

An aerial photograph of a wide river with several large, forested islands. The water is a murky brown color, and the islands are covered in dense green trees. The sky is not visible.

DANUBEparksCONNECTED

PROJECT REPORT

2017 – 2019

DANUBEPARKS
network of protected areas

 **Interreg** 
Danube Transnational Programme
DANUBEparksCONNECTED



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In Wachau in Austria, the Danube cuts a small canyon into the verdant landscape, hosting species-rich dry habitats.

EU-funding programme: Interreg DTP
Project Title: DANUBEparksCONNECTED
Term: 2017-2019
Project budget: 3,085,412.49 Euro
Partnership: 15 project partners, 10 associated partners



The Danube River Network of Protected Areas

Bridging the Danube Protected Areas towards a Danube Habitat Corridor

The Danube River is a green axis of life, hosting highly valuable biological diversity, and functioning as an essential eco-corridor of Europe. Sadly, fragmentation of ecosystems has become a major threat to biodiversity in Europe. When it comes to ecological connectivity along the Danube, Protected Areas preserve the most important natural sites, and form the backbone of the Danube Habitat Corridor. Transboundary conservation is crucial in protecting large ecosystems, which is why only transnational cooperation can restore and maintain habitat connectivity along the world's most international river. DANUBEparksCONNECTED presents an integrative approach that is key to developing Green Infrastructure and strengthening the Danube, one of Europe's most valuable ecological corridors.

Strong partnership

Through two previous cooperative projects, the DANUBE PARKS Network has already significantly improved coherence in the management of the Danube Protected Areas. The partnership has focused on the protection of flagship species along

Project co-funded by the European Union (ERDF, IPA funds)

the Danube, the preservation and restoration of river dynamics - strengthening nature tourism and environmental education programmes. This successful cooperation led to the foundation of the DANUBE PARKS Association which now plays a leading role in nature conservation along the Danube.

The DANUBEparksCONNECTED project, connecting Protected Areas from 9 Danube countries, launched the DANUBE HABITAT CORRIDOR campaign to counteract ecological fragmentation. Local pilot activities and the development of Danube-wide strategies deliver important findings to improve ecological connectivity in the long term. The project's emphasis on collaboration has involved various sectors, stakeholders and the local public. The support of partners like the EU Danube Strategy (EUSDR) and the International Commission for the Protection of the Danube River (ICPDR) has further anchored the strategic approach of DANUBEparksCONNECTED as a good practice initiative on a policy level as well.

Danube Habitat Corridor Guiding Principles

DANUBEparksCONNECTED aims to establish and further develop the Danube Habitat Corridor

by implementing best practice examples for ecological connectivity and Green Infrastructure in all elements: DANUBE FREE SKY for the flyway (air element), WILDIsland (water element), Dry Habitat Corridor and Forest Corridor (land element). This is the driving force behind the development of the Danube Habitat Corridor Guiding Principles, which compile experiences from the project focuses and define follow-up actions. The result is an overarching guiding document for future activities concerning ecological connectivity along the Danube.

"The Danube River connects more bio-geographic regions than any other ecological corridor in Europe. Its connectivity can minimize the negative impact of climate change on its biodiversity. The Danube Protected Areas act as core sites, and DANUBEparksCONNECTED serves as good practice for Europe to counteract fragmentation.."

Elisabeth Köstinger
Federal Minister for Sustainability and Tourism, Austria

WILDIsland



Danube islands provide valuable habitats for species of European importance like the little-ringed plover.

The importance of islands

Islands are threatened hotspots of biodiversity that provide habitats upon which countless species depend for survival. They are excellent indicators for a dynamic riverine morphology and ecological backbones for the development of Green Infrastructure. As the many small, large, and partly even still dynamically developing islands are stepping stones along the Danube, it is the aim of DANUBEPARKS to preserve these vital river sites to strengthen the aquatic corridor on a Danube-wide scale.

Danube Wild Island Habitat Corridor

The WILDIsland initiative launched by DANUBEparksCONNECTED aims to strengthen

Category A islands in Romania are not just a symbol of the beauty of the Danube, but they also demonstrate true river wilderness.



ecological connectivity and to preserve natural wilderness in the heart of Europe. Through several meetings and cross-sector conferences, DANUBEPARKS partners and external experts reached a joint understanding and formulated the WILDIsland guidelines. Based on these guidelines a dynamic database of Danube islands was prepared, establishing an eco-corridor of 912 Danube islands.

The WILDIsland Online Tool

The dynamic inventory of Danube islands is visualized and shared through the WILDIsland Online, the very first interactive map-based database of islands along the entire Danube! The platform categorizes islands according to their natural character, ranging from islands with completely natural wilderness (category A) and valuable islands with restoration potential (category B) to islands that are strongly subjected to human use (category C). The inventory therefore gives an important overview of the status of the Danube Wild Island Corridor. The most natural islands with the potential to be WILDIslands are selected based on jointly defined guidelines, and following on-site visits, agreements for non-intervention management are prepared. As such,

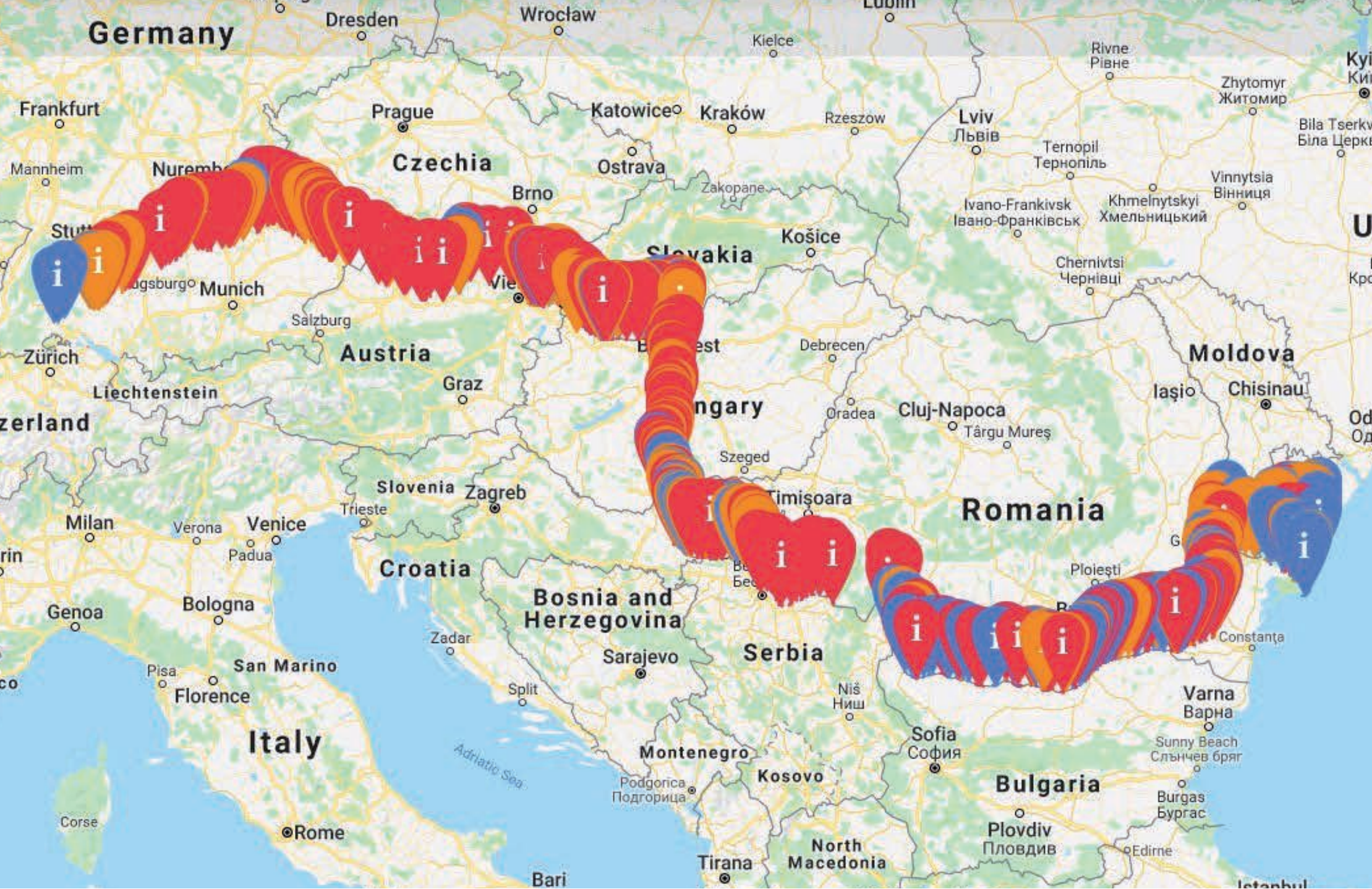
the WILDIsland label aims to safeguard natural processes and characteristic riverine habitat structures. Further information is available at: wildisland.danubeparks.org

The Danube Wild Island Habitat Corridor

- 3,000 river kilometres
- 912 islands
- 138,000 ha of dynamic island habitats
- 147 untouched or completely natural islands
- 14,000 ha of wilderness

WILDIsland figures

Wild islands are a great example of the potential coexistence of natural values, wilderness, and waterway management. Cross-sector meetings between Protected Areas and the waterway sector have laid the foundations for the strengthening of a Danube-wide cooperation. Furthermore, joining forces with DanubeSTREAM, a project of the Danube waterway administration focusing on ecologically-sound waterway maintenance, has enabled the identification of possible areas of cooperation, and has seen an increase in the outreach to a variety of stakeholders.



The online tool provides a Danube-wide overview of 912 islands grouped in three categories of naturalness. wildisland.danubeparks.org

A Danube-wide vision

Pilot actions for restoring riverine habitats

Healthy river dynamics are of the utmost importance, as the free flowing Danube provides riverbanks that are habitats for characteristic flora and fauna. Hydro-morphological alterations in the past have put these habitats under serious threat, which is why DANUBEparksCONNECTED targets river restoration to reinstate natural processes and characteristic riverine habitats. For several islands restoration actions to improve their ecological status are necessary to qualify as WILDislands, which aims to strengthen their role as stepping-



Tangible pilot actions improved river dynamics: side arm restoration through the removal of artificial groynes in Austria.

stones along the Danube. Two successful side arm revitalisations in Austria and Slovakia have already taken place, while in Bulgaria an island restoration concentrated on sediment removal from the side arm. As a means of habitat improvement, Protected Areas in the Upper Danube tested concrete pilot activities of forest management and the elimination of invasive species on islands. Moreover, a modelling of the possible adaptation of hard structures was developed on a Hungarian island, in order to build a base for follow-up steps and to re-establish a more natural state on the site.

Anchoring WILDisland on policy level

The WILDisland initiative already received recognition from the EU-Forum of Nature and Biodiversity Directors for establishing EU-level Green Infrastructure and strengthening the coherence of Natura 2000 sites.

A Danube-wide commitment signed by all DANUBEparks directors anchors the WILDisland

The first letter of intent for non-intervention management signed by Roland Weigert, District Administrator, Bernhard Gmehling, Mayor of Neuburg an der Donau and Dr. Marcel Huber, the Bavarian Minister for Environment, to ensure natural development and wilderness on two Bavarian islands.

initiative on policy level, providing the support it needs to go to national grounds. The path for success has been paved, the Danube-wide commitment having already triggered the first national declarations for the protection and non-intervention management of Danube islands.

DANUBEparks developed the WILDisland masterplan compiling possible future steps of the WILDisland process, which will see its continuation in the form of a follow-up LIFE project. This ensures the growth of the Danube Wild Island Habitat Corridor and anchor WILDisland in the long-term.

Voices

“The WILDisland initiative is an excellent example for the establishment of Green and Blue Infrastructure. The Danube Wild Island Habitat Corridor project contributes to further developing and strengthening the coherence of the Natura 2000 network.”

Humberto Delgado Rosa
DG Environment European Commission
Director Natural Capital



River revitalisation in three steps: an island side arm in Austria has undergone restoration by removing nearly 6,000 tonnes of groynes. The revitalisation supports the improvement of water discharge and sediment transport by enabling water continuity, and will play an important role in the preservation of the character of this island in the long term.



Category A island in the Danube Delta in Romania.



DANUBE FREE SKY



The Danube River is a flyway of European importance. Every year millions of birds use the Danube as their migration route.

Birds and power lines

The Danube region functions as a backbone of bird migration, providing an important breeding, resting, and wintering place for birds. Even though the Protected Areas provide refuge along this corridor, the hundreds of power lines that cross natural areas are dangerous barriers, as avian collisions with power lines result in mortality for several bird species along the Danube. More than 200 high-voltage and extra-high voltage lines cross the river in addition to numerous other medium- and low-voltage lines. As this network of power lines is growing, it is necessary to implement mitigation measures against their negative impact on bird fauna.

Electricity grids are crossing important habitats throughout the Danube basin. Since rivers serve as important points of orientation, a high number of birds collide with power lines running through the Danube region.



FREE the DANUBE SKY

Studies have shown that by using the right marking techniques, the approach risk by birds can be reduced by 70-90%. The DANUBE FREE SKY strategy aims to ensure the conservation of Europe's most important hotspots for biodiversity by creating and strengthening the platform between nature conservation and the energy sector, raising awareness on a regional level, and developing a Danube-wide best practice approach. Furthermore, it demonstrates feasibility by implementing pilot activities of marking power lines, and increases the efficiency of adopted measures on a transnational level. The initiative forms the basis of a long-term solution to make the increasing avian mortality rates a thing of the past!

Inventory and experience exchange

Power line operators generally responded positively to the call for cooperation. With their support a detailed Danube-wide inventory was prepared, displaying all power lines crossing the Danube, highlighting the most dangerous areas, and indicating priority power line stretches for marking. To further identify the highest risk areas that urgently need mitigation measures, partners

organized small-scale monitoring activities for collecting valuable on-field data.

To compile the current Danube-wide situation on bird collision and electrocution caused by power lines, the DANUBE FREE SKY position paper and literature research report was prepared. This document summarizes current knowledge, defines risk categories for each power line in the Danube corridor, describes power line marking standards, and introduces innovative and effective marking methods.

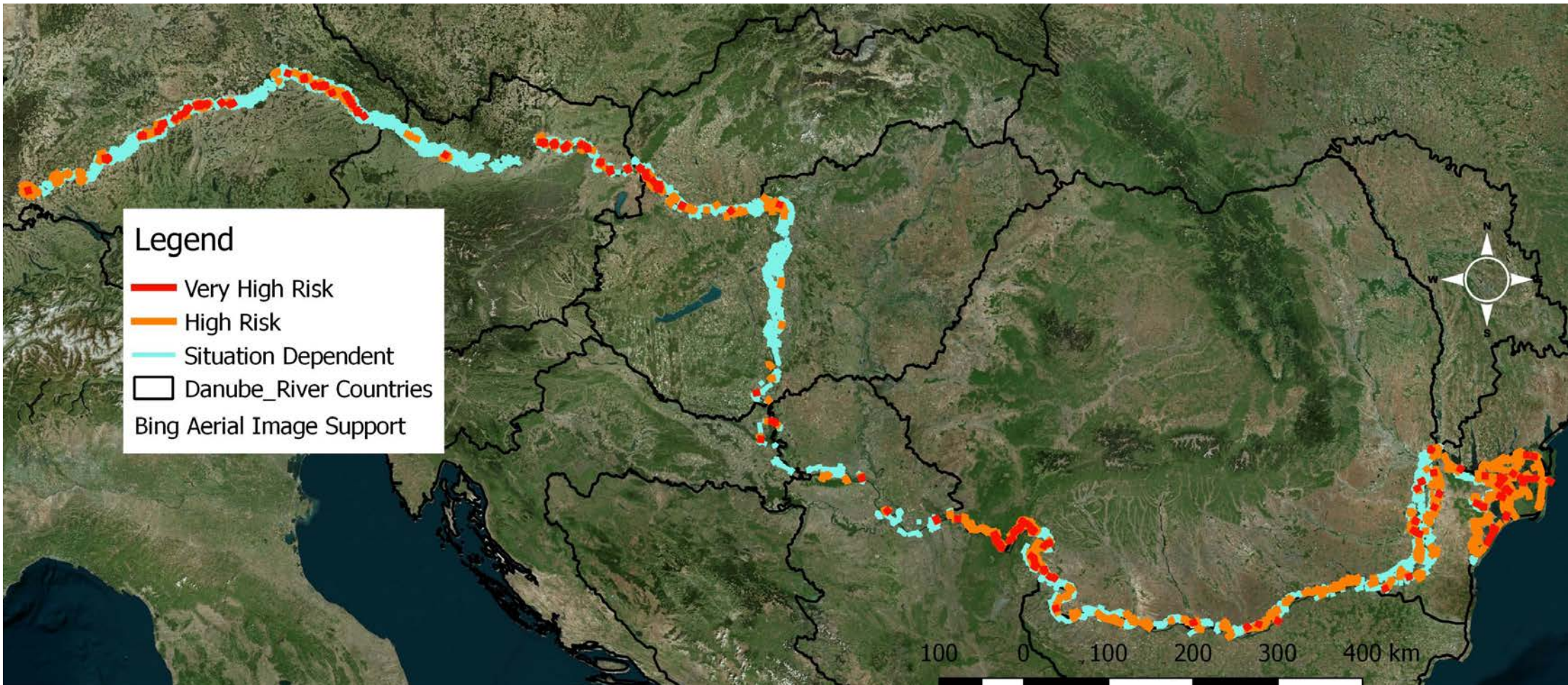
Voices

"DANUBE FREE SKY raised the awareness for bird conservation at power lines. Innovative technical solutions against bird collision and electrocution became possible due to the fruitful and cooperation among the conservation and the energy sector, initiated by the DANUBEPARKS Network."

Florian Ballnus & xxxxxxxx
Priority Area Coordinators of the
EU Danube Strategy for Biodiversity
(PA6) and Energy (PA2)



Yearly hundreds of avian species fall victim to power lines along the Danube.



The DANUBE FREE SKY map presents the results of the first Danube-wide inventory of 12,000 kms of power lines in total. This includes 3,900 km of high-voltage as well as 6,500 km of medium or low-voltage power lines.



The white-tailed eagle is one of the many bird species threatened by collision with power lines.



Marking the power lines reduces the risk of collision by 70-90%.

2,500 bird lives
saved per year



Pelicans are at extremely high risk for collisions with power lines.

Marking the power lines has been by far the most common mitigation measure of power line companies to modify risky overhead wires. Attaching markers in the form of spirals, plates, flappers, or spheres increases the visibility of power lines, and helps prevent birds from colliding with them.

Owing to joint efforts with electricity providers, about 8 km of the most dangerous power lines in 5 Danube countries have become more ‘bird-friendly’ through marking and retrofitting, saving approximately 2,500 avian lives each year! In Austria, an agreement was made together with

electricity providers that all power lines alongside the Danube will be marked, while in Slovakia a high-risk medium voltage power line was successfully marked with bird diverters. As a result of a national meeting in Germany, a power line crossing the river was marked, and additional bird diverters will be installed.

In Fertő-Hanság National Park, critical power lines were identified using pre-monitoring, and the first pilot actions have commenced. The electricity provider played a leading role in the implementation of pilot markings in the Duna-Ipoly National Park, where a high-risk, high-voltage power line was marked with two types of diverters, which were installed by drones and a helicopter. Meanwhile, Duna-Dráva National Park, home of the highest number of white-tailed eagles in Hungary, tackled the marking of mid-voltage power lines. Last but not least, 250 diverters were installed along 2,5 km of a power line with very high collision risk in the Romanian Danube Delta, an area which hosts more than 300 species of migratory and resident birds.

Looking ahead

A milestone has been reached in the signing a Memorandum of cooperation between the nature

over 12,000 km of power lines along the Danube Corridor
over 200 high voltage wires crossing the river
14 pilot actions implemented
over 8 km of power lines marked and retrofitted
approx. 1,000 bird diverters installed
approx. 2,500 bird lives saved per year

Figures

conservation and the energy sector, which defines and adopts joint follow-up actions across these regions that work toward a free and accessible Danube flyway. In order to guarantee the continuation of protective measures, a Danube-wide LIFE+ project has been developed and submitted. This initiative is a breakthrough in terms of building bridges across sectors. Joining forces with the electricity providers will serve as a good example for other tributaries as well.



Power line marking in three steps: a very critical medium-voltage power line was marked in Slovakia. These measures were very simple and quick to implement.



Close cooperation with the electricity providers: Marking of a high-risk power line crossing the Danube in Hungary.

A cutting-edge drone technology has enabled easy and safe power line marking in various locations.



Danube Dry Habitat Corridor



Sheep grazing took place in the Upper Danube to test an alternative management measure for dry habitats.

14 Dry habitats are rare, but not unusual in pristine floodplains. They play a crucial role in sustaining biodiversity by harbouring many rare and endangered species. Unfortunately, these dry habitat patches are very often reduced to small remnants in the floodplain areas, resulting in isolation and habitat fragmentation. The focus of the DANUBE DRY HABITAT CORRIDOR is therefore the protection, restoration, conservation, and appropriate management of the Danube dry grasslands. For the first time, local expertise on the management of dry habitats has been incorporated into a Danube-wide perspective.

The DANUBEPARKS Canyons Network

A milestone was reached with the establishment of the DANUBEPARKS Canyons Network,

Visiting an important canyon in Duna-Ipoly National Park – the Danube Bend.



resulting in a joint Memorandum of Cooperation between the Danube Canyon Administrations. These Canyons are break-through valleys and gorges often acting as key areas for habitat connectivity along the Danube. The five Protected Area representatives from Germany (Donauengtal near Passau), Austria (Wachau, UNESCO World Cultural Heritage), Hungary (Danube Bend, Duna-Ipoly National Park), Serbia (Djerdap National Park), and Romania (Iron Gate Nature Park) will work on joint strategies to synergize the biodiversity conservation actions of Danube Canyons in the coming years.

Danube-wide Dry Habitat Cadastre

The first cadastre and Danube-wide map of dry habitats were established in order to fully visualise the Danube Dry Habitat Corridor. Building on existing data and the compilation of habitat specifics of each Protected Area, the finalized map sheds light on the core areas, as well as possible gaps interrupting this corridor.

Pilots for dry habitat management

Flood protection dykes act as ecological linkage for semi-dry grassland species in various sections of

the Danube. A grazing pilot activity in Germany, in addition to cross-border grazing between Slovakia and Austria, aimed to support this eco-corridor and to develop the dyke as Green Infrastructure between the Protected Areas. The activities raised awareness, brought together key experts, and demonstrated a feasible alternative for the long-term management of dry grasslands.

Since dry habitats host valuable populations of orchids, the management of these areas must be given special consideration. Alongside a Danube-wide map of orchids as flagship species, a special botanical study on orchid abundance in a section of the Danube in Hungary was prepared, as well as a study on a rare, flagship butterfly species specific to an important dry habitat in Germany.

Based on a thorough evaluation of local dry habitats, a Danube-wide strategy has been developed to form a better understanding of the habitats of the Danube, and to provide information on directly applicable management measures.



Butterfly-monitoring tested the success of management actions.



The ideal habitats for the Eurasian Hoopoe - considered extinct in many European countries - are dry grasslands.



Grazing can be an alternative management measure for dry habitats.



A Danube-wide map of orchids as flagship species for dry habitats was prepared to demonstrate the Dry Habitat Corridor.

Danube Riparian Forest Corridor



Riparian forests are famous for their richness in biodiversity, however, fragmentation poses a big challenge on them.

Riparian forest habitats are a substantial part of the river ecosystem. Sadly, around 90% of these zones have been lost in the past century due to human intervention. DANUBEparksCONNECTED aims to restore riparian forests by detecting gaps in the riparian forest corridor for conservation or restoration measures. Such reforestation activities can mitigate climate change significantly by raising the carbon storage capacity of the Danube riparian zones.

fragmentation, as well as habitat typology. Built upon the Fitness Check, a roadmap towards a Riparian Forest Corridor was jointly developed.

Testing and demonstrating the Riparian Forest Corridor

In Slovakia, Hungary and Serbia, as well as in Bulgaria and Romania, much focus was put on the reforestation of gap areas in-between intact forest complexes with domestic species, the conversion of plantations used by intense forestry into native stands, and the management of invasive alien tree species. Diverse and productive riparian forests are of outstanding importance for bat conservation, as they prefer habitats of old growth forests. To put the results of the Riparian Forest Fitness Check to the test, a survey of bats as indicator species was conducted in the Upper, Middle and Lower Danube, examining about 100 sampling sites. Outstanding results show that Protected Areas house an abundance of species of great significance. The survey also indicates that 10-20 m³ of standing dead and hollow trees per hectare are recommended

for a healthy riparian forest habitat.

A deep-rooted strategy

The protection of Riparian Forests requires strong cross-sector cooperation. Three study visits in the Upper, Middle, and Lower Danube brought Protected Areas and forest enterprises together. These study visits presented a good opportunity to discuss pilot actions, demonstrate good practice projects, and plan follow-up activities regarding the Riparian Forest Corridor.

Voices

“With the funding of the Interreg Danube Transnational Programme, the DANUBEparksCONNECTED project elaborated transnational strategies and realized demonstrative pilot actions. Follow-up initiatives are already prepared by the DANUBE PARKS Network, to continue and further intensify our efforts on the field of ecological connectivity along the Danube River.”

Vlatko Rožac, DANUBE PARKS President
Nature Park Kopački rit, Croatia

The Lower Danube Study Tour provided a platform to jointly explore the Danube as a Riparian Forest Corridor by visiting good practice examples in other Danube areas.



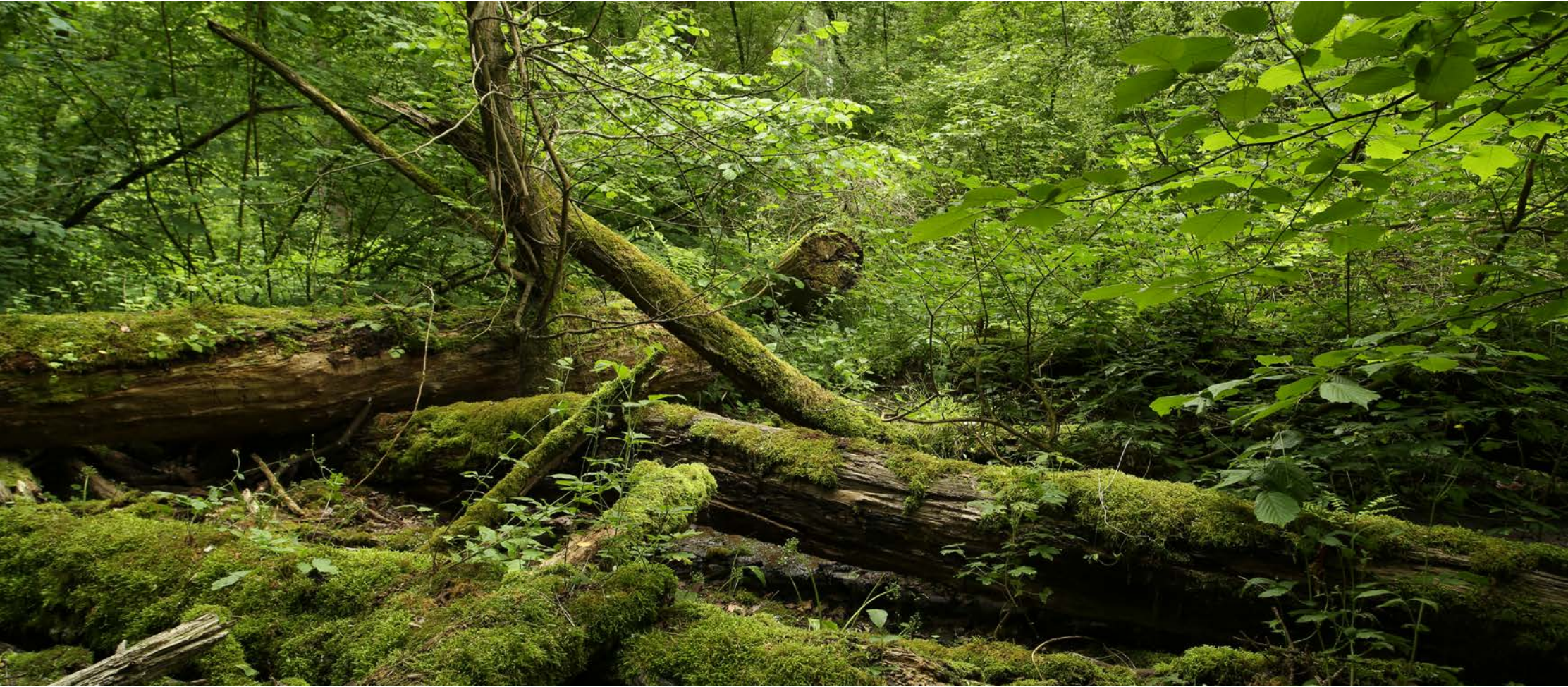
Reforestation with riparian tree species in Slovakia to enlarge the riparian forest surface area.



A coordinated survey was conducted on bats as indicator species for habitat quality in riparian forests.



A joint visit to a reforestation site in Serbia by nature conservation experts and forestry sector.



The riparian forest is important in preserving water quality, maintaining stream integrity and providing wildlife habitat.

Involving people for nature conservation



Danube Volunteers Days

Volunteers represent an important pillar in the conservation of certain habitats and the management of Protected Areas. For two years in a row, DANUBEparksCONNECTED has organised Volunteers days spanning 15 Protected Areas in 8 Danube countries, the first initiative of its kind. The Volunteers Day raises awareness by actively

involving the public and fostering environmental education. Youth and school groups, locals, as well as NGOs, municipalities, and stakeholders worked hand in hand for the Danube Habitat Corridor.

The 1st Danube Volunteers Day was dedicated to the activities of the Danube Dry Habitat Corridor, and worked toward the management and preservation of dry habitats and grasslands by cutting bushes, mowing steep slopes, and removing invasive species.

The 2nd Volunteers Day was dedicated to WILDIsland, focusing on waste collection and cleaning dynamic riverine habitats. To gain a deeper understanding of waste composition along the Danube, a waste analysis was prepared in cooperation with the Interreg project PlasticFreeDanube.

Website
www.danubeparks.org
<http://www.interreg-danube.eu/danubeparksconnected>

Facebook
<https://www.facebook.com/DANUBEPARKS/>

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Stay informed!

Cycling the Danube

With the help of DANUBEparksCONNECTED, the Danube-wide flood prevention dyke has evolved from its origin as flood prevention infrastructure to Green Infrastructure linking valuable dry habitats. As more and more tourists use the Euro Velo 6 for cycling along the Danube, it has become a corridor not only for fauna and flora, but for people as well.

The experienced cyclist Jovan Eraković cycled from Germany down to the Black Sea in Romania along the EuroVelo 6 from April to June 2019, visiting all Protected Areas and learning more about DANUBEparksCONNECTED. Upon his arrival, 15 local events were organized to promote the corridor and present the project activities to the local public. On his journey he also met several stakeholders and other Interreg projects.

Several project partners even accompanied him along certain sections to visit the neighbouring Protected Areas.

Voices

“Thousands of local people, youth and school groups, NGOs and different supporters participated in the DANUBEPARKS Volunteers Days and followed the Danube-wide expedition “Cycling the Danube”. This makes the Danube Protected Areas to an excellent catalyst to fascinate people for our Danube’s joint natural heritage.”

Ivan Zavadsky
Executive Secretary of the
International Commission for the
Protection of the Danube River (ICPDR)



18

Danube Volunteers Days
2 years
8 Danube countries
30 events
800 volunteers
2700 working hours

Figures



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|---|---|--|------------------------------|--|
| 1 Danube Delta Biosphere Reserve | 2 Lower Prut Nature Reserve | 3 Rusenski Lom Nature Park | 4 Persina Nature Park | 5 Iron Gates Natural Park |
| 6 Kopački rit Nature Park | 7 Gornje Podunavlje Special Nature Reserve | 8 Duna-Dráva National Park | | 9 Duna-Ipoly National Park |
| 10 Szigetköz Landscape Protection Area, Fertő-Hanság National Park | | 11 Dunajské Luhy Protected Landscape Area | | 12 Záhorie Protected Landscape Area |
| 13 Donau-Auen National Park | 14 Wachau Protected Landscape Area | 15 Narrow Valley of the Danube in Passau district | | 16 Donauauwald Neuburg-Ingolstadt |



DANUBEPARKS
network of protected areas



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