by the NGO and these can be separated in following groups:

- Project funding for specific activities;
- Internal funding sources;
- Volunteers.

Financial needs are estimated as following:

Activity	Estimated budget (BGN)	Sources
Annual maintenance of the created nesting platforms and islets	3 000	Internal sources; Volunteers
Creating new nesting platforms and islets at areas less affected by human disturbance	12 000	Project funding; Internal sources; Volunteers
Regular monitoring of birds at the site and threats for these	4 000 / <i>annually</i> /	Internal sources;
Regular monitoring of habitats and threats for these by invasive plant species	2 000 / <i>annually</i> /	Internal sources;
Removal of invasive plant species threatening the target habitats	6 000 / <i>if these are detected</i> /	Project funding; Internal sources; Volunteers

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