

# LIFE Network Danube Plus New fish migration route

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Mit Unterstützung von Bund, Land und Europäischer Union

 Bundesministerium  
Landwirtschaft, Regionen  
und Tourismus







Altenwörth dynamic bypass river: about 30 hectares of new river habitat have been created in the LIFE Network Danube Plus project.



**Natura 2000: protected areas for flora and fauna**

Natura 2000 is a Europe-wide, ecological network of special areas of conservation. It ensures the continued existence of endangered types of plant and animal species as well as their habitats. The Natura 2000 network extends from the Atlantic via the Alps to the Black Sea. There are approximately 350 such protected areas in Austria alone. The legal basis is the European Union's Habitats Directive and the European Commission's Birds Directive.



**LIFE programme: investing in the future**

The LIFE programme is used by the European Union to finance projects in the areas of environmental and nature conservation, as well as climate policy. It can be used by both public and private institutions. The LIFE programme has access to a budget of 5.43 billion euros for the 2021 to 2027 funding period.

# This is what the LIFE Network Danube Plus has achieved

The LIFE Network Danube Plus project improved the habitats between the VERBUND Danube power plants at Altenwörth and at Greifenstein in the European conservation area of the “Tullnerfelder Donauauen”. This included the construction the Lower Austria’s longest fish pass.

## Green light for fish

Several barriers for upstream migration of fish were removed. This means that there is now a barrier-free fish migration route covering 1,100 kilometres – from the Iron Gate in north-eastern Serbia to the Ybbs-Persenbeug power plant in Lower Austria.

## Networked habitats

The Altenwörth fish pass alone created about 30 hectares of new river habitat. The rivers Kamp, Krems, Mühlkamp, Göllersbach and Schmida were reconnected to the Danube to provide a complete fish passable river network.

## More biodiversity

The project created new habitats: fish got new spawning and breeding grounds, and highly endangered riverine species found shelter from the ship induced waves. Amphibians, reptiles, birds and mammals also benefit from new habitats.

## Nature conservation in Europe

The Danube, one of Europe’s most important rivers, has gained a building block for greater ecological diversity. The measures have an impact far beyond Austria’s borders: together, the project partners have made an important contribution to the nature conservation goals of the European Union and to the implementation of the Water Framework Directive.



Around Altenwörth: the 12.5-kilometre-long, near-natural fish pass and the side arm of the Danube, where ecological measures have been taken.



Always passable: the “Gießgang” watercourse at the Greifenstein power plant was equipped with four fish passes.



# Fish-friendly and barrier-free: new life for the Danube

The fish pass at the Altenwörth power plant connects the new river habitats with the Danube, enabling fish to swim around the power plant. It also offers new typical river habitats.



## The Altenwörth fish bypass in numbers

- Length: 12.5 km
- Maximum height difference: 16.2 m
- Inflow: 3 to 12 m<sup>3</sup>/s
- Total outflow up to max. 38.8 m<sup>3</sup>
- Material movements: 716,000 m<sup>3</sup>
- Initial operation: April 2022

Clean hydropower is Austria's most important source of energy. The expansion of power plants along the rivers was accompanied by environmental impacts. The LIFE Network Danube Plus project reconnected habitats on the Danube at Altenwörth and Greifenstein.

### From power plant construction to new habitats

With around 2 billion kilowatt hours of electricity generated each year, the Altenwörth power plant is the most powerful Danube power plant in Austria. Its construction in the 1970s restricted the free migration of fish in the Danube and in the tributary rivers Kamp, Kreams and Mühlkamp. The rivers were partially straightened and rerouted, and the typical Danube floodplain landscape was cut off. From 2008, there were plans to reconnect the Danube with its northern tributaries and make it passable for fish. The LIFE Network Danube Plus project was launched in 2019. The goal: to enhance the habitats in the Natura 2000 site "Tullnerfelder Donauauen", which are the largest contiguous riverine wetland system in Austria. In addition, "Blue Corridors" – transregional networks of waterways – were also to be created to link up further Natura 2000 protected areas.

### Lower Austria's largest fish pass

The centrepiece of the project was the construction of the Altenwörth fish pass, which is over 12.5 kilometres long. A bypass river was created from the reservoir via the Kreams-Kamp channel to the tailwater area. In the approximately 8-kilometre-long Kreams-Kamp channel, ramps which were migratory obstacles, were removed and the river bed was enhanced with features including gravel and sand banks as well as wooden structures. A new, near-natural river section was created in the course of the LIFE project, downstream to where the channel enters the Danube. These measures also reconnected the Kamp, Kreams and Mühlkamp to the Danube. Construction work on the fish pass began in March 2020



and was completed quickly, despite the coronavirus pandemic. The first flooding of the bypass river took place on 5 October 2021, and the opening took place in April 2022.

### Enhancement of the Danube side arm

In the Danube side arm near the Altenwörth power station, the riparian zones were ecologically enhanced, spawning conditions for fish improved and areas created for even more attractive leisure use. Excavated material from the Altenwörth fish pass was used for this purpose. The newly created "constructed wetland" on both sides of the bank naturally cleans the water in the side arm.

### Measures at Greifenstein

The so-called "Gießgang", or watering course, together with the floodplain is today a protected area with a wealth of typical animal and plant species. Four fish passes were created here. They connect the Danube with the northern tributaries Göllersbach and Schmida. Fish passability in the lower part of the Greifenstein "Gießgang" has also been improved.

Barrier-free fish passage through new vertical slot facilities in the Greifenstein "Gießgang"



## Success for the environment: endangered species return



An ecologically valuable, interconnected riverine habitat covering an area of over 15,000 hectares: this is the result of the LIFE Network Danube Plus project. Additional habitats for numerous fish, birds, insects and amphibians were created between the Altenwörth and Greifenstein power plants.

Ideal as shelter: deadwood structures like these provide sheltered areas for fish and help to direct the current.

### Spawning grounds for barbels, Danube salmon and other fish

The spawning and breeding grounds in the newly created sand and gravel banks attract many fish. Among them is the endangered common nase, a typical inhabitant of the Danube, which lays its eggs in the gravel banks that are flooded during high water. Other Danube fish such as barbel and Danube salmon are also benefiting. In addition, the new bypass river protects fish from waves caused by ships.

### Fish migration is digitally recorded

In a monitoring programme that started in the first half of 2022, aquatic ecologists have been studying the migration patterns and numbers of fish at the Altenwörth fish pass. Thirty-eight Danube fish species have been identified so far. Some fish have travelled as far as the lock of the Aschach power plant in Upper Austria during their migrations – that's a distance of 200 kilometres!

### Sheltered breeding sites for many bird species

Many breeding and migratory birds, as well as wintering bird species, now find optimal living conditions. The kingfisher and the sand martin have gained kilometres of breeding grounds as a result of the steep embankments that have been created. The flat banks are used by gravel-nesting birds, such as the rare little ringed plover, to lay their eggs. These are just a few examples of the many amphibians, reptiles, birds and mammals that inhabit the new wetlands.



### Water quality in the side arm improved

The water quality in the side arm of the Danube near Altenwörth has improved significantly. A so-called “constructed wetland” was created by establishing a biotope on both sides of the watercourse. This reduces the growth of algae to a natural level and improves the bathing quality in the side arm.

### Outlook: how the story will continue

The construction work between Altenwörth and Greifenstein has been completed. The large-scale, ecologically valuable habitat created by LIFE Network Danube Plus now has an impact that extends far beyond the region. The river landscape should be allowed to develop undisturbed and naturally. In the coming years, the last obstacles for fish in the Danube will also be made passable. Another LIFE project by VERBUND is already under way in this regard.



A classic Danube fish: large barbels like this one swim through the fish pass and find better living conditions in the project area.

Green toad on tour: many animal species benefit from the new seasonally wet habitats at the Danube power plant Altenwörth.

Gravel-nesting birds such as the little ringed plover lay their well-camouflaged eggs directly in the gravel banks.

# LIFE Network Danube Plus at a glance

**Project area:** Austrian Danube (European conservation area "Tullnerfelder Donauauen")

**Project duration:** 2019 to 2024

**Measures:** Construction of a fish pass and habitat improvement measures at the Altenwörth power plant on the Danube (length of bypass: approx. 12.5 kilometres), installation of four fish passes in the "Gießgang" at the Greifenstein power plant, as well as the upgrading of the riparian zones and creation of an artificial biotope at the Danube side arm near Altenwörth.

**Costs:** 14.5 million euros

**Financing:** VERBUND and other financing partners: Office of the Lower Austrian Provincial Government | Federal Ministry of Agriculture, Regions and Tourism | Lower Austrian Provincial Fishing Association | Co-financed by the EU with funds from the LIFE programme

**Support:** Municipality of Kirchberg am Wagram

**Participation:** Also involved are the companies with power purchase rights at the Greifenstein and Altenwörth power plants: EVN, Wien Energie, Energie AG, KELAG and VKW.



## Contact and other information



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Project partners at the opening of the Altenwörth fish pass in 2022: Member of the Provincial Government Christoph Kaufmann, Mayor of Zwentendorf Marion Török, COO Achim Kaspar (VERBUND AG), Provincial Fishing Master Karl Gravogl and the Mayor of Kirchberg am Wagram Wolfgang Benedikt.

## Legal notice

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