

LIFE+ project LIFE09 NAT/LV/000237 (2010-2015)

Restoration of Corncrake habitats in Dviete floodplain Natura 2000 site

After-LIFE Conservation Plan

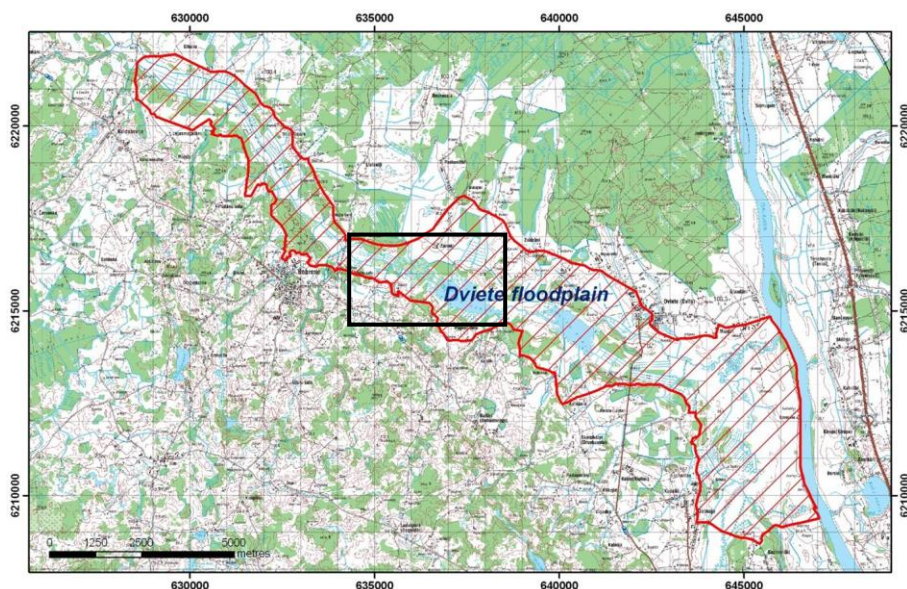


The LIFE+ project DVIETE

The project “Restoration of Corncrake habitats in Dviete floodplain Natura 2000 site” (LIFE09 NAT/LV/000237) was implemented to restore breeding habitats of the Corncrake in overgrown grasslands in the middle part of Dviete floodplain during the time period between 1 October 2010 and 30 September 2015. The project was funded by the LIFE+ programme of the European Commission and co-funded by the Latvian Environmental Protection Fund, as well as the implementers of the project – the Latvian Fund for Nature, the Ilūkste municipality, ARK Nature (the Netherlands), Elm Media and the Institute for Environmental Solutions.



Location of Dviete floodplain nature park.



Map of Dviete floodplain nature park with an outline of the project area in its middle part.

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Background for the LIFE+ project

Dviete floodplain was established in 2004 both as a Natura 2000 site and as a national Specially Protected Nature Territory (Nature Park) and was recognised as one of the key sites for the breeding Corncrakes and floodplain grassland habitats in Latvia. It was one of the 15 sites where the LIFE-Nature project 'Restoration of Latvian Floodplains for EU Priority species and habitats (LIFE04NAT/LV/000198) was implemented from 2004 to 2008. Aim of the project was to restore floodplain habitats in 15 best areas in Latvia. In Dviete floodplain, removal of bushes was carried out on ca. 3% of its area, on many isolated patches around the Natura 2000 area where grasslands were easily restorable by 'soft' measures of bush cutting and initial mowing, without changes to the hydrological regime.

During the mentioned 'first' LIFE project, a site management plan for Dviete floodplain was elaborated in 2005. This document recognized the outstanding importance of Dviete floodplain for maintenance of the Corncrake population and envisioned that ecological requirements for this and other species cannot be ensured by common management actions (mowing, removal of bushes) alone. Complex habitat restoration measures, including hydrological restoration, were recommended for improving the values and integrity of the site.

Next steps towards grassland habitat restoration were made during a small-scale project 'Management and restoration of Dviete floodplain Nature Park' funded by the Dutch National Lottery Fund and run by *Vogelbescherming Nederlands* in cooperation with ARK Nature in 2006-2008. In cooperation with Latvian Ornithological Society, this project introduced a targeted 'wild grazing' scheme with Konik horses and Highlander cattle on part of the abandoned grasslands in Dviete floodplain, and established an information and visitor centre. A preliminary study on hydrological restoration of a natural course of river Dviete was also made.

As a result of these quick and successive developments from designation of the Dviete floodplain as a Natura 2000 site to the conservation planning, management and development of infrastructure, a good foundation was laid for the next stage of a complex habitat restoration work envisaged in 2009 in project proposal for the 'second' LIFE-Nature project DVIETE.

The LIFE+ project DVIETE summary

The main objective of the project was to improve the extent, connectivity and quality of open grassland habitats for breeding Corncrakes *Crex crex* in Dviete floodplain Natura 2000 area. This was done by addressing two main conservation problems: land abandonment and altered hydrological regime. Accordingly, two groups of restoration actions were carried out in a degraded and largely abandoned middle section of Dviete river floodplain:

- 1) restoring the abandoned former grasslands by removal of bushes and trees (Action C.2) and maintaining the restored open landscape by a year-round grazing of appropriate hardy breeds of cattle and horses (Action C.3);
- 2) restoring the natural course of river Dviete within the grassland restoration area to improve the hydrological regime in favour of the wet grasslands naturally typical for this area (Action C.1).

The initial habitat restoration targets were generally met, with some insignificant shifts for adjusting the locations and extent of the concrete conservation actions to the actual conditions. As a result of the implemented actions:

- 1) 113 hectares of open grasslands were restored by clearing the abandoned and overgrown patches from trees and bushes (Action C.2);
- 2) 113 hectares of grasslands were fenced and grazed within the newly established grazing enclosures (Action C.3);
- 3) 1.8 km of Dviete river bed were excavated as part of the restoration of hydrological regime within a total section of 2.3 km upstream from the Skuķu lake (Action C.1).

Implementation of these actions resulted in restoring:

- 1) a continuous area of more than 300 hectares of open grasslands, formed by the restored open patches that were reconnected to adjacent areas of existing meadows and pastures;
- 2) suitable hydrological conditions for increasing and retaining the average groundwater level in the restored section of river Dviete, upstream from the Skuķu lake;
- 3) an increasing breeding population of Corncrakes in and around the habitat restoration area towards the end of project, as a result of the grassland restoration and maintenance.

All effects combined, the implemented actions have improved the overall ecological integrity of the Dviete floodplain Natura 2000 site and contributed to the favourable conservation status of Corncrake in Latvia. The project has also served a good demonstrational and public awareness role for grassland and wetland habitat restoration aims in Latvia.

Assessment at the end of the project

All main results expected in the project proposal have been reached, despite serious problems and delays in implementing the river restoration (Actions A.1 and C.1, described in detail in the technical part of the Final Report):

- 1) Breeding Corncrakes have occupied the area of restored habitats, their number was shown (by monitoring within Action E.10) to be increasing in and around the habitat restoration area at a rate significantly higher than in the control routes in other parts of the nature park. In summer 2015, there were 6-7 males registered calling from within the polygons restored by Action C.2, in combination with habitat management by Action C.3. In the areas managed by Action C.3. alone, 6-10 males were registered, and selection for pastures by calling birds was not significantly different from random selection, i.e., there was no avoidance of the grazed grasslands by this species. It can therefore be concluded that the habitat patch size and connectivity has been significantly improved for the Corncrake in the project area. Potential for population growth in the restored area is even greater, depending on boundaries of future grazing areas and reduction of grazing pressures after sufficient recovery of wet grassland vegetation. This trend in habitat suitability and persistence is expected to be supported by the hydrological effects of river restoration, carried out within Action C.1.
- 2) River Dviete restoration target was raised from 2.1 km to 2.3 km during the project. It was eventually restored to its natural meanders both in the upstream and downstream parts of the 2.3 km long section, with a total of 1.8 km excavated in these two parts, and the middle 0.5 km long section left running in the existing straightened channel. Restoration works were done in compliance to the technical project (Action A.1). The project had been amended in 2014 to avoid one land property where permission to Action C.1 was refused. Works were completed in spring 2015, the following summer before the end of project was very dry, so the monitoring of groundwater level (Action E.11) could not confirm an increase in average ground-water level. However, effects of restoration on the water table change are expected to happen gradually, with slowly diminishing discharge flow capacity of the fresh river-bed, due to increasing channel roughness by developing vegetation and sedimentation. Thus, a slow increase in the average groundwater level for improved wet grassland habitat quality for the Corncrake is expected to take place gradually during the coming years.
- 3) Bushes and trees were cleared from all of the available and relevant (actually overgrown) parts within the original 105 ha target outline. After restoration grasslands, ca. 100 ha within these boundaries had become open landscape, and additional 13.2 ha were restored on adjacent patches, and 113 hectares of open grasslands were restored in total.
- 4) The open grassland habitats around restoration area were reconnected to form over 300 hectares of continuous open grasslands for breeding Corncrakes, improving local habitat connectivity and overall Natura 2000 site integrity. Successful habitat restoration by removal of trees and bushes and maintenance of open grassland areas by

grazing have effectively changed the landscape in the middle part of the Dviete floodplain Natura 2000 area, as can be seen in the aerial images below:



5) The restored wet grasslands were maintained by natural grazing of cattle and horses in optimal densities to avoid regrowth but also prevent overgrazing. Grazing has helped significantly in restoration of former open wet grasslands by suppressing and stopping regrowth of bushes and trees. Grazing pressure was adjusted to provide enough browsing pressure on the recently restored areas (Action C.2) and ensure sufficient vegetation cover for Corncrakes. In summer 2015, 6-10 males were registered calling in areas managed by Action C.3. The final ENFA approach to habitat modelling (Action C.4) has also shown that the grazing areas are much more favourable for Corncrake than initially predicted. As part of the grazing pressure reduction, 45 horses from the grazing enclosures established before the LIFE+ project

were removed from the project pastures in January 2016, and transported to Croatia by ARK Nature.

'SWOT' analysis

Strengths

- Good existing foundation of overall conservation planning for the Dviete floodplain Natura 2000 area before the project (site management plan 2005).
- Experience of the preceding LIFE-Nature projects in Dviete floodplain and in other sites in Latvia, incl. Ķemeri NP.
- A good history of established cooperation with local NGOs, municipalities and local people (since 2004).
- A prior history of cooperation with the national and international partners, involved in the project as the associated beneficiaries.
- The existing 'wild' grazing scheme established in cooperation with Ark Nature in 2006.
- Prior investigations into hydrological restoration in the project area.
- Good relations with and largely favourable attitude by the local community.
- Adequate competence and resource base capacity of the involved project partners.

Weaknesses

- Lack of experience with planning and implementing restoration of hydrological regime in Latvia and the Baltic region.
- Apparent contradictions in the national legislation relevant to the interrelating interests in nature conservation in Natura 2000 areas and the governance of the state drainage systems.
- Failure to provide for the advanced hydrological modelling of river restoration as an obligatory part in the project proposal.
- Insufficient negotiations with the most relevant stakeholders, especially land owners before the project, lack of written and legally binding agreements on cooperation for implementing certain project activities.
- A possible need for land purchase at the most crucial parts for the habitat restoration actions not foreseen in the proposal and not discussed with land-owners before the project.
- Reliance of the land owners and managers on the unpredictable terms and conditions of the national Rural Development Programme.

Opportunities

- Invaluable new experience in methods and practical approaches to restoration of open former floodplain grasslands.
- General experience with planning, preparing for and implementing hydrological restoration of floodplain rivers.
- Continued and improved cooperation with the local NGOs, municipalities, farmers and other local residents.
- Improved infrastructure and quality information sources for the area's visitors.
- Good foundation for a reviewed site management plan and setting new goals for the management and conservation of the Dviete floodplain Natura 2000 area.

Threats

- Shifting attitudes of land-owners and managers towards further maintenance and restoration of floodplain grasslands due to the changing terms and conditions, as well as heavy bureaucracy levels of the national Rural Development Programme, including insufficient and diminishing area payments.
- Resulting loss of interest and withdrawal of support and cooperation by the land-owners and managers.
- Lack of funding for continued habitat management and restoration in the Dviete floodplain Natura 2000 area.

After-LIFE objectives and methodology

After the end of project, management of the restored open grasslands will continue, mostly by means of grazing. The grazing scheme will be maintained by 'Dvietes senlejas pagastu apvienība', representing administrations of the parishes of the area. An agreement, related to continuation of grassland management, has been signed between the LFN and 'Dvietes senlejas pagastu apvienība' (included in Annex 7.2.8. of the Final Report). Awareness raising infrastructure, like the outlook platform, information signs, exposition on river restoration and the website www.dvietespaliene.lv will be maintained by the project partner Ilūkste municipality. A relevant agreement has been signed between the Latvian Fund for Nature and Ilūkste municipality on the maintenance of achievements of the LIFE+ project (attached as Annex 7.2.9 to the Final Report).

Important milestone for the next review of the existing experience and future directions for managing the Dviete floodplain Natura 2000 area is expected to be the elaboration of a new site management plan. This task was provisionally set for 2016 by the Nature Conservation Agency. Previous version of the plan was drawn together in 2005 for the period of 2006-2015. Not only has it expired formally, but has become actually outdated, with significant development that has taken since 2005 in terms of governance, infrastructure development, practical management, habitat restoration, and research on natural and cultural values in the area. The prospective revision of the site management plan should include evaluation of experience from all implemented projects, including both the 'first' and 'second' LIFE-Nature projects on grassland restoration, as well as the EREMITA MEADOWS¹ project, and set out with a new vision for the comprehensive development and conservation of the Dviete floodplain Natura 2000 area for at least the next decade.

Meanwhile, this document provides a summary on follow-up to the actions implemented with the 'second' LIFE-Nature project "Restoration of Corncrake habitats in Dviete floodplain Natura 2000 site" (2010-2015).

Hydrological regime

(Action C.1: Restoration of river Dviete natural course, Action E.11: Monitoring of groundwater table)

No maintenance is necessary to the restored section of river Dviete in the foreseeable future. During completion of the engineering works in spring 2015, special attention was paid to finishing the stream-diverting dams safely. The spring and following summer were unseasonally dry, without flooding, which facilitated quicker drying, compacting and strengthening of the newly built dams by vegetation. The dams are fixed solid obstacles made of the local mineral soil and sediment, and have no regulation mechanisms to be operated or

¹ LIFE-Nature project „Management of Fennoscandian wooded meadows (6530*) and two priority beetle species: planning, public participation, innovation" (LIFE09 NAT/LV/000240).

maintained. Just as routine surveys of the restored river were made in the latter phase of project by the project coordinator and the local coordinator, regular inspection are continuing after the project as part of the grazing area surveys.

Due to the extremely dry summer of 2015 with no preceding spring floods, reduced precipitation and unseasonally low ground water table, there were not enough data for the monitoring of groundwater level (Action E.11) to confirm an immediate increase in the average ground-water level. Effects of restoration on the water table change are expected to happen gradually, with slowly diminishing discharge flow capacity of the freshly excavated river-bed and increasing channel roughness due to development of vegetation and ongoing sedimentation of debris and particle matter. By definition, it will take more time of continued monitoring to indicate the hydrological effects of Action C.1. Follow up monitoring of the groundwater level after the end of project has been agreed with the project's hydrologist in 2016.

The middle 0.5 km section of the natural old riverbed left out of the restoration works in 2015 was designed for restoration and included in annex to the final version of the technical project as an alternative course for Dviete river restoration. This solution would significantly facilitate future attempts at completing hydrological restoration of this section by readily available technical plans, in terms of saving time and expenses for the repeated full cycle of technical designing. Prospective change of ownership (or owner's attitude) in favour of river restoration could trigger resumption of the follow-up and completion of the middle section by relatively affordable means.

The next major step of potential new projects for restoration of natural hydrological regime in the Dviete floodplain would be an increase in the minimum level of water level in Skuķu lake, further downstream from the river section restored within Action C.1. This stage of restoration has been foreseen in the first site management plan for Dviete floodplain Natura 2000 area in 2005, but needs a complex and detail assessment of the possible scenarios and their impact on land-use and natural values in the lake and on its shores. Hydrological modelling and socio-economical study should be an integral part of this analysis.

Open grassland restoration

(Action C.2: Restoration of open grasslands)

Having completed removal of trees and bushes from all relevant parts of the original 105 ha target outline and additional 13.2 ha nearby during the project, every available option of open grassland restoration in this part of Dviete floodplain was realised. Similar restoration can be replicated in further fragments of formerly abandoned grasslands elsewhere in the nature park, bearing in mind the experience of LIFE+ project. In areas of peaty and muddy soft soils with beaver channels, river ox-bows and extremely dense vegetation of bushes and trees, the only option for permanently restoring open grasslands would be the combination of:

- 1) removal of the wooded vegetation by cutting and collecting;

- 2) applying additional mechanical mulching (milling) of the highest remaining stumps and strongest root systems where necessary;
- 3) putting in place a ‘wild grazing’ scheme with a stock of sturdy animals ready for browsing on the regenerating bushes and trees persistently at various seasons.

Similar work would be much simpler in dry areas with mineral soils and relatively easy access by machinery, where regeneration of wooded vegetation could be implemented by regular initial mowing, after removal of stumps. In wetter parts of the floodplain that are out of reach of conventional wheeled tractors and mowers, the only feasible alternative would be to use specialised low-load mowers on caterpillars.

Maintenance of the restored open grasslands by grazing

(Action C.3: Establishing of grazing scheme)

The restored grasslands are maintained mainly by natural grazing of cattle and horses. The grazing intensity is permanently monitored by DSPA to keep it in optimal level - to provide enough browsing pressure on the restored areas (Action C.2) and simultaneously ensure sufficient vegetation cover for grassland birds. If the grazing pressure will become too heavy, surplus animals (offspring) will be removed from the pastures and transported to other natural grazing areas. In order to regulate grazing pressure within the grazing area, internal enclosures are used.

Restoration of grasslands, funded by the LIFE+ project (by an immediate combination of Actions C.2 and C.3) have given a possibility for farmers to apply for subsidies under the Latvia’s Rural Development Programme (RDP , 2014–2020). Maintenance of the restored grasslands after the project will be funded by RDP, the most important financial instrument in Latvia supporting management of habitats. The relevant measure for continuation of the project’s activities funded within the framework of the RDP, is the measure 10.1.1. Maintenance of biodiversity in grasslands. The objective of the activity is to maintain biologically valuable grasslands that are dependent on agricultural activities. Extensive grazing and mowing is supported by this measure.

The future of grasslands in Dviete floodplain, as well as in other places in Latvia, largely depend on the available funding under the RDP - for maintaining biodiversity in grasslands in combination with other available subsidies (e.g. single area payment, payments to areas facing natural or other specific constraints), and also possibilities of funding, offered by other types of economic activities (rural tourism, organic farming), encouraging functioning of viable farms.

In 2015, amount of available funding under RDP for maintenance of grasslands per hectare was considerably reduced for most of the biologically valuable grasslands – the previous measure No 213: NATURA 2000 payments and payments linked to Directive 2000/60/ECC (annual compensation payment to offset restrictions of economic activity in utilized agricultural areas located in NATURA 2000 territories) was no longer included in the current planning period, and subsidies for less favoured areas (LFA) diminished significantly. At the

same time agri-environmental payments (Maintenance of biodiversity in grasslands) were diversified as follows: 55 euro/ha for grasslands, which are not [yet] identified as habitats of EU importance, 83 euro/ha for EU habitats in grasslands on fertile soils and bird habitats, 155 euro/ha for EU habitats in mesophilic grasslands, 206 euro/ha for EU habitats in grasslands on poor soils. Mainly the first two categories are found in Dviete floodplain, therefore for most of the farms support decreased, if compared with previous planning period (123 euro/ha). At the same time, a requirement for removal of biomass (hay) came into force (mulching and leaving the hay on the site was allowed previously), making the grassland management more time- and money-consuming, thereby not raising willingness of local farmers to apply for agri-environmental measures.

Latvian Fund for Nature permanently monitors changes in Rural Development Programme and relevant annual Regulations of the Cabinet of Ministers of Latvia and lobbies nature conservation interests by preparing comments and recommendations and taking part in various meetings and working groups. LFN is represented also in the Monitoring Committee of the Latvia's Rural Development Programme (2014-2020). In 2015, LFN organised a meeting with representatives of Greens-Efa in the EP (17.06.2015) to discuss agri-environmental and forestry policies, a representative of LFN also took part in the Civil Dialogue Groups on Organic Agriculture (17.04.2015) and Rural Development (06.05.2015) of DG Agriculture in Brussels. The task is made harder by the fact, that lobby of intensive farming is strong in Latvia and the RDP is mainly focused to intensification of agriculture.

An achievement of LFN (2015) was inclusion of the grassland areas, restored within EC LIFE projects, among the areas eligible for funding under the RDP immediately after the restoration, even before they correspond to the requirements of managed agricultural lands, with increased rate of support (330 euro/ha), as single area payments are not available for these areas. The issue was raised in the seminar of LIFE+ project on 17 June 2014 and the relevant recommendations were submitted to the authorities after the seminar.

Nevertheless, a part of the lands, restored within the LIFE+ project DVIETE, were recognised as managed agricultural lands by regional staff of the Rural Support Service in spring 2015, thereby considerably smaller support was available for management of these lands.

Another gap of the RDP was also discussed in the LIFE+ project seminar on 17 June 2014 and included in recommendations for changes in RDP and relevant Regulations of the Cabinet of Ministers – cancellation of the requirement for additional mowing of pastures in autumn, where animals are grazing in appropriate density all year round. The issue is not solved yet, although removal of bush shoots and remnants of high one-year vegetation in autumn causes shortage of food base for grazing animals in winter and increases necessity for their additional feeding with hay. To negotiate on the issue, Latvian Fund for Nature organised a meeting with Rural Support Service on October 21, 2015. As a result an exception in requirement of mowing of un-grazed vegetation in autumn in year-round grazing areas of grasslands, important for birds, was prepared by the Ministry of Agriculture and included in the list of potential amendments of the RDP during the meeting of Steering Committee of the RDP on 26.02.2015.

To ensure the maintenance of the grasslands, restored within the LIFE project DVIETE, the following agreements have been signed:

- 1) Agreements on grassland restoration within Action C.2, signed between the LFN and land owners, sub-contracting grassland restoration works, included an obligation to maintain restored areas thereafter;
- 2) Land rent agreements or agreements “On grazing of biologically valuable grasslands”, signed between ‘Dvietes senlejas pagastu apvienība’ (DSPA) and land-owners to perform grazing management.

Agreements cover both the grassland areas, restored and included in grazing enclosure within the LIFE+ project, and grassland areas, included within grazing grounds already before the project. Total area covered by agreements currently is 371 ha.

Land rent agreements have different durations, because they are not signed simultaneously. Cooperation scheme between ‘Dvietes senlejas pagastu apvienība’ and land owners of Dviete floodplain was developed before the LIFE+ project. Fenced grazing area increased and land rent agreements were signed gradually since 2006. Initially, duration of an agreement was 4-5 years, currently – 10 years. Routines include signing of a new agreement, when duration of an agreement has come to an end.

Agreements are attached in Annex 7.2.8. of the Final Report.

Above mentioned agreements cover all but one of the land units, where grassland restoration took place within the LIFE+ project. One of the land owners of restored areas is going to maintain grasslands by mowing. It is ensured by the agreement on grassland restoration between the land owner and the LFN. The agreement is attached in Annex 7.2.10 to the Final report.

- 3) Agreement on the maintenance of LIFE+ project achievements, signed between Latvian Fund for Nature and DSPA on 30 September, 2015. According to the agreement, DSPA undertakes for the next 20 years (until 30 September 2035) to organise and perform activities, targeted to the maintenance of the achievements of the LIFE+ project DVIETE in the restored grassland areas of the lands, owned and managed by DSPA, and to promote and support above mentioned activities in other grassland areas, restored within the LIFE+ project. The agreement is attached in Annex 7.2.8. of the Final Report.

Restored grasslands are protected also by national legislation. The Regulations of the Cabinet of Ministers N° 274 of 24.04.2007. “Individual Regulations on the protection and use of the Dviete floodplain nature park” includes a prohibition of ploughing of floodplain grasslands and grasslands on terraces.

Use of the habitat suitability model for the Corncrake

(Action C.4: Habitat suitability model for the Corncrake)

Elaboration of Corncrake habitat suitability model was one of the tasks of the project. Latvian Fund for Nature submitted the report on Corncrake habitat modelling to Nature Conservation Agency (NCA) and Latvian Ornithological Society (LOS) during the project.

The model is important for species conservation as a cost-effective approach, therefore it could be used in other nature areas in Latvia for Corncrake habitat identification, management planning or population number estimation.

Maintenance and regular updating of the website

www.dvietespaliene.lv

(Action D.1: Creation and maintenance of project's website)

After the end of the LIFE+ project, the website <http://www.dvietespaliene.lv> will be managed by the Ilūkste municipality in cooperation with the NGO 'Dvietes senlejas pagastu apvienība', representing administrations of local parishes. The project webpage will be transformed into a permanent site devoted to Dviete floodplain Natura 2000 area. The website will be regularly updated with news on nature conservation and tourism activities in the nature park and on relevant public events. Maintenance of the website requires reasonably small resources and could be done mainly by voluntary work and use of free materials (photos etc.).

Maintenance of the outlook platform

(Action D.4: Setting up of an outlook platform)

The platform will be maintained by the Ilūkste municipality in cooperation with the NGO 'Dvietes senlejas pagastu apvienība'. It will be actively used to demonstrate achievements of the LIFE+ project DVIETE to the visitors of the area. Technical monitoring of the platform at least once per year and small maintenance works could be needed (e.g. tightening screws). It can be done as a voluntary work of DSPA or a worker hired by Ilūkste municipality (4 hours x minimal wage = 9 euro/year)). The rent agreement of the land under the platform between the Ilūkste municipality and the land owner (signed on 12 June, 2012) is valid to 12 June, 2032.

Maintenance of information boards and signs

(Action D.5: Preparation of information boards and signs)

Information boards and signs of the LIFE+ project will be maintained by Ilūkste municipality in cooperation with the NGO 'Dvietes senlejas pagastu apvienība' at least for 5 years after the end of project. If needed, signs and boards will be replaced with new ones.

Maintenance of exposition on floodplain restoration

(Action D.6: Setting up an exposition on floodplain restoration)

The exposition will be maintained by Ilūkste municipality in cooperation with the NGO 'Dvietes senlejas pagastu apvienība' using their own resources. It will be actively used to demonstrate the project achievements to the visitors to the information centre.

Use of the equipment

A computer with the software and multimedia projector purchased by the LFN, has been delivered to the Ilūkste municipality, responsible for continuation of the information dissemination actions, initiated under the project. The equipment will be used in the Dviete floodplain information centre to raise awareness about nature conservation issues. It will serve for demonstration of project achievements and raise public awareness of conservation issues, important for the area.

Corrals for catching and transporting of cattle and horses as well as beds for staff accommodation at the information centre will be also used by the Ilūkste municipality, for use in further implementation of site management. An agreement has been signed between the Latvian Fund for Nature and the Ilūkste municipality, providing that the delivered equipment will be used exceptionally for nature conservation purposes.

Other two computers with the software, purchased by the Latvian Fund for Nature within the LIFE+ project, LFN will use in other nature conservation projects.

Monitoring of groundwater level

(Action E.11: Monitoring of groundwater table)

Monitoring of groundwater level will be continued by the project's hydrologist as a voluntary work. Groundwater level will be measured in monitoring wells only during low-water level period (when water level is under the ground): from the end of spring floods (May) till the beginning of autumn rain season (October). To evaluate the results of project activities, particularly low-water period is important. During the rest time of the year remarkable fluctuations of water level, caused by external factors, do not allow to evaluate the impact of project actions.

Monitoring of the Corncrake population

(Action E.10: Monitoring of Corncrake population)

Monitoring of Corncrake population in Dviete floodplain will be continued after the LIFE+ project DVIETE within the framework of the Natura 2000 monitoring, included in the National Monitoring of Biological Diversity. Natura 2000 monitoring is implemented to obtain data on dynamics of the species' populations in Natura 2000 sites and to evaluate, if favourable conservation status for the species is achieved.

Monitoring of Corncrake population in Dviete floodplain Natura 2000 site is included in the Natura 2000 site monitoring, organised by the Nature Conservation Agency sub-contracting monitoring performers. Bird counts are done by certified experts.

Preparation of a new management plan for the Natura 2000 site, nature park “Dviete floodplain”

The time period of the current management plan for the Natura 2000 site, nature park “Dviete floodplain” ends in 2019. Elaboration of a new plan is included in the priority list for preparation of management plans by the Nature Conservation Agency till 2020 (http://www.daba.gov.lv/public/lat/iadt/dabas_aizsardzibas_plani/prioritates/).

Management plan could include the following actions of the After-LIFE Conservation Plan:

- Monitoring of the restored river course;
- Maintenance of grasslands by grazing or mowing in an area of 113 ha;
- Maintenance and regular updating of the website www.dvietespaliene.lv;
- Maintenance of the outlook platform;
- Maintenance of information boards;
- Maintenance of exposition on floodplain restoration;
- Monitoring of groundwater level;
- Monitoring of Corncrake population.

During the preparation of a new management plan for Natura 2000 area, the actions, proposed within the current plan (2005) and not implemented yet, including restoration of hydrological regime downstream of the restored river section (Skuķu lake, other sections of Dviete river) and restoration of grassland areas in other parts of the nature park (outside the project area, where it was most urgently needed) should be considered, negotiated with all relevant stakeholders and updated according to the relevant national legislation.

Besides we suggest to consider also such ideas for further development of the nature park during the elaboration of the management plan as building of financial and human resource capacity of the NGO ‘Dvietes senlejas pagastu apvienība’ or establishment of an alternative management/administrative body for supervision of management of the area, as well as supplementing grazing management scheme with organic meat production thus decreasing dependency on agri-environmental payments and contributing to its sustainability.

Overview of the after-LIFE activities, funding needs and the sources of funds

<i>After-LIFE activity</i>	<i>Importance</i>	<i>Time-plan</i>	<i>Responsible organisations/institutions and implementers</i>	<i>Foreseen costs</i>	<i>Funding sources</i>
Monitoring of the restored river course	Crucial	Continuously. Regular inspection as a part of the grazing area surveys.	‘Dvietes senlejas pagastu apvienība’	Insignificant.	-
Maintenance of grasslands by grazing or mowing in an area of 113 ha	Crucial	Continuously	Owners and managers of grasslands	26 900 per year	EAGGF, state budget (55-330 euro/ha per year for maintenance of biodiversity in grasslands plus subsidies for less favoured areas plus single area payment)
Use of the habitat suitability model for the Corncrake	Important	Occasionally	Nature Conservation Agency, Latvian Ornithological Society	Depends on the area	Attracting projects, eg. EU LIFE Programme
Maintenance and regular updating of the website www.dvietespaliene.lv	Important	Continuously	Ilūkste municipality in cooperation with ‘Dvietes senlejas pagastu apvienība’	Updating – voluntary work, hosting – 12 euro/year.	‘Dvietes senlejas pagastu apvienība’, attracting projects
Maintenance of the outlook platform	Necessary	Continuously (technical monitoring). Annual small maintenance works	Ilūkste municipality in cooperation with ‘Dvietes senlejas pagastu apvienība’	Voluntary work of DSPA or a worker of Ilūkste municipality (4 hours x minimal wage = 9 euro/year)).	Ilūkste municipality or ‘Dvietes senlejas pagastu apvienība’, attracting projects
Maintenance of information boards and signs	Necessary	Continuously	Ilūkste municipality in cooperation with ‘Dvietes senlejas pagastu apvienība’	Costs of maintenance are insignificant. Potential replacement of a sign - ~4 euro (all 30 signs)	‘Dvietes senlejas pagastu apvienība’, attracting projects

				– ~120 euro); potential replacement of an information board - 45 euro (134 euro for all three boards).	
Maintenance of exposition on floodplain restoration	Necessary	Continuously	Ilūkste municipality in cooperation with ‘Dvietes senlejas pagastu apvienība’	Insignificant.	-
Monitoring of groundwater level	Important	Continuously	Expert-hydrologist	Will be performed as voluntary work.	-
Monitoring of Corncrake population	Important	Annually	Nature Conservation Agency, experts-ornithologists	Within the scheme of the monitoring of Natura 2000 sites.	State budget
Preparation of a new management plan for the Natura 2000 site, nature park “Dviete floodplain”	Important	Till 2020	Nature Conservation Agency	~ 40 000 euro	EU Cohesion Fund