

## Danube Delta

One of Europe's "pearls of nature"

**Size:** The Danube Delta is 799,000 ha (approx. 80% Romanian and 20% Ukrainian territory).

**Status:** Designated a *Wetland of International Importance* under the Ramsar Convention in 1991, inscribed on the *World Heritage List* in 1991 and internationally recognised as a *Biosphere Reserve* under UNESCO's Man and the Biosphere Programme in 1992.

**Strictly Protected Areas** cover about 65,000 ha, including floodplains, as well as 600 lakes larger than one hectare.

**Composition:** Three main branches: the Kiliya Branch, the Sulina Branch and the Sfântu Gheorghe. The Kiliya Branch forms the border between Ukraine and Romania.

### Other facts:

- The Danube is the largest tributary to the Black Sea.
- Contains the largest reed bed in the world (180,000 ha).
- Breeding, feeding and resting areas for pelicans and 300 other bird species.
- Over 3400 species of aquatic fauna have been recorded, representing 98% of the European total, many of them endemic.
- 86 freshwater fish species.



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### Dynamic and diverse

The Danube Delta is the second largest river delta in Europe, after the Volga. In European terms, it is huge (some 12 times the size of the Cota Donana Reserve on the Guadalquivir Delta, Spain). The dynamics of the living Danube River cause the northern part of the Delta to slowly sink, resulting in measurable water flow increase in the Kiliya arm of the Danube. Only 9% of the area is permanently above water. The Danube River transports thousands of tons of alluvial deposits, which are carried into the Delta every year, resulting in a constant reshaping of the riverbanks and sandbars. The Delta is a magnet for birdwatchers, fishermen and those seeking unique wilderness.

### Biosphere Reserves

There are two Biosphere reserves covering most of the Delta areas: Biosphere Reserve in Romania lies on the coast of the Black Sea in the eastern part of country, located in

Tulcea County, and encompasses the area between the branch rivers Kiliya, Sulina and Sfintu Gheorghe. The site also includes the Razelm-Sinoie complex of lakes Razelm, Sinoie, Zmeica and Golovita to the immediate south of the delta.

The overall basic hydrological and ecological systems of the Romanian Delta, although strongly degraded, are considered intact. The Rosca-Buhaiova core area is considered almost unaltered by man due to the shallow water level making access almost impossible. The Zatoane-Sacalin core area (the largest in the Romanian Delta) is a mosaic of lakes, ponds and reedbeds with parallel strips of sand dunes ('grinduri'). Sacalin Island is made up of alluvial deposits with sand dunes and Tamarix.

The Biosphere Reserve in Ukraine covers mainly the outer delta of the Kiliya arm and protects the only growing part of the entire delta. Apart from the Kiliya outer delta, the Reserve in Ukraine includes Ermakov Island and

the Stensovsko-Zebriyansky Plavni area.

The remaining two, large wetland areas in the Ukraine show signs of significant ecological degradation and loss of biodiversity as a result of embankment. At the moment, there are plans in development to restore Ermakov Island.

Large wetlands in the upper part of Ukrainian Danube Delta were reserved for later expansion of the Biosphere Reserve. Although this process has virtually failed and there is no political will to include other important areas into the Ukrainian Biosphere Reserve, e.g. lakes Kugurlui and Kartal, which are one of the most significant biodiversity hot spots as well as Ramsar sites, in the Ukrainian Delta.

The Delta has different habitat types: aquatic habitats - lakes (0.80-2.50 m depth) covered with flooded reedbeds, 'plaur' - flooded islets, flooded reeds and willows, riverine forest of willows and poplars, cane-fields, sandy and muddy beaches, wet and dry meadows, human settlements, sandy and rocky areas, steep bank, forests on high ground (Ciochia, n.d.).

Over 300 species of birds have been recorded in the Delta, of which over 176 species breed here. The most important species are cormorant (3,000 pairs), pygmy cormorant, (2,500 pairs comprising 61% of the world's population), white pelican; (2,500 pairs comprising 50% of the Palearctic breeding population), Dalmatian pelican (estimated at 500 pairs on the floating islands on lake Hrecisca and Sinoie, which represents 9% of the world breeding population), night heron (2,100 pairs), squacco heron (2,150 pairs), great white heron (700 pairs), little egret (1,400 pairs) mute swan (500 pairs), white-tailed eagle (8 pairs), osprey (3 pairs), Saker falcon (1-2 pairs), red-footed falcon (150 pairs).

The Delta is very important for fish with 45 freshwater species present, including threatened sturgeons. Otter, stoat, and European mink, as well as wildcat are found on the floating islands. It appears that little studies have been done on Delta mammals since 1970, largely as a result of lack of funding, but the mink population, although its size is unknown, is apparently significant in European terms.

## **The People of the Danube Delta**

The population is estimated between 12,000 and 16,000. For people living along the three main waterways, Kiliya, Sulina and Sfintu Gheorghe, the main source of drinking water comes from the Delta. The population is aging; the younger generation has left the Delta and some old fishing villages of reed huts have been replaced by concrete structures, although individual fishing huts are retained. Some villages (e.g. Gorgova) have no electricity.

The local population has been involved in small-scale, low-intensity use of natural resources supplemented by outside interests, such as fishing (10,000 boats are registered), cattle grazing and beekeeping. The people generally are fluent in both Romanian and Russian. Around 40,000 people are ethnic Russians. Some settled in the delta due to religious reasons (they did not approve with the reforms of the Russian orthodox church) or they were forced to move to the Danube Delta as part of the colonisation policy of the Russian Empire.

## **Visitors facilities**

During the Socialist regime, parts of the Delta were heavily used for tourism, with up to 100,000 visitors annually, mostly concentrated at two hotels along the Sulina channel, although many people camp along major channels in the summer.

Access to the core areas is prohibited and there are 19 tourist routes approved by the Biosphere Administration. Nature tourism, however, has not been emphasized compared to general tourism, which has been encouraged in the last years within the delta and on the Black Sea coast.

The Danube Delta's visitors come for a unique experiences, traditional cuisine based on fish products; fish borsch, spitted fish, brine pickle of fish with garlic dressing, fish meat balls "sprinkled" with the finest wines of the region, i.e. Niculitel, can be an unforgettable delight.

## **Threats to the Delta**

Major threats to the delta ecosystem come from the changes both in the upstream conditions as well as from the changes in the delta itself.

## Retained sediments

The river must continue to deliver ample sediment to the Delta, and this sediment needs to be deposited in the "right" places.

Sediments vital to the survival for the outer Delta come from the upstream Danube River system. The side movement of the riverbed is a crucial process for sedimentation; by meandering, the river erodes the floodplain in some places and deposits the sediments in the other places. The river's connection to the floodplain is essential for the natural morphology of the river landscapes. Straightened riverbed and construction of polders, flood protection dams and groins cut the river from the floodplain and thus significantly diminish the amount of available sediments

## Transport development

Waterway navigation and harbour development in the Delta region, if implemented in sensitive areas, poses a serious threat to the Delta's natural system.

A plan to "improve" navigation conditions on the Danube (about 1000 km, mostly in the Lower Danube) poses one of the largest threats to the river at this moment.

## Tourism development

Tourism is an important threat to nature conservation and key ecological processes of the delta ecosystem if implemented unsustainably.

There is already a high level of unsustainable tourism in the Delta, which puts pressure on the natural system, e.g. number of sport fishermen, tourism infrastructure, unsightly buildings and guesthouses built in the "wrong" places, large motor boats that cruise at very high speeds through small channels, and questionable concessions given to serve private entities from outside delta (e.g. big companies, wealthy people from big cities), to name a few.

There has been an increase in these threatening activities in recent years, and it is expected to increase even more and faster.

## Restoration Projects

In Romania in the period from 1994 to 2003, about 15% of the embanked area has been restored to the natural situation. By focusing on sustainability and having long term perspectives, the projects contribute not only to saving the biodiversity and ecological values of the Danube Delta, they also aim to safeguard the cultural heritage and a lifestyle unique and rare in Europe.

In Ukraine dikes on Tataru Island in the Danube Delta were removed, restoring natural flooding to 800 ha.

A first experiment with natural grazing by cattle in the Ukrainian delta, to ensure development of natural forest and reed beds is ongoing.

Other ongoing projects also include restoration of Katlabuh Lake in the Ukraine with the total area of about 10,000 ha as a first attempt to address water quality issues by large-scale restoration projects, as well as natural grazing in the riverine forests along the Danube.

## Trilateral Biosphere Reserve

Upstream from the Danube Delta, the Prut River - the border between Romania and the Republic of Moldova - joins the Danube River within the Danube Delta Biosphere Reserve territory. The creation of a trilateral cross border biosphere reserve will offer the chance to co-operate in order to preserve one of the most important wetlands of Europe. The successful protection and safeguard of this outstanding ecologically important area requires co-operation between Moldova, Romania and Ukraine in order to agree on, e.g. water management schemes.

### Further Reading:

- The Danube (Delta): A living Gateway to Europe, and Ramsar Advisory Missions: No. 53, Ukraine, Kyliiske Mouth (2003) on [www.ramsar.org](http://www.ramsar.org)
- Partners for Wetlands: Danube Delta: [www.panda.org](http://www.panda.org)
- Global 200: Freshwater Regions [nationalgeographic.com/wildworld](http://nationalgeographic.com/wildworld)
- UNESCO World Heritage Site: <http://whc.unesco.org/>.
- Danube Delta Biosphere Reserve Authority: <http://www.ddbra.ro>