



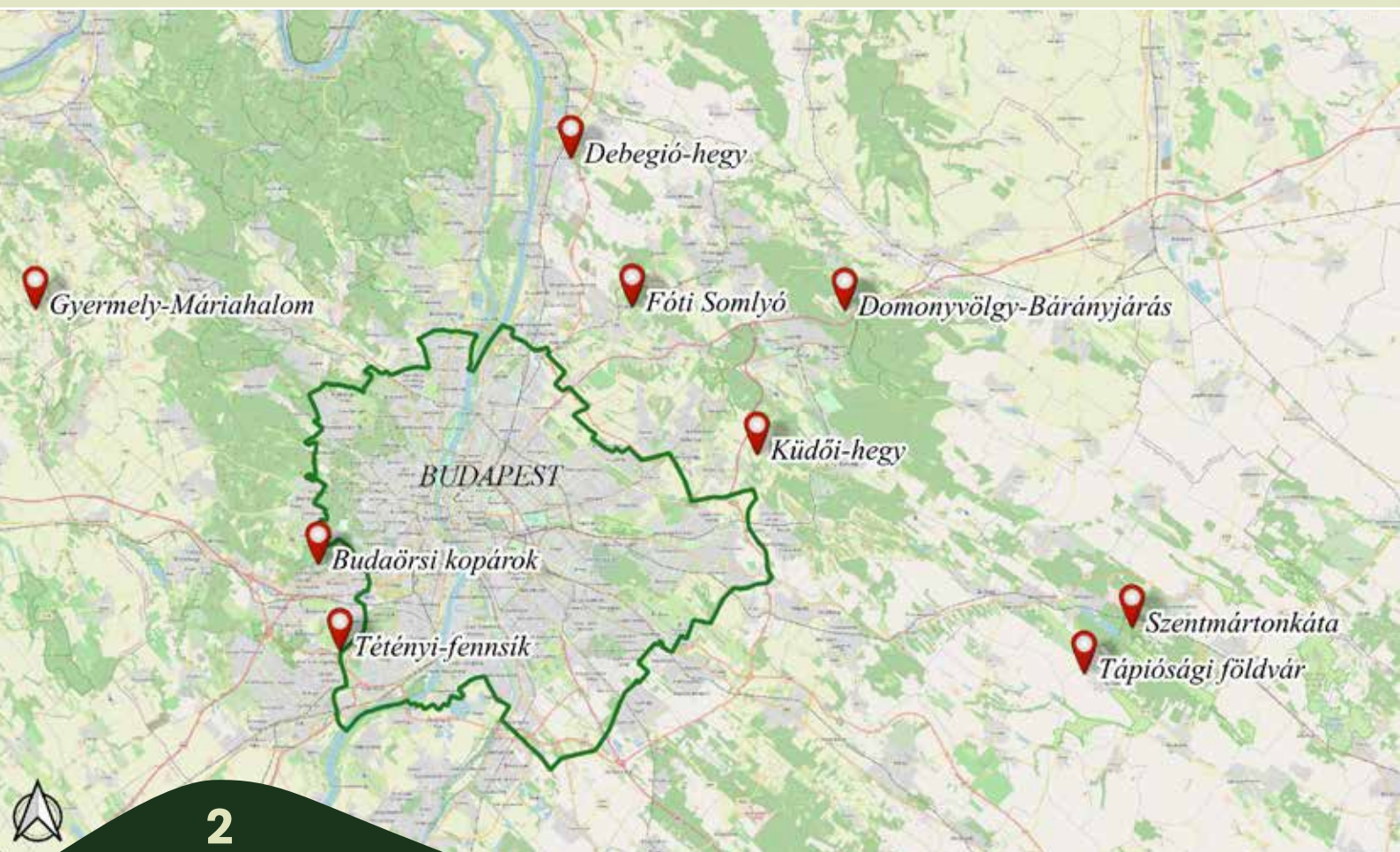
**CONSERVATION OF DRY GRASSLANDS
IN CENTRAL HUNGARY**
LIFE12 NAT/HU/001028

Basic data of the project

Title	Conservation of dry grasslands in Central Hungary		
Source	European Union LIFE+ Nature programme, and national co-financing		
Duration	From 1 September 2013 to 31 August 2020		
Budget	Total	EU support (75%)	National co-financing (25%) Ministry of Agriculture
	1.978.121 €	1.483.590 €	494.531 €
Beneficiary:	Duna-Ipoly National Park Directorate		

AREAS

Between 2013 and 2020 we have performed various habitat reconstruction interventions within the frames of the project on 9 project sub-sites of the Directorate covering a total project area of 633 ha, in the following endangered dry grassland areas:



OBJECTIVES

All three of the priority grassland habitat types covered by the project (Sub-Pannonic steppic grasslands, Pannonic loess steppic grasslands and Pannonic sand steppes) have their largest and most valuable areas in Hungary. The substantial part of the continuously decreasing but still surviving habitat spots was created as a result of tree and shrub clearing having had been performed – through grazing – several hundred years ago. Since the land use around this grasslands has considerably changed over the centuries, the number of grazing animals is ever decreasing, these habitats – formed and maintained by human impact – have become of high value as the last refuge for rare plant and animal species related to natural grassland types.

At the beginning of the project the Duna-Ipoly National Park Directorate set the objective of preserving the natural state of some of the rich but very vulnerable dry grassland habitats located within its area, and in certain areas even of improving their state by efficiently addressing the problems endangering them.

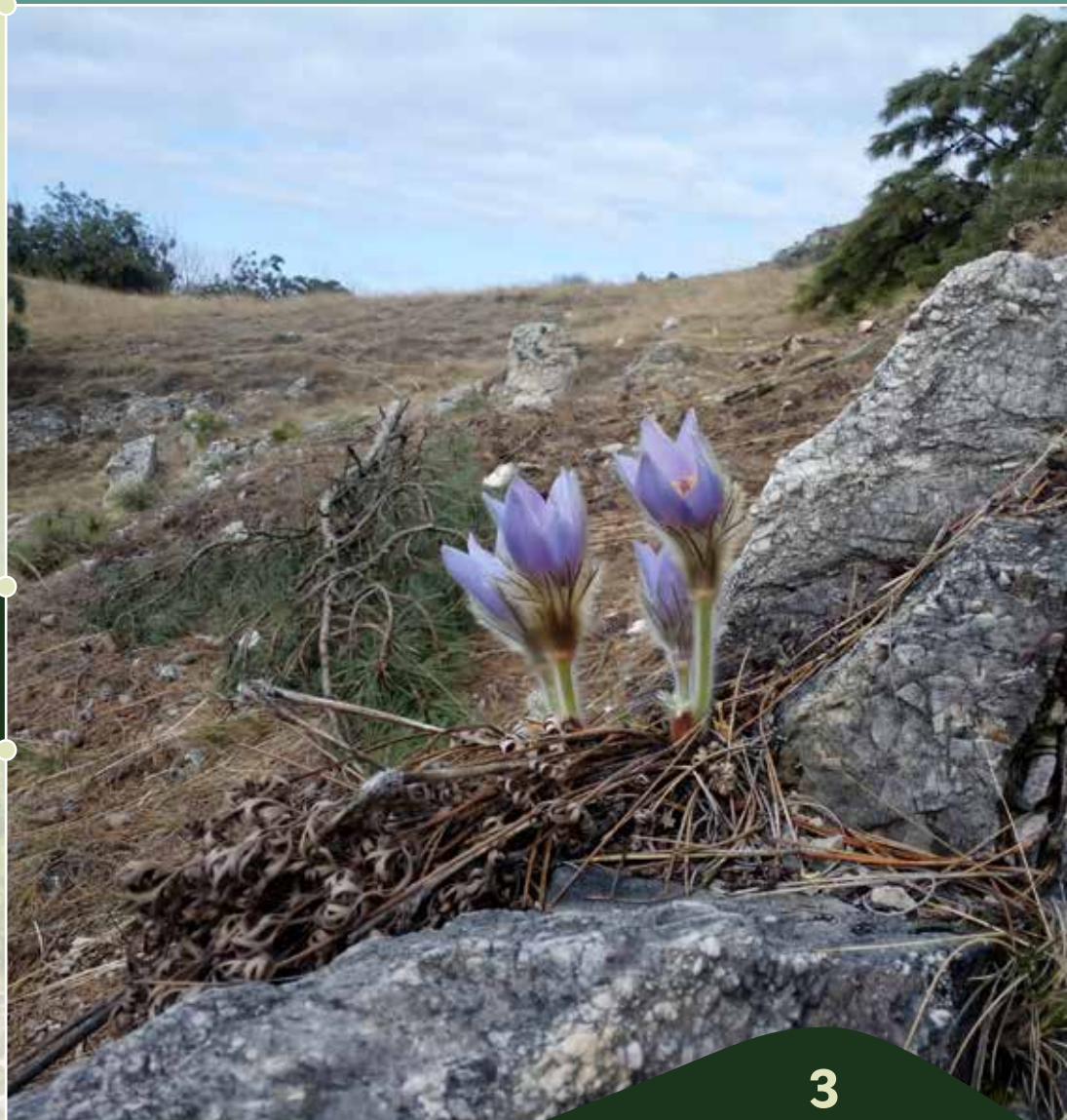
The table presents the most serious threatening impacts to these habitat types to be protected in a targeted way, the methods of handling them and the quantified results of the treatments.

Flowering *Pulsatilla grandis* with felled black pines in the background. Budaörsi Kopárok, March 2017

The invasive black pine (*Pinus nigra*) having been planted in the Buda Hills in the 20th century with the aim of reforestating the bare areas without the project intervention sooner or later would have fully populated the rupicolous grassland serving as a home of several protected plant and animal species.

Negative impacts	Methods of intervention	Results of the project in numbers
Rapid spread of indigenous shrubs	Partial removal of shrubs	Net area of 131 hectares
Grassland areas destroyed or deteriorated as a result of human impact	Grassland reconstruction interventions	Net area of 13 hectares
Aggressive spreading of herbaceous and arboreal invasive plant species	Eliminating invasive plants through mechanical and gently chemical treatments	Herbaceous invasive species net 35 hectares Arboreal invasive species net 62 hectares
Unfavourable human impacts:		
illegal waste dumping illegal traffic, routes field sports in protected grassland areas, illegal sand mines, etc.	Area closures with gates, trenches, waste removal	4 project areas partially closed 470 tons of waste removed
Unfavourable ownership structure of land areas	Taking the land areas into public ownership and under national park property management	176 hectares

In the case of treatment net area sizes are indicated, these result in the size of the treated areas with a theoretical 100% coverage of the given target species. For example, a fully cleaned area of 20 hectares with 50% initial coverage means 10 hectares of net treatment area.



SPREAD OF INDIGENOUS SHRUBS

Grazing and mowing had played the main role in maintaining these grasslands over the centuries. These traditional agricultural activities, however, has been suppressed during the past decades, and the lack of these activities favoured the slow reforestation of the grassland areas. The first phase of this process is when the indigenous shrubs – mainly hawthorn and sloe and certain wild rose species – become widespread and form a closed population. Without artificial intervention this process results in the retreat and total disappearance of the given dry grassland community. During the habitat treatment activities we have performed the mechanical removal of the shrubs, clearing the grassland areas. The elimination of the shrubs was not full, in the areas with high shrub density the fully closed spots were left, thus increasing habitat diversity – especially the diversity of arthropod and bird species.



Tétényi Plateau, Spring 2016: Dried hawthorn shrubs felled and piled together after partially opening the already closed shrubby areas.

As a result of the advanced spread of shrubs in this project area it was necessary to remove the shrubs partially, in larger or smaller spots, thus creating a favourable grassland/shrubby area mosaic.



Fóti-Somlyó, April 2018: The project physical team of the Directorate is cutting the coppice shoots of the hawthorn shrubs removed in 2016.

Regular mechanical and/or chemical post-treatments play an important role in the control of invasive and indigenous plants.

SPREAD OF INVASIVE PLANT SPECIES

The increase in the coverage by invasive species displaces the indigenous grassland communities by shadowing (similar to that of the indigenous shrub species), resulting the total disappearance of the grassland species. In the case of black locust it is also a problem that by increasing the nitrogen content of the soil the habitat can be made unsuitable for the indigenous species over the long term, by favouring the colonisation of nitrophilous, weed-like undergrowth. Apart from the black locust, the control of *Ailanthus*, silverberry, common hackberry and common milkweed presented the biggest challenge during the project.

Mount Debegió, July 2016: chemical treatment of common milkweed performed by the contractor hired within the frames of the project.

In dry areas one of the biggest professional challenges is to control this herbaceous invasive plant species. The seeds of common milkweed efficiently dispersed by the wind, and as a result of its widespread and deep root system it is very resistant even against chemical treatments.



Fóti-Somlyó, September 2018: individually injected and flagged black locust plants.

This method of chemical treatments – when applied at the appropriate time (August, September) – has proved to be efficient mainly against black locust and *Ailanthus altissima*.



ILLEGAL LAND USE

In the project target areas in several places problems were caused by human activities that damage the soil surface and the vegetation. These activities mainly include illegal vehicle traffic, waste disposal and illegal mining (typically sand mining). The elimination of the partially interconnected problems was achieved on four project sites by physical limitation of the road network (road closures, gates): on the Tétényi Plateau where illegal land use caused the most problems, and to a smaller extent in the shooting range of Szentmártonkáta, on Fóti-Somlyó and in Domonyvölgy-Bárányjárás.



Tétényi Plateau, June 2015: newly installed gate near Diósd Road.

This area borders on District 22 of Budapest, and two agglomeration settlements, Törökbálint and Diósd. Based on its characteristics – a relatively large surface area, its distance from busy roads and residential areas, and its deserted state – it became suitable to “serve” as an illegal waste disposal of the nearby settlements.

In the summer of 2015 the Duna-Ipoly National Park Directorate installed 8 gates on the access roads to Tétényi Plateau to limit vehicle traffic, and – where it was possible – closed down other entry points with ramparts. Based on the experiences of the five years following the closing it can be stated that the traffic to the area practically ended.

In the spring of 2016 the systematic removal of the waste having accumulated on the Tétényi Plateau over the years started.

Tétényi Plateau, the same dirt road in April 2016, then in May 2016: mechanical and manual works were performed along the dirt roads of the plateau – where the highest level of pollution was present.

The workers of the firm selected for the task progressed step-by-step on the routes assigned to them and removed the refuse dumps in their way. In two phases a total of 450 tons of mixed construction and communal waste were collected and removed from this project area.



UNFAVOURABLE OWNERSHIP STRUCTURE

In certain project target areas (Küdői-hegy, earth fort of Tápíóság, Gyermely grasslands and Domonyvölgy) the unfavourable ownership structure presented a serious practical obstacle in implementing conservation treatments. In the areas where the owners decided to sell their properties at the reasonable market prices

the solution was to take the areas into public ownership for nature conservation purposes, since this way the implementation of the necessary conservation treatments fell under the responsibility of a single stakeholder, operating under the sectoral legislation. During the duration of the project a total area of nearly 180 ha was included in the direct nature conservation treatment by the Duna-Ipoly National Park Directorate through various methods (market-based purchase, purchase of right holder areas, compulsory purchase, taking under national park property management).

OTHER PROFESSIONAL RESULTS

In the project area of the shooting range of Szentmártonkáta the grassland areas to be protected were surrounded by forest sections containing invasive tree species that put a pressure on grassland communities with their continuous spreading. Within the frames of the project the Duna-Ipoly National Park Directorate performed a tree species replacing forest-restructuring activity by planting indigenous tree species on a total area of 10.6 hectares

Shooting range of Szentmártonkáta, April 2019: Newly planted indigenous saplings in the place of a former black locust forest.

These tree species (e.g. field maple, wild pear, crab apple, common oak, domestic poplars), together with woodland fridges containing also indigenous shrub species (e.g. sloe, wild rose species, hawthorn) provide nectar and pollen for the pollinators in a more varied and balanced way than the usually unmixed poplar woodlands. These latter are undoubtedly excellent bee pastures – for about three-four weeks of the year –, but before and after that they hardly provide anything for the pollinating insects. By contrast, a varied woodland, completed by richly flowering neighbouring grassland areas – although with a lower intensity – provide continuous food supply for these important insects from spring to autumn.



RESEARCH

The results of the on-site treatments and grassland reconstruction interventions are monitored annually by botanist and zoologists. Based on the research reports it can be clearly established that the treatments have been successful:

- *By removing the invasive species completely and the indigenous shrub species to the necessary extent the condition of the treated habitats improved in all of our 9 project areas, and also the surface of the target habitats increased.*
- *During the several years of research it could be observed that the spider, ant, beetle and grasshopper species related to the target grassland types returned or settled to/in the treated areas, and the number of individuals increased, furthermore, the occurrence of several new, previously not reported species was also reported.*
- *In the areas of grassland restoration we were successful, however, subsequent to the project it will take some time until the vegetation characteristic to the given habitat rebalances itself.*
- *Research, however, confirmed in several cases that mechanical treatment solely is not always sufficient, using chemicals cannot be avoided in many cases.*
- *In order to keep up the results achieved even after project closure mowing and/or grazing at the appropriate times remains necessary in the treated areas to prevent the reappearance of shrubs.*

Female of yellow headed ladybird spider (*Eresus moravicus* Rezac, 2008) in its nest in Máriahalom, where this species was first described within the frames of this project in 2018.



PROJECT COMMUNICATION ACTIVITIES

During the implementation of the project we placed great emphasis on direct presentation of the natural values of our areas. Within the frames of the project we have established two new study trails (on the earth fort of Tápíóság and Budaörsi Kopárok) and renewed one study trail (Fóti Somlyó). At the same time we created the Duna-Ipoly mobile application, with the help of which all study trails of the Duna-Ipoly National Park Directorate can be visited and followed while saving paper.

Fóti-Somlyó, June 2020: Owing to the project the Budaörs and Fót study trails were enriched by a spectacular 3x1-metre panoramic board each.



Tétényi Plateau, September 2016: An On-location filming for the 22 September 2016 episode of the Kék Bolygó (Blue Planet) programme of the Hungarian Television.



Duna-Ipoly

tour guide application

At the project locations 8 coloured, large information boards have been installed, as well as 75 Natura 2000 boards.



We provided information continuously about the results, experiences: in the form of press articles, website news. We have promoted the project activities and their results by publishing 5 thematic "Cincér" (longhorn beetle) newsletters, and by appearing in TV and radio interviews.

The topic of the TV interview was the large-scale cleaning of the Tétényi Plateau: the project contributed to this with the collection and appropriate disposal of a total of 450 tons of waste, as well as with closing down the area with gates to prevent further illegal waste dumping.

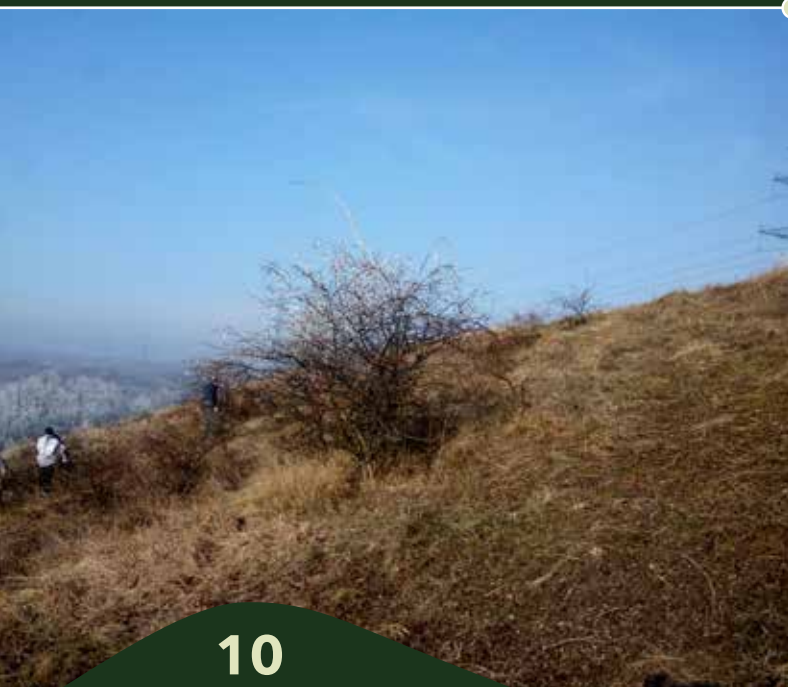


Royal Castle of Gödöllő, 6 September 2015: At the most monumental family programme of the project, the “Dombvidéki Zöld Forгатag” several hundreds of people participated in various nature awareness programmes, handicraft sessions, professional presentations and open-air concerts.

With an objective to raise awareness we involved volunteers into the habitat treatment activities of the project on 27 occasions in total. This activity was very popular, more than 600 people participated in the practical implementation of nature conservation: students from primary and secondary schools, university students and collectives from companies. Under the direction of the local rangers they mainly helped to carry away the shrubs felled by the project physical team from the areas, but waste collection and painting of guarding rails were also included in the tasks.

2 December 2016 Küdői-hegy: Volunteers are carrying the shrubs felled in the project area to the depot location

8 October 2016: Volunteers are painting the guarding rails along the Fóti-Somlyó study trail constructed within the frames of the project.



LIFE AFTER THE PROJECT – WHAT’S NEXT?

Subsequent to restoring in the project areas the grassland status considered to be optimal, our Directorate aims to establish a land management method that is in line with the local characteristics and can be sustained over the long term, for example by introducing gentle, extensive grazing within the frames of leasehold contracts.



Fóti-Somlyó, August 2018: Sheep are grazing in an area that has been cleared from hawthorn shrubs and leased for grazing within the frames of the project.

The ideal long-term maintenance treatment for dry grasslands is grazing with sheep and in a limited number with goats, at a moderate intensity. When it is not possible, regular annual mowing, performed at the right time can also help a lot in preventing the gradual spontaneous reforestation of the area.

Domonyvölgy-Báránycsár, June 2016: Báránycsár freshly mowed by the project physical team.





Budaörsi Kopárok (Photo by *Ádám Selmeczi Kovács*)

Text by Gyula Kiss, Andrea Schrett

Photos by: Gyula Kiss, Archives of DINPI

Issued by: Duna-Ipoly National Park Directorate (DINPD); 1121 Budapest, Költő utca 21.

Publisher: András Fűri, Director
Budapest 2020

Publishing and printing house: MAM Tanácsadó Kft.

This publication is printed on environmental-friendly recycled paper within the frames of the „Conservation of Dry Grasslands in Central Hungary” project (LIFE12 NAT/HU/001028), with the support of the EU LIFE+ Nature Programme.

www.dunaipoly.hu