



natur&ëmwelt  
**FONDATION  
HËLLEF FIR D'NATUR**

under the High Patronage of HRH the Grand Duke

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THE RETURN OF THE  
**BEAVER**  
IN LUXEMBOURG



## EDITO

What a chance to see the return of an animal as emblematic as the beaver.

It's as if he knew that we need him more than ever.

He is our best ally and helper in providing local solutions to the two major global crises we are facing: climate change and biodiversity loss.

The beaver is by instinct an expert builder in hydrology. It only thinks about retaining water to create a natural protective and nourishing environment.

Thus, it creates new water reservoirs with natural materials and permanent maintenance. These new wetlands, like a sponge, retain water and regulate the flow of streams.

This increase in water retention capacity reduces the local risk of flooding and erosion or the drying up of rivers during extreme climatic events. We know that climate change will increase the number of torrential rainfalls and long periods of drought.

At the same time, more than 80% of wetlands and the plants and animals that depend on them have disappeared from our landscapes over the last century. By naturally restoring these habitats, the beaver is finally reversing this trend. With its management, the beaver is able to revitalize a river and its alluvial plain with all the biodiversity that goes with it. It helps us to restore our aquatic ecosystems, and this in an efficient way and at a lower cost.



But the beaver cannot recreate its environment without a helping hand from us. Its protection for several decades has been decisive for its return and expansion in Western Europe. However, it needs to find rivers with non-concrete banks and softwood trees nearby, ideally in the form of an alluvial forest.

The Hëllef fir d'Natur foundation is particularly proud of the fact that it was able to welcome the first beaver families into its reserves. It has paid off to gradually purchase land along the streams, especially on the Oesling plateaus.

In our area, the new hosts have been enthusiastically welcomed and no one has been upset when they have cut down trees to build their dams and feed on the bark, and when they have made the adjacent meadows wet and unworkable.

It is true that this can be a problem for private landowners. While the state has developed an action and management plan that proposes a compensation concept, the beaver has returned to stay. And experts agree that their presence generates ecosystem benefits whose financial value far exceeds the apparent damage that results.

We therefore propose to any landowner who feels harmed by the beaver or who simply wishes to offer it a new biotope to sell their land to the Fondation Hëllef fir d'Natur at a fair price. At the same time, we appeal to all friends of nature to support us financially so that we can make these land acquisitions and thus offer many peaceful habitats to the beaver, a great benefactor to society and nature.

*Patrick Losch - President*







## BEAVER IDENTITY SHEET

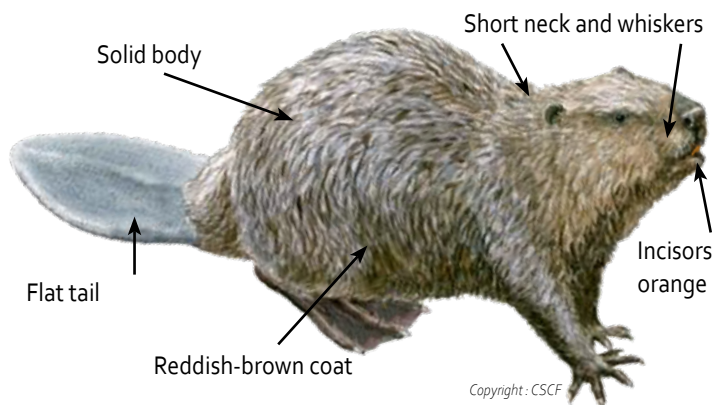
Apart from man, who has always hunted it for its fur and beaver, the beaver has few natural predators (e.g. wolves, lynx, etc.). For a long time, the beaver was accused of destroying the cultures installed along the rivers. It was hunted and almost disappeared at the end of the 19th century. Today, it is a protected species, listed in Annex II of the Habitat Directive. Thanks to its protection throughout Europe and its reintroduction in Belgium and Germany, it has spread again in Luxembourg towards the end of the 90s.

In order to assess the distribution of the species in the country, the administration of nature and forestry carried out a nationwide monitoring of the beaver during the winter of 2022 (Europäische Biber). It was found that today more than 80 sites, some of which belong to the Foundation, are occupied by these atypical rodents, mainly in our rivers and streams such as Sûre, Our, Woltz, Alzette, Eisch, Mamer and Attert.

*Evolving in the same environment, it is important to distinguish the beaver, which is protected, from the muskrat and the coypu, which are invasive species. In the water, the beaver is the most immersed: it only leaves the top part of its head and its neck protruding, while the muskrat and the coypu have their head entirely out of the water as well as their entire upper back. Out of the water, the beaver's head, in proportion to its body, is much smaller than that of the coypu and muskrat. In addition, its broad, flat tail is typical of the species.*

**Scientific name:** *Castor fiber*

**Description :** The beaver is the largest rodent in Europe (adult over one meter long; average weight: 25 kg). It is recognizable by its scaly tail in the form of a paddle about fifteen centimeters wide. The beaver is dark brown to gray-black in color, slightly lighter on the belly.



**Feeding :** The beaver is strictly vegetarian (bark, leaves and young woody shoots, aquatic plants, fruits, tubers and terrestrial herbaceous vegetation). Woody plants constitute the essential part of the winter diet, with a preference for salicaceous plants (willows and poplars) which are the most sought after.





*The frequent ingress and egress of water transforms the passageway into a veritable beaver slide.*



*Beavers dig channels to reach their habitat and food without leaving the water.*



*Fresh beaver footprints in the mud.*




*Gnawing marks are the most prominent evidence of a beaver in the area.*



# ON THE TRACKS OF THE CASTOR IN THE RESERVES OF THE FOUNDATION



- |                           |                            |
|---------------------------|----------------------------|
| 1 - Fooschtbaach          | 8 - Op der Woltz           |
| 2 - Sauerwiesen           | 9 - <u>Breitwies</u>       |
| 3 - Rittefenn             | 10 - <u>Ramescher</u>      |
| 4 - <u>Cornelysmillen</u> | 11 - Krupbeiwien           |
| 5 - Hollermillen          | 12 - <u>Schwärzerbaach</u> |
| 6 - Weiler Weiher         | 13 - Froumicht             |
| 7 - Follmillen            | 14 - Hosterbaach           |

 Foundation Nature Reserves occupied by beaver in 2023

*Fooschtbaach and the beaver settlements*





*Beaver dam in Cornelysmillen Nature Reserve.*

### Why does the beaver build dams?

Built on a small stream, the dam allows it to protect its habitat and secure the entrance to its lodge, which is continuously submerged. The beaver needs a minimum water depth of 60 cm. If the water is not deep enough, it raises the dam to flood the area and regulate the flow.

### What is the impact of the dam on the environment?

When the beaver cuts down trees, it brings light and other plant species can colonize the site. The beaver's actions restore an environment favorable to the development of biodiversity in aquatic ecosystems. They also have a filtering effect that favors the deposit of sediments and pollutants.

### Why do beavers cut down trees?

These rodents are vegetarians. During the spring and summer, they have a wide variety of plants, tree seedlings and tubers. But their main source of food in winter is tree bark. They have a preference for willow and poplar bark.

Under normal conditions, they store enough branches in submerged islands to last through the winter. The trunks have no nutritional value. Since the beaver cannot climb, the solution is to cut down the tree to access all the bark of the softer branches. Once debarked, these branches can be used for dams. The beaver is able to cut down a tree of 30 to 40 cm in diameter in one night.



*A tree freshly nibbled by a beaver*



*Lodge of a beaver family*

### What does a beaver lodge look like?

Located on a river bank, the lodge consists of a feeding area, a resting area, a fresh air supply and at least two underwater tunnels for entrance and exit. The areas are built on a platform 10 cm above the water level so that they remain dry. The beaver creates space to store wood, mud, twigs, and bark to form the lodge.

The size of the lodge depends on the size of the family, the number of years they have lived there, and the variation in water levels. Most lodges are about 5 m in diameter and 2 m high. When it freezes, the beaver covers the lodge with mud except for the opening at the top.





## WETLANDS REHABILITATION PLAN : THE BEAVER OUR AMBASSADOR

Tireless worker, by building dams and creating ponds, the beaver gives life and dynamics to the waterways hindered by man. It recreates wetlands, economically non-productive, but extremely rich in biodiversity. The gnawed dead wood is deposited in places in the stream and constitutes a shelter for fry, and a nesting place for birds. Alternating gnawed and regrowing trees rejuvenate the stream bank vegetation. All this recreates a habitat for many animals and plants, allowing the redeployment of species which, because of the scarcity of these environments, are often in difficulty: insects (dragonflies, mayflies, ...), plants (sedges, cottongrass, rushes, ...), frogs and newts, birds... It contributes to the improvement of the aquatic environment, to the restoration of the ecological corridor along the watercourses, to the maintenance and the restoration of the fluvial dynamics in the alluvial plain. All these objectives are mentioned in the European plan for the management of protected areas. The beaver carries out this task free of charge.

### Beavers help mitigate climate change!

Deep water points and shallow stretches, fine sediment upstream, fast flowing water with a stony and gravelly bottom downstream of the dams, the stream can more easily shed its silt into the terrestrial vegetation, making the water clearer and less polluted. Through its dams, the beaver increases the water holding capacity and raises the water table. Downstream, this results in an average drop in water temperature of 2 to 3 degrees. Beavers can be an effective tool in protecting river ecosystems. Rivers shaped by beavers are then more resilient to the consequences of climate change.







*By building a dam, the beaver ensures the creation of wetlands.*



*No matter how big the trees are,  
the beaver carves the trunks.*

## LANDOWNERS, COMPENSATION IS POSSIBLE.

It is inevitable that in the future, beaver activities will conflict with human interests in the intensively used Luxembourg landscape. For this reason, a "Plan d'action et de gestion du castor au Luxembourg" (Administration de la nature et des forêts, 2018) has been specially developed.

In addition to measures to promote the acceptance of the European beaver, this plan proposes solutions in case of conflicts and provides for financial compensation in case of various damages.

Compensation is only paid for forestry and agricultural damage, as well as for damage to commercial ponds, if:

- there is a causal link between the damage and the beaver
- the damaged crops or activities are in compliance with existing regulations and the legal provisions are respected.

In order to obtain compensation, a specific form must be filled out and an ANF official contacted. (<https://anf.gouvernement.lu>)





*Aerial view of Cornelysmillen Nature Reserve and beaver modification of the landscape.*

## GIVE TODAY FOR THE NATURE OF TOMORROW

Since 1982, and under the high patronage of HRH the Grand Duke, the Fondation Hëllef fir d’Natur de natur&ëmwelt is committed to nature and biodiversity in Luxembourg.

Supporting the foundation also means giving us the means to acquire new nature reserves and to maintain more than 1700 ha of land of high ecological value, including 575 ha of wetlands favourable to the beaver.

By making a donation to the foundation, you can participate concretely in the protection of nature and thus preserve biodiversity, flora and fauna in Luxembourg.

For any Legacy or land donation, please contact the Foundation:

Gilles Weber : 29 04 04 306 ou par mail : [donation@naturemwelt.lu](mailto:donation@naturemwelt.lu)

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Rédaction : Fondation Hëllef fir d'Natur

Layout : Nicolas Hormain

Photos : Kevin Jans, Alexandra Arendt,  
Claudine Felten, Nathalie Grotz,  
Nordlicht Wikipedia, Fondation Hëllef  
fir d'Natur, ANF

Photo couverture : Jean-Pierre Tissier  
Photo dos : Kevin Jans

Références :  
Europäische Biber in Luxemburg (ANF)  
Protégeons le castor européen (FHFN)

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*Tree eaten by the beaver in the shape of an hourglass.*

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reserves of the Hëllef  
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through our Youtube  
videos!



Deutsche  
Version



Version  
Française

