# Danube


## Basin countries

Riparian countries (from upstream to downstream): Germany, Austria, Slovakia, Hungary, Croatia, Serbia & Montenegro, Romania, Bulgaria, Moldova, Ukraine.

Additional basin countries: Poland, Czech Republic, Switzerland, Italy, Slovenia, Bosnia-Herzegovina, Albania, FYR of Macedonia.

## Summary of basin characteristics

The Danube basin, covering 817,000km$^2$ – about one-third of continental Europe outside Russia – is the most international river basin in the world, extending over all or part of the territories of 18 countries. The Danube River itself crosses ten countries and is Europe's second longest river after the Volga, flowing over 2,857km from Germany's Black Forest to the Romanian and Ukrainian Danube Delta on the shores of the Black Sea. The Danube is also Europe's only major river that flows west to east, from the current Member States of the European Union through the former eastern bloc countries of central and eastern Europe, many of which are now prospective EU members. The European Commission recognizes the Danube as the "single most important non-oceanic body of water in Europe" and a "future central axis for the European Union".

### *Socio-economic importance*

The main economic uses of the Danube are:

- domestic/drinking water supply
- water supply for industry
- water supply for agriculture
- hydroelectric power generation
- navigation
- tourism and recreation
- waste disposal (both solid and liquid wastes)
- fisheries.

In addition, the Danube's remaining floodplains provide a range of economically important 'ecological services', such as water quality regulation and flood control.

One of the most important factors influencing river basin management activities is the socio-economic contrast between the 'capitalist' and former 'socialist' countries within the basin. Since the end of communism in the late 1980s, the central and lower Danube region has experienced a rapid shift to free-market democracies within the context of increased globalization, privatization and deregulation, including the loss of much of the formerly guaranteed social security structure.

At the same time, as a result of economic restructuring, many former socialist countries have lost markets in neighbouring countries and the former Soviet Union. This is especially true of agriculture, which remains the economic mainstay in rural central and eastern Europe, in spite of tough competition from EU-subsidized agricultural products. The result is rural decline, with increased poverty, unemployment and depopulation. Rural environments are being exploited for short-term gain through overfishing, over-grazing, deforestation and poaching, such that traditional lifestyles and sustainable economic practices are at risk.

### *Biodiversity values*

The Danube basin is home to a wide variety of natural habitats. Among these are the Alps and Carpathian Mountains, Germany's Black Forest, the Hungarian *puszta* plains, the Lower Danube floodplains and islands and the vast lakes, reedbeds and marshes of the Danube Delta. These habitats are home to a rich and in many cases unique biological diversity, including over 100 different types of fish, among them six endangered species of sturgeon.

The 600,000ha Danube Delta has been designated as a Ramsar Site and UNESCO Biosphere Reserve. It supports more than 280 bird species, including 70 per cent of the world population of white pelicans *Pelecanus onocrotalus* and 50 per cent of the populations of pygmy cormorant *Phalacrocorax pygmeus* and – in winter – red-breasted goose *Branta ruficollis*.

## Priority issues for river basin management

Until the end of the 19th century, the Danube was a largely natural system with an extensive network of channels, oxbows and backwaters. The river was characterized by constant changes in its course and dynamic natural exchanges with its floodplains. Since then, human interventions in the way of flood protection, agriculture, power production and navigation have destroyed over 80 per cent of the Danube's wetlands, floodplains and floodplain forests.

Major losses in habitats and wildlife have resulted. One example is the considerable reduction of nursery areas for spawning fish and the blocking of migratory pathways for commercially important species such as sturgeon, which now survive only as small remnant populations. Changes in flow volume and velocity, water temperature and quality as a result of river regulation and pollution have also had negative impacts on biodiversity.

Forty years of communism in central and eastern Europe resulted in both positive and negative effects for the middle and lower reaches of the river. On one hand, many wetland areas were drained to support unsustainable agricultural and forestry practices (e.g. along the Tisza River in Hungary where 2,590,000ha of floodplains were reduced to 100,000ha). On the other hand, the main Danube channel itself was not subject to the same level of dam construction as occurred in western Europe, where the upper 1,000km of the river were converted into an artificial waterway by an almost uninterrupted chain of 59 hydropower dams. This contrasts with just two dams on the lower 1,800km of the Danube. Overall, the

central and lower reaches possess a generally higher level of biodiversity than do the upper reaches in western Europe. For example, the middle and lower Danube still support some extensive areas of natural or semi-natural floodplain forest and other wetlands, while more than 95 per cent has been lost further upstream.

Current priority issues at a basin scale include:

### *Proposed shipping developments*

A number of proposals threaten severe ecological damage to the Danube in central and eastern Europe. They include plans to construct a canal through the Ukrainian Danube Delta to the Black Sea coast, and another – the Danube-Odra-Elbe canal – linking the Baltic Sea with the Black Sea. In addition to the loss of natural and semi-natural areas that such developments would cause, chronic pollution and the risk of a major oil or chemical spill are also likely to increase.

### *Impacts of EU accession*

Many former eastern bloc countries are now in the process of joining the European Union. As part of this 'accession process', each prospective Member State is required to transpose into national law – and implement – a raft of EU legislation before they are granted entry. Potential impacts on nature conservation in the Danube basin are both positive and negative. While the EU's nature conservation legislation and the Water Framework Directive (which governs water policy and management throughout the EU according to the principles of river basin management) are recognized as positive mechanisms, it is expected that threats to rural economic security in the central and lower Danube will be worsened by the EU's Common Agricultural Policy (CAP). The CAP, though recently reformed, continues to support intensive, unsustainable practices and perverse subsidies. The EU may also provide funding for some of the potentially destructive shipping development projects through its Trans-European Networks for Transport (TENs-T) programme.

### *Environmental disasters*

The last five years have seen a number of ecological crises in the Danube basin that have gained worldwide media attention (e.g. the spillage in January 2000 of some 100 tonnes of cyanide into the Tisza River in Romania, following an accident at a gold mining operation). Unless more is done soon to improve environmental security, especially in those parts of the region where industrial and urban infrastructure is old and decayed, further catastrophic incidents can be expected.

### *Nutrients and eutrophication*

The main sources of nutrients in the Danube are agriculture (c.50%), municipal waste (c.25%) and industry (c.25%). The total nitrogen load in the Danube is between 537,000 and 551,000 tonnes per year (compared with 50,000 tonnes for the Rhine). The total phosphorus load is 48,900 tonnes per year. The legal limit for nutrient content in groundwater is often exceeded throughout the basin. As a result, the Danube is the biggest contributor of nutrients to the Black Sea, where radical changes to the ecosystem and biodiversity loss have occurred in the last 40 years as a result of eutrophication. There remains insufficient capacity along the Danube to treat municipal and industrial wastewater, and more sewage treatment plants are needed urgently. Restoring wetlands would also significantly increase the river's natural 'self-cleansing' capacity.

## Role of WWF and its partners

In 1992, WWF's activities in the Danube River basin came together under its Green Danube Programme (now the Danube-Carpathian Programme). Early on it was recognized that while the Danube Delta is the outstanding natural feature of the region, it would be necessary to undertake activities throughout the entire river basin in order to deliver environmental and socio-economic benefits in the long term. One of the principal achievements has been the development of partnerships with governments, management authorities, local communities and other NGOs.

The Green Danube Programme began with five projects located in natural areas critical for the survival of the river:

- Mouth of the Isar River (Germany)
- Morava-Dyje transboundary floodplains (Austria-Czech Republic-Slovakia)
- Bulgarian Danube Islands

- Danube-Drava transboundary floodplains (Hungary-Croatia-FR Yugoslavia)
- Danube Delta (Romania-Ukraine).

In 1998, the WWF International Danube-Carpathian Programme was established to coordinate WWF activities in the Danube River basin, with an additional focus on the Carpathian Mountains and ecologically sustainable forestry. The programme's freshwater component currently has three objectives, each contributing to the achievement of a long-term vision for the region:

1. **Policy:** By 2006, the Danube River basin is internationally recognized as a successful model for integrated river basin management.
2. **Capacity:** By 2006, there is sufficient capacity amongst national NGOs, water stakeholders and governments to implement integrated river basin management in at least six countries within the Danube River basin.
3. **Projects:** By 2006, there are successful projects in place throughout the Danube River basin demonstrating the restoration, protection and sustainable management of freshwater habitats according to the principles of integrated river basin management.

In addition, WWF is now seeking to integrate more closely its freshwater, forests and Carpathian ecoregion work to achieve effective conservation and sustainable management of headwaters and mountain wetlands.

Major initiatives and achievements in the field of river basin management to date have included:

- Forging links with the International Commission for the Protection of the Danube River (ICPDR), the implementing body for both the Danube River Protection Convention and the EU's Water Framework Directive. WWF is an observer on two ICPDR Working Groups that support implementation of the Directive in the Danube basin, and is also promoting public participation at all stages of the process.
- Ensuring that wetland issues are fully integrated into river basin management initiatives. For example, the 1994 WWF report *Economic Evaluation of Danube Floodplains* revealed that the average value per hectare per year of the Danube floodplains was EUR383, resulting in an annual basin-wide value of EUR666 million.
- Analysing the ecological potential for floodplain restoration along the whole of the Danube and promoting a shift in thinking about floodplain management. This in turn led to the intergovernmental agreement known as the 'Lower Danube Green Corridor' under which the governments of Bulgaria, Romania, Moldova and Ukraine have committed themselves to the effective management of up to 900,000ha of existing and new protected wetlands.
- Implementing 'Partners For Wetlands Ukraine' which, within an overall conservation vision for the Danube Delta, aims to secure the restoration and sustainable use of large floodplain areas.
- Playing a key role in securing US$13.3 million in World Bank/GEF funding for wetland restoration in Bulgaria (see below) as a contribution to implementing the Lower Danube Green Corridor.
- Contracting of WWF by UNDP/GEF to deliver part of the Danube Regional Project through assisting selected countries in the basin to prepare new land-use and wetland rehabilitation policies and legislation in line with existing and emerging EU environmental requirements. The overall output of this component will be a methodology for determining sustainable land use in the Danube River basin; the method will be tested in the development of land-use concepts at three pilot sites, in Croatia, Romania and Slovakia. The measures, once proven, will be implemented on a wider scale using funds from Phase 2 of the Danube Regional Project (2003-2006). WWF is also contracted to deliver both a Participation Strategy and a Communications Strategy for the Danube River basin.
- Establishing strong and effective partnerships with national and local NGOs, particularly in Bulgaria (Green Balkans), the Slovak Republic (DAPHNE) and Croatia (Dravska Liga).
- Working with NGO and government partners and the Ramsar Bureau to secure the designation of a trilateral protected area and Ramsar Site

along the Morava-Dyje floodplains shared by Austria, the Czech Republic and the Slovak Republic. This partnership was presented with the Ramsar Award in 2002.

- Responding rapidly and effectively to environmental crises in the region, such as the impacts of war in the Balkans on the Danube, and the effects of the Tisza cyanide spill.

## Conservation method demonstrated

WWF's vision for the Danube-Carpathian region is one in which high biodiversity and a rich cultural heritage are mutually supportive, and serve as a model of nature conservation and community prosperity. With this in mind, WWF's aims are the successful conservation, restoration and sustainable management of nature, primarily of freshwater and forest resources, in the Danube River basin and the Carpathian Mountains. This requires a planning approach at the ecoregion scale involving demonstration projects, policy work, communications, networking, capacity building and crisis response.

## Resources devoted

WWF's expenditure in financial year 2002 was US$1.68 million, largely contributed by WWF National Organizations.

Income from governments and aid agencies has been relatively modest, varying from around 7-15 per cent per annum. The principal donors in this category have been the EU (through its 'Phare' programme), the World Bank and the United Nations Development Programme (UNDP)/Global Environment Facility (GEF). Smaller contributions have come from Danish environmental assistance to Central and Eastern Europe (DANCEE), IUCN–The World Conservation Union, the Organization for Security and Cooperation in Europe (OSCE), and the United Nations Environment Programme (UNEP).

## Chronology

**1992**
- Establishment of WWF Green Danube Programme.

**1998**
- Initiation of WWF Danube-Carpathian Programme.

**2000**
- Lower Danube Green Corridor Agreement signed.

**2001**
- Presidential Summit of Danube countries organized by WWF and the government of Romania.

**2002**
- Ramsar Award presented in recognition of the Austrian-Czech-Slovak trilateral protected area.

**2003**
- Completion by WWF of the official 'Danube River Basin Public Participation Strategy' as a contribution towards implementing the EU Water Framework Directive in the basin.

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## Lessons learnt

**1. It takes a long time to make real progress**
WWF's respected role in the basin has been achieved after more than ten years of continuous technical and financial investment and a permanent presence in the region. Objectives at a river basin scale cannot be tackled seriously within the scope of a typical three-year project.

**2. Work at different levels simultaneously**
This means working at field/site, national, and basin levels (the latter including cooperation with the basin authority [where one exists], regional donors, and policy drivers). It is important to develop a sound reputation at field/project level to gain respect and attention, and at national level to gain credibility. Participation in international/basin-wide processes can provide the credentials to open doors at a local level. WWF is one of just a handful of organizations that have basin-wide experience.

**3. Use unexpected/ad hoc opportunities to build a platform for river basin management**
In the case of the Danube basin, a fast and technically competent response to emergency situations, such as the Tisza cyanide spill, gained WWF high-level political and media access. Do not let such opportunities slip by.

**4. Effective partnership building is essential**
The success of partnership building can be attributed to:

- interpersonal and diplomatic skills and experience of key staff in the WWF Network
- keeping partners' expectations of WWF action to a level that can be met or, better still, exceeded
- readiness to supervise rather than control
- knowledge and understanding of the region
- provision of concrete technical and financial support, often in quite small amounts
- readiness to engage in long-term partnership and project activities
- readiness to involve local expertise and experience
- readiness to assist with building of local capacity
- an open, constructive and modest approach when dealing with local stakeholders.
- demonstrating that NGOs can be beneficial to governments
- readiness to integrate partners' priorities into WWF projects.

**5. 'Piggyback' the pursuit of wetland/river basin conservation objectives on other issues that are more important to a wider range of stakeholders**
Selling wetlands as pollution processors and nutrient sinks has been particularly successful in the Danube context.

**6. Base work on sound science**
WWF's mapping of floodplain restoration potential for the entire Danube basin was a major breakthrough and provided a vision supported by hard scientific fact.