



ABSTRACTS OF PRESENTATIONS

KEY-NOTE LECTURES

Rudy van Diggelen

Wetland Restoration in Central Europe: necessity, feasibility and knowledge

The present talk will give an overview on the possibilities and constraints of freshwater wetland restoration in Central Europe. I start with an analysis of the necessity to restore wetlands and continue with an estimation of the possibility to restore the different ecosystem services that wetlands have. I will explore the effects of changes in water regime and water chemistry on wetland functioning and investigate whether it is possible to reverse a degradation trend after drainage and return to the original state. I will then investigate whether threatened red list species are likely to return and if so how fast. Next I will compare alternative restoration techniques and estimate their cost-effectiveness. Finally I will discuss different restoration targets.

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The Via Baltica case – the road to a happy ending

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In 2002, the group of nature conservationists from Polish NGOs, established the coalition to prevent damage to nature valuable sites in NE Poland by the planned construction of I Pan-European Road Corridor "Via Baltica" (TEN-T). The expressway route supported by the government threatened at least 4 legally protected sites in the region. The main campaign goal was to change the road route to the existing viable alternative one avoiding most of them.

The fight to protect the most unique site threatened by the Via Baltica construction – the pristine wetlands in Rospuda Valley – gathered up celebrities, journalists, lawyers, politicians, artists, ecological activists and thousands of other people in Poland and abroad. The [Council of Europe](#), European Parliament and the European Commission also get involved in the action to save protected sites. The campaign was supported by numerous scientists and NGO coalition's international partners as well other Polish NGOs.

Eventually, after a 7-year long battle, the decision to construct the road by-passing the valuable fen-valley was taken in 2009. The Augustów city Bypass will avoid the wetlands and follow the alternative route out of the Natura 2000 site.

At the end of 2009 another landmark decision was taken. Polish government decided that the whole Polish section of Via Baltica expressway has to be constructed in line with the nature protection legal regulations. Thus the new route will follow the Strategic Environmental Assessment recommendations, go through Łomża and bypass the key Natura 2000 sites.

This was possible due to a combination of several factors: (1) concerted action of a coalition of the major domestic NGOs supported by international partners, leading to favorable rulings in numerous cases in domestic courts; (2) support of European authorities, the European Commission, which opened a case against Poland in the European Court of Justice, following the complaint of NGOs, as well as the European Parliament and Bern Convention Standing Committee; (3) wide support of the public opinion, generated by main media in Poland, even in other European countries; and (4) strong scientific evidence and (5) continuous advocacy work on national and European levels.

Rospuda Valley, Augustów Forest, Biebrza Wetlands, and Knyszyn Forest would have been spectacularly destroyed right now despite its Natura 2000 status without these factors operating in concert.

Michał Miazga

Communication in Natura 2000 implementation in Poland

10 years ago, in May 2000 in Ojców, the first Natura 2000 conference to discuss future implementation Natura 2000 in Poland was organized. Currently, 10 years after the beginning of the Natura 2000 history in Poland we can analyze the way of implementation of this EU policy, especially taking into account that the approach used was changed several times during these years. In this presentation I analyze the communication related to implementation of Natura 2000 in Poland.

Before the EU accession the communication related to Natura 2000 was relatively limited and formal. Even though 16 Regional Implementation Teams and 16 regional seminars were organized, the knowledge related to Natura 2000 and awareness of its importance was not improved well enough. The culmination of this phase of communication was the consultation of the Natura 2000 sites with local authorities in February 2004. Unfortunately, inadequate and formal way of consultation, together with the previous limited information share resulted in overwhelmingly negative reaction of local authorities.

First years of Natura 2000 existence saw growing conflicts related to investments and enlargement of Natura 2000 network. In the shadow of those conflicts several very positive efforts took place, especially on local level: 70 local cooperation programs were prepared in the participatory process, several promotional publications were prepared and widely distributed. Additionally, regional nature protection staff was trained in communication and the communication strategy for Natura 2000 implementation was developed. Unfortunately, the possible good result of this work was strongly reduced by unclear national policy related to Natura 2000.

Last two years brought about good improvement in communication for nature protection. The government created 16 Regional Specialist Teams which, apart from data collecting and sites designation, communicated with local authorities regarding new Natura 2000 sites. In some cases (eg małopolskie and zachodniopomorskie regions) it was quite intensive work consisting of many seminars and meetings. Additionally 70 trainings for local authorities were organized, to spread knowledge about Natura 2000 rules and discuss local problems. All this effort supported by remarkable progress in data collecting and law adjustment brings good results and improvement of cooperation with local partners.

Marcin Sielezniew

Complexity of invertebrate conservation in wetlands: a case study of butterflies

Stenotopic wetland butterflies are usually divided into two groups i.e. tyrophilous species preferring raised bogs and boggy coniferous forests, and hygrophilous species related to fens and damp meadows. There are some difficulties in this classification, as different populations of the same species (ecotypes) e.g. *Phengaris alcon*, *Boloria eunomia*, *Minois dryas* may be specialized to different biotopes. The habitat of a certain butterfly species is defined as a combination of resources which are necessary for completion of the life cycle i.e. availability of nectar and larval food plants, appropriate places for courtship, resting etc. For myrmecophilous representatives of the Lycaenidae family the presence of ants is also vital, especially for socially parasitic species of the genus *Phengaris*, which exploit *Myrmica* nests in their final larval instar. Conservation of butterflies has to take into consideration all aspects of their life-history. For tyrophilous species the protection of biotope aimed at the prevention of water level drop and eutrophication is usually enough, as those habitats are less threatened with spontaneous succession. However on damp meadows and fens the situation is usually much more complicated. Most of the threatened species depend on the special structure of vegetation, e.g. *Lycaena helle* requires some bushes to act as shelters against the wind. Moreover the conservation management suitable for plants or birds may not be appropriate for butterflies. Spontaneous succession, which is usually considered as a serious threat on some sites is a long-lasting process. In contrast intensification may eradicate or suppress some species very quickly e.g. mowing of a total area at a time when caterpillars feed on flowerheads is highly detrimental for *Phengaris* butterflies. Interestingly spring fires support some species on abandoned areas, however they are destructive for others. Therefore every location should be considered individually for optimal protection of all target butterflies.

Lesław Wolejko

The role of ecohydrological research in conservation planning of Polish mires

Various ecohydrological methods, well advanced in western Europe, are gradually introduced into the studies of Polish mires. They should also be included in planning and monitoring procedures for all protected wetlands, where active management and restoration are necessary, as well as in referencing possible impact on wetland ecosystems of all commercial enterprises (such as a road construction).

To successfully accomplish such goals the ecohydrological methods must be applied on different nature organization levels, namely that of landscape, ecosystem and habitat.

Landscape level analyses may be applied to the identification of eco-hydrological mire type and its landscape setting and the evaluation of the state ("health") of the regional hydrological system. This could also allow the re-construction and modeling of the past mire development within the transforming landscape.

Key problems addressed at the ecosystem level are: the determination of major processes controlling the existence of wetland ecosystems and the dynamics of these processes, as well as the evaluation of the results of applied management and restoration measures. Recently, due to the rapid industrial development, establishing reference systems for a long-term monitoring of possible change in ecological conditions of the affected mires has become important issue.

Main applications at habitat level are, for example, analyzing of habitat conditions for individual biota and testing the suitability of particular sites for re-introduction (meta-plantation) of species.

Several case studies from the mires of north-western Poland, illustrating application of ecohydrological methods, are presented and discussed.

Heinrich Belting

LIFE-projects for Rewetting of the Lake Dümmer fen area (north-western Germany)

Background and aims

Up to 1953 the river Hunte and Lake Dümmer (north-western Germany) regularly burst their banks every year, which caused extensive flooding of the surrounding fens (5,000 ha). In 1953 dikes were built, the wet grasslands of the fen were drained and agricultural use was intensified. This led to oxidation, reduction and shrinkage of the fen peat. The populations of many breeding and resting birds decreased or disappeared entirely.

Since 1987 a total of 2,500 hectares of private land were purchased. The last 180 hectares were made available through the LIFE projects.

The aim is the regeneration of wet grassland for meadow birds. Another aim is that local farmers work the meadows in a sustainable fashion that is in compliance with Natura 2000.

Results

50 adjustable weirs were built into the drainage ditches. Water levels can now be adjusted and set to levels that were typical of the area before dikes were built. Flooding in winter and slow step-by-step drainage during spring recreates suitable habitats for meadow birds. At the same time the local farmers can use the grassland in the summer months.

The areas purchased are let to 140 local farmers. LIFE provided various facilities to ensure sustainable grassland management. Thus the aims of Natura 2000 are being achieved and at the same time the farmers remain a part of the project by using and maintaining the grassland compliant with nature conservation.

Nature conservation has met with success. Species-rich wet meadows continue to develop where many bird species that had disappeared have returned to the wet grasslands. The populations of meadow birds are increasing.

Conclusions

The consolidation of the area by LIFE was an important prerequisite for the rewetting.

Conserving meadow birds in future is only possible as long as profitable farming can continue.

People have been made part of the project. This keeps public awareness alive in future. A regular international exchange of experiences and networking is fundamental for implementing the Natura 2000 sites into the European context, as well as evaluating the measures and best practices for conserving the EU's habitats.

István Csaba BOTOS, Balázs LESKU, Attila LUKÁCS, Csaba SZIGETVÁRI Dr., Szilvia RÉV

Experience of the LIFE-NATURE project, Practical protection of *Angelica palustris* habitats in Hungary

***Angelica palustris* - Treasure of European significance in the Nyírség area of Hungary**

Angelica palustris is a rare relict plant species from the Ice Age which managed to survive on a few proportion of its original habitat, despite of the gradual warming of the cold climate dominating several thousand years ago. All but a couple of the westernmost habitats of the plant are found in Hungary, in the Nyírség region. *Angelica palustris* lives in cool-microclimate birch and willow swamps and wet meadows of depressions among sand-hills. Its habitats in Hungary are threatened by depression of ground water level, infiltration of fertilizers from the surrounding agricultural fields, ploughing of meadows, invasion of alien species and lack of traditional mowing. The plant is threatened with extinction throughout Europe, which is why it is included in the Red Book, and protected under the Bern

Convention and the EU Habitat Directive (NATURA 2000) as well. It is strictly protected in Hungary, and its intangible value is 100,000 HUF (cca. 400 Euro).

Project objectives 2002-2006

In order to protect the habitats of the endangered *Angelica palustris*, E-misszió Association, with its partners (Directorate of Hortobágy National Park, Liget Public Foundation for Nature Conservation, Fűvészkeret Association, the Society of Young Botanists, and Bors Foundation), and with the financial support of the European Union's LIFE NATURE fund and the Hungarian state's KÖVICE fund, launched a 5-year complex nature conservation programme in 2002.

Planned project activities and the problems of implementation

Planned activities of the project covered the preparation of the management plans of the 11 project areas, purchasing of 1,033 hectares, afforestation of 150 hectares, grassland reconstruction of 100 hectares, building of water retention structures at 32 sites, machine mowing of 400 hectares, manual management of 100 hectares, performing the guarding and presentation of the 11 project areas, carrying out a lot of communication activities, botanical and zoological research and monitoring, and continuous project management. During the implementation the project met considerable obstacles unforeseeable in the planning stage. The agrarian policy, the domestic propaganda related to the accession of Hungary into the EU, and the accession itself resulted in a considerable increase in land prices and a decrease in selling inclination. Since no additional financial sources could be used for the project implementation, by 2004 it became evident that certain project activities could not be implemented to the extent originally planned. Modification proposals were made in several steps to adapt the project to the changing external circumstances, thus to achieve the original project goals as completely as possible. The officials of the Hungarian Ministry for Environmental Protection and Water Management, the specialists of the Hungarian Academy of Sciences and independent foreign experts have found the modified plans feasible, efficient and as one that is approaching the original targets to a large extent. Upon thorough evaluation, the European Commission did not approve the project modification, since, to its opinion, the original objectives would not have been achievable through the modified plans. Accordingly, the project was finished before the originally planned deadline.

The presentation is going to give details of the arisen problems and the experience we got during solving them.

Balázs Deák, Balázs Lesku, Attila Molnár, Tibor Magura, István Sándor, Péter Olajos Results and conclusions of the “Complex rehabilitation of habitats at Central-Bereg-plain” LIFE-Nature programme

The main objective of our project was to preserve and restore *Sphagnum* bogs and mires forest communities (riparian mixed forest, Pannonic woods), wooded pastures and pastures, which are unique habitats of the Central-Bereg-plain region (North-Eastern Hungary). These habitats have important landscape value and harbour rare plant (*Hammarbya paludosa*, *Vaccinium oxycoccos*, *Andromeda polyfolia*) and animal species (*Euphydryas maturna*, *Leucorrhinia pectoralis*, *Carabus hampeii*, *Lacerta vivipara*, *Crex crex*, *Lutra lutra*) too.

To achieve this aim we concentrate on the following factors: (i) improvement of water-regime of bogs and forests, (ii) improvement of the microclimate of the bogs, (iii) complex improvement of the status of wooded pastures, pastures (iv) raising public awareness, and cooperate with local people for preserving and maintaining the natural resources of the area.

From 2004 to 2008 we implemented the following main actions in the 4277-ha project area: (i) development of existing water supply wells, (ii) water retention in several wetlands which affected c.a. 1500 ha, (iii) establishment of buffer-zones for wetlands, development of habitats for species listed in Annex I. and II. and improvement of the landscape naturalness of region by planting 101 ha of forests (iv) restoration of 113 ha of wooded pastures (v) restoring 196 ha of pastures, (vi) installation of a wildlife fence around Nyíres-lake to avoid

the raised bog from disturbance of overabundant game population. Last but not least (vii) we involved the local farmers, inhabitants and students in the restoration and wise using.

According to our efforts the water regime (increased water levels on bogs, mires; increased groundwater levels in the area; more balanced water regime) of the most accentuated objects developed (affected area c.a. 1500 ha). The new afforestations provide a more humid microclimate even being a few years old. On the restored pastures extensive cattle and sheep grazing were reintroduced. These favouring environmental changes induced appearance or population growth of protected and Annex species: (i) *Leucorrhinia pectoralis* was detected in the project area, (ii) population of *Botaurus stellaris*, *Circus aeruginosus*, *Lanius collurio*, *Lutra lutra* showed a considerable growth.

Herbert Diemont

Integrating ecology and economy; how to do business?

The common denominator in ecology and economy is specialization, which is the engine for economic growth as well as evolution. The question is how to internalize the high demand for more biodiversity in our society -as an expression of evolutionary potential - in economic growth. The national parks and the Natura 2000 network are already underway to make a link between economy and ecology. Examples will be given and the role of the WTO and EU-CAP will be discussed.

Goran Gugić

Start anywhere, just get started

Central Posavina – Wading Toward Integrated Basin Management

Background and aims. The Ramsar-site, IBA and potential SPA/SCI Lonjsko Polje Nature Park (510 km²) represents mainly palustrine-riverine wetlands located within the floodplains of the Middle Sava-river basin (Central Posavina, Croatia). It represents both the largest maintained inundation area of all the Danube-river catchment and the key facility of the flood control system of the entire Sava basin. The high-ranked species and habitat diversity is mainly caused by man-made landscape variety, traditional grazing activities with endangered autochthonous breeds and a natural micro-relief.

Results. LPNPPS has established and improved Ramsar's wise use and integrated river basin management approach on Park and basin scale (1) by developing consultative processes and appropriate structures which involve the stakeholders by ensuring non-structural flood control methods which take advantage of the natural functions of wetlands to supplement or replace existing flood control infrastructure, (2) by developing a management planning process for the Park taking into account the wider context of Central Posavina, so as to ensure that the needs of the wetland are recognized and fully incorporated in this wider planning and management, (3) by providing support and tools for the effective implementation of the wetland-related traditional wise use activities to improve benefits for local people, (4) by providing the Park and its surroundings with a sustainable visitor management system, and (5) by improving the knowledge and skills of ranger staff on basic ecology, communication, interpretation and monitoring.

Conclusions. A combination of tools provided by EU-directives (NATURA 2000, Water-framework), the Ramsar Convention («Critical path» approach) and the World Heritage Convention (Serial site approach) as well as the establishment of stakeholders committees on both the Park scale and central basin scale enabled LPNPPS to conduct a management planning process that fully incorporate the PA in the wider context of the Sava basin ensuring the integrity of the floodplain ecosystem. Beside the planning process joint practical work with various stakeholders appears as a crucial management tool.

Søren Kjær

Action for sustaining the population of *Euphydryas aurinia* in Denmark

Background and aims

This LIFE - Nature project has secured an internationally significant population of *Euphydryas aurinia* in Denmark. Working at a landscape scale the project aimed to restore habitat condition and connectivity across six Natura 2000 sites. The project aimed to: increase the area of *E. aurinia* breeding habitat in favourable condition; improve connectivity between breeding patches within the Natura 2000 sites and through a comprehensive information campaign to raise awareness about the vulnerable butterfly among landowners and local authorities.

Results

ASPEA has managed and restored about 500 ha of *E. aurinia* habitats, and as a result the negative trend for the Marsh Fritillary has been curbed. This outcome was documented through an intensive monitoring programme; practical experience was gained, and a comprehensive information campaign was conducted.

500 landowners in the action areas received eight newsletters each; several plot owners' meetings were held in addition to multiple nature excursions, a seminar with 80+ participants, including experts and public authorities from across the country, and more than 100 individual meetings between plot owners and the management authorities.

Conclusions

The most significant successes of the project have been:

- restoring the Danish *E. aurinia* sites to a favourable habitat condition where the long term survival of *E. aurinia* is now much more secure
- building a public appreciation of the grassland habitats where they are now recognised as a coherent ecological entity of international significance, and thereby providing a solid foundation upon which other initiatives have already begun to build (e.g. amenity access, local wildlife and recreation businesses, marketing of the beef from traditional breeds grazed on the project sites)
- establishing successful partnerships with local graziers that will allow the appropriate grazing management of the project sites to continue into the longer term
- generating a substantial body of survey data and analysis to inform ongoing management of the project sites and other *E. aurinia* projects.

Ewa Kominek, Paulina Dzierża

Practical aspects of conservation measures in the project Wetland Butterflies (LIFE06/NAT/PL/000100)

Wetlands Butterflies is the project financed by LIFE Nature, GEF/SGP and EcoFund and realized in co-operation by six partners, including NGOs, scientific institute and national administration of protected areas. Its ecological aim is to strengthen the populations of six endangered butterfly species strongly connected to extensively used wet meadows on four Natura 2000 sites in Poland. The project is almost finished, taking 3,5 years of work to restore about 250 ha of meadows by mowing, shrub removal, topsoil removal and a number of "soft" actions. Its specific character was determined by its complexity in all areas of its realization: from ecological demands of target species, through technical obstacles to financial problems. The aim of our presentation is to show the complexity of the project that probably made it financed and ecologically effective on one hand, but was the reason for practically most obstacles in its realization. We also want to show the advantages and positive effects of our work, not only in the area of nature conservation, but also in influencing local societies' wellbeing and environmental awareness. We hope to be helpful for

the potential LIFE and other big funds' beneficiaries to avoid mistakes and construct the project in the most ecologically, economically and financially effective way.

Lukasz Kozub

European Beaver (*Castor fiber*) activity – help or obstacle in wetland restoration? – a remark

The presentation is not a result of a particle research but just a remark made on a few observations compared with literature findings and is aimed to raise interest towards interactions between beaver and wetland restoration.

Wetland degradation very often was caused by alterations in the hydrology, mainly by drainage. Now in ecological restoration projects we emphasise the importance of restoration of hydrological conditions suitable for desired ecosystems. Second often faced problem is overgrowth of the opened areas by trees and shrubs. Can beaver help us to gain our restoration goals?

European Beaver (*Castor fiber*), the largest European rodent, is a very specific animal. It shares with human the ability of altering the landscape according to its needs. By constructing dams and canals it can change the hydrological situation over vast areas. As many other large mammal species, beaver has become nearly extinct in Europe till 20th century due to overhunting and habitat alteration. But since the middle of 20th century in many countries (Russia, Poland, Germany, The Netherlands, Denmark) programmes of reintroduction of this species were carried out. They have been surprisingly successful and today the range of this species continues from European Russia and Fennoscandia as far west as France and south to Italy and Balkans.

The activity of a beaver causing the most severe changes in habitat is damming the watercourses. Raising the water level has a strong impact on surrounding vegetation, which has been proven in natural habitats. The second important impact is connected to foraging activity. Beavers can feed on nearly every kind of vegetation but during wintertime they have strong preferences towards broadleaf softwood species. Its activity can strongly suppress growth of those species.

Despite the positive impact on wetlands at the first sight the pros and cons of beaver activity for wetland restoration strongly depend on our objectives. The observations show that the severely damaged by drainage wetlands with very low biodiversity can benefit from beaver presence. But wetlands created by beaver are in most of cases eutrophic and the problems come when the aim is to restore specific low-productive habitats vulnerable for any disturbance as fens or fen meadows. The inundation with surface water, high water fluctuations or strong resprout of cut willows can be an obstacle during the restoration.

Lars Lachmann

The Aquatic Warbler LIFE project in Poland and Germany - bumpy start, successful implementation and fantastic chances for follow-up

The Polish Society for the Protection of Birds (OTOP), the Polish partner of BirdLife International, together with its partners, is currently implementing the largest Polish LIFE project to date, targeting the protection of the Aquatic Warbler, a flagship species of fen mires and wet meadows. The project is 75% funded by the European Union's LIFE-Nature Fund, totals €5.4 million and runs over the years 2005-2011. It takes place in nine locations including the most important sites for Aquatic Warbler in Western Poland and the Biebrza River valley. The project has six project partners and three co-financing institutions. As one of the first Polish LIFE projects, and because its size, the project experienced various obstacles and setbacks, which have all been overcome. The ecological background of the project is summarized in the presentation by F. Tanneberger.

This presentation explains also the landscape-scale solution to the management of Aquatic Warbler habitat in the Biebrza Valley that has been facilitated by the project: The peat

meadows of the Biebrza Valley in NE-Poland (c. 30,000 ha) hold 2,500 pairs of Aquatic Warblers, equalling almost 20% of the world population. After traditional land use by hand scything ceased around 1970, successional overgrowth has become the main threat to this habitat. Until 2007, over 20% of open fen meadows have disappeared and the overall habitat quality has deteriorated. The establishment of the Biebrza National Park in 1993 could not stop this development. The LIFE Project has now catalysed the implementation of a landscape-scale solution for the restoration and sustainable management of these peat meadows, with already over 4,000 ha under regular management in 2009. Purpose-built prototype mowing machinery with very low ground pressure and fast working speed is now used across the site. The national park has made 12,000 ha of public land available for management under lease agreements that guarantee the benefit for biodiversity, especially Aquatic Warblers. A targeted Aquatic Warbler agri-environment package provides a financial incentive for local farmers and enterprises to take up the lease and implement the management measures. In the near future, infrastructure will be put in place to allow for the energetic use of the biomass harvested, e.g. through the production of briquettes. This will contribute to the management costs in the future.

Mara Pakalne

Raised bog management and monitoring in the LIFE “Mires” sites in Latvia

Raised bog studies were carried out in the especially protected nature areas in Latvia - Cena Mire, Stikli Mires and Klani Mires Nature Reserves. The sites are nationally and internationally important and include intact raised bog vegetation. The marginal parts of the sites are influenced by drainage and peat extraction. These were the sites of the LIFE project “Implementation of Mire Habitat Management Plan in Latvia” (2004-2008). Mire vegetation in the intact parts of the raised bogs has a typical hummock - hollow complex and includes labyrinths of bog pools and ridges.

In the project sites vegetation and hydrological studies were carried out to preserve the rare and typical species and habitats. To stop the desiccation of the valuable raised bog habitats management plans are elaborated that were the basis for the management actions. The management plans include such actions, like rising of the water level and management of fen habitats. Prior to the start of raised bog management, monitoring of the habitat and site hydrology was carried out.

Habitat monitoring was carried out in all the 4 project sites where building of dams and habitat management is planned. In 2005 permanent plots were established next to hydrological monitoring plots, in places where vegetation changes are most likely to occur before the planned management actions take place in 2006. There are 38 monitoring plots on ditches in the raised bogs, twenty monitoring plots in raised bogs (7110*, 7120) and four monitoring plots in transitional mire (7140). Monitoring scheme includes also control plots. The wetness of the sites was recorded and includes surface water evaluation; identification of adjacent pools and *Sphagnum* dominated vegetation. In total there are 130 monitoring plots.

In the study sites restoration of the hydrological regime was carried out by building of dams on the drainage ditches. In Cena Mire - in the September and October, 2007 but in May/June, 2007 the action was continued in Stikli Mires and Klani Mire. In total, 351 dams were built on the drainage ditches both by the excavator and the hand work. The aim of the building of dams was to raise the water level and to allow the start of the regeneration of degraded raised bog habitats.

The results in 2007/2008 show that after building of dams on the drainage ditches, the water level has risen.

In total, 14 habitats of EU importance and 14 species of EC Habitats Directive were distinguished there, from which 4 are priority habitats (7110*, 9080*, 91D0*, 9010*). From all the sites the highest species and habitat diversity has Stikli Mires (total area of 6636 ha) - it has 116 especially protected species of Latvia, 38 species of Habitats Directive, 2 protected habitat of Latvia, 8 protected habitats of EU importance.

Katarína Radvanská, Tomáš Kušík

Conservation of endangered bird species populations in natural habitats of the Danube inland delta,

International nature conservation project aimed on improving the conservation status of the floodplain bird species that are protected in mirror NATURA 2000 sites: Slovak SPA Dunajské luhy and Hungarian SPA Szigetköz. The project area is spread at both banks of the Danube river from Bratislava to Štúrovo.

Project actions are designed for restoration of the most threatened natural habitats of the target bird species; introduction of an appropriate site management; creation of conditions for long-term sustainability of the conservation status of target species and awareness raising of the key stakeholders and public on the conservation of floodplain habitats.

The main project activities are oriented to a practical nature conservation with several larger construction interventions. With help of large water management companies we will restore 8 wetlands and old river branches along in the Danube in both countries, construct 2 fishways on two important sections of Danube and we also have started to restore steep river banks by removing a stone embankment at four 25 m long sections. This will create nesting habitats for *Riparia riparia* which is really missing in the Slovak Danube river bank.

In 2009 we have started also restoration of lowland wet meadows by grazing of 70 cows, 100 sheep and 20 goats. Planting of native floodplain tree species will restore minimum of 15 ha of the residual alluvial forests and 20 ha of riparian mixed forests on the areas currently occupied by plantations of hybrid poplars.

This project allows us also to purchase and lease the land within the NATURA 2000 areas. In 2009 we have already bought 23,4 ha of land in the district of Komárno. At these acquired land we will have opportunity to realize various forms of nature conservation activities.

Bernhardt Riehl

Wetland Restoration in the Salzburg Region, Austria - experiences of two LIFE Nature projects

The presentation gives a short overview of two recent LIFE Nature projects in the federal state of Salzburg, focusing on its practical implementation and both its successes and its constraints.

The first LIFE project (2006-2010) "Untersberg-Vorland" is located at the foothill of the Northern calcareous Alps 15 km southwest of the city of Salzburg. Its overall objective is to restore several typical wetland habitats such as calcareous fens and molinia meadows and at the same time improve the living conditions of the Scarce fritillary (*Euphydryas maturna*) which represents one of the largest remaining meta populations in Europe and two other Annex II butterflies species: the Marsh fritillary (*Euphydryas aurinia*) and the Scarce large blue (*Maculinea teleius*). Due to the cooperation with the Salzburg open-air museum, there is a unique chance to improve the public awareness of the high conservation value of the project area. Meanwhile 6 hectares of abandoned fen meadows have been restored, 3.5 kilometres of forest edges have been restructured for the Scarce fritillary and a special mowing equipment has been bought to facilitate the maintenance of the extremely wet meadows. Moreover acceptance of the Natura 2000 site has significantly risen amongst the local public and the farmers. (www.untersberg-vorland.at)

The second LIFE project "Habitat management in the SPA Weidmoos" (2003-2007) took place in a bog region 25 km north of Salzburg. It aimed at creating a high-quality "second-hand" habitat out of a former industrial peat extraction site thus maintaining and optimising the area as a breeding, resting and wintering areas several Annex I birds species. At the same time acceptance of the SPA among the local population was to be risen.

Throughout the project 45 dams were constructed and landscape modelling was undertaken to hold the water on site. The result is a more open landscape, interspersed with standing water bodies that provides a better habitat for birdlife. Experimental management of wet meadows, reed beds, bare land and bushy areas was also undertaken to optimize procedures for maintaining habitats. Visitor pressure was managed by constructing facilities to encourage people into the southern Weidmoos and so leave the other parts of the SPA free from human disturbance.

Cooperation between the project participants – the department for nature protection, two municipalities and a local NGO (peat renewal association) - is considered exemplary by the LIFE program monitoring team who has highlighted the project as a best-practice example of incorporating stakeholders and achieving acceptance by local people. (www.weidmoos.at)

Miroslava Rudá, Jaromír Šíbl

Project LIFE05NAT/SK/000112 „Restoration of the Wetlands of Zahorie Lowland“

Project focus:

In Slovakia the wetlands are among the most seriously threatened natural ecosystems. Wetlands represent rather unique habitats for many plant and animal species, and they are considered important both for the biodiversity conservation and stabilization of the water regime of the landscape. During the last few decades the total area of wetlands in Slovakia has been dramatically reduced and the vast majority of remaining natural and semi-natural wetlands have been seriously threatened by human interventions. The most significant have been the changes in their natural water regime, caused by the extensive drainage, peat extraction and land reclamation schemes. These changes have lead to the dramatic decline of the biodiversity and reduction of the retention capacity of the areas concerned. Therefore the project is focused on the restoration of the most valuable remaining wetlands at the territory of Zahorie Lowland, which is one of the most important regions in Slovakia not only for wetlands, but also for the biodiversity in general.

Actions and means involved:

- elaboration and implementation of Management Plans and Restoration Projects for 8 proposed Sites of Community Importance (wetlands degraded by drainage) at the territory of Zahorie Lowland.
- implementation of specific restoration and management measures to restore degraded wetlands and meadows
- education and training of key project personnel
- public awareness campaign on the importance of the wetlands and their conservation and restoration.

Project Partners:

- State Nature Conservancy of the Slovak Republic (project beneficiary)
- Slovak Water Management Enterprise
- BROZ - Regional Association for Nature Conservation and Sustainable Development

Urmas Sellis

How eagle specialists restored 2500ha of flood plains and bought the lands?

EAGLELIFE project was prepared in 2003 for arrangement of spotted eagles and black stork conservation in Estonia. Mainly our interest was to work with eagles and storks directly – to check and search the nests, use transmitters, prepare documentation for micro-reserves, install web cameras etc.

But to increase volume of the project to make it more serious, we included restoration of foraging areas in a pilot area – Soomaa National Park. That is on the best breeding areas of both spotted eagles and also for black stork. Spotted eagles prefer to forage on maintained flood plains, also black storks use frequently the small waterbodies after water is down.

On the maps we drew easily out 2800 ha of overgrown flood plains within Soomaa NP, checked some easy accessible places in field and so the great number appeared in proposal. Also our partner (ministry of environment) prepared to acquire to the state at least 65 ha of old forests around some nests (where owners could violate on nesting target species).

If the first mentioned actions (more interesting for main staff) were implemented with fine success, the restoration and land acquisition were pushed further...

Main constraints with restoration work and land acquisition:

- The 1/3 of flood plains planned (on map) to restore – were forested already, old maps show something other... we were obliged to find replacement areas and organize restoration there;
- Overflows on restoration sites and rised restoration costs prolonged additionally our work on flood plains ... additional national funding was necessary to find and to use more intensively the suitable weather conditions;
- AfterLIFE actions on restored sites were needed to confirm by stakeholders ... our partner managed to buy cattle to local farmers for sustainability of further maintenance and directing of local farmers to Agri-Environmental schemes helps;
- Some environmental officers made bad decisions for our project actions (due personal problems between them and project staff) ... such things appear, but are possible to solve speaking with people;
- Some private owners are not agree with restoration of their lands ... after restoration around their plots is wise to meet owner again (accidentally) and usually all needed agreements will be got;
- Not all local people are interested in scrub crushing, as these pieces make troubles for fishermen, filling with trash the fishnets below the working area during next over flooding;
- Friendly relations with sub-contractors and dense communication will help a lot;

Land acquisition:

- Main problems were juridical – early start with topic helps to solve even these, but change of legislation is time consuming;
- Involving Estonia to EU raised price for land – quite a long list of land acquisition sites gives more flexibility;
- Political constraints were the worst ones – we asked help from LIFE Unit, desk officer game personally to talk with high representatives of ministry of environment and the solution has found quickly...

For to get solid target for E actions (and partly for monitoring of results) we suggest to organize sociological studies at the beginning of project and for monitoring of results to repeat it near the end. In our case we made twice two studies, for overall public and for restricted land owners.

Most important is to believe in success of actions you prepare and not to overestimate own abilities!

Additional Clauses are also possible in case of urgent need – in LIFE Unit are working also the people like us...

Franziska Tanneberger

Fen mire conservation and vegetation management for Europe's most threatened songbird species

The Aquatic Warbler (*Acrocephalus paludicola*) is the only globally threatened passerine bird species in Europe. Around 1900, it was one of the most widespread birds in European fen mires. The population severely decreased as a consequence of wetland drainage and the species has disappeared from most of its former range in northern Germany and Poland. Habitat loss and degradation in the stop-over and wintering sites add to the critical situation.

This presentation gives insight into the ecological requirements of the Aquatic Warbler and the management recommendations derived from this, which are currently being implemented in the Aquatic Warbler LIFE project in Poland and Germany (LIFE05/NAT/PL000101) run by the Polish Society for the Protection of Birds (OTOP), the Polish partner of BirdLife International, together with its partners. This project is the largest Polish LIFE project to date, targeting the protection of the Aquatic Warbler as a flagship species of fen mires and wet meadows.

Optimal breeding habitat conditions during late May/early June include a vegetation height of less than 70 cm, a cover of the lower herb layer of approx. 20% and of the upper herb layer of less than 60%, i.e. rather sparse vegetation. Whereas in Eastern Polish sites the water height is up to 20 cm and a thick litter layer is needed for building nests, in Pomerania the water height is only 0-1 cm and the thickness of the litter layer should be less than 10 cm. This is probably connected to the larger invertebrate biomass on moist sites with a small litter layer. Trophic conditions in current and potential Aquatic Warbler habitats strongly influence the management needed to maintain or restore suitable conditions. Early summer land use is needed in the more productive sites to prevent habitat deterioration by succession to higher and denser vegetation. As this also poses a serious threat to broods, it is recommended to create a mosaic of early and late used patches by alternating land use. In the less productive sites, autumn and winter mowing can maintain suitable habitat conditions. Small stripes should be left uncut to increase prey availability and to provide nest-building material. Further eutrophication needs to be prevented, and habitat restoration is probably best supported by summer mowing.

The general management recommendations are currently transferred to detailed site-specific advice in the framework of Aquatic Warbler management planning within the N2000 plans. Since recently, Aquatic Warbler friendly land use in Poland is supported by a targeted Aquatic Warbler agri-environment package which provides a financial incentive for local farmers and enterprises to implement the management measures.

Zenon Tederko

The EU Environmental Liability Directive and wetlands restoration

The EU Environmental Liability Directive (ELD), which was implemented by the end of April 2007, made investors/operators which cause environmental damage financially responsible for remediating this damage, in accordance with the Polluter Pays Principle. The goal of the REMEDE project was to develop, test and disseminate methods (known as resource equivalency methods) for determining the scale of remedial measures necessary to adequately offset environmental damage. REMEDE was designed to support the application of the different methods that can be used, as listed in Annex 2 of the Directive.

The project, which draws from both EU and US experience, aimed to apply and develop the resource equivalency methods in accordance with the requirements of not only the ELD but also the Environmental Impact Assessment, Habitats and Wild Birds Directives. The end result is a toolkit that can be applied to all damage cases in the EU covered by the Directive, and which was tested through case studies in different Member States.

One of the case studies has been used to test the toolkit on basis of a hypothetical international express road in North-Eastern Poland, which sourced data and problem identification from the case of the Augustów bypass and the Rospuda river valley. Two major problems have arisen during the case study: (i) restoration of fens and wetlands, and (ii) scaling of habitats within fens and wetlands group as well as fen/wetland habitats versus non-wetland habitats. Both issues are methodologically difficult and disputable. However proper calculation of remediating and compensation measures is critical for restoration of wetlands which suffered from ecological damage (*ex post* approach) or may suffer from potential investment project (*ex ante* approach)

Further information:

For project publications and news updates, see the REMEDE website (www.envliability.eu). On the website, you can also sign up to the project mailing list. For any further enquiries contact Zenon Tederko: Tel (+48) (0) 510 275 210; Zenon.Tederko@aster.pl or Zenon.Tederko@otop.org.pl

Henk de Vries

Some Dutch examples of wetland restoration

On European scale The Netherlands forms one of the large concentrations of wetlands. Wet nature is typical for the Netherlands. There is a lot of experience in restoring wetland systems. A few examples of wetland restoration in the northern part of the country will be presented: salt marsh, a peatland complex and a small river valley. The lessons from successes and failures lead to some general principles for restoration projects.

Daan Wensing

Landscape auctions, a new financing tool for nature

“Welcome to the future!” – it is with these words that the first auction of a landscape was opened by the mayor of Ubbergen, The Netherlands, in September 2007. Launched by Knowledge Centre Triple E, in cooperation with the NGO ARK and the ViaNatura Trust Fund, landscape auctions represent a new instrument in the conservation finance toolbox.

In just over an hour, EUR 140,000 was raised for the conservation of a typical Dutch river delta landscape. Hedges, ponds, trees and a walking trail were ‘sold’ to the highest bidder. Companies, individual citizens and a high school participated in the auction, which received coverage from national television, radio and newspapers. So far, three landscape auctions have been held, raising over EUR 240,000. In this way, people got a chance to actively conserve the area they live and work in. This is direct, tangible, and fun.

Incentives for conservation

Farmers in The Netherlands play a key role in maintaining nature and landscape. Their land forms an integral part of important biodiversity corridors, protected areas and regional conservation areas. Central government has acknowledged this role by providing financial incentives for conservation to farmers in the form of subsidies. However, European Union regulations now make this more and more difficult as these subsidies are seen as income support.

The Ooijpolder attracts over 1 million visitors a year, making it one of the top attractions in the country. This, however, has not translated into the payments needed for biodiversity conservation. As with most nature areas in The Netherlands, entrance fees do not exist and parking is for free. Likewise, surrounding towns were unwilling to pay for its conservation even though most of their inhabitants use the area for recreational purposes. A new financing tool needed to be created.

How does it work?

Farmers in the Ooijpolder nature area approached Knowledge Centre Triple E with the task of creating a conservation finance tool which would be compatible with EU policies. This resulted in the concept of landscape auctions. A landscape is cut into tangible pieces called 'landscape elements', for instance a hedge, a pond or a group of trees. The farmers then determines the minimum price for each element by calculating how much it would cost them to maintain the ecological functions of these landscape elements for 10 years.

Before an auction is held, a catalogue is published listing all the landscape elements, the terms and conditions, and the 'rules of the game'. In this way, buyers could base their bid on all relevant information. The catalogue is also published online and potential buyers are approached through the media and relevant networks.

On 15 September 2007, over 300 people (representing banks, accounting firms, a waste plant, a high school as well as many individual citizens) participated in the first landscape auction. Under a clear blue sky, set in the nature area, over EUR 140,000 was raised for the upcoming 10 years. When items proved too expensive for an individual bidder, the auctioneer then grouped bids in order to secure a winning bid. This created a feeling of unity: together we stand.

The landscape elements that were 'sold' through the auction did not actually change hands as they remained the property of the farmers. Participants only 'bought' the maintenance costs of the element, not the element itself. The money raised through the auction is managed by ViaNatura, a regional trust fund, which also monitors compliance. Contracts are thus between farmers and the trust fund, as well as between winning bidders and the trust fund.

All bids are clearly labelled, ensuring that the money paid for a particular landscape element is only spent on that element. This is key to the concept of landscape auctions: a direct link between payments and product. When the money paid for an element exceeds the cost, the auctioneer and the bidder determine on what additional element that extra money should be spent. This ensures transparent, tangible and direct influence. Successful bidders can go and 'enjoy' the elements they bought.

Citizen participation

The auctions help to showcase the value of our landscape and to break a barrier between those who can take care of it and those who value this service. Companies can show their commitment to the landscape in a tangible way and communicate that CSR can be turned into something real (conservation of landscape elements). A funeral home, for example, bought an area with an ancient funeral mound in a protected area as they saw it as their responsibility to take care of a heritage which is intimately linked to its business.

Donations though the auctions are also tax deductible, as the payments are done to an NGO, making it even more attractive to participate. Auctions have now been carried out at three different locations in The Netherlands: the Ooijpolder, the Heuvellandschap and the Gooij. The Gooij area is located in the most populous area of the country, showing that landscape conservation is possible not only in areas where relatively few people live.

Citizens can and do participate -- by buying the tree under which they had their first kiss, the area they walk their dog, the hedge next to their house. A school adopted a hedge and its pupils helped maintain it as well, as an educational tool. A group of people who did not know each other joined hands and placed a bid to secure a landscape element they all felt connected to but could not afford alone. This clearly shows the power of this new tool: the direct link between what you pay and what you get.

The Landscape Auction are now also being organized in other countries like Germany, the United States of America and Poland.

Daan Wensing is Director of the International landscape Auctions, Biobanking and Management Planning department of Triple E.

Expertise Centre Triple E (Economy, Ecology and Experience) is a knowledge centre specialised in the relation between nature, economy and the experience people gain through and from nature.

Irma Wynhoff

At home on foreign meadows: lessons from the reintroduction of *Maculinea* butterflies

In The Netherlands, the two butterfly species *Maculinea teleius* and *Maculinea nausithous* went extinct in the 1970's but were reintroduced into a nature reserve in 1990. These obligate myrmecophilic butterfly species live as a caterpillar in the nests of the ant species *Myrmica scabrinodis* and *M. rubra*, respectively. Butterflies have narrowly defined habitat requirements and can only survive on sites with both host ants and the mutual host plant *Sanguisorba officinalis*. The butterfly population size is dependent on the density of host ants close to the host plants. Since their reintroduction, information on the population development and the ecology of the butterflies and the effect of management on the ant communities of the habitat have been collected. In The Netherlands, *Maculinea teleius* occurs in a nature reserve while *Maculinea nausithous* is restricted to line shaped landscape elements like road verges and canal borders. An increase in population size can best be achieved by improving the habitat quality for butterfly and ant species. Specific management activities have to be integrated into wider scale management plans. This is of special relevance to the populations on road verges. They are dependent on nature friendly management organized by municipalities that have prime interest in traffic safety.

The information collected is now used to delineate Natura 2000 sites and develop management plans for these sites. In the future, sustainable populations of both endangered butterfly species will be realized on sites which are still corn fields and cattle pastures nowadays.

Nerijus Zableckis

Wetlands for reptiles and humans

Representing a group of reptiles mainly distributed in warmer regions, The European pond turtle (*Emys orbicularis*) appears a rather exotic part of the North European lowlands native fauna. The northern part of the turtles distribution range reaches from its north-eastern border in Lithuania and Latvia over Poland, where the species occurs in the eastern parts of the country as well as near Odra river, to the north-western distribution border in Northeast Germany.

Due to loss of suitable habitats the species has undergone severe decline along the northern distribution area. This makes the species under strict protection in European Union, and it is included in both Annex II and Annex IV of the Habitats Directive. Therefore the Lithuanian, Polish, German herpetologists with support of Danish experts launched in 2004 cooperation to determine actions required for protection of the species in these countries. In 2005 the efforts resulted in the Life-Nature project titled "Protection of the European pond turtle and amphibians in the North European lowlands". Freshwater habitats:

The aim of project was to ensure favourable conservation status of European Pond turtles, including rare and threatened amphibians - Great crested newts and Fire bellied toads. The actions have been entirely implemented in southern Lithuania, North east and West Poland,

Eastern Germany by creating new and restoring freshwater bodies: swamps, bogs, forest ponds where turtles and other species like birds, invertebrates spend most of their life. Beside the wildlife the social benefit has been provided for local farmers, communities fulfilling the needs of fresh water and water bodies.

Marcin Zalewski

How green are biofuels?

I will present unexpected ecological consequences of production biofuels. In short biofuels are not solution for energetic crises nor they are helpful in reduction of GHG emissions. They also cause serious economic problems and are risk to biodiversity.

I will also describe our project on meadows of Kampinos National Park where we try to produce biofuels that do reduce GHG emissions. Additionally, this production promotes habitats of endangered birds and butterflies.

Marcin Zalewski

How green are EU agri-environment schemes?

I review results of numerous works showing very limited effects of EU agri-environment schemes for conservation and discuss possible sources of this situation. I will also talk a bit about my experiences in conducting agri-environment schemes and suggest that that Polish system is not so rosy as well.