

of bands occur along dunes up to 250m long and 10m wide. The delta has been classified into 12 habitat types as follows: aquatic, lakes (0.80m - 2.50m 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 meadows; dry meadows (arid); human settlements; sandy and rocky areas; steep banks; and forests on high ground.

Over 300 species of bird have been recorded, of which over 176 species breed, the most important being: 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 Palaearctic breeding population), and Dalmatian pelican (V) (estimated at 150 pairs, perhaps now only 25-40 pairs, on the floating islands on lake Hrecisca, which represents 5% of the world population). There are numerous multi-species heron colonies and raptor species including white-tailed eagle (V) with eight pairs present. The marsh tern colonies are especially notable. The delta holds huge numbers of geese in the winter with record counts of 500,000 white fronted geese, 27,500 read-breasted geese (a globally threatened species with almost all the world wintering population present), 150,000 teal, 200,000 mallard, and 970,000 pochard. The delta is very important for fish with 45 fresh water species present. Otter and weasel are to be found on the floating islands. The mink population, although its size is unknown, is apparently significant in European terms.

4. STATE OF PRESERVATION / CONSERVATION

The Danube Delta is a remarkable alluvial feature constituting critical habitat for migratory birds and other animals. It is the major remaining wetland on the flyway between central and eastern Europe and the Mediterranean and Middle East and Africa. It is exceptional for its contiguity of wetland ecosystems and currently supports endangered flora and fauna. The threats remain numerous and include intensive fish farming, shooting, canal and dyke construction and pollution and eutrophication. The most important action to date has been the announcement by the Government to halt all reclamation work in the delta and to designate a biosphere reserve pursuant to the preparation of a comprehensive conservation strategy. In so doing, the Government expressed a desire to work with the local population and the non-government organisations.

Conditions of integrity are fulfilled as follows:

- (i) The vast scale of the Delta ensures maintenance of natural ecosystem functioning together with the provision of the range requirements of a diversity of animal species;
- (ii) Attention is being directed to the rehabilitation of the quantity and quality of water flows in the Danube drainage basin. The core areas, together with the appropriate buffer zones will ensure survival of wildlife including migratory birds, fish and mammals;

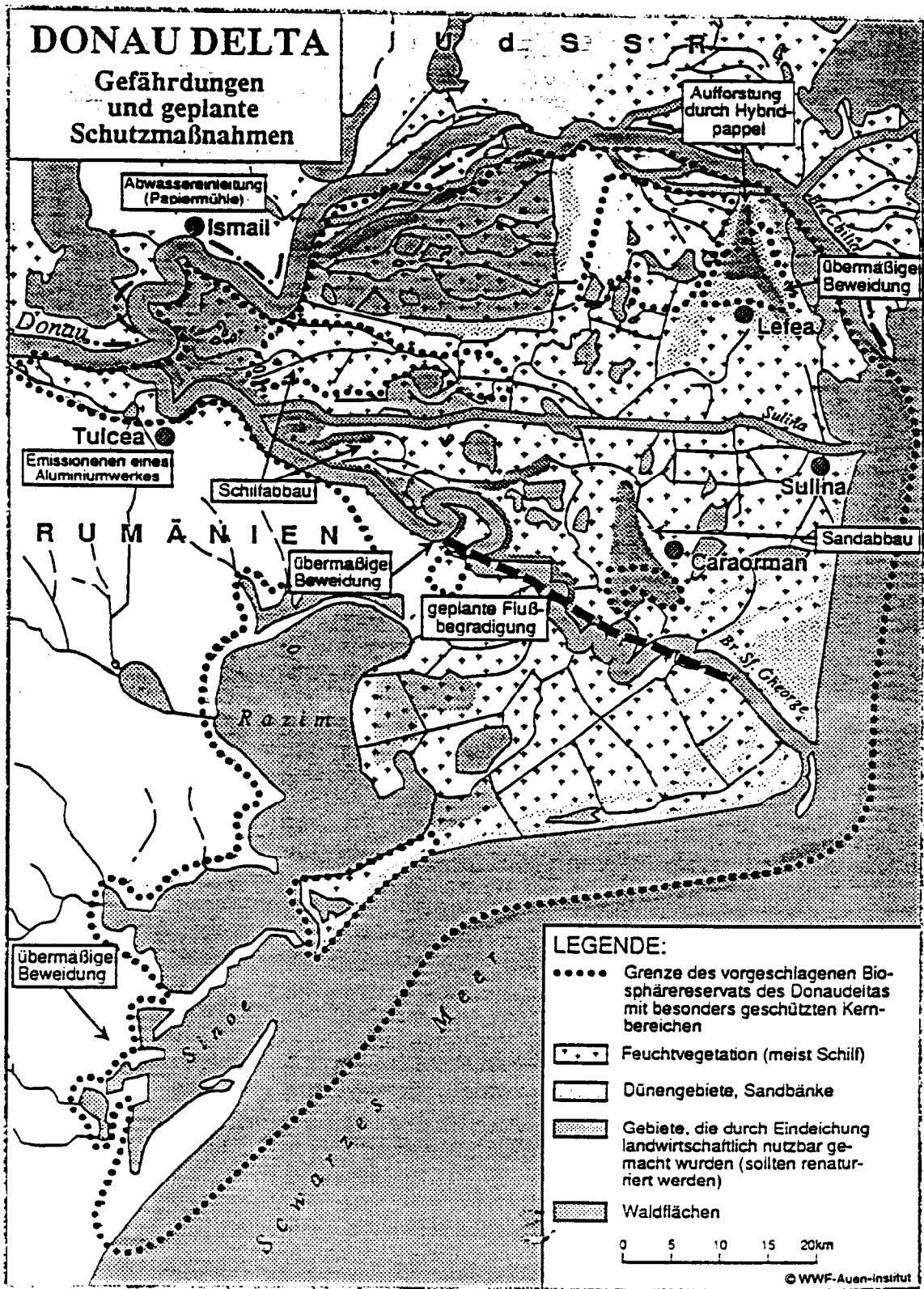
- iii) The Government of Romania is committed to the permanent protection and enhancement of the Danube Delta Biosphere Reserve, and has initiated the appropriate institutional, scientific and legal processes to guarantee the safeguarding of its unique contribution to the world's natural heritage.

5. JUSTIFICATION FOR INCLUSION ON THE WORLD HERITAGE LIST

The Danube Delta Biosphere Reserve nomination, as presented by the Government of Romania, provides the following justification for designation as a World Heritage property:

D) Natural property

- (i) Outstanding examples representing the major stages of the Earth's evolutionary history. The site lies at the meeting point of the Palaearctic and Mediterranean biogeographical zones.
- (ii) Outstanding examples representing significant ongoing geological processes, biological evolution and man's interaction with his natural environment. The scale and diversity of wetland plant and animal communities sustained by traditional compatible uses are exceptional.
- (iii) Contains unique, rare or superlative natural phenomena, formations or features of exceptional natural beauty. It is an outstanding example of a most important ecosystem, being a wetland ecosystem on a vast scale, unique both in its European context and internationally.
- (iv) The most important and significant habitats where threatened species of plants and animals of outstanding universal value from the point of view of science and conservation still survive. It contains a habitat complex of world value for certain rare and endangered species.



WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

588: DANUBE DELTA BIOSPHERE RESERVE (ROMANIA)

1. DOCUMENTATION

- i) IUCN Data Sheet
- ii) Additional Literature Consulted:
 - M. T. Gomoiu. A New Area Under Special Ecological Protection in Europe. May, 1991. 10 p.
 - IUCN. Conservation Status of the Danube Delta (Draft) May, 1991. 120 p.
 - Ramsar. 1990. Directory of Wetlands of International Importance. 782 p.
- iii) Consultations: Romanian Government Officials, E. Schneider, F. Spitzenberger, K. Bauer, G. Wendelberger, L. Pons, H. Jungius, R. Grimmett, L. Hoffman, M. Smart, G. Lewis
- iv) Field Visit: May, 1991, J. Thorsell, P. Dugan, E. Hopkins, Z. Karpowicz

2. COMPARISON WITH OTHER AREAS

In terms of size and the amount of water inflow, the Danube is the largest delta in Europe. Other tideless deltas found in the Mediterranean (Ebro, Po, Evros) are much affected by man and much smaller. The deltas of western Europe (Rhine, Meuse, Scheldt, Weser, Elbe, Seine, Loire, Garonne) are in fact estuaries affected by tidal movement and all are intensively cultivated and used by people. In terms of development, the Danube Delta and the associated lagoons along the Black Sea are the most natural remaining in Europe, as only relicts of natural ecosystems remain in the other sites. The only European comparable sites are the deltas of the Rhone and the Guadalquivir. The Rhone delta is now mostly an artificial system and supports only a relatively small number of birds. The Guadalquivir is only one-twelfth the size of the Danube and also does not compare in terms of avifauna. Other deltas along the Black Sea have also been modified, cultivated and have lost to a great extent their original water regimes.

The delta that is most comparable is that of the Volga which flows into the Caspian Sea in Western Asia. The Volga Delta (a Ramsar site) is somewhat larger (650,000 ha) and supports a substantially greater number of birds (5-7 mil birds during the spring and autumn migration). The Volga also is less disturbed than the Danube as it has not been "canalised" to facilitate ocean-going ships.

Relative numbers of pairs are:

	<u>Danube</u>	<u>Volga</u>
Dalmatian Pelican	120	160
Common Cormorant	3,000	30,000
Egret (great white)	700	4,500
Egret (little)	1,400	3,500
Night heron	2,100	4,000
Squacco heron	2,150	4,000
White-tailed eagle	6	75

Although these figures are dated, they do give a general indication that the Danube supports far fewer birds than the Volga. It is still considered, however, a critical site for this migration route and as the major site for two threatened species (the pygmy cormorant and the red-breasted goose). The Danube Delta is considerably more important to conservation than the nearby Srebarna World Heritage site found just upstream along the border in Bulgaria. This site is only 600 ha in size and has only a fraction of the diversity and abundance of species that the Delta contains. In many aspects the wetland ecosystem of the Danube Delta is under a similar set of stress factors as is the Everglades World Heritage site in Florida which was also inscribed when it contained only a small fraction of its original natural value.

3. INTEGRITY

Prior to the 1989 change in Government in Romania, the Delta was seriously threatened by a reclamation programme which aimed at the drainage of around 1,200 km² of wetland. By 1989, about 420 km² had been converted to agriculture land. Much of this land proved unsuitable for cultivation because of the peaty soils, and only 170 km² are currently productive.

Recent civil engineering works, including the straightening of sections of the southern branch of the Danube (Sfintu Gheorghe), have had a strong negative effect on the ecological functions of the delta, and, by reducing flooding and sedimentation, have led to serious eutrophication that in turn affects fish stocks and waterbird populations. Dams on the Danube upstream of the Delta have resulted in reduced sedimentation and, as a consequence, severe coastal erosion.

The most important problem is pollution (particularly phosphorus) from the Danube catchment. Other localised ecologically damaging human activities have been carried out including use of heavy machinery for reed harvesting, intensive agriculture, silviculture and fish-farming, growing tourism and hunting.

Beginning in 1990 a number of very positive developments give great hope for conservation of the Delta. A presidential decree has halted all agricultural and hydrological developments in the Delta (except essential activities) for one year, and it is widely accepted within Romania that there should be no further drainage. A further presidential decree has

declared the entire Danube Delta as a Biosphere Reserve (the U. S. S. R. is also considering establishing a Biosphere Reserve on the Soviet side of the Delta). A law to strengthen the administration of the Biosphere Reserve is now awaiting approval by parliament.

The Romanian government has established a Danube Delta Institute for monitoring the delta and for enforcing conservation activities. The Biosphere Reserve has a large headquarters office in Tulcea and is a new unit within the Ministry of Environment.

At the request of the Romanian government, an IUCN mission, which included experts from ICBP/RSPB/IWRB/UNESCO/WWF, visited the Delta in September 1990 to survey the environmental and management status of the Biosphere Reserve and to identify priorities for joint activities. The recommendations were:

- The ecological impacts of the creation and enlargement of canals and other hydrological works should be carefully evaluated before any further work is undertaken.
- Romania and other Danubian states should take measures to reduce the contamination of the river and to restore the filtering and biological functioning of the fluvial wetlands upstream from the delta.
- A full assessment of the function of the system should be undertaken to identify and quantify the benefits of the Delta to its human population and the degradation that occurs due to inappropriate human activities.
- A strategy and management plan for the Biosphere Reserve should be developed to integrate human activities in the Delta with the natural functioning and wildlife importance of the ecosystem, to ensure sustainable utilization of resources.
- International financial and technical assistance should be made available to provide better equipment for research and pollution monitoring, to assist with staff training, to guide the development of wildlife tourism, and to produce educational materials for the public and educational establishment.

Despite the markedly improved prospects for conservation in the Delta, it should be clearly understood that there have been major reductions in the natural integrity since the beginning of this century. Pelican numbers for instance have been reduced to less than 10% of what they used to be. Waterbird numbers are also only a fraction of what they once were. Fish catches have declined dramatically with the sturgeon fishery reduced from 1000 tonnes earlier in the century to only 20 tonnes in 1989. The recent dredging of the Caraorman canal is resulting in further degradation of some lakes in the heart of the Delta. The deterioration of water quality in general and especially over the past 10 years has led to impoverishment of invertebrate communities and submerged macrophytes, the very foundation of the food web. Restoration is certainly possible but full recovery of the natural riches that once were will be difficult.

It should also be noted that a relatively small proportion (10%) of the Biosphere Reserve has been zoned as strictly protected. The remainder of the Delta is still open to extractive activities within guidelines for controlled use.

Finally, construction work is soon to be completed which will allow a connection for ocean-going ships between the Black Sea and the North Sea. The implications of this on the Delta are not known.

4. ADDITIONAL COMMENTS

4.1 It should be noted that the Danube Delta is on the border with the Ukraine and 20% of the Delta is in the U. S. S. R. The Dunay Ramsar site on the Ukraine side forms a logical extension of the property and the authorities should be encouraged to consider a transfrontier World Heritage site.

4.2 The Danube Delta is also being proposed as a Biosphere Reserve and will be considered in 1992. Papers to establish it as a site under the Ramsar Convention have now been approved.

4.3 There have been various attempts to improve environmental management of the Danube basin. The Bucharest Declaration of 1985 promoted regional cooperation on pollution control. The Danube Charter of 1990 was put forward by European NGO's to promote conservation. In February 1991 all eight countries that share the river initiated discussion on an international agreement that recognised the need for ecosystem management.

5. EVALUATION

Although it has been affected by a number of activities (reclamation, upstream pollution, livestock grazing, over-fishing and hunting) there is still time to reverse the declines and restore the Danube Delta to a relatively natural state. This will require some major investments of resources and a strong commitment by the Romanian Government and cooperation with other countries upstream. As there is no management plan and few staff or management facilities, a major effort from the ground-up urgently needs to commence. The role of the 12-16,000 local residents will also be a major influencing factor.

Consideration of including the area in the List of World Heritage in Danger might also be given in light of the rapid decline in the integrity of the Delta over the past ten years. During this period five bird species have been extirpated, eight have decreased, 27 have become rare and 18 are disappearing (verification of these figures is being sought).

The Danube Delta has the potential to meet criteria (ii) as an outstanding example of a "living delta" where the trapping and incorporation of river sediments are actively underway forming a rich variety of biotypes.

As the largest continuous marshland in Europe, the Danube Delta is an outstanding example of an important ecosystem and thus could also meet criteria (iii). Finally, the Delta is of great importance for bird conservation. It supports the majority of the world population of two endangered species (pygmy cormorant, red breasted geese), has 5% of the breeding population of a third (white pelican) and is used by at least three other threatened bird species. It is also a majoring wintering area for ducks and thus meets criteria iv.

Conditions of integrity are largely met as the boundaries of the site encompass almost the entire Delta and also the buffer zone. Adequate protection of the migratory species (condition v), however, will always be a concern as this cannot be guaranteed.

6. RECOMMENDATION

The Danube Delta is clearly one of the most important natural sites in the Palearctic and meets criteria iii and iv. Although it has been severely degraded over the past few decades, its future conservation and restoration is now given much greater priority by the Romanian Government. Recently designated as a Wetland of International Importance under the Ramsar Convention, the Delta has also been proposed as a Biosphere Reserve under UNESCO's MAB program. A number of projects with assistance from IUCN, WWF, ICBP and others are now underway to support the Romanian government initiative.

In light of these important advances, it is possible (but perhaps still premature) to provide reasonable assurance to the Committee that the site will meet the high standards of integrity and management required for World Heritage sites. The final law legitimizing the Reserve is awaiting approval by Parliament and the management plan process has just commenced. The possibility of a transfrontier property with the Ukraine side is also in the informal discussion stages.

IUCN's recommendation for inscription, therefore, is favorable given the need for international support and the increasing prospects for an improved conservation regime for the Delta. A positive decision should include accompanying recommendations to the Romanian authorities on: 1) completing the legal process; 2) supporting the management planning process (which will hopefully result in an increase of land zoned in the strictly protected category); and 3) dialogue with the Ukrainian SSR concerning cross-border cooperation. Initiatives in transboundary agreements with the other seven countries in the drainage basin should also be encouraged. The Committee may also wish to express its willingness to assist Romania in implementing aspects of the management plan and to congratulate them on their policy changes which will reverse further decline in the conservation values of the Delta.

(Since the Bureau meeting a management planning workshop was held in the Reserve and a smaller World Heritage boundary was proposed. The workshop report and a new map of the site will hopefully be available in time for the Committee meeting.)

