UNA

Wild River National Park

Feasibility study



March 2026

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Una Wild River National Park. Feasibility Study.

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2. EXECUTIVE SUMMARY

The Una Wild River National Park (UWRNP) Feasibility Study (2025) provides a detailed and multidisciplinary evaluation of the potential to establish a transboundary Wild River National Park along the Una River and its tributaries, shared between Bosnia and Herzegovina and Croatia. The study aligns with the International Union for Conservation of Nature (IUCN) Category II guidelines for national parks.

2.1. RIVERS AND CATCHMENT AREA

The proposed UWRNP covers approximately 351,60 km^2 and includes 657,66 km of river courses. The Una River system consists of the Una and 15 tributaries: Dabar, Gomjenica, Japra, Klokot, Korčanica, Krka, Krušnica, Mlječanica, Ribnik, Sana, Sanica, Srebrnica, Sredića, Unac, and Žirovnica. This interconnected karst river network is one of Europe's last free-flowing systems, characterized by outstanding hydromorphological integrity, tufa cascades, waterfalls, and diverse aquatic habitats.



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2.2. INCLUDED RIVERS



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Una River

The Una River stretches over 216 km, with a drainage area of 10.200 km². It originates at 520 m a.s.l. and meets the Sava River at 94 m a.s.l. Its flow regime is pluvio-nival, with spring peaks and winter floods. The upper Una shows a balanced karst flow, while the lower part experiences variations up to 3 m. The river is known for its tuff rock formations, waterfalls, and rich aquatic vegetation. Threats include hydropower development and riverbank housing.



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Srebrnica and Sredica

These two headwaters of the Una (14 km and 10 km long) form wide wetlands and wet grasslands before joining the main river. They are ecologically valuable areas that support diverse habitats.



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Krka

The Krka River, 5 km long with a catchment of 119 km², is a short karst river forming meanders and gravel bars in its valley. It displays a typical karst hydrology.



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Unac

With a length of 46 km and 1,161 km² catchment, the Unac River is a major right tributary of the Una. It originates from complex karst systems, disappears in poljes, and reappears through floodplain forests before entering a gorge at Martin Brod. Some regulation near Drvar affects its natural flow.



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Klokot

A short (5 km) but water-rich karst tributary with 15 m³/s discharge. It forms a plain north of Bihać and acts as a flood retention area. Main threats include fish farming near its spring and potential construction of houses.



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Krušnica

The 7 km long Krušnica (301 km² basin) has an average discharge of 8 m³/s. It flows from an impressive karst spring with a rock wall and cave. Small hydropower plants and intensive fishing pose risks.



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Žirovnica

A 24 km long non-karstic tributary with a meandering lowland course, surrounded by floodplain forests and wet grasslands.



© Jan Janković

Mlječanica

The 32 km long Mlječanica is another non-karst river characterized by meandering courses and floodplain forests along its lower reaches.



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Sana River

The Sana River flows 141 km, draining 4.189 km^2. Its pluvio-nival regime results in spring and winter high flows. Compared to the Una, it features fewer waterfalls and more floodplains. The tuff riverbed supports rich macrophyte growth in summer. Main threats come from urbanization, especially near Prijedor.



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Japra

The Japra River (48 km) is a non-karstic tributary flowing through hilly terrain into plains. Its meandering channels and extensive wet grasslands are ecologically important.



© Sead Badnjević

Dabar

The Dabar River (4 km) is a small karst stream with a narrow valley surrounded by forests. A hydropower plant near its spring affects its natural regime.



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Korčanica

The Korčanica (2km) is a short karstic tributary of the Sanica. Known as important spawning ground for salmonid fish species, it is increasingly pressure from fish farming and river regulation.



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Ribnik

The Ribnik (5 km) is a short, water-rich karst tributary. Its clear water and forested surroundings are scenic, but a large fish farm in its basin contributes to nutrient pollution.



© Anna Kovarovics

Sanica

The Sanica (20 km) is a tributary of the Sana, known especially for its crystal-clear water and its abundance of wild fish.

2.3. ZONING CONCEPT

The park's zoning concept follows ecological, hydrological, and landscape criteria, ensuring full protection of natural river processes while allowing for sustainable local development. The five proposed zones are:

Zone	Abbreviation	Area (km²)	Description
Core Zone A	CORE A	30,5	Pristine river sections and islands under strict protection.
Core Zone B	CORE B	2,9	Restoration areas within the core zone.
Natural River Dynamic Zone	RDZ-N	160,1	Natural river-floodplain dynamics and hydrological connectivity.
Cultural River Dynamic Zone	RDZ-C	115,3	Areas with traditional land use in balance with nature.
Sustainable Development Zone	SDZ	42,8	Settlements, eco-tourism, and sustainable land use activities.

The proposed Una Wild River National Park covers 657,66 km of rivers and a total area of 351,60 km², with Core Zones A and B comprising 33,4 km², the Natural River Dynamic Zone 160,1 km², the Cultural River Dynamic Zone 115,3 km², and the Sustainable Development Zone 42,8 km².

Maps showing the entire course of the Una River System included in the proposed transboundary Una Wild River National Park are available here: https://shorturl.at/LuNrn

Maps showing sections of the rivers incuded in the proposed Una WRNP are shown in the Annex to this report (in a pdf format).

A 30-meter riparian buffer zone along both banks is recommended to mitigate external impacts such as erosion, nutrient runoff, and traffic. Urban Protected Areas (UPAs) for towns like Bihać, Sanski Most, Prijedor, and Bosanska Krupa will connect communities to conservation and eco-tourism initiatives.

2.4. KEY ECOLOGICAL AND CULTURAL VALUES

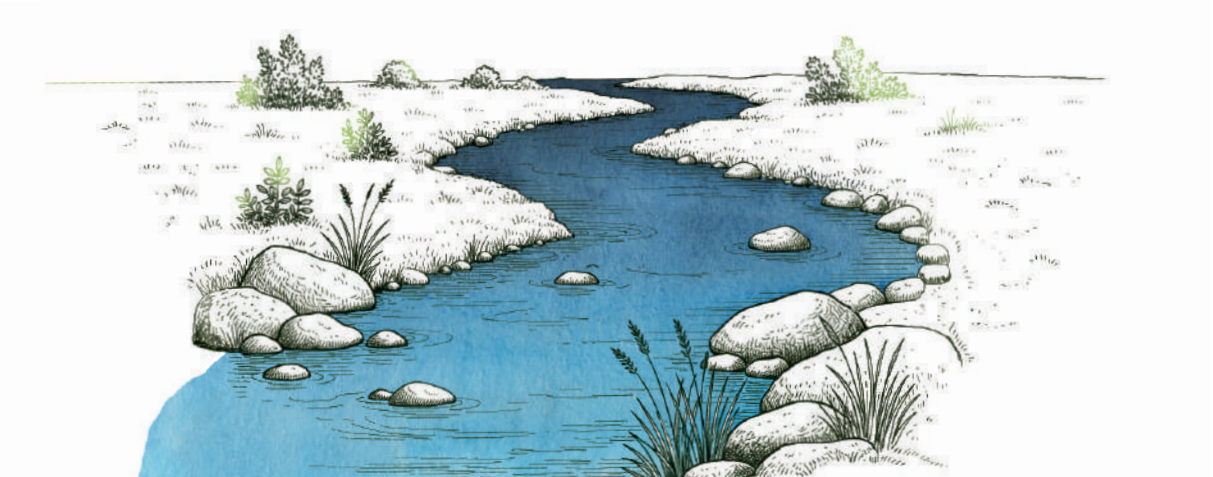
The Una River and its tributaries represent one of the most intact river ecosystems in the Balkans. The ecological values include:

- Free-flowing hydrology without significant artificial barriers.
- Unique karstic tufa cascades, waterfalls, and travertine formations such as Štrbački Buk and Martin Brod.
- Exceptional habitat diversity – from deep pools and rapids to floodplain forests and wetlands.
- Connectivity between aquatic and terrestrial ecosystems supporting high biodiversity.
- Cultural and socio-economic values are equally significant.
- Centuries-old coexistence between local communities and the river, reflected in traditional settlements, water mills, and agricultural landscapes.
- The river as a symbol of identity and unity for people across the Bosnia–Croatia border.
- Potential for sustainable tourism, education, and recreation.
- Contribution to climate resilience and water security for regional populations.

2.5. KEY SPECIES AND BIODIVERSITY

The Una River system supports exceptional aquatic and riparian biodiversity, with several globally or regionally endangered species:

- *Hucho hucho* (Danube salmon) – Vulnerable (IUCN), Annex II Habitats Directive. The Una hosts one of the last large, self-sustaining populations in Europe.
- *Lutra lutra* (European otter) – Near Threatened, Annex II & IV Habitats Directive.
- *Cottus gobio* (Bullhead) – Least Concern, Annex II Habitats Directive.
- *Austropotamobius torrentium* (Stone crayfish) – Annex II & V Habitats Directive.
- *Proteus anguinus* (Olm) – rare cave-dwelling amphibian recorded in the Krušnica River.
- *Ciconia nigra* (Black stork), *Alcedo atthis* (Kingfisher), and numerous bird species dependent on riparian habitats.
- Over 450 recorded species of vertebrates, plants, and invertebrates highlight the global importance of the Una River basin for biodiversity conservation.



2.6. THREATS AND PRESSURES

Despite its high natural integrity, the Una River system faces several existing and emerging threats:

- Hydropower development – existing hydropower plants (e.g., Kostela, Medna) and new project proposals threaten longitudinal connectivity.
- Illegal construction – unregulated tourism and private housing in riparian zones undermine habitat quality.
- Water abstraction – excessive withdrawals for irrigation and industry alter flow regimes.
- Gravel and sediment extraction – localized but harmful to aquatic habitats.
- Pollution – municipal wastewater, agriculture, and small-scale industry contribute to nutrient and chemical pollution.
- Invasive species – particularly along modified floodplains.
- Climate change – altered precipitation and increased drought frequency may reduce flow and habitat resilience.
- Mitigation strategies include stricter permitting, improved wastewater management, transboundary monitoring, and stakeholder engagement.



2.7. FEASIBILITY ASSESSMENT

1. Ecological Feasibility - **HIGH:** The Una River System remains among Europe's best-preserved hydromorphological systems, supporting rich and diverse species and habitats. Its free-flowing regime and biodiversity provide a strong foundation for Category II designation.

2. Legal and Governance Feasibility - **HIGH:** Existing national and EU-aligned legislation supports the establishment of a transboundary protected area. A four-tier governance model (Intergovernmental Commission, Transboundary Park Council, Technical Secretariat, Park Manager) ensures joint management.

3. Financial Feasibility - **MODERATE TO HIGH:** Feasible through state budgets, EU programs (IPA, LIFE, Horizon...), international funding (EBRD, KfW, Sida, UNDP...), and sustainable tourism. Long-term financing could be supported by ecosystem service payments.

4. Socio-Political Feasibility - **HIGH:** Strong stakeholder support and local ownership. The future Una Wild River National Park aligns with cross-border cooperation priorities and the EU Green Agenda for the Western Balkans.

2.8. PROPOSED GOVERNANCE MODEL AND STAFFING

A four-level governance model for the transboundary Una WRNP has been proposed:

Intergovernmental level: Joint Intergovernmental Commission
Management level: Transboundary Park Council
Technical coordination level: Joint Technical Secretariat
Implementation level: Existing PA/Natura 2000 bodies, coordinated by a new **Una WRNP Manager**, ensure daily field implementation across the entire park.

It is also proposed to establish a **Joint Scientific/Advisory Body to advise on management and ensure the involvement of key stakeholders in management. The minimum staffing level is estimated at 42 employees. Seven work programs have been proposed for the management of the Una WRNP.**

2.9. ESTIMATION OF THE UNA WRNP OPERATIONAL COSTS

Rough estimate of Una WRNP management costs is based on the costs incurred on an annual and multi-year basis and a separate capital investment cost category:



Annual recurring costs are fixed, every-year operating expenses, which include salaries for 42 staff and routine operations like utilities, fuel, maintenance, IT, training, etc.

"Not every year's" (or one-off / multi-year) costs cover the costs for irregular program, outreach, infrastructure and equipment development, and planning items whose amounts vary by year.

Total capital investment costs comprise costs for large, one-time capital projects implemented over several years, including the design, permits, construction and equipment for one large visitor's center.

2.10. ROADMAP AND PROPOSED TIMELINES

The steps in the roadmap for establishment of the Una Wild River National Park are illustrated in the diagram below:



Short description of key steps/activities includes:

Preparatory phase:
Professional conservation institutions in both countries prepare a Protection Study that identifies natural values, proposes the protected-area category, and defines baseline protection regimes to justify legal designation.

↓

Legal designation process:
Authorities review national and cross-border legal bases and complete parliamentary procedures, culminating in the legal act establishing the protected area.

↓

Institutional setup:
A dedicated management body (with rangers and core staff) is formed promptly after designation, with coordination links to existing PA/Natura 2000 managers.

↓

Initial management plan, zoning, and regimes:
A provisional plan details zones and permitted /prohibited activities aligned with the founding legal act and existing planning documents.

↓

Stakeholder engagement:
Early, structured involvement of NGOs, scientists, landowners/users, and local communities builds understanding of objectives, zones, and rules and secures participation.

↓

Financing and resources:
Governments ensure core staffing while additional resources come from EU and donors, under a long-term sustainable financing strategy (including own revenues) and staff training.

↓

Pilot actions:
Visible early measures (signage, promotion, participatory activities, eco-tourism pilots) demonstrate benefits and build public support.

↓

Monitoring and evaluation:
A capacity-appropriate monitoring plan enables adaptive management, starting as soon as possible after designation to guide improvements.





In a Una Wild River National Park the rivers would be protected including a 30 m buffer zone on each side. From the source in Croatia to the confluence with Sava.

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The table below shows a proposed timeline for establishment of the Una Wild River National Park, which is basically conceived as a six-year plan:

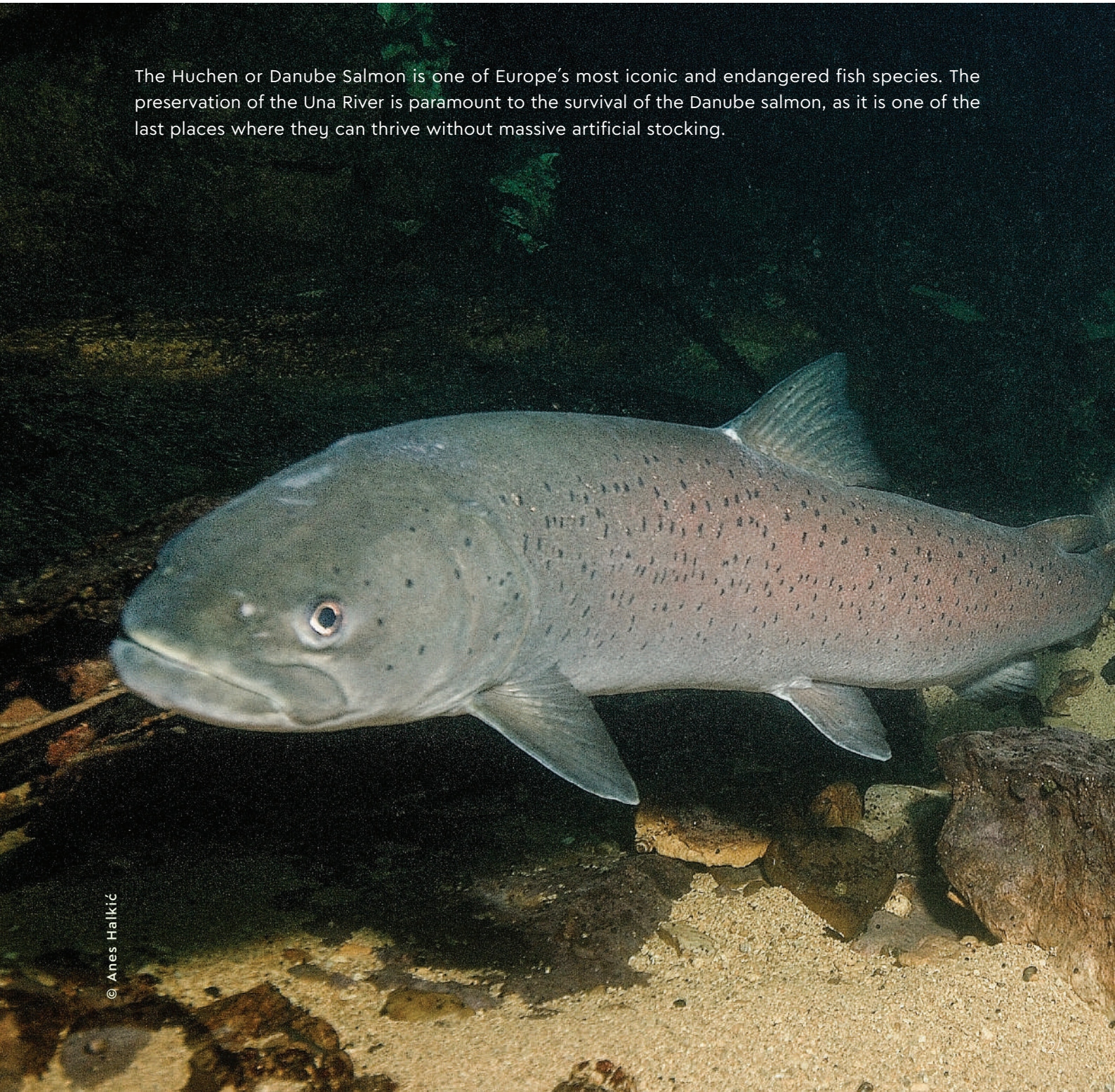
	Year 1/ milestone	Year 2-3 / milestone	Year 4-5 / milestone	Year 6 milestone
Preparatory phase	Protection Study			
Legal designation process		Declaration of the NP		
Institutional Setup			Management authority and staff	
Management plan, zoning, regimes		Management plan with detailed zones		
Financing & Resources			Yearly budget approved	Yearly budget approved
Pilot Actions	Awareness campaign	Awareness campaign	Initial signage completed	Information points
Monitoring & Evaluation		Monitoring program elaborated	Monitoring & adaptive management	Monitoring & adaptive management
Stakeholder engagement	1st round of public participation concluded		2nd round of public participation concluded	

2.11. OVERALL CONCLUSION

The Una Wild River National Park is ecologically justified, legally feasible, financially viable, and socially supported. It represents a pioneering transboundary model for river protection in Southeast Europe. The establishment of the park will safeguard one of Europe's last wild rivers, enhance regional cooperation, and create long-term benefits for both people and nature.

"The Una remains wild – a living symbol of Europe's natural heritage, unity, and the harmony between people and rivers."

The Huchen or Danube Salmon is one of Europe's most iconic and endangered fish species. The preservation of the Una River is paramount to the survival of the Danube salmon, as it is one of the last places where they can thrive without massive artificial stocking.



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