



Hydrology LIFE

After-LIFE Plan

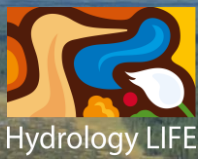
Hydrology Life – After-Life Plan

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Photo: Antti Kanninen



1. Project summary

Project summary 1/3

Hydrology LIFE was a large and effective project for improving the ecological condition of peatlands, important bird lakes and small water bodies in more than 100 Natura 2000 sites across Finland.

Peatlands and mires are typical features of the Finnish landscape, but these environments have undergone significant changes in recent decades. The extensive restoration measures carried out during the project initiated the recovery of degraded habitats towards their original state, which is vital for many valuable species.

Throughout the project, almost 6000 hectares of degraded peatlands and more than 42 kilometers of rivers and streams were restored. Additionally, the water levels of ponds and lakes were raised on 13 sites and the mosaic structure of 5 bird lakes was enhanced.

The Hydrology LIFE project spanned from August 1, 2017, to December 31, 2023, with a budget of 8.9 million euros, of which 60% was funded by the European Union. The project was coordinated by Metsähallitus Parks and Wildlife Finland and involved nine associated partners which were North Savo and Central Finland Centres for Economic Development, Transport and the Environment, Finnish Forest Centre, Tapio Oy, Natural Resources Institute Finland, Metsähallitus Forestry Ltd, and the universities of Jyväskylä, Oulu and Turku.

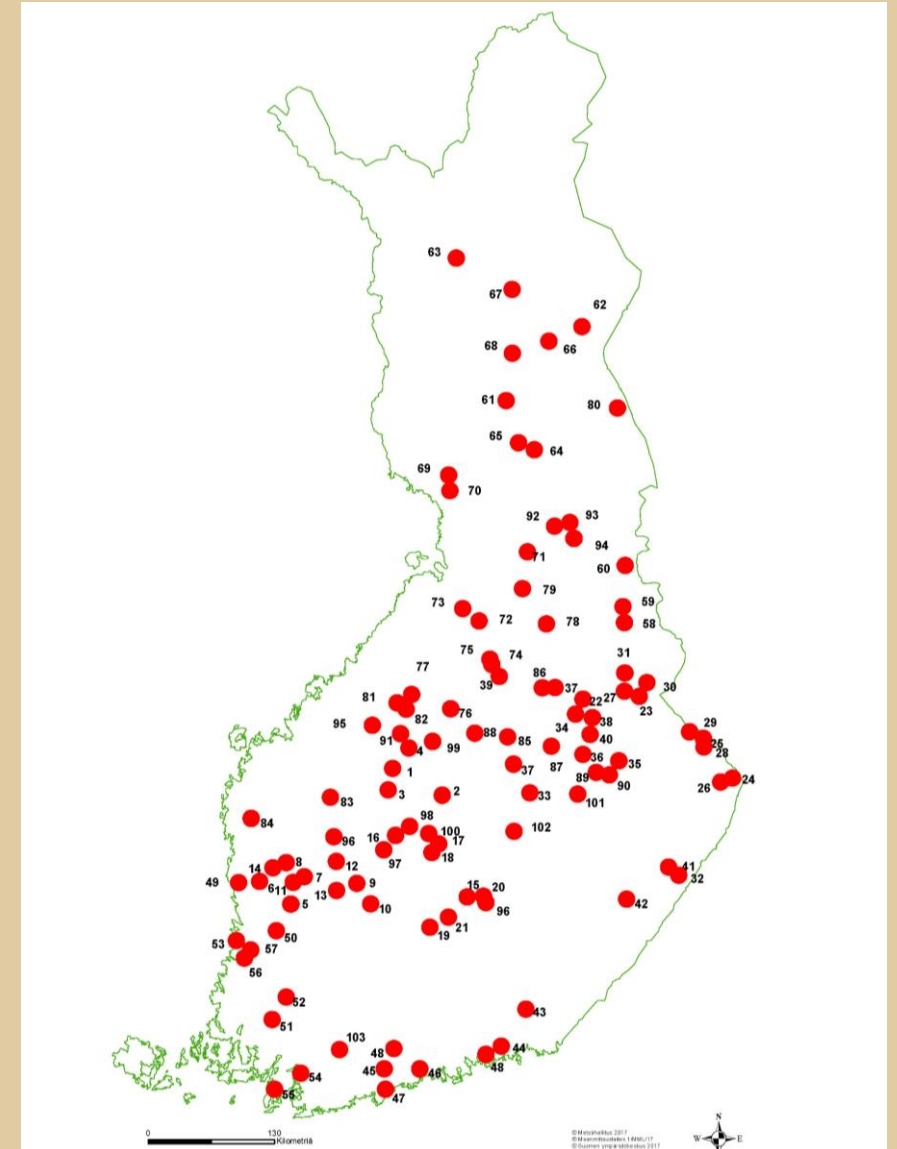


Figure 1. Hydrology Life's project sites



Project summary 2/3

Hydrology LIFE's restoration measures targeted 14 habitat types listed in the Habitats Directive Annex 1. In total, the project restored almost 7000 ha of these habitat types. Restored habitat types included e.g. aapa mires 7310, bog woodland 91D0 and active raised bogs 7110.

During the project, contributions have been made to the implementation of relevant strategies, such as the Prioritised Action Framework for Natura 2000 (PAF).

The overall restoration goal for peatlands in the period 2021-2027 within the PAF framework is 10,000 hectares. Thus, Hydrology Life significantly contributed to improving the habitat conditions of the habitat types prioritized in the PAF. In addition to prioritized habitat types, restoration measures were also targeted to other habitat types to ensure improvement of the overall condition of the entire peatland complex which is significant for the preservation of the peatland flora and fauna.

Project summary 3/3

While most of the results of the restoration will become visible only within the years to come, project's contribution to the wellbeing of peatland habitats has been noticeable. Hydrology LIFE has been one of the most important and effective projects for improving the status of peatlands and headwaters in Europe.

In addition to implementing concrete restoration measures, project contributed to the development of restoration and monitoring methods and conducted research on themes relevant to its objectives. The wide range of inventories and long-term monitoring by the project provided invaluable data about the impacts of restoration on biodiversity and water quality. The extensive network and collaboration of restoration specialists and researchers played a crucial role in achieving these results.

Integral to the project were also various measures aimed at increasing awareness of the importance of wetlands. This included organizing training sessions, producing materials for environmental education, and actively engaging in networking efforts at both local and international levels. These efforts have proven valuable in effectively disseminating and replicating the project results.

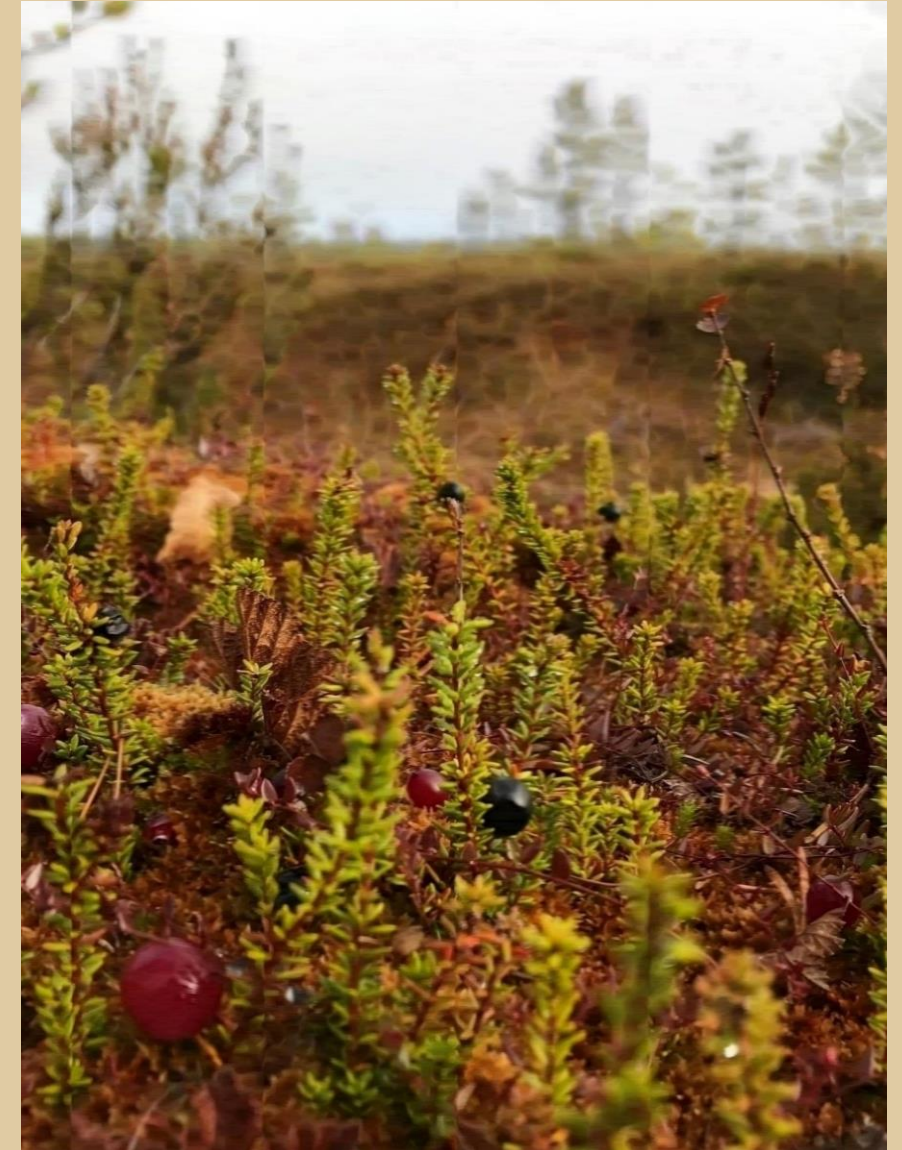


Photo: Katja Sandgren

After LIFE objectives

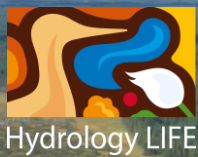
While Hydrology LIFE has achieved significant results, there is still more work to be done to attain favorable conditions in Finnish wetlands.

In this After-LIFE plan, we outline measures necessary beyond Hydrology LIFE. The After-LIFE plan aims to:

- Provide context on how the project's measures have contributed to national and international objectives.
- Describe the next steps, funding sources and the responsible entity as anticipated at the end of the project.
- Specify action-specific After LIFE measures.



Photo: Jari Ilmonen

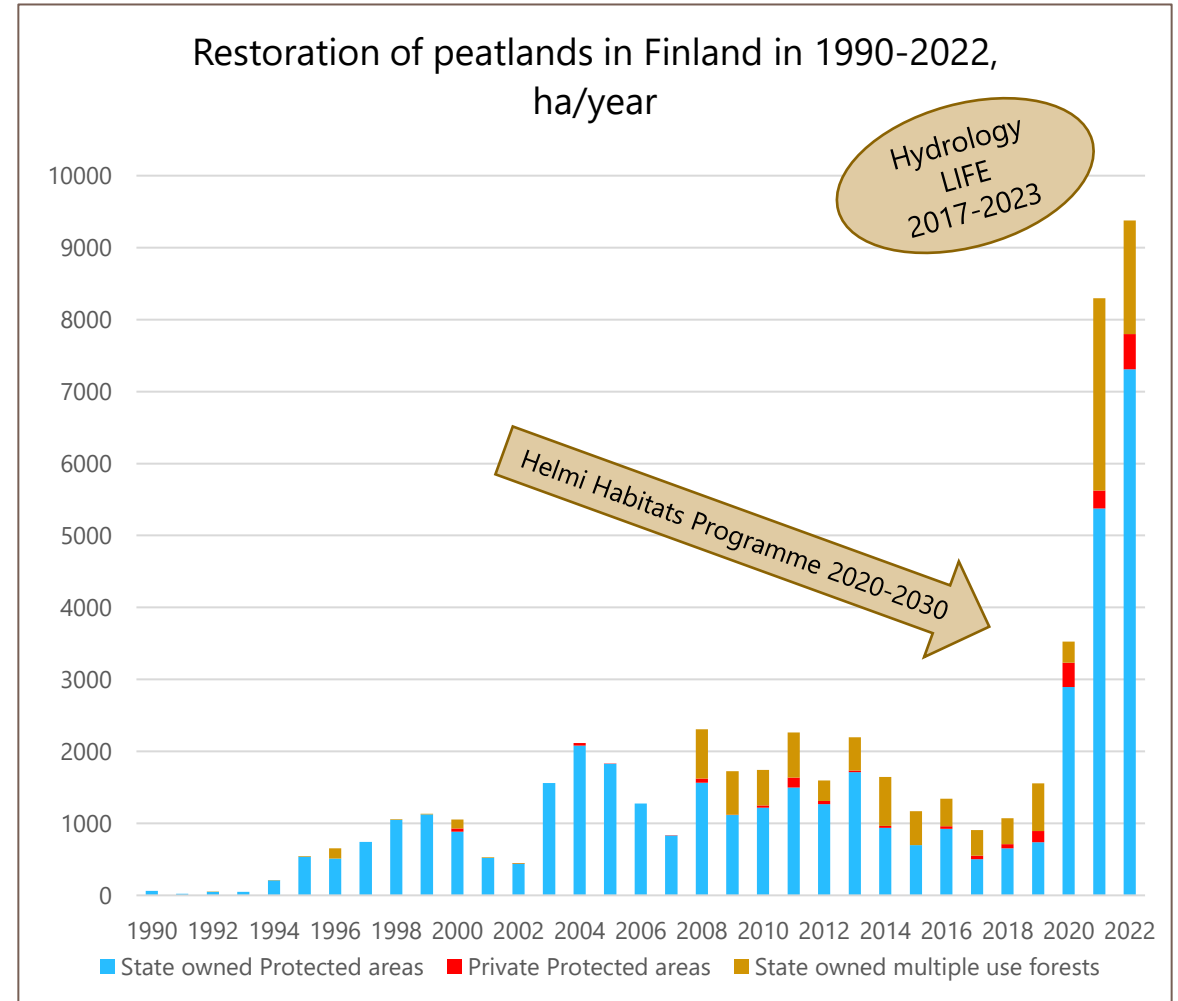


2. Restoration measures after the project

Peatland restoration in Finland 1/2

Between 1990 and 2022, Metsähallitus Parks and Wildlife Finland restored over 44 000 ha of peatlands in state-owned and private protected areas. Additionally, approximately 12 000 ha of peatlands was restored in state-owned multiple-used forests by Metsähallitus Forestry Ltd and an additional 1 400 ha at private commercial areas by e.g. private landowners and associations. **In total, 57 400 ha of peatlands was restored in Finland between 1990 and 2022, of which Hydrology Life covers approximately 10 %.**

After the Hydrology LIFE started in 2017, restoration of peatlands have increased significantly, and peatland restoration records have been broken every year since 2020. National Helmi Habitats programme, led by the Ministry of the Environment and started in 2020, remarkably accelerated the execution of peatland restoration by increasing the funding targeted to nature management and restoration measures.



Peatland restoration in Finland 2/2

Since 1995, there have been over 50 LIFE Nature projects in Finland, with 40 % of them incorporating peatland protection and restoration measures. However, Hydrology Life stands out as the largest project in terms of the volume of restoration measures targeted to wetlands. For example, in 2021, over 8000 ha of peatlands were restored in Finland with 20 % of that accomplished through Hydrology Life.

Thus, together with the Helmi habitats programme, Hydrology LIFE has had a significant impact on peatland restoration and the well-being of wetlands in Finland.

However, despite the ambitious targets and implementation of restoration measures in recent years, the work is not yet completed. It is estimated that approximately 38 000 hectares of peatland habitats in conservation areas still need to be restored.



Photo: Antti Kanninen

Peatland restoration after the Hydrology Life 1/2

Helmi Habitats Programme continues to be one of the most important funding sources for peatland restoration also after the project. The program has ambitious targets, aiming to restore 30,000 hectares of peatlands in protected areas by 2030. Remarkably, almost 10,000 hectares of peatlands were already restored in protected areas during the first three years (2020-2022) of the Helmi Habitats Programme.

However, to achieve the favorable conservation status of peatland habitats, large-scale restoration supporting the N2000 network is needed also outside the protected areas. In addition to protected areas, Helmi Habitats Programme is also aiming at restoring peatlands outside them.

In total, the aim of the Helmi Habitats Programme is to restore 29 300 ha of peatlands outside protected areas of which 9 300 ha will be restored in multiple-use forests of Metsähallitus Forestry Ltd. Privately owned peatlands will be restored with a support from the incentive system for sustainable forestry (METKA). Also, the Forest Biodiversity Programme for Southern Finland (METSU), provides funding for nature management projects for private forest owners.



Photo: Eerika Tapio

Peatland restoration after the Hydrology Life 2/2

Restoration of peatlands will also continue in the new Biodiversity Life project starting in 2024. With a budget of EUR 50 million, the project will e.g. create regional biodiversity programmes and implement an extensive set of restoration measures targeting also wetlands.

Thus, peatland restoration both within and outside protected areas will continue with the support from several programmes and projects after the Hydrology Life. However, public funding for nature management and conservation measures is decreasing in the coming years posing a risk to achieving the restoration targets set, for example, in the Helmi Habitats Programme.

Should also be remembered that the European Parliament adopted the Nature Restoration Law on 27th February 2024. However, the future of the law is currently uncertain. The planned final vote was postponed during the EU Council meeting on 25th March. If the Nature Restoration Law comes into force in the future, the annual volume of peatland restoration will increase significantly. Similarly, funding for restoration measures will need to be increased in order to meet the targets of the new law.



Photo: Eerika Tapio

Development of cooperation between restoration and ditch network maintenance

During the project, an operational model for rewetting protected mires, in coordination with the maintenance of the ditch network within commercial forests, was further developed and demonstrated in five pilot sites. Pilot sites produced new knowledge for the operational model, removed barriers and disseminated the benefits and possibilities of the method to landowners, restoration experts and policymakers.

Hydrology LIFE had a key role in upscaling the method to the national level. This cost-efficient restoration method has spread to other projects, forest management recommendations, national guidelines, and programs such as Helmi habitats Programme. Helmi Habitats Programme aims to survey and implement this specific rewetting method in 400 sites by 2030.

Thus, this measure has been particularly effective in transferring and replicating its principles. Lessons learned in Hydrology LIFE will also be included in rewetting experience guide that will be published in 2024 by Centre for Economic Development, Transport and the Environment of South Ostrobothnia. Furthermore, the training materials produced within the project will be utilized in the restoration and water protection training sessions organized by the Finnish Forest Centre and Tapio Ltd.



Photo: Jani Antila

Restoration of small water systems 1/2

In the Finnish landscape, peatlands, lakes, and small rivers form an interconnected hydrological network. When considering restoration efforts, it is crucial to aim to restore the entire ecosystem, including various aquatic habitats.

Unfortunately, only approximately 1% of Finland's streams remain in their natural state. Over the past century, river systems across the country have undergone extensive channelization and dredging, primarily for timber floating and flood protection purposes. This has consequently created an urgent demand for the restoration of these ecosystems.

In Hydrology LIFE, conditions of over 42 km of valuable small rivers and waterbodies in the headwaters were improved. As the condition of small streams is not well known, we carried out biotope inventories for 13 streams. Additionally, the water table of lakes was raised in 13 project sites.

However, our work has only just begun. To fully restore the favorable conservation status of rivers and small water bodies, we also need to extend our efforts beyond designated conservation areas. Aligning with the Water Framework Directive (WFD) and the PAF 2021-2027, additional restoration measures are essential.

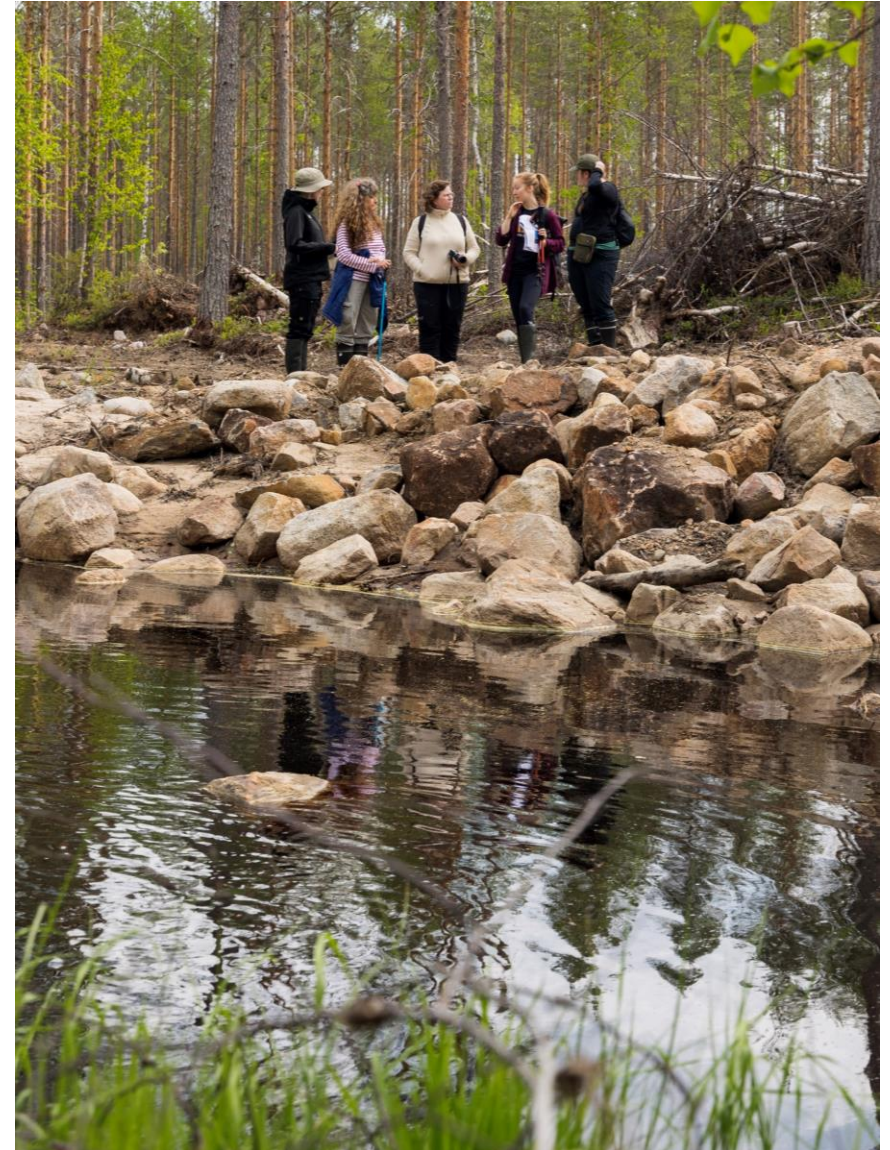


Photo: Antti Kanninen

Restoration of small water systems 2/2

After-LIFE measures:

- **Helmi Habitats Programme** aims e.g. at
 - Restoring 200 km of streams in protected areas in 2020-2030
 - Restoring 400 km of streams outside protected areas in 2020-2030
- **NOUSU programme**, led by Ministry of Agriculture and Forestry of Finland, improves the living conditions of migratory fish and aims to restore the natural reproduction of migratory fish populations in Finnish rivers.
- **Priondiversity LIFE** will plan and implement regional management plans to optimize biodiversity conservation and land-use. Measures will improve catchment area management and include restoration measures targeted small rivers.
- **LIFE Revives** focuses on improving the ecological conditions of freshwater pearl mussel. Restoration measures are carried out in 69 rivers and as a part of the project Metsähallitus Parks and Wildlife Finland will restore 85 km of small river bodies
- **TRIWA LIFE** will restore 100 km rivers and wetlands and removes almost 400 migration barriers by 2030. Total impact is over 3000 km migration routes for fishes and other aquatic life. Metsähallitus Parks and Wildlife Finland is an associated beneficiary of the project.

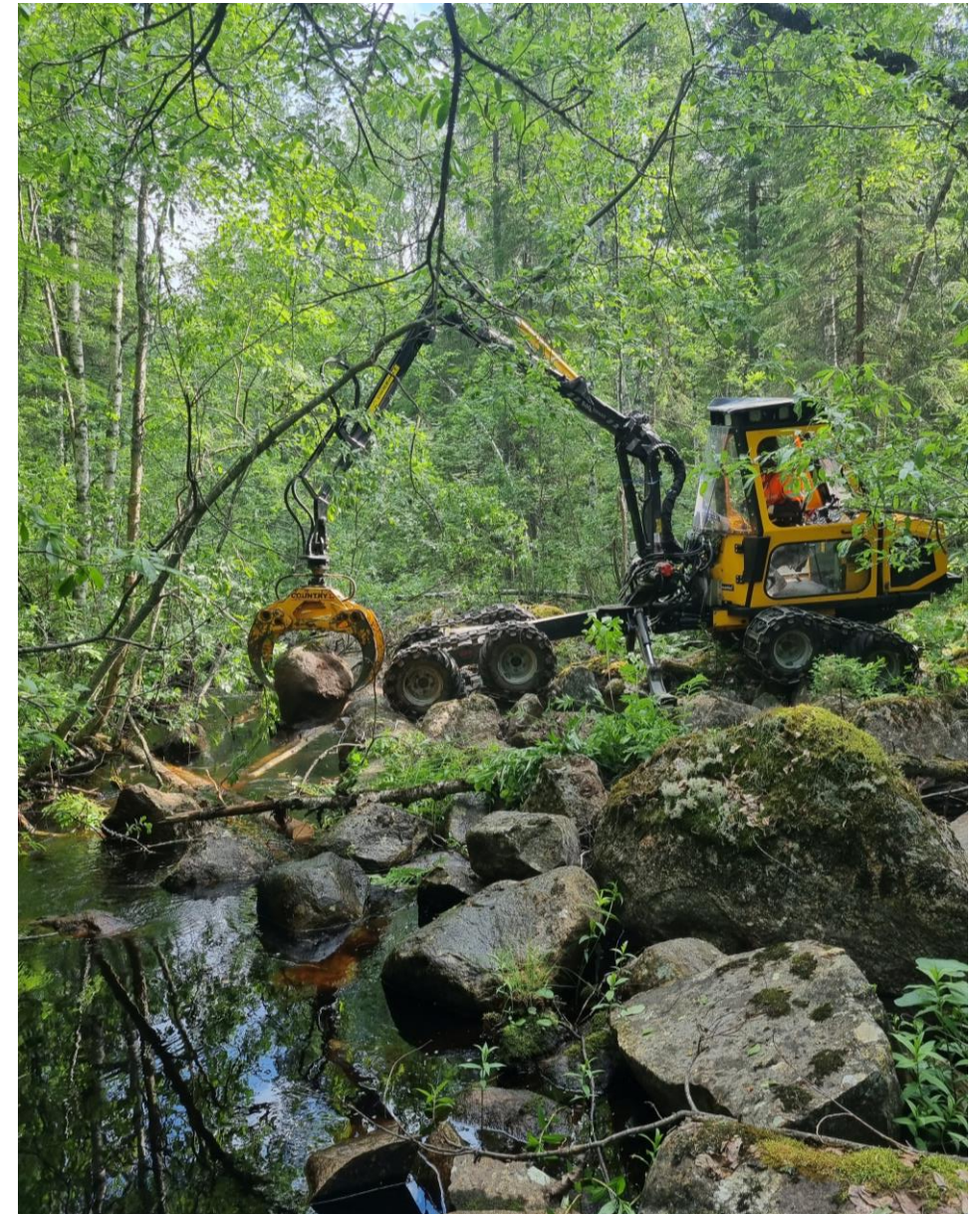


Photo: Christian Koivula

Bird lake restoration

Project improved conditions for valuable bird lakes in four N2000 sites covering 35,9 ha.

The restored bird lakes will require repeated management measures based on the specific characteristics and needs of each restoration site. The Centres for Economic Development, Transport and the Environment of Central Finland and North Savo (ELY-centres) and Metsähallitus Parks and Wildlife Finland are committed ensuring the durability of restoration results, and if needed, carry out the complementary measures after the project.

After-LIFE measures:

- **Helmi Habitats Programme** aims at
 - Restoring 200 bird lakes by 2030
 - Ensuring continuous management measures where needed
 - Establishing 500 bird wetlands outside protected areas.
- **SOTKA programme** (2020-2024), run jointly by the Ministry of Agriculture and Forestry and Ministry of the Environment, builds wetlands, a network of resting areas, restores mires and catchments and captures small predators. Programme implements the Helmi programme.



Photo: Antti Kanninen

Land purchase for conservation

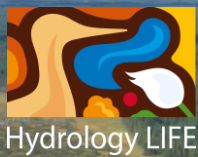
In 2018, two new privately owned conservation areas were established as a part of Hydrology LIFE. In total, these protected areas cover 156 ha. Lands were purchased by the ELY-centres of Central Finland and North Savo. Since June 2023, Silmäsuo conservation area is also a part of the expanded Tiilikajärvi National Park.

After-LIFE measures:

- **Helmi Habitats Programme** aims to have 60 000 ha of peatlands voluntarily protected by 2030. In addition, **the Forest Biodiversity Programme for Southern Finland** (METSU), provides a possibility for a landowner to either permanently or temporarily protect their peatlands
- ELY centres will continue to establish protected areas when landowners want to offer their land for conservation



Photo: Jari Ilmonen



3. Monitoring measures after the project



Project's monitoring measures

In the Hydrology LIFE project, we implemented a comprehensive set of monitoring measures. These range from technical monitoring at each project location to the continuation of the national monitoring network dedicated to the restored of peatlands. This also internationally unique network offers an opportunity to study the long-term impacts of restoration focusing on vegetation and hydrological data.

Furthermore, we have developed drone monitoring methods specifically for peatland restoration. Aerial images enable us, for example, to assess the impact of restoration on the hydrology and vegetation of the restored areas. For instance, these images can illustrate how water levels around the blocked ditches have begun to rise and how the vegetation has transformed following restoration.

We have also investigated the effects of peatland restoration on bats. We monitored bat activity at 21 sites over four summers, both before and after restoration. The analysis of a substantial amount of audio data revealed an increase in bat activity, particularly in restored mires. All bat species in Finland are protected, and the encouraging outcome is that peatland restoration does not negatively impact these species. In fact, it's quite the contrary!



Photo: Lassi Päckilä

Continuation of technical monitoring

Our restoration efforts are evaluated through technical monitoring, where we compare the outcomes with our pre-established restoration goals. This evaluation typically takes place during the first spring following the restoration and involves site visits and visual assessments. If problems such as leaking ditches are identified, corrective actions are carried out. For the second time, technical monitoring of the restoration sites is conducted approximately ten years after restoration.

During the project timeframe, all restoration sites were systematically monitored, with the exception of one site, 43 Enäsuo, which was completed in late 2023. Monitoring of this particular site will commence post-project, when it becomes viable. Additionally, the ELY centres will continue to monitor bird lakes based on the requirements set in the water permits.

The development of monitoring measures is continuing in several projects and organisations. For example, drone measurements in the current sites and in other peatland restoration sites as well as the mapping, processing, and analyzing methods will be further developed in the becoming restoration monitoring projects.



Continuation of the national long-term monitoring network

Hydrology LIFE continued the work of Boreal Peatland Life project (2010-2014) by collecting and analyzing data of the national long-term network for restored peatlands. We collected and analyzed hydrology and vegetation data from restored peatlands 10 years after the restoration measures took place.

Results show that restored peatlands are starting to recover towards their natural state, but the change is slow. Thus, it is urgent to continue this work now, since the first signs of ecological recovery of peatlands have been observed. Fortunately, this also internationally unique monitoring network, will be continued in the Biodiversity LIFE project, where results after 15 years of restoration will be analyzed and reported. Field data will be collected using complementary funding from the national Helmi Habitats Programme.

In the forthcoming years, the development of the monitoring network focuses on combining the vegetation plot data and hydrological monitoring data with remote sensing data. Aim is to use remote sensing methods to extrapolate the in-situ vegetation and hydrological monitoring data to cover larger areas to determine the effects of restoration actions qualitatively and quantitatively.

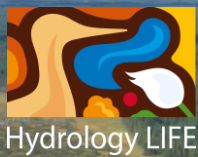


Monitoring measures in Priodiversity LIFE

Priodiversity LIFE (2024-2031) focuses on evaluating the long-term impact of restoration measures through already established experimental set-ups. The long-term monitoring effort in Priodiversity LIFE addresses crucial knowledge gaps, as the analysis of ecological data spans up to 10-25 years after restoration.

The project will utilize multiple different remote sensing data sources. Multi-sensor approaches will be developed to detect spatial patterns of ecosystem and habitat types and their condition, and to track changes in them. Project will especially focus on the continuous collaboration between biodiversity and remote sensing experts to maximise the uptake of developed methods and data in biodiversity monitoring, and to develop combined field and remote sensing protocols that enable the construction of reliable wall-to-wall map products.

As monitoring methods are currently being developed in several, separately funded research and development projects, in different universities and research facilities the aim of the Priodiversity LIFE is to facilitate the co-operation in method development and the data distribution between the projects and organizations.



4. Dissemination and communication of the project results after the project

Dissemination and communication of the project results after the LIFE

Hydrology LIFE produced an extensive set of communication and education materials including e.g. the [Wetland Game](#), [YouTube](#) videos and teacher's materials to support the dissemination of the project themes. All materials will be available after the project for all interested parties. Most of the materials will be available at the project [website](#). Educational materials, such as the teacher's materials, are also available at [Mappa.fi](#), an open material bank for environmental educators. Additionally, a [Layman's report](#), produced at the end of the project, combines the project results into an understandable format, concentrating on the project's key results.

Project also produced several reports targeted, for example, to nature management experts. Remote sensing results, experiences, and recommendations for improving current monitoring practices are given in the *Proposals for developing the monitoring of restored peatlands* report, which will be published by Metsähallitus Parks and Wildlife Finland. Project's results will be utilized in *Rewetting experience guide* combining findings from several projects focusing on rewetting protected mires surrounded by commercial forests. Some of the reports are also translated into English to improve the possibilities for international replication and dissemination. Furthermore, these findings will be taken into consideration during the development of new national peatland restoration guidelines, which are scheduled to begin from 2024 onwards.



Photo: Marko Haapalehto

Dissemination and communication of the project results after the LIFE

Several projects are continuing the work initiated in the Hydrology Life. For example, the data collected in the long-term monitoring network will be utilized in new projects focusing on the development of remote sensing methods. Additionally, the compiled data will be made available to all researchers, thus enhancing the use of data internationally and increasing knowledge on the impacts of restoration.

As a part of Priodiversity LIFE project, there will be a major effort to improve communication and knowledge exchange between different organizations and sectors by establishing a national **Education Network for Biodiversity** as a part of the Priodiversity LIFE project.

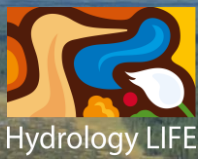
The project aims at:

- connecting nationwide biodiversity professionals and operators
- improving knowledge exchange
- offering specified biodiversity trainings to various target groups such as advisory organizations and landowners in agriculture and forestry
- launching a public online portal where information on nature management and restoration will be gathered

Lessons learned during Hydrology LIFE and best practices will be carefully documented and transferred. Care will be taken to ensure that lessons learned in Hydrology LIFE are taken into account in new LIFE projects.



Photo: Jari Ilmonen



5. Funding of after-Life measures

Funding of the After-LIFE measures 1/2

The LIFE Programme remains a crucial funding source for achieving Finland's nature conservation and restoration goals. As highlighted in the report, projects like Priodiversity LIFE, LIFE Revives, and TRIWA LIFE will continue addressing themes relevant to Hydrology LIFE. Notably, with a budget of EUR 50 million, Priodiversity LIFE stands out as one of the most important means of continuation of several measures carried out within Hydrology LIFE.

Additionally, [Helmi Habitats Programme](#) led by the Ministry of Environment, continues to play a significant role in funding both concrete protection and management measures within and beyond conservation areas. Launched in 2021, the Helmi programme aims to achieve its objectives by 2030.

Furthermore, the Forest Biodiversity Programme for Southern Finland (METSU) and the Forestry Incentive Scheme (Metka) provide tools and support, for example, for voluntary-based conservation and nature management efforts for private landowners.



Photo: Mika Puustinen

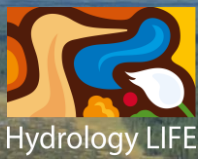
Funding of the After-LIFE measures 2/2

We have identified a number of critical actions required to enhance the condition of endangered wetland ecosystems in Finland. However, the implementation of these measures is largely dependent on Helmi Habitats Programme and other state funding, which are subject to policy decisions.

It is evident that national funding for nature conservation and restoration will decrease during the years 2024-2027. This decline in national funding will drastically affect the implementation of above-mentioned measures and restoration targets at Metsähallitus Parks and Wildlife Finland along with other state-funded organizations.

Cuts to nature conservation funding contradict the global need for biodiversity loss prevention and the targets of the EU Biodiversity Strategy. These reductions can hinder our ability to achieve the objectives outlined in various programmes and strategies.





6. Action-specific After LIFE measures

Continuation of the preparatory actions, elaboration of management plans and/or action plans (A-actions)

A1: Restoration plans

We prepared 87 restoration plans, conducted 55 supplementary biotope and species inventories, and 5 cultural heritage inspections. All data accumulated in these inventories is stored in relevant systems and databases, such as SAKTI, protected area compartment information system. Action is successfully completed, and the data will be utilized, particularly in the ongoing management of Natura 2000 areas and in assessing the status of these areas.

A2: Development of cooperation between restoration and ditch network maintenance

The targets set for the action were met, involving the establishment of five pilot sites to test and develop rewetting of protected mires surrounded by commercial forests. Furthermore, the operational model for cooperation between restoration and ditch network maintenance in commercial forests was further developed based on the experiences gained in the project. The method has spread to other projects, forest management recommendations, national guidelines, and programs such as the Helmi habitats programme.

A3: Preparatory training

Preparatory trainings were organized for experts who plan and carry out nature restoration measures. The action has been completed and Priodiversity LIFE and LIFE Revives will continue to organize trainings for nature experts.

Continuation of the purchase/lease of land and/or compensation payments for use rights (B-actions)

B1: One-off
compensation
payment

Two valuable wetland sites were protected through one-off compensation. The forestry use has ceased, and the sites will be managed to enhance habitat quality. Privately owned nature conservation areas are managed by Metsähallitus Parks and Wildlife Finland.

Continuation of the conservation actions (C-actions)

C1: Restoration of hydrology in conservation areas

Restoration of peatlands is a one-off method and continuous management measures are unnecessary at the restored peatlands. However, if technical monitoring reveals that restoration has not gone as planned, corrective actions will be implemented. Complementary restoration measures will be funded either through the Helmi Habitats Programme or Metsähallitus Parks and Wildlife budget funding. Restoration of peatlands in conservation areas will continue e.g. through funding from the Helmi Habitats Programme and in the Biodiversity LIFE programme.

C2: Tree removal

Tree removal is a one-off measure used during peatland restoration to return the open mire scenery.

Continuation of the conservation actions (C-actions)

C3: Initiating ecological restoration in commercial forests affecting Natura2000 areas

Restoration of peatlands outside Natura 2000 areas is a one-off measure. Action continues e.g. as a part of the Helmi Habitats program at peatlands owned by Metsähallitus Forestry Ltd.

C4: Restoration of small water systems

Around 42 kilometres of stream restoration and raising the water table of ponds and lakes on 13 sites are completed and do not require measures after the project except at one project site. At Oksalan Isosuo-Miehinkäisensuo (site 100), some repair measures are needed post-project to ensure the desired water level of the lake by fixing the dam built in the project. These measures are funded either by Helmi Habitats programme or Kesely's own funding. Restoration of small water systems will continue e.g. as a part of Helmi Habitats Programme and several LIFE projects.

C5: Restoration of important bird lakes

Planned restoration measures were completed but due to the continuous input of nutrient and organic matter from surrounding areas, restored sites can overgrow again within coming years. Restoration of bird lakes often requires recurring management measures to ensure the success of the actions. Possible recurring measures will be done if the funding is available, for example, from the Helmi habitat programme.

Continuation of the monitoring of the impact of the project actions (D-actions)

D11 Technical monitoring

During the project timeframe, all restoration sites were systematically monitored, with the exception of one site, which was completed in late 2023. Monitoring of this particular site will commence post-project, when it becomes viable.

D13 *Chondrostereum purpureum* treatment

As part of peatland restoration, trees are often removed from the peatlands. However, as side effect of tree logging is the sprouting of broad-leaved trees, which hinders the recovery of peatlands. *Chondrostereum purpureum*, a decay fungus, offers potential as a biological control agent for sprout control. In our project, we established a demonstration area to test *C. purpureum*. Using this fungus to control birch sprouting on restored peatlands is more efficient than merely cutting the saplings. However, long-term monitoring of the treated birches is necessary to confirm its impact. Unfortunately, there are currently no plans or funding for follow-up studies.

D12 Development of new methods for monitoring peatland restoration success in practice

Drone measurements in the current sites and in other peatland restoration sites as well as the mapping, processing, and analyzing methods will be further developed in the becoming restoration monitoring projects. All remote sensing results, the experiences, and the recommendations for improving the current monitoring practices given in the "Proposals for developing the monitoring of restored peatlands" report will be considered when the development of new national peatland restoration guidelines takes place from 2024 on. The report will be promoted by presenting it at various events among the audience of interest. The produced scientific results will be presented in various conferences, seminars, and workshops. In addition, the results will be disseminated to large audiences by writing non-scientific articles and attending events where scientists can discuss the topic in public.

Continuation of the monitoring of the impact of the project actions (D-actions)

D2 Monitoring hydrological responses and interactions

D3 Assessing success in restoring ecosystem structures – vegetation

The long-term monitoring will continue in Priodiversity LIFE project. Priodiversity LIFE will analyze data 15 years post-restoration. In the forthcoming years, the development of the monitoring network focuses on combining the vegetation plot data and hydrological monitoring data with remote sensing data. To bring results of this work together, Priodiversity will facilitate the co-operation in method development and the data distribution between the projects and organizations.

The produced scientific results within Hydrology LIFE will be presented in various conferences, seminars, and workshops. In addition, the results will be disseminated to large audiences by writing non-scientific articles and attending events where scientists can discuss the topic in public.

Continuation of the monitoring of the impact of the project actions (D-actions)

D4 Monitoring protected bats

The post-restoration data collection was done soon after the restoration actions and the effect on the wetland habitats may not have been fully realized in 2022. There is a clear interest in repeating the study in the near future (4-6 years post-restoration) to monitor the long-term impact of the restoration on the bats. However, no definitive plans were made by the end of the Hydrology LIFE project. UTU has an application in progress for national funding, which could potentially allow some of the work done in this LIFE project to continue.

D5 Monitoring the success of bird lake restoration

ELY Centres will continue monitoring water quality at sites where it is required due to water permits. Post-restoration drone images from these sites reveal an increase in water volume, evident by the expanded water surface area. Additionally, the distribution of biotopes has become more mosaic across most sites. This ongoing development will be closely monitored in the coming years using additional drone photography. Furthermore, water invertebrate populations and bird populations will be periodically assessed. If needed, the number of small predators will also be monitored at select sites.

Continuation of the monitoring of the impact of the project actions (D-actions)

D6 Socio-economic impacts

According to the assessment of socio-economic impacts, people tend to support restoration of peatlands and small water bodies and accept the use of tax money to meet the restoration goals. Public opinion on restoration has seemed to stay relatively stable over the last years encouraging actions to be implemented all around Finland. Luke is already in the process of planning projects that not only continue but also expand upon the concepts of this project. Biodiversity LIFE project also continues to develop monitoring of socio-economic impacts. [Results](#) of the socio-economic impact assessment are published in Luke's publication series.

D7 Ecosystem functions restoration

The evaluation on the effectiveness of hydrological restoration is completed. Luke is planning to continue to leverage remote sensing to detect/predict peatland GHG balances in different peatland site types and degradation stages and is planning to explore opportunities to expand the scope of remote sensing applications. Luke has reported the results in the Action Synthesis Report. However, a scientific article on the ecosystem functions will be published, and the results will be disseminated further after the project's completion.

Continuation of the public awareness and dissemination of results (E-actions)

E1: Project dissemination and networking

There is no dedicated funding targeting communication and networking after the project. However, the results of Hydrology LIFE will be disseminated and transferred to new projects via project personnel. Communication materials will also be available on the project website after the project's completion.

E2: Activating important target groups

Metsähallitus Parks and Wildlife Finland and other beneficiaries will continue to raise public awareness through other projects (e.g. Biodiversity LIFE) and with budget funding. Education Network for Biodiversity established in Biodiversity LIFE provides valuable opportunities for connecting nationwide biodiversity professionals and operators and improving knowledge exchange.

E3: Improving wetland related education in nature centres

The teacher's manual will be available at Mappa.fi and the [Wetland game](#) will be playable both at the Liminka Bay Nature Centre and online.

Continuation of project management (F-actions)

F1: Project management

Project management has been efficient, and project has reached its targets. Project management will be finished when the final report is accepted in CINEA.

The project has received funding from the LIFE Programme of the European Union. The material reflects the views by the authors, and the European Commission or the CINEA is not responsible for any use that may be made of the information it contains.



Hydrology LIFE