



LIFE Project Number
LIFE10 NAT/SK/080

FINAL Report
Covering the project activities from 01/01/2012 to 31/03/2018

Reporting Date
31/10/2018

LIFE+ PROJECT NAME or Acronym
**Restoration of NATURA 2000 sites in cross-border
Bratislava capital region**

Project Data

Project location	SK010 Bratislavský kraj, SK021 Trnavský kraj, HU221 Győri, NUTS2 Niederösterreich, NUTS3 Weinviertel
Project start date:	01/01/2012
Project end date:	31/03/2018
Total Project duration (in months)	75
Total budget	3 490 059 €
Total eligible budget	3 490 059 €
EU contribution:	1 745 029 €
(%) of total costs	50%
(%) of eligible costs	50%

Beneficiary Data

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List of abbreviations

BROZ - Regional Association for Nature Conservation and Sustainable Development
BVS – Bratislava Drinking Water Company (Bratislavská vodárenská spoločnosť, a. s.)
Daphne IAE – DAPHNE – Institute of Applied Ecology
DVD - digital video disc
EC – European Commission
IR – Inception Report
MoE – Ministry of the Environment
MPs – Management plans
MTR – Midterm report

NGO - Non-governmental organization
 NM – National monument
 NPDA – National Park Donau-Auen
 NNR – National nature reserve
 NR – Nature reserve
 PK – Trout Circle Association (Pisztráng Kör)
 PLA - Protected Landscape area
 NP – National Park
 PR – Progress report
 SC – Steering committee
 SCI – Site of Community Interest
 SKUEV – national synonym for SCI
 SNC SR – State Nature Conservancy of the Slovak Republic
 SVP – Slovak Water Management Enterprise, state enterprise (Slovenský vodohospodársky podnik, š. p.)
 UK - Comenius University in Bratislava

2 Executive summary

2.1 Brief summary of each chapter of the report

Administrative part

The project's implementation was divided into two phases: Inception phase covering mostly the expert studies (A. actions) and implementation phase in which the concrete conservation measures (C. actions) were implemented. Awareness and promotion (D. action) actions were mostly realized as accompanying actions to C. actions.

During the project the following reports were delivered to the European Commission:

Inception Report – 1.1.2012 – 30.9.2012

Progress Report n.1 – 1.10.2012 – 31.3.2013

Progress Report n.2 – 1.4.2013- 30.9.2014

Midterm Report – 1.1.2012 – 31.5.2015

Progress Report n.3 – 1.6.2015 – 31.5.2016

Progress Report n.4 – 1.6.2016 – 30.9.2017

Final Report – 1.1.2012 – 31.3.2018

Project steering committee was established of 12 members. The steering committee was meeting at least once a year. Due to large number and variety of project actions and project localities, smaller meetings were also held, additional (as an alternative) to the regular SC meetings, concerning concrete action or project locality. This enabled to reflect the actual needs of the project action in more effective and prompt way.

Amendment of the project was approved concerning the prolongation of the project duration (+ 12 months), change of the project partnership structure due to the cofinancing of the project by the Ministry of Environment of the Slovak republic.

Technical part

There have been 7 Preparatory actions (A) in the project. Aim of these actions was to prepare detailed material for the practical realization and implementation of C. actions. Expert studies provided information about distribution and actual stage of various habitats (forest, non-forest, rocky, caves) and proposed the extent, intensity and methods for the concrete conservation measures (C. actions). Preparatory actions included also elaboration of management plans for 4 project sites. Long-term land lease (B. action) action exceeded the previous project plan what facilitated the restoration actions and protection of forest habitats in larger scale. Concrete conservation actions (C. actions) contained measures focused on restoration and conservation of valuable forests, grasslands, water and rocky

habitats. Conservation actions included also measures focused on elimination of negative impact of humans on protected areas.

Public awareness and dissemination of results

High number of dissemination actions under Public awareness and dissemination of results (D.1 – D.10) promoted undertaken conservation actions as well as the project itself and the NATURA2000 network of protected areas. Various printed materials were elaborated: project leaflets, project brochures, brochure about Szigetkoz, brochure for stakeholders, calendars and also promotion materials like t-shirts, magnets, stickers, textile bags and educational film (D.3, D.4, D.7). In frame of the environmental education (D.5) comprehensive educational programme for schools was elaborated and practiced. Installed tourist infrastructure improved the tourist management and provided unique information about the project sites (D.3, D.6).

The actions focused on direct presentation like excursions and presentations for schools, public etc. and the media coverage of the project highly exceeded the planned number of outputs. For this reasons some of the printed materials and promotion materials were produced in a larger number (D.4).

2.2 Key deliverables and outputs

- A1 managements plans for 4 project sites elaborated and approved (4 planned)
- A2 expert study on restoration and management of forest habitats
- A3 expert study on restoration of forest steppe habitats
- A4 expert study on restoration of grassland habitats
- A5 expert study on restoration of traditional habitat management by grazing
- A6 expert study on restoration of water and wetland habitats
- A6 technical documentation on restoration of water and wetland habitats
- A7 expert study on restoration and protection of rocky habitats and caves
- B1 long term land lease of 156.08 ha (70 ha planned)
- C1 planting of 61 000 seedlings of native trees (45 000 seedlings planned)
- C1 elimination of invasive species on 456.5 ha (420 ha planned)
- C1 9 350 valuable old trees preserved and marked (9 000 planned)
- C2 118 ha of forest steppes restored (115 ha planned)
- C3 restoration of 158.25 ha grassland habitats (142.9 ha planned)
- C4 functioning grazing system established on 5 localities (4 planned), total 144 ha (185 ha planned)
- C5 2 major (large-scale) restoration of water and wetlands habitats (1 planned)
- C5 5 smaller restoration of water and wetlands habitats (5 planned)
- C6 rocky habitats restored on 1.8 ha (1.67 planned) and 2 restoration actions on bat wintering places
- C7 two new rangers operating during the project
- C7 various visitors regulation measures and actions realized
- D1 project webpage
- D2 34 stakeholders meetings (15 planned)
- D2 3 x 2 day excursions (3 x 2 day planned)
- D2 11 technical workshops (10 planned)
- D3 7 outdoor interactive educational elements installed
- D3 37 big and 20 small information panels installed (36 big and 20 small planned)
- D3 maps about the project area
- D4 project brochures, calendars, project stickers, leaflets, magnets, textile bags, t-shirts
- D4 Layman's Report
- D5 education program for schools with various educational elements (toolkits, CDs, leaflets, worksheets, games etc.)
- D5 11 excursions for teachers (15 planned in originally in D.9, total 19 D.5 + D.9)
- D6 7 watching facilities installed (3 planned)
- D7 education film, documentary film about project

D8	3 trainings and exchange of know-how realized
D9	8 excursions for teachers (15 planned, total 19 D.5 + D.9)
D9	14 presentation for students (10 planned)
D9	33 guided excursions for students (20 planned)
D9	46 presentations for public (5 planned)
D9	54 guided excursions for public (7 planned)
D9	15 boat trips (10 planned)
D9	trainings of 12 guides (5 planned)
D9	11 excursions for public during the Earth Day events (15 planned)
D10	9 presentation of project on conferences (5 planned)
D10	6 press conferences (4 planned)
D10	16 press releases distributed (7 planned)
D10	171 articles covering the project published (35 planned)
D10	11 radio interviews (10 planned)
D10	42 TV shots broadcasted (5 planned)
E3	monitoring on report on status of vegetation of the target habitats
E3	report on soil changes
E4	reports on fauna monitoring
E5	12 networking organized (10 planned)
E7	publication of after LIFE conservation plan

3 Introduction

3.1 Project general objectives

The main project objective was the establishment of functional network of NATURA 2000 areas in the trilateral region of Bratislava and to secure favourable conservation status for habitats of Community interest by restoration and management measures carried out in 16 project sites. Project actions were aimed at restoration of forest habitats, forest steppes, grasslands, water and wetland habitats as well as caves and rocky habitats. Elimination of negative impacts of high population of capital city on valuable protected areas by various means: communication with broad scale of stakeholders, increasing of awareness, regulation of uncontrolled tourism and disturbance, creation of new tourist facilities etc..

3.2 Specific objectives

Specific objectives of the project were:

1. Restoration and introduction of appropriate management of habitats of Community interest
2. Restoration of river branch connectivity, water regime and flowing water conditions
3. Land lease and following introduction of appropriate habitat management
4. Implementation of measures preventing uncontrolled tourism and disturbance in target SCIs
5. Awareness rising of key stakeholders and public

3.3 Project sites

Project actions were implemented in various habitat types in the Danube, Carpathians and Záhorie region. The previous number of 17 project sites was reduced due to removal of project site SKUEV 0369 Devinske luky from the national list of NATURA2000 sites. This fact did not affect in any way the overall project objectives.

Involved project sites:

1. SKUEV0064 Bratislavské luhy
2. SKUEV0090 Dunajské luhy
3. SKUE 0104 Homolské Karpaty
4. SKUEV0117 Abrod
5. SKUEV0168 Horný les
6. SKUE 0269 Ostrovné lúčky
7. SKUEV0270 Hrušovská zdrž
8. SKUEV0276 Kuchynská hornatina
9. SKUEV0279 Šúr
10. SKUEV0280 Devínska Kobyla
11. SKUEV0295 Biskupické luhy
12. SKUEV0312 Devínske alúvium Moravy
13. SKUEV0313 Devínske jazero
14. SKUEV0314 Rieka Morava
15. SKUEV0388 Vydrice
16. HUFH30004 Szigetköz

3.4 Targeted habitat types

Targeted habitat types:

- 1340 *Inland salt meadows
- 3150 Natural eutrophic and mesotrophic lakes with Magnopotamion or Hydrocharition type vegetation
- 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation
- 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation
- 3270 Muddy river banks with Chenopodion rubri p.p. and Bidentition p.p. vegetation
- 6110 *Rupicolous calcareous or basiphilous grasslands of the Alysso-Sedion albi
- 6190 Rupicolous pannonic grasslands (Stipo-Festucetalia pallentis)
- 6210 *Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia),
- 6240 *Sub-Pannonic steppic grasslands
- 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)
- 6440 Alluvial meadows of river valleys of the Cnidion dubii alliance in central Europe
- 6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)
- 7230 Alkaline fens
- 8160 *Medio-European calcareous scree of hill and montane levels
- 8210 Calcareous rocky slopes with chasmophytic vegetation
- 8310 Caves not open to the public
- 9110 Luzulo-Fagetum beech forest
- 9130 Asperulo-Fagetum beech forests
- 9180* Tilio-Acerion forests on slopes, screes and ravines
- 91E0* Mixed ash-alder alluvial forests of temperate and Boreal Europe (Alno-Padion, Alnion incanae, Salicion albae)
- 91F0 Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers of the Atlantic and Middle-European provinces (Ulmenion minoris)
- 91G0* Pannonic woods with Quercus petraea and Carpinus betulus
- 91H0* Pannonian woods with Quercus pubescens

3.5 Main conservation issues being targeted (including threats)

Project actions responded to wide range of conservation and biodiversity problems in the region:

1. Degradation of grassland habitats due to abandonment of traditional land use.
2. Degradation of specific fen grassland habitat types due to drainage, inappropriate farming practices and eutrophication.
3. Inappropriate forest management.
4. River regulation, changed water level regime.
5. Lack of capacities and insufficient cooperation between local authorities, key stakeholders and NGOs in management of NATURA 2000 sites in the region.
6. Significant negative impact of uncontrolled tourism in NATURA 2000 sites located close to the capital city and consequent degradation of target habitats.
7. Low awareness of authorities, decision-makers and public

3.6 Socio-economic context

The location of the project in the capital region of Bratislava and its close surroundings presented a great challenge for the implementation of the project action. Thanks to this, wide spectrum of stakeholders groups has been involved and the project attracted a lot of attention from inhabitants, visitors, media and various interest groups. Multiple exceeding of the previous numbers of media outputs and project propagation actions, documented the enormous interest for the project actions and results. Cooperation with local farmers by restoration of grassland habitats provides a new economic opportunities. Various enviro-educational actions had a great impact on young generation. River restoration of Devínske and Karloveské sidearms presented a multiple benefit effect. Restoration contributed to the improvement of the water quality in nearby most important drinking water resources for the whole Bratislava region. Improved water regime in river branches provides better conditions for water sports, which are of a great tradition in Bratislava. Various tourist infrastructures and information elements increased the recreation potential and the awareness about protected areas for inhabitants and visitors of this region.

3.7 Expected longer term results

- Restoration management applied on grasslands and forest steppe habitats created the conditions for their sustainable use. Restored traditional management of these valuable habitats by grazing or by regular mowing will maintain the favourable status of the localities.
- Elimination of invasive species, planting of 61 000 seedlings and protection of 9 350 valuable trees will significantly contribute to the increasing of the biodiversity and ecosystem services in forest habitats for long term period.
- Hydrological restorations launched the natural water dynamic processes which are essential for long term sustainability of the favourable condition for fish communities as well as other species of community interest.
- The implementation of the project action significantly increased knowledge on the ecological and management requirements of targeted habitats and the effectiveness of the key conservation actions for the habitat conservation.
- The realization of the nature restoration measures had to overcome various administrative obstacles and set several precedents which are beneficial for future nature protection actions in the region.
- The project contributed to the strengthening of cooperation between state nature conservation authorities, non-governmental organizations, stakeholders, local municipalities as well as landowners and land users.

- Multiple public awareness actions, dissemination products and installed tourist infrastructure contributed to the change of the attitude about the needs of nature protection of NATURA2000 sites by the wide public.
- Elaborated environmental-educational programs, training seminars for teachers and the realized education on schools contributed to the future enhancing of the knowledge and respect about the natural values.

4 Administrative part

4.1 Description of the management system

The coordinating beneficiary of the project BROZ was responsible for the overall project management, communication and reporting. Steering committee meetings, project monitor visits as well as partner meetings to individual actions were being organized. BROZ has established a good communication base within the project associated beneficiaries with aim to share the information about fulfilling of particular actions. Because many project actions realized by different project partners met on the same project sites and also some project actions were connected to the others, intensive cooperation and communication was established through the project team.

The project's implementation was divided into two phases. The inception phase covering mostly the elaboration of expert studies (A. actions) which presented the basic document for the follow up concrete conservation actions. Expert studies involved studies focused on restoration of forests, forest steppes, grasslands, water and wetland and rocky and caves habitats, study on restoration of traditional grazing management. Apart from this, technical documentation for restoration of water habitats were been prepared.

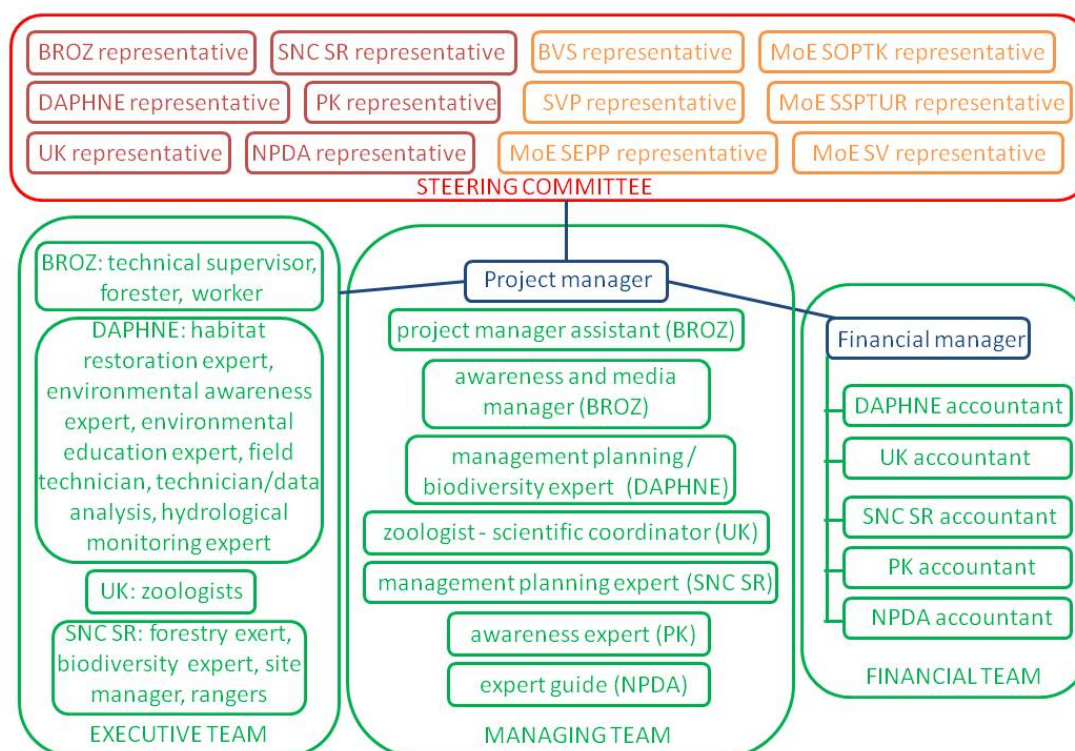
During inception phase the coordinating beneficiary project management team was established, consisting of the project manager, project manager assistant, financial manager, awareness manager and other technical positions. Technical team of the project partners was established as well. Several internal meetings were organized with project partners focused on the project planning. In this phase the project web site was established where information about the project are presented. Project steering committee was established.

Second phase consisted of finalisation of expert studies, management plans and implementation of concrete conservation actions (C. actions) focused on restoration measures, conservation and maintenance of various habitat types in the project sites. It also included E actions – project management, reporting and monitoring and B actions focused on long-term land lease.

Public awareness and dissemination actions (D. actions) were realized during both phases but mostly as accompanying actions to C. actions.

The project running was based on timely and accurate management and administration, the consultations and meetings of project manager and assistants with project associated beneficiaries, which were held on regular basis. Project management team also attended various meetings with municipality representatives, stakeholders, key personnel of organizations and state institutions to communicate all management activities directly in the region with regional interests groups. Financial manager supervised fluent money spending by associated beneficiaries and communicated with accountants of project associated beneficiaries.

Organigramme of the project team and the project management structure



Project Steering Committee was meeting once a year (Tab.1) (Annex 1,2,6). Members of the Steering Committee were nominated by associated beneficiaries and institutions and organizations within the project area before the first meeting. There were 12 members of the Steering Committee:

- Bratislava Waterworks Company (BVS)
- Regional Association for Nature Conservation and Sustainable Development (BROZ)
- DAPHNE - Institute of Applied Ecology (DAPHNE)
- Ministry of Environment of the Slovak Republic, Directorate of Environmental Programs and Projects
- Ministry of Environment of the Slovak Republic, Directorate of Nature and Landscape Protection
- Ministry of Environment of the Slovak Republic, Directorate of the EU and Environmental Policies
- Ministry of Environment of the Slovak Republic, Directorate of Water Protection
- National Park Donau-Auen (NPDA)
- Comenius University in Bratislava (UK)
- Slovak Water Management Enterprise, state enterprise
- State Nature Conservancy of the SR, Banská Bystrica
- Pisztráng Kör (PK)

Tab. 1.: Steering committee meetings

N.	Date	Number of SC members	Number of participants
1	19.9.2012	12	19
2	7.6.2013	7	15
3	12.12.2013	8	16
4	11.12.2014	7	12
5	16.12.2015	8	11
6	15.11.2016	8	15
7	5.12.2017	8	14

Due to large number and variety of project actions and project localities, smaller meetings were also held, additional (as an alternative) to the regular SC meetings, concerning concrete action or project locality. This enabled to reflect the actual needs of the project action in more effective and prompt way. Total 24 individual meetings were realized. Attendance records and the summarization can be seen in (Annex 3 and 5).

Partnership agreements with all associated beneficiaries were signed before the official starting date. The agreements contained exact financial plan and timetable with exact stated proportion of the EC contribution. Associated beneficiaries were obliged to send technical and financial reports to the project coordinating beneficiary every six months with copies of all accounting documents. BROZ realised the financial and technical control and correction of the documentation.

In December 2016 the request for an amendment to the Grant Agreement was submitted to the European Commission. Reasons of the amendment were two substantial changes to the Grant Agreement:

1. Change of the project partnership structure, due to the cofinancing of the project by the Ministry of Environment of the Slovak republic
 2. Change of the project duration. Some of the project actions needed longer period for the full implementation or for better adjustment of the conservation management and restoration measures.
- The Amendment to the Grant Agreement was signed in March 2017. The project duration was prolonged to 31st March.2018.

4.2 Evaluation of the management system

BROZ as the coordinating beneficiary ensured the smooth running of the project in accordance with the project proposal and oversaw the meeting of deadlines and time schedule. Beneficiaries were NGOs, state and public institutions experienced with project management and with transparent accounting system.

Project was dealing with issues never realized before in region of the capital city of Bratislava or not in such a large scale in such populated area e.g. restoration of grasslands and forest steppe habitats by traditional grazing, restoration of Danube river branches etc. The project sites also consisted of areas with the most valuable natural values and with highest degree of protection as National Nature Reserve (NNR) Šúr, NNR Devínska Kobyla, Nature Reserve (NR) Kopáčsky ostrov (in Slovakia, SCIs are being established within the those national categories of protection). This caused that broader spectrum of experts needed to be involved into the preparation and implementation of the project conservation measures.

Tackling these challenges however helped to create a good platform of land owners, state organizations, public bodies and local stakeholders, which will ensure the sustainability of the project outputs as well as provide a good examples for similar follow up project and activities.

Insignificant changes to the time schedule, project budget or in the achieved results occurred. Results of some project actions highly exceeded the previous project plan (C.1 – planted seedlings, C.5 –

number of restored Danube river branches, B – long term leased areas, D.6 – number of installed nature-observing facilities, D.9 – public awareness work, D.10 – media outputs), some needed small amendment of the extend of the outputs (C.4 – area with grazing management).

Delay in elaboration and approval of the management plans (MPs) for 4 project sites (A.1) was caused by the fact, that during elaboration of management plans two new amendments of the Acts on Nature and Landscape Protection came into force and new form and structure of documents related to biodiversity conservation and management were set up. Thanks to the intensive communication with the MoE and the Environmental Department of the District Office in Bratislava all 4 MPs were approved till the submitting of the Final report.

Project reports:

Submitted reports / reporting period:

Inception Report – 1.1.2012 – 30.9.2012

Progress Report n.1 – 1.10.2012 – 31.3.2013

Progress Report n.2 – 1.4.2013- 30.9.2014

Midterm Report – 1.1.2012 – 31.5.2015

Progress Report n.3 – 1.6.2015 – 31.5.2016

Progress Report n.4 – 1.6.2016 – 30.9.2017

Final Report – 1.1.2012 – 31.3.2018

Monitoring missions:

Nominated external monitor was Mr. Peter Bezák. Each Monitoring mission was divided in two parts – administrative and technical. Relevant Associated beneficiaries were present on both parts of the mission.

13.-14.6.2012 – the introduction of project management team and presentation of working plans for the Inception period, field visit at project sites.

13.-14.6.2013 - presentations on overall project actions progress, expert studies, grazing management in SKUEV Šúr, progress of forest steppe restoration in SKUEV Ostrovné lúčky,

30.-31.7.2014 – presentations on overall project actions progress, grazing management in SKUEV Devínska Kobyla, dissemination materials, planned large scale river branch restoration.

11. – 12. 8.2015 - presentations on overall project actions progress, visit of project sites SKUEV Devínska Kobyla, SKUEV Vydrica, SKUEV Bratislavské luhy, SKUEV Dunajské luhy.

6.7.10. 2016 - project was visited by technical desk officer Ms. Ana Klenovšek, financial desk officer Ms. Päivi Rauma and external monitor Mr. Peter Bezák.

16.-17. 8. 2017 - presentations on overall project actions progress, visit of the project sites SKUEV Devínska Kobyla, SKUEV Homol'ské Karpaty, SKUEV Abrod, SKUEV Horný les and SKUEV Šúr.

30.-31.7 and 24.8. 2018 - presentations on overall project actions progress, SKUEV Dunajské luhy, SKUEV Biskupické luhy, SKUEV Bratislavské luhy.

5 Technical part

5.1 Technical progress, per task

5.1.1 A – Preparatory actions

Action A.1 Elaboration of management plans for selected SCIs

Responsible beneficiary: SNC SR

Deliverables of the action:

7. A.1_Personnel_assignment_Annex5_IR
8. A.1_Database for non-forest habitats_PR1_Annex1_A1
9. A.1_Management plans - proposal, records from meeting_PR2_Annex 1_A1
10. A.1_Management Plan for SKUEV0168 Horný les_MTR_Annex 1_A1
11. A.1_Management Plan for SKUEV Devínske jazero_PR3_Annex 1_A1
12. A.1_Management Plan for SKEV Devínska Kobyla_PR3_Annex 2_A1
13. A.1_Management Plan for SKEV Horný les_PR3_Annex 3_A1
14. A.1_Management plans_SKUEV Ostrovné lúčky_PR4_Annex 1_A1
15. A.1_Approval document for MP for the SKUEV Horný les_FR
16. A.1_Approval document for MP for the SKUEV Devínske jazero_FR
17. A.1_Approval document for MP for the SKUEV Ostrovné lúčky_FR
18. A.1_Approval document for MP for the SKUEV Devínska Kobyla_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

4 management plans for selected project sub-sites elaborated and approved: SKUEV0168 Horný les, SKUEV0280 Devínska Kobyla, SKUEV0269 Ostrovné lúčky and SKUEV0313 Devínske jazero

Achieved results:

The 4 MPs were elaborated in accordance with attachment number 18 according to Slovak executive decree number 24/2003.

Management Plans were approved by the relevant authority - District Office in Bratislava.

This action was in delayed due to legislative changes and long lasting procedure of approval. The action was finished in 9/2018.

Problems and their solution:

During project implementation three new regulations which amended the national legislation on Nature and Landscape Protection came into force. The order of MoE proposed a new concept of elaboration of the management plans which had to be considered. This fact caused the need for additional time for incorporation of these changes into already elaborated parts of the management plans.

Moreover before the management plans were submitted to the relevant authority for official approval, internal reviewing and pre-negotiation process conducted by SNC staff with the land owners and land users on management measures was necessary and relevant comments were incorporated into draft management plans. Two of the project sites are located directly in the capital city, what caused a complicated negotiation due to the special expectation and demands of the land owners as well as the inhabitants and various interests groups. Despite these facts the conditions were agreed and the MPs were submitted. Approval of the submitted management plans by the relevant authority was beyond control of project beneficiaries, as there are no deadlines in the law for the approval process.

Implementation of the action:

At the beginning of the project implementation, scientific articles and relevant data were collected to obtain current and relevant scientific data for development of management plans. Methodological discussion, meetings on content and approach to management planning process were undertaken to be able to harmonize preparation of all selected management plans.

Several meetings with relevant stakeholders were organized with the aim to set up appropriate management measures at project sites. Project activities and proposed management measures were discussed with stakeholders and incorporated to management plans.

The management plans were elaborated in accordance with attachment number 18 according to Slovak executive decree number 24/2003 (Annex 11-14). It also included the prescribed structure of the management plans. In 2014 three new regulations which amended the Act No. 543/2002 on Nature and Landscape Protection and the Order of MoE No. 24/2003 Coll. came into force. It included a new concept of elaboration of the management plans which had to be considered during their preparation.

All management plans were submitted to the relevant authority - District Office in Bratislava and approved (Annex 15-18):

SKUEV0168 Horný les – approved on 20.9.2018

SKUEV0280 Devínska Kobyla – approved on 25.9.2018

SKUEV0269 Ostrovné lúčky – approved on 24.9.2018

SKUEV0313 Devínske jazero – approved on 3.9.2018

Action A.2 Preparation of expert study on restoration and management of forest habitats

Responsible beneficiary: BROZ

Deliverables of the action:

19. A.2_Expert study on restoration and management of forest habitats_PR2_Annex 2_A2

Comparison with planned outputs / expected results and time schedule:

Expected results: Elaboration of the expert study on restoration and management of forest habitats

Achieved results: Expert study was elaborated in 3/2014 (Annex 19).

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

The expert study comprised various project sites with wide range of habitat types and presented a base for implementation of concrete conservation measures in frame of the action C.1. Three main sub-actions are: a) planting of native tree species, b) removal of invasive species, c) preserving of valuable trees and modification of logging.

The study comprises nine NATURA 2000 sites: SKUEV Bratislavské luhy, SKUEV Dunajské luhy, SKUEV Biskupické luhy, SKUEV Ostrovné lúčky, SKUEV Homol'ské Karpaty, SKUEV Kuchynská hornatina, SKUEV Devínska Kobyla, SKUEV Horný les and SKUEV Devínske jazero. Proposed localization of planting of native trees was specified, seedling characteristics, planting methods and after planting care was discussed. Presence of invasive species in project sites was described. Different methods for elimination were discussed. The study emphasized the importance of modification of logging and preserving old valuable trees in forest habitats.

The study content is: 1. Introduction, 2. Goals of the study, 3. Description of the project site, 4. Threats for the forest habitats, 5. Definition of favorable status of the habitats, 6. Proposal of concrete conservation measures, 7. Conclusions

The study was divided in parts concerning the individual sub-actions. Partial delivery of the study enables earlier start of some sub-action like marking and preserving valuable trees and modification of logging.

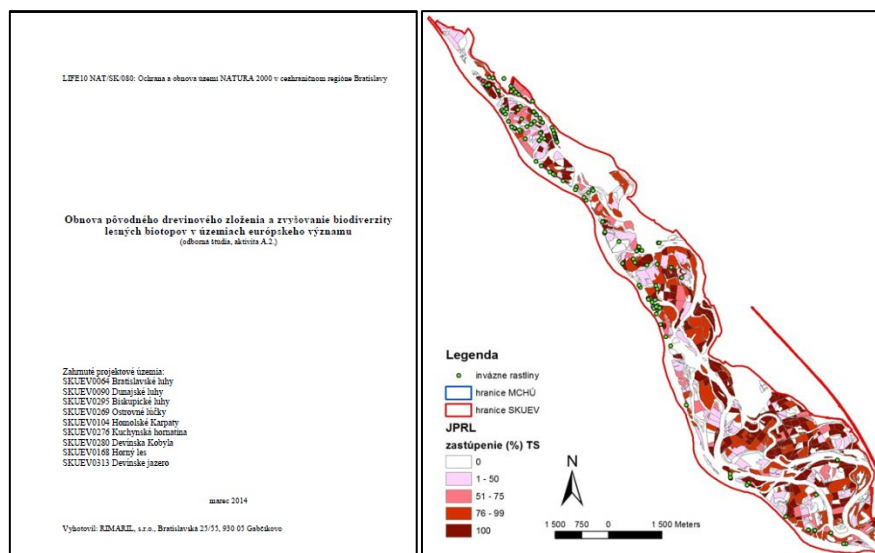


Fig. A2_1: Expert study

Action A.3 Preparation of expert study on restoration of forest steppe habitats

Responsible beneficiary: BROZ

Deliverables of the action:

20. A.3_Expert study Restoration of forest steppe communities_PR1_Annex2_A3

Comparison with planned outputs / expected results and time schedule:

Expected results: Elaboration of expert study on restoration of forest steppe habitats

Achieved results: The study was elaborated in 12/2012 (Annex 20).

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

The study on the restoration of forest steppe habitats comprised five NATURA 2000 sites: SKUEV Ostrovské lučky, SKUEV Biskupické luhy, SKUEV Bratislavské luhy, SKUEV Šúr and SKUEV Dunajské luhy. The study comprised all valuable forest steppe habitats in proposed project sites. Methods and measures of restoration were discussed and optimal propositions were specified. The study consisted of five main parts: 1. Introduction, 2. Description of historical origin and development of forest steppes in Bratislava region and their former use, 3. Current and past threats, 4. Methodology, 5. Management possibilities, 6. Results of mapping and management proposals. The study served as a base document for implementation of concrete conservation measures in frame of the action C.2.

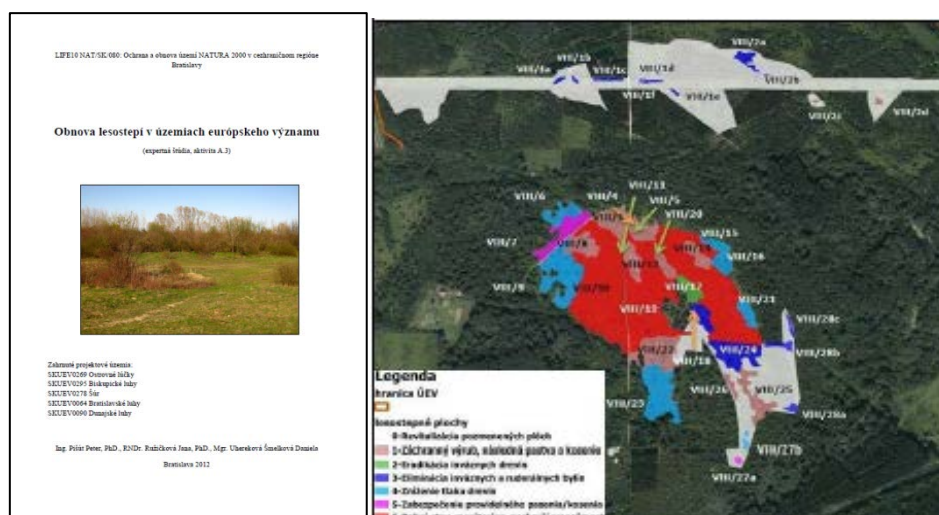


Fig. A3_1: Expert study

Action A4 Preparation of expert study on restoration of grassland habitats

Responsible beneficiary: DAPHNE

Deliverables of the action:

21. A.4_ Mapping habitats- proposal of the methodology_IR_Annex_A6

22. A.4_Expert study on restoration of grassland habitats_PR2_Annex 3_A4

Comparison with planned outputs / expected results and time schedule:

Expected results: Elaboration of the expert study on restoration of grassland habitats

Achieved results: The study was elaborated and reported on 30 September 2014 (PR2)(Annex 22).

Finalisation of Action A.4 was delayed (foreseen in December 2013), but it had no impact on fulfilling of project goals.

Problems and their solution:

There were few discrepancies in project proposal concerning proposed areas for grassland restoration: In Action A4 we mentioned proposed area for restoration at least 150 ha. This was rough estimate without detailed maps. It was followed by info in C3 Action in Expected results, where we calculated more precise, but still without maps as 148 ha for restoration. Probably, the most decisive was the budget table, where the restoration of only 117 ha had been calculated.

After detailed mapping of project sites, the expert study proposed the total area of 143 ha for restoration (Tab. A4_1).

Tab. A4_1. Targeted restoration area for Action C.3 According to restoration plan

Reference in text part of the document	Locality (potential)	Restoration measures	Area (ha)	Euro
C.3, b)-4.	SCI Abrod	local improvement of access road		9 000
C.3, b)-1. and b)-2.	SCI Abrod	First phase: cutting of shrubs and trees, removal of biomass, mowing	30.7 ha	54 400
C.3, b)	SCI Devinske Jazero	cutting of shrubs, reeds, removal of biomass	22.6 ha	34 000
C.3, b)	SCI Devinske alúvium Moravy	cutting of shrubs, reeds, removal of biomass	6.3 ha	
C.3, a)	SCI Devínska Kobyla	cutting of shrubs and trees, removal of biomass	58.3 ha	161 600

C.3, a)	SCI Devínska Kobyla	Elimination of invasive Robinia trees (3000 individuals)	25 ha	
C.3, b)-3.	SCI Abrod	re-seeding – cancelled	25ha	39-500
Total ha			142.9 ha	

Implementation of the action:

Expert study on restoration of grassland habitats focusing on 4 project sites was elaborated. The restoration study was based on habitat mapping, taking into account specifics of target habitats.

SKUEV0280 Devínska Kobyla represents valuable dry grasslands endangered by scrub encroachment. As a result of habitat mapping and evaluation of conservation status, 58.3 ha of dry grasslands were proposed for scrub removal and 30.7 ha for elimination of invasive tree black locust, which is spreading on abandoned dry grasslands on the site.

SKUEV0117 Abrod is important by occurrence of purple moor grass fen (*Molinion caeruleae*) threatened by eutrophication and scrub overgrowing in large sections of the reserve due to human pressures. Restoration management was proposed for cutting of trees and scrubs. To suppress reed, mowing and/or mulching was proposed to be undertaken twice a year and construction of access road for machinery was exactly located.

SKUEV0312 Devínske alúvium Moravy and SKUEV0313 Devínske jazero represent valuable floodplain grassland area located in the lower section of the Morava River floodplain. Proposed management measure was mowing of abandoned grasslands with area of 22.6 ha. . On a small scale, scrubs and trees of mainly invasive tree species *Acer negundo* were proposed to be cut on area of 6.3 ha.



Fig. A4_1: Expert study

Action A.5 Preparation of expert study on restoration of traditional habitat management by grazing

Responsible beneficiary: BROZ

Deliverables of the action:

23. A.5_Expert study-about grazing_PR1_Annex3_A5

Comparison with planned outputs / expected results and time schedule:

Expected results: Elaboration of the expert study on restoration of traditional habitat management by grazing

Achieved results: The study was elaborated on 12/2012 (Annex 23).

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

The study on the restoration of traditional habitat management by grazing comprised four NATURA 2000 sites: SKUEV Ostrovné lúčky, SKUEV Biskupické luhy, SKUEV Devínska Kobyla and SKUEV Šúr. The study consisted of six main parts: 1. Historical aspects, 2. Habitats threats, 3. Grazing management, 4. Establishment of grazing management 5. Description of individual sites and technical, organizational grazing proposals, 6. Conclusions. The study summarized the technical and organizational aspect of grazing management for each project site individually. Breeding issues like feeding, veterinary and administrative needs were involved as well. The study served as a base document for smooth implementation of the action C.4.

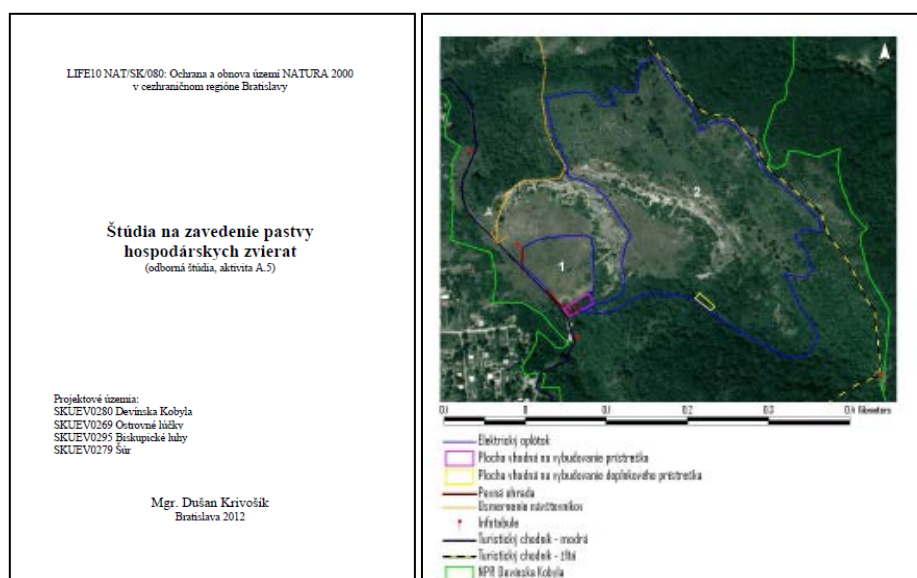


Fig. A5_1:Expert study

Action A.6: Preparation of expert study and technical documentation on restoration of water and wetland habitats

Responsible beneficiary: BROZ

Deliverables of the action:

24. A.6_Expert study-restoration of Devínske rameno sidearm; Expert study-restoration of Karloveské rameno sidearm; Technical documentation for Devínske sidearm_PR1_Annex4_A6

25. A.6_Expert study for Starohájske sidearm; Technical documentation for Karloveské sidearm; Study on the restoration of water and wetland habitats along Porec; Study on restoration of wetlands habitats_PR2_Annex 4_A6

26. A.6_Restoration of water and wetland habitats along Porec stream in SKUEV Abrod – documentation for construction authorisation, Tria projekt Ltd., Bratislava, December 2015_PR3_Annex 4_A6

Comparison with planned outputs / expected results and time schedule:

Expected results: Elaboration of expert study and technical documentation

Achieved results:

Following studies and technical documentations were elaborated:

Expert study for restoration on Devínske sidearm – elaborated 12/2012 (Annex 24)

Expert study for restoration on Karloveské sidearm - elaborated 12/2012 (Annex 24)

Expert study for restoration on Starohájske sidearm – elaborated 4/2014 (Annex 25)

Study on restoration of wetlands habitats – elaborated 9/2014 (PR2) (Annex 25)

Study on the restoration of water and wetland habitats along Porec – elaborated 10/2014 (Annex 25)
Technical documentation for Devínske sidearm – elaborated 1/2013 (Annex 24)
Technical documentation for Karloveské sidearm – elaborated 12/2015 (Annex 25)
Documentation for construction authorisation Porec stream – elaborated 12/2015 (PR3) (Annex 26)

Problems and their solution:

The preparatory phase of large-scale water habitats restoration is a long term process with lot of administration. Because of this reasons we divided the study in separate studies concerning individual restoration actions. This enabled the progressive implementation of following C.5 actions. This caused small amendment of the timetable, however ensured the more effective way of achieving the action objectives.

Implementation of the action:

At the beginning of this action, detailed field survey of potential localities was carried out.

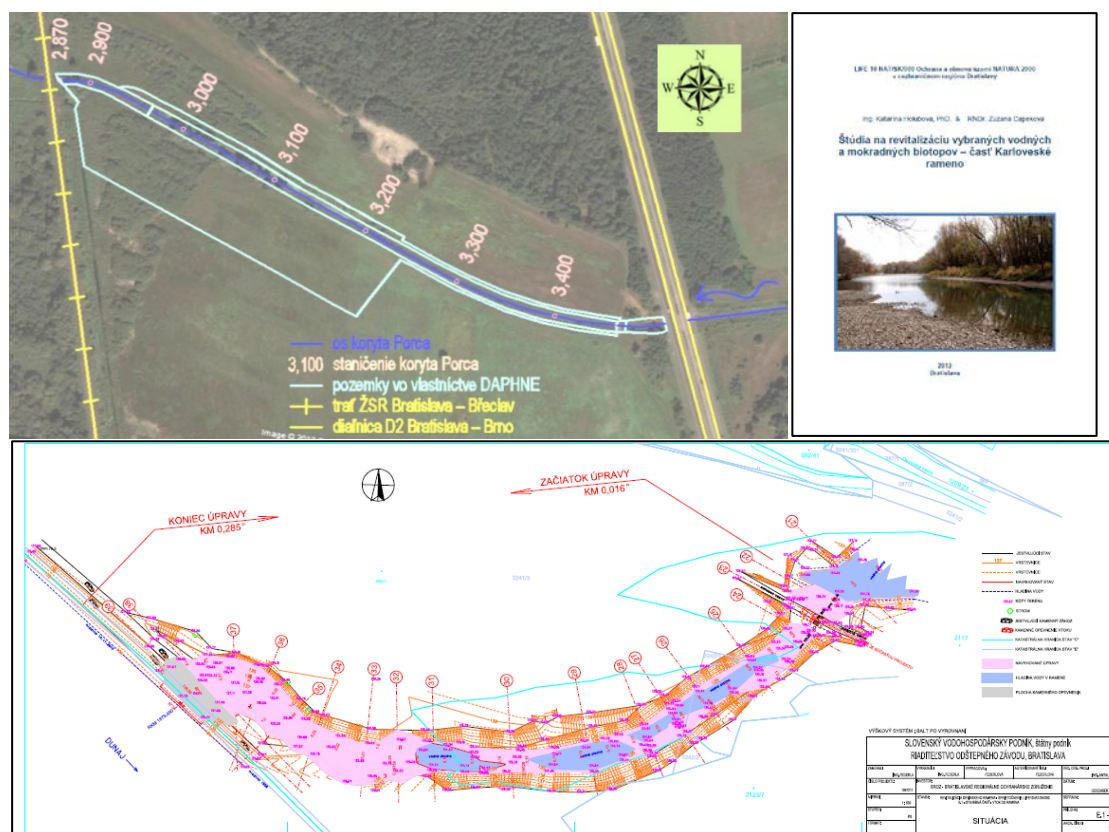
Expert studies for three main side arms in Bratislava were elaborated: **Devínske sidearm, Karloveské sidearm and Starohájske sidearm.**

The studies dealt with historical changes in the sidearms, evaluated the transverse and longitudinal profiles of the riverbeds and identified the barriers which needed to be removed to ensure the restoration.

Technical documentation for Devínske sidearm and Karloveské sidearm was elaborated. The technical documentations were prepared in cooperation with the Bratislava waterworks company. Several meetings and negotiations took place with various stakeholders (canoeing associations, fishing organizations, etc.) in order to facilitate the following realization phase. The process of gathering the necessary statements, permissions and final construction permit for the restoration works on Devínske sidearm was finished in October 2014 and for Karloveské sidearm in spring 2015. The public procurement procedure in order to select the supplier of the restoration works was initiated and completed.

Study on restoration of wetlands habitats was elaborated in September 2014. The study consists of five main parts: 1. Introduction, 2. Description of targeted species, 3. Restoration measures, 4. Outcomes of the field survey, 5. Concrete restoration proposal. The study served as a base document for implementation of concrete conservation measures and aimed to improve the status of amphibians in project sites.

Study on the restoration of water and wetland habitats along Porec stream in SKUEV0117 Abrod was elaborated. Hydraulic modelling and proposal for restoration measures were elaborated by experts from Slovak Technical University in Bratislava and discussed with the project team – Daphne and State Nature Conservancy, Administration of PLA Zahorie. **Documentation for construction authorisation** Porec was finished in December 2015.



Action A.7: Preparation of expert study on restoration and protection of rocky habitats and caves

Responsible beneficiary: BROZ

Deliverables of the action:

27. A.7 Expert study - restoration and protection of rocky habitats and caves PR1 Annex5 A7

Comparison with planned outputs / expected results and time schedule:

Expected results: Expert study on restoration and protection of rocky habitats and caves

Achieved results: The expert study was elaborated in December 2012 (Annex 27).

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

The study on the restoration and protection of rocky habitats and caves comprised three NATURA 2000 sites: SKUEV Devinska Kobyla, SKUEV Homolske Karpaty and SKUEV Kuchynska hornatina. The study consists of three main parts: 1. Introduction, 2. Description of the localities and management proposals, 3. Conclusion. The study served as a base document for implementation of concrete conservation measures in frame of the action C.6.

Proposed restoration and protection measures were: removal of trees and shrubs, collection of litter, restriction or completely prohibition of access for humans.

5.1.2 B.1 Long-term lease of land

Responsible beneficiary: BROZ

Deliverables of the action:

28. B.1_Agreement on mutual cooperation - grazing_PR1_Annex6_B1

29. B.1_Signed contract of land lease; Ownership certificate confirming the land lease for BROZ_PR2_Annex 5_B1

30. B.1_Signed contract of land lease with Komposesorát Kyselica_MTR_Annex 2_B1

31. B.1_Signed contract of land lease with Komposesorát Dobrohošť_MTR_Annex 3_B1

32. B.1_Copies of the originals of the signed contracts of land lease with land association Vojka, Kyselica and Dobrohošť_PR3_Annex 5_B1

33. B.1_Copies of the originals of the signed contracts of land lease with land association Bodíky_FR

34. B.1_Copies of the originals of the signed contracts of land lease with land association Rohovce_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

The objective of action B1 was a long term land lease of 70 ha for purposes of nature conservation and restoration.

Achieved results:

First land lease contract was signed on February 2014, covering 35.0306 ha of forests and small area of water bodies in cadastral area Vojka in project site SKUEV Dunajské luhy.

The objectives of this action were significantly extended, all together 156.08 ha of land has been leased for the purposes of nature conservation.

Problems and their solution:

The capital region of Bratislava is very specific due high prices of land and specific terms and demands by negotiations about land lease. Realization of this activity was located in SKUEV Dunajské luhy, what enabled more effective allocation of project budget and enabled to involve much bigger area into the long term nature conservation regime. Considering this fact higher investment needs to be done into the follow up project measures on these areas, in particular concerning the forest habitat measures (planting of native trees, elimination of invasive species).

The duration of the land lease in contract signed with land association in Bodíky represents 20 years. The 30 years period, as it was foreseen by the project, was not accepted by the land association, however the duration of the contracts meets the common provisions article 25.2. This amendment has no significant impact on the overall goals of this action and will not influence the after LIFE management, these area represents only 1,6% of the total leased area by the project.

Implementation of the action:

This action was connected with the needs of concrete conservation measures, based on the results of preparatory actions (A-actions - expert studies). A detailed analyses of land ownership was elaborated for priority areas for land lease. Regular meetings and negotiations took place with the land owners among the whole project area. The attempt was focused mainly on the project site SKUEV Dunajské luhy. The reason is that this part of the project area is mostly affected by intensive forestry (monocultures of hybrid poplar plantation, invasive plant species) and the changes in water regime due to the construction of hydro power plant Gabčíkovo. Restoration of forest habitats in this area needs long term interventions and control of the implemented measures. Moreover SKUEV Dunajské luhy is the most remote project site to the capital city of Slovakia Bratislava, this fact is a significant factor by setting the price for land lease. The prices for hectare of similar habitat types are lower in comparison to close surrounding of Bratislava or in the city itself. In a simplified way, with the same budget it's possible to protect, restore and manage much bigger area of the same habitats.

Strategic long term land lease contracts were signed with 5 subjects in the project site SKUEV Dunajské luhy. All together an area of 156.08 ha was covered by the contracts and appropriate land management was launched. On the leased areas various project actions were realized, for example:

planting of native trees, elimination of invasive species, protection of valuable individual trees (C.1), restoration of forest steppe habitats (C.2), restoration of traditional grazing (C.4), restoration of wetlands (C.5) and various D. actions.

Signed land lease contracts:

Komposesorát Vojka – land association in municipality Vojka nad Dunajom. The leased land is part of the project site SKUEV Dunajské luhy, comprising mainly forest habitats and water bodies. The long- term land lease contract was signed on 04/02/2014 and is lasting until 31/12/2045. The leased area represents 35.0306 ha (Annex 32).

Komposesorát Kyselica – land association in municipality Kyselica. The long term land lease contract for 30 years and 10 months was signed, lasting from 01/03/2015 until 31/12/2045. The leased land is part of the project site SKUEV Dunajské luhy, comprising mainly modified forest habitats with predominating hybrid poplar plantation but with the high restoration potential. Water bodies are represented by a network of side arms. Total leased area represents 57.6330 ha (Annex 32).

Komposesorát Dobrohošť - land association in municipality Dobrohošť. The area presents modified forest habitats with predominating hybrid poplar plantations, however small patches of natural forest are present which will support the planned restoration measures. Numerous negotiations resulted in signing of the long term land lease contract for 30 years and 10 months, lasting from 01/03/2015 until 31/12/2045. The leased land is part of the project site SKUEV Dunajské luhy and total area is 57.4761 ha (Annex 31).

Urbariát Rohovce - land association. The leased area consists mainly from young native ash and oak trees and from valuable old individual trees and valuable littoral tree vegetation with old willows, with total area of 3.4973 ha. The contract was signed in December 2017, lasting from 1/1/2018 until 31/12/2045. Thanks to the contract this valuable forest stands were extracted from the commercial forest management regime. On the whole area the elimination of invasive non-native American ashes was carried out (Annex 34).

Bývalí urbárnici v Bodíkoch – land association. The total leased area is 48.9067 ha, consisting of old pastures with remnants of pollard willows and old trees with broad crowns. This kind of habitats is very valuable in Danube region and at the same very threatened mainly by their abandonment, insufficient management and followed spreading of invasive species. The contract was signed in December 2017, lasting from 1/1/2018 to 31/12/2038.

The contract was assigned to project LIFE10 NAT/SK/080 and also to the project LIFE14 NAT/SK/001306. In frame of this project restoration of forest steppe habitats and restoration of traditional grazing was carried out. Due to the fact that most of the project investments to this locality was realized in the year 2018, the project accounts only the first payment of the land leased contract (1 770 EUR). The LIFE 14 project will follow with the conservation measures in the next periods, mainly by restoration of pollard willows and elimination of invasive trees. The leased area assigned to the project was calculated, based on the financial rate accounted to the project: ration 1/20 represents 2.4453 ha (Annex 33).

All long term leased land has been acquired in order to allow and support implementation of the project conservation actions (Tab. B1_1), to secure preservation of the project achievements and results, to allow after-LIFE nature conservation management of these lands and also to prevent any negative development of these lands in the future. The realized activities during the project period as well as the after-LIFE actions have a significant demonstrative value, for landowners and other stakeholders, in form of promotion of the nature protection focused land management.

The maps of realized conservation measures were submitted in the PR4. Maps which were edited due to continuation of the implementation after PR4 are submitted in Final report as annexes by the individual project actions. Below is the table (Tab.B1_1) of the implemented conservation actions on leased land.

Tab. B1_1: Project actions implemented on the leased areas

Land lease contract	land association Vojka	land association Kyselica	land association Dobrohošť	land association Rohovce	land association Bodíky
total leased area / implemented conservation measures (ha)	35.0306	57.6330	57.4761	3.4973	2.4453
C.1 - planting of native trees	2.14	21.46	9.86		
C.1 - elimination of invasive species	whole area	46.0	whole area	whole area	
C.1 - protection of valuable tree individuals	whole area	whole area	whole area	whole area	
C.2 - restoration of forest steppe habitats			14.5		whole area
C.4 - traditional grazing management			3.5		whole area
C.5 - restoration of wetlands			2.49		



Fig. B.1_1: Map of the leased land: Dobrohošť, Kyselica, Vojka

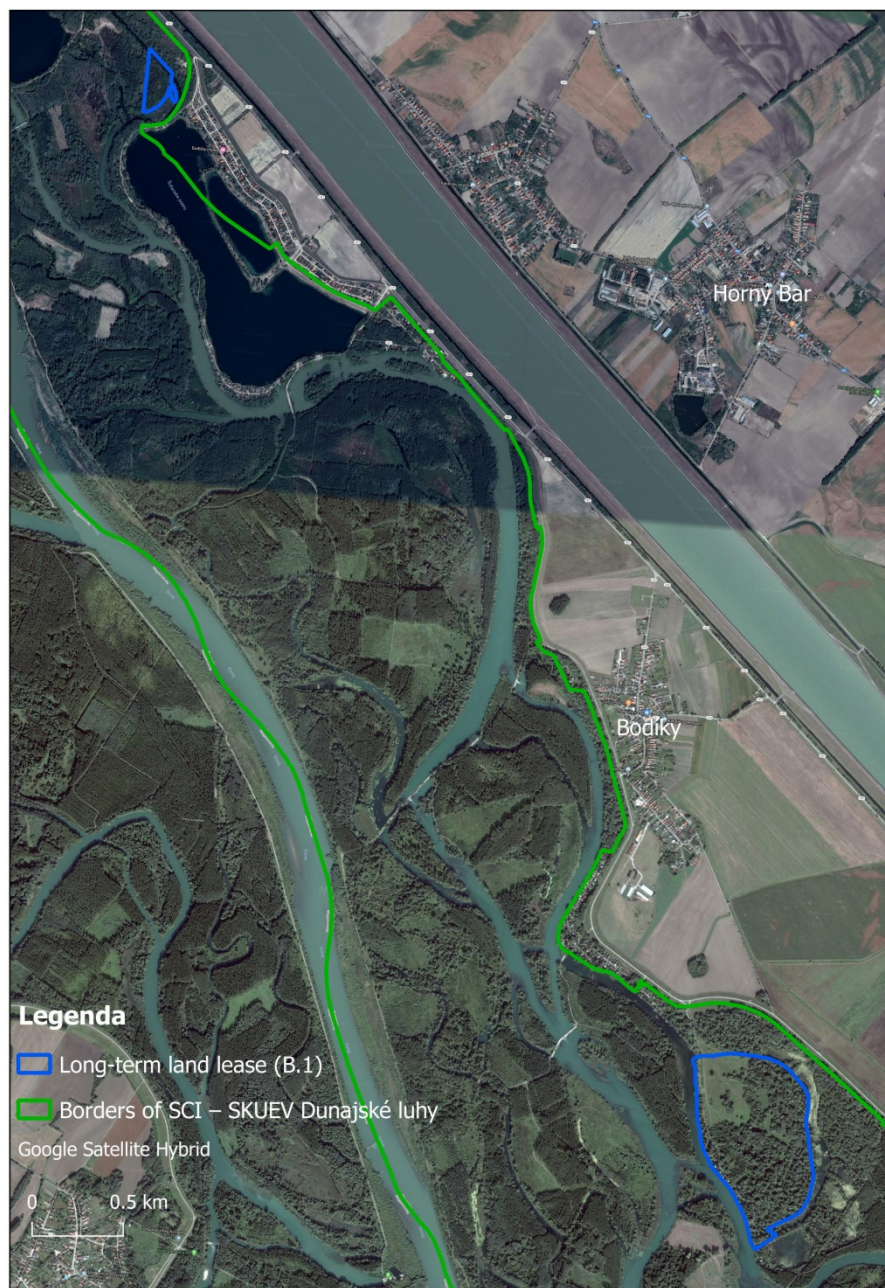


Fig. B.1_2: Map of the leased land: Rohovce, Bodíky

5.1.3 C – Concrete conservation actions

Action C.1: Restoration and management of forest habitats

Responsible beneficiary: BROZ

Deliverables of the action:

- 35. C.1_Marking preserving valuable trees_IR_Annex7
- 36. C.1_Photo documentation of planting_PR1_Annex7_C1
- 37. C.1_Restoration of forest habitats - photo documentation of the implementation_PR2_Annex 6_C1
- 38. C.1_Maps_PR4_Annex 2_C1
- 39. C.1_Map of elimination of invasive species_SKUEV Dunajske luhy_FR

40. C.1_Map of elimination of invasive species_SNC_Horný les_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

Invasive species removed on area of 445 ha (BROZ: 200 ha by external services, 220 ha by the tractor with accessories purchased, SNC: 25 ha by external services)

45 000 trees planted

40 ha of natural species composition forests restored

9 000 valuable old trees preserved and marked

Achieved results:

Invasive species were removed on a total area of 456,5 ha

203.5 ha by external supplier (BROZ)

25 ha by external supplier (SNC)

228 ha by project personnel and project equipment (tractor with accessories)

61 000 native trees planted

47.16 ha of natural species composition forests restored

9 350 valuable old trees preserved

Problems and their solution:

On some localities the afforestation was very complicated due to the permanent damage of the seedlings by game browsing. This was documented also by the efforts in the past, when the previous land users unsuccessfully attempted to afforest these areas. As a result these areas have been gradually overgrown by shrubs and invasive species. The solution for this area was installing of temporary fences. Fences are built from tough metal grid blocks and wooden posts and protect the seedlings in first years from game browsing.

Despite the precise methodology of elimination and two-step treatment, it happened that few individuals could rejuvenate. Intensive communication with the land users and also the long term rental of more than 156 ha of floodplain forest in SKUEV Dunajské luhy will ensure that the permanent control of invasive species will be carried out also after the project end.

Implementation of the action:

The action consisted of three main activities: a) Removal of invasive species b) Planting of native tree species and c) Marking and preserving valuable trees and modification of logging.

Removal of invasive species

Invasive species are a serious problem especially for the floodplain landscape. In some areas the density of this species is so high that the investment in tackling this problem would be not cost-effective. In this areas we focused our efforts "only" to eliminate the invasive species on very valuable forest steppe habitats and its surroundings. Basic philosophy by the planning was elimination of invasive species on the most valuable areas (SKUEV Ostrovné lúčky, SKUEV Bratislavské luhy), where the forest management is less intensive in comparison to the commercial forests. The intensive forestry is the gateway for dissemination of invasive species. Invasive species were eliminated also on the project site SKUEV Dunajské luhy where the invasive species are distributed in numerous smaller patches.

The elimination of invasive species by external supplier was divided into three parts.

First part was carried out from august 2013 until October 2014 and comprised an area of 100 ha. Invasive species were eliminated by external supplier. Implementation took place in project site SKUEV Dunajské luhy and SKUEV Ostrovné lúčky. Mainly *Ailanthus altissima* and locally also *Negundo aceroides* and *Phalopia sp.* were eliminated using combination of mechanical and chemical methods. The two-step treatment was applied. In first step all individuals were identified and treated. Second step was carried out in next vegetation season, when all individuals were controlled and if there had been a signs of rejuvenation, another treatment was performed.

The experiences from the first part proved that the most suitable method for elimination of *Ailanthus altissima* was the stem injection method. This application involved herbicide containing glyphosate

into the cambium layer of the tree by an injection. The holes into the trees were done using the cordless drills (spacing the injection at 7.5 cm intervals around the circumference on the stem). This method was in accordance with the national legislation.

Second part covering another 100 ha started in June 2015. External supplier was contracted after public procurement procedure. In the season 2015 the first measures were taken on the whole area of 100 ha. Mainly *Ailanthus altissima* and locally also *Negundo aceroides* and *Phalopia sp.* were eliminated using combination of mechanical and chemical methods. The action took place in three project sites: SKUEV Ostrovné lúčky, SKUEV Bratislavské luhy and SKUEV Dunajské luhy. Second step was realized in season 2016 and comprised the inspection of the sites threatened in the first step and the additional treatment was done if needed.

The third part was realized on the land leased by the contract with the land association Rohovce. In February 2018 invasive species *Fraxinus pennsylvanica* and *Negundo aceroides* were eliminated on the whole area (3.5 ha), by external supplier.

After the treatment of the invasive species, the effectiveness was monitored by the project forester. Significant signs of deterioration of trees were visible already after two weeks - dry leaves, stems and sprouts.

Elimination of invasive species in SKUEV Horný les was implemented by SNC in October 2016 at eight forest stands on the area of 25 ha (Annex 40). Works were done by the external supplier. The stem injection method was applied for the eradication of invasive trees (*Negundo aceroides*, *Fraxinus pennsylvanica*). The field inspection was carried out in July 2017, in the next vegetation season after intervention. The success of the chemical eradication done in October 2016 was about 97 %. Based on inspection results the repeated intervention on surviving individuals was done by the same supplier in August 2017 at the same plots (in the context of the complaint process). During the realization next sites were identified where invasive species were presented. After the project end on an additional area of 11 ha invasive trees were eliminated by the personnel of the SNC.

Since September 2014 tractor with accessories was permanently used for implementation of various project actions (C.2, C.4) and especially for restoration of forest habitats (C.1).

Invasive tree species were eliminated before planting of native tree species using tractor with miller. Areas where dense cover of invasive species was present the need of recurring treatment with tractor is essential in first years, until the seedlings grow higher. Individual care for seedlings was provided by external supplier but the overgrowing of the whole area after planting needed to be targeted with tractor and mulcher and / or miller.

Tractor with miller was also used for elimination of invasive species in young forest stands where the fast growing invasive species present a significant competitor for planted seedlings. This is possible only in young forest stands where the access of tractor is possible. Total area where elimination of invasive species was carried out by project personnel and project equipment was 228 ha.

Tab.C1_1.: Elimination of invasive species

Elimination of invasive species	
project site	area (ha)
SKUEV Dunajské luhy	199.5
SKUEV Ostrovné lúčky	108
SKUEV Bratislavské luhy	124
SKUEV Horný les	25
Total area	456.5

Maps of the areas where elimination of invasive species was implemented can be seen in the Annex 38 and 39.



Fig.C1_1,2: Elimination of invasive species in SKUEV Dunajské luhy



Fig.C1_3: Control of the elimination of invasive species in SKUEV Horný les

Fig.C1_4: Elimination of invasive species by project equipment – tractor with accessories

Planting of native tree species

Activity started in October 2012. 36 000 seedlings of native tree species were planted in the first phase in planting seasons 2012/2013 and 2013/2014.

Second phase of implementation was carried out in planting season 2015/2016 when 25 000 seedlings were planted on the areas leased by BROZ in SKUEV Dunajské luhy (B.1 action). By the selection of tree species many factors were taken into account: habitat type, micromorphological characters, actual status of each area, rejuvenation potential of adjacent stands etc. Planted species: *Populus x canescens*, *Populus alba*, *Populus nigra*, *Quercus robur*, *Fraxinus angustifolius*, *Tilia cordata* and *Salix* species.

After planting care for all planted seedlings was carried out in order to prevent damage from game browsing, overgrowing by weeds, etc. On some areas where the number of game is too high, building of fences was essential. Fences were built from tough metal gridblocks and wooden posts and protected the seedlings in first years from game browsing.

Total number of planted seedlings (61 000) significantly exceeded the previous plan (45 000). The increase was caused mainly by the increase of the leased area within the project (B.1 action). The total area where the natural species composition was restored is 47.16 ha. The location of the planted seedlings can be seen in the Annex 38.



Fig.C1_5: Fencing of the planted areas

Fig.C1_6: Seedlings of native trees prepared for planting

Marking and preserving valuable trees and modification of logging

Cooperation with foresters, forest authorities and land owners was set up from the beginning of the project. Modification of logging was ensured by close cooperation with foresters on administrative level as well as directly in field. Preserving individual valuable trees and dead wood from logging was highly beneficial to the biodiversity of the habitats and consequently also for number of species of Community interest dependent on old trees and dead wood. During the project duration all most valuable forest stands, where logging was planned, were observed. After identifying of valuable tree individuals the negotiation with land managers – foresters was launched in order to protect these trees before being cut down. These presented an essential prerequisite for ensuring the biodiversity and natural structure of forests stands. Together 9 350 individual trees were identified and protected.

Activity was carried out in riparian forest as well as in Carpathian forests in project sites (Tab.C1_2): SKUEV Dunajské luhy, SKUEV Bratislavské luhy, SKUEV Biskupické luhy, SKUEV Homolské Karpaty, SKUEV Devínska Kobyla and SKUEV Kuchynská hornatina.

Tab.C1_2 Marking and preserving of valuable trees

Marking and preserving valuable trees	
Project site	Number of trees
SKUEV Dunajské luhy	4480
SKUEV Bratislavské luhy	918
SKUEV Biskupické luhy	622
SKUEV Homolské Karpaty	1056
SKUEV Devínska Kobyla	1630
SKUEV Kuchynská hornatina	644
Total	9350



Fig.C1_7: Marking and preserving of valuable trees

Great emphasis was put on the active involvement in the preparation of the crucial documentation for the forest management. BROZ and SNC actively took part on this legislative process of preparation of Forest management plans. These represent the most crucial documents for the period of 10 years, which will determine the methods and intensity of forestry measures in project areas. In cooperation with project partner SNC SR project objectives were strongly promoted. Many requirements were incorporated in the documents concerning: elimination of invasive plants, minimalizing the planting of non-native tree species and protection of priority forest stands before intensive logging.

Involvement in preparation of Forest management plans:

Forest unit LHC Rača, valid 2016-2026 - includes project sites: SKUEV Šúr, SKUEV Homol'ské Karpaty,

Forest unit LHC Rusovce, valid 2016-2026 – includes project sites: SKUEV Bratislavské luhy, SKUEV Ostrovné lúčky, SKUEV Biskupické luhy,

Forest unit LHC Šamorín, valid 2015 – 2025 – includes project site SKUEV Dunajské luhy

Forest unit LHC Gabčíkovo, valid 2015 – 2025 – includes project site SKUEV Dunajské luhy

Action C.2 Restoration of forest steppe habitats

Responsible beneficiary: BROZ

Deliverables of the action:

41. C.2_Restoration of forest steppe habitats_PR1_Annex8_C2

42. C.2_Restoration of forest steppe habitats - photo documentation of implementation_PR2_Annex 7_C2

43. C.2_Maps_PR4_Annex 3_C2

44. C.2_Map_restoration of foressteppe_SKEUV Dunajske luhy_Bodiky_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

115 ha of forest steppes restored and prepared for regular recurring management.

Achieved results: 118 ha of forest steppe habitats were restored by various conservation measures in project sites SKUEV Bratislavské luhy, SKUEV Ostrovné lúčky, SKUEV Dunajské luhy and SKUEV Biskupické luhy, SKUEV Šúr. Maintenance of the results was secured by follow up management by grazing or mowing of sites in charge of BROZ or various stakeholders.

Problems and their solution:

As reported in previous reports (PR 3 – C.2, PR4 – C.4) after first phase of restoration works in SKUEV Ostrovné lúčky, focused on elimination of overgrowing and elimination of invasive herbs, the follow up works were blocked by unreasonable obstruct from the side of land owner. Despite these

problems the elimination of invasive species *Ailanthus altissima* and the non-native young pine trees was finalized. Based on the experiences from the opposite side of the Danube in SKUEV Biskupické luhy this presents the basal measure which is very essential for maintaining of the typical condition for this habitats (open, unshaded, xerotherm character). Intensive work was done in frame of the A.1 action by preparing of the management plan for SKUEV Ostrovné lúčky. Concrete and binding measures for this forest steppe habitat were defined. Thanks to this management plan, binding nature conservation documentation, according the Act No 543/2002 on nature and landscape protection will cover all future managements in this project site and will secure the continuing and maintenance of the project actions in this area.

Implementation of the action:

The expert study A.3 serves as a base document for the implementation of the restoration measures. Localization of management measures, methods, time schedule and extend of realization was specified. Supplier for the restoration works was contracted after public procurement procedure. The action started on June 2013 on project sites SKUEV Šúr, SKUEV Biskupické luhy and SKUEV Ostrovné lúčky. According the results of the expert study different methods were used. Invasive trees were eliminated using very gentle methods, due to very sensitive adjacent habitats where many endangered plant species are present. Each invasive tree were treated individually to ensure that no other vegetation were affected by used methods. Depending on locality various methods were used, each measure was discussed by biodiversity experts from project partner SNC SR. Different approaches were applied depending on planned future management.

SKUEV Bratislavské luhy

Locality Pečniansky les represents the last valuable locality of forest steppe habitats on right side of the Danube in central Bratislava. Part of the locality was disturbed by tilling and growing of maize by hunter association. Thanks to the cooperation of BROZ and SNC SR in frame of the project, we prevent, after series of negotiations, the continuation of this undesirable activity. After this disturbance of the habitat the locality was exposed to the spreading of invasive species like *Solidago spp.*, *Asclepias syriaca* and *Ailanthus altissima*. At the beginning of 2016, the restoration of disturbed forest steppe habitats was launched. The degraded parts have been repeatedly mulched to eliminate the invasive herbs. Undisturbed buffer parts, has been mowed and the biomass containing seeds of natural plant species, was spread on the disturbed parts to support the restoration process. After two seasons of implemented conservation measures the locality start to recover, the invasive species were significantly reduced and typical species were recorded. The total area where restoration measures were implemented is 5.2 ha.

SKUEV Biskupické luhy

The main threat for the valuable forest steppe habitats in Biskupické luhy was the overgrowing from invasive and non-native plant species like: *Solidago spp.*, *Ailanthus altissima*, *Pinus nigra*. The localities were often small and dispersed in the whole project site. Various measures were realized to improve the state of the localities: elimination of *Ailanthus altissima* by stem injection method, mulching of dense ground cover of *Solidago spp.*, mowing, elimination of shrub vegetation, cutting of non-native *Pinus nigra* trees, establishing of grazing management. This action was also significantly connected with various public awareness and dissemination actions like: excursions, media reportage, enviro-education, publication of brochures and leaflets and installation of infopanel. Great emphasis was put to proper adjustment of grazing regime which will secure the follow maintenance of the most valuable localities like NR Kopáčsky ostrov or NM Pánsky diel. The total area where restoration measures were implemented is 55.7 ha.

SKUEV Šúr

Area represents valuable mosaic of various habitats: biggest Middle-european wetland with Alder forest, meadows, forest steppe habitats, saltmarshes, xerotherm Oak forest in Panónsky háj with 100 years old robust trees. Forest steppe habitats in Panónsky háj and its surroundings were in the past created and maintained by grazing of livestock. After abandonment, more than 50 years ago, the areas started to overgrown by shrub species and invasive plants. Project localities were mulched in proper

period of year to eliminate the dense growth of invasive plants like *Aster spp.* and *Ambrosia artemisiifolia*. After initial measures the grazing regime was established. In first phase a herd of horses owned by local stakeholder and later project cows were used to permanent maintaining of the locality. Small parts in Panónský háj were restored by recurring cutting of shrub vegetation. The total area where restoration measures were implemented is 17.2 ha.

SKUEV Dunajské luhy

Project site SKUEV Dunajské luhy consists mainly of riparian forests and water bodies, however small parts located on old gravel deposits of the river dynamics preserve their xerotherme character. These areas were in the past used for preparing of hay and mostly for pastures. The restoration measures were focused mainly on elimination of invasive trees (*Ailanthus altissima*) and herbs (*Solidago spp.*) and reduction of overgrowing by shrubs. Stem injections was applied to eliminate *Ailanthus altissima*. Initial measures in locality Dobrohošť and Bodíky, before establishing of grazing management, were the elimination of dense shrubs and invasive herb *Solidago spp.* with tractor and accessories. Followed grazing management proofed to be very effective by maintaining of the restored habitats. The total area where restoration measures were implemented is 31.0 ha.

SKUEV Ostrovné lúčky

Initial restoration measures were carried out in 2013. In cooperation with SNC SR the boundaries of the protected sites were marked in the field. Eastern part of the national reserve was due to the insufficient demarcation used like an arable land. The owner of the land – PD Dunaj was informed about this situation and the continuation of this undesirable activity was stopped. On the whole area the invasive species *Ailanthus altissima* and non-native pine trees seedlings were eliminated. Areas with dense cover from *Solidago spp.* were repeatedly mulched. In southern parts the overgrowing of shrubs was reduced. As described above, continuation of this restoration works were blocked by the landowners. Future maintenance of conservation measures will be ensured by the binding management plan for this project site (A.1 action). The total area where restoration measures were implemented is 8.9 ha.

The location of the restoration measures can be seen in the Annex 43 and 44.



Fig. C2_1: Elimination of overgrowing of shrubs (SKUEV Šúr). Before and after realization.



Fig.C2_2: Mulching of totally overgrown locality by invasive species *Solidago sp.* (SKUEV Biskupické luhy)

Fig.C2_3: Restoration of forest steppe habitats – elimination of shrubs (SKUEV Ostrovné lúčky)



Fig.C2_4: Former forest steppe habitats degraded by monocultures of invasive species *Solidago sp.* – during the monitoring mission in 2014, SKUEV Biskupické luhy

Fig.C2_5: The same locality after initial measures (mulching) and two season of grazing management in 2017, SKUEV Biskupické luhy



Fig.C2_6: Restoration of forest steppes in SKUEV Dunajské luhy-locality Dobrohošť: initial measures with tractor and follow up grazing management

Fig.C2_7: Restoration of degraded locality in SKUEV Bratislavské luhy – Pečnianský les

Action C.3: Restoration of grassland habitats

Responsible beneficiary: DAPHNE

Deliverables of the action:

45. C.3_ Attendance list and photos of realized action_IR_Annex8_C3

46. C.3_Photo documentation and summarization of voluntary restoration measures at SCI Devínska Kobyla_PR2_Annex 8_C3
47. C.3_Photo documentation and summarization of voluntary restoration management activities at SKUEV Devínska Kobyla_MTR_Annex 4_C3
48. C.3_Maps of restoration works _PR3_Annex 6_C3
49. C.3_Maps_PR4_Annex 4_C3
50. C.3_Map of invasive tree removal 2018 (SKUEV Devínska Kobyla – southern part)_FR
51. C.3_Map of invasive tree removal 2018 (SKUEV Devínska Kobyla – central part)_FR
52. C.3_Attendance lists of volunteer actions_FR

Comparison with planned outputs / expected results and time schedule:

Achieved results:

- The total area of 158.25 ha of grasslands was restored and their status was significantly improved
- 1 380 m of field road was re-constructed at SKUEV Abrod

Tab C3_1: Total area of planned and implemented grassland restoration measures.

Site and type of restoration activity	Expected	Implemented
SKUEV Abrod - cutting of shrubs, removal of biomass, mowing	30.7	39.85
SKUEV Devínske jazero - cutting of shrubs, reeds, removal of biomass	22.6	22.6
SKUEV Devínske alluvium Moravy - cutting of shrubs, reeds, removal of biomass	6.3	12.87
SKUEV Devínska Kobyla - cutting of shrubs and trees, removal of biomass, hand mowing	58.3	63.9
SKUEV Devínska Kobyla - elimination of invasive black locust trees	25	19.03
Total in ha	142.9	158.25

Problems and their solution:

There were no significant problems related to implementation of this activity.

Implementation of the action:

Based on the expert study on restoration of grassland habitats (Action A.4), the restoration works were implemented in SKUEV Abrod, SKUEV Devínska Kobyla, SKUEV Devínske alúvium Moravy and SKUEV Devínske jazero. Management measures were focused on implementation of such conservation measures, which will lead to improved favourable conservation status of habitats of Community interest, protected species and included cutting, mulching, removing of biomass, removing of trees on non-forest habitats, elimination of invasive species and mapping of protected species and habitats.

In **SKUEV Devínska Kobyla** the grassland restoration works were implemented on the total area of 59.5 ha in the period 2015 - 2018. It started with removal of trees and shrubs, continued with injection of invasive tree species, mowing of grasslands and removal of injected trees. In 2016 and 2017 the sprouts of shrubs and trees were repeatedly removed from the whole area of restored grasslands. The biomass was either removed (where infrastructure was available), burned or dumped in surrounding forests. The chemical eradication of invasive tree species, mainly Black locust (*Robinia pseudoacacia*), South European flowering ash (*Fraxinus ornus*) and Tree of Heaven (*Ailanthus altissima*) was implemented on 19 ha to stop its further spreading into valuable grassland habitats. The stem injection method, including application of herbicide containing glyphosate into the cambium layer of the tree, was applied for the eradication of all the above mentioned species. The success of the intervention monitored in the season of 2018 was approx. 90%. Based on results from monitoring, the chemical eradication proved to be the most efficient method for eradication of invasive tree species.

In early spring 2018, part of the injected trees, which had not shown any signs of natural regeneration were removed from the total area of 5,35 ha of grasslands and surrounding forests. DAPHNE organised individual tree removal also on additional area with the help of volunteers.

All works were supervised and controlled by DAPHNE and were implemented in close cooperation with SNC SR and in coordination with local shepherds.



Fig.C3_1: Black locust trees before chemical treatment – SKUEV Devínska Kobyla

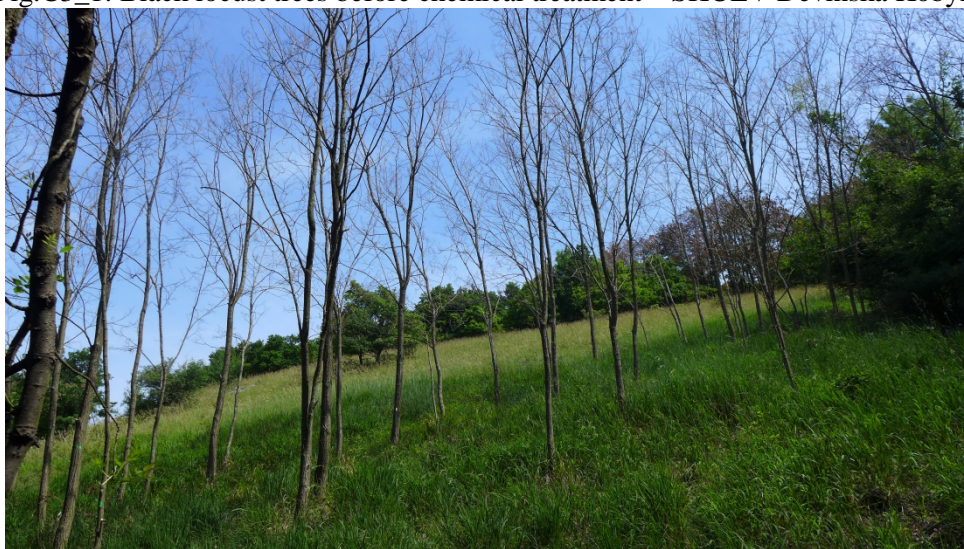


Fig.C3_2: Black locust trees after chemical treatment



Fig.C3_3: Injected black locust trees removed two years after treatment



Fig.C3_4: Mowing of dry grasslands_SKUEV Devínska Kobyla



Fig.C3_5: Restoration of grasslands in SKEUV Devínske alúvium Moravy

Volunteer work of private companies at Devínska Kobyla

DAPHNE's cooperation with private companies in SKUEV Devínska Kobyla was successfully running between years 2012-2018 with involvement of PLA Male Karpaty, the Bratislava city district Devínska Nová Ves, companies Volkswagen Slovakia (VW), Tatrabanka, IBM, The British Embassy and also with local scouts.

It was organized more than 20 volunteer working days dedicated to cleaning of SKUEV Devínska Kobyla during the project implementation. Approximately 4 ha of the dry grassland in surrounding of Sandberg and in the cadaster of Devín have been cleaned from bushes and approx. 4.4 ha of meadows have been mown thanks to the work of volunteers.



Fig.C3_6: SKUEV Devínska Kobyla: Local volunteers and employees of VW Slovakia helping with restoration management of grasslands. (21/10/2017).



Fig.C3_7: SKUEV Devínska Kobyla: Geocachers and Tatrabanka employees helping grasslands restoration (12/09/2017 and 26/11/2017)

In **SKUEV Devínske alúvium Moravy** and **SKUEV Devínske jazero** removal of trees and shrubs and mulching was implemented in full extent based on restoration plan (6.3 ha and 22.6 ha respectively) and biomass was removed from the whole area in autumn 2015 and summer 2016. The restored meadows were mown by land users in autumn of 2016 and in summer 2017 and 2018 and no additional costs were associated with the LIFE project in these seasons.

At locality **SKUEV Abrod** clearing of shrubs on abandoned meadows was finalised in autumn 2016 on total area of 6.86 ha and the biomass was removed. In 2017, the cleared plots were mulched and mown on the total area of 32.99 ha. The project prepared the locality for further mowing and the land-user took over the management and has mown the restored grasslands in 2018.

The field road at SKUEV Abrod was re-constructed in total length of 1 380 m, as planned in the project document. The access to the site was improved and land-users give positive feedback on this action. The road reconstruction provided good access for recurring land management (mowing, transport of hay, etc.). The driving of vehicles (hunters, neighbouring land managers, farmers, etc.) across the protected area and natural habitats was thus also eliminated.

The maps of the restoration measures can be seen in Annexes 48-51.

Considering opinion of experts and public

DAPHNE applied participatory approach to grassland restoration. During the restoration works, the opinion and suggestions of various experts and target groups were discussed and considered in implementation of restoration methods. The most intensive discussions with experts from various

fields (mainly botanists, entomologists), landowners and public took place at SKUEV Devínska Kobyla. Number of meetings were organised to discuss the situation with people at the site to clarify details of project activities. Restoration methods have been adjusted to the requirements of botanists working with oak trees, roses and hawthorn species to prevent damage to individuals which have been part of complex genetic research in the area. We have considered requirements of entomologists in order to preserve ideal habitats for selected insect species (ant lion, predatory bush cricket) and also vertebrateologists to protect rare birds, snakes and lizards.

Action C.4 Restoration of traditional habitat management by grazing

Responsible beneficiary: BROZ

Deliverables of the action:

- 53. C.4_Administrative pressures to set up grazing locality_PR1_Annex9_C4
- 54. C.4_Restoration of traditional habitat management by grazing - photo documentation_PR2_Annex 9_C4
- 55. C.4_Maps_PR4_Annex 5_C4
- 56. C.4_Map of grazing area_SKUEV Dunajske luhy_Bodiky_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

Grazing animals purchased – cows (20), sheep (100) and goats (150) and functioning grazing system established.

Area of 185 ha of grassland and forest steppe habitats regularly grazed by the end of the project.

Achieved results:

On 5 localities of 4 project sites the grazing regime was established on the total area of 144 ha. The necessary permission according the act No. 543/2002 on Nature and Landscape protection and act. No. 326/2005 on Forests and permissions from landowners were obtained.

The grazing infrastructure: fences, shelters, water supply, infrastructure for shepherds etc. was installed. On some localities the local farmers were involved in to the grazing management.

Grazing animals were purchased – 22 cows, 103 sheep, 85 goats. Next 57 animals (15 goats and 42 sheep), which were in the possession of local farmers were also used for the grazing.

Problems and their solution:

Grazing management presented a most challenging project action. Many aspects needed to be taken into account: administrative, legislative, veterinary, visitor's behaviour, comments from various experts, technical aspects, etc. The planned grazing management in project site SKUEV Ostrovné lúčky was not feasible because of unreasonable obstruction from the landowners.

On some other localities technical limits didn't allow to start with the management. As we reported during the monitoring mission on 17th august 2017 and PR4 the overall goal of restoration of grazing on an area of 185 ha was not feasible.

Despite all these circumstances we have succeeded to establish functional grazing management on 5 most valuable localities on 4 project sites, with different grazing animals (goats, sheep and cows) and the overall goal, to secure the maintenance of the restored project sites (by action C.2, C.3) and the elimination of invasive species, has been achieved. Furthermore a good communication of this action to public, visitors, interest groups, local authorities presented this action as well as the overall project in positive way. Involving of local people, stakeholders like hunters or local farmers secure the future sustainability of this action.

Implementation of the action:

Despite the historical tradition of grazing in the project areas, the grazing was currently a new element in the area and it was necessary to deal with a lot of potential risks and obstacles (technical: water

supply, shelter, fencing and electricity; legislative: permissions, law exceptions; social: visitors, walking out with the dogs etc., land owners, neighbors, hunters, etc.). Thanks to a detailed field examination, negotiation work and intensive public campaign it was possible to tackle these aspects.

First step was a precise field survey of the each potential project site where grazing would be restored. The expert study (A.5) provided the most suitable technical solution of the establishing of grazing infrastructure. This was discussed with land owners, local authorities and SNC SR. After, necessary administrative processes were carried out to obtain the necessary permissions and exceptions from the relevant Acts, according the degree of protection and the cadastral land category. On areas categorized as forest land, despite it was a forest steppe or meadow habitat without forest, the grazing was prohibited. Complicated process of getting exception from the Act No. 326/2005 on Forests, needed to be undergone. This was relevant for localities in SKUEV Biskupické luhy.

Intensive publicity and informative work was done before the start of grazing (summarized in Action D.9 and D.10). The action was supported by local authorities, land owners, officials and public. To ensure the following actions also after project realization, cooperation with locals was established. Local partners expressed their willingness to join the project activity and to be involved in the implementation phase.

The grazing management started in June 2013 on two project sites SKUEV Devínska kobyla and SKUEV Šúr. External suppliers were contracted to secure grazing management on these sites (including daily care of animals).

In SKUEV Devínska kobyla, due to technical limits, the realization was divided in two separated locations where grazing infrastructure has been installed. The herd consists of goats, partly purchased by the project and partly owned by local stakeholder. The grazing regime, time schedule, and intensity is being discussed and specified with SNC SR and other experts before each grazing season. The herd of goats has proved to be a very effective in suppression of overgrowing of shrubs, what was the most significant threat for this locality. In particular connection with the measures in frame of the project action C.3 was essential. After cutting of shrubs and trees the rejuvenation was suppressed by the goats. Grazing was realized in a free way with shepherd and also on some parts where it was technically feasible, electric fences were used. Total area where grazing regime was established is 39 ha.



Fig.C4_1: Grazing in SKUEV Devínska Kobyla – cadastre area Devínska Nová Ves



Fig.C4_2: Grazing in SKUEV Devínska Kobyla – cadastre area Devín

Fig.C4_3: Presentation of grazing by director of PLA Malé Karpaty (SKUEV Devínska Kobyla)

In SKUEV Biskupické luhy most valuable forest steppe habitats are represented by NR Kopáčský ostrov an NM Panský diel. These are very valuable xerotherm “islands” surrounded by riparian forests. After initial measures (C.2 action), herd of 130 sheep and 10 goats is maintaining the open and dry character of this localities. The grazing started at the end of the year 2015. Water supply, fences, stable, caravan for shepherd and other infrastructure was purchased. The animals played a crucial role in elimination of dense growth of invasive species *Solidago spp.*, which on some locations dominated. After two seasons of grazing the invasive species have been totally eliminated what was the essential precondition for restoring of the original biodiversity. The grazing area in this project site represent a mosaic of patchy distributed forest steppe with different quality of habitats. Permanent moving of the herd between these individual localities (localities with good stage vs. degraded localities) helped to disperse seeds of the typical plant species on animal bodies and their excrements, what facilitate the restoration of these habitats. Total area where grazing regime was established is 43 ha.



Fig.C4_4: Grazing in SKUEV Biskupické luhy – NR Kopáčsky ostrov

In SKUEV Dunajské luhy grazing regime was established on 2 localities. Near the municipality Dobrohošť there was established a basic grazing infrastructure with herd of 30 goats and sheep in cooperation with local stakeholder. After initial restoration measures (C.2 action), the herd maintain and improve the forest steppe habitats.

Near the municipality Bodíky an old pastures are located with remnant of pollard willows and old trees with broad crowns. The area was threatened by overgrowing and spreading of invasive plants. On an area of 37.5 ha a solid fence was build and the grazing of 15 cows launched in march 2018. The animals eliminate the invasive species (mainly *Solidago spp.*) and the dense overgrowing of the area and restore the open character of the old pastures and maintain the forest steppe and meadow habitats. Grazing management on both areas, is realized on land leased by BROZ (B.1 action), what simplified the administrative procedure of launching the grazing and secure good condition for the future sustainability of this action. Total area where grazing regime was established is 41 ha.



Fig.C4_5: Grazing in SKUEV Dunajské luhy – locality Dobrohošť

Fig.C4_6: Essential grazing infrastructure for manipulation with cows



Fig.C4_7: Grazing in SKUEV Dunajské luhy – locality Bodíky

In SKUEV Šúr the grazing started in 2013 with mixed herd of goats and sheep at locality “Slanisko”. After two seasons of grazing the locality was significantly cleared from shrub plants. From the season 2016 the grazing regime was enlarged to the steppe habitats between the valuable wetland of international importance designated as Ramsar site and the valuable former pasture forest – Panónsky háj. At the area of 14 ha the grazing regime started in cooperation with local farmer. In first phase the horses were placed (ownership of the farmer) and later after public procurement (Mai 2016) also project cows.

Significant results by elimination of monocultures of invasive plants (*Aster sp.*, *Ambrosia artemisiifolia*) were achieved. The grazing area was divided into polygons where the grazing is shifted during the season. This secured better control of grazing intensity and contributed to the diversification of the area. This is also in coherence with the demands of other subjects like hunters organization, which put emphasis on free migration of wild animals. Various meetings took place in

the town Svätý Jur with representatives of the town, land owners, hunters and other stakeholders involved. Total area where grazing regime was established is 21 ha.



Fig.C4_8: Grazing in SKUEV Šúr

The total area where grazing management was established is 144 ha, the areas in the respective project sites are presented above in the individual descriptions. The maps of the areas are presented in the Annex 55 and 56.

The grazing proved to be effective in:

- suppression of overgrowth of shrub plants and trees,
- restoration of the localities through dispersing plant seeds on animal bodies and their excrements,
- promotion of specific animal species linked to the presence of certain animals – various insect species are linked to excrements and also birds that feed on them,
- effective suppression of invasive and allergenic plants such as goldenrod (*Solidago spp.*) and common ragweed (*Ambrosia artemisiifolia*).
- disturbance of soil surface by hooves, thus creating conditions for reproduction of valuable plant species and optimum conditions for various life forms of insects,
- grazing creates a mosaic of more intensively and extensively grazed areas, which is significant in terms of the promotion of biodiversity,
- maintaining sites that are not accessible to other types of maintenance (steep, inaccessible slopes).

Action C.5 Restoration of water and wetland habitats (BROZ)

Responsible beneficiary: BROZ

Deliverables of the action:

57. C.5_Maps_PR4_Annex 6_C5

58. C.5_Maps_restoration_Porec_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

- barriers in the river branch system removed, water regime and continuity of river branch system improved on 6 localities
- one major large-scale restoration of Danube sidearm, minimum of 3 000 m of river branches will be re-connected and/or restored,
- restoration of the Porec stream
- four small-scale restorations
- migration barriers for water organisms will be removed, population of fish species and amphibians increased
- significant decrease of human disturbance on approximately 12 ha, due to the restricted access to some places after restoration

Achieved results:

- on 6 localities the water and wetlands restoration measures were realized
- two large – scale restoration of Danube sidearms were realized with total length of 6 300 m.
- restoration of the Porec stream on a total length of 600 m
- four small-scale restoration of wetlands for amphibians
- removing of artificial migration barriers, sediments and river embankment significantly improved the condition for fish species and amphibians.
- due to the restoration of two Danube sidearms in Bratislava the access to the protected areas on the islands was significantly reduced (water barrier) with the total area of 269 ha.

Problems and their solution:

More ambitious plans concerning the large scale restoration (two sidearms in comparison to one planned) caused small delay of the small-scale restoration of wetlands habitats. The location of the Danube sidearms in the city centre of Bratislava increased the need of proper preparation and communication of the actions. Both sidearms are flowing around the most important water resources for Bratislava capital city and surroundings, what caused the need for cooperation with Bratislava waterworks company (BVS). This resulted in a direct involvement of BVS to the restoration works and presented a great synergy by protection of water resources and habitat restoration.

Delay in delivering the results of Action A.6 - Study on the restoration of water and wetland habitats along Porec stream, caused postponed launch of this action. During the restoration work, gas pipeline was discovered at restoration site and technical documentation was adjusted due to the need of special technical solution for the pipeline in the restored river bed. This caused additional time delay and procedural changes, so the public procurement had to be repeated with new technical details.

Implementation of the action:

Based on the expert studies (A.6) technical documentation for 2 major side arms of Danube, in project site SKUEV Bratislavské luhy – Devínske rameno (December 2012) and Karloveské rameno (May 2013), was elaborated by authorized engineers from the Slovak Water Management Enterprise.

Restoration of Devínske rameno sidearm

The study and the technical documentation specify the extent of restoration works on Devínske rameno sidearm. Three main restoration objects were identified: inflow part, outflow part and road crossing. As a result of series of negotiation with BVS the former road crossing was rebuild to bridge crossing in April 2014. The crossing must be retained because of the access to the drinking water sources which are located on the island between Danube and the Devínske rameno sidearm. The former crossing, consisted from a ford with permanent clogged pipe with diameter of 80 cm. These presented a serious barrier for the flow and the rebuilding was essential for the follow up restoration work. Due to project intervention and series of negotiations, BVS constructed a new bridge fully in accordance with requirements for river branch restoration and fully on their own costs.

Public procurement procedure for restoration works on Devínske sidearm (inflow and outflow object) started on September 2014. Several field inspections with potential suppliers took place. Construction permit was obtained from the construction office in October 2014.

Restoration phase started in February 2015. Restoration works were divided in two parts. Upper part – inflow object: artificial stone embankment was removed on length of 28 meters and was adjusted to the elevation spot 135 m.a.s.l, as agreed by the Slovak- Austrian commission of border waters and approved in the construction permit. On first approximately 250 meters the side arm bed was cleared and adjusted in order to restore his original flow capacity. Lower part – outflow object: artificial stone embankment was removed on length of 28 meters and was adjusted to the elevation spot 134 m.a.s.l. River branch bed profile was cleared and adjusted on a length of approximately 90 meters.

Thanks to simultaneous work on both objects at the same time the restoration works proceeded very prompt and were finished in April 2015.

Intensive campaign and good media coverage of this action was crowned by media briefing with personal attendance of the Minister of Environment of the Slovak Republic Ing. Peter Žiga, director general of the SVP Ing. Marián Supek and mayor of the Bratislava city district Devín Ing. Ľubica Kolková.



Fig.C5_1: Previous unsuitable crossing of Devinske rameno sidearm and new bridge crossing fully in accordance with the requirements



Fig.C5_2: Outflow part of Devinske rameno sidearm before and after restoration



Fig.C5_3: Inflow part of Devinske rameno sidearm before and after restoration

Restoration of Karloveské rameno sidearm

Parallely with the restoration works on Devínske rameno sidearm the necessary administrative steps for second large-scale restoration in SKUEV Bratislavské luhy, were realized.

The works were divided in two parts. First part consisted of improving of the connection with main course of Danube – inflow part. Second part consisted of removing of barriers from the riverbed.

Due to the fact that similar to Devínske sidearm also Karloveské sidearm flows around the very important water resource for Bratislava region, cooperation with BVS continued also on this restoration action. BVS was fully in charge of the first part of the restoration.

At the beginning of the year 2016 BROZ submitted to the Regional office of Bratislava all necessary letters of approval and agreements of all involved subjects, concerning the restoration works on the second part. At the beginning of April 2016 BROZ obtained the final approval for the restoration works on the second part. Simultaneously with this procedure the tendering of the supplier was realized. On 18. April 2016 the restoration works started.

The works consisted of removing of artificial as well as natural barriers, sediments caused by the disturbed water dynamics, from the riverbed of the sidearm. Altogether more then 6 500 m³ of materials were extracted and transported away from the sidearm.

After the realization the connectivity between main course of Danube River and the sidearm will start already from the discharge value 1250 m³ per second, this will ensure in average nearly 100 days more per year when the sidearm will be connected with main course of the Danube. Restoration of the sidearm is important also for the drinking water source Sihot', located on the island between the sidearm and Danube. Better water supply and infiltration, improvement of the circulation in the river branch itself and reduction of the rate of sediment accumulation, will all positively affect the quality and abundance of the water source Sihot'.



Fig.C5_4: Karloveské rameno sidearm – before restoration



Fig.C5_5: Karloveské rameno sidearm – restoration works

Intensive campaign and good media coverage of this action was crowned by media briefing on 3. 6. 2016 with personal attendance of the Minister of Environment of the Slovak Republic László Sólymos, director of the SVP Bratislava Jozef Dúcz, director general of the BVS Zsolt Lukáč, major of the Bratislava city district Devín Ľubica Kolková and city district Karlová Ves Dana Čahojová. At the end of the briefing the participants had the opportunity to observe the restored sidearm from the project boats.

Intensive communication work, involvement of various stakeholders and the fact that Karloveské and Devínske sidearms are in the middle of the capital Bratislava provide a very positive image of the restoration works and also of the project itself.



Fig.C5_6: Medial briefing – restoration of Karloveske side arm

After successful finalization of large scale restoration of Devinske and Karloveske side arms the activity continued with **restoration of wetland habitats** in SKUEV Dunajské luhy mainly on sites leased by the project. Project site SKUEV Dunajské luhy was the center of the biggest inland delta of Danube in the past, where the wild Danube with its dynamics processes dominated to the landscape and permanently changed the landscape formed by water bodies, wetlands, permanent changing sidearms and riparian forests. After construction of water dam Gabčíkovo this unique habitat was significantly changed. The water dynamic was totally reduced, what caused serious negative effects for the inland delta ecosystem. The volume of water flowing through the area was significantly reduced. The mosaic of permanent and temporary wetlands was lost and hereby also the habitats for amphibians.

Technically simple measures based on field measurements were proposed, identifying the depressions located lower than the usual water level in the surrounding system of sidearms.

Preparatory phase contained also gaining of permissions from the land owners and public procurement was finalized in July 2016. After detailed mapping and geodetical measurements the restoration works started in July 2016 on first locality, second phase was realized in autumn 2016 and the last third phase in early spring 2017. Totally 4 inflow channels ensured the creation of 2.7 ha of wetlands suitable for amphibians.



Fig.C5_7: Inflow channels in SKUEV Dunajské luhy



Fig.C5_8: First phase of wetland restoration – SKUEV Dunajské luhy

In project LIFE07 NAT SK 707 Danube Birds conservation project, was reported a positive side-effect of the restoration of the Dunajské kriviny river branch system, by supporting the water level increase on 20 ha of surrounding forest area. By this action the ground water level of the area was increased, what is significant for the riparian forests, however no open waterbodies or wetlands, except of the river branch itself, suitable for reproduction of amphibians were created. In frame of the reported project the aim was to create new wetland habitats for amphibians. New waterbodies were created which is essential for living and reproduction of amphibians. The conservation measures in project LIFE07 NAT SK 707, building of inflow object and irrigation of the river branch on the length of 1 200 m, were essential for the measures undertaken by our project. This project used the restored river branch for further restoration actions at the locality of Dunajské kriviny. The maps of the restoration of Danube sidearms and wetlands are presented in Annex 57.

In autumn 2014 the preparatory steps to launch the **restoration action on Porec stream** in SKUEV Abrod started. This included preparation of meetings with local stakeholders to discuss the proposed restoration measures. Further consultations with authors of the restoration study were necessary in order to properly present the study and prepare basic information for public procurement procedure. The authorized designer elaborated the technical documentation for construction permitting, as requested by the river basin authority (SVP) and the environmental authority. The construction permission process was fulfilled. During the process, gas pipeline was discovered at restoration site and technical documentation was adjusted due to the need of special technical solution for the pipeline in the restored river bed. This caused additional time delay and procedural changes, so the public procurement had to be repeated with new technical details.

Special agreement was signed between Daphne and Slovak Water Management Enterprise (SVP) (river basin authority) to exchange the ownership of respective land parcels in order to ensure that the new restored riverbed of Porec stream will be owned by the state represented by the SVP. All permits and statements from authorities and stakeholders were obtained. Due to breeding season, restoration works were postponed till summer 2017. The restoration of Porec stream has been successfully accomplished in September 2017, when the hydrological situation was most suitable for construction works (low water level in the stream).

Length of restored stream is 600 m in area framed by highway from the East and railway from the West. Section of stream, which is in Daphne ownership, has been used for creation of meander, which follows former stream bed. The new channel has been shaped in V-profile with slopes 1:6 and 1:15. Banks created had not been fortified in order to allow rapid natural succession. Width of the new restored river bed section is 15-20 m (Fig.C5_9,10). Bottom part of the new restored river bed has been left natural and unfortified. Proposed restoration secures sufficient flow as well as rapid natural succession. Maps of the restored section of Porec stream are presented in Annex 58.



Fig.C5_9: Restoration work on Porec stream



Fig.C5_10: Restored Porec stream

In 2018, very nice zonation of littoral vegetation was observed on the site. We observed species like *Cyperus fuscus*, *Juncus articulatus*, *Juncus buffonius*, *Juncus alpino-articulatus*, *Ranunculus sceleratus*.

Action C.6 Restoration and protection of rocky habitats and caves

Responsible beneficiary: BROZ

Deliverables of the action:

- 59. C.6_Photo documentation - restoration and protection of rocky habitats and caves_PR1_Annex10_C6
- 60. C.6_Maps_PR4_Annex 7_C6

Comparison with planned outputs / expected results and time schedule:

Expected results:

Restoration of rocky habitats by removal of trees and shrubs on an area of 1.67 ha. Most vulnerable localities will be restricted to the access of people.

Achieved results:

Restored entrances into important bats wintering places – on 2 localities

Eliminated overgrowing of rocky habitats

Permanent cleaning of the localities from waste

Total area targeted by the project action is 1.8 ha (out of 1.67 ha)

Problems and their solution:

More ambitious plans realized in the main conservation actions caused the change of the time schedule of this action. Despite this postponement all planned outputs were achieved.

Implementation of the action:

The implementation started in February 2013 in project site SKUEV Devínska Kobyla. Restoration works with volunteers were carried out on an area of 0.2 ha. Invasive and allochthonous tree species were removed to improve the status of rocky habitat at locality “Pieskovňa”.

Next action was focused on preparatory work for the protection of cave Veľké Prepadlé in SKUEV Homol'ské Karpaty. Necessary approvals for restoration works were obtained: land owner – Forest SR, municipality of Stupava and SNC SR. Obtained documents together with the technical solution were submitted to the mining office, which is the state authority in charge of issuing the permission. Technical solution of the restoration was discussed and proposed with speleological and zoological experts.

In 2016, a closure of the cave Veľké Prepadlé in the site of Community interest SKUEV Homol'ské Karpaty was carried out. The cave, has two entrances and the overall length of accessible passages of over 500 m. It is one of the most important wintering sites of bats in Little Carpathians with the recorded occurrence of up to 10 species. The old and damaged wooden structure was removed from the main entrance and a new masonry wall with strong iron entrance door was installed. A small bar was installed on the side entrance. The implemented measures will provide a free entry for bats and, at the same time, will prevent illegal entry of humans disturbing wintering bats.



Fig.C6_1: Reconstruction of the entrance closure – locality Veľké prepadlé, SKUEV Homol'ské Karpaty

The second action was carried out at the former adit Slovinec located under the Devínska Kobyla massif, near Sandberg. This adit represented an important wintering site for bats in the past. In 2011, however, it was filled up, which prevented the entry of these rare animals. The work was carried out very quickly after an accommodating cooperation with the local authority in 2017. The entrance was cleaned from various materials (soil, rocks, concrete, litter, etc.) and a new, massive entrance of local rocks was built. This measure allows entry for bats and prevents humans from entering. Monitoring of

bats on this site is done with modern ultrasound detectors so there is no need for people to enter the facility.



Fig.C6_2: New entrance suitable for bats – SKUEV Devínska Kobyla_locality Slovinec

Restoration of rock habitats overgrown with shrubs and trees vegetation took place in two localities of the Devínska Kobyla, on an area of 1.6 ha, by a short-term inclusion of these sites in the grazing regime. This concerned mainly locations that are hard to reach and also dangerous for standard methods. Based on the experiences gained we can confirm that a goat herd is an ideal means of caring for such inaccessible habitats.

Maps of the restoration measures are presented in Annex 60.



Fig.C6_3: Grazing on rocky habitats – SKUEV Devínska Kobyla

Action C.7 Regulation of disturbing human impact on habitats and species

Responsible beneficiary: SNC SR

Deliverables of the action:

61. C.7_ Regulation of disturbing human impact on habitats and species_IR_ Annex9_C7

62. C.7_Photo documentation-Regulation of disturbing human impact on habitats and species_PR1_Annex11_C7

63. C.7_Photo documentation of implementation_PR2_Annex 10_C7

Comparison with planned outputs / expected results and time schedule:

Expected results:

Regular visitor regulation in project site,
Negative and illegal actions reported to responsible authorities
Disturbance of sensitive species significantly reduced at 550 ha
5 organised actions against illegal car access implemented,
10 organised actions to control nature conservation regulations implemented
10 organised actions to collect the litter and removal of illegal camping sites implemented,
Borders of project site and nature reserves visibly marked in field,
Illegal access of cars stopped at least on 5 localities
250 m of trails in Devínska Kobyla project sub-site improved, fences and arbours installed
5 benches installed at Devínska Kobyla project sub-site,
8 information panels installed at Devínska Kobyla project sub-site.

Achieved results:

- regular visitor's regulation at project sites was achieved by project rangers
- negative and illegal actions reported to responsible authorities
- disturbance of sensitive species significantly reduced at 739 ha (total 739 ha out of 550 ha)
- 10 organised actions against illegal car access implemented (total 10 out of 5)
- 25 organised actions to control nature conservation regulations implemented (total 25 out of 10)
- 20 organised actions to collect the litter and removal of illegal camping sites implemented (total 20 out of 10)
- borders of project site and nature reserves visibly marked in field
- illegal access of cars stopped on 3 localities (total 3 out of 5)
- 370 m of trails at Devínska Kobyla project site improved (total 370 m out of 250 m)
- 2 arbours installed at Devínska Kobyla project site (total 2 out of 2)
- 50 meters of fences installed to regulate visitors access to part of SKUEV Devínska Kobyla – part Sandberg
- 5 benches installed at Devínska Kobyla project site (total 5 out of 5)
- 8 information panels with nature protection regulations installed at Devínska Kobyla project sub-site (total 8 out of 8)

Problems and their solution:

Major part of the action was realized in accordance with the timetable. The part of action – reconstruction of the tourist trail at Sandberg was in delay because of the necessity to find out some more sophisticated and esthetical technical solution for its reconstruction, because the site was under high pressure of erosion due to geological composition.

Implementation of the action:

This action was implemented at following project sites/SKUEV: Devínska Kobyla, Bratislavské luhy, Ostrovné lúčky, Biskupické luhy, Šúr, Homolské Karpaty, Kuchynská hornatina, Devínske alúvium Moravy, Horný les, Vydrica, Devínske jazero and Abrod.

In order to assign control of human activities at project sub-sites two rangers were hired during the project period. One of them became a regular employee as a ranger of SNC SR, continuing his work also after the project. Thus it enables to maintain this activity after project.

A lot of field regular observations and controls have been made by rangers at project sites. Following activities were implemented within the ranger services during the project period:

- control and repair of damaged marks and borders of protected areas
- control of illegal car accesses to project sites
- control of implementation of nature conservation regulations by visitors
- removal of illegal camping sites, fireplaces and litter
- control of illegal tree cutting
- control of illegal sport activities that can disturb sensitive species

- patrolling in order to avoid robbing of sensitive plants in project sub-sites as well as several other activities, e.g. guided tours for schools and teachers, providing information about project sub-sites and project activities to visitors, mowing the meadows at the SKUEV Devínska Kobyla, cooperation with project beneficiaries in introducing of grazing (SKUEV Devínska Kobyla and Šúr) and restoration of forest steppes (SKUEV Biskupické luhy and Ostrovné lúčky).

During project period some actions were implemented in cooperation with voluntary nature rangers and other volunteers: 20 organized actions to collect the litter and removal of illegal camping sites (in particular at the following project sites: SKUEV Bratislavské luhy, Ostrovné lúčky, Devínska Kobyla, Šúr, Homolské Karpaty and Devínske Alúvium Moravy) and 10 organized actions (controls) against illegal car access into protected areas (project sites: SKUEV Ostrovné lúčky, Devínska Kobyla, Šúr, Bratislavské luhy, Homolské Karpaty and Kuchynská hornatina).

We have achieved a great success in communication with the Police Forces, Regional Environmental Office in Bratislava and Slovak Environmental Inspection to which negative and illegal actions at project sites were reported. During project implementation several inspections with the police focused on control and enforcement of the Act on Nature and Landscape Protection were carried out in particular at the SKUEV Devínska Kobyla, Ostrovné lúčky, Bratislavské luhy and Biskupické luhy, (the areas with the greatest impact of the visitors).

Other actions (25 in total) aimed on the control of the implementation of the nature conservation regulations (e.g. movement off marked tourist paths, uncontrolled roaming of dogs, entering bicycles, collecting fossils, etc.) were organized in cooperation with voluntary nature rangers at the following project sites: Devínska Kobyla, Homolské Karpaty, Ostrovné lúčky, Biskupické luhy, Bratislavské luhy, Šúr, Devínske alúvium Moravy, Horný les, Vydrlica, Abrod, Devínske jazero and Kuchynská hornatina.

One of the specific actions was renewal of borders marking of protected areas in cooperation with voluntary nature rangers. It was essential for identification of protected areas in field. This action was ongoing during whole project period at the following project sites: Devínska Kobyla, Šúr, Homolské Karpaty, Ostrovné lúčky, Bratislavské luhy, Kuchynská hornatina, Biskupické luhy, Devínske alúvium Moravy and Vydrlica.

To protect project sites against illegal car access different approaches were applied. The type and the localization of the measures was preceded by a precise mapping and analysis. Three localities (out of 5 as planned) were identified and an illegal car access has been stopped there (other sites were secured in particular by ramps installed by landowners out of the project action). One ramp was installed on access road to the SKUEV Devínska Kobyla. By this way an illegal car access was reduced on total area of 650 ha at this site. This road is only one asphalt road which goes into this site. Another site was SKUEV Ostrovné lúčky, where 10 pcs of traffic signs including “no entry” signs were installed at the entrance to the area with the 4th degree of protection. An illegal access was reduced on total area of 55 ha.

An illegal access of cars was stopped also in the SKUEV Bratislavské luhy (on total area of 34 ha) near the outflow of Devínske sidearm. On the entrance road, often used for illegal access of cars and for deposition of litter a simple barrier from big blocks of natural stones was installed.

These measures have helped to reduce the disturbance of sensitive species at mentioned project sites on total area of 739 ha.

To help rangers to document and to clarify illegal activities and to avoid of robbing of protected plant species, camera traps were installed at the SKUEV Devínska Kobyla.

To guide the movement of visitors at the SKUEV Devínska Kobyla various types of infrastructure were installed there - information panels with nature protection regulations, wooden arbours, wooden benches and wooden fence to regulate access to part of the SKUEV Devínska Kobyla – Sandberg.

In order to ensure safe movement of visitors at the SKUEV Devínska Kobyla some parts of existing pathways were repaired there. Before the trails were reconstructed some selection of parts of trails which need to be repaired was carried out. Totally 370 meters of such parts of the trails for visitors (out of 250 m as planned) were identified and improved. The biggest attention was paid to the most critical part of the trail at Sandberg. Reconstruction of this part of the trail in the length of 16 meters has been done at the end of March 2017. Works followed relevant documentation and the critical part of the trail was supported with gabion retaining wall.

Other parts of the trails (354 m) were reconstructed, fixed and improved during the project actions by some different means like small stabilizations of edges, flattening of surface, reduction of shrub branches, etc. The branches of shrubs and trees along the touristic trails in the forest part of the site were cut in order to enable tourists to walk along marked pathways and eliminate usage of illegal side paths. With the same aim, touristic trail from Devin to Devínska Nova Ves was fixed and supported by wood (wood from removed Black locust trees) on 3 sections of the trail. The entrances to small illegal paths were blocked by removed shrubs, serving as a barrier to stop illegal access to valuable habitats. Some works were done in cooperation with volunteers.

All mentioned activities helped to improve the visitor's behaviour at project sites and to reduce disturbance of sensitive species in these protected areas.



Fig.C7_1: Marking of borders of various project site and nature reserves by project ranger



Fig.C7_2: Illegal access of cars stopped in SKUEV Devínska Kobyla



Fig.C7_3: Illegal access of cars stopped in SKUEV Ostrovné lúčky



Fig.C7_4: Actions to collect the litter and removal of illegal camping sites in various project sites



Fig.C7_5: Reconstruction of the tourist trail at SKUEV Devínska Kobyla



Fig.C7_6: Arbour in SKUEV Devínska Kobyla



Fig.C7_7: Installed fence in SKUEV Devínska Kobyla – part Sandberg



Fig.C7_8: Infopanel for visitors in SKUEV Devínska Kobyla



Fig.C7_9: Benches for tourists in SKUEV Devínska Kobyla

5.1.4 E – Project monitoring and networking

Action E.3: Monitoring of impact of project actions on target habitats

Responsible beneficiary: DAPHNE

Deliverables of the action:

- 64. E.3_Monitoring report grassland habitats_2014_PR2_Annex 20_E3
- 65. E.3_Monitoring of vegetation_all monitored sites_2015_PR3_Annex 20_E3
- 66. E.3_Monitoring of vegetation_all monitored sites_2015_PR4_Annex 26_E3_1
- 67. E.3_Monitoring of vegetation_Devinska Kobyla_2016_PR4_Annex 27_E3_
- 68. E.3_Monitoring of vegetation_Devinska Kobyla_2017_PR4_Annex 28_E3_3
- 69. E.3_Monitoring of vegetation SKUEV Abrod_PR4_Annex 29_E3_4
- 70. E.3_Soil monitoring_Abrod_PR4_Annex 30_E3_4
- 71. E.3_Hydrological monitoring at SKUEV0117 Abrod_FR
- 72. E.3_Soil monitoring at SKUEV Abrod_FR
- 73. E.3_Impact of black locust eradication at SKUEV Devínska Kobyla_FR
- 74. E.3_Monitoring of vegetation SKUEV Abrod, 2018_FR
- 75. E.3_Monitoring of vegetation_other sites_2016_2017_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

- monitoring report on status of vegetation of the target habitats in selected project sub-sites
- report on status of soils in SKUEV0117 Abrod
- report on soil changes within the monitoring period

Achieved results:

- grassland vegetation was monitored at a total of 18 permanent monitoring localities.
- monitoring of the impact of black locust eradication at SKUEV Devínska Kobyla
- hydrological monitoring at SKUEV0117 Abrod
- soil monitoring at SKUEV0117 Abrod

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

Vegetation monitoring

Monitoring of vegetation was focused on the impact of restoration activities on non-forest habitats. Permanent plots of size 4x4 m were fixed in the field. Phytosociological relevé was combined with data on species presence in grid of 8 quadrates (0.5 x 0.5 m). Data are in special MS Access database. Permanent monitoring plots were focused on the impact of restoration management techniques – grazing, mowing and scrub and tree removal. Grassland vegetation was monitored at a total of 18 permanent monitoring localities (PMLs) on following project sites:

SKUEV Devínska Kobyla - 12 permanent monitoring localities (Annex 64-68)

SKUEV Abrod - 3 permanent monitoring localities (Annex 69, 74)

SKUEV Šúr - 1 permanent monitoring locality (Annex 64-66, 75)

SKUEV Biskupické luhy - 1 permanent monitoring locality (Annex 64-66, 75)

SKUEV Ostrovné lucky - 1 permanent monitoring locality (Annex 64-66, 75)

SKUEV Devínska Kobyla

To monitor the impact of management measures (removal of black pine, removal of scrubs and trees and subsequent grazing), 5 permanent monitoring localities (PMLs) were set up in the autumn of 2014, and in the spring of 2016 another 7 permanent monitoring localities were set up with control plots without intervention.

The monitored biotopes are predominantly the biotope 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) at different

stages of succession. In selected parts of Devínska Kobyla, where the PML was based, mechanical removal of wood was carried out in the winter of 2016. Reconciliated shrubs were re-eradicated in the autumn in 2016. Since 2015, goats have been introduced into the territory.

As a result of clearing of the woody area, we have seen a significant increase in the number of light and thermophilous species, such as *Pulsatilla grandis*, *Plantago media*, *Jurinea mollis*, *Astragalus onobrychis*, *Carex michelii*, *Chamaecytisus austriacus*, *Thesium linophyllum*, *Linum tenuifolium* after two years of monitoring. The total number of species in 2016 was higher than before the management intervention on the area of 4x4 m as well as on small areas 50x50 cm. The increase was caused by occurrence of hemicryptophytes. The coverage of scrubs remained relatively high due to their rich their rich regeneration and the formation of large quantities of sprouts, which can in two-three months and grow to 40 cm.

The results of the comparison reveal a clear trend of penetration of light depending and thermophilic species from the surrounding grass-herb vegetation. These species were likely to be present in the soil seed bank and could be germinated when the surface was open. Ensuring grazing management and removal of sprouts are an important prerequisite for a favorable development of vegetation on the areas under consideration. The species composition in the spring after the management intervention already showed a gradual increase of the species. The optimal method of management is the sheep grazing, or the sheep and goat mixed herds grazing, which can weaken and gradually eliminate them by which can weaken and gradually destroy the extinguishing sprouts.

Two permanent monitoring localities were based on the influence of the black pine excavation, which acidifies the soil substrate by its obliteration. Biotope 6210 was overgrown by black pine (*Pinus nigra*) with poor undergrowth as a result of a needle ridge and shading of the area with tree crowns. Few species of target biotope, such as *Globularia punctata*, *Asperula cynanchica*, *Artemisia campestris*, and others, have been present with very low coverage. In winter 2016, black pine has been eradicated in the immediate vicinity of the monitoring area and conditions for vegetation have changed. After the excavation of the black pine, the locality was lightened and the thickness and coverage of the needle partially diminished. The number of species on the observed areas increased significantly, adding mostly herbage-growing herbs, probably occurring in a seed pot (*Allium flavum*, *Crinitina linosyris*, *Petrorhagia saxifraga*, *Sanguisorba minor*, *Seseli osseum*, *Stipa joanis*, *Thesium linophyllum*). The presence of light- and thermophilic steppe species can be expected to increase.

Several permanent monitoring localities were established to monitor the impact of grazing on grassland vegetation. From 2013 to 2017, grazing of goats was carried out on and around the areas. At the beginning grazing was rather extensive and recorded changes in the number of species were due to the monitoring of areas in a different time period. In 2015, the permanent monitoring localities were set up and monitored in the autumn when many spring and summer species were already blooming and dried. Long-term monitoring will show the effects of grazing on the composition of vegetation. In 2017 grazing at the Geological Museum sites was very intensive, resulting in a significant mechanical disturbance of the grassland and a significant reduction in the number of species. However, the animals have largely suppressed creeping scrubs, and by destroying the grass turf they have created conditions for the beneficial capture of annual species. In 2018 grazing was temporarily excluded on the given area, the area began to regenerate, resulting in an increase in the total number of species by about 25%, including the target habitat species such as *Acinos arvensis*, *Alyssum montanum*, *Globularia punctata*, *Koeleria macrantha*, *Vinca herbacea* and others. The grazing animals largely suppressed scrubs, and the grass turf was broken up to create favorable conditions for teophytes. The rotation of more extensive and intensive grazing is an optimal solution for the development and maintenance of a favorable status of priority grassland habitats.

At Devínska Kobyla we recorded two completely new micropopulations of the Bee Orchid (*Ophrys apifera*) in number of dozens of pieces as result of restoration measures implemented by the project. It is IUCN Red List Species. The Adriatic Lizard Orchid (*Himantoglossum adriaticum*) is listed on Annex II of the Habitats Directive and it is endangered in Slovakia. It is growing in two priority habitats on the site: in 40A0* Subcontinental peri-Pannonic scrub and 6210* Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia). It was recorded up to 600 individuals on the site in 2017.

The populations of Bee Orchid and the Adriatic Lizard Orchid have been strengthened by realisation of restoration measures and introduction of grazing at SKUEV Devínska Kobyla.

SKUEV Šúr

To monitor the impact of management measures (eradication of scrubs and grazing by goats), a permanent monitoring plot was established in 2014. Removing of scrubs in 2015 had a positive effect on the state of vegetation. Typical species of the target biotope (1340 * Inland Salt meadows) appeared on the area: *Artemisia santonicum subsp. patens* and *Plantago maritima*. Other important species have been recorded: *Serratula tinctoria*, *Pseudolysimachion spicatum*, *Peucedanum oreoselinum* and others. Near the monitoring area, the protected species *Galatella cana* was widely distributed. It is critically endangered species having the only site in Slovakia in SKUEV Šúr.

SKUEV Biskupické luhy

On the territory of SKUEV was established 1 permanent monitoring plot and 3 permanent monitoring sites (2015) to monitor the impact of management measures (removal of invasive herbs, removal of scrubs and subsequent grazing of sheep and goats).

Permanent monitoring plot at the Ostrov Kopáč:

Coverage of the scrubs on the area was 70% before the intervention. The shrubs were removed in September 2015. In 2016, grass and herbs, characteristic of a given habitat, such as *Festuca rupicola* and *Festuca valesiaca*, appeared on the area. In addition, protected and endangered species of *Orchis coriophora*, *Muscari neglectum* and *Thesium ramosum* appeared. From the comparison of the species composition before and after the removal of the scrubs, there is an obvious clear trend of the penetration of light and thermophilic species from the surrounding dry grassland vegetation. These species were likely to be present in the soil seed bank and could be germinated when the surface was overgrown. Grass coverage has decreased slightly. The scrub removal has had a positive effect on the status of vegetation. The number of target species typical of habitat 6210 has increased.

Permanent monitoring sites at the Panský diel:

In 2016, the intervention was carried out - mulching invasive species of herbs with the dominance of *Solidago gigantea*, removal of and tress and subsequent grazing in 2016. In 2017, a herd of sheep and goats began to be intensified on the site. Originally dense growth of the invasive species *Solidago gigantea* and scrub *Crataegus monogyna* was replaced by the species-rich dry grassland priority habitat 6210* with typical species *Acosta rhenana*, *Asparagus officinalis*, *Astragalus cicer*, *Astragalus glycyphyllos*, *Botriochloa ischaemum*, *Centaureum erythraea*, *Clinopodium vulgare*, *Odontites vulgaris*, *Pimpinella saxifraga*, *Seseli annuum*, *Vicia villosa* and others. The occurrence of the following protected and endangered plant species was recorded: *Artemisia pontica*, *Blackstonia acuminata*, *Bromus squarrosus*, *Gypsophila fastigiata*, *Lycopodioides helveticum*, *Muscari neglectum*, *Orchis coriophora*, *O. militaris* and *Petrorhagia saxifraga*. The positive effect of the implemented management measures is visible on the whole area of monitored sites.

SKUEV Ostrovné lúčky

The removal of scrubs in 2013 had positive effect on dry grassland vegetation. Species like *Blackstonia acuminata*, *Clinopodium vulgare*, *Festuca rupicola*, *Linum catharticum* and *Jacea pannonica* were recorded on the site. However, due to problems with land owners, it was not possible to realise further management measures on the site and permanent monitoring plot was overgrown by scrubs again. It proved the fact, that one-off management treatments are not sustainable due to the high regeneration ability of scrubs.

SKUEV Abrod

There were 3 permanent plots established in 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) to see the impact of mowing, reed and tree removal. Monitoring plots were established in 2015 and 2016 and monitored also in 2017 and 2018. Monitoring report can be found as Annex 69 and 74.

The positive impact of frequent moving on elimination of reed was proved on the site, where reed started to invade into 6410 grassland. Its abundance was decreased from 15% in 2015 on 5% in 2018. It was recorded higher abundance of vegetation cover and higher number of species after removal of

scrubs. Due to high amount on nutrients after mulching, there is still some occurrence of ruderal species. The biggest changes were recorded on site will 100 % invasion of reed. Only 11 other plant species occurred on the site in 2016 with minimal abundance. The abundance of reed was only 5% in 2018 after realised restoration management. 17 other species were recorded, with dominance of hydrophilous species.

1. Hydrological monitoring at SKUEV0117 Abrod.

The activity included monitoring of the ground water table in the existing network of probes and surface water level in the Porec stream within SKUEV Abrod. The monitoring has been continuous since 2001 and provides good overview on seasonal and inter-annual dynamics of the groundwater which then can be related to changes of the plant communities in the site. The measurements were made on 29 monitoring points, every 2 weeks from April till November, during hydrological season. Monitoring data were collected during the project and evaluated by the end of the project (see Annex 71). A total of 297 of 305 monitoring results were processed for the purpose of the evaluation. Monthly precipitation amounts from Moravský Svätý Ján and monthly average air temperatures from Kuchyňa - Nový dvor were available for this assessment, both data series from 2001 to 2003 and 2006 to 2017.

Statistical treatment of results followed the following objectives:

- A. Describe the dynamics of groundwater levels on the site, especially with regard to weather conditions.
- B. Describe the development of levels, especially in recent years of measurements, when a number of revitalization measures took place at the site.
- C. Describe long-term surface trends using a statistical model that takes into account the predominant effect of weather (precipitation, water balance) on levels.

The high correlation between groundwater level characteristics and weather characteristics confirms the assumption that precipitation and water balance have a key impact on the status and dynamics of groundwater levels of the site. Using the linear regression model, seasonal variability of up to 60% is explained by the variability of seasonal rainfall, seasonal water balance or the highest cumulative deficit. These parameters are also relevant to other groundwater level characteristics, so they are used for further interpretation.

The model points to the overall increase in summer levels at the end of the monitoring period from baseline, by approx. +30 cm, this increase is somewhat more pronounced in the northern part (+ 40 cm) than in the southern part of the site (about 25 cm).

This improvement can be interpreted as a consequence of the revitalization measures that have taken place in recent years with increased intensity.

In the context of climate change, the strong dependence of groundwater levels on weather conditions for the local ecosystem of Abrod is an obvious threat. Average air temperatures in Slovakia are increasing, the trend is accompanied by a significant decrease in relative humidity and reduction of precipitation in the south of Slovakia, on average by up to 10%. The synergistic effect of the decrease in atmospheric precipitation and temperature increase disturbs the natural water cycle and deepens the balance deficit. Local increases in watering during torrential rain are temporary, and water flows (and thus alluvium levels) are expected to be greatly reduced especially during spring and summer months.

With these regional and global climatic trends, revitalization measures are important countermeasures. Humidity rates on the site are almost unlikely to return to 50-70 years, but if measures lead to an increase in summer levels by several centimetres, certain types of vegetation that are currently due to declining levels of decline may stabilize in the future. Final report on hydrobiological monitoring can be found in Annex 71.

2. Soil monitoring at SKUEV Abrod.

Abrod reserve is threatened by the nutrient release from both in-situ (soil organic matter mineralization) and ex-situ (surrounding agricultural land) sources. Monitoring was therefore planned for gathering representative information about soil and groundwater nutrients in the most vulnerable parts of the reserve. As the first step, the proposal of monitoring network and the methodology of soil and hydrogeological monitoring was compiled in December 2014. The sites were selected after the field research.

Research was conducted in 2015 and 2016, with an emphasis on the content of essential nutrients (nitrogen and phosphorus) and soil processes that are essential for the cycle of these nutrients. The results are discussed in relation to the findings from previous periods; in particular the results of the analysis of groundwater samples taken at the site since 2003 and the analysis of soil samples from the 2009.

The sampling network consisted of 11 sites for regular soil sampling (sampling once per year) and 5 sites for groundwater sampling (twice a year). Soil acidity and electric conductivity of soil suspension, major nutrients, soil organic carbon (SOC) and nitrogen, phosphorus pools and composition of cation exchange complex (CEC) were analyzed. Groundwater samples were taken in July and October at four and six sites, respectively. Major cations and anions were analyzed.

The monitored soils in Abrod are rich in the nitrogen-rich surface layer in soil organic matter. Inorganic forms accessible to plants form only a very small proportion. Profiles rich in organic matter contain more phosphorus, which is also largely inaccessible to plants. The exception is flooded land south of Porec, rich in accessible forms of phosphorus. The soils north of the Porec bed are at least partly doped with mineralized groundwater with an increased amount of calcium, which prevents their possible acidification. A comparison of the medium-term changes in soil properties between 2009 and 2015/2016 shows that in the surface layer of soils there was a substantial loss of soil organic matter. The calculated loss range is 20-63%. Soil system therefore does not show signs of eutrophication by nitrogen. Among the positive external factors are to maintain the current status of fixed forms of nutrients essential (1) maintaining high groundwater levels for as long as possible, (2) removal of the biomass of plants (mowing, no mulch), (3) preservation of local positive hydrological factors (field irrigation, gravel pit, Porec floodplains).

There is a certain risk of the reserve contamination by nutrients from the nearby. The nutrient inflow to the reserve is more likely after an accidental event (e.g. surface flow after heavy rains) than as a result of regular subsurface / groundwater flow, which is obviously filtered sufficiently by the border vegetation.

Based on the results, border vegetation has been identified as an important element recovering the released nitrates and protecting the lower-laying parts of the reserve. Within the reserve area, trees, shrubs and especially annual border vegetation accumulating nitrates has to be removed, taken out from the reserve and not only mulched; otherwise nitrogen recycles after plant biomass mineralization and it can eutrophicate the soil environment. Therefore, Abrod management was adopted in parts of the reserve adjoining the grass turf fields. Final report on soil monitoring can be found in Annex 72.

3. Impact of black locust eradication at SKUEV Devínska Kobyla

Penetration of non-native species into habitats in which they were not originally present is currently one of the main threats to the diversity of natural ecosystems. In particular, invasive plants that produce large numbers of diaspores and can spread extensively from parent plants to vegetative species, the species composition of vegetation and the abundance of domestic species greatly change. Such species is black locust (*Robinia pseudacacia*) in the Devínska Kobyla SKUEV. For the purpose of monitoring the forests before and after the intervention, three monitoring plots of size 20 x 20 meters were established and marked in the autumn of 2015. At each monitoring plot phytosociological relevé were recorded and individuals of the black locust in individual thickness category (up to 5 cm, 5 – 10 cm, 10 and more cm) were counted. Then management intervention took place. Monitoring was repeated in 2016 and 2017.

From the results of the three-year monitoring it can be stated that the intervention aimed at the eradication of *Robinia pseudacacia* was extremely successful. On all monitoring sites, after the first year, all individuals of the black locust died completely. It had impact on significant decrease in the cover layer. In the following years, domestic species of scrubs, mainly *Cornus mas*, *Ligustrum vulgare*, *Rosa canina* agg., *Fraxinus ornus* and *Berberis vulgaris*, began to spontaneously grow. The increase in the coverage of the herbage and the increase in the number of indigenous light, thermophilous and psammophytic species in all monitored plots in the second and especially in the third year of observation. Species like *Arenaria serpyllifolia*, *Erysimum odoratum*, *Veronica austriaca*, *Arrhenatherum elatius*, *Brachypodium pinnatum*, *Bromus sterilis* and others appeared. Results from monitoring can be found in FR Annex 73.

Action E.4 Monitoring of impact of project actions on main fauna species

Responsible beneficiary: UK

Deliverables of the action:

76. E.4_Monitoring report – main fauna species_PR2_Annex 21_E4

77. E.4_Final report from the monitoring of Mollusca_FR

78. E.4_Final report from the monitoring of Lepidoptera_FR

79. E.4_Final report from the monitoring of Coleoptera_FR

80. E.4_Final report from the hydrobiological monitoring_FR

81. E.4_Final report from the ichthyological monitoring_FR

82. E.4_Final report from the monitoring of Amphibians_FR - added as a separate chapters of the study on restoration of wetlands (A.6)

Comparison with planned outputs / expected results and time schedule:

Expected results:

Monitoring reports of selected groups of biota from project sites

Achieved results:

Monitoring report of fauna following fauna groups: dragonflies, butterflies, beetles, fish, and amphibians. Monitoring recorded the state of selected species before, during, and after the protection measures had been implemented. The data obtained helped to adjust individual methods and the intensity of measures being implemented effectively throughout the project duration.

Problems and their solution:

During the ichthyological survey in the fall of 2014, the engine of the electrical device for fish sampling was accidentally damaged. For this reason, samples were not collected and the device was sent to manufacturer to replace the damaged parts. During hot summer seasons, some of the monitored sites were without water that is why monitoring of them was not possible. In some cases, due to delay of restoration works, it was not possible to evaluate the effectiveness of the revitalization to the final report.

Implementation of the action:

The main objective of biological monitoring was to evaluate the effectiveness implemented “C” activities through the changes in particular zoocenosis. Six groups of animals were selected for the monitoring of particular sites (molluscs, beetles, butterflies, fishes, macrozoobentos, amphibians):

In primarily planned ichthyological monitoring of Porec creek (SKUEV Abrod) in May 2014 none fishes were recorded. Due to this fact, **monitoring of malacofauna** (Annex 77) was chosen as a replacement (refers to action C.5). A total of 22 species (1416 specimens) of molluscs were sampled during three-year monitoring (2014 – 2016) at 4 sites in SKUEV Abrod. The highest species richness (16 species) was recorded at the Porec bank, where two species listed in the Annex II of the Habitat directive were sampled as well - *Vertigo angustior* and *Vertigo moulinsiana*. Due to delay of restoration works at Porec creek, it was not possible to evaluate the effectiveness of the revitalization in the final report. However, the monitoring is still running, so the success of management measures is expected to be evaluated during the next few years.

A total of 33 species of fishes were sampled during the **ichthyological monitoring** (Annex 81, refers to action C.5) in seasons 2014 – 2016 from two sites – Devínske side arm and Karloveské side arm. Six recorded species were listed in the Annex II of the Habitat directive (*Aspius aspius*, *Cobitis taenia*, *Cottus gobio*, *Gymnocephalus schraetser*, *Rhodeus sericeus*, *Romanogobio albipinnatus*). Restoration of both Danube arms improved water flow conditions and created/extend appropriate conditions for the reofilous species such as *Chondrostoma nasus*, *Leuciscus spp.*, *Barbus barbus* etc. In the case of Devínske side arm, the changes in ichthyofauna were more pronounced than in Karloveské side arm. Revitalization of Devínske side arm and Karloveské side arm improved the conditions for the presence of dozens of fish species (at least 40). Both localities provide not only temporary or permanent habitat

for species, but also feeding and spawning ground, that are proved by high number of recorded fish juveniles.

Hydrobiological monitoring (Annex 80, refers to action C.5) was additionally chosen for better identification of the changes during the restoration of aquatic habitat. A total of 58 taxons of aquatic invertebrates were sampled during the hydrobiological research in 2014 – 2016 from three sites: Devínske side arm, Karloveské side arm and Porec creek (SKUEV Abrod). The highest species richness was recorded in Devínske side arm, where also two rare species were sampled: *Borysthenes natinchina* (mollusc) and *Glossiphonia slovacica* (leech). Significant changes in macrozoobentos communities were recorded after the restoration monitored Danube side arms. Before the restoration of the Devínske side arm, the coenosis of macrozoobentos was composed by limnophilous species, represented by *Cloeon dipterum*. After the restoration, predominance of reophilic species occurred, represented by *Potamanthus luteus*. However, as the water flow decreases during the hot weather, higher recolonization of limnophilic species occurred. This changing of environmental condition followed by changes in macrozoobentos community, is typical for such type of biotope. The restoration of both side arms can be evaluated as positive intervention, because the life conditions for both reophilytic and limnophilic species have been created. During the upcoming period, enriching of rheophilous species and the elimination of limnophilic, respectively indifferent taxa in the Devínske side arm is expected. Due to delay of restoration works at Porec creek, it was not possible to evaluate the effectiveness of the revitalization in the final report.

A total of 76 species of butterflies were recorded during the **lepidopterological monitoring** (Annex 78, refers to actions C.2, C.3, C.4) during the seasons of 2013 – 2017 from four sites – Devínska Kobyla, Šúr, Biskupické luhy and Ostrovné lúčky. These sites were selected according the C activities focused on the restoration and management of the meadow and foreststeppe habitats. During the monitoring, three species listed in the Annex II of the Habitat directive were recorded: *Callimorpha quadripunctaria*, *Eriogaster catax* and *Lycaena dispar*. The highest species richness (63) was recorded in Devínska Kobyla site. This represents approximately 54% of all species richness studied in the territory of Devínska Kobyla (in terms of the studied groups). In this area, most of the species (43) were found in old stone-pit. Before the revitalization no studied groups of butterflies were observed on the transect overgrowth by bushes and trees at the left site of the upper floor of the stone-pit. During the next year, after the elimination of overgrowth vegetation by manual eradication and grazing, 36 butterfly species were recorded. The similar situation was observed after eradication of *Solidago* sp. on project site SKUEV Biskupické luhy. The elimination of overgrowth vegetation (manually or by grazing) can be evaluated as positive intervention, because it is generally beneficial for the immigration and occurrence of butterflies on restored sites.

The aim of **monitoring of Coleoptera** (Annex 79) was to obtain data about the population quality of target species of beetles in selected project areas in relation to project activities (refers to actions C.1, C.2, C.3, C.4). A total of nine project localities were monitored during seasons of 2014 – 2016. Monitoring was target on 6 species listed in the Annex II of the Habitat directive (*Cerambyx cerdo*, *Cucujus cinnaberinus*, *Limoniscus violaceus*, *Lucanus cervus*, *Osmoderma eremite*, *Rosalia alpina*). During the monitoring, population quality of the target species was estimated. Potential habitats of xylobiont species were located (old trees) and obtained their GPS coordinates. Site selection has been set to coincide with planned implementation of project activities aimed to increasing the biodiversity of grassland and forest habitats. Since the target species are xylobionts, monitoring results provide a source of information for better targeting specific conservation activities (modification of wood harvesting) and are important for further protection of old valuable trees. Grazing, removal of non-native and invasive species, protection of old trees and dead wood and nature closer to forest management should have a positive impact on protected beetle species in future.

First part of **batrachological research** (Annex 82) was focused on identification most of the suitable sites for the revitalization, summarized in the study "Revitalization management on reproductive sites of amphibian focusing on species *Triturus dobrogicus* and *Bombina orientalis* in selected areas of Bratislava surroundings". During this study 6 SPAs were examined and suitable sites for the restoration proposed. Monitoring of amphibians was realized on 4 localities in SKUEV Dunajské luhy,

where restoration of wetlands was realized. These sites were restored during the years 2016 and 2017, where significantly better conditions for the existence of amphibians were created. Batrachological research was done shortly after the restoration, during which eggs, subadults and adults of *Rana dalmatina* and *Pelophylax esculentus* complex were observed on all restored sites. These species are generally considered as pioneer species on the newly created habitats. In Dunajské Kriviny an adult specimen of *Lissotriton vulgaris* was also observed and there is a strong prediction of returning of other species recorded in the area, such as *Bombina bombina*, *Pelobates fuscus*, *Bufotes viridis*, *Hyla arborea*, *Rana arvalis*, *Pelophylax lessonae*, *Triturus dobrogicus*, mostly to the wetland parts, where fish cannot manage to penetrate. The batrachological monitoring was added as a separate chapters to the expert study (A.6).

Actin E.5 Networking with other projects

Responsible beneficiary: BROZ

Deliverables of the action:

- 83. E.5_Networking_IR_Annex18_E5
- 84. E.5_Networking_PR2_Annex 22_E5
- 85. E.5_Networking_PR3_Annex 21_E5
- 86. E.5_Networking_PR4_Annex 31_E5
- 87. E5_Networking_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

Establishing of contact with relevant projects focused on restoration of target habitats and promotion of NATURA 2000 network. Mutual exchange of information and experiences, visits of project sites and restoration actions. Consultations and comparison of different approaches and methods, strengthened international cooperation. Raised knowledge of project personnel. 10 organized networking's.

Achieved results:

During the implementation of various project actions cooperation with national and also foreign organisation has been established. Experiences and knowhow about implementation of nature protection measures were exchanged. 12 networking meetings were organized.

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

From the beginning of the project we started to communicate with projects and initiatives similar to our planed project action. We focused mostly on grazing management, water habitats restoration and tourist infrastructure and management. The experience and knowhow exchange took place either through visiting of various projects mostly in foreign countries, or by hosting of interest groups on our project localities. Gathered information were very useful for implementation of our project actions. Altogether 12 networking meetings were organized (Annex 83-87).

Overview of the organised networking:

Date	Project/Activity	Organisation	Place	Topic – reference to project activity
13.4.2012	LIFE 09 NAT/CZ/000363	AOPK CZ and representatives of municipalities	Bratislava	C.4, C.3, C.7,
27.6.2012	LIFE 09 NAT/CZ/000363	AOPK CZ	České středohoří – Czech republic	C.4, C.3, C.7,
28.6.2012	Grazing of xerotherme	Government of	Prague	C.4

	habitat in the capital Prague	Prague		
20-21.9.2012	LIFE „Pannon gyepek élőhelykezelése magyarországon“	NP Duna-Drava	NP Duna-Drava	C.4, C.5, C.7
24.9.2012	LIFE09 NAT/IT/ 000118	RI.CO.PR.I.	Mail communication	C.3, C.4
12.11.2013	Restoration of traditional grazing	oz. Manner	Czech Republic	C.4
18.10.2013	LIFE+ Restoration of the Lower Morava floodplains	WWF Austria		C.5
27.5.2016	LIFE11 NAT/SI/882	Partners involved in the project	Bratislava	C.3, C.4, C.5, D.3
9.5.2017	LIFE11 NAT/SE/000849 (SandLIFE) a Sandrasen im Dahme-Seengebiet (LIFE Sandrasen)	Partners involved in the project	Bratislava	C.3, C.4, D.3
27.6.2017	LIFE 14 NAT/SK/0001306	Duna Ipoly NP	Duna Ipoly NP	C.1
14.11.2017	LIFE+ Restoration of the Lower Morava floodplains	Via Donau	Bratislava	C.5
19.3.-23.3.2018	Various environmental education projects and activities	Verein true move NGO in St. Gallen in Switzerland	Switzerland	D.4, D.5

BROZ keeps permanent contact with the personnel of the LIFE projects which we visited in frame of the networking during the project duration.



Fig.E5_1: Networking 18.10.2013



Fig.E5_2: Networking 27.6.2012



Fig.E5_3: Networking 14.11.2017



Fig.E5_4: Networking 9.5.2017

5.2 Dissemination actions

5.2.1 Objectives

Dissemination: overview per activity

Action D.1 Web site development and maintenance

Responsible beneficiary: BROZ

Deliverables of the action:

89_D.1_Project website_Printscreen_IR_Annex10_D1
www.broz.sk/natura2000ba

Comparison with planned outputs / expected results and time schedule:

Expected results:

The project web site developed, maintained and promoted during the whole project period.

Achieved results:

The project website www.broz.sk/natura2000ba was launched in October 2012.

Problems and their solution:

Due to many project partners and many individual project actions there was few delays in updating of the actual outputs of the project and translation into all languages. The webpage was updated and the progress was reported during the monitoring visit on 6-7th October 2016.

Implementation of the action:

It is fully operating in four languages (Slovak, English, Hungarian and German) and includes basic information about the project as objectives and actions, project associated beneficiaries, the whole project site (with map) as well as particular localities (with photos), updated results and outputs description, contacts to project personnel, media outputs and section where all relevant public documents for downloading are stored. Website has been regularly updated.

The website was transformed during 2018, which was connected with change of the whole design and structure of BROZ webpage. New project website is available on the address: www.broz.sk/natura2000ba

The old version used during the most project period is available on this address:

<http://www.stary.broz.sk/natura2000ba>

Action D.2 Communication and regular meetings with key stakeholders and decision makers, preparation of expert workshops and seminars, sharing of experience

Responsible beneficiary: BROZ

Deliverables of the action:

90. D.2_Meeting with stakeholders_Attendance lists_IR_Annex11_D2

91. D.2_Meeting with stakeholders_Attendance lists_PR1_Annex12_D2

92. D.2_Attendance records, photo documentation, reports from study visits_PR2_Annex 11_D2

93. D.2_Summarization and attendance records_MTR_Annex 5_D2

94. D.2_Workshops and stakeholders meetings_PR3_Annex 7_D2

95. D.2_Final table of stakeholders meetings_FR

96. D.2_Workshop documents_2017_FR

97. D.2_Study visit documentation_2016_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

15 meetings with stakeholders

3 two- day study visits for about 30 people, each will be organized in SK-AT-HU-CZ region

2 technical workshops for approx. 20 participants organized every year

Achieved results:

34 meetings with stakeholders organized

3 two- day study visits with 93 participants

11 technical workshops organized

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

Communication and regular meetings with key stakeholders and decision makers had started just right from the beginning of the project and were running continuously according to actual project needs. 34 meetings with 204 stakeholders were realized (out of 15 planned) (Annex 95).

The technical workshops were organized with aim to facilitate the project actions, to raise awareness about concrete conservation issues between land owners, land users, state authorities and municipalities and also for propagation of realized project actions. Due to the localization of the project in the highly populated capital city, workshops together with other dissemination actions were essential for good communication of the project and smooth realization of the project actions.

Overview of the realized workshops

N.	Date	Topic	Targeted stakeholders	Place	Participants
1.	15.2.2012	Methodological workshop focused on elaboration of management plans (A1)	SNC SR, BROZ, DAPHNE	Dunajská Streda – SNC SR	23
2.	5.12.2012	Workshop focused on rangers activity in frame of the project (C7)	SNC SR, BROZ, DAPHNE, UK	Bratislava	14
3.	30.1.2013	Workshop focused on identification of valuable trees and invasive species (C1)	UK, BROZ, SNC SR	UK Bratislava	8
4.	25.9.2014	Methodical workshop on topic of river restorations (C5)	BROZ, representatives from the Ministry of Environment, municipalities, SNC SR, UK	Bratislava	32
5.	25.9.2014	Methodical workshop on topic of grazing in protected areas (C4)	BROZ, representatives from the Ministry of Environment, municipalities, foresters, SNC SR	Bratislava	32
6.	18.4.2016	Workshop – restoration of traditional grazing in protected areas (C.4)	BROZ, Secondary school Ivanka pri Dunaji	Bratislava	13
7.	29.4.2016	Workshop – restoration of traditional grazing in protected areas (C.4)	BROZ, Secondary school Ivanka pri Dunaji	Secondary school Ivanka pri Dunaji	53
8	20.5.2016	World fish migration day – workshop – restoration of Danube sidearms	Public, students experts, media etc.	Bratislava	100
9	28.1.2017	Workshop – nature restoration and protection measures in SKUEV Dunajské luhy	NGOs, public, SNC SR	Gabčíkovo, Dunajské luhy	33

10	17.5.2017	Workshop - 25 years of LIFE projects	NGOs, public, experts, media, state organisation, representatives of municipalities	Bratislava, Vodárenské múzeum	106
11	5.10.2017	Workshop – restoration of Danube sidearms	Public, students, experts	Bratislava, VÚVH	21

The first two-day study visit was focused on topic – grazing in protected areas and was realized on 19th - 20th September 2013 at different localities in Austria, where we visited several types of habitats and had discussions with local people and farmers, which have experiences with grazing in protected areas for years.

The second 2-day study visit was realized on 12th and 13th June 2014 in Austria (Nature reserve March-Auen and National park Donau-Auen) with 36 participants (representatives from the Ministry of Environment, municipalities, foresters, project associated beneficiary from the State Nature Conservancy) on topics of forest management in protected areas. We saw many examples, how to treat invasive species or plant native trees in areas after hybrid poplars clear-cuts.

On 13th – 14th October 2016 the third planned two-day excursion was organized in project site SKUEV Dunajské luhy. Project objectives and achieved results were presented and discussed to representatives of nature protection authorities, foresters, land owners, representatives of SNC SR and project partners (together 31 participants). Three main activities were presented: C.5 – wetland restoration, C.4 – restoration of non-forest areas by grazing and C.1 – restoration of forest habitats. Undertaken measures on leased (B.1) sites were demonstrated in fields. The records from the study visits can be seen in Annex 92 and 97.



Fig.D2_1: Workshop 25.9.2014 - grazing



Fig.D2_2: Workshop 25.9.2014 – river restorations



Fig.D2_3: Workshop 20.5.2016



Fig.D2_4: Two-day study visits in Austria – grazing management



Fig.D2_5: Two-day study visits in Austria – forest management

Action D.3 Environmental awareness raising and improvement of interpretation value of NATURA 2000 sites

Responsible beneficiary: DAPHNE

Deliverables of the action:

- 98. D.3_Panel which informing about the history and current conservation of Devínske sidearm_IR_Annex12_D3
- 99. D.3_Invitation - activities for public_PR1_Annex13_D3
- 100. D.3_Infopanel from SKUEV Devinska Kobyla and Devin, outdoor educational elements, maps with location of educational elements and information panels at project site Devínska Kobyla, previews of 7 information panels in project site Devínska Kobyla_PR2_Annex 12_D3
- 101. D.3_Photo documentation of installed elements, panels, boards_PR3_Annex 8_D3
- 102. D.3_Map of localisation of information panels and boards located in SKUEV Devínska Kobyla_PR3_Annex 9_D3
- 103. D.3_Map of Devinska Kobyla_PR4_Annex 8_D3
- 104. D.3_Table of installed infopanel_FR_
- 105. D.3_Installed infopanel_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

36 large and 20 small information panels
 set of interactive educational elements in project sites
 map (attractions and educational pathway) – 5 000 pcs., (4 000 pcs. in Slovak language, 500 pcs. in German and 500 pcs. in English language).

Achieved results:

37 large and 20 small information panels installed
 7 outdoor interactive educational elements installed
 Map – attraction and educational pathway in Devínska Kobyla printed and disseminated- 5 000 pcs., (4 000 pcs. in Slovak language, 500 pcs. in German and 500 pcs. in English language)

Problems and their solutions:

No problems influencing realisation of this action occurred.

Implementation of the action:

The installation of the educational elements and panels in all project were discussed with all of the relevant stakeholders before its installation. The proper educational elements inform the wider public about the uniqueness of the chosen project locality in an interactive way.

Daphne has installed an interpretative trail of 7 outdoor educational elements in August 2014. The elements, namely a butterfly, an insect hotel, an oil beetle, a sheep, a lamb, a goat and a special paleo-sandpit, were installed along the already existing tourist path and educational trail. Thanks to this a small area for education and relaxation at the Devínska Kobyla site has been enlarged. The elements were constructed mainly from natural materials, such as wood and stone (Annex 100,101).

The Maps of attractions (in SK, GE, EN) have been distributed among public and local schools and have become one of the favorite materials during excursions organized by Daphne or municipality Devínska Nová Ves at the Devínska Kobyla (Annex 103).

Tab D3_1.: Overview of printed and disseminated materials within Action D3

D3	Product title in project (ENG)	Product name (SK)	Pcs plan	Pcs real
1.	Map of Devínska Kobyla (attractions and educational pathway) - Slovak language	Lákadlá Devínskej Kobyly	4000	3000
2.	Map of Devínska Kobyla (attractions and educational pathway) - German language	Lockungen von Devínska Kobyla	500	1000
3.	Map of Devínska Kobyla (attractions and educational pathway) - English language	Attractions of Devínska Kobyla	500	1000

37 large information panels and 20 small information panels were installed. The panels were installed in 6 selected project sites, or their close area: SKUEV Devínska Kobyla, Bratislavské luhy, Devínske jazero, Vydrlica, Biskupické luhy, Hrušov, HUFH Szigetköz. Some of the panels are interactive, featuring a bigger wooden circular guide, whilst provide information about habitats of Community interest supported by the scheme and photos and some focus on comprehensive information about particular project sites. The comprehensive list of installed infopanel, year of installation, topic and localization as well as the appearance of the infopanel can be seen in Annex 104 and 105.

We would like to kindly ask for reconsideration of eligibility of costs related to additional information panel in SKUEV Devínska Kobyla. Based on request from local people and the municipality of Devínska Nová Ves, within the cooperation of Daphne, SNC SR, Volkswagen Slovakia and in the frame of the LIFE project, new information panel was installed at SKUEV Devínska Kobyla. The main topic of the panel is the traditional life of Slavic people in the area. The Natura 2000 objectives are promoted in the text via the traditional way of management, which protected the biodiversity richness of the site for long years and now needs to be reintroduced in order to maintain the unique nature value of the area. Natura 2000 network is explicitly mentioned in the text and logos of LIFE and Natura 2000 are also included in lower right corner of the panel. This information panel is promoted as a symbol of good cooperation among the LIFE programme of EK, the State Nature Conservancy, local municipality, Daphne and the private company VW Slovakia. The costs included in the LIFE project are related to travel and work time of Daphne expert in the phase of designing of the information panel, in order to provide proper information on Natura 2000 network in the text on the panel.



Fig.D3_1: Map – attraction and educational pathway in Devínska Kobyla

Fig.D3_2: Educational element - oil beetle



Fig.D3_3: Educational element - paleo-sandpit

Fig.D3_4: Educational element - goat



Fig.D3_5: Infopanel were intensively used for propagation of the project action and NATURA2000

Action D.4 Publishing of information, educational and promotional materials

Responsible beneficiary: BROZ

Deliverables of the action:

- 106. D.4_The draft layout of a small information leaflet_IR_Annex13_D4
- 107. D.4_Project promotional materials_PR1_Annex14_D4
- 108. D.4_Project calendar 2014, project stickers and brochure about Szigetköz in electronic printed version_PR2_Annex 13_D4
- 109. D.4_Project T-shirt_MTR_Annex 6_D4
- 110. D.4_Project calendar for the year 2015_MTR_Annex 7_D4
- 111. D.4_Project textile bags_MTR_Annex 8_D4
- 112. D.4_Brochure about project site Szigetköz_MTR_Annex 9_D4
- 113. D.4_Calendar 2016_Annex 10_D4
- 114. D.4_Project magnets_PR4_Annex 9_D4_1
- 115. D.4_Project brochures_PR4_Annex 10_D4_2
- 116. D.4_Project calendar 2017_PR4_Annex 11_D4_3
- 117. D.4_Brochure for stakeholders_FR
- 88. D.4_Layman's report_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

brochures - 2 450 copies
leaflets - 4 900 copies
layman's report - 700 copies
stickers - 10 500 copies
calendars – 1 750 copies
textile bags – 700 pieces
T-shirts – 1 400 pieces
magnets – 350 pieces
brochure for stakeholders – 350 pieces
brochure about Szigetköz – 2 100 pieces

Achieved results:

brochures – 4 050 copies
leaflets – 9 200 copies
layman's report – 2 500 copies
stickers – 15 440 copies
calendars – 1 750 copies
textile bags – 700 pieces
T-shirts – 1 400 pieces
magnets – 1 060 pieces
brochure for stakeholders – 2 100 pieces
brochure about Szigetköz – 2 100 pieces

Problems and their solution:

Due to the enormous interest about the project and multiple excited presentation actions (D.9, D.10) the number of copies of almost all promotional material increased.

Implementation of the action:

At the first phase of the project the project information leaflet in Slovak, English, German and Hungarian language was printed. The leaflet provides brief information about the project, project partners, objectives of the project and also info about NAUTRA 2000 and LIFE programme. Leaflet was very useful for meeting with various stakeholders in the preparatory phase of the project. Project calendar was annually produced and distributed to various stakeholders and public. Topic of the calendars was the beauty of the nature in project sites and also the activities realized in the project.

Project magnets, stickers, T-shirts and textile bags were produced and distributed in various project actions (D.2, D.9, D.10).

Project partner Pisztráng Kör produced a project brochure about project site Szigetköz in Hungary, containing information about the protected area, maps and information about fauna and flora of the project site.

Project brochure was produced based on satellite maps of the most important project sites in Bratislava and surrounding. The publication presents a very useful guide through the project sites and provides information about project activities and outputs, information about the borders of protected areas and restrictions which have to be respected by the visitors.

Brochure for stakeholders and Layman's report was produced and distributed in the last project period, so that all project activities and outputs could be covered and a comprehensive publication could be produced.

In the table below (Tab. D.4_1) is a complex summary of the produced materials, number, year of production, languages and dissemination.

Tab. D.4_1: Promotional materials

Promotional materials	Pcs. plan	Produced	year	Reprint	year	Total	Languages	Dissemination (pcs.)
project brochure	2 450	1000	2015	3 050	2017	4 050	SK/GER/ENG/HU	3 800
project leaflet	4 900	4 900	2012	4 300	2016	9 200	SK/GER/ENG/HU	9 000
Layman's report	700	2 500	2018			2 500	SK/GER/ENG/HU	2 400
Stickers	10 500	15 440	2013			15 440	SK/ENG	14 000
Calendars	1 750	1 750	2013 - 2017			1 750	SK/ENG	1750
Textile bags	700	400	2015	300	2017	700	SK	700
T-shirts	1 400	605	2015	795	2017	1 400	SK/ENG	1400
Magnets	350	1060	2017			1 060	SK/ENG	1000
Brochure for stakeholders	350	2 100	2018			2 100	SK/ENG/HU	2000
Brochure about Szigetköz	2 100	2 100	2015			2 100	HU/ENG/SK	2100

Mostly all copies of the promotional materials were distributed during the project period. Only small amount were kept for the after-life activities of the project.

The project brochures, leaflets and Layman's report were designed and disseminated to all relevant stakeholders groups for the project: professional public, members of relevant institutions (state and private), representatives of municipalities, nature conservation institutions, other NGOs, land owners, land users (farmers, foresters, hunters, anglers), tourists, local inhabitants, students and general public. The dissemination was connected mainly with realization of the D.2, D.5, D.9, D.10 and E.5.

Project calendars and brochure for stakeholders were designed and disseminated mostly for concrete stakeholders group: members of relevant state institutions, representatives of municipalities, land owners and land users. The dissemination was realized personally by the members of the project team mostly in frame of the D.2 and D.10 actions.

Project stickers, textile bags, T-shirts and magnets were focused mostly on younger generations, in particular students, visitors, local inhabitants and were distributed also to other organizations working in the field of environmental education. The dissemination was connected mainly with the project actions D.5 and D.9.

Brochure about Szigetköz was focused for visitors of the project site Szigetköz, mainly schools, local inhabitants, individual and organized tourist groups. The dissemination was connected mainly with the project actions D.6 and D.9.

All publications are containing the information about NATURA2000 network and references to the LIFE programme.



Fig.D4_1: Examples of printed materials

Action D.5 Elaboration and implementation of complex educational programmes on the NATURA 2000 in the region for schools

Responsible beneficiary: DAPHNE

Deliverables of the action:

118. D.5_Proposal of manuals for schools and a list of schools_PR1_Annex15_D5

119. D.5_Teacher's toolkits for primary school teachers, along with student worksheets focused on NATURA 2000, teacher's toolkits for high school teachers, along with student worksheets focused on NATURA 2000, articles about Natura 2000 sites called „Planétka NATURA“ published in children's magazine Slniečko_PR2_Annex 14_D5

120. D.5_List of schools where the educational programmes were taught_PR3_Annex 11_D5

121. D.5_Offers and descriptions_PR3_Annex 12_D5

122. D.5_Toolkits for teachers_PR3_Annex 13_D5

123. D.5_Identification circles_PR3_Annex 14_D5

124. D.5_Picture concentration game_PR3_Annex 15_D5

125. D.5_Leaflets about Natura 2000 sites_PR3_Annex 16_D5

126. D.5_Description of programme for secondary schools_PR4_Annex 12_D5_1

127. D.5_Toolkits for schools_PR4_Annex 13_D5_2

128. D.5_Painted cloth – antlion costume_PR4_Annex 14_D5_3

129. D.5_Painted cloth – Devínska Kobyla_PR4_Annex 15_D5_4

130. D.5_Picture book_PR4_Annex 16_D5_5

131. D.5_Identification cards_PR4_Annex 17_D5_6

132. D.5_Leaflets_PR4_Annex 18_D5_7

133. D.5_Picture concentration game_PR4_Annex 19_D5_8

134. D.5_CD for high schools_PR4_Annex 20_D5_9

135. D.5_Picture concentration game – reprinted version_FR

136. D.5_Worksheets for primary and secondary schools - 3 types_FR

137. D.5_Dobble games – 6 types (only graphics, without print)_FR

138. D.5_Educational tools_FR

139. D.5_Environmental education activities proposed for a new school curriculum including list of schools and number of pupils involved in testing of activities_FR

140. D.5_Painted cloth 4 and 5: Four seasons in Natura 2000 sites, River arm and re-attached painted cloth 1: Morava river/wetland_FR
141. D.5_ Exhibition “Biodiversity and water” in Banská Bystrica_attendance list_FR
142. D.5_ Exhibition “Biodiversity and water” in Banská Bystrica_FR photos and poster_FR
143. D.5_Description of programme for primary schools_FR
144. D.5_Education at schools_Summary table of schools_FR
145. D.5_Seminars for teachers_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

- four educational programs provided in 40 lessons
- promotional materials for schools – 1500 pcs.
- picture books – 5 000 pcs.
- painted educational cloths – 5 pcs.
- toolkit 1 for teachers – 600 pcs.
- toolkit 2 for teachers – 600 pcs.
- CD for high schools – 1 800 pcs.,
- identification circles 360 x 5 – 1 800 pcs.
- leaflets (about SCIs) – 5 x 500 pcs.
- identification cards (about Devínska Kobyla Nature Reserve) – 2 000 pcs.
- worksheets (2 types) for basic schools – 2 x 500 pcs.
- worksheets for high schools – 500 pcs.
- picture concentration game – 1 500 pcs.

Achieved results:

The action objectives are being fulfilled based on steps identified in the project proposal. The outputs summarisation of the printed materials is provided in the table D5_1. Concerning the providing of educational programs together 179 sessions has been taught during the project duration.

Problems and their solution:

Additional seminars for teachers and programmes for schools require purchase of educational tools and elaboration of new worksheets, therefore additional equipment for environmental education is being purchased.

Implementation of the action:

Educational programmes: Four types of environmental education programmes were developed for kindergartens, primary schools, secondary and high schools, providing information about NATURA 2000 in the Bratislava region, focusing on targeted NATURA 2000 habitats and species and on nature conservation (Annex 121,126,143). The programmes interpret five SCIs that represent various landscape types in the region: SKEUV Bratislavské luhy, Šúr, Devínska Kobyla, Devínske jazero and Vydrica. Programmes include interactive teaching methods and tools to introduce different topics of nature conservation, functions of ecosystems and NATURA 2000 species. The educational programmes for schools are implemented on regular bases. These programmes were provided free of charge during the LIFE project implementation. In last project period, after PR4 was submitted, next 81 educational programmes were taught at kindergartens, primary and secondary schools, with the total number of pupils 1477. Thanks to creative **educational tools** obtained within the project, the programmes became unique in their interactivity including many interesting examples of natural materials (Annex 138). Thanks to the project, 5451 children had the opportunity to get a close insight into Natura 2000 sites and had opportunity for hands-on activities for conservation of Natura 2000 species and habitats (Annex 144).



Fig.D5_1: Educational tools – costumes for children and activity leader.

Support for teachers: New activities and worksheets have been developed in order to incorporate Natura 2000 information into regular science curriculum at primary schools in Slovakia (Annex 139). Worksheets and proposed activities were tested at 14 primary schools around Slovakia, involving 949 pupils from January 2017 to March 2018, with the main focus on Bratislava region. Activities and worksheets were adjusted to the requirements from teachers. Teachers from whole Slovakia have been trained and consulted to include project outputs into teaching of biology or geography in interactive and experiential way.

Toolkits for teachers: Two toolkits for primary and secondary schools have been printed in September 2017. Toolkits are distributed mainly to teachers and public in Bratislava region, but, based on demand; we distribute them also to other parts of Slovakia. Many topics included in the toolkits are relevant for Natura 2000 sites also in other regions of Slovakia.

Dobble game – dobble game was proposed as additional activity for teaching about Natura 2000 species. 6 types of dobble games were produced (electronic versions), themes: fish, trees, amphibians and reptiles, meadows, forest, water. They have been provided to teachers (Annex 137).



Fig.D5_2: Dobble games – 6 types for teaching about Natura 2000 species

Painted educational cloths support the educational process during the programmes in kindergartens and schools. All five educational cloths were finished and are used at educational programmes in schools and NATURA 2000 sites. Each painted educational cloth is hand-made original and therefore only pictures are attached to the report (Annex 140).



Fig.D5_3: Painted cloths – Four seasons in Natura 2000 sites and River arm.

Identification circles: Five types of identification circles were printed and four types were reprinted in January 2018. Almost all have been distributed before the project end. There was the second round of printing of identification circle of water invertebrates and of trees, as these publications had been already disseminated and there was a huge demand for more copies among teachers and public.

The **picture concentration game** was all disseminated till summer 2017 and due to interest from public, it was re-printed in 2018. Re-printed version was adjusted by graphic designer to fit the ideal format for printing company (Annex 135).

Picture book was printed based on project plan and is being disseminated. At present, the picture book became the most favourite project publication for kindergartens (Annex 130).

Leaflets about five Natura 2000 sites were printed and were disseminated among the main stakeholders, visitors of project localities and public (Annex 125,132).

Educational **CD for high schools** has been produced and is being disseminated (Annex 134).

Identification cards of plants at SKUEV Devínska Kobyla were printed and were distributed mainly to visitors of the valuable grasslands of Devínska Kobyla (Annex 131).

Training events for teachers: This action was previously planned in action D.9, but due to close relation to other sub-action in this action it was partly reported in action D.5. Namely 8 events for teachers were organised before the end of 2016 and reported under D9 and other 11 events for teachers were organised after January 2017 and reported under D5. Total 19 events for teachers were organized (Annex 145). The feedback on seminars/events was positive and the teachers as well as the Methodological-pedagogical centre ask for continuation. Daphne continued in teacher trainings in order to ensure broad use of project materials. In last project period, after PR4 was submitted, Daphne organised 2 seminars for teachers and distributed project publications and promoted project results on other 6 events for teachers.

“Biodiversity and water” Exhibition in Banská Bystrica

The exhibition “Biodiversity and water” about Natura 2000 water related species and habitats and their conservation, presented in Bratislava in May 2017 was exhibited in The Central Slovakian Museum in Banská Bystrica from 1.3.2018 till 29.3.2018. The exhibition was visited by 828 visitors, including 43 school groups (Annex 141,142).

Tab. D5_1: Overview of printed and distributed materials within Action

	Product title in project (ENG)	Product name (SK)	Pcs plan	Pcs real	Re-print	Dissemination (pcs)	Finalized in reporting period
D5							
1.	4 educational programs provided in 40 lessons	Vzdelávacie programy	4 programs	4 programs	-	NA	PR3, PR4, FR
2.	Promotional materials for schools	Ponuky pre školy	1500	500	-	500	PR3
3.	Picture books	Omaľovanka	5000	5000	-	4300	PR4
4.	Painted educational cloths	Maľované plátna	5	5	-	NA	v PR 4
5.	Toolkit 1 for teachers	Príručka pre ZŠ a SŠ - textová	600	1000	-	870	PR4
6.	Toolkit 2 for teachers	Príručka pre ZŠ - obrázková	600	2000	-	1800	PR4
7.	CD for high schools	CD pre stredné školy	1800	3500	-	3120	PR4
8.	Identification circles	Identifikačné/určovacie kruhy					PR3
		Dreviny 1	500	500	1500	1845	PR3
		Dreviny 2	500	500	1500	1730	PR3
		Dreviny 3	500	500	1500	1780	PR3
		Bezstavovce a stavovce Devínskej Kobyly	500	500	-	450	PR3
		Vodné bezstavovce Vydrice, Obojživelníky	500	2x500	1500	2300	PR3
9.	Leaflets (about SCIs)	Letáky o územiach Natura 2000					PR4
		SKUEV Devínska Kobyla	500	3000	-	2825	PR4
		SKUEV Vydrice	500	3000	-	2930	PR4
		SKUEV Šúr	500	500	-	445	PR4
		SKUEV Devínske jazero	500	500	-	410	PR4
		SKUEV Bratislavské luhy	500	500	-	470	PR4
10.	Identification cards (about Devínska Kobyla Nature Reserve)	Leporelo - rastliny Devínskej Kobyly	2000	2000	-	1730	PR4
11.	Worksheets (2 types) for basic schools	Pracovné listy pre ZŠ	2x500	1000	-	760	FR
12.	Worksheets for high schools	Pracovné listy pre SŠ	500	500	-	430	FR
13.	Picture concentration game	Pexeso Natura 2000	1500	1500	1000	2330	PR4
14.	Posters for exhibition (A0 format)		0	6	-	NA	FR

Action D.6 Installation of wildlife watching hides

Responsible beneficiary: Pisztráng Kör

Deliverables of the action:

146. D.6_Photo documentation of watching hides_PR2_Annex15_D6

Comparison with planned outputs / expected results and time schedule:

Expected results:

Observation hides for wildlife observation installed and used by visitors in Slovakia (1) and Hungary (2).

Achieved results:

7 watching facilities were installed/constructed:

Watching hide in project site SKUEV Hrušov (SNC SR)

Watching hide on a tree (Pisztráng Kör)

Hide built directly on side arm (Pisztráng Kör)

Hide buried in the ground (Pisztráng Kör)

Two hides on the sidearm bank (Pisztráng Kör)

Solar boat (Pisztráng Kör)

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

After precise preparatory work and field survey, we decided to build smaller but more sophisticated hides with wide range of observing opportunities and which can provide unique views of the nature of Danube floodplains.

Thank to this approach more hides were built on more localities. This kind of “innovative” versions of watching hides are: watching hide on a tree using it as its supporting construction, hide built directly on side arm of river enabling to observe or make photos of underwater life, another one is buried in the ground for more natural conditions and less disturbance of surrounding nature for visitors of this protected area or photographers. Two hides are situated on the banks of sidearms providing an opportunity to observe birds and other species.

Another watching facility is a solar boat. The visitors have the opportunity to admire the nature from the small boat which is able to pass also small sidearms and hardly accessible places. Furthermore the boat is driven by solar power what ensure a very silent movement.

These watching hides are appreciated by wildlife photographers, visitors but also offer unique observation during excursions for public and schools in this area.

One watching hide was realized by SNC SR in Slovakia on project site SKUEV Hrušov. The location provides a great opportunity for observation of variety of bird species, but also bats, beavers and other inhabitants of water and wetland habitats. The site is one of the most important wintering places for water birds in Central Europe. On the water, there are plenty of islets, reed vegetation, bank stands of willows and shoals with deposited wood. These sites provide a place for nesting, resting and wintering for a number of water bird species.



Fig.D6_1: Watching facilities in Szigetkoz: hide directly on the sidearm, underwater hide, hide near sidearm



Fig:D6_2: Watching facilities in Szigetkoz: hide near sidearm, hide on a tree



Fig.D6_3: Watching facilities in Szigetkoz - buried in the ground



D6_4: Watching hide in SKUEV Hrušov

Action D.7 Promotional and educational films

Responsible beneficiary: BROZ

Deliverables of the action:

147. D.7_Documentary film and trailer of the education film_PR3_Annex 17_D7

148. D.7_Educational film_PR4_Annex 21_D7_1

149. D.7_Short documentary films_PR4_Annex 22_D7_2

150. D.7_Short documentary film_FR

151. D.7_DVD_educational film_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

The 30 minutes educational film about NATURA 2000 will be presented at 1 TV channel, will be introduced at several exhibitions, on the project website and in other important institutions and museums in different countries.

The documentary film about the project (15-30 minutes long) - published in a form of partial outputs during the project implementation on different social networks, project website and promoted during different events to public.

Achieved results:

Educational film "Bratislava – city in the middle of nature" – 52.min, presented at Slovak national TV, introduced on film festivals and events, produced and distributed on DVD – 3 000 pcs (Annex 151).

Documentary film: short documentary shots produced and published on internet, one professional document about restoration of Karloveske rameno sidearm produced.

Problems and their solution:

The cooperation with Slovak national TV was doubtless an important benefit for the project film propagation and contributes to extend the film to 52 minutes, however the presentation of the film on internet (youtube, facebook, webpage) was according the agreement possible only after premiere of the film on 1st September 2018 in Slovak national TV. Projection of the film on events and distribution of DVD's was not limited.

Implementation of the action:

The education film – "Bratislava – city in the middle of nature", was finalized in November 2016. The film provides a very professional presentation of NATURA 2000 sites in Bratislava region, highlights the need of protection of valuable species and habitats and presents the most important project restoration actions. The film was produced by a professional documentarist Branislav Molnár. After negotiations, Slovak National television (RTVS) decided to cooperate by the production of the film. Thanks to professional inputs of most important Slovak TV the document duration was prolonged to 52 minutes (instead of planed 30 minutes). Part of the cooperation was also the broadcasting of the document in Slovak National Television. The premiere of the film on TV was on 1st September 2018, at prime time 8:00 PM.

Before the broadcasting in the Slovak National Television, the film was already presented on famous film festivals and events. At film festival "Hory a mesto" (Mountains and the city) the film was awarded as the best film produced in countries of the Visegrad Group (V4 countries). Short trailer to the award is presented under this link (the trailer was not produced by the project):

<https://www.youtube.com/watch?v=W4feB-RFYtU>

Tab. D.7_1: Projection of the education film

Date	Event	Turnout (viewer)	Link
23.3.2017	Festival Hory a mesto 2017	230	http://www.horyamesto.sk/fileadmin/templates/images/hory_a_mesto_2017/dokumenty/H

			ory a mesto 2017 programova skladacka.pdf
26.3.2017	Festival Hory a mesto 2017	230	http://www.horyamesto.sk/fileadmin/templates/images/hory_a_mesto_2017/dokumenty/Hory_a_mesto_2017_programova_skladacka.pdf
17.5.2017	Anniversary – 25 years of LIFE, 20 years of BROZ	80	http://stary.broz.sk/oslava-k-20-vyrociu-vzniku-broz
25.5.2017	Ekotopfilm festival, Bratislava, Hotel Tatra	100	http://www.ekotopfilm.sk/bratislava
12.6.2018	Projection for stakeholders in BROZ office	40	
1.9.2018	Slovak national television - RTVS	54 000	
	Webpage of the project		https://broz.sk/dnes-budu-o-2005-vysielatna-2-bratislava-mesto-uprostred-prirody/
	YouTube		https://www.youtube.com/watch?v=p-9JMv5wEIM&t=506s
	Facebook		https://www.facebook.com/broz.ba/photos/a.307375065447/10155397961560448/?type=3&theater

The DVD of the film “Bratislava – city in the middle of nature” was produced in Slovak, English, German and Hungarian language. The DVD was produced in 3 000 pcs in October 2017.

Tab. D.7_2: Dissemination of the DVD:

Dissemination of the DVD “Bratislava – city in the middle of nature”	
Subject/event	Pcs.
Produced DVD	3000
Individual people by meeting, events, excursions etc.	661
Delivered to PP SNC SR	400
Delivered to the PP DAPHNE	200
Delivered to the PP UK	250

Delivered to the PP NPDA	250
Delivered to the PP PK	300
Delivered to the MoE	50
World Fish Migration Day - event on 20/4/2018	100
Slovak national television - RTVS	100
Film festival "Hory a Mesto"	50
Film festival "Ekotopfilm"	50
NGO Saola - environmental education	25
primary school - Košická, Bratislava	10
primary school - Sibírska, Bratislava	10
primary school - Cirkevná ZŠ Narnia	10
Tourist information centre in Devínska Nová Ves, Bratislava	40
Bratislava waterworks company	10
Municipality Devínska Nová Ves	10
Municipality Devín	10
Municipality city Svätý Jur	5
Representatives of the project INTERREG 3E-Morava Nature	15
Slovak academy of science	50
Delivered to most important TV in Slovakia	120
Slovak environment agency	100
Total	2826



Fig.D7_1: DVD of the film “Bratislava – city in the middle of nature”

Purchased project equipment (camera) was permanently used for recording of project activities like grazing in protected areas, planting of native trees and water habitats restoration. Short documentary shots were produced and distributed through webpage, events, youtube and social networks (Annex 147, 149, 150). In frame of documentary videos of project activities, we produced also one professional film in cooperation with enthusiast Branislav Hronec, professional cameraman. The documentary film is covering the restoration of the most known sidearm in Bratislava – Karloveské rameno. The document provides attractive view on various aspects of the restoration.

Tab. D.7_3: Documentary films produced

Topic	Length (min)	Link
Long document about restoration of Karloveske rameno sidearm	31:37	https://www.youtube.com/watch?v=6e2aUT39vYc
Short document about restoration of Devínske rameno sidearm	3:21	https://www.youtube.com/watch?v=oUzn9o_XZTw
Short document about grazing	3:06	https://www.youtube.com/watch?v=EFZ30oInNgE
Short document about planting of native trees	3:35	https://www.youtube.com/watch?v=S32vkoP6qlU
Short document about grazing in SKUEV Šúr	0:40	https://broz.sk/sunday-slowfood-v-npr-sur/
Short document about grazing in SKUEV Šúr	1:29	https://broz.sk/od-piatku-opat-obnova-biodiverzity-v-npr-sur/

Tab. D.7_4: Projection of the documentary film about Restoration of Karloveské sidearm

Date	Event	Turnout (viewer)	Link
21.7.2017	Danube Day - Bratislava	80	https://ki dstownm.citylife .sk/ina- akcia/den-dunaja
20.4.2018	World fish migration day – water research institute Bratislava	100	

The short documentary film about grazing in SKUEV Šúr was immediately edited, with clear reference to LIFE programme and the project. (<https://broz.sk/sunday-slowfood-v-npr-sur/>)

Action D.8 Education, training and exchange of know-how aimed at nature and visitors management

Responsible beneficiary: NPDA

Deliverables of the action:

152. D.8_Photo documentation, attendance record_PR2_Annex 16_D8

153. D.8_Attendance records since Progress report n.2_MTR_Annex 10_D8

Comparison with planned outputs / expected results and time schedule:

Expected results:

One 3-day study trip including education, training and exchange of know-how aimed at nature and visitor management organized in Austria, Hungary and Slovakia (one day in each country) for approximately 40 people from beneficiary institutions together.

Achieved results:

3 study trips organized in Austria, Hungary and Slovakia with total attendance of 29 participants.

Problems and their solution:

No problems influencing realisation of this action occurred.

Implementation of the action:

The main focus of this action was to train project team personnel and project partners on nature and visitors management and share the first hand experiences in ecotourism offered by experienced tourist guides.

On 18th September 2013 first part of 3-day training study visit for project personnel in Austria was realized and on 23th and 24th October 2014 its second part in Hungary and Slovakia.

The various ways how to promote important project sites for public were showed by project associated beneficiary NPDA – during first part of study visit in Austria on boat excursion, the interactive indoor exhibition were presented for participants – project partners from Daphne, NPDA and SNC SR. During second part on 23th October 2014 in Hungary we visited newly built watching hides in Szigetkoz area and in Slovakia we have presented to participants mainly the way how we promote the implementation of project activities (C.4 and C.5) to public and schools during excursions directly in the field on 24th October 2014.

Gathered experiences and know-how, mainly from the higher developed tourist management in Austria, were implemented in the various follow up realization of action outputs (C.7, D.5, D.6).



Fig. D8_1: 3-day training study visit in Austria, Hungary and Slovakia

Action D.9 Presentation for students, teachers and public, guided walks and excursions in SK-HU-AT trilateral cross-border area

Responsible beneficiary: BROZ

Deliverables of the action:

- 154. D.9.Excursions for public_attendance lists_IR_Annex14_D9
- 155. D.9_Attendance lists_PR1_Annex16_D9
- 156. D.9_Attendance records, photo documentation from excursions and presentations_PR2_Annex 17_D9
- 157. D.9_Summarization and attendance records since Progress report n.2_MTR_Annex 11_D9
- 158. D.9_Attendance records_PR3_Annex 18_D9
- 159. D.9_Attendance records_PR4_Annex 23_D9
- 160. D.9_Attendance records_FR
- 161. D.9_Final table of D.9 outputs_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

10 presentations for students (together 200 people expected),

20 guided excursions for students (together 200 people expected),
5 presentations for the public (together 100 people expected)
7 guided excursions for the public (together 50 people expected),
10 boat trips,
15 excursions for teachers,
trainings of 5 guides,
15 excursions for public during Earth Day events

Achieved results:

14 presentations for students with 362 participants,
33 guided excursions for students for with 758 participants,
46 presentations for the public with 1 323 participants
54 guided excursions for the public with 1 002 participants,
15 boat trips with 347 participants
8 excursions for teachers – total 19 events (11x D.9 and 8x D.5)
trainings of 12 guides,
11 excursions for public during Earth Day events with 163 participants

Problems and their solution:

Due to the high interest in the project actions the final outputs of this action were more times exceeded. This caused increase of personal cost on position awareness manager. However this change was very desirable and contributed to intensive presentation of the project itself as well as the LIFE programme and NATURA2000 network.

Implementation of the action:

Due to the localization and character of the project actions, the project itself attracted enormous attention. Various interest groups, schools, organizations and individuals contacted us during the whole project implementation with the interest of gaining more information about the project actions. The planned project outputs were highly exceeded during the project realization.

Several events for schools and general public were organized by BROZ and Daphne. During each such event we presented project itself, its objectives, actions and LIFE+ programme. Each event was recorded with an attendance record, short minutes and photographs. These events helped the smoother implementation of the project actions and to better understanding of the realized measures. Promotional materials like leaflets, brochures, DVD, stickers etc. (outputs of D.4, D.5, D.7) were highly appreciated during the presentation and excursions.

The project actions, information about the project sites and importance of NATURA2000 Network, were presented personally to 3 955 participants!

The activity excursions for teachers was in the project foreseen in this action, but due to the fact that it was fully in charge of DAPHNE and was closely related to the implementation of complex educational programmes, it was partly reported in action D.5. Namely 8 events for teachers were organised before the end of 2016 and reported under D9 and other 11 events for teachers were organised after January 2017 and reported under D5. Total 19 events for teachers were organized (Annex 145). Total 6 events for training of 12 guides were organized. Comprehensive summarization of the outputs can be seen in Annex 161.



Fig.D9_1: Presentation of the project

Action D.10 Promotion of project on conferences and in media

Responsible beneficiary: BROZ

Deliverables of the action:

- 162. D.10_Conferences_IR_Annex15_D10
- 163. D.10_Promotion of project on conferences and in media_PR1_Annex17_D10
- 164. D.10_Photo documentation and records of project media outputs_PR2_Annex 18_D10
- 165. D.10_Table of media outputs since Progress report n.2_MTR_Annex 12_D10
- 166. D.10_Media outputs_PR3_Annex 19_D10
- 167. D.10_Media outputs_PR4_Annex 24_D10
- 168. D.10_Media outputs_FR
- 169. D.10_Final table of media outputs_FR

Comparison with planned outputs / expected results and time schedule:

Expected results:

Project presented on at least 5 conferences,
 4 press conferences organized,
 6 press releases distributed,
 35 articles covering the project published,
 10 radio interviews broadcasted,
 5 TV shots broadcasted.

Achieved results:

project presented on 9 conferences,
 6 press conferences organized,
 16 press releases distributed,
 171 articles covering the project published,
 11 radio interviews broadcasted,
 42 TV shots broadcasted.

Problems and their solution:

Similar to D.9 action.

Implementation of the action:

All goals in action D.10 exceeded the previous plan many times. Due to the specific region of implementation – region of the Bratislava capital city, the intensive work with media was essential. Majority of project actions was realized directly in capital city Bratislava or in adjacent areas, which are used for recreation by inhabitants. This presented on one hand a very good challenge to present and promote the project actions and the project itself. On the other hand many efforts were needed to present, communicate and discuss the project actions to prevent the possible misunderstandings by media, public or other stakeholders.

Thanks to this, wide spectrum of stakeholders groups was involved and the project attracted a lot of attention from inhabitants, visitors and various interest groups.

The overall uniqueness of the character of the project and the realized project actions has been highlighted by significant interest from the media, public and authorities, documented by the total number of 246 media outputs!

There were 171 articles published concerning the project within the project duration of which 125 were published online and 46 printed in newspapers and magazines. The articles were aimed to promote project and on-going restoration actions.

Most outstanding actions like restoration of Danube sidearms, restoration of grazing on most valuable protected areas were promoted by press conferences with personal attendance of Minister of Environment of the Slovak Republic, director of the SVP, director general of the BVS, majors of Bratislava city districts and other important stakeholders. These events were organized in cooperation of mostly all project partners. 16 press releases were distributed and 6 press conferences organized.

The project was presented in 42 TV shots and 11 radio interviews. Comprehensive summarization of the outputs can be seen in Annex 169.

The project team had the privilege on 6th September 2016 to present the project results to EC commissioner for the environment, maritime affairs and fisheries Mr. Karmenu Vella. We discussed the project objectives and realized actions and we also visited project sites SKUEV Devínska kobyla and SKUEV Bratislavské luhy, where the results of grazing management and restoration of Danube sidearms were presented.



Fig.D10_1: Presentation of the project to Mr. Karmenu Vella

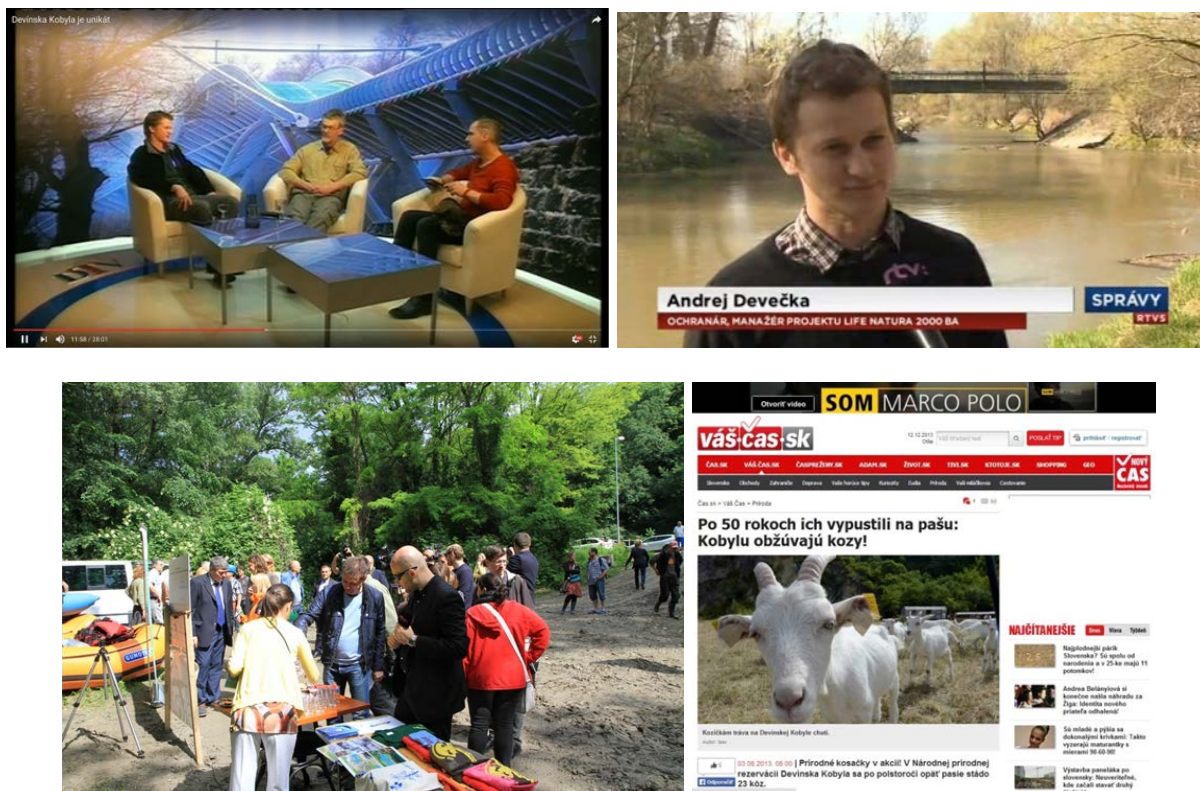


Fig.D10_2: Various presentation of the project in media

5.3 Evaluation of Project Implementation

The project consisted of wide range of different actions, with many project sites and various habitats (water, wetland, forest, grassland, forest steppe, rocky habitats) located in specific region of the capital city Bratislava. During the realization insignificant amendment to the previous project, concerning the project outputs or budgeted, occurred however the overall goals of the project were achieved. Furthermore certain outputs of the project actions exceeded the goals set by the project (B.1, C.1, C.5, D.5, D.6, D.9, D.10).

The applied methodologies can be divided into the following groups:

- methodology for overall project management;

Project partners were experienced organizations, with several successfully realized projects. (incl. LIFE projects). Although each organization was in charge of concrete project actions, many activities met in the same project sites or were mutually connected, what required intensive cooperation of project partners. Regular communications and meetings from the beginning of the project helped to facilitate the project realization.

- methodology for financial management;

BROZ was responsible for the overall financial reporting of the project. Clearly set timetable of financial reporting on partner's level helped the smooth preparation of operative overviews of the actual stage of expenditures. This was essential for the overall cash-flow of the project, preparation of accounts of expenditures and requests for payment.

- methodology for monitoring of project results and elaboration of reports from the monitoring;

Monitoring of the project results occurred in multiple steps:

- project reports for EC ,
- steering committee meetings,
- project report for co-financer MoE,
- annual monitor visits,

- monitoring mission from EC,
- monitoring of vegetation and zoological monitoring
- methodology for implementation of conservation measures

BROZ is nowadays very experienced and professional beneficiary with successful implementation of number of conservation measures and with experiences with communication with the state authorities and various stakeholders. Each conservation measures consisted of following steps:

- preparatory phase: field survey, expert studies
 - communication phase: communication and involvement of stakeholders (experts, landowners, state organizations)
 - administrative phase: gaining of permissions, agreements, construction permits etc.
 - public procurement: contracting of supplier
 - realization phase: control of the realization, documentation of the realization, operative reporting of the results
 - monitoring phase: control of the realized measures
- methodology for organizing of trainings and workshops, PR and media activities.

Partners of the project are experienced organizations with their own PR strategy and methodology. Most significant PR actions of the project were realized in cooperation of mostly all project partners. Project outputs (D.3, D.4, D.5, D.7) were collectively used for promotion of the project in media.

Cost effectivity

During the project implementation, the attention was paid to the cost-efficiency of the project's actions. Public procurement procedures following legal requirements were applied concerning works and services provided by external providers. Especially the so called electronic auctions contributed to significant decrease of the expected prices for construction works and services.

The cost-efficiency of the project's actions was reached also through a systematic approach to the project management, including efficient use of the project staff's work time, equipment and other resources.

Task	Foreseen in the revised proposal	Achieved	Evaluation – description of successes (S) and lessons learned (LL) and problems (P)
A1	four managements plants elaborated and approved	MP elaborated and approved for: SKUEV Horný les SKUEV Devínske jazero SKUEV Devínska Kobyla SKUEV Ostrovné lúčky	LL: -Possibilities of influencing and accelerate of the approval process is very limited. P: -Complications concerning the implementation of the action were caused by changes of the national legislation and very complicated approval procedure.
A2	expert study on restoration and management of forest habitats	Accomplished	S: The study provides a very useful information about the stage of the forest habitats in riparian forests and the appearance of invasive species. LL: -Various methods of elimination of invasive species were tested. Stem injection proofed to be the most efficient method. -Location of the proposed

			measures depends strongly from the follow communication and negotiation with the landowners
A3	expert study on restoration of forest steppe habitats	Accomplished	S: -Comprehensive overview of the forest steppe habitats on project sites. LL: -Not always is it possible to implement the foreseen measures due disagreement of the landowners.
A4	expert study on restoration of grassland habitats	Accomplished	S: - Study has been based on field inventory of grassland habitats, which was endorsed by species composition of mapped polygons. LL: -Similar study need to be supported by sufficient ecological description of crucial parameters, which allow proposing appropriate restoration measures.
A5	expert study on restoration of traditional habitat management by grazing	Accomplished	S: Expert study summarized the best practices experiences of grazing and proposed the technical solution for establishing of grazing. LL: -Many aspects beyond of the scope of the expert study arise by the implementation.
A6	expert study on restoration of water and wetland habitats	5 expert studies elaborated,	S: -Thanks to the cooperation with experts from Water research institute, the expert studies were highly regarded by official authorities. LL: -Proposing of different variants of restoration is advisable, due to the significant differences in the budgets of large scale restorations.
A6	technical documentation on restoration of water and wetland habitats	3 technical documentation	LL: -Cooperation with state water management company by the elaboration of the technical documentation is very effective for the follow up preparatory and administrative phase
A7	expert study on restoration and protection of rocky habitats and caves	Accomplished	S: -Expert study provided information's about the rocky habitats and caves in 3 project sites and proposed protection measures.
B1	long term land lease on 70 ha	The objectives of the action were significantly exceeded.	S: -Long-term land lease of

		<p>Long term lease contracts signed in SKUEV Dunajské luhy:</p> <p>Land association Vojka: 35.0 ha</p> <p>Land association Kyselica: 57.6 ha</p> <p>Land association Dobrohošť: 57.6 ha</p> <p>Land association Rohovce: 3.5 ha</p> <p>Land association Bodíky: 2.45 ha</p> <p>Total: 156.08 ha</p>	<p>156,05 ha of riparian forest in Danube floodplains will have a significant effect on nature biodiversity and also demonstrative effect for other land users</p> <p>LL:</p> <p>-Land parcels distant from the capital region are much cheaper, even if the habitat types area similar. With the same amount of money it is possible to lease and protect significantly larger areas.</p> <p>P:</p> <p>-High number of rather small land parcels often with many co-owners.</p>
C1	planting of native trees 45 000 seedlings	Objectives exceeded, together 61 000 seedlings of native trees planted	<p>S:</p> <p>-Increase of the proportion of forests with native trees in Danube floodplain forests.</p> <p>-Afforestation of the areas which were not possible to afforest for a long time before.</p> <p>LL:</p> <p>-On places with intensive game browsing, temporary metal fences are essential</p> <p>P:</p> <p>-Overgrowing from various weeds and invasive species present a serious threat for the young seedlings.</p>
C1	elimination of invasive species 445ha	<p>Invasive species eliminated on total area of: 456.5 ha:</p> <p>-external supplier 228.5 ha</p> <p>-project personal and project equipment: 228 ha</p>	<p>S:</p> <p>-Largest action ever on elimination of invasive species in Danube floodplain forests.</p> <p>LL:</p> <p>-Most effective method for elimination of invasive trees is stem injection, 2-step treatment is essential.</p> <p>P:</p> <p>-Rejuvenation from the stem or roots can occur, so the permanent monitoring is essential.</p>
C1	9 000 valuable old trees preserved and marked	<p>9 350 individual trees marked and preserved</p> <p>-intensive communication with land users</p> <p>-involvement in Forest Management plans</p>	<p>S:</p> <p>- Project objectives were strongly promoted by the preparation of the Forest management plans.</p> <p>LL:</p> <p>- Intensive communication and demonstrative actions with foresters are essential.</p> <p>P:</p> <p>-There are weak legislative opportunities how to enforce the nature conservation demands in forestland.</p>
C2	115 ha of forest steppes restored	118 ha of forest steppes restored and follow-up management established	<p>S:</p> <p>-Typical plant and animal species started to recolonize the areas where before the</p>

			<p>project invasive species dominated.</p> <p>LL:</p> <ul style="list-style-type: none"> -Maintaining of the open character of the habitats and reduction of the rejuvenation of the shrubs is best achievable by grazing. <p>P:</p> <ul style="list-style-type: none"> -Landowners can intensively obstruct to the restoration management.
C3	restoration of 142.9 ha grassland habitats	158.25 ha grassland habitats restored	<p>S:</p> <ul style="list-style-type: none"> -Largest restoration action of grasslands in Bratislava region <p>LL:</p> <ul style="list-style-type: none"> -Preparatory phase for large restoration action in capital city needs intensive communication with public and experts.
C4	Functioning grazing system established, 20 cows, 100 sheep, 150 goats, grazing on 185ha grasslands and steppes	Grazing system established on 5 localities, 22 cows, 145 sheep, 100 goats, 144 ha managed by grazing,	<p>S:</p> <ul style="list-style-type: none"> -Restoration of grazing management after more than 60 years of abandonment of the most valuable localities. -Breaking the myths by farmers that grazing in protected areas is undesirable and prohibited. <p>LL:</p> <ul style="list-style-type: none"> -Grazing is very effective by elimination of invasive herbs. -Traditional undemanding breeds of animals are more suitable because they need less deworming treatments, what could have negative effect on insects. -Permanent communication and involvement of broad spectrum of experts is needed, to set the optimum grazing regime and to avoid possible discrepancies <p>P:</p> <ul style="list-style-type: none"> -Grazing on grasslands or foreststeppe registered as forest land is prohibited according to the Act No. 326/2005 on Forests. -Farmers often prefer more simple and more nutrient rich localities in comparison to the xerothermic habitats. -----,---- -Agricultural subsidies are hard reachable for this localities.
C5	1 major (large-scale) restoration of water and wetlands habitats	The objectives were exceeded: 2 large-scale restoration of Danube sidearms realized: Devínske rameno 2015 Karloveské rameno 2016	<p>S:</p> <ul style="list-style-type: none"> -Largest water habitat restoration action in capital region, with enormous media coverage and public interest. -Restored processes of river dynamics. <p>LL:</p>

			<ul style="list-style-type: none"> -Restoration of sidearms is beneficial also for the water resources. -Even small changes in restoration level can cause enormous differences of costs.
C5	5 smaller restoration of water and wetlands habitats	4 localities restored on an area of 2,7 ha in SKUEV Dunajské luhy 600 m of Porec stream in SKUEV Abrod restored	<p>S:</p> <ul style="list-style-type: none"> -Suitable condition for amphibians were created. <p>LL:</p> <ul style="list-style-type: none"> -With relative simple methods is it possible to restore habitats for amphibians.
C6	rocky habitats and caves restored and protected	Restored entrances into important bats wintering places – on 2 localities Eliminated overgrowing of rocky habitats on an area of 1,8 ha	<p>S:</p> <ul style="list-style-type: none"> -One of the most important wintering places for bats is protected against illegal access. <p>LL:</p> <ul style="list-style-type: none"> -Herd of goats is very effective by management of inaccessible rocky habitats, where the management would be very dangerous and costly.
C7	Two new rangers operating in project sites	Two rangers were operating during almost all project period and fulfilling the C.7 actions	<p>S:</p> <ul style="list-style-type: none"> -Regular control of most threatened project sites was introduced. -Very good cooperation with police forces was established. <p>LL:</p> <ul style="list-style-type: none"> -Cooperation with police forces helped to increase their knowledge and engagement in nature protection. <p>P:</p> <ul style="list-style-type: none"> -The work is sometimes dangerous, due to the low acceptance of rangers. -New threats appeared in form of stealing of endangered species.
C7	Visitors regulation measures	<p>Realized visitor infrastructure: reconstruction of tourist trail, arbors, fences, benches, infopanel.</p> <p>Regular visitor regulation on project sites, 55 organized control actions, illegal access of cars stopped on 3 localities.</p>	<p>S:</p> <ul style="list-style-type: none"> - Infrastructure was very positively perceived by the visitors and inhabitants. -Tourist infrastructure is permanently used for running environmental education. <p>LL:</p> <ul style="list-style-type: none"> -Cooperation with police by controlling of the protected areas proved to be very effective and increased the overall acceptance of the nature protection restrictions. <p>P:</p> <ul style="list-style-type: none"> -Potential misusing of the infrastructure need to be permanently controlled.
D1	Project webpage	Operating in 4 languages, regularly updated	<p>LL:</p> <ul style="list-style-type: none"> -Although the webpage has important communication role, new social media are nowadays much more effective and operative.

D2	15 stakeholders meetings	34 realized meetings with stakeholders	S: -Number of meetings was significantly exceeded. -Several cooperation in nature protection were established and concrete conservation actions implemented.
D2	3x2day excursions	3x 2day excursion organized	S: -Direct presentation of successfully implemented actions helped significantly to facilitate the planned project actions. LL: -More day excursion help significantly to build good relationship with various stakeholders (foresters, state authorities, representatives of municipalities). -Effective tool for increasing their motivation to cooperate on project actions.
D2	10x technical workshops	11 technical workshops organized	S: -During the project period we notice an enormous interest in practical information's gathered during the project realization, in particular in river branches restoration and grazing management.
D3	interactive educational elements	7 outdoor interactive educational elements installed	S: -7 innovative educative elements were installed in most visited project site and involved in the environmental educational program
D3	36 information panels	37 large and 20 small information panels installed	LL: -Modern design, lot of photos and broader context of the presented topics (link with history, socio-economical issues, geology etc.) made the infopanel more attractive. P: -Vandalism caused few times damage of parts of the infopanel.
D3	maps about the project area	Map – attraction and educational pathway in Devínska Kobyla printed and disseminated- 5 000 pcs.	S: -One of the most favorite materials during excursions organized by Daphne or municipality Devínska Nová Ves at the Devínska Kobyla.
D4	project brochures	Project brochures produced, 4 050 pcs.	S: Very popular and useful brochure based on the satellite maps, with borders of protected areas and project achievements.
D4	Calendars project stickers project leaflets Magnets textile bags	Annual calendars for each year published and distributed: 2013-2017, each 350 pcs. Stickers produced and distributed: 15 440 pcs.	S: -Promotion materials were distributed at various meetings, presentations and events.

	t-shirts	Leaflets produced and distributed: 9 200 pcs. Magnets produced and distributed: 1060 pcs. Textile bags produced and distributed: 700 pcs. T-shirts produced and distributed: 1 400 pcs.	-Based on great public interest in promotional materials amount copies of most materials was increased.
D4	Layman's Report	Produced and distributed: 2 500 pcs.	S: Due to great interest in project Layman's Report was produced and distributed in higher numbers. LL: Very useful comprehensive tool for future initiatives and after-life conservation actions.
D5	education program for schools	Various educational tools produced and lesson learned, see Tab. D5_1	S: -The educational programmes has been evaluated by teachers, nature conservationists and experts as a unique tool for promotion of the rare habitats among young generation and also as a great support helping teachers to teach natural science subjects more interactively at their classes. Based on this positive feedback and great demand, we printed additional copies of the toolkits, CD's, leaflets, identification circles
D6	3 watching hides installed	7 watching facilities were installed/constructed and frequently used by visitors	S: -Innovative opportunities for observing the nature attracts great interest from visitors. LL: -The process of fulfilling legal requirements for building of the watching facilities was very time-consuming. At some localities, due to unclear ownership the initially proposed localization was changed and the process of obtaining necessary approvals was prolonged.
D7	education film, documentary film about project	Educational film: "Bratislava – city in the middle of nature" – 52.min, broadcasted, DVD version Documentary film: short documentary shots produced and published on internet, one semiprofessional document about restoration of Karloveske rameno sidearm produced	S: -The broadcasting of the educational film in Slovak National Television in primetime received very positive feedbacks. -The film was awarded at film festival "Hory a mesto" as the best film produced in countries of the Visegrad Group. LL: Cooperation with Slovak National Television was very enrichable for the document itself as well as for the project team.
D8	training and exchange of know-how	3 trainings in all three countries realized	S: -Inspirational and modern

			approaches to tourist management as well as various tourist facilities were presented. Gained information's were very beneficial for the follow project actions.
D9	presentation for students 10x guided excursions for students 20x presentation for public 5x guided excursions for public 7x boat trips 10x excursions for public during Earth Day events 15x excursions for teachers 15x	presentation for students 14x guided excursions for students 33x presentation for public 46x guided excursions for public 54x boat trips 15x excursions for public during Earth Day events 11x excursions for teachers 19x (11x D.5 + 8x D.9)	S: -The project attracts enormous interest from public, schools and various stakeholders. Objectives of this actions were multiple exceeded. LL: -Especially grazing management attract lot of people and is very effective tool for propagation of nature conservation. -Installed tourist and educational infrastructure and promotional materials are very useful for the excursions.
D9	excursions for teachers 15x	23 events for teachers organized	S: -The feedback on seminars was positive and the teachers as well as the Methodological-pedagogical centre ask for continuation
D9	trainings of 5 guides	12 guides trained	S: 12 guides were trained on 6 events and provided with the project publications
D10	presentation of project on conferences 5x press conferences 4x press releases distributed 7x articles covering the project published 35x radio interviews 10x TV shots broadcasted 5x	presentation of project on conferences 9x press conferences 6x press releases distributed 16x articles covering the project published 171x radio interviews 11x TV shots broadcasted 42x	S: -The media coverage of the project was very intensive and the individual goals were multiple exceeded. P: -Despite the permanent underlining, mentioning the obligatory reference to the LIFE programme, was out of our control.
E3	monitoring on report on status of vegetation of the target habitats	Vegetation monitoring reports from 18 permanent monitoring areas on grassland habitats of most significant location. - monitoring of the impact of black locust eradication at SKUEV Devínska Kobyla	S: Monitoring recorded the state of habitats before, during, and after the conservation measures had been implemented. The data obtained helped to adjust individual methods and the intensity of measures being implemented effectively throughout the project duration. Positive effect of restoration actions (C.2, C.3, C.4) were recorded, positive effect on elimination of invasive plants.
E3	Report on soil and hydrological monitoring at SKUEV Abrod	Report on soil monitoring at SKUEV Abrod	S: Due to existence of longer term data – even before the project start, we are able to set up trends in the development of pedological and hydrological processes.

			LL: It was proved that soil system does not show signs of eutrophication by nitrogen which indicates that proposed restoration measures will be successful..
E4	reports on fauna monitoring	<ul style="list-style-type: none"> - Final report from the monitoring of Mollusca, - Final report from the monitoring of Lepidoptera, - Final report from the monitoring of Coleoptera, - Final report from the hydrobiological monitoring, - Final report from the ichthyological monitoring, - Final report from the monitoring of Amphibians, 	S: -Reports on monitoring of fauna on localities where restoration measures were elaborated. Positive effect on fish communities (C.5 – restoration of sidearms), amphibians (C.5 – restoration of wetlands), butterflies (C.2,C.3,C.4) was recorded.
E5	networking 10x	12 networking visits realized focused on various project actions	S: -Due to broad spectrum of activities in the project, the project team had the opportunity to meet with many organizations, initiatives and experts and to discuss the preparation and implementation phase of concrete conservation actions. -We are still in contact with the involved organizations and we are frequently exchanging our experiences and consulting various nature conservation issues.
E7	publication of after LIFE conservation plan	After LIFE conservation plan	LL: -It is very useful tool to plan continuation of relevant actions.

Immediately visible results

Most of the project outputs have an immediately visible impact on the habitats and in perception of the wide public. Restoration of Danube sidearms presented the largest river-restoration actions in the Bratislava region. Reconnection of sidearms with the Danube River after decades and their change from regularly dried up into dynamic sidearms with enough water presented a significant benefit for natural habitats as well as for the public in form of improvement of conditions for most important drinking water resources, fishery and sport activities. Actions focused on restoration of grasslands and forest steppe habitats changed the abandoned localities overgrown by shrub vegetation and invasive species into habitats with open character with restored conditions for original biodiversity and with visible eliminated invasive species. Furthermore the follow-up management of grazing became very popular. The herds of goats and sheep which are taking care of the most valuable protected areas like NNR Devínska Kobyla or NR Kopáčsky ostrov became an attribute of the nature protection in Bratislava region. Various project infrastructure (watching hides, infopanel, educational elements etc.) served immediately for the inhabitants and visitors as well as for the project goals concerning the education of public and tourist management.

Results apparent after a certain time period

Planting of 61 000 seedlings of native tree species will have direct impact on the biodiversity only after the forest stands became older. Forest composed of natural species with sustainable nature protection orientated management will secure nesting and feeding habitats for various typical riparian forest species (birds, insects etc.).

Environmental educational activities aimed at the youngest generation were also of crucial importance. Even if the results of such activities will prove in later stage, we hope that the sowed seeds of respect to the nature will once germinate. Action focused on restoration of wetlands for amphibians and the restoration of Porec stream are immediately visible, however the reconstruction of the original biodiversity and resettlement of this areas by typical species will need longer time.

Management plans for 4 project sites are crucial documents which determine the future management of these areas and facilitate the future conservation measures.

There have been 1 project amendments during the project period concerning the:

- 1.Change of the project partnership structure - Ministry of the Environment of the Slovak Republic participate on the project as a co-financer.
- 2.Change of the project duration.

The prolongation of the project until 31st March 2018 (1 year plus) helped to:

- finalize the actions delayed because of administrative processes which were beyond of our control (A.1)
- finalize the actions which were delayed due to the more ambitious overall plan of the action (C.5)
- finalize the actions which were more complicated as was previously expected (C.4)
- better adjustment of the follow up managements concerning the grassland and forest steppe habitat management (C.3,C.4)
- additional promotion of the project, LIFE programme and NATURA2000 (D.9, D.10)

Effectiveness of dissemination of the project's results:

The project's results were disseminated via several tools, including media outcomes, webpage, published materials, presentations at workshops and conferences, etc.

The enormous interest in project outputs is documented by the many times exceeded outputs of the media and public presentation (D.9, D.10). The reasons are the location of the project action in region of Bratislava capital city, uniqueness and attractiveness of some actions and also the fact that the project actions covered some of the most important protected areas in Slovakia.

Numerous actions focused on sharing of project results, like networking with other organizations or presentation of the project results on various seminars, conferences or workshops, were also important. Wide spectrum of stakeholders was targeted by various project events. Outstanding for the project presentation was the visit of the commissioner Mr. Karmenu Vella and multiple PR actions with the Ministry of the Environment of the Slovak Republic.

The various publication and dissemination products of the project were permanently distributed by PR actions. The amount of the promotion actions led to the increase of the number of copies of some materials (leaflet, project brochure, layman report, magnets, brochure for stakeholders)

5.4 Analysis of long-term benefits

5.4.1 Environmental benefits

a)Direct / quantitative environmental benefits:

The LIFE project aimed to bring direct conservation benefits to the target habitats through their restoration and protection and thus to improve their conservation status according to the Habitats Directives. Before the project many of these habitats were affected by various threats: intensive forest management, disrupted water regime, overgrowing by invasive species, lack of suitable management or undesirable effects of human activities. Expert studies and technical documentation elaborated in 6 preparatory actions helped to evaluate the state of this project sites and proposed future management

measures. This outputs together with the experiences gained by their implementation provides a long-term benefit for future managements.

Main environmental benefits are:

- restoration of the water habitats on length of 6 900 m (6 300 Danube sidearm, 600 Porec stream)
- restoration of wetlands for amphibians on an area of 2,7 ha
- improvement of the biodiversity of forest habitats by planting of 61 000 seedling of native trees, elimination of invasive species on an area of 456,5 ha and protection of 9 350 valuable tree individuals
- restoration and establishing of future management for grassland habitats on an area of 158,25 ha
- restoration and establishing of future management for forest steppe habitats on an area of 118 ha
- improvement of the tourist and visitors management by systematical work and new tourist facilities

The direct benefits to the habitats were confirmed by the results of monitoring of indicative animal species and vegetation.

b) Relevance for environmentally significant issues or policy areas

The water habitats restoration accords with the Water framework directive, Article 1.:

a) prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;

b) promotes sustainable water use based on a long-term protection of available water resources;

and accords with the environmental objectives for surface water, Article 4.:

Member States shall protect, enhance and restore all bodies of surface water, subject to the application of subparagraph for artificial and heavily modified bodies of water, with the aim of achieving good surface water status at the latest 15 years after the date of entry into force of this Directive, in accordance with the provisions laid down in Annex V, subject to the application of extensions determined in accordance with paragraph 4 and to the application of paragraphs 5, 6 and 7 without prejudice to paragraph 8;

The project's actions contribute also into the EU 2020 Biodiversity Strategy and 7th EU Environment Action Program, in particular to the following priority objectives:

1. to protect, conserve and enhance the Union's natural capital
3. to safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing
4. to maximize the benefits of the Union's environment legislation by improving implementation
5. to increase knowledge about the environment and widen the evidence base for policy
9. to help the Union address international environmental and climate challenges more effectively.

5.4.2 Long-term benefits and sustainability

a) Long-term / qualitative environmental benefits

Part of the actions was focused on one-off investments, which did restore natural river dynamics and vital ecosystem functions and services. Restoration helped start up natural river dynamics processes; vertical banks as well as gravel bars reappeared on the river branches, which are significant characteristics of a healthy riparian landscape and important habitats for a number of animal species.

The flow restoration brought back living space for many water animals and fish that will be able to swim freely in and out of the river branches and that will find a suitable place for reproduction here. Wetland habitats restoration by reconnection of natural depression with surrounding system of river branches presented measures with no need of future management.

Planted young seedlings of native tree species need human care mainly in first 1 - 3 years after planting, which includes removal of weeds, climbers, protection from game, etc. This costly part was secured during the project. Most seedlings were planted on the long-term leased areas by BROZ, what will ensure the future nature protection orientated management.

Elimination of invasive plants is very time consuming and costly. For this reasons the two-step treatment was chosen and precise control from project personnel was carried out to eliminate the potential rejuvenation. It is expected that the control of the invasive species on this areas will be necessary also after the project, but the most financial and time demanding work was done in frame of the project.

Initial most costly restoration for grassland and forest steppe habitats was carried out during the project. Elimination of invasive trees, overgrowing of shrubs as well as the establishing of grazing infrastructure and purchasing of the animals was essential for the future maintenance of the project results. From the beginning the action was realized with cooperation of local farmers which will secure the after project management of this sites, by mowing or grazing.

Remaining threats follow mainly from the highly populated area of the capital city which could express negative effects on protected areas: unregulated tourism, harming of the future management (especially grazing). Grazing management could be also affected by the socio-economical changes or change of the breeding regulation.

Details regarding what actions should be carried out, when, by whom and using what source of finance are listed in the After-LIFE conservation plan.

b) Long-term / qualitative economic and social benefits

Despite the project was focused on nature protection accompanying socio-economical benefits are significant by most of the project actions.

Restoration of Danube sidearms beside the habitat restoration improved also the protection and quality of two most important drinking water resources for Bratislava region. Sediment that gradually made its way to the river branches and was deposited there also brought a large amount of unwanted substances that could gradually deteriorate the quality of the water resource. Restoration contributes to the improvement of water quality, its better infiltration into the subsoil, and to an increase in the well yield in local drinking water resources on the islands. Restoration measures also provide better conditions for canoeing, which has a great tradition in both sidearms.

Re-establishment of the traditional management of grasslands and forest steppe created a new economical opportunities for local people. Potential products from the grazing will have a added value of "nature protection products".

Several project outputs like 37+20 infopanel, various publications, 7 watching facilities and other tourist infrastructure help to raise the knowledge and the appreciation of the protected areas and NATURA2000 network.

Local inhabitants, communities, land owners and land managers can benefit also from restored and/or improved ecosystem services.

c) Continuation of the project actions by the beneficiary or by other stakeholders

After initial measures on restoration of alluvial grasslands the followed management is carried out by a local farmer. Grazing management is performed either in charge of BROZ or by local farmers involved to the grazing already during the project period. Actions like sidearms and wetland restoration do not need any additional future management. Planting of native trees and after planting care was realized during the project period. Most of the afforested areas are covered by the long-term land lease contract, so the future management will be in charge of BROZ. Control and further elimination of invasive species will be realized by BROZ and SNC SR. Activities focused on

environmental education are continuing in charge of Daphne in cooperation with schools involved already during the project.

Replicability, demonstration, transferability, cooperation

Various project actions have a significantly demonstrative character due to their extent, used methods or uniqueness. The partnership structure and the involvement of various stakeholders presented a very good example of cooperation between state organizations, NGO's, University, Bratislava capital city, municipalities and various interests groups.

Restoration of grasslands and forest steppe habitats was never done in such extent in the Bratislava region. Grazing animals on most valuable protected sites in Slovakia, abandoned more than 60 years ago, attract lot of attention from public, experts and various stakeholders. The re-establishing of grazing was done in cooperation with local farmers. Increasing of their awareness and assistance with solving the administrative obstacles helped to overcome psychological barrier, that it is not possible to do farming within protected areas. Grazing on forest steppe habitats, which are according the cadaster evidence forest parcels, needed an exception from the forest law, which prohibits grazing on forest land. Breaking this restriction administratively as well as in minds of foresters and clerks was crucial for the project and also presented a precedent for future initiatives.

Restoration of two most well-known Danube sidearms in Bratislava was the greatest river restoration action in the Bratislava region. The Danube River is the largest and most international river in the EU. The action was realized in cooperation with Water management company, Waterworks company, SNC SR and provided a nature conservation as well as social benefits. The gathered experiences from the overall restoration process, were presented in multiple seminars, workshops, conferences, media and can be replicated in other water restoration actions along the Danube as well as other rivers.

The developed educational program with a set of books, toolkits, worksheets and other materials can be extended also to other schools in region of Bratislava.

Project activities have inspired many other subjects and organizations. Museum of the city of Bratislava take an example from the grazing management on adjacent Devínska Kobyla and started own grazing project in the castle of Devín. In 2018 an SK/AT INTERREG project B 011 3E-Morava Nature was launched with aim of reconnecting of the running grazing management in Devínska Kobyla with environmental education. City Svätý Jur started in summer 2018 a project focused on restoration of the locality of Panónsky háj in NNR Šúr. The goal is to restore the old forest pasture landscape type. After initial restoration measures the running livestock grazing management (C.4 action) will be enlarged also to these evaluable parts of the NNR.

Best practice lessons

The project and its actions are based on know-how and best-practice available and applied in similar initiatives mainly in neighbouring countries. Preparation phase of the project was focused on gathering useful best practice experiences to individual project actions. Involvement of experts and communication and personal visits of similar running or undertaken initiatives in foreign countries helped to propose the best methods and approaches for our project actions.

The realization of best practice approaches was adjusted to the local condition, needs and restrictions. The most challenging and "lesson learned" was the phase of preparation, communication and evaluation of the individual conservation measures. Due to the location of the project actions in the Bratislava capital city and close surrounding and the fact that most project sites are very valuable protected areas, many factors needed to be considered. Tackling all this aspects was very informative and enriched all involved subjects. A key condition for successful implementation is education and explanation of the importance of NATURA 2000 protected areas, understanding the importance of protected habitats, an understanding the conservation measures.

Innovation and demonstration value

The project and financial support provided by the European Commission have significantly contributed to restoration and protection of range of habitats in capital region. Due to wide variety of habitats (forest, grassland, forest steppe, water, wetlands, rocky) lot of approaches and methods were used and many stakeholders were involved. Many of the restoration actions were unique and often first time implemented in this region.

Gathered experiences by elimination of invasive species in forest habitats as well as in non-forest areas by grazing have a highly demonstrative value for other initiatives.

Long-term land lease of 156,05 ha in the centre of the most valuable Danube floodplain protected areas and the realized conservation measures and the following nature protection orientated management will be very demonstrative for other landowners and landusers along the Danube.

Project presented also an innovative approach to protected areas tourists and visitors management for Slovakia. Various installed enviro-educational elements and in particular sophisticated watching facilities provide a new view on the nature conservation.

Long-term indicators of the project success

To monitor long-term sustainability of the project's results the following indicators were selected:

- size and species composition of the restored grasslands and forest steppe habitats
- increase of population size of species using the restored habitats
- new species starting to occupy and permanently use restored habitats
- coverage of the shrub species on valuable grassland and forest steppe habitats
- appearance of invasive species in forest and non-forest habitats
- water level of the restored wetlands
- flow capacity of the restored river branches

The indicators will be monitored annually.

6 Comments on the financial report

6.1 Summary of Costs Incurred

PROJECT COSTS INCURRED			
Cost category	Budget according to the grant agreement	Costs incurred within the project duration	%
1. Personnel	1 098 325	1 175 338,02	107,01%
2. Travel	109 113	46 962,03	43,04%
3. External assistance	1 161 584	1 158 002,49	99,69%
4. Durables: total <u>non-depreciated</u> cost			
- <i>Infrastructure sub-tot.</i>	35 000	44 438,38	126,97%
- <i>Equipment sub-tot.</i>	390 380	372 885,82	95,52%
- <i>Prototypes sub-tot.</i>	0	0	
5. Land purchase / long-term lease	237 300	256 464,31	108,08%
6. Consumables	152 550	123 025,26	80,65%
7. Other costs	93 010	99 985,45	107,50%
8. Overheads	212 797	210 940,13	99,13%
TOTAL	3 490 059	3 488 041,89	99,94%

6.2 Accounting system

All expenses included in the final report were paid and duly booked in the accounting systems of the coordinating beneficiary BROZ or associated beneficiaries of the LIFE+ LIFE10 NAT/SK/080 NATURA 2000 BA project.

6.3 Partnership arrangements

Partnership agreements were signed in fall 2011. Based on their wording, first 40% of budgeted amount was received by project partners within 30 days after signing the Agreement. Second payment (40% of the budget), within 15 days after approval of spending first instalment, however, not earlier than receiving second payment from EC. The last payment of EC contribution will be sent to project partner after approval of final report by EC.

6.4 Auditor's report/declaration

Audit was prepared by company Ing. Jozef Haraj - Ekoposs:
Membership No of the Slovak Chamber of Auditors: SKAU No. 444
Trade Licensing Register No: 205-3640

Registration number: IČO: 11875321
Auditor: Ing. Jozef Haraj – EKOPOSS
Address: Hviezdoslavová 477, 905 01 Senica, Slovak Republic

Audit was performed in two main sessions in BROZ office. Complete project documentation was provided to auditor, including reports and explanations on all raised questions. Auditor's report can be found as Annex_194.