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Danube Delta Biosphere Reserve Authority's Experience in the IAS Management

IASON Project Code: BSB-1121

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Danube Delta Biosphere Reserve Authority

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Danube Delta Biosphere Reserve

The Danube Delta was declared biosphere reserve in **1990** by the Government of Romania

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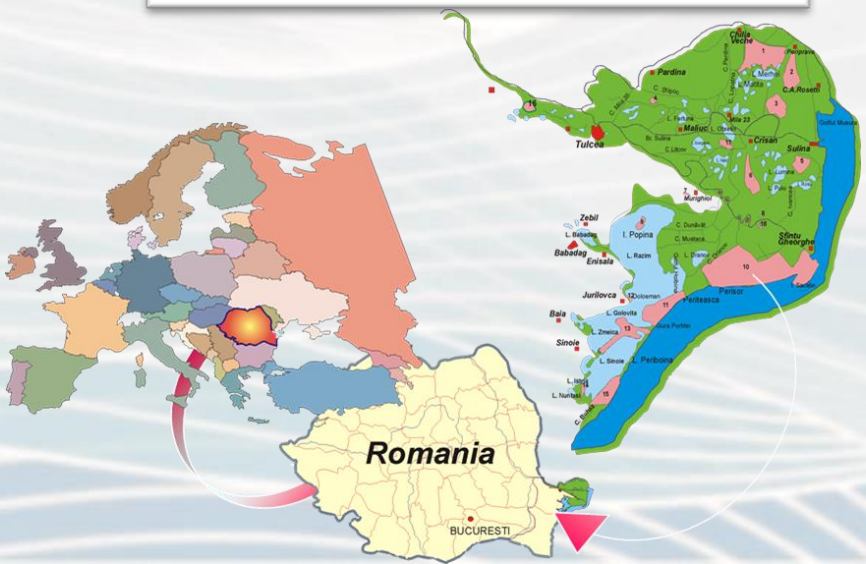
- ✓ The Danube Delta Biosphere Reserve is the third-richest biosphere reserve in the world in terms of biodiversity, after Australia's Great Barrier Reef and Ecuador's Galapagos Islands.
- ✓ It is the only delta in the world declared entirely as a biosphere reserve.
- ✓ Its area represents about 2.5% of Romania's surface and it is the second largest delta in Europe, after Volga delta and the 22nd largest delta in the world.
- ✓ It shelters the largest compact area of reedbeds on the planet and supports 30 types of ecosystems.



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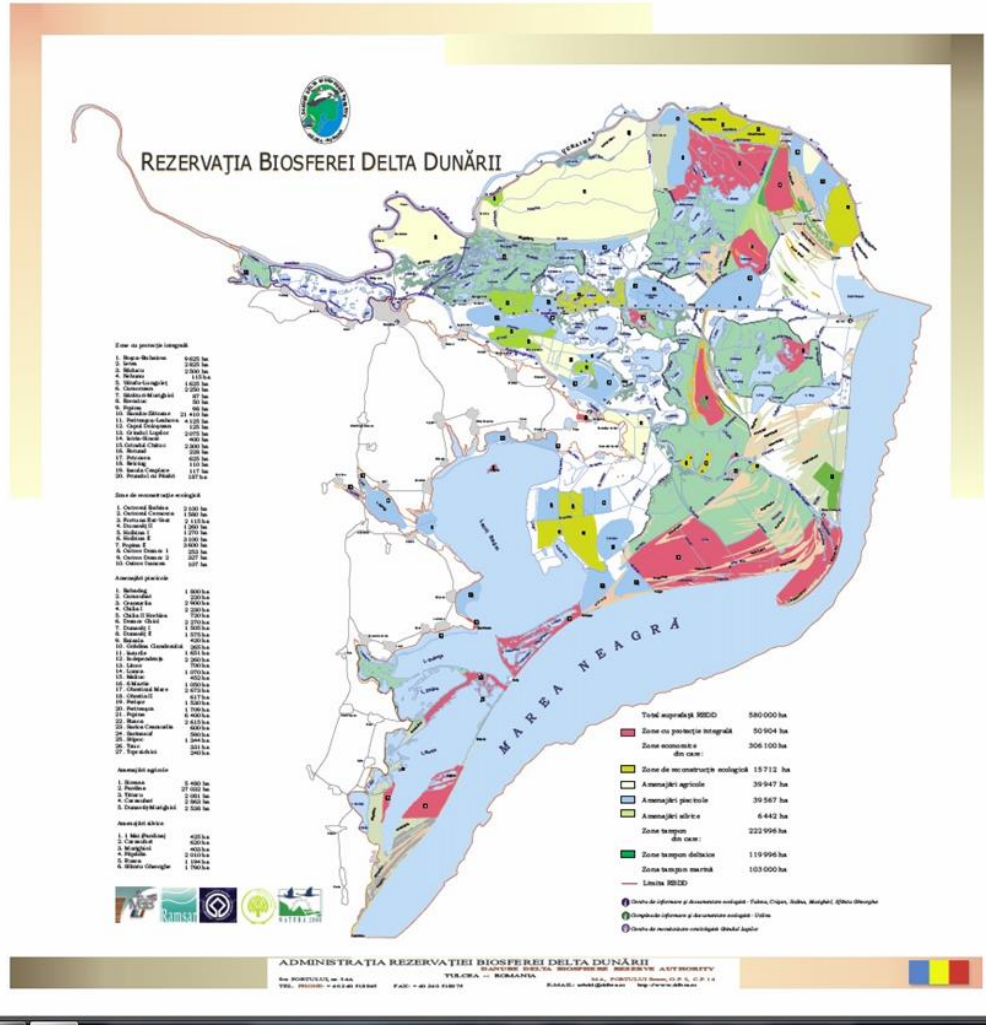
DDBR General Presentation (580,000 ha)

- 20 core areas (strictly protected) - 50,904 ha
- 13 buffer zones - 223,300 ha (103,000 ha marine buffer zone)
- Economic/transition areas - 306,100 ha, including the ecological reconstruction areas - 16,783 ha.

The Danube Delta Biosphere Reserve is famous for:

- mosaic of habitats (30 types of ecosystems)
- Rich biodiversity (total number of species: 9581, out of which 362 species of birds)
- nesting place for bird populations: white pelican (*Pelecanus onocrotalus*), Dalmatian pelican (*Pelecanus crispus*), pygmy cormorant (*Phalacrocorax pygmeus*)
- wintering place for swans and geese, including almost the entire world population of red-breasted goose (*Branta ruficollis*).



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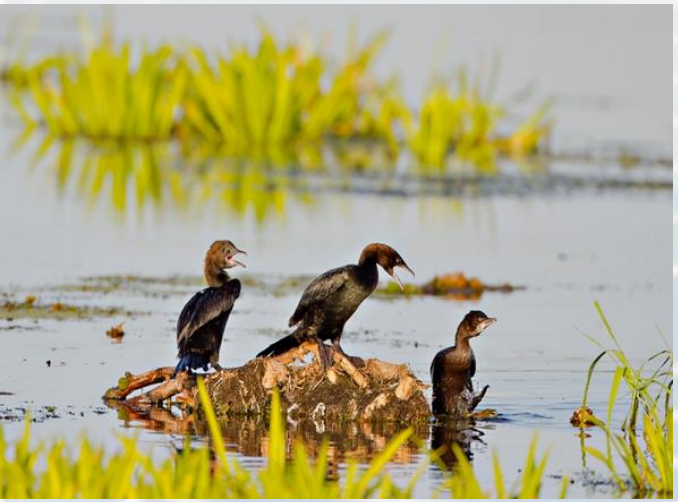
Danube Delta Biosphere Reserve is entirely a Natura 2000 site.

The Danube Delta (ROSCI0065) and the Danube Delta Marine Area (ROSCI0066) were included in the category of Special Areas for Conservation (SAC).



The Danube Delta has certain particularities due to the major influence of the Danube river and the alluvia deposited by it, therefore unique sedimentary habitats in the Romanian coastal area are found.

This site hosts important protected species and special types of habitats.

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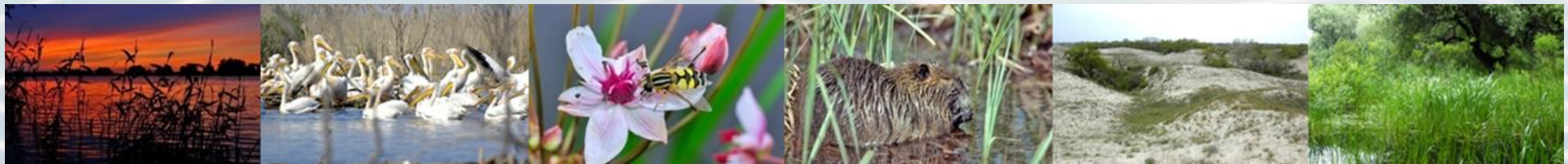
Danube Delta Biosphere Reserve Authority (DDBRA)

DDBRA is a public institution subordinated to the Romanian Ministry of Environment, Waters and Forests and it is managed by a Governor (Undersecretary of State).

DDBRA coordinates the management of the Biosphere Reserve having three main objectives:

- To conserve and protect the existing natural heritage → promote the conservation of landscapes, ecosystems, species and genetic variation;
- To promote the sustainable use of resources generated by the natural ecosystems of the reserve → stimulate the economy and human development in a socio-culturally and ecologically sustainable way;
- To provide support for the management, education, training and services, based on the scientific results → demonstrational projects connected with the sustainable development.

The management of the DDBR is based on the Management Plan, approved by Governmental Decision.



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"Invasive Alien Species Observatory and Network Development for the Assessment of Climate Change Impacts in Black Sea Deltaic Protected Areas"

The aim of the project is to create an international network for invasive species (IAS) in the Black Sea deltaic ecosystems and to assess their response to current or projected climatic conditions. Emphasis will be placed on the cross-border component of joint monitoring and assessment activities, respectively on the risk assessment of invasive species in current climatic conditions and future climate projections.

DDBRA will work with the Coordinating Partner and all the partners to exchange information.

The DDBRA has a representative in the Steering Committee established at the project level and also had contributions to technical activities for the elaboration of the list of invasive species in the DDBRA.

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Danube Delta Biosphere Reserve Authority's Experience in the IAS Management

According to the current RBDD Management Plan, one of the management objectives in the Danube Delta Biosphere Reserve is to stop the decline of biological diversity and conserve natural heritage through invasive species inventory actions and develop precautionary measures for their management.

Based on the inventory lists of the invasive species of flora and fauna existing and provided by INCDDD Tulcea, ARBDD has implemented over time a series of measures in support of this objective:

- Imposing conditions / measures in the regulatory acts (licences, permits, etc.) during the appropriate assessment procedure by carrying out works such as interventions to eradicate them, reducing the potential for reproduction and spreading of these endangered species for native species, green landscaping with plant and shrub species specific to the area, taking into account the list of species of trees, shrubs and plants considered to be invasive, etc. in coastal cordon areas, in forest, in wetlands, meadow meadows habitats, etc.

- Activities carried out within the European funded projects implemented or under evaluation.

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Examples of activities in European funded projects :

- Within the project DANUBEparksCONNECTED - Bridging the Danube Protected Areas towards a Danube Habitat Corridor (DANUBEparksCONNECTED - Danube Protected Areas Network, a Danube Habitat Corridor), financed from the Danube Transnational Program, implemented by ARBDD in the period 01.01.2017 - 30.11.2019, the Danube Volunteer Day was organized on October 5, 2017, an awareness campaign that took place in the area of Sulina beach, respectively in the area of habitats of community interest - *Embryonic mobile dunes - 2110*, populated with coastal plant species that provide a first stage of fixing the marine sands and whose structure is influenced by the presence of invasive species. The only way to keep the habitat in a favorable state of conservation is to eliminate the invasive species.

- The 70 volunteers participating in the action, students and teachers of the “Jean Bart” High School from Sulina and volunteers of the Euro Tulcea Association, received explanations about some invasive species, for example *Xanthium italicum* and *Cuscuta europaea* that were removed and which are the main threat for the endangered species in the area, such as *Convolvulus persicus* (volbura de nisip) and *Eryngium maritimum* (vitrigonul).

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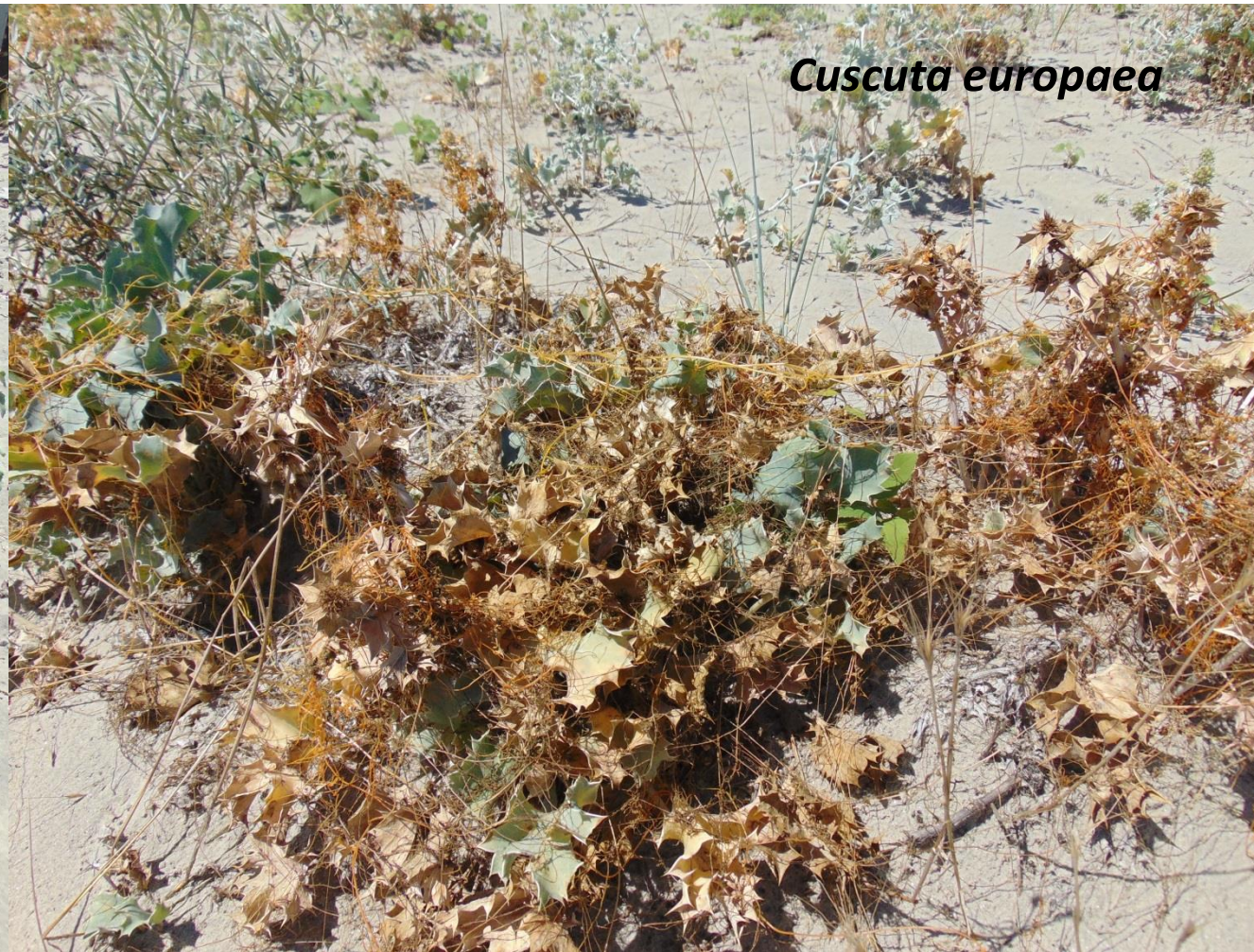
Xanthium italicum



Cuscuta europaea

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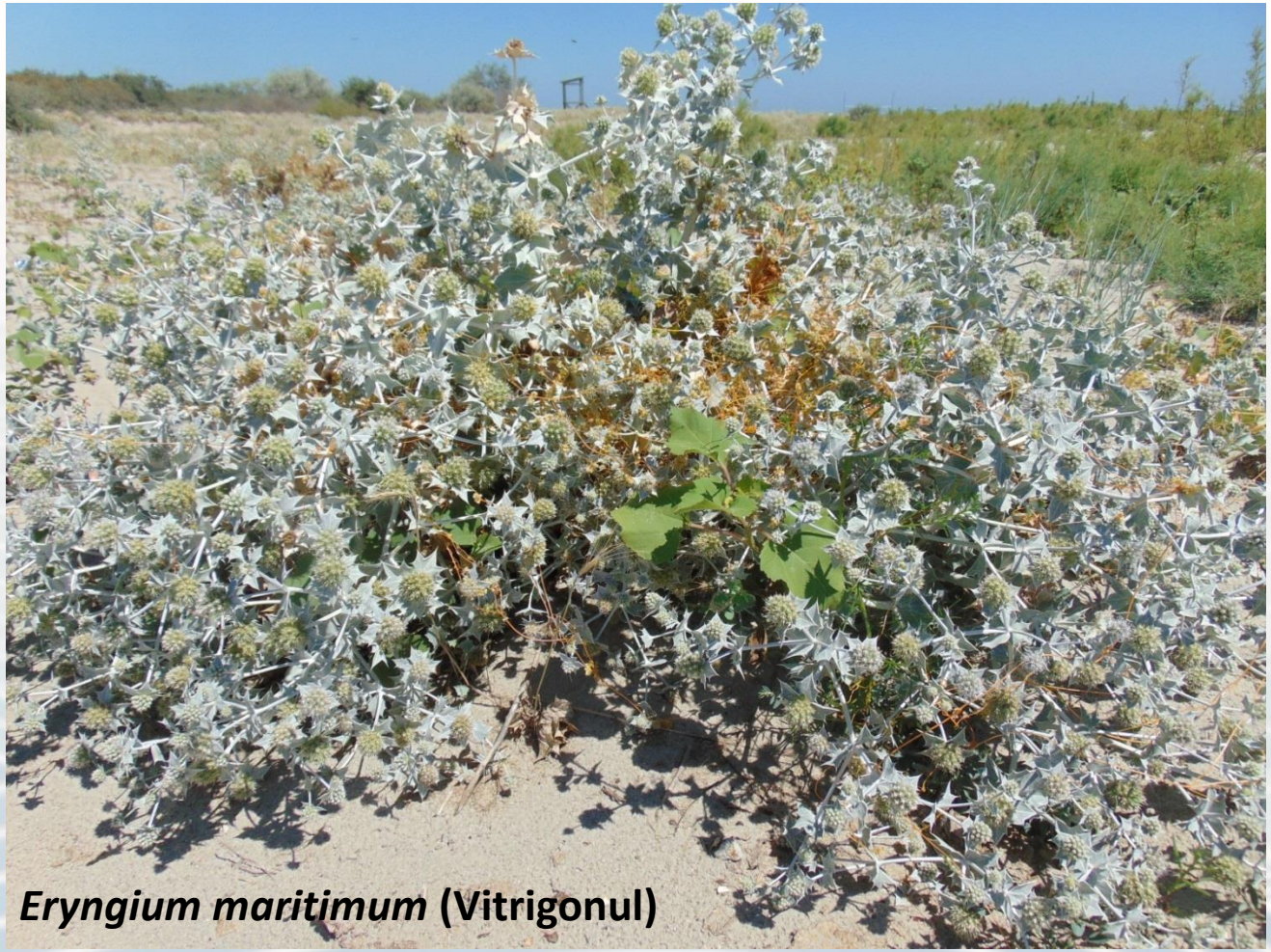
Convolvulus persicus L. (Volbura de Nisip)



Eryngium maritimum (Vitrigonul)

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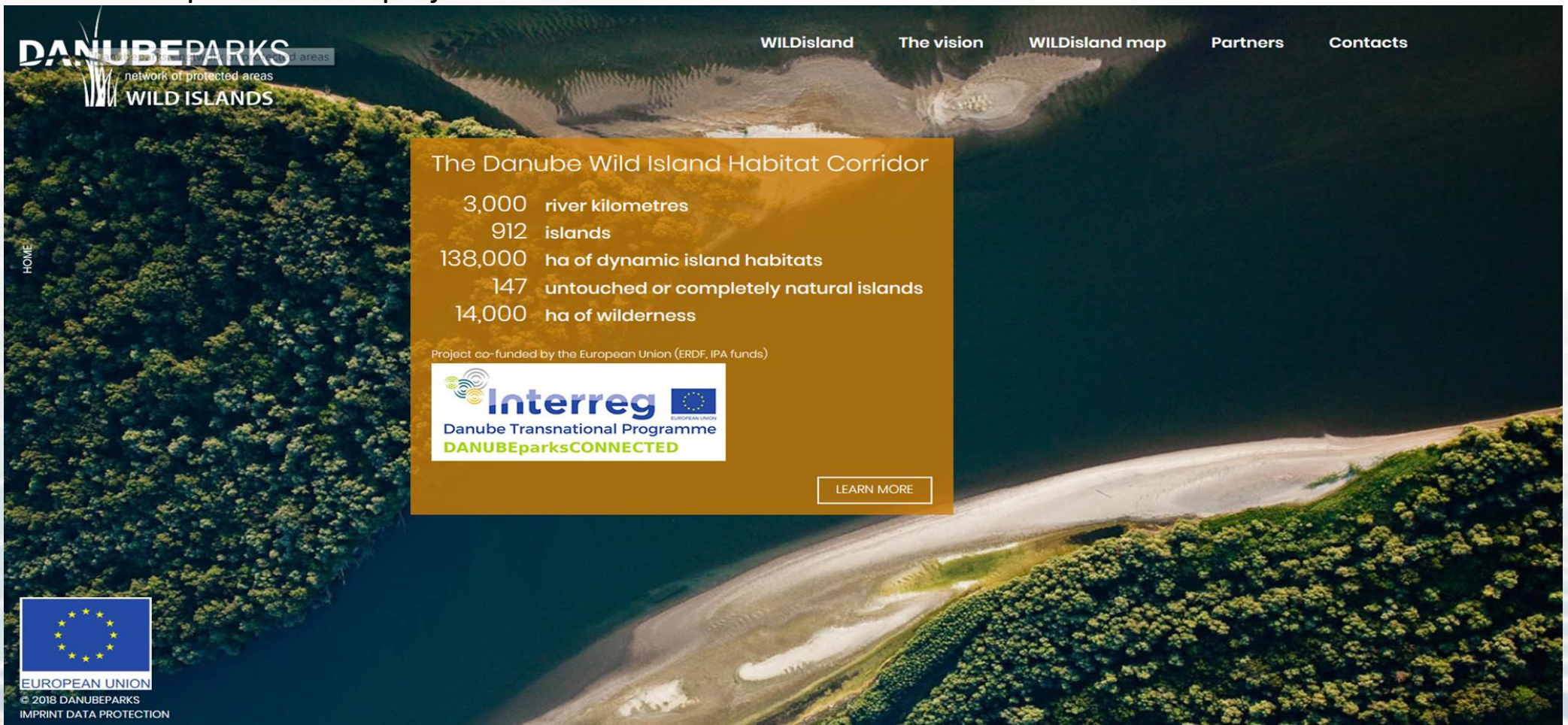
Activities under European funded projects: LIFE WILDisland



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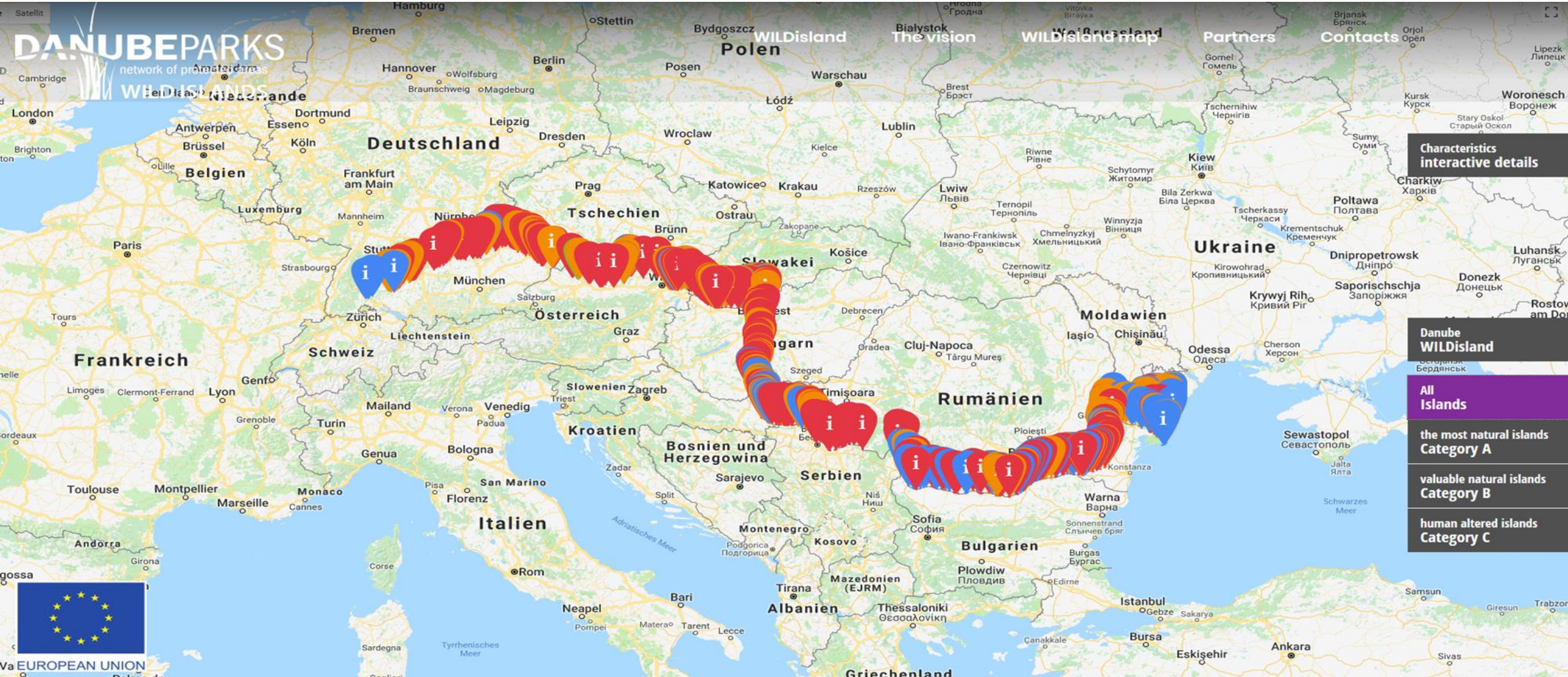

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LIFE WILDisland Project

Project period: 1st Sept. 2021 – 31st August 2027
Budget: 14,2 Mio. € (EU 63,98%)

The aim of this project is to implement measures for the conservation and restoration of the Danube natural islands as emblematic habitats for the dynamics and morphology of the Danube river in order to counteract the degradation and fragmentation of softwood meadow forests (habitat 91E0 * - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*) .

Objectives:
Establishment of **ecological corridor for dynamic riverine habitats** (Danube islands as stepping stones)
Promotion of river dynamics & non-intervention management & **riverine wilderness**
Restoration of islands and dynamic riverine habitats
Improvement **of conservation status of 91E0*** as „umbrella habitat“
Cross-sectoral cooperation (nature conservation, waterway, hydropower, forestry)
WILDisland habitat eco-corridor as **best practice Green & Blue Infrastructure for large rivers in Europe**

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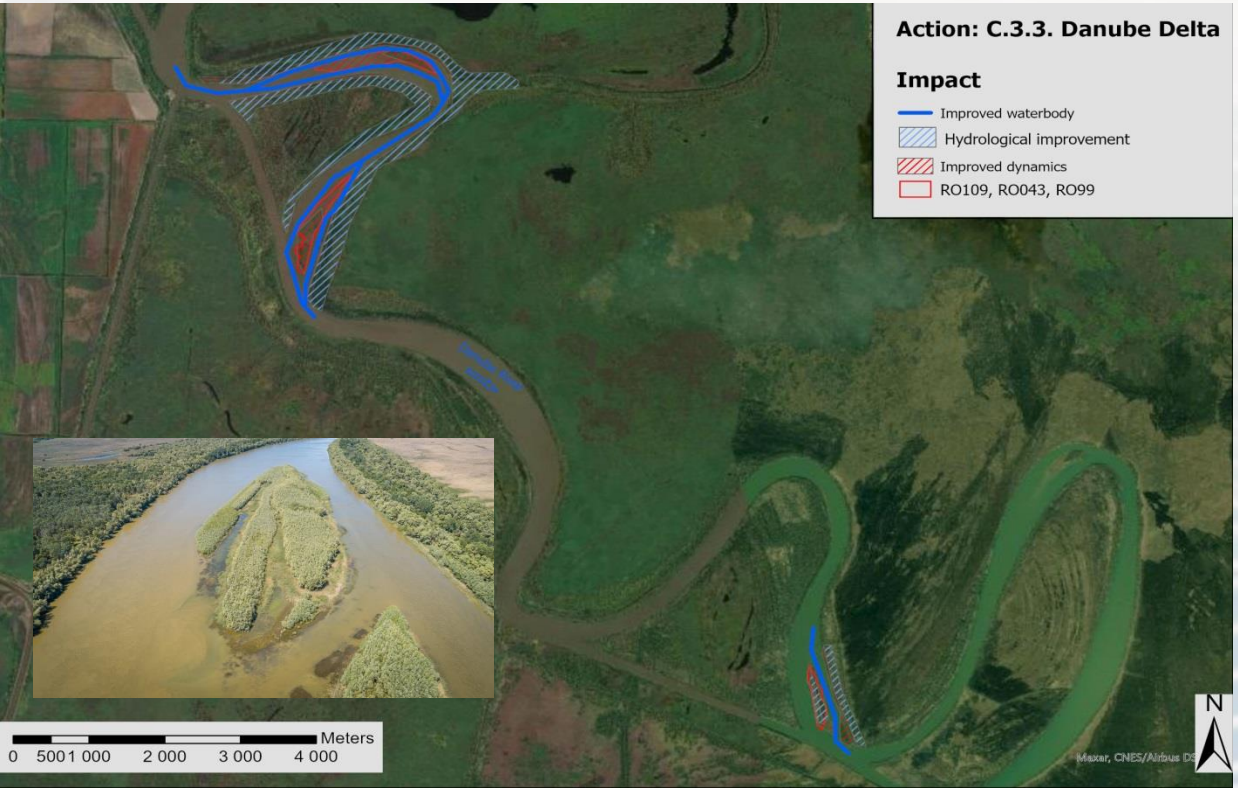
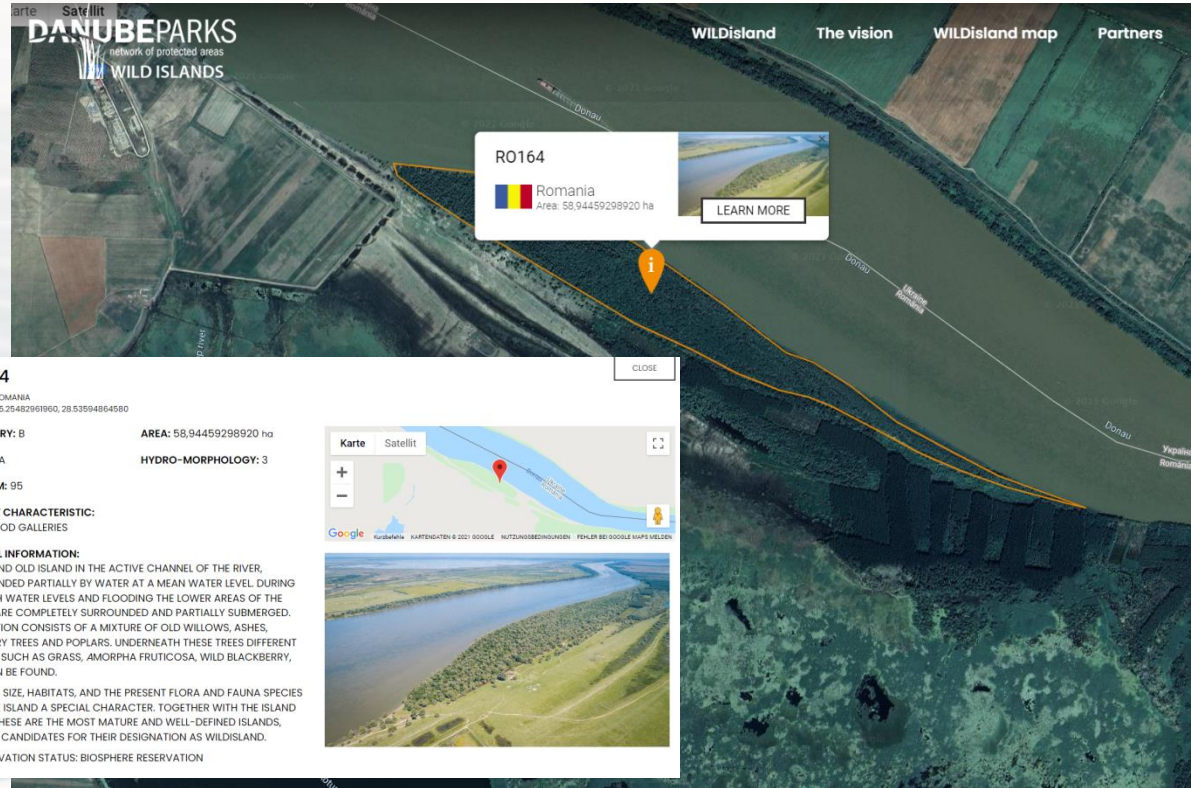
C.3.3 **WILDisland restoration (RO109, RO43, RO99) through re-dynamization of cut-off meanders** in the Danube Delta (Romania)

C.3.2 **side branch reactivation** to restore WILDisland RO164





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C.4.11 & 4.12 best practice **IAS management & Black-poplar planting**

Factsheet: A.4.11 Best practice IAS management in the Danube Delta Biosphere Reserve (RO163, RO97, RO86, RO109, RO43) - 43ha;

Location: five selected island in the Danube Delta Biosphere Reserve, Romania

Responsible Partner: Danube Delta Biosphere Reserve Authority DDBRA, Romania

Background: The Danube Delta is one of the largest wetlands in Europe and one of the most natural areas along the Danube. Accordingly, it hosts some of the most natural islands of the Danube (Category A in the WILDisland inventory Danubeparks - WILDisland). For LIFE WILDisland, five islands have been selected which are in a very natural status, but their habitat conditions of soft wood forests is strongly reduced by invasive alien tree species. Natural rejuvenation of 91E0* is limited in particular by *Amorpha fruticosa*, *Fraxinus pennsylvanica* and *Acer negundo*.

Despite the increasing negative impact on IAS on the Danube Delta, DDBRA has not implemented yet large scale management actions to counteract this pressure.

Objective:
A.4.11 is to prepare a first best practice IAS management project for the Danube Delta, implemented by DDBRA together with external forest experts.

The IAS management will be done by manual and by physical actions. The action focus on a systematic uprooting of young trees in combination with the elimination of the mature trees by ringing of the bar. The restoration actions will take place on an area of 43 ha in total. It includes the supervision and monitoring of the management actions and the maintenance work in the follow-up year. This long-term approach ensures the improvement of the habitat quality on the tackled islands also after project finalization.

Factsheet: A.4.12 restoration through Black Poplar planting on WILDisland RO164 - 11ha;

Location: right bank of the Danube at river km 95 - 96

Responsible Partner: ROMSILVA, RO

Background: At this time, in the island the quality of 91E0* habitat is low due to the improper status of forest vegetation. Trees are mainly from the former coppiced forest stand (from sprouts), with a degraded health status. Forest stands are in great majority degraded and is supposed to be replaced in natural succession by invasive species if reforestation measures with adapted, autochthonous species are not taken place.

Objective: Jointly, ROMSILVA in cooperation with DDBRA, will implement 91E0* forest restoration on island RO164 on 11 ha. This area is composed of 4 perimeters, each between 2-3 ha large. Restoration will take place in areas where the forest was harnessed and will be done with characteristic species of 91E0* habitat (Salix alba, Black poplar, White poplar).

After the degraded forest stand is removed, the main actions carried out are: site preparation (remove or destroy all stumps and invasive vegetation, ploughing, disking), planting one year-old saplings of indigenous species, weeding control. All plantations (each polygon) will be monitored till the plantation is at the natural pruning phase.

ROMSILVA REGIA NAȚIONALĂ A PĂDURILOR

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In order to prevent the damage of forest habitats by invasive species, the following measures are mainly recommended:

- destruction of specimens of these species during land and soil preparation works in the areas where afforestation works are to be carried out;
- the execution of the soil mobilization works in the young plantations until the achievement of the massive state, when the young specimens of the invasive species resulting from seeds are destroyed;
- maintaining a degree of soil covered with forest vegetation in the mature trees status of at least 70%, which makes it impossible for invasive species to develop, these being light-loving forest species.

Within the project, the management of the IAS will be done through manual and physical actions.
The action focuses on the systematic uprooting of young trees in combination with cutting a ring in the tree bark.
These include the supervision and monitoring of management actions and maintenance in the coming years. This long-term approach ensures the improvement of habitat quality on the islands also after the completion of the project.

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Conclusions

- The IAS approach and management is a challenge and a great responsibility for a protected area administrator;
- Prevention of the introduction of invasive species - a priority that requires national and international efforts;
- Raising awareness of global climate change, a significant factor contributing to the spread and establishment of invasive species, a major problem affecting native diversity in many parts of the world;
- The IASON project will obtain reference data for the IAS in the Danube Delta area, in current and forecast climatic conditions, through the implementation of joint cross-border monitoring and assessment;
- Establishment of an Observatory-type organizational structure through which Information and Communication Services will be provided not only for IAS monitoring and evaluation but also in connection with the involvement of citizens in the improvement and use of updated project results;
- Cross-border collaboration and information exchange through the development and implementation of information and communication activities at all levels of society (teachers and educators, protected area administrators, decision makers, local community).

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Thanks for your attention