

EUROPARC seminar "Experience exchange – restoration of sensitive biotopes in protected areas"

May 5-7, 2009, Dzukija National Park, Marcinkonys, Lithuania.

*Report by Dr. Johan Rova, Jönköping County Administrative Board and
the Swedish Environmental Protection Agency.*



Dzukija National Park visitor centre

Johan Rova

The seminar opened after a nice lunch in the visitors' centre of Dzukija National Park. The National Park Director, Mr Eimutis Gudelevicius, greeted all the participants welcome to the National Park and "the most beautiful part of Lithuania". He wished everybody a fruitful conference that would promote knowledge.

The EUROPARC Nordic-Baltic Section President, Mr Thomas Hansson, also welcomed everybody and addressed his thanks to the National Park and its staff for arranging the seminar. A special thanks was directed to Emilis Tamosiunas for valuable help in organizing all practical arrangements for the seminar.

After a short presentation from each participant, the seminars started.

Dzukija National Park, Lithuania

The first seminar was held by Mr Eugenijus Drobelis and Mr. Mindaugas Lapele, Dzukija National Park. They gave an overview of threatened habitats of Dzukija and experiences from their restoration.

Dzukija is the largest National Park in Lithuania, covering 58 500 hectares, and famous for its traditional cultural landscape – a mosaic of small fields, meadows and pastures scattered in a large area of forests. The National Park was established in 1991. It holds a high biodiversity because of its unique combination of sandy plains and moraine highlands, with river valleys serving the purpose of migration corridors.



The first seminar in Dzukija.

Species composition ranges from southern in the warm sand areas to northern in the peatlands. Influence from human activity on nature has been comparatively gentle, and there is a mosaic of forests and small villages with traditional farming within the park. The continuity of traditional haymaking is probably one of the reasons this area is so rich in butterfly species.

Due to socio-economic and demographic changes, the use of open areas has almost ceased, and the park administration has observed a sharp decline of open habitats, which are valuable for many protected species. To improve the situation, management of wet and dry meadows has been organized as well as the continuous management of habitats suitable for black grouse.

Conclusions from this presentation were that continuous management of restored habitats is a “never ending story”. We also need to be better in learning from other peoples’ experiences, so that we can adopt and improve methods already tried by others instead of repeatedly re-inventing them and making the same mistakes over and over again. Since lack of resources makes it necessary for us to prioritize, we need to be sure that we do the right thing in the right place.

Q1: What is the highest conservation value in Dzukija NP?

A1: The forests (capercaillie, black grouse) and the traditional cultural landscapes, and the mosaic between them.

Q2: How many land owners are there in Dzukija NP?

A2: A lot of private land owners! It is sometimes difficult to come to agreements with land owners, because large parts of the land has uncertain ownership – the land has not yet completely been distributed from state to private owners. The land reform has not been completed.

Adazi Natura 2000 site, Latvia

A second seminar was held by Ms Ieva Mardega. She gave us an insight into a Latvian LIFE project where restoration of biological diversity had been performed in Adazi, a military training area and Natura 2000 site.

The aim of the project was to restore heath, meadow, mire, and freshwater habitats. The problem of overgrowing started when military training in the area decreased and, therefore, the main objectives of the project was to integrate nature conservation and military interests, restore and maintain nature values, and to promote networking and dissemination with military site managers. Actions in the project were mainly habitat restoration and maintenance, restriction measures, and education actions.

“We are restoring heath habitats (1040 ha), meadows and inland dunes (35 ha) and raised bog habitats (306 ha) by mowing and cutting of bushes and trees, regulating the water level and burning. Quality of freshwater habitats is restored in oligotrophic Lake Mazuika and mezotrophic Lake Lieluika.”

Monitoring the impact of the project actions on species and habitats included inventories done on a regular basis in 77 sample plots, as well as detailed yearly reports about the main habitat types (heath, meadows, freshwater and mire).

Q1: How will you manage these areas after restoration?

A1: We have thought of an “after LIFE” plan. We hope that the military will go on managing the area.

Q2: Do you have any recommendations on how to cut shrubs and trees?

A2: According to tradition, trees should be cut or bark peeled off when the moon is on the wane in order to prevent offshoots. No one has however proven this, but probably, this will be critically tested in a continuation of the project.

Q3: What about unexploded shells in the ground?

A3: Unexploded shells make it difficult to get rid of tree roots. Burning is better than digging/soil processing because of the risk of explosion when digging. The use of military equipment for removal of mines could perhaps be used in order to get rid of both unexploded shells and roots (as has been tested in Sweden).

Zuvintas Biosphere Reserve, Lithuania

The third seminar was held by Mr. Arunas Pranaitis, Zuvintas Biosphere Reserve, Lithuania. He gave a description of how threatened habitats were managed in Zuvintas.

Fens, wet grassland, shallow lake vegetation provides important habitats for many animals and plants in the Žuvintas Biosphere Reserve area. Because of restrictions in the protected area, traditional land use has ceased there. A lack of management affected biodiversity negatively. The main threat is that fens are being overgrown by reeds, higher plants and bushes, *Salix* sp, and trees, *Alnus* and *Betula*. Breeding wading birds and ducks species has thus been replaced by a bird fauna that is adapted to shrubby habitats.

Management of the area is basically about restoring and keeping the nature values that existed in the 1950's, when agricultural activities such as grazing and hay-making in fens, marshes,

and meadows kept the area more open than it is today. Cattle grazing and mowing was reintroduced in several parts of Žuvintas fens according to the 2007 Management Plan for the Reserve. Management actions include removal of the wooded vegetation, removal the growth of cut-off trees and bushes, removal and cutting of reeds, mowing, grazing, and restoration of wet meadows and fens. Grazing and mowing is done by Hereford cattle rented to local farmers, where the outcome belongs to the farmers. Hereford is good cattle in this area, because they browse also in the water. Reed that is cut is planned to be used in a local heat plant. Cutting submerged vegetation in the Lake positively has effected populations of breeding birds.

Comments from the audience: Several species of waders have declined in Europe in recent year – the reason for this is unknown.

Q1: Is water level managed in the lake?

A1: No, the water level of the lake is not managed; the old dam is going to be rebuilt this year, but the water level will be kept almost the same all year. Changing water levels is believed to cause unwanted effects in the surrounding vulnerable habitats, so for this reason water level should be kept stable.

Walk through the forest

After the seminars, but before dinner, all participants went on a spontaneous excursion on foot in the National Park forest, just outside Marcinkonys. The aim of the tour was to see an area where an accidental forest fire had occurred just 10 days before the conference.



Walking excursion in search of the burned forest.

Johan Rova

Along the trail, we got glimpses of the rural landscape, the village of Marcinkonys, and the forest. The soil in the area consists mostly of sand, and with some small exceptions, the forest was dry, open pine forest (*Pinus silvestris*) mixed with small bogs and the occasional stream.

The fire had affected an area of approximately 40 ha. Apparently, the heat and smoke had been so severe that a majority of the pine trees were either killed or would die soon. A discussion then started whether the dead trees should be left to promote biodiversity in decaying wood or if the timber should be taken out from the National Park. According to the National Park staff, the plan was to cut down the trees.



Burned forest near Marcinkonys.

Tuesday evening

After dinner, we were all invited to the “pub” in the cellar of the Visitor’s Centre. There, we had the opportunity to try some Lithuanian drinks and local food. Soon the great event of the evening appeared: a fellowship of village women, who introduced us to Lithuanian folk songs and taught us a couple of singing games, such as the “Flour mill dance” and “The lonely bird”.



Lithuanian ladies singing.

Johan Rova

Komosse nature reserve, Sweden

The next day, Wednesday May 6, started after breakfast as the first speaker Dr. Johan Rova, Jönköping County Administrative Board, gave a presentation of a wet meadow/swamp forest restoration project in the Komosse raised bog area of Southern Sweden.

Komosse Nature Reserve and Natura 2000 site (Jönköping County, southern Sweden) is one of the largest raised bogs in southern Sweden. The central part of the raised bog is relatively untouched, but most of the fens surrounding the bog have been drained in order to increase timber production. In this project, an attempt was made to restore the hydrology in parts of the transition zone between bog and forest. The major aim was to regenerate the fens, swamp forests and wet meadows that once bordered the raised bog.

Four different ways to plug ditches were evaluated: dams made from pieces of logs, plank dams, intermittent dams made of mineral soil, and damming made by filling the entire ditch with mineral soil. The different methods were selected depending on ground conditions along each ditch. Since all ditches were in the border outside the raised bog, they had been dug in mineral soil, which facilitated the project. An extensive monitoring program was set up to check both if botanical composition would respond favourable of the actions, and if restoration would cause increased levels of e.g. mercury, nitrates, aluminium, and phosphorous in the water downstream. Hardly any chemical effects could be detected, but some positive results can already be seen in the vegetation, because of a raised ground water level. It was concluded that on this site, plank dams were the most expensive way to plug ditches, and the plank dams also easily suffered from erosion.

Söderåsen National Park, Sweden

The second speaker on the Wednesday was also from Sweden. Mr Roland Larsson, Söderåsen National Park, Skåne, presented to us a restoration project where extensive areas of Norway spruce plantations had been replaced by deciduous forests.

Söderåsen National Park is one of the largest remaining broad leaved forests in N Europe. Other characteristics of the National Park are the talus slopes. The National Park is situated at the same latitude as N Lithuania.

The actual project of restoring broad leaved forest was aimed to restore the areas where spruce trees had been planted. Spruce is considered a foreign tree in this part of Sweden. The spruce should be thinned and successively phased-out over 20 years. This successive cutting, consisting of thinning, cutting off forest edges, and creating gaps and corridors in the forest, is not a conventional method, but aimed to be more environmentally friendly.

142 ha of the area was clear cut before the National Park was established, and on these areas burning would have been an interesting start of restoration, but this was not allowed. Instead scarification and plantation was used here.

In some smaller areas, young and dense birch forest had to be thinned in order to increase the amount of sunlight hitting the ground. An attempt to use horses for timber transportation was made. In the end, however, machines – often specially designed for the project – were used for most of the work.

The project was part of a LIFE project. This meant that the statement of accounts had to be fulfilled according to specific EU standards. The project therefore employed a specialized bookkeeper, which in the end turned out to be a success.

The entrepreneurs involved in the project took the chance to invent and test new machines, e.g. a machine for sowing beech nuts was invented and tested for the first time.

Fencing of plantations was necessary in order to keep wildlife outside. Because of this, survival of plants is high, usually well over 40 %. The only exception was areas where beech was planted under a too dense birch tree cover.

The project has been successful. It would not have been possible without funding from the LIFE fund.

Q: How long do the fences need to be there?

A: About 10 years. Fences are expensive to keep in good shape, so they will be taken away as soon as possible. There is a large population of wild boar in the NP – they are beneficial for beech regeneration, but they are also a nuisance because they destroy the fences.

Q: What did you do to the residues (branches, bark, apices) remaining from the spruce logging?

A: We usually left it on the ground. This differed in different places.

Lake Hornborga Nature Reserve, Sweden

The last speaker in the program was Mr. Peder Hedberg-Fält, manager of Lake Hornborga, Southern Sweden. He showed a very informative film about the restoration history of the bird lake Hornborga.

Lake Hornborga is an important link in the migration route for numerous migrating birds, such as cranes and wader birds. In its original state, the lake was considered to be one of the prime bird lakes in Sweden. However, in order to gain arable land, the water level of Lake Hornborga was lowered five times through the recent agricultural history. This has caused a complete alternation of the ecosystem of the lake, and severe damage to the lake as migration site.

Restoration of the lake has been ongoing since the 1970's, gradually gaining experience on how to do. Following a government decision, a unique restoration programme began during the latter part of the 1980's with the aim to recreate a bird lake. The restoration has until today taken more than 30 years, and is probably one of the most ambitious wetland restorations in Europe.

There is a conflict between fish (Cyprinids) and bird values of the lake.

Fish populations are important in this kind of lakes. *Potamogeton*, *Chara* and other submerged vegetation are very important for the birds. If the populations of fish species foraging in the mud are too large, there is a risk that phosphorous will be released to the water, causing algal blooms. Experience shows that lakes of this type are in a very unstable condition, which means that they can quickly switch from a clear water state to a turbid water state.

Q: Do you need to repeat the restoration continuously?

A: No, after the raising of the water level in the lake, the open lake areas are "self cleaning"; we have not needed to do any new restoration there. Only the wet meadows are continuously managed (mowing, haymaking, grazing).

Q: Are there any monitoring programmes running?

A: We are still monitoring the environment in the lake, but even though monitoring has been ongoing for over 20 years, no results have been published. The fish and bird fauna is monitored every year.

Q: Does anyone make money from the ornithological tourism in the area?

A: The public interest in crane spotting began in the 1950's, when people started going around in their own cars. Today we have around 150 000 visitors; quite a lot of them come from abroad, needing food and accommodation. Together with the tourist board in the area, the number of facilities for tourist accommodation have increased. The season is very short, so the tourist entrepreneurs need to have other income as well. However, the large number of visitors spending money in the area has made the people living around lake Hornborga positive to the restoration of the lake.

Teici Nature Reserve, Latvia

After the scheduled programme, Mr. Juris Jatnieks spoke about experiences from Teici nature reserve in Latvia. There, they had performed plugging of ditches in a project similar to Komosse, although in Teici the dams had been made in peat soil, not in mineral soil. Also here, profiles had been dug perpendicular to the ditches in order to make the dams wider than the ditch. Digging had been done by hand – using voluntary workers, even “academics” and “administrators” from the central governmental offices had participated as volunteers in the project.

The experiences from Teici are similar to those from Komosse: dams made of planks do not last for a long time, and they need extra support by soil or other structures on the down stream side. Instead of plank dams, double rows of logs with a central core of peat have often been used as dams. The experiences from this type of dams were good.

The results from the project were that large drained lakes have been restored to lakes. Already it was possible to see that peat formation has started over again. The dams have been integrated in nature – the parts of the canals between dams have started to get filled with peat moss.

Conclusions from seminars

Before lunch was served, everybody was allowed to make some final comments about things learned in their projects.

Adazi

The experiences from the project are spread both internally in the organisation and between colleagues. Also visitors and international exchange of experience has been important, e.g. from a visit by the Swedish military.

Zuvintas

Dams must last for over 50 years in a raised bog; if mistakes are made, it is difficult to fix them. It is important to learn from other's mistakes and experiences.

Komosse

All experience is used when the areas of restored hydrology will be extended. It is always a good idea to try to visit other sites and ask for other projects' experiences. Nevertheless, each site is unique and costs for different methods vary between sites and countries.

Söderåsen

The project was close to catastrophe because of the storms in 2005 and 2007; unpredicted events can always cause damage to a project.

Hornbogasjön

You can never inform too much; it is extremely important to involve local people in working groups in order to gain knowledge about what they know works and what does not work.

The President's conclusion

Mr. President Thomas Hansson thanked everybody for their informative talks and everybody's participation in interesting discussions. He finally stressed that in all projects, informing and involving stakeholders is important for the success of the project. He also urged everybody to use the network from this – and other – meetings in order to increase the base of knowledge for running and upcoming restoration projects.

Field trip in Dzukija National Park

After lunch, we went on a field trip to Musteika heathland, the Skroblus river valley, the Village of Musteika, and a museum of traditional bee-keeping. We also had the opportunity to participate when one of the bee-keepers used traditional equipment to check if a bee nest had survived the winter in one of the huge pine trees where an artificial bee hive had been constructed "the old way". One brave seminar participant even dared try the ropes used by the bee keeper for inspection of the nest.



A rainy yet pleasant afternoon in the Skroblus River valley.

Johan Rova

The excursion ended at the local arts-and-crafts museum in Marcinkonys, where we were served a wonderful buffet with Lithuanian specialities, including pickled fish, dark rye bread, meat, buckwheat, and deep fried fish.

Feedback and comments from the participants

The participants had the opportunity to give feedback and comments on the seminar. The feedback was given on a scale 1-5, where 1 equals unacceptable and 5 equals excellent. Nine participants handed in a feedback form.

Choice of month [May] for this seminar

Feedback value: 4,4

Comments

- Beautiful outside, “warm” weather, no mosquitoes.
- In May there is always a lot of things to plan before the field season.
- Better – in April.
- It’s a hectic time this month, but good to get new ideas relatively early of the year.

Choice of time for the seminar [Tuesday lunch to Thursday morning]

Feedback value: 4,5

Comments

- Perfect; enough time to travel during working week, Saturday and Sunday free.
- It’s perfect, so all can travel to the seminar without trouble.

Were you satisfied with the practical information distributed before the seminar via e-mail?

Feedback value: 4,0

Comments

- Wished for more information about staying over night, what to bring/not to bring.
- Very good job and fast response on all questions.
- I wish a participants list.

Did the seminar agenda fulfil your expectations and requests?

Feedback value: 4,2

Comments

- Good organisation all days.

Were you satisfied with the presentations?

Feedback value: 4,1

Comments

- Presentations may be better, but films about seminar theme – excellent!
- Videos were awesome!

Were you satisfied with the field trip?

Feedback value: 3,9

Comments

- Very exciting!
- It had been nice to see some restoration work on the field trip, but otherwise it was a really nice trip.
- Thanks to organizers!
- Would have liked a walk through Musteika and more time in Kapiniskes.
- Very nice guides!! And skilled!!
- Could have been a little longer and with less rain...

Conference venue

Feedback value: 3,8

Comments

- Do not understand question.

Accommodation

Feedback value: 3,7

Comments:

- Could have been warmer.

Meals

Feedback value: 3,9

Comments:

- Not enough.

Other comments

- A very good insight in Lithuanian culture and food – much appreciated!!
- Social activity on Tuesday evening = 5+
- Thank you for the opportunity to take part in this seminar – hearing valuable information, gaining new experience, and foreign contacts.
- A list of participants would have been nice to get before the seminar. It would have made it easier to learn peoples' names.