Foundation prize
„The Living Danube“
Application documents 2026
(Application period 01. April 2025 until 31. August 2025)

Proposer (if not identical with applicants**)**

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Applicant

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Summary of institution/<u>of project/of applicant</u>

(Please underline where applicable)

For more than 12 years, I have dedicated my professional life to the conservation and recovery of the Danube sturgeons – living fossils that have survived since the age of the dinosaurs yet now face the real possibility of extinction. Working within WWF Bulgaria’s freshwater conservation programme, I have led research, habitat mapping, community engagement, restocking efforts, and policy advocacy that directly protect sturgeons and their riverine habitats.

My personal contribution has been central to several milestones in sturgeon conservation in Bulgaria: from filling critical gaps in scientific knowledge, to establishing trust with fishing communities and enforcement authorities, to securing the first protected area in the country dedicated specifically to sturgeons – *“Esetrite – Vetren”*.

This work has combined rigorous science, hands-on conservation, capacity-building, and public outreach into an integrated model. It has produced tangible results: more than 87 000 juvenile sturgeons restocked, over 220 live sturgeon releases reported voluntarily by fishermen, improved law enforcement cooperation across agencies, and growing public support for protecting the Danube’s natural heritage.

Detailed description

Background & Why It Matters

Sturgeons are one of the planet's most ancient animals, appearing over 76 million years ago. Today, they are "more critically endangered than any other group of species" (IUCN). Of the six species native to the Danube and the Black Sea, two have already disappeared from the river; three – the Stellate, Russian, and Beluga sturgeon – are *Critically Endangered*, and the sterlet is *Endangered*. These long-lived, migratory fish require decades to mature, and spawn only at long intervals, making them especially vulnerable to human impacts. In the Danube, all native species face an extremely high risk of extinction due to habitat fragmentation from dams, loss of spawning grounds, overfishing. In Bulgaria, legal sturgeon fishing has been banned since 2012, yet poaching and black-market trade continue, and there are still no signs of recovery.

The **Lower Danube is now the last place in Europe where sturgeons still reproduce naturally, but natural reproduction has become rare and sporadic**. This makes it critical to protect these remaining populations, safeguard their habitats, and implement every possible conservation measure to secure their future. Because sturgeons depend on healthy, connected river–sea ecosystems, their conservation is not only about saving a species – it is a measure of the health of the entire Danube. Protecting them demands science-based, international cooperation and long-term commitment.

When I joined WWF Bulgaria in 2012, scientific knowledge of spawning and feeding habitats downstream of Iron Gates II dam was severely outdated — with the last recorded spawning data from 2002 and the last diet studies dating back to the 1960s. Without accurate, current data, targeted conservation was impossible.

Target (Concept, Project Design, Methods)

The goal is to ensure the long-term survival and recovery of wild sturgeon populations in the Lower Danube through an integrated strategy:

- **Scientific research** to locate, assess, and secure key spawning and feeding habitats
- **Restocking programmes** using genetically appropriate juveniles of Danube origin
- **Community engagement** to build trust and cooperation with fishing communities, encouraging voluntary release and reporting of sturgeon catches
- **Capacity-building** for enforcement agencies to combat illegal fishing and trade
- **Public awareness campaigns** to encourage responsibility and stewardship of sturgeons as part of the living heritage of the Danube

Methods include ichthyological field surveys, habitat mapping with sonar, non-invasive diet studies, tagging with PIT, CWT, and acoustic tags, collaborative training with enforcement bodies, and sustained on-site engagement in fishing villages along the Danube and Black Sea coast.

Implementation

Personal contribution within WWF Bulgaria's Freshwater Conservation Programme

Field Research and Monitoring

Since 2014, I have organised and participated in over 340 days of fieldwork and 2 050 sampling events using bottom drifting trammel nets and ichthyoplankton nets (Figure 1), as well as a non-invasive method, to study the diet of sturgeons (*Figure 2*). Every captured sturgeon was measured, tagged, genetically sampled, and released. This research identified over 75 potential spawning sites, mapped feeding grounds, and documented rare cases of natural reproduction (Figure 3).

Figure 1. Sampling of the ichthyoplankton net for catching sturgeon eggs and larvae and sampling with fishing drifting trammel nets for catching young of the year sturgeon in order to identify spawning habitats and ensure the success of natural reproduction of populations in the Danube River © WWF Bulgaria

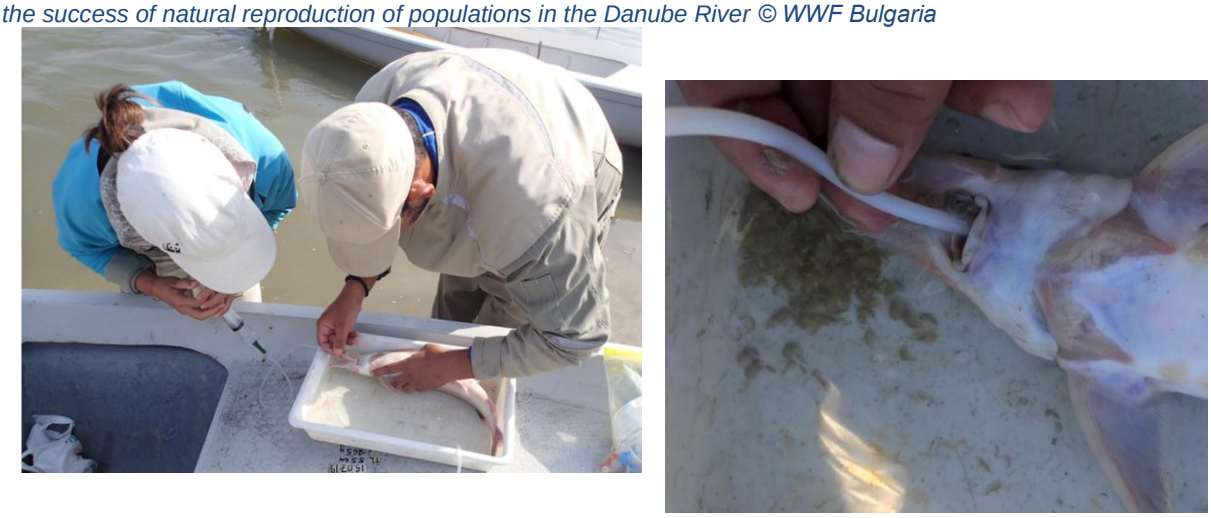

Figure 2. Study of sturgeon diet using a non-invasive method (stomach lavage) in field conditions © Veselin Koev, WWF Bulgaria

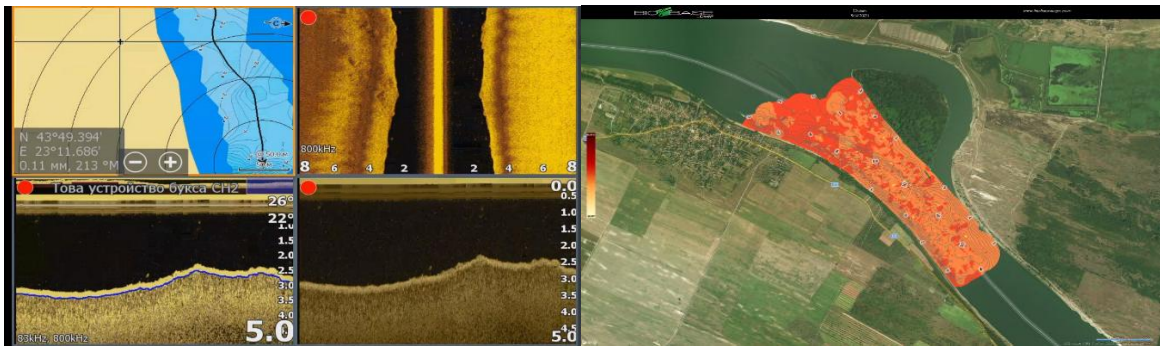

Figure 3. Study of potential sturgeon habitats by mapping the Danube River using sonar © WWF Bulgaria

Restocking

Since 2014, I have coordinated the restocking of over 87,000 genetically verified, tagged juveniles (Beluga sturgeon, Russian sturgeon and sterlet) originating from local broodstock with proven Danube origin (Figure 4) into the Bulgarian stretch of the Danube River (Figure 5). Ongoing monitoring of their adaptation, growth rate and migration patterns is also in place (Figure 6). Monitoring indicates that the restocked fish are integrating into the wild population and using the same feeding habitats as naturally occurring individuals.

Figure 4. A Beluga sturgeon, used for broodstock, from a Bulgarian farm with a genetically proven Danube origin. It was used in a programme to strengthen the sturgeon population in the Danube. © A. Chobanov; A one-month-old Beluga sturgeon which was released into the Danube at three months of age. © Borislava Margaritova

Figure 5. Sturgeon restocking, Belene, Bulgaria, 2025 © Hans Moyson/WWF Belgium (Facebook post);

Figure 6. Tracking the migration and growth rate of restocked Russian sturgeon from the Danube to the Black Sea © WWF Bulgaria

Community Engagement

As WWF Bulgaria's Sturgeon Advocate, I have visited fishing villages along the Danube and Black Sea coast, building trust in communities where women are traditionally not accepted on fishing boats. Over time, fishermen began to see me as an equal and started sending photos, videos, and catch details of incidentally caught sturgeons via mobile apps. This voluntary reporting now covers over 220 live releases – a dramatic increase from the two cases officially recorded by institutions in the same period (Figure 7, Figure 8).

Figure 7. Working with fishermen to collect information on sturgeon bycatch. Photos showing the measurement, weighing, and release of accidentally caught sturgeon.

Figure 8. Bycatch reporting - Young Russian sturgeon caught at the Bulgarian North Black Sea coast near Krapetz © WWF Bulgaria. Social media post on sturgeon migration from Turkey to Bulgaria

Law Enforcement Cooperation

I have established ongoing cooperation with different low enforcement authorities, such as the Executive Agency for Fisheries and Aquaculture, Border Police, customs officers, and food safety authorities. As part of our team, I have organised and led joint trainings, transboundary meetings, and workshops on sturgeon identification, caviar labelling, and the use of sonar to detect illegal fishing gear (Figure 9, Figure 10). These efforts have led to intensified controls and confiscations of illegal fishing gear, as well as improved caviar identification, interagency communication, and cross-border collaboration.

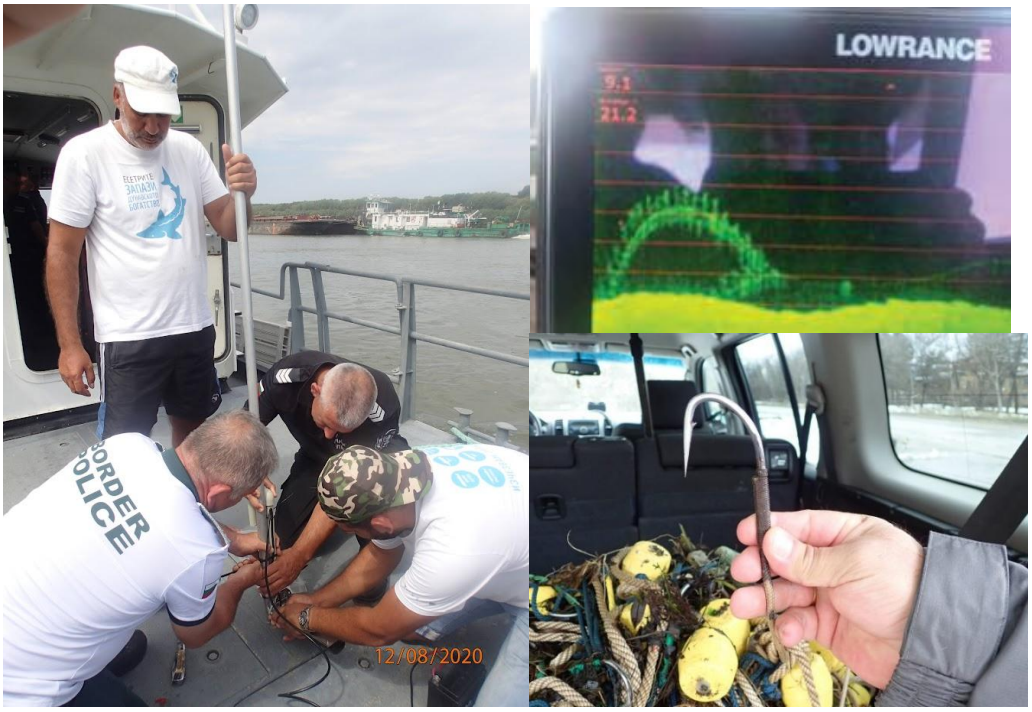

Figure 9. Photos from joint work with border police to identify illegal fishing gear (ropes with sharp hooks, called karmatsi) and sonar image of karmatsi placed on the bottom of the Danube. © WWF Bulgaria

Figure 10. Practical training for Bulgarian law enforcement experts teaching them the relevant techniques of genetic and isotopic analysis used for distinguishing between wild and farmed sturgeon products, and for verifying their origin

Public Awareness

As part of the WWF Bulgaria team, I regularly participate in various events, including Danube Day and World Fish Migration Day celebrations, as well as workshops and public and school lectures. In these events, I act as the sturgeon expert, explaining the sturgeons' biology, conservation status, the threats they face, and the necessary protection measures. I have appeared in two international documentaries (BBC and Arte), both of which have raised global awareness of the plight of Danube sturgeons. Public and fishermen support have been further amplified by materials such as the "*Release a sturgeon today so they will be here tomorrow*" campaign.

Figure 11. Photos from events to raise public awareness about sturgeon conservation and a T-shirt with the slogan "Release a sturgeon today so they will be here tomorrow"

Results

So far, my work has led to:

- More than 340 days of field research conducted on the Bulgarian section of the Danube;
- Identification of 75 potential sturgeon spawning sites and mapping of feeding habitats.
- Restocking of Beluga sturgeon, Russian sturgeon, and sterlet into the wild;
- A trusted network of local fishermen who now report incidental catches instead of selling them illegally, and an increase in official voluntary releases from zero to over 220 in under a decade;
- Transitioning from outdated data to a stable, continuous monitoring programme has led to the publication of several scientific articles containing up-to-date data, as well as a dissertation on sturgeon habitats in the Bulgarian section of the Danube River.
- One of the most significant outcomes to date is the designation of *Esetrite Vetren* as Bulgaria's first sturgeon-specific protected area (Figure 12), achieved with strong local support and based on the habitat data gathered through the research.

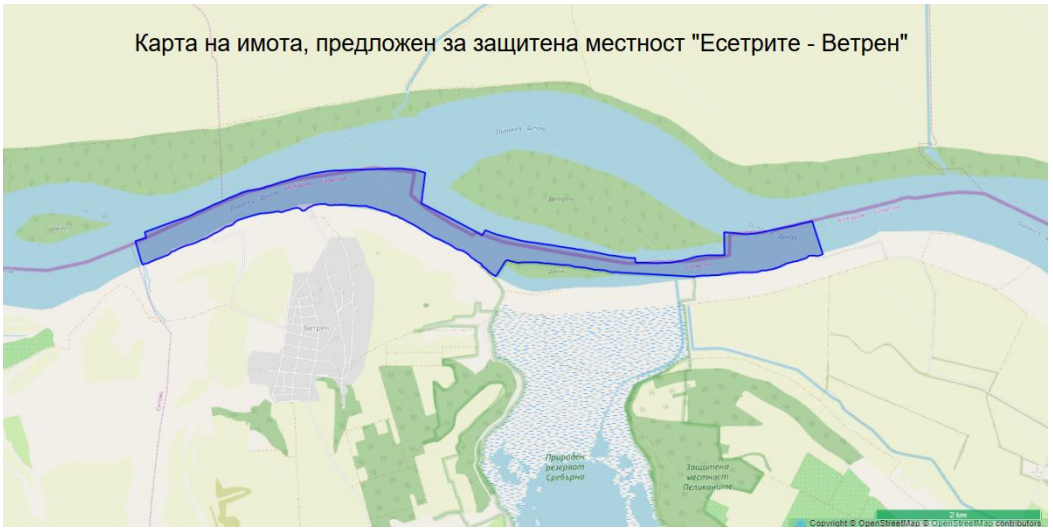

Figure 12. Map of the protected area "Esetrite Vetren"

Looking Ahead

The river still holds many mysteries, and our work is far from done. I plan to continue the search for active spawning grounds, expand citizen science projects that empower local communities, and strengthen international cooperation for sturgeon monitoring. I want to ensure that our restocking efforts not only return sturgeons to the river but also give them a chance to thrive and reproduce naturally.

For me, this is not just a profession — it is a commitment to the Danube's living heritage. Each time I see a sturgeon swim away after tagging or release, I am reminded of why this matters: because by saving sturgeons, we also protect the health, culture, and history of the river itself.

Next steps

Despite progress, pressures from habitat degradation, illegal fishing, and limited spawning success continue to threaten sturgeon survival. Future priorities include:

- Designation of new sturgeon habitat protected areas based on field data.
- Expansion of sonar-based surveys to locate and characterise additional feeding and spawning grounds.
- Strengthening long-term cooperation with both fishermen and enforcement institutions.
- Continuation of restocking and post-release monitoring to reinforce wild populations.

By combining rigorous scientific research with active community and institutional engagement, this work aims to secure the ecological conditions necessary for natural sturgeon reproduction in the Danube — ensuring that these ancient species remain part of the river's future.

Additional Materials:

- Scientific publications:
  - Dietary composition of young sturgeons Acipenseridae from the Bulgarian section of the Danube River
  - Downstream migration of young-of-the-year sturgeons (Acipenseridae) in the Lower Danube River, Bulgaria
  - A dissertation synopsis, by B. Margaritova

- WWF reports and resources:
  - Collaboration with fishermen to monitor and report sturgeon bycatch;
  - Involving Fishermen in Sturgeon Monitoring in Bulgaria;
  - Sturgeon in the Black Sea and insights on by-catch in Bulgaria
  - Poaching of Sturgeon – WWF 2024 Report
  - How Engaging Law Enforcement Institutions Can Help Protect Danube Sturgeons
  - Market Survey on Wild Sturgeon Trade – WWF 2021 Report
  - Sturgeon released into the Danube: Link 1, Link 2
  - Brochure How to Handle and Release Sturgeon Safely
  - Strategy for ecological corridor conservation and restoration in the Danube catchment

- Media coverage including BBC *Earth's Great Rivers II - Danube* (Link 1, Link 2)

- Additional visual documentation (Appendix 1).

Sofia, 14.08.2025 Borislava Margaritova

Place and date Signature

Appendix 1. Additional visual documentation

Figure 13. Facebook post about the results of sturgeon monitoring

Figure 14. Facebook post about the protected area of Esetrite Vetren

Figure 15. Facebook post about DOUBLE good news: during regular monitoring of fish populations conducted by our team in the Danube, we caught a large sturgeon fish - a male Stelate sturgeon! This was the second Stelate sturgeon fish we have caught in over 8 years. However, the story does not end here! A few minutes later, a second sturgeon appeared in the same net - this time a Sterlet! And this was documented during the filming of a BBC documentary episode Earth's Great Rivers II: Danube

Figure 16. German television channel Arte has produced a documentary about the Danube, describing the river through a series of extraordinary human stories. Along with stories from across the Danube, their team also met with us. During filming, we caught a small sturgeon, which was measured, tagged, and then returned to the Danube (Facebook post).

Figure 17. Tagging of sturgeons with different tags (PIT, CWT, and acoustic) and reading the tags © WWF Bulgaria

Figure 18. Participation in international and national conferences

Figure 19. Training of experts in fish tagging

Figure 20. A joint working meeting with representatives of different law enforcement agencies.

Figure 21. Meeting with a local fishing community

Figure 22. A fisherman with a sturgeon he caught as bycatch before releasing it back into the sea and Facebook post with video of the measuring and the release of Beluga sturgeon