

# ReBorn

Restoration of Boreal Nordic Rivers






## ReBorN

The LIFE project ReBorN or *Restoration of Boreal Nordic Rivers* is an environmental restoration of watercourses impacted by log driving in Västerbotten and Norrbotten counties. The project started in summer 2016 and will continue until 2021. With a budget of more than 124 million SEK, the project is the largest of its kind in Sweden.

The project builds on previous successful projects such as for example the LIFE project ReMiBar, where barriers to fish migration have been rectified in several of the catchment areas. The Lögde River will, once ReBorN is completed, be completely restored following log driving to more nature-like settings, with free migratory routes in the entire catchment area. This is unique in today's industrialised society.

The project contributes in accordance with the EU Water Framework Directive to watercourses achieving good or high ecological status. The conservation status of the environments *Large natural watercourses of Fennoscandian type* and *Watercourses with floating leaf vegetation or aquatic mosses* and species within Natura 2000 areas will also be improved. Species such as salmon, otter and freshwater pearl mussel will have better habitats in the future.



The otter is one of the target species in the project, here feasting on a frog, Ume River near Lycksele.  
Photo: Erling Stenmark.




## The rivers

In all, more than 200 km of impacted river stretches in both Norrbotten and Västerbotten counties will be restored.

The rivers being restored to more nature-like environments are:


- Lögde River
- Byske River
- Åby River
- Pite River
- Råne River
- Kalix River

The map on the left shows the areas included in the project ReBorN.



Ongoing restoration of river stretches impacted by log driving. Using an excavator with specially designed bucket, more nature-like structures are re-created to benefit the salmon among other species. Photo: Tommy Forsgren



A photograph of a river with rapids flowing through a forest with autumn foliage. The water is turbulent and white with foam as it flows over rocks. The surrounding trees have yellow and orange leaves, indicating autumn. The text is overlaid on the upper part of the image.

# What effects on nature and people along the rivers of northern Sweden can we expect once ReBorN is completed?

2017, a restored section of Stockfors River, a tributary of Pite River: Photo: Magnus Lindberg, Västerbotten County Administrative Board.







## Carina Wallin

**Angler, active in the  
organisation Swedish Angler's  
Association**

**What in your opinion will restoration of Lögde River among other objects mean to angling?**

“It will mean greater numbers of fish can rise in the river and if we choose to adapt fishing in a good way, for example slot sizes and “fishing-free” zones or other measures to promote fish, then angling will grow, which in time will probably mean that angling tourism can grow too”.

**You have long experience both as an active fly fisher and as a member of the organisation Sportfiskarna (Anglers): is there an upward trend among women to take up angling?**

“To me it feels that way, and that women are taking more space. Daring to be interested. The market is growing, so equipment, clothes and so on are being adapted for women as well. And that probably increases interest even more”.

Fly fishing for salmon on Lögde River.  
Foto: Stefan Ågren.





## Linda Johansson

### Conservationist at the County Administrative Board in Norrbotten

**The otter is one of the target species in the project Re-BorN. In your expert opinion, what do you think environmental restoration of the rivers can mean to the otter?**

“Once you remove migratory barriers and re-create spawning grounds for fish, the number of fish increases and thereby the supply of food for the otter. The otter is a species that marks territory, which it prefers to do in high-lying places. Along impacted watercourses there is often an absence of rocks and there is a risk of otters crossing roads to mark territory. If during restoration you can reintroduce stones under bridges, you can hope to encourage otters to pass under the bridge instead of across the road, which is much preferable since traffic is one of the major causes of death among the species”.

Fish is crucial in the diet of the otter, one of the target species in the project. With restoration of the rivers in the project, it is hoped that conditions for the otter will improve.  
Photo: Erling Stenmark.



# Daniel Holmqvist

## Former technical coordinator on the LIFE project Vindel River Life


**Daniel, you have many years' experience in angling and restoration, including from the Vindel River. What will free migratory routes and restored spawning and nursery areas mean to the Lögde River salmon?**

“Overall, restoration of Lögde River will increase the production area of among other things salmon, and the quality of their habitats will improve, although it is not simple to demonstrate this scientifically. Modern restoration leads to the re-creation of many nursery areas. This brings a considerable increase in the potential for smolt production.”

**How do you think angling will be affected by restoration – will we see another type of angling tourism in the future?**

“We will certainly have better fishing in the future after well executed restoration. It is in a way irrelevant how fine the angling spots are if the river does not also produce fish fry. I believe restoration aimed primarily to recreate the old structures/functions in the watercourse can very well take place hand-in-hand with attractive angling sites”.

“Fishing rights holders must realise the value of their asset! If they do then perhaps they are also willing to give up more of their own angling for the good of the region and for rural development. There are good examples of this in both Ammarnäs and Kraddsele”.



Daniel Holmqvist, Lycksele Municipality, lecturing in the field on the restoration of the estuaries of Vindel River within the completed project Vindel River Life. Photo: Magnus Lindberg, Västerbotten County Administrative Board.



An underwater photograph showing a stream bed densely populated with freshwater pearl mussels. The mussels are clustered together, covering the rocks and debris. The water is slightly turbid, and the lighting is dim, creating a natural, somewhat somber atmosphere. The mussels have a characteristic rounded, shell-like appearance with some visible gills and siphons.

## Lennart Henriksson

### Biologist and expert on mussels

**The freshwater pearl mussel is endangered in Sweden, largely due to the historical physical impact. You have long experience on work to benefit the freshwater pearl mussel – what can the mussel gain if we restore the environment in the rivers?**

“Around stones and deadwood, the water currents change and bed material is sorted. During this process, fine particles are released and the substrate becomes cleaner. The substrate can also be sorted, so that suitable structures are formed for young mussels. With variations in water velocity, this ‘internal dynamic’ occurs continuously, so that a mosaic of suitable micro-habitats is created”.

**If you gaze into your crystal ball, will restoration continue to have great significance for the well-being of the mussel, or can you see new future threats?**

“New threats? It is hard to say, but of course we have the usual standard answers about expected climate change – which gives higher temperatures and a higher run-off. Increased temperatures can probably be a factor. On a large scale one could envisage that the mussel might spread higher up towards the mountains”.

Freshwater pearl mussels cover the bed of a stream. The mussel is a target species in the project and an important element in achieving the environmental goal “living lakes and waters”. Photo: Västerbotten County Administrative Board.





# Emil Öhman


## Forestry technician at the Swedish Forestry Agency

**The forestry agency is participatory in ReBorN, how do you see your role in the project?**

“We consider it extremely important in forestry to focus on water issues. In Norrbotten and Västerbotten counties we have a high proportion of productive forest which is affected by large catchment areas.

It is vital that we show consideration to flora and fauna in forestry processes, and this can always be improved.

With today’s knowledge, information, map material and good planning we have every opportunity to reduce the negative impact on watercourses. It is therefore important to work informatively on water issues. We will be setting up demonstration areas which show good environmental safeguards for water, for example buffer strips, overpasses, planning of carriageways and plugged ditches.”

A photograph of Emil Öhman, a forestry technician, standing on a large, light-colored rock in a forest. He is wearing a dark jacket with yellow and grey accents, dark pants, and a dark cap. The background shows a river flowing through a dense forest of evergreen trees.

Emil Öhman standing at a restored stretch of Åby River, Norrbotten County. Photo: Maria Johansson, National Forestry Agency.



A vertical photograph of a snowy winter landscape. In the foreground, a wooden fence is partially visible. The middle ground shows a line of trees covered in snow, and the background is a bright, overcast sky. The overall scene is peaceful and serene.

# Madeline Jakobsson

## Municipal Commissioner of Nordmaling Municipality

**What do you think restoration of Lögde River and hopefully more salmon in the river will mean to the municipality and its inhabitants?**

“Rivers are important resources in our municipality – both as recreation for those who already live in Nordmaling and to attract tourists to the municipality. To facilitate and improve things for angling is good both for those who already live here and for tourists. We are a coastal district with several fine rivers and we need to market ourselves accordingly.”


**What do you think of the possibilities of more entrepreneurs in the tourism/angling industry starting up in Nordmaling?**

“There are already several who have shown interest in it and if there are more fish in the river, the prospects will improve that such companies set up operations here, and that would be fantastic!”

Madeline Jakobsson with Lögde River in the background on a beautiful winter's day.  
Photo: Tommy Forsgren.



**“If it weren’t for the rocks in its bed,  
the stream would have no song” – Carl Perkins**

A wide river flows through a forested landscape. The riverbed is composed of numerous dark, rounded rocks of various sizes. The water is clear and turbulent, creating white foam as it flows over the rocks. The surrounding forest is dense with tall, thin evergreen trees and some deciduous trees with yellowing leaves. The sky is overcast with grey clouds.

Långträsk River. On the left, a river course where rocks have been cleared away to facilitate log driving. The original rock material is seen stacked in the middle of the picture. To the right however we see a completely untouched river course. Note the big difference between these two courses in the quantity of rocks.  
Photo: Sofia Perä.

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**Cover picture:** 2014 restoration of Karlsbäcken stream, tributary of Lögde River. Photo: Magnus Lindberg, Västerbotten County Administrative Board.

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Ongoing restoration in lower parts of Holmsjöbäcken stream, just before the stream empties into Lögde River. Note the increased wet width after measures upstream of the machine. Photo: Magnus Lindberg.



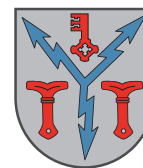
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