

Restoration of Endemic Pannonic Salt Marshes and Sand Dunes in Southern Slovakia



Janka Guzmová
Department of Nature Conservation
Directorate for Nature, Biodiversity and Landscape Protection

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LIFE NAT/SK/083 Restoration of Endemic Pannonic Salt Marshes and Sand Dunes in Southern Slovakia



Salt marshes



Salt marsh – a habitat containing high amounts of soluble salts in soil, created and further formed as a result of the combination of the presence of underground water with a high content of readily soluble salts, water evaporation regime and warm climate.

1340* Inland salt meadows,
1530* Pannonic salt steppes and salt marshes

3 Project area - Danubian Lowland



Biogeographical regions of Europe

- Arctic
- Boreal
- Atlantic
- Continental
- Alpine
- Pannonian
- Mediterranean
- Macaronesian
- Steppic
- Black Sea
- Anatolian

After a map by the European Environmental Agency: www.eea.eu.int



Project sites - Special Areas of Conservation

1. Komárňanské slanisko/ salt marsh
2. Pri orechovom rade/ salt marsh
3. Marcelovské piesky/ sand dunes
4. Kamenínske slaniská/salt marsh
5. Čenkov/ sand dunes
6. Jurský chlm/salt marsh
7. Bokrošské slanisko/salt marsh
8. Mostová/salt marsh
9. Juhásove slance/salt marsh
10. Síky/salt marsh
11. Panské lúky/salt marsh
12. Šurianske slaniská/salt marsh
13. Nesvadské piesky/ sand dunes
14. Pavelské slanisko/salt marsh
15. Chotínske piesky/ sand dunes



Komárňanské slanisko, photo: Pavol Littera



Bokrošské slanisko, photo. D. Baláž

<http://www.sopsr.sk/natura/index1.php?p=4&lang=sk&sec=2>

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Goals of project

- ✓ to contribute to the conservation of priority habitats and reinforcement of the Natura 2000
- ✓ to implement restoration management measures to achieve and maintain favourable status
- ✓ to ensure long-term conservation of these unique habitats in cooperation with towns and villages
- ✓ to increase public awareness of these habitats and their significance



The main activities of the project and results achieved

photos: Daphne

1. Preparing of studies and management plans to be used in management of the project areas

Study on the eco-hydrological restoration of salt marshes

Study on the reintroduction of grazing

Study on the ecological restoration of sand dunes

Management plans for 15 project sites

Technical documentation

Nature conservation measures

2. Purchasing or long-term leasing of lands for implementation of restoration measures and reintroduction of grazing

- 78.34 ha of land (salt marshes and sand dunes) was purchased

- 20.6 (Pavelské slanisko) and 6.9 ha (Chotínske piesky) were acquired by long term lease

3. Implementing restoration management

- removal of pioneer wood species, mulching, harrowing, mowing (380 ha)



Restoration of traditional grazing

- grazing was a traditional way of using salt marsh in the past
- **Expert study on restoration and management of halophytic and sand habitats by grazing**
- analysis of conditions and recommendations for restoration of grazing on each project site
- the most suitable animal breeds
- recommendation of maintaining proper care for animals
- grazing regime
- solutions for creating infrastructure for grazing



Photos: Daphne

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One of the project's output is the establishment of a mobile grazing herd - 99 sheep was purchased.

77 cows (calves) and 5 water buffaloes (calves) were purchased and provided for local farmers and communities for restoration and long-term keeping of grazing on the project sites.

42 km of fixed fences, 6 shelters for grazing animals, 12 watering wells and 5 km of mobile electric fencing.



Photo: Daphne



Photo: Broz



Photo: Broz

Traditional grazing was reintroduced on 8 salt marsh and 3 sand dune sites – 350.2 ha

Pavelské slanisko – whole site (18,5 ha), mobile herd, infrastructure;

Kamenínske slaniská – almost on the whole site (108.9 ha), cooperation with local farmers, infrastructure, animals provided;

Šurianske slaniská – 97 ha, cooperation with local farmer, animals provided, plan for the future – build a small dairy and restaurant;

Mostová – 22.5 ha, mobile herd, infrastructure;

Bokrošské slanisko – whole site (10 ha), cooperation with local farmer, infrastructure;

Pri orechovom rade – almost whole site (1.5 ha), cooperation with local farmer, infrastructure;

Komárňanské slanisko – almost whole site (14.5 ha), infrastructure;

Síky – 16 ha in the southern and eastern part;



Photos: Broz

4. Informing the public and increasing their awareness

- webpage for the project
- information about project sites put on the web pages villages/towns
- 15 information panels placed at project site
- information brochures, posters
- excursions and field meetings
- seminars
- methodological manuals
- 28 education programmes

5. Monitoring of the impact of restoration measures in target habitats

- several species have returned (*Trifolium retusum*, *Crypsis aculeate*, *Lythrum tribracteatum* etc.)
- typical population have expanded (*Camphorosma annua*, *Chenopodium chenopodioides*, *Plantago tenuiflora* etc.)
- awareness of people increased



11 Basic information about the project

Title: Restoration of Endemic Pannonic Salt Marshes and Sandu Dunes in Southern Slovakia

Beginning of project: 01/09/2011

End of project: 30/06/2017

Budget approved: 2,367,530 EUR

Real expences: 2,324,057 EUR

Contribution of the European Commission: 75 %

Project co-financed by the Ministry of Environment of the Slovak Republic

Project implemented by: Daphne – Institute of Applied Ecology, State Nature Conservancy of the Slovak Republic and Regional Association for Nature Conservation and Sustainable Development

Project area: Podunajská nížina – Danubain Lowland

<http://daphne.sk/sk/ochrana-biodiverzity/projekty/restoration-of-endemic-pannonic-salt-marshes-and-sand-dunes-in-southern-slovakia/>





Institute of Applied Ecology - NGO, founded in 1993, nature conservation mainly on the protection of non- forest ecosystems in Slovakia, using the tools of applied research, environmental education activities. www.daphne.sk



State Nature Conservancy of the Slovak Republic - national expert organisation established by Ministry of Environment of the Slovak republic; nature, landscape and biodiversity conservation. www.sopsr.sk



Regional Association for Nature Conservation and Sustainable Development – NGO, founded in 1997; work is focused on conducting practical nature conservation measures and promoting sustainable development, mainly in west Slovakia. www.broz.sk



Thank you for attention