



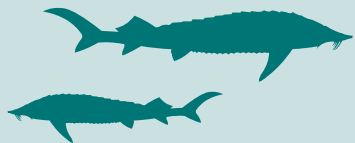
The project **LIFE Sterlet**

Together for the survival of the
sterlet in the Danube



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“The globally threatened sturgeon is an indicator of a healthy river systems. As the Federal Ministry of Agriculture, Regions and Tourism, we invest in the restoration of natural bodies of water every year. I am all the more pleased about the success of this EU project for the reintroduction of the sterlet in the Danube.”

Elisabeth Köstinger
Federal Minister of Agriculture, Regions and Tourism



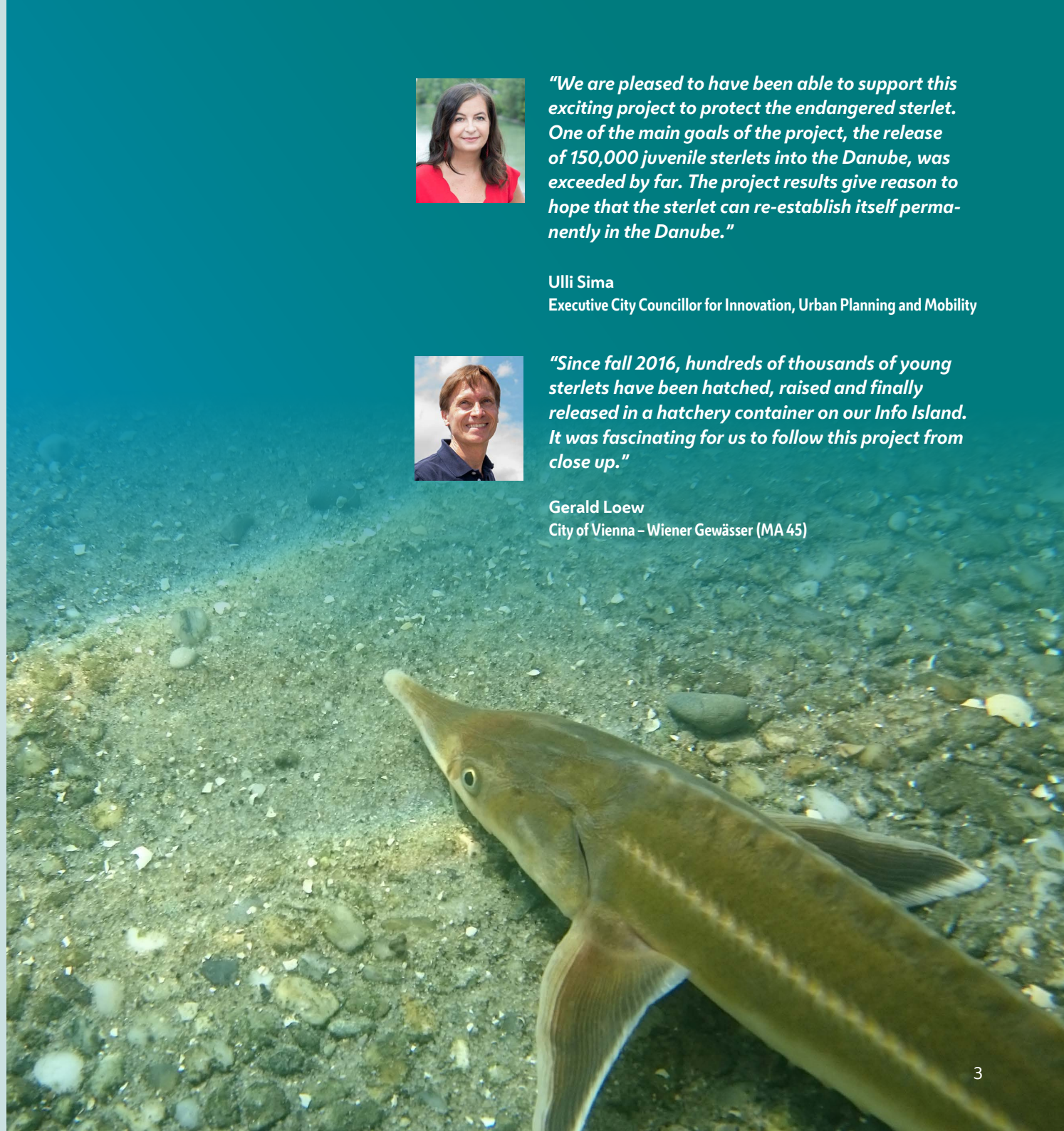
“We are pleased to have been able to support this exciting project to protect the endangered sterlet. One of the main goals of the project, the release of 150,000 juvenile sterlets into the Danube, was exceeded by far. The project results give reason to hope that the sterlet can re-establish itself permanently in the Danube.”

Ulli Sima
Executive City Councillor for Innovation, Urban Planning and Mobility



“Since fall 2016, hundreds of thousands of young sterlets have been hatched, raised and finally released in a hatchery container on our Info Island. It was fascinating for us to follow this project from close up.”

Gerald Loew
City of Vienna – Wiener Gewässer (MA 45)



The project

Last of its kind

Only the smaller sterlet is still found sporadically in the Upper Danube, as it lives permanently in the river, but this small population is critically endangered!



Sturgeons are the most threatened animal family globally and an example of the drastic effects of human impacts on our river ecosystems. Four out of five sturgeons are extinct in the Austrian Danube. The main reasons are overfishing in the past and the interruption of migration routes. Only the sterlet, the smallest of the native sturgeon species, can still be found in small numbers in the Upper Danube. However, the remnant population is severely threatened due to its small size.

The aim of the EU- project LIFE-Sterlet was to strengthen the wild population of the sterlet and to establish healthy, self-sustaining populations in the last free-flowing stretches of the Upper Danube.



above: Juvenile sterlet, ten months old

One of the main goals of the project, the release of a total of 150,000 juvenile sterlets during the project period, was not only achieved but far exceeded, with over 238,000 juveniles released. Several adult fish from the first releases have already been recorded again in the Danube as of 2021.



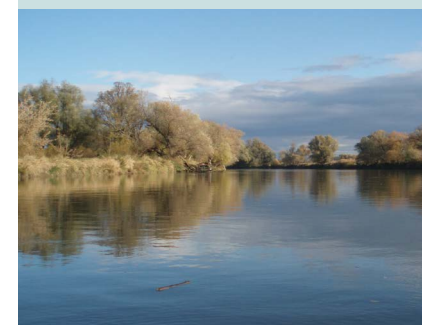
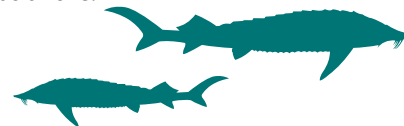
Rearing in a container on Danube Island in Vienna and the release of the young fish raised in the Danube water between 2016 and 2021 was accompanied by intensive monitoring and public relations activities.

Project Team

The project was led by a team of the Institute of Hydrobiology and Aquatic Ecosystem Management of the University of Natural Resources and Applied Life Sciences Vienna. Project partners were the City of Vienna – Wiener Gewässer (MA 45) and the Slovak Academy of Sciences. The project was also supported by the Federal Ministry of Agriculture, Regions and Tourism, viadonau, the Lower Austrian Provincial Fisheries Association and a number of other organizations from the fields of fisheries, administration and nature conservation.

Project Areas

The Wachau and the National Park Donau Auen, as well as the River Morava, a tributary to the National Park section, were selected as project areas. These are the last free-flowing stretches of the Danube in Austria and offer a variety of different habitats due to ongoing river restoration works, which favor the reestablishment of healthy sterlet populations.



above: Rearing tanks and natural habitat

The sterlet

- **max. length: 1 m**
- **lifespan: up to 25 years**
- **weight up to 16 kg**



Unchanged for 200 million years

The sterlet is the last survivor of the sturgeons in Austria

Threats

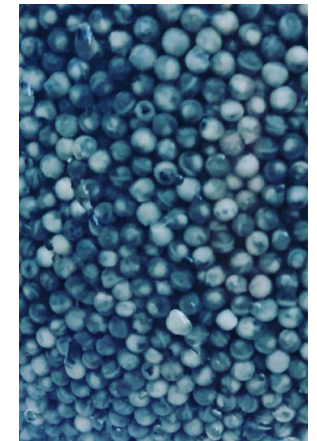
The species is on the Red List Austria as "Critically endangered" and is protected by the Convention on International Trade in Endangered Species (CITES). The reasons are past overfishing, migration obstacles, habitat alterations and pollution.

Due to the sterlet's behavior, existing fish passage solutions only work for sturgeons in exceptional cases, severely restricting habitat availability, migration routes and exchanges between populations.



Nursery on Danube Island

Young sterlets were reared by a team of BOKU experts in a hatchery container on Vienna's Danube Island on the premises of the Inselinfo of the City of Vienna – Wiener Gewässer from 2016 to 2021. The rearing tanks were supplied with Danube water and feed was selected according to the sterlet's natural diet. This ensured that the young fish imprinted to the water body and showed homing behavior to spawn in their natal river. At the same time, the young fish were prepared in the best possible way for life in the wild by the natural food and fluctuations in temperature, water turbidity, current and chemistry.



A share of the eggs used for rearing came from adult fish from the Hungarian Danube. Additionally, a small remnant population of old sterlets was detected by chance downstream of Vienna. Starting in 2018, parental fish from this population were caught annually, propagated and the juvenile fish reared in the hatchery container, with the adults being tagged and released after reproduction. The young fish obtained in this way maintain the genetic heritage and diversity of this remnant population.

From the careful stripping of the mother fish to the incubation of the eggs to the fully raised young fish, great caution and dedication are required.



Some of the larger fish were tagged with microchips (PIT) so that they can be clearly identified when recaptured. In this way, knowledge about the growth and migration of the released sterlets can be obtained even years after the end of the project.

Release of sterlets

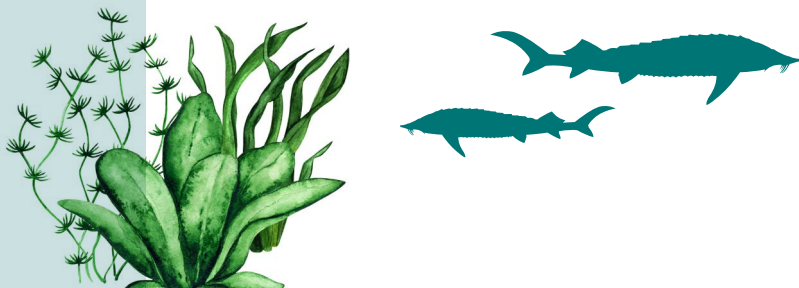
Sterlets of varying sizes were released into suitable sections of the project area during the summer and fall months. The sizes varied from feeding fry of a few centimeters in length to fish of 30 to 40 centimeters in length. While the smaller fish can adapt to a new environment more quickly, they are more prone to predation; the larger fish take longer to adapt but are less likely to be eaten.

Monitoring

The project was accompanied by intensive monitoring from the beginning, surveying small populations of wild sterlets in the Danube by net fishing. Some of the wild fish caught were later used for breeding purposes. In parallel, genetic samples were taken and the size of the populations downstream of Vienna and in the Jochenstein area on the German–Austrian border was calculated using the degree of relationship. The results showed that the populations in both areas are very small, ranging from 60 to 120 individuals.

A telemetry study was conducted as part of the monitoring. For this purpose, selected sterlets were equipped with hydroacoustic transmitters. At the same time, receivers were installed along the Danube from the Freudenau power plant to the next power plant in Slovakia recording the fish swimming past. From the data obtained in this way, valuable conclusions can be drawn about the migratory behavior and habitats of the sterlet.

Hydrophones are used to listen for tagged fish.



Success of the project

About 240,000 juvenile fish were released

Thousands of sterlets have been successfully reared in the hatchery station every year. Since the start of the project in 2016, more than 238,000 juvenile fish have been released into the Danube and March rivers. This almost doubles the number of 150,000 envisaged at the beginning of the project.



Response from experts and the media

The hatchery station was open to the public during the summer months and offered a large number of visitors the opportunity to learn more about the project, the sturgeons and the Danube as an ecosystem.

Around 50 delegations from Austria, the European Commission, other EU countries and even China visited the rearing container on Danube Island. More than 40 school classes took part in guided tours of the hatchery station, with all school children releasing their personal sterlet into the Danube. With over 180 press reports, TV and radio features, there was wide media interest in the project.



240,000
sterlets were released into
the Danube



The release of the young fish inspires all generations.



School classes visited the hatchery station.



Sturgeon identification cards were distributed to anglers.

Reports of sturgeon catches with photo, location, date and size are requested also after the official end of the project.

Contact: WhatsApp at +43 650 4507428 or thomas.friedrich@boku.ac.at

Successful collaboration with anglers

Anglers are an important dialogue group in the LIFE Sterlet project. They are invited to report catches of sterlets in the Danube and the Morava. For this purpose, special sturgeon identification cards were produced and distributed, and a hotline was set up to report sturgeon catches. The identification cards contain all the information needed to identify not only the sterlet but also all other native and non-native sturgeon species.

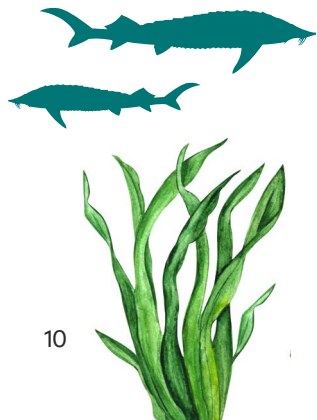
Telemetry study

Over a period of one and a half years, 75 sterlets equipped with transmitters were observed along the Danube, allowing us to learn more about the migration patterns and preferred habitats.

Netfishing survey

43 wild fish were caught by the net fishing survey, providing important information on the population in the National Park section.

A particular success in 2021 was the recapture of the first three mature fish that had been released as juveniles in 2017.



Outlook

Even though the LIFE-Sterlet project has already achieved great success, a continuation of these efforts is essential to ensuring the survival of this endangered fish species in the Upper Danube. A possible follow-up project, which would start in 2022, is already being planned. For this purpose, some of the small sterlets will be maintained in rearing tanks by BOKU to serve as future broodstock in the follow-up project.

LIFE Sterlet – Project data

- Title:** Restoration of sterlet populations in the Austrian Danube (short: LIFE Sterlet)
- Duration:** 2016–2022
- Management:** University of Natural Resources and Life Sciences, Vienna, Institute for Hydrobiology and Aquatic Ecosystem Management (IHG)
- Partner:** City of Vienna – Wiener Gewässer, Slovak Academy of Sciences
- Countries:** Austria, Slovakia, Czech Republic

With the contribution of the LIFE Programme of the European Union.



„Sturgeons are 200-million-year-old living fossils. In just 200 years, they have become the most endangered animal family in the world. It is our societal duty to preserve these fascinating creatures for future generations.“

Thomas Friedrich
University of Natural Resources and Life Sciences, Vienna;
Institute for Hydrobiology and Aquatic Ecosystem Management (IHG)

links: The project was supported by state and federal politics and stakeholders from administration, nature conservation and fisheries.

Partner



Stadt
Wien

Wiener
Gewässer

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Impressum

Responsible for content: Project Team LIFE Sterlet

Contact: thomas.friedrich@boku.ac.at

Graphic Design: message Marketing & Communications GmbH

Photos: City of Vienna – Wiener Gewässer (MA 45), Wiener Wildnis/MA 45,

Christian Fürthner, Clemens Ratschan, Kristof Reuther, Christian Witt,

Thomas Kaufmann, Thomas Friedrich, Christian Houdek, David Vesely

Print: Druckerei Hans Jentzsch & Co GmbH, Wien; Printed on environment-friendly paper

from the „ÖkoKauf Wien“ sample folder; Wien, März 2022

Sponsoren

 Bundesministerium
Landwirtschaft, Regionen
und Tourismus



viadonau

