



LIFE Project Number
LIFE03 NAT/SLO/000076

LIFE PROJECT NAME
Conservation of endangered species and habitats in the Sečovlje salt-pans

LAYMAN'S REPORT



November 2006

Introduction and background

The Sečovlje Saltworks are the most northerly saltworks still in operation in the Mediterranean. It covers around 650 hectares in the extreme south-west of Slovenia, next to the border with Croatia in the southern part of the Piran Municipal District.

Secovlje Salina Nature Park (KPSS) is considered as one of the most important natural and cultural heritage areas along the Adriatic coast in Slovenia and listed as part of the Natura 2000 ecological network. Rich biological and landscape diversity of the area is supported by human induced activity, traditional, still-active salt production through appropriate water management. In other words: maintenance of the traditional salt production is a precondition for survival of particular habitats and species. Through the centuries these habitats and species have adapted to specific environmental conditions which were induced by men. Intensive external pressures on the area, most attractive for tourism sector, and lack of the management due to financial constraints in the past, are the major threats for the biodiversity conservation of the area.

Lack of the management and maintenance of dykes and embankments due to financial constraints in the past, together with intensive external pressures on the area, most attractive for tourism sector is considered as one of the major threats for the biodiversity conservation. The main reason for devastating state of the area lies in the fact that in the eyes of former managers of the area traditional salt-making process, which is essential to support biodiversity, was not considered profitable. The area was therefore partly abandoned which resulted in uncontrolled flooding and degradation of the saline ecosystem.

Summary of project scope and objectives

The main goal of the project Conservation of endangered species and habitats in the Sečovlje salt-pans (LIFE03/NAT/SLO/000076) was to ensure effective protection of endangered habitats and species, which require particular management measures. Targeted habitats included: 1130 Estuaries, 1140 Mudflats and sandflats not covered by seawater at low tide, 1310 Salicornia and other annuals colonizing mud and sand, 1320 *Spartina maritima*, 1410 Mediterranean salt meadows (*Juncetalia maritimi*), 1420 Mediterranean and thermo-Atlantic salt marshes and salt meadows (*Sarcocornetea fruticosi*). Targeted species included: *Knipowitschia cf. caucasica* and *Aphanius fasciatus* (six above mentioned habitat types and two fish species are listed on the Annexes I and II to the Council Directive 92/43/EEC ("the Habitats Directive")). There are also 6 bird species (*Himantopus himantopus*, *Recurvirostra avosetta*, *Sterna hirundo*, *Sterna albifrons*, *Anthus campestris* and *Charadrius alexandrinus*) listed in the Annex I of the Council Directive 79/409/EEC ("the Birds Directive"), with the most important national populations or the only breeding populations for Slovenia. Secovlje and near-by Strunjan salt-pans are considered as the most important post-breeding area for migrating *Larus melanocephalus* (Annex I of the Council Directive 79/409/EEC listed species) in Slovenia.

Description of the approach and results achieved

LIFE project actions were orientated to provision of effective management background to securing effective water management and infrastructure, provision of suitable ecological conditions for habitats and species and to the awareness campaign, cooperation and support to the local economy.

LIFE project approach	Description	Results obtained
Preparation of the site specific management plan	<ul style="list-style-type: none"> • Technical documentation for long-term management of the site 	<ul style="list-style-type: none"> • Management plan prepared and adopted by the official body, appointed by the Ministry of Environment
Actions to secure control over the water regime in the salt-pans and the dykes and to prevent habitat destruction and nest predation	<ul style="list-style-type: none"> • Restoration of high-water channel embankments and sea defences • Creation and maintenance of edge channels along the outer boundaries of salt-pans • Mowing and maintenance of the dykes and embankments 	<ul style="list-style-type: none"> • 2000 m² of most valuable habitat area protected against intrusion of high waters and flooding; • 18.000 m of dykes regularly mown and thus strengthened. • 6.500 m of new edge channels dredged out/more than 100 ha basins surrounded by edge channels;
Creation of substitute habitats	<ul style="list-style-type: none"> • Habitat creation for Terns • Topping of soils on smaller dykes and creation of islands in the dyke lines • 	<ul style="list-style-type: none"> • 5.000 m² of the area with current low conservation value transferred into breeding islands moulting area for project target bird species; • Construction of two breeding rafts;
Awareness and promotion campaign, including support for the job-creation for local population and economic development of the Natura 2000 site	<ul style="list-style-type: none"> • Information and promotion materials and their dissemination • Establishment of an information/ promotion centre for visitors • 	<ul style="list-style-type: none"> • Information centre set up with permanent exhibition on the biodiversity and cultural values of the Natura 2000 site and LIFE project; • Park-newsletter, containing information about the project, Natura 2000 network and biodiversity values of the area produced and distributed to over 8000 households in the community (7 instead of planned 6 issues); • Film on the importance of salt-pans for biodiversity, LIFE project and Natura 2000 produced, promoted (several occasions, also outside the park) and regularly presented to the visitors of the area; • Leaflets for wider public produced and distributed; instead of planned one leaflet, in cooperation with the partners of the project, two leaflets and one CD Rom were produced (providing information on the site, targeted Annex species/communities, LIFE

		<p>project and Natura 2000 network;</p> <ul style="list-style-type: none"> ●Several newspaper and magazine articles informing general public about the Park and the work undertaken within the LIFE project and promotion of the Natura 2000 network were produced. Other promotional tools include several media events, press conferences and interviews, both for radio and TV broadcasting; ●Web-site prepared and regularly updated (information about the project, Natura 2000 and the site) in three languages, (SLO, GB, I) and layman's report delivered to the Commission.
<p>Strengthening transboundary co-operation and exchange of experience</p>	<ul style="list-style-type: none"> ●Study visits, exchange of staff, scientific/technical cooperation 	<ul style="list-style-type: none"> ●Active cooperation and exchange of experiences with another similar LIFE support project site (Salinas in Cervia and Comacchio in the Delta del Po Regional Park in Italy) established. This resulted in two study visits (delegation of each project site visited another project site) and regular exchange of experiences in particular field actions (i.e. preparation of the management plans, particular field actions, participation at the workshops and meetings, preparation of joint project applications...); ●Established contacts with another LIFE project site in Portugal (Sado salt pans LIFE00NATP/007088) which resulted in planned participation at the "Salt Fair" in Portugal and more scientific cooperation with salinas in Camargue/France, another LIFE supported Natura 2000 site; ●Presentation of the activities, also partly funded by the LIFE project, at the meeting on the ecological management of salt-pans in Greece (Santorini).

Assessment of the conservation (and other) benefits for the Natura 2000 site and species/habitat targeted

The LIFE project provided major encouragement and contribution to the overall enhancement of favourable status of targeted habitats and species. The key point was the provision of “seed money” for initiation of the activities which requested major investment after (too) long period of complete abandonment. Such activities include restoration of the major scrapes and damages in the dykes and embankments, removal of completely overgrown vegetation on the dykes, creation of small islands in the newly established dyke lines... Maintenance of improved infrastructure is much less expensive and could be undertaken more easily. In addition, due to several biotic and abiotic factors, influencing the state of certain habitats, substitute habitat creation was an essential tool to provide suitable reproduction and living conditions for certain species. An example is the creation of 15 extensive breeding and moulting areas for highly endangered Terns (*Sterna hirundo*) and Mediterranean Gulls (*Larus melanocephalus*). Introduction of effective control of water regimes in parts of the area contributed to improved conditions for almost all targeted habitats and fish species.

The photos below indicates the improvement of the ecological conditions for the targeted wetland and saline habitat types in the dredged channel. In such restored areas one of the indicators of favourable ecological conditions is the presence of targeted fish species (Aphanius, Knipowitschia) which were not present at all before restoration works.



Before

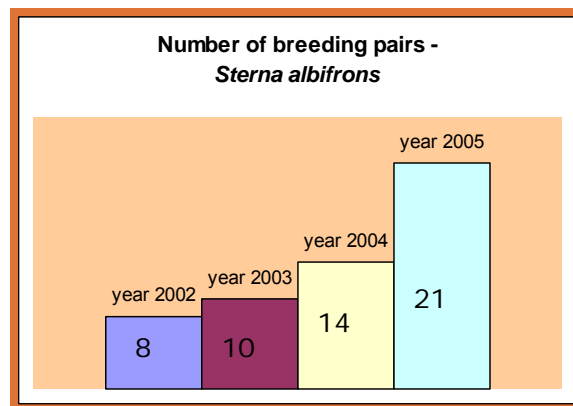


After

For the **mudflats and sandflats, Salicornia and other annuals, Mediterranean salt meadows and Mediterranean and thermo-Atlantic salt marshes and salt meadows**, which are mostly located in the core protection zone of the area, it is essential to provide appropriate water management. For this purpose several water control mechanisms were set up and regular monitoring activities to oversee the development of the vegetation communities were undertaken. A new area (“Botanični rezervat”/Botanical Reserve) was arranged at the area of Fontanigge, where additional areas were arranged to enlarge the

areas of those habitats. Another testing area to grow *Salicornia* stands was set up at the Lera area.

Diagram indicates the rise in numbers of some breeding bird species, such as Little Tern,. The increase was mainly due to more appropriate and controlled management of water and anti-predation measures. In addition, artificial breeding rafts for Common Terns increased the number of breeding from 8 to 21!



LIFE activities, especially those related to the effective control of water, provided suitable conditions for re-colonisation of the Avocet.



Extensive attention put to securing an effective water management regime and maintenance of habitats resulted in increase of almost all project targeted species. Even more, during the implementation of the LIFE project, several new breeding bird species have occurred. These include: two pairs of Shelduck *Tadorna tadorna*, a pair of breeding Redshank *Tringa totanus* and return of the breeding pair of Avocet *Recurvirostra avocetta*. Another new breeding species, European Bee-eater *Merops apiaster*, started to breed in the artificial breeding cliff, created primarily for breeding of Kingfisher *Alcedo atthis*. One should also note that appropriate management of water regimes attracted first ever recorded individual of Greater Flamingo *Phoenicopterus ruber*.

Encouraged with the results and outcomes of the LIFE induced actions, the beneficiary started with other conservation works. One of them include protection and rehabilitation of

the freshwater wetland in which monitoring activities during LIFE project discovered probably the biggest population of European Pond Turtle (*Emys orbicularis*), another habitat Directive listed species, in this part of Slovenia. LIFE project contribution in the last three years supported restoration and maintenance of more than 500 metres of sea-water defence walls and 6.500 metres of internal dykes inside the salt-fields. This important contribution stimulated other conservation work, which resulted in the restoration of more than 30.000 metres and additional 200 metres of sea-walls of internal dykes. For an effective protection of endangered, Birds Directive listed species, additional fencing of the most valuable breeding areas is needed. For this purpose, the park management authority has secured funding for fencing approx. 2.200 metres of highly important bird areas along the Jernej Channel. The works (setting up the fence) are already under way.



Some of the targeted habitats required only effective prevention of any actions that might influence their favourable status. For the favourable status of all the targeted habitats, measures to control water regimes (already described above) were beneficial. In the case of the Dragonja river estuary and *Spartina* community in the Jernej channel, another needed action was to raise awareness and inform the public about the importance of the site and protect the site against undesired influences. Information signs for public, informing about the importance of both habitats, prohibited actions and measures (prevention of dumping the sites with rubbish, prohibition of walking outside the marked paths etc.), but also about the Natura 2000 network and LIFE project have been set up. In addition, information leaflet, focused on the *Spartina* community has been issued. It is considered that at present no additional actions (except already mentioned water regime control) is needed and the management authority will maintain with the established patterns of water management for the benefits of the habitats.

The LIFE project echoes widely in the public. Several tools of delivering the key messages about the project, Natura 2000 and LIFE programme were used to communicate with public. It proved that the most effective were the events organised during different project milestones, combined with press conferences and messages for the media and public (i.e. opening of the information centre, presentation of the LIFE film) or targeted communication actions (Park newsletter circulated to all the households).

Cost-benefit discussion on the results (economic and conservation benefits)

LIFE project initiated several “seed” actions where “kick-off” was needed in order to overcome obstacles aroused due to long-term non-management (cleaning up the overgrown areas, reconstruction of the major scrapes in the dykes, outdoor reconstruction of the information centre building...). Now, when the initial actions (some of them related also to major investments) are concluded, the park management authority will continue with the maintenance and further developments in the area for the benefits of wildlife and habitats.

LIFE initiated actions encouraged the management authority to restore additional parts of sea-defence walls and smaller dykes. All together, approximately 30.000 metres of internal dykes have been maintained/ restored in the last years. One could say that every LIFE supported restored metre of dykes stimulated further reconstruction more than 4 metres of dykes!

Restoration of almost deserted salinas, with great support of the LIFE projects, provided for creation of new jobs: more than 15 young persons have been employed recently to maintain the salt-making process which supports biodiversity in the area and other conservation initiated activities (maintenance of habitats, mowing...). Even more job opportunities have been offered through increased visitation of the restored Salinas and Nature Park.

Transferability of project results

Recent process of re-construction of the salt-pans, in great part supported by the LIFE project, will be further used for wider promotion of the benefits of the Natura 2000 sites and promotion of sustainable use of these sites. This opportunity has already been offered to the Ministry of Environment who often use the “success story” of the area for promotion of the Natura 2000 sites for wider audiences. One such recent event was the visit of the President of the Republic of Slovenia to the area. His visit was used for detailed explanation of the achievements with the support of LIFE funding, presentation of the importance and benefits of designation of Natura 2000 sites and demonstration of sustainable use and products (salt) that are harvested in this area. The President highly acknowledged the achievements and made a report for public on his web site. In the report he emphasised the need for preservation of this outstanding area of natural and cultural values.

The project outcomes in the only active salt-pans in Slovenia could be transferred to other sites where the concept of sustainable development should be illustrated with the application in practice. As far as the dissemination of the project approach is concerned one should note direct transfer of experiences and know-how to the similar habitat area in the neighbouring country. During the project implementation warm working relationship has been developed especially with our partners in Delta del Po regional Park in Italy where exchange of experiences in the process of restoration of the Salinas in Cervia and Comacchio will include also experiences from this LIFE project.