



Pelicans

## A vision for the Danube Delta, Ukraine

The Danube is the second-longest river in Europe and of great international importance. Within its basin of 817,000 km<sup>2</sup> there live about 80 million people in 12 countries who use the river for water supply and transport as well as the natural products of the floodplain ecosystems.

The Danube Delta is of global and European importance for its natural values and is one of the WWF Global 200 most valuable sites on Earth. Although in the Delta itself only a few settlements are found, in the area around the Delta live about 420,000 people. The pursuit of an ecologically brutal style of economic development for this population has changed the natural character of the Delta.

New understanding and modern techniques in economy and ecology mean that it is now possible to protect and improve both natural resources and the welfare of the people who depend on them or live near them. This is what the Vision for the Danube Delta in Ukraine proposes and what selected practical projects will demonstrate.

A more detailed technical explanation about the subjects in this booklet can be found in 'A Vision for the Danube Delta, Ukraine', 2003 (in English and Russian) which can be obtained from [www.partnersforwetlands.org](http://www.partnersforwetlands.org) where it can be downloaded for free.



Vision for the Ukrainian Danube Delta, project area

This short booklet provides an introduction to the Vision for the Ukrainian Danube Delta and outlines the reasons for its development by regional and local organisations, and WWF. It is also an invitation to groups and individuals to contribute their expertise, experience and enthusiasm to its implementation.

# Characteristics of the Danube Delta and its importance



Pygmy Cormorants  
[D. Usher / Foto Natura]

The processes of water and sea have formed the Delta assisted by climate and weather events over thousands of years.

The Danube Delta is growing intensively. It is one of the richest European ecosystems, inhabited by over 4,000 species of flora and fauna. Dozens of them are globally threatened, and stable populations of Ponto-Caspian relicts are found only here.

The river, carrying millions of tons of silt which accumulate on the river-sea border, forms the basis of an intricate and picturesque mosaic landscape. The plant diversity reflects this



Pygmy Cormorants,  
Night Heron and Egret

structure and contributes to the landscape variations together with the grazing habits of domestic and wild herbivores.

The Danube Delta has very extensive reedbeds (about 280.000 ha) and high fish productivity

The Delta is an indispensable stepping stone along the Afro-Eurasian bird migration route and lies at the heart of several land, river and marine ecological corridors in the north-west Black Sea region, thus contributing to the global conservation of biodiversity.



## Natural processes in the Danube Delta

Until about 50 years ago the Ukrainian part of the Danube Delta remained largely intact. Each spring, floods brought silt and nutrients from upstream and washed away the salts accumulated from the previous summer. At the same time, the large lakes, called *ëlimansí* locally, were filled with fresh water from the Danube river.

White willow and black poplar trees followed the course of the waterways or formed clusters on the river banks.

Behind the banks and around the limans a labyrinth of reedbeds, small lakes and channels covered great expanses of the Delta offering a haven for fish, birds and other animals.

For thousands of years the Delta provided a dwelling place for wild herbivores which helped to shape the mosaic of woodlands, reedbeds and patches of grassland.

The reedbeds captured the silt transported by the river which allowed the Delta to grow in height and keep pace with the rising level of the sea. Clarified water filtered out by the reeds and floodplain system reached the Black Sea.

In the Outer Delta, where the river meets the sea, dunes and sand spits separate new areas won from the sea. These landscape forms are very important and essentially contribute to the diverse habitats of the Delta. In this area Delta growth can still be seen.



top Glossy Ibis

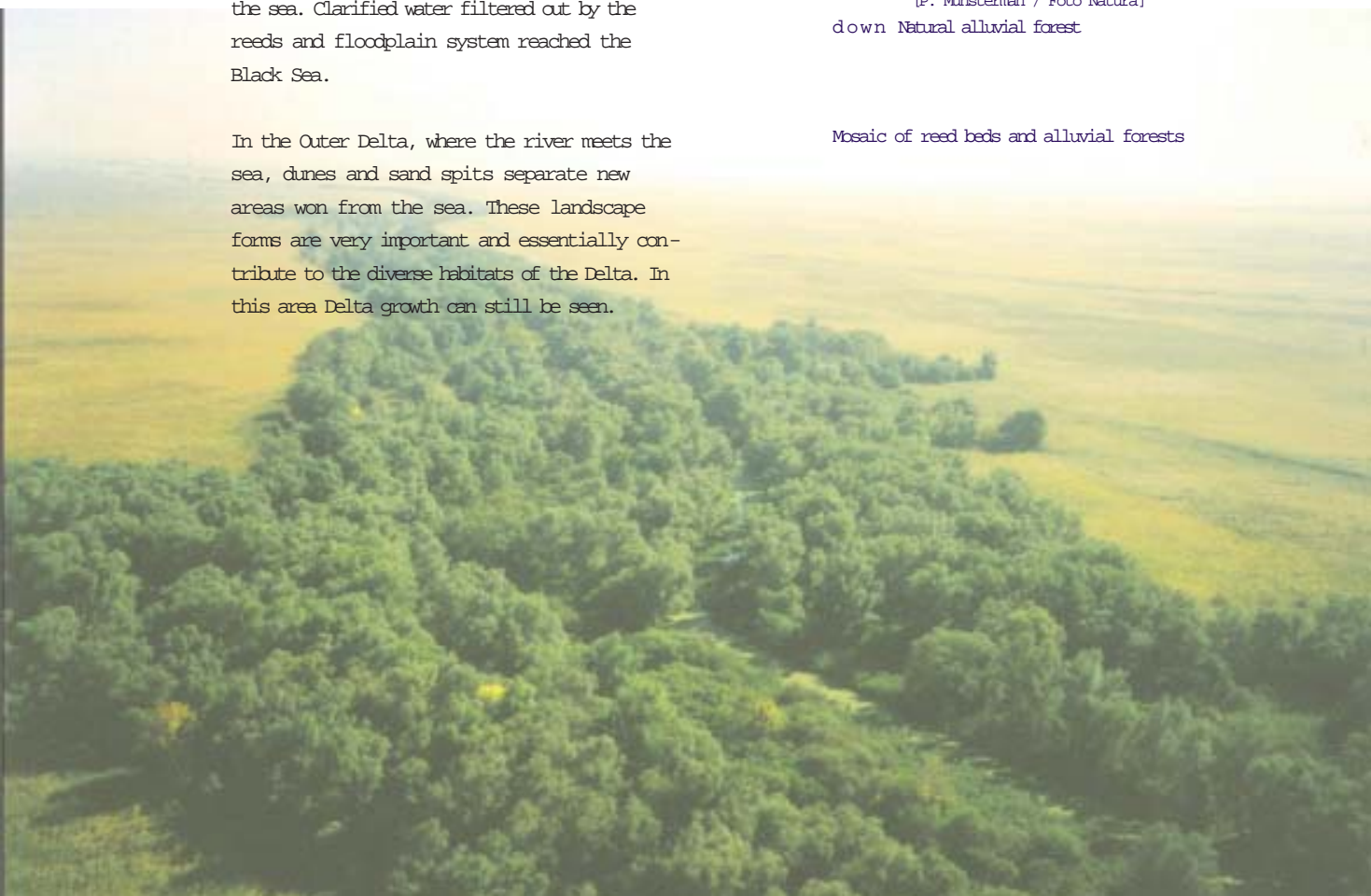
[P. Munsteman / Foto Natura]

middle Grey-legged Geese

[P. Munsteman / Foto Natura]

down Natural alluvial forest

Mosaic of reed beds and alluvial forests





## People's use of the Delta before the changes

top Fisherman on frozen liman  
down Grazing cattle

As the waters gradually receded with the approaching summer, cattle were brought to graze on the fresh grass of the riverbanks.

Fish were plentiful in the rivers and the limans and the fishery made one of the most important contributions to the local economy superseded only by shipping along the Kiliya branch.

Reed and wood were cut for building materials and heating. Waterfowl was hunted for food.

In some places near the villages vegetables and fruits were grown on the fertile, regularly flooded lands.

People's use remained within the productive limits of the system. The most valuable resource for this arid zone was the water for drinking and irrigation.





In about 1960 the balance between the economy and the nature of the Delta changed because it was decided to build a system of dykes, dams and sluices in order to control the river, the floodplain and the lakes.

The aim was to add new floodplain areas for agriculture and to store water for the fishery and irrigation.

At first, the results were positive. In later years, however, a number of problems began to emerge:



The Skunda canal

## Transformation of the Delta through technological development

the natural fish population collapsed

soon after the construction of the dykes due to the disappearance of natural spawning places. Artificial fish breeding took its place and was successful as long as cheap electricity was available. In the 1990s electricity prices rose and the system was abandoned as it was no longer profitable.

water became salty and unsuitable for drinking

or for agriculture. This is because fresh water from the annual Danube floods was no longer reaching the limans so the *ilungsi* ceased to operate. Concentrations of salts began to grow. Long periods of high water level in the lakes caused strong bank erosion.

soil fertility of embanked areas has been lost

and continues to be lost because of the formation of salts during the hot, dry, summers which are no longer washed out by the Danube water during floods; neither does new silt settle causing soil exhaustion.

large parts of the delta are at risk from rising sea-levels

as the height of the extremely flat land from Reni to the sea has all but stopped growing because new material is not being deposited at the parts of the floodplain behind the dykes.

In the Outer Delta, horizontal growth is continuing thanks to the interaction of the river and the sea. This process must be maintained in order to protect the Delta from erosion.

river water now passes directly into the black sea without being filtered through the immense system of reedbeds and lakes of the Delta. Silt, nutrients and some pollutants were formerly filtered out by the reeds to a greater extent than now, and clarified water reached the Black Sea.

In the Outer Delta the system is still intact and is able to filter the river water.

What can we expect if we choose to continue as before?



top Fish stall at the market  
middle Fishermen in the Outer Delta  
down Ecotourism on Tataru Island

- i The quality of the dykes is deteriorating each year. Even now they cannot protect us from a maximum flood.
- i The cost of repairing dykes and sluices will constantly grow.
- i Soils on the embanked areas will become exhausted; the cost of farming there will grow while profits decrease.
- i Water quality in the lakes will deteriorate. Fighting against that trend will mean building larger canals and sluices requiring huge investment.
- i Fishing and fish-breeding will demand more investment.
- i Biodiversity and the natural productivity of the Delta will decline and large-scale artificial biotope management will be necessary.
- i The inner Delta will not be able to keep pace with the rising level of the Black Sea.
- i The Black Sea shelf will be more heavily polluted.



A livi

yes, we can keep to the current technological solutions, but th

## There is another choice

wwf, using experience gained in other countries, offers restoration of natural processes and systems as a rational solution to many of the present problems.

The aim is restoration of the natural system in such a way that people's use of its natural riches will be possible again without harming or mutilating the natural system itself.



top Vilково  
down Boys fishing



A living Danube Delta A home for wildlife and welfare for people

This slogan expresses the double goal of the vision for the Delta developed by wwf and its partners: natural abundance hand-in-hand with human welfare.

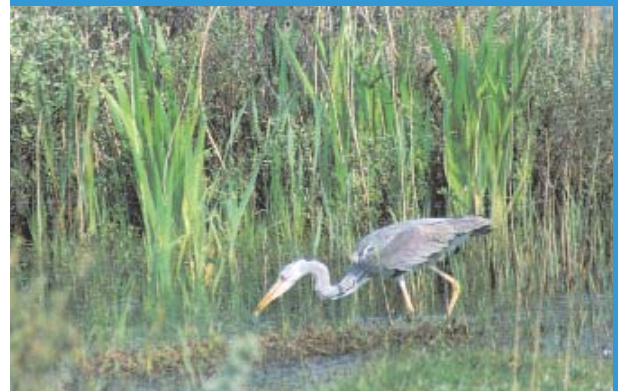
but the financial costs of such a choice could be enormous.

## Key elements of the Vision for the Ukrainian Danube Delta

- i Removal of dykes where feasible in the inner Delta is the most important action.
- i Observance of relevant international standards and agreements on the protection of deltas from man-made catastrophes.
- i Training in restoration methods on model sites.
- i Restoration of the flood regime so that the Delta can breathe.
- i Enlargement of natural grazing areas and meadows and of lands for extensive market gardening, fish-spawning and herbivore reserves.
- i Conversion of over-exploitative agricultural techniques on the floodplains to methods that remain within the limits, products and resources of the natural system (sustainable practices)
- i Redistribution of investments from hopeless attempts at repairing old dykes to construction of new transport and tourist infrastructure.



left Observation cabin in the Outer Delta  
right Grey Heron



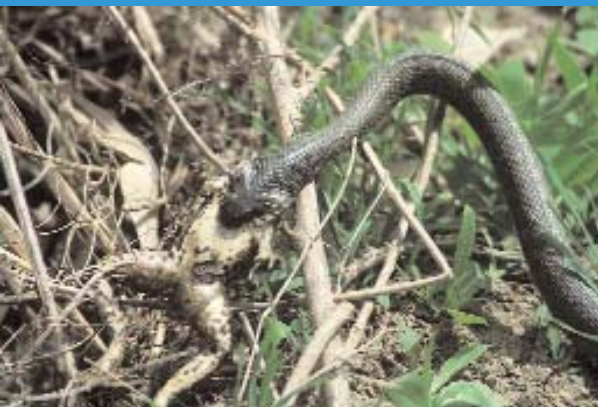
Of course, the removal of the dykes must take into account social and economic factors and must be in tune with the aims of the administrative and economic structures most concerned





top Water, reed, willow and a Grey Heron  
down Snake swallowing a frog

## Benefits for the local population and future sustainable use of the Delta resources



Many of the activities will be much the same as they were before the embankment but using more modern techniques: fishing, horticulture, reed harvesting, gathering of plants, animals and other raw materials.

To these will be added new opportunities such as ecotourism for which demand is growing. As the Danube Delta is one of the largest river deltas in Europe, it is sure to be a top ecotourism destination.

There will be regulations to ensure that the production of agricultural, fishery and forestry products is ecologically acceptable.

And the most important: long-term and efficient flood protection will be ensured and water quality in the lakes will be improved and secured as demand rises with a growing economy. The vertical growth of the inner delta will be restored.



## A closer look at the future management of Ö

top Kugurlui Lake

down Wildcat [Weiman / Foto Natura]



### water

Restoring the influence of the river in the floodplain will restore the quality of the water in lakes and linans. It will then be suitable once again for drinking water for tens of thousand of people, for irrigation, fishery and tourism.

### shipping:

Shipping is one of the major economic activities in the region. Facilities such as harbours, canals, sluices and accompanying industries should be carefully located from both an environmental and economic point of view.

### tourism

Environment-friendly tourism (or ecotourism) has already successfully started in a modest way with small entrepreneurs offering accommodation. To this campsites, boat hire and organised excursions can be added. A detailed study of options, infrastructure and skills needed to further develop the sector should uncover more opportunities.



Canal with reed and boats

## Ö and sustainable use of Delta resources

### reed harvesting

The export market for reed is currently being explored particularly to assess the quality of Delta reed because the requirements for construction purposes are high. Thatching reed from Ukrainian Danube delta is already being exported to some of the countries in western Europe.

### agriculture

Rice fields that are unprofitable would best be returned to the floodplain for alternative sustainable uses (fishery, grazing by large herbivores, organic farming, etc.). Intensive crop cultivation should be removed from the Delta or changed to other forms of farming. Intensive cereal crop production has to be stopped altogether in some areas and changed to sustainable farming practices in others.

Market gardening and such crops as grape vines resistant to flooding should continue where they integrate well with the natural system.

### fisheries

The return to natural processes will greatly improve fish yields. More equitable distribution of the economic benefits will be possible once over-fishing and poaching are seriously addressed through better regulation, licensing and enforcement.

### harvesting

Medicinal plants, herbs and honey and trapping of small animals for food and for fur could all be revenue-generating activities and carried out in ways which do not damage the ecosystem.

### herd management

Wildfowl habitat and productivity will grow sharply. In addition, indigenous large herbivores, (deer species, cattle, horses) living in wild herds could be re-introduced and managed carefully to prevent overpopulation. However, methods should be used which avoid the animals associating humans with danger, thereby making them less shy and more accessible for viewing by tourists.





The Vision is a source of ideas  
and a call for cooperation Ö

Gallery forest

rather than a programme of implementation. The ideas could be integrated into development plans and could stimulate other organizations and initiatives to join the partnership with wwf to implement the Vision.

Work at selected Model Sites will take the first steps in implementation of the Vision.

A Model Site should illustrate, in the field, how the Vision or essential parts of it can be implemented in practice, as well as show the benefit to the local communities, economies and environment. In Model Sites experience can be gained, and ideas can be illustrated and shared.

Through them, others can be inspired to take the Vision forward. In fact, a range of strategic partners should together implement the Model Site projects. This will involve professional communication about the work and the lessons learned to generate enthusiasm and knowledge amongst a wide audience in Ukraine and elsewhere.

It was the availability of partners who are interested in and willing to implement the Vision on the ground that served as the main criterion (apart from feasibility) for the selection of the first model sites.

Some Model Site projects are starting

## The first model site projects

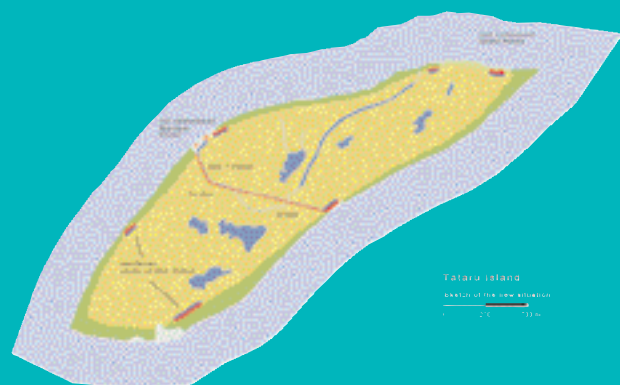
### tataru island

Tataru Island near Izmil has been partly embanked. The dykes were never completely finished as it proved impossible to carry out agriculture and forestry in the centre of the island.

By removing the dykes in close cooperation with the major stakeholder, the Izmil Forest Service, the island will be brought back to a natural state.

Experience at Tataru Island can be used in larger projects on island restoration, dyke removal, or the removal of polders in the Delta and along the middle course of the Danube river.

Ecotourism will be developed on the island and, along with sustainable forestry and fishery, will provide a new source of income for the Forestry Service and for the local population. These uses should replace intensive forestry which was devastated after a high flood killed most of the poplar plantations a few years ago.



re starting now in 2003

top Tataru Island, situation 1957  
before embankment  
middle Tataru actual situation  
bottom Tataru Model Site, new situation

## The first model site projects

### katlabuh liman

The lake is separated from the Danube by dykes. It is filled only through low capacity canals. At present the lake is used for fish-breeding and its water is also taken for agriculture. Because of growing salinity, water consumption has dropped from 25.5 million/m<sup>3</sup> in 1995 to 5.3 million/m<sup>3</sup> in 2001. High water level throughout the year has contributed to heavy bank erosion and part of the river bank has been lost.

In collaboration with the Odessa Water Management Board and local organisations, a study will be made on restoration of more natural fluctuation of water levels in the lake. The expected results are improvement of water quality and recovery of the natural fish population.

Experiences with these measures can be applied to the other big limans of Kitai, Yalpuq/Kugurlui and Kagul.



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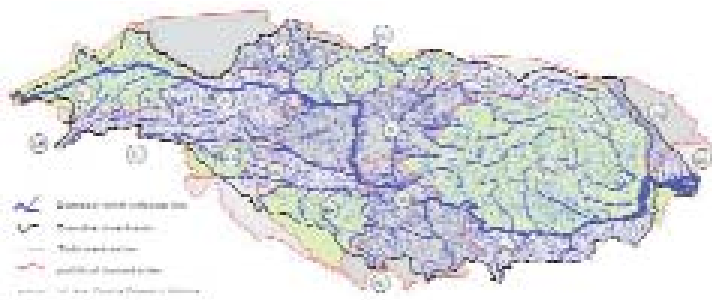
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## reference

W orld Wide Fund for Nature, a Vision for  
the Danube Delta, brochure  
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## What is a Vision?

The term "Vision" is now often used in action plans which combine social, economic and ecological elements. It means a set of ideas, a concept and/or prognosis of a desirable future for a territory.

In spite of the apparent simplicity of a vision, it is impossible to present a feasible and desirable future for any territory without well-reasoned analysis of its past and present. The Vision presented here is the result of such a careful analysis which seeks to unify a diverse range of components in one model for the welfare of future generations, in harmony with their environment.