











Restoring Europe's Rivers

RESTORE Events: Reporting

Engagement event 2 round 2 in action C4 (seminar) and sector specific event 3 round 2 in action C3 (excursions):

Finland, Lahti - Helsinki

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14 – 16 Aug 2013

LIFE 09INF/UK/000032



Event Details

North Region Closing Seminar was round 2 event for the national seminar arranged in January 2012. It gathered together water managers, practitioners, politicians and other stakeholders from all North Region member countries. The aim of the seminar was to close the RESTORE-project and sum up the achievements of the project focusing on the themes discovered most challenging in the member states. These include the multi-level connections between land use and river restoration – agriculture, forestry, hydro power and urban waters.

The seminar was followed by excursions organized on 15th and 16th of August 2013 in Southern Finland. The event promoted RESTORE, River Wiki and 5th European River Restoration Conference, discovered and transferred good RR practices, familiarized the participants from Sweden, Finland, Poland, Estonia and Norway to each other, and got acquainted with Finnish RR case studies in the field.

Key Issues from the Event

Key issue of the event was to

In terms of RESTORE, our key issues were:

- To discuss jointly about the common hindrances and solutions for river restorations (RR) in Finland, Estonia, Sweden, Norway and Poland.
- To share information about RESTORE and especially about RiverWiki to stakeholders and river basin planners from various countries.
- To get participants acquainted to create possibilities for future transnational cooperation between the North Region member countries.
- To get acquainted with Finnish river restoration sites focusing on agriculture and fisheries.
- Transnational exchange of RR expertise.

Key Outcomes

During the seminar where we got a comprehensive picture of what are the key challenges and interest in Finland, Estonia, Sweden, Norway and Poland. We also visited many restoration cases in Lahti and Helsinki Metropolitan Area.

During the event in Helsinki Metropolitan Area we got to see solutions how to use blue and green infrastructure in agricultural and urban areas in combining the river restoration with stormwater and flooding management as well as providing recreation areas for residents. The selected sites were good examples where restoration work had been done to enhance the ecology of fish and other

organism in production and migration during the past 10 years. Most of the work had been done with the help of volunteers and guided by the government authorities and municipalities.

14th of August: Seminar

The RESTORE North Region Closing Seminar was held in Sibelius hall, Lahti.

In the seminar the main topics and discussions were about:

- *Hydropower;* how to define environmental flows, reduce hydropeaking, restore and create reproduction habitats?
- Agriculture; how to integrate ideas of river restoration into local drainage practices?
- *Urban rivers*; Green infrastructure, urban brooks and sustainable urban drainage facilities should be incorporated into urban planning.
- *Estonia, Pirita River*; Increasing reproduction habitat area for salmon and trout new type of spawning habitat in lime stone, restoring dams to nature-like fish passages.
- *Norway*; Side channel, to compensate impacts of road construction, flood control etc. will be propagated for power companies as example of practical measures that can be done to increase natural reproduction of salmonid fish species.
- Poland; Management of morphological processes by making side channels instead of making one big engineered channel. In Poland there are good results in increasing diversity. Attitudes about natural rivers: the old flood disasters are still in memories and many people find natural rivers very frightening.
- Norway, Borselva; Reduced discharge through water abstraction, nutrient load. Increasing minimum flow in winter. Hydropower; National screening soon published. Environmental flow and bypass demands do not decrease power production significantly when revising licenses. National prioritizing of ecosystem services: Environmental potential, fish, diversity, landscape. Good examples rather than best practice. Environmental flow for bypasses is a political question? Screening relevant for many other countries and sectors
- *RESTORE and ECRR*; Promoting and networking. Making access to examples easier. How can ECCR continue with the results of RESTORE.
- Sweden; New quality standards, morphological and hydrological characterization of all catchments, discharges, regulation, deviation from natural flow, buffer zones, large woody debris, river segments, priorization of restoration measures (fish stocking does not help for good condition), restoration focused on adding rock and gravel (only 7 with large woody debris), new structures like rapids, little monitoring- should be standardized.
- *Finland, Iijoki River*; Heterogenity and habitat diversity does not automatically lead to fish or benthic diversity (stream specific responses). Young brown trout densities high bubbot problem. Increased landscape aesthetics and fishing opportunities. Land ownership problems in re-meandering, water levels. Forest drainage erosion problems. Possibilities

for restoration. Overland flow fields, wetlands. 6 fish ways lacking. Environmental flow concept needed. Monitoring: think why and what to restore, manage the health of stream systems.

15th of August: Lahti excursion

Wetlands, settling ponds and electro-osmosis experiment in brook Purailanviepä

The Purailanviepä ditch was constructed in 1960's for land drainage. It has been one of the heaviest nutrient load releasing catchment and the source of eutrophication for the lake Vesijärvi (mainly Komonselkä area). The ditch mouth area has been heavily eutrophicated and silted.

During summer 2006 three pools were constructed on the shore of the lake. Water flows from pool to another through the walls made by stone. In this slow process the solids settle to the bottom. Also there are iron wires placed on the bottom of the pond. The electric current will help the phosphorus to precipitate.

The Hollola municipality and The Lake Vesijärvi protection- project have both supported the construction work by approximately 10 000 euros. The same amount has also been given by the locals through fishery collective and so called 'ditch clearing cooperative'.



Figure 1. Purailanviepä brook

Chemical precipitation in Upilanoja stream

The stream Upilanoja (in the river Kutajoki, municipality of Hollola) is a three km stream that runs through the agricultural fields to the lake Vesijärvi. New wetland for research was constructed in 2013 by The Lake Vesijärvi Foundation. Water flows from the wetland through the chemical storage to the settling pond. The amount of decreased phosphorus is monitored and measured during the next few years.



Figures 2 and 3. Pond in the stream Upilanoja and vessel for chemical precipitation

This project involved also volunteer work. Chemicals and devices were given by corporations who created and developed these methods.

Restoration for fishery in the river Hammonjoki

The river Hammonjoki was restored from seven different sections by the end of year 2007. The source of the water in the river comes mainly from springs. Catchment area is 45 km² and the river runs to the lake Vesijärvi.

The field excursion site is in the lower part of the river. Previously the connectivity of the river was blocked by an old mill dam. The old dam is protected by the 'National Board of Antiquities and Historical Monuments' and it was not permitted to take it down totally, but it was possible to explode a hole into the dam to enable the fish migration. The bypass was constructed to the rapid section year 2007.

The river Hammonjoki inhabits populations of e.g. brown trout, brook trout, grayling and brook lamprey. Brown trout is the only natural salmonid species of the river and is mainly found from the lower parts of the river. Brook trout is the most common species and abundant in the whole river, also in the small headwaters. Brook trout population originates from the fish farm upstream (Hatsina) stockings made in 1960's. Recently there has also been seen stocking of rainbow trout for fisheries. The river Hammonjoki has had a distinct fishing section for fly fishing since 1990's.



Figures 4 and 5. Rapid in the Hammonjoki (Koveroinen)

NATURA 2000 -site lake and habitat restoration in Lahdenpohja

Lahdenpohja in the lake Vesijärvi is a part of Kutajärvi regions' Natura 2000 site. The lake Vesijärvi is influenced by ground water and is known to be the most valuable lake for its aquatic plant community in Finland. The bays which are rich in bird species and populations are also exceptionally representative and diverse in aquatic plant species.

Restoration of the area started in the beginning of 2000 by making the settling ponds and artificial rapids in the stream Mustaoja. The excavation bank (30m long) was removed during the winter 2004-2005. At the same time silt dredging was conducted.

The shore of the Lahdenpohja area was again restored this year for 700m. The area was dredged from the silt and the old dredging banks were cleared. This restoration cleared up the boating routes, made the lake scenery better and enhanced the habitat for fish, birds and plants. The Lake Vesijärvi Foundation and local 'Centre for Economic Development, Transport and the Environment' supported both the project by 20 000 euros. The shore will be further restored by exhauster dredging.

The Lahdenpohja area is a great example for exceptional volunteer work activity in the protection of the lake Vesijärvi. The restorations measures which are ongoing are extension for the work previously made in the streams Mustaoja and Vironoja and in the lake Matjärvi.



Figure 6. NATURA 2000 -site lake and habitat restoration in Lahdenpohja

Photos by Pinja Kasvio

16th of August: Helsinki Metropolitan Area excursion

River Mäntsälänjoki

River Mäntsälänjoki is an old sea trout river which has been modified to the needs of agriculture and hydropower production in 1950's. A regional watercourse protection organization belonging to the Finnish Watercourse Restoration Network and called Itä-Uudenmaan ja Porvoonjoen vesien- ja ilmansuojeluyhdistys r.y. The association has been restoring the River Mäntsälänjoki since 1990's. Latest the river has been restored by voluntary work in late October 2012. Spawning habitats for sea trout were created.



Figures 7 and 8. Spawning habitats for trout was created by adding gravel and rocks to the stream.

River Vantaanjoki

River Vantaanjoki flows through the Uusimaa Region, starting from the City of Riihimäki and flowing through the cities of e.g. Kerava, Vantaa and Helsinki, and draining into the Gulf of Finland. Besides the 87 kilometres long main channel, the river has many tributaries including rivers and brooks, which are essential for its ecology.

The whole river area was famous for its salmon and sea trout populations from medieval times but through a dam in the estuaries and later pollution, the original stock became severely endangered. Fish passes were constructed and the regional authorities restored the main river channel in 1995-2002 with more than one million euros. All together 20 hectares of spawning habitats has been restored, and the annual number of sea migrating smolts no varies between 18 000 and 25 000. However, the result still partly relies on stockings. The aim is to return a sea trout population based on the natural reproduction of the fish population.

Besides inputs from authorities, the role of voluntary work and NGOs has been remarkable at the river and its tributaries. Co-operation between different organizations has been a success and it is still carried out as the restoration work continues.

Kaukas Fishway at River Keravanjoki

This nature-like fishway is one of the best ones in Uusimaa Region. It has been built in 2005, and is located at an old factory dam in a charming cultural surroundings. A piece of the old dam was left next to the fishway. The dam used to cut the migration route for trout. After the building of the fishway, the local trout population has been revived.



Figure 9. Kaukas Fishway at River Keravanjoki.

Nukarinkosket Rapids at River Vantaanjoki

There has been an old mill dam at Nukarinkosket Rapids, which has been an obstacle for migrating fish. A by-pass channel was built in the beginning of 2000's and forms now a functional migration route for sea trout in cultural historical surroundings. The Rapids area is very popular among the fly-fishers.



Figures 10 and 11. A fishpass at Nukarinkosket Rapids next to the old mill damn .

Longinoja Brook at River Vantaanjoki

Longinoja brook in the city of Helsinki has been restored since 2000. The brook flows through densely populated urban area and partly along cultivated area. After the voluntary organization VIRHO begun re-introducing the trout population by stocking and restoration, the brook has become an important breeding area for the sea trout population of the Vantaanjoki River. The brook was restored by voluntary work in a workshop held May 2012 as a RESTORE event. The aim of the restoration was to increase the breeding possibilities for migrating sea trout and also to improve the area's landscape for recreational areas for residents.



Figures 12 and 13. The Longinoja Brook restoration project has been done in two stages. First in 2004 and then restoration work continues upstreams in 2012, with adding gravel, stones and wood material.

Attendance

There were 96 people attending the event in the RESTORE North Region Closing Seminar, 155 on the excursion in Lahti Region and 17 on the excursion in Helsinki Metropolitan Area. The sectors represented by the participants were: water managers, river basin planners and practitioners (universities, research institutes and NGO's) and stakeholders.

Support for Restoration Practices

The RESTORE North Region main themes, also important for the whole RESTORE project, like hydro power and streams in agricultural and urban areas was presented and discussed in the seminar. The problems for high energy rivers will also be useful for other regions. Site visits highlighted some of the good results gained by RR.

After three years of discovering good river restoration practices, it was a good discussion point to sum-up the most usual topics and methods in the North Region countries.

Building on Network Capacity

During the event river and lake restoration experts from Finland, Estonia, Sweden, Norway and Poland were able to get acquainted. New connections for further cooperation and knowledge sharing was made possible, to solve similar problems in different countries.

Promoting Effective Knowledge Transfer

The event was a great advertisement of River Wiki, RESTORE Project and the 5th European River Restoration Conference.

Dissemination of Event Outcomes

We will write an article about the event for the RESTORE Bulletin (september) and we will write an article to the Finnish magazine called Suomen Kalastuslehti (Finnish Fishing Magazine) later this year.

All the sites visited during the event were described. Suitable ones will be uploaded into the River Wiki.

Follow Up

A questionnaire of the event was sent after the event. We received 31 responses. We also received direct feedback via phone calls and e-mails from participants. According to the answers all the participants enjoyed the event and found the side events very interesting. For example one participants wrote that "The gained knowledge will be used to improve lectures given to University students about the protection and restoration of watercourses".

One also wrote that "Gained and improved knowledge about nature-like fish passes, knowledge about measures aimed at reducing the load of nutrients to lakes". Each participant learned something new about river restoration, are now more enthusiastic about river restoration and gained new ideas how to make RR solutions in their own countries as well.

The follow up will be continued via personal contacts. The event was advertised by e-mail to key organisations in all member countries of the North Region before the event and afterwards a description was written to the RESTORE bulletin.

Attached

- 1. Lists of participants
- 2. Event Program