



Where the blue  
danube goes green

Donau-Auen  
National Park

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**Cover image: Welcome home.** Endangered species like the Little Ringed Plover have once again found a home in the Donau-Auen National Park.



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## Welcome to the Donau-Auen National Park!

The Donau-Auen National Park has many natural resources: habitats which have now become rare, and a huge variety of animal and plant species, some of which are endangered and strictly protected. This brochure is meant to give readers a better understanding and appreciation of these natural treasures and the efforts being undertaken to protect them.

Discover the uniqueness of this sanctuary. Take a walk or even a guided tour and see the many hidden wonders along the way.

### Welcome to the Donau-Auen National Park – the Green Wilderness on the Big River!





**Unique.** The National Park stretches across 93 km<sup>2</sup> and protects one of the last major, nearly intact wetlands environments in Central Europe.

## The Donau-Auen National Park

Far-ranging wetlands environments have become rare in Europe. Founded in 1996, the Donau-Auen National Park preserves the **last significant wetlands** located in a rapidly-developing region. The construction of the hydroelectric facility planned for Hainburg was prevented. Instead, this stretch of the Danube was declared a **National Park**.

Here, one can still feel the unbridled energy of the great river which once had the power to form the surrounding landscape. Flood waters create and re-create the wetlands, forming new bodies of water, carrying away the earth along with the trees and plants rooted in it, bringing forth new, bare spaces.

**Green corridor.** The Donau-Auen National Park is embedded in the up-and-coming Centrope region. Its neighbours: metropolitan areas of Vienna and Bratislava.

Once the water recedes, these bare spaces are soon covered in new growth – a **constant state of flux**. **But only when the Danube can flow freely, as it does in these reaches, can its workings prevail.**



“Wetlands” also means **forests**. The Danube wetlands boast a veritable mosaic of water and land-based habitats which are maintained by the constant ebb and flow of the Danube. There is enormous biodiversity, with over 800 vascular plant species, more than 30 mammalian, 100 breeding bird, 60 fish, 13 amphibian and eight



**Primeval.** Despite extensive flood protection measures, parts of the wetlands remain untamed.

reptilian species found in the National Park, not to mention the countless terrestrial and aquatic insects as well as invertebrates.

Protecting and maintaining the unique **dynamic character** of the Danube wetlands to the east of Vienna is the core mission of the National Park. Yet nature should also be accessible to people as a site of recreation and edification. Our network of marked paths, visitor facilities and wide-ranging programme of excursions make this possible. What is more, the National Park administration is also dedicated to environmental **research and education** in order to deepen existing knowledge of natural resources and impart this knowledge to visitors.

**Biodiversity.** Eight reptile species may be found in the Danube wetlands, including the endangered Dice Snake.



## Nature Conservation at the Donau-Auen National Park

The Danube is the **lifeline** of the National Park. Thus effective conservation means sustaining and improving the dynamic processes characteristic of riparian landscapes. Even though the Danube wetlands are largely intact, human



intervention has left its mark. Built-up "hard" banks, river regulation, structures erected for shipping and flood protection: all these reduce the connectivity between the river and the surrounding wetlands. And the impact of the nearly uninterrupted chain of power stations along the Danube can be seen in movement of bed loads and drainage patterns.

**Innovative water engineering** measures such as reconnecting side arms to the river and removing hard, built-up banks are being utilized to re-establish more natural conditions.

For especially endangered species, additional dedicated conservation programmes are in operation. There are also other measures for the ecological enhancement of areas affected by forestry operations, and for the maintenance of

**Moving principles.** The best way to preserve the wetlands is to let the river do its work!

wetlands meadows. In this way, typical wetlands habitats are being preserved and sustained.

Administration of the National Park is carried out by the Nationalpark Donau-Auen GmbH, the Donau-Auen National Park operations of the Austrian National Forests (ÖBf), and the National Park Administration, City of Vienna Municipal Department 49 (Forestry Office and Urban Agriculture).

Numerous projects have been successfully completed in tandem with valued partners. The City of Vienna and its municipal departments 22 (Environmental Protection) and 45 (Water Engineering); the Environmental Protection Department of Lower Austria; and via donau (formerly known as the Austrian Waterways Authority) have contributed significantly to project implementation. Financing has been made possible in large part through EU funds made available via the LIFE Nature Project.

**Energetic.** Revitalization projects and regulatory interventions help preserve the wetlands. More and more volunteers from companies and clubs are lending a helping hand!

In addition to the Austrian Danube wetlands, there are many other areas with unique flora and fauna worth preserving along the river and its tributaries. International partnerships are essential to sustainable preservation, as Mother Nature does not heed borders. The **transnational project DANUBEPARKS**, initiated by the Donau-Auen National Park, bundles these efforts.





**Land along the big river.**  
The Danube forms the National Park and is its lifeline.

## Water Habitats

### The Danube

Coming from Germany, the Danube flows for around 350 kilometres through Austria before making its way through other European countries to the Black Sea. And in Austria, the Danube can be characterized as a mountain river due to its extreme slope and rapid currents. Differences in water levels of up to seven meters are evidence of the river's force.

### **The last remaining free-flowing stretches in Austria may be found in the Wachau and the National Park.**

Yet even here, the river has been impacted by human intervention. The main regulation project forced the Danube, once a river of many branches, into a fixed bed, and cut off many of the side arms. Long stretches of

**Unbridled.** Water levels in the current may vary by up to seven meters.

banks were fortified by hard concrete and stone. As an international waterway, the Danube was also optimized for navigation with edifices and the formation of a shipping canal. Many of these interventions have now been undone, step by step.



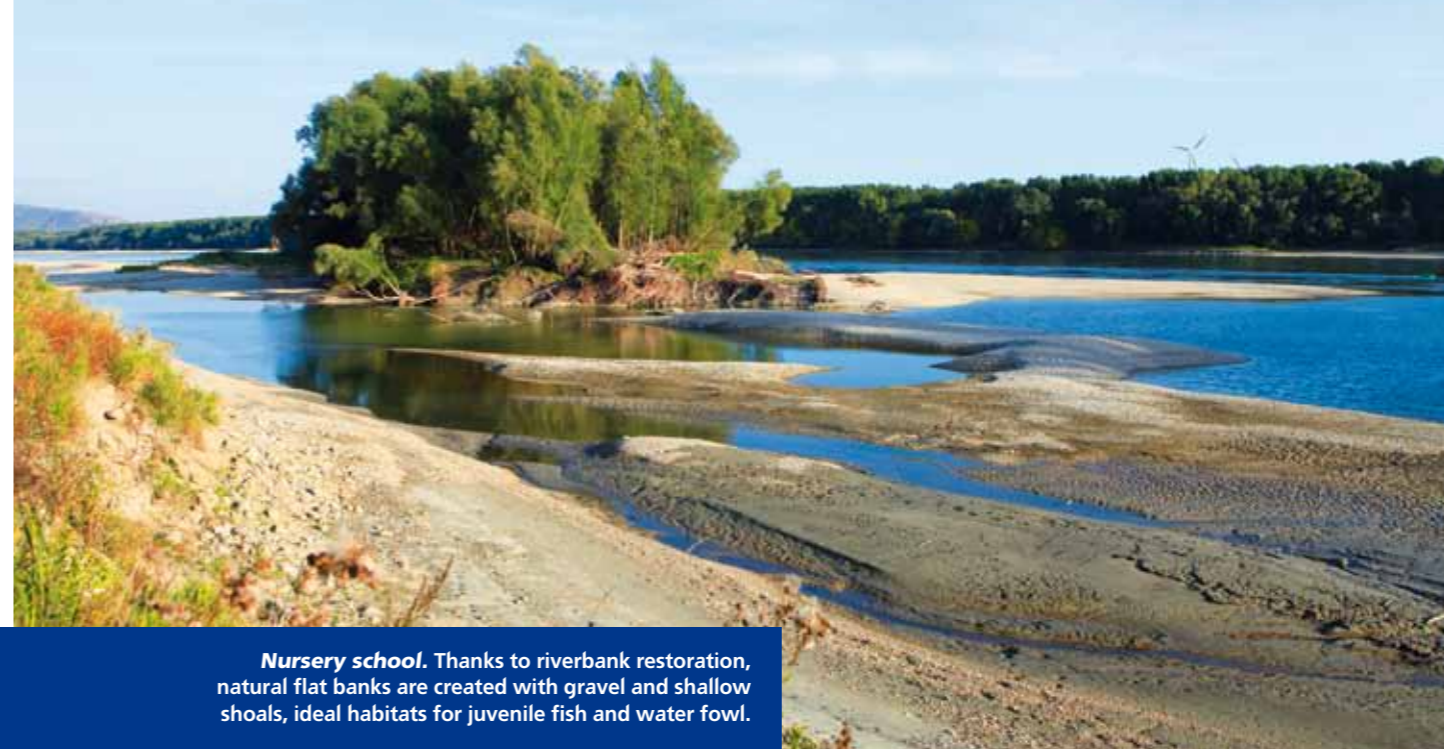
Power plants upstream hold back the gravel, causing the river to continually deepen and cut itself off from the wetlands. This affects not only the Danube itself, but also side channels and the groundwater.



**Robust.** Current-loving species like the Barbel feel right at home in the Danube's waters.

The river and its banks provide the ideal habitat for rare fish species which thrive in the currents and numerous water fowl which prefer gravel environments for breeding, such as the Common Sandpiper and the Little Ringed Plover, but also the White-tailed Eagle. Diverse pioneer plants and willows grow on the gravel banks.

**The most ecologically rich places on the Danube are at the mouths of river branches, on riverbanks in their natural state, and in shallow water zones.**



**Nursery school.** Thanks to riverbank restoration, natural flat banks are created with gravel and shallow shoals, ideal habitats for juvenile fish and water fowl.

## Water Habitats

### Side Arms

Today it is nearly impossible to see just how many side arms the river once had. The fixed towpath along the Danube prevents sufficient connectivity between the Danube and



the side arms. In addition, the free flow of water has been hindered by the many traverse structures.

Yet some backwaters continue to be connected to the Danube current and are at least periodically flooded.

**Every year, rising high waters force their way toward the side arms and are able to release their force into the wetlands.** Growth and sediment are carried away, riverbanks are gnawed at and gravel banks repositioned. Entire bodies of water are changed in appearance and form.

**Natural spectacle.** Nothing is untouched when floodwaters reach the wetlands.

**Since the founding of the National Park, water connectivity measures to unite the Danube with its side arms have been implemented step by step.**

Traverse structures in side channels are being removed or at least partially opened, because only the regular supply of water guarantees the preservation of the wetlands!

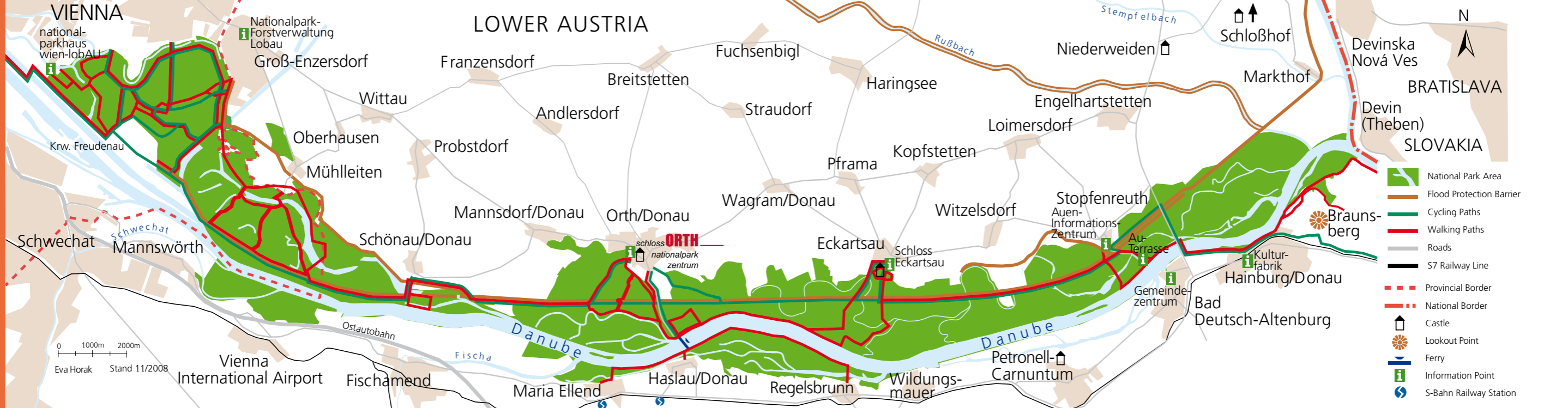
Specially-adapted flora and fauna are able to exploit the highly dynamic habitat of side arms regularly supplied with water: pioneer plants germinate on the bare gravel and pave the way for a new riparian forest. Numerous fish, rare

**Discerning.** Only side arms with moving currents provide the preferred habitat of the rare kingfisher.

dragonflies and birds of prey take over the waters. Beavers erect their structures on the loamy banks, and kingfishers dig their breeding tunnels into newly-emerged steep ground near water.







- National Park Area
- Flood Protection Barrier
- Cycling Paths
- Walking Paths
- Roads
- S7 Railway Line
- Provincial Border
- National Border
- Castle
- Lookout Point
- Ferry
- Information Point
- S-Bahn Railway Station

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Eva Horak Stand 11/2008



**Safe haven.** The last remaining population of the European pond turtle, once common to the area, lives in the Danube wetlands.

## Water Habitats

### Former River Branches

Numerous former side arms are no longer connected to the river and are cut off from the current. The main regulation of the Danube led to the separation of these bodies of water from the river, except in times of extreme high water. And the backwaters located beyond the Flood Protection Barrier are replenished only through groundwater.

These former Danube arms have turned into stagnant waters with gradual accumulation of sedimentation. Aquatic plants form rich growth, and mud is deposited at the bottom.

**However, these former arms are just as worthy of conservation as more dynamic waters, as they provide shelter for an enormous number of species.** Before the Danube was regulated, such bodies of water came about

**Enchanting.** Broad expanses of reeds and floating water lilies are characteristic of Danube backwaters.

naturally and regularly. But today, these areas can only be maintained in the long term by being replenished periodically. This is why the Danube must be able to better penetrate the wetlands during high-water times.

Water lilies, Common Frogbit and Water Soldier form expansive carpets of floating leaves in the former side arms. A habitat is provided for various aquatic insects, amphibians and fish but also for the European pond turtle, the Grass and the



Dice Snakes. The stalks of the Common Reed shelter various warblers and the Little Bittern.

### Ditches and Ponds

Very small bodies of water such as ditches, hollows and ponds may periodically go dry, but are still utilized by many



aquatic organisms! They are of particular importance as breeding grounds and expansion corridors.

Road crossings of elongated ditches were intended to ease access to the wetlands for humans, but have in fact become nearly insurmountable barriers for aquatic creatures. For this reason, earth deposits which are no longer necessary are being removed and replaced by boardwalks. In this way, these small yet ecologically valuable water habitats are being better connected.

### Muddied waters and oxygen deficiency are no problem for the Mudminnow and the Loach.

Amphibians spawn here and many aquatic insects gather. Wading birds like the White and Black Storks as well as herons lie in wait for their prey in the shallow waters.

**Lost.** It was thought that the European Mudminnow was extinct – until it was discovered again by chance in the National Park. The species now enjoys special support.

## Meadow Habitats

### Flood Meadows

Flood meadows might be described as a cross between water and dry land habitats. In the springtime, these meadow spaces are flooded by rising groundwater and encroaching high waters and, at least for a time, are transformed into shallow bodies of water. They are among the rarest and richest habitats, since naturally-occurring flood meadows have been systematically eliminated from our man-made environment.

**In the Donau-Auen National Park such flood meadows are protected; efforts to preserve these environments on the March are also being made.**

Flood meadow inhabitants must be able to withstand

**Land of Plenty.** Thanks to the preponderance of amphibians, flooded meadows are vital hunting grounds for storks.

alternating periods of drought and flood – or at least utilize the wet phases at the right time! The rare Common Carp requires flooded meadows in order to spawn. Brine shrimp eggs are able to survive underground for extended periods of time until water returns. Amphibians spawn in the spring, and only after metamorphosis is complete must the young leave the now-disappearing pond. The Siberian Iris only grows in flood meadows.



### Meadows

The riparian forest has long been exploited by the forestry industry, but extensive meadows for grazing and hunting were also created and still exist today. They are no longer fertilised and are characterized by a multiplicity of rare



**In need of protection.** The shy corn crane, an endangered species, can nest undisturbed in the National Park meadows.

species which are completely absent from lands now used for conventional agriculture.

**Since the founding of the National Park, these areas are no longer commercially exploited.** Yet the meadows must still be regularly mown, as otherwise the areas would become overgrown.

Typical meadow plants include diverse grasses and protected orchid species. Numerous moths, solitary bees and beetles colonize the meadows, and birds such as the Hoopoe and corn crane find ideal conditions here. Wetlands meadows also serve as hunting grounds for birds of prey and as a source of nourishment for game.



**Biodiversity.** Numerous plants on the Red List thrive in the wetlands meadows. Determining the right time to mow is essential to allow for seed maturation.

## Meadow Habitats

### Xeric Habitats

Despite the fact that the Danube wetlands are characterized by water, there are in fact some extraordinarily dry spots – the so-called xeric habitats. These are created by the formation of large sand and gravel deposits and in



**Sharp hunter.** Observe the mysterious Praying Mantis on the lookout for prey in the xeric habitats.

former river beds which were sealed in the process of river regulation. Here, water seeps away very quickly and there is hardly any humus in the soil. Xeric habitats are savannah-like and shelter very specific types of flora and fauna.

**Like the meadows, xeric habitats can only be maintained through gentle intervention.** In order to prevent overgrowth, sheep are allowed to graze here and new tree and shrub growth is regularly removed.

The Sea Buckthorn shrub, Stipa grasses and numerous orchid species are characteristic of xeric habitats. Drought and heat-resistant lichen and moss are also common here. Various types of spiders, ground beetles and ants thrive here, and the Praying Mantis can also be spotted on grass blades, lying in wait for its prey.

### Protective Barriers

In the course of the extensive Danube regulation of the 19th century, the “Marchfeldschutz Dam” was erected to protect the Marchfeld area from flooding. This protective barrier extends from the north of Vienna all the way to the mouth of the March. It cuts off certain bodies of water, such as the Fadenbach Creek and forms a barrier between the dynamic wetlands and the riparian forests on the shore.

**Although this barrier is an artificial element in the natural landscape of the Danube wetlands, it has developed into a valuable and very special habitat.** Extremely dry and nutrient-poor conditions prevail, thus encouraging the abundance of semiarid grassland species. The habitat is preserved by regular mowing and removal of clippings.

**Second-hand nature.** The Hubertusdamm was erected to protect people, but it now exhibits a wide range of unique flora and fauna.

Over 400 types of plants have been found on the “Marchfeldschutz Dam”, among them many grasses and orchids as well as members of the Sedus genus of flowering plants and the Cypress Spurge. Many beetles, bugs and moths thrive here, and the highly poisonous Violet Oil Beetle is often sighted in spring.





**Achievement.** Thanks to energetic conservation efforts, the White-tailed Eagle is breeding again in the inner regions of the Donau-Auen National Park.

## Forest Habitats

### Softwood Riparian Forest

There are two types of riparian forest: the softwood and the hardwood riparian forest. The names come from the type of wood found in each respective forest. Softwood riparian forests are flooded several times each year, and the trees may be under water for weeks at a time. The vegetation of the softwood riparian forest has adapted well to these extreme conditions.

Together with flowing bodies of water and water surfaces, the softwood riparian forest forms an interlocking mosaic which is transformed with every flood. **These highly dynamic habitats are among the most ecologically vital areas and are protected zones of the National Park.**

**Soft yet tough.** Softwood species such as poplar and willows can easily bear being under water for weeks.

Typical softwood species include White and Purple Willows, Alder, Silver Poplar and the rare Black Poplar. Like the White-tailed Eagle and other protected raptors, the reclusive Black Stork will only build its eyries in gnarly trees deep in the riparian forest.



### Hardwood Riparian Forest

Flood waters seldom reach the hardwood riparian forest. This type of forest normally lies at higher elevations and on the land side of the Hubertusdamm barrier. Because the forest in the National Park is no longer commercially exploited, it has been able to develop into a natural forest with an increasingly large share of mature growth.



Yet in some areas the forest can't be left entirely alone: non-indigenous species introduced long ago by forestry operations such as the locust and hybrid poplars are being pushed back in order to make space for endangered native species. And where necessary, the deer and wild boar populations are also regulated.

The hardwood riparian forest is home to elms, oaks, ash and diverse wild fruits. The Snowdrop, Fig Buttercup and wild garlic carpet the woodland floor in the spring. The Wild Grape, rare ancestor of the cultivated Common Grape, climbs to dizzying heights. **Old trees and deadwood offer valuable shelter for rare beetles and their larvae as well as for ants, woodpeckers and bats.**

**Full of life.** It is hard to believe the cornucopia of species thriving in the shelter of dead trees.

### Forest Habitats

#### Slope Forest

On the south bank of the Danube are steep cliffs of up to 40 meters, a slope formed by the Vienna Basin. These overhanging banks provide natural flood protection for humans living in the nearby towns, but also create the ideal conditions for a very special type of forest biotope.

Providing that suitably arid conditions prevail, the lowest-lying beech forest in Austria grows here, just above the high-water level. At lower elevations in the wetlands, no beech trees are to be found, as they do not tolerate flooding. At the foot of the slope are chains of pools and crop outs from springs which are fed by seepage.

**Very special.** Slope forests with beech trees have a unique character – more like the Vienna Woods than wetlands forest.

**This slope forest is protected as part of the Donau-Auen National Park.**

In addition to the Common Beech, ash also thrives in this very special habitat. Deer and wild boars often flee to these areas during flood periods. The elegant Aesculapian Snake can often be spotted. The chains of pools are the ideal spawning grounds for amphibians.





**Up close and personal.** The wilderness can be experienced at first hand on an expedition in the Donau-Auen National Park.

### Outlook

Since the foundation of the National Park, much has been accomplished. But there is yet much work ahead of us. Urban sprawl encircles the Danube wetlands ever more tightly. The amount of traffic continues to increase, and the airport is expanding. The interests of business and tourism, hunting and fishing, residents and visitors must be taken into account and reconciled with nature conservation.

How should this nature preserve be developed? The National Park management's most important goal is the maintenance and promotion of an intact, dynamic riparian landscape. Water connectivity should be implemented on a broader scale than at present; expanded, natural riverbanks should be allowed to emerge. The ongoing riverbed erosion must be stopped, and the water level of the Danube elevated by adding gravel to the bed load. A natural, primeval forest should come about, with its characteristic mix of species and

**Preserving precious nature for generations.** The Donau-Auen National Park will remain true to its mission of conserving the Danube wetlands for generations to come.

large share of ecologically valuable mature growth. Rare and threatened species should find conditions which enable them to survive. **All these aims are only attainable in cooperation with national and European partners.**

In this way, a piece of wilderness can be sustained at the heart of Central Europe: as a natural heritage, refuge for flora and fauna, and recreational area for people.







Bosch Household Appliances supports the conservation efforts of the Donau-Auen National Park.



[www.donauauen.at](http://www.donauauen.at)



[www.umwelt.gv.at](http://www.umwelt.gv.at)

