

# **Project "Elaboration of the Management Plan of the ROSPA0040 Dunărea Veche-Brațul Măcin, ROSCI0012 Brațul Măcin and Traian Lake Nature Reserve"**

## *Proiectul „Elaborarea Planului de management al ROSPA0040 Dunărea Veche-Brațul Măcin, ROSCI0012 Brațul Măcin și Rezervației naturale Lacul Traian”*

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### **Abstract**

*The project is financed through the Large Infrastructure Operational Programme, Priority Axis 4 – Protecting and restoring biodiversity, remediating contaminated soil and monitoring air quality.*

*Project duration: August 01, 2017 - July 31, 2020.*

*The beneficiary of the project is the Medio Pro NGO from Brașov in partnership with the Environmental Protection Agency Tulcea.*

*The total project value is 3,166,494.11 Ron/ 688,562.88 Euro.*

*The protected areas covered by this project are:*

*1. Natura 2000 Special Protection Area ROSPA0040 Dunărea Veche-Brațul Măcin, covering 19,011 ha, established by Government Decision 1284/ 2007 regarding the establishment of Special Protection Areas as part of the European ecological network Natura 2000 in Romania, as amended by Government Decision 971/ 2011.*

*2. Natura 2000 Site of Community Interest ROSCI0012 Brațul Măcin with an area of 10,433 ha established by Minister Order no. 1964/ 2007 regarding the establishment of Site of Community Interest as part of the European ecological network Natura 2000 in Romania, as amended by Minister Order 2387/ 2011.*

*3. Lacul Traian Nature Reserve with an area of 326 ha, established by Government Decision 2151/ 2004 on the establishment of protected natural area regime for new zones.*

*The target species in the project are: 108 birds species of Community interest, four amphibian and reptile species of Community interest, three mammalian species of Community interest and one mammalian species of National interest, 11 fish species of Community interest, one plant species of Community interest and one plant species of National interest, eight habitats of Community interest.*

**Keywords:** *management, protected area, special protection area, species of Community interest, habitats*

## Content

The project regarding the management plan development is addressed to the protected natural areas: ROSPA0040 Dunărea Veche-Brațul Măcin, ROSCI0012 Brațul Măcin and Traian Lake Nature Reserve, which have not a management structure. The project is implemented in partnership by the Medio Pro Association, from Cristian (Brașov County) and Tulcea Environmental Protection Agency (EPA/APM).

The protected areas covered by the project are:

### **ROSPA0040 Dunărea Veche – Brațul Măcin (19,011 ha)**

This site (Figure 1) hosts important number of bird species protected at European level by the Birds Directive and the Bonn Convention, as well as nationally by O.U.G. no. 57/ 2007, respectively: 63 species listed in Annex 1 of the Birds Directive, 55 other migratory species, listed in the annexes to the Convention on Migratory Species (Bonn) and seven globally endangered species.

The site is important for nesting populations of: *Coracias garrulus*, *Falco vespertinus*, *Aythya nyroca*, *Accipiter brevipes*, *Anthus campestris*, *Lanius minor*, *Lanius collurio*, *Calandrella brachydactyla*. The site is important for migration of: *Pelecanus crispus*, *Accipiter brevipes*, *Branta ruficollis*, *Pelecanus onocrotalus* and *Phalacrocorax pygmaeus*. The site is important for wintering of *Phalacrocorax pygmaeus* and *Anser albifrons*.

### **ROSCI0012 Brațul Măcin (10,235 ha)**

First of all, the site is of importance for the conservation of the habitat 92A0 *Salix alba* and *Populus alba* galleries which occupies approximately 19.41% of the site, respectively 4% of the surface of the habitat at national level. The site is also important for the conservation of the priority habitat **62C0\* Ponto-sarmatic steppes**, occupying an area of about 4% from the national surface of the habitat.

At the same time, the site is important for the species of community interest *Marsilea quadrifolia* (pond clover), this species being cited by SĂVULESCU (1976) from the area of Iglîța Lake. According to the specialized literature consulted, after 1976, the species was no longer found in the area of Iglîța Lake.

The site represents the northern part of the migration corridor of plant species from the Balkan Peninsula to the northern Dobrogea and the Danube Delta. In addition, it is also an important migration route for certain species of fish, including sturgeons, as well as for birds, the territory of the site ROSCI0012 Brațul Măcin, being totally overlapped with ROSPA0040 Dunărea Veche-Brațul Măcin.



Figure 1. ROSPA0040 Dunărea Veche – Brațul Măcin  
(source: EPA Tulcea Archive)

*Fig. 1. ROSPA0040 Dunărea Veche-Brațul Măcin (sursa: arhiva APM Tulcea)*

### **Traian Lake Nature Reserve (326 ha)**

The Traian Lake (Figure 2) is of particular interest for ornithological studies, especially because it represents an important refuge for nesting, resting and feeding on rare bird species and because the area is less studied.

Following the study carried out by „Gavrilă Simion” Eco-Museum Research Institute of Tulcea in the area of the Traian Lake, 102 identified species of birds, systematically grouped into 15 orders and 39 families. From the total species identified, 52 species are nesting. Regarding the phenological distribution of the ornithofauna from Traian Lake, 70 species are summer guests, 18 species are sedentary, seven species are winter guests and seven species are passage.

Of the 102 species of birds identified here, 64 are strictly protected species, 30 are protected species and only 12 are species of hunting interest, according to Law no. 103 from September 27, 1996. Following the observations made, seven very rare bird species that nest in this area were identified, which make it of international importance.



Figure 2. Traian Lake Nature Reserve (source: EPA Tulcea Archive)  
*Fig. 2. Rezervația naturală Lacul Traian (sursa: arhiva APM Tulcea )*

**The general objective of the project** is the biodiversity conservation, public awareness and information on the importance of the natural values of the Special Protection Area ROSPA0040 Dunărea Veche-Brațul Măcin, Site of Community Interest ROSCI0012 Brațul Măcin and Lacul Traian Nature Reserve.

Also, **the specific objectives of this project** are:

1. Ensuring an efficient management of the species and habitats of the protected areas ROSCI0012 Brațul Măcin, ROSPA0040 Dunărea Veche-Brațul Măcin and the Lacul Traian Nature Reserve, through the elaboration and approval of the management plan.
2. Informing, raising awareness and consulting the population and stakeholders on the territory of the protected areas, in order to increase the efficiency of the management actions for the sites ROSCI0012 Brațul Măcin and ROSPA0040 Dunărea Veche-Brațul Măcin and respectively for the Lacul Traian Nature Reserve.

**The main purpose of the project** is the elaboration of the Integrated Management Plan and the concrete activities related to the conservation of

biodiversity, within the project, are: inventory, mapping, assessment of the impacts of threats and pressures, respectively assessment of the conservation status for the species and habitats of community interest for which conservation areas were declared protected natural areas ROSCI0012 Brațul Măcin, ROSPA0040 Dunărea Veche-Brațul Măcin and Lacul Traian Nature Reserve.

Also we purpose the information and awareness of the local community within the territorial area of the three protected natural areas and the stakeholders that carry out direct or related activities in the territory of the protected areas, because the conservation of biodiversity, respectively the minimization of the anthropic impact, are not possible without their information and involvement in applying effective management measures.

Within the three protected natural areas, studies were carried out for the following categories of habitats and species in the standard formular:

**Habitats:** **3130** Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/ or *Isoëto-Nanojuncetea*; **3270** Rivers with muddybanks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation, **62C0\*** Ponto-Sarmatic steppe meadows; **6430** Hydrophilous tall herb fringe communities of plain and of the montane to alpine levels; **6510** Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*); **92A0** *Salix alba* and *Populus alba* galleries; **3140** Hard oligo-mesotrophic waters with benthic vegetation of *Chara* sp.; **6440** Aluvial meadows of river valleys of the *Cnidion dubii*.

**Plants:** *Marsilea quadrifolia*, *Echinops ritro* subsp. *ruthenicus*.

**Amphibians and reptiles:** *Bombina bombina*, *Triturus dobrogicus*, *Emys orbicularis* and *Testudo graeca*.

**Mammals:** *Lutra lutra*, *Spermophilus citellus*, *Mustela eversmannii* and *Meles meles*.

**Fish:** *Cobitis taenia*, *Misgurnus fossilis*, *Pelecus cultratus*, *Rhodeus sericeus amarus*, *Aspius aspius*, *Gobio kessleri*, *Alosa tanaica*, *Gymnocephalus schraetzer*, *Sabanejewia aurata*, *Zingel streber* and *Zingel zingel*.

**Birds of community/ national interest:** *Accipiter brevipes*, *Accipiter nisus*, *Acrocephalus melanopogon*, *Alcedo atthis*, *Anthus campestris*, *Clanga pomarina*, *Ardea purpurea*, *Aythya nyroca*, *Botaurus stellaris*, *Branta ruficollis*, *Bubo bubo*, *Burhinus oediconemus*, *Buteo buteo*, *Buteo rufinus*, *Calandrella brachydactyla*, *Caprimulgus europaeus*, *Charadrius alexandrinus*, *Chlidonias hybridus*, *Ciconia ciconia*, *Ciconia nigra*, *Circus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garrulus*, *Dendrocopos syriacus*, *Dryocopus martius*, *Egretta garzetta*, *Emberiza hortulana*, *Falco vespertinus*, *Ficedula albicollis*, *Ficedula parva*, *Haliaeetus albicilla*, *Hieraaetus pennatus*, *Himantopus himantopus*, *Ixobrychus minutus*,

*Lanius collurio*, *Lanius minor*, *Larus melanocephalus*, *Larus minutus*, *Lullula arborea*, *Melanocorypha calandra*, *Milvus migrans*, *Nycticorax nycticorax*, *Oenanthe pleschanka*, *Pandion haliaëtus*, *Pelecanus onocrotalus*, *Pernis apivorus*, *Phalacrocorax pygmeus*, *Philomachus pugnax*, *Picus canus*, *Platalea leucorodia*, *Plegadis falcinellus*, *Porzana parva*, *Recurvirostra avosetta*, *Riparia riparia*, *Sterna albifrons*, *Sterna hirundo*, *Sylvia nisoria*, *Tringa glareola*.

The field research consisted in: inventory of species and habitats, mapping of species and habitats distribution, inventory and mapping the distribution of pressures and threats on species and habitats of community interest. For a more efficient visualization and analysis of the process of data collection in the field, respectively of the areas covered by the experts, the period in which the data collection activities was carried out was divided into four semesters. For the determination of plant and animal species, specialized determinants and reference works were used (CIOCÂRLAN, 2000; OLTEAN, 1994; PAPP, FÂNTÂNĂ, 2008; PETRESCU, 2007; POPOVICI *et alii*, 1984; PRODAN, 1935; SANDA, ARCUȘ, 1999; SĂVULESCU, 1976; TÖRÖK, 1998).

Following the completion of the data collection stage, the distribution maps of the species and habitats, the pressure and threat maps, the impact assessment, the conservation status of the species and habitats, as well as the establishment of management measures and monitoring protocols were prepared. In parallel with the collection of data from the field, the data collected were integrated into the geospatial database.

## Results and discussion

**1. Mammals.** Within the ROSCI0012 Brațul Măcin, all the species recorded on the standard form were found, namely the European ground squirrel, *Spermophilus citellus* Eurasian otter, *Lutra lutra* steppe polecat, *Mustela eversmannii* and European badger *Meles meles*. The European ground squirrel identified in the steppe habitats within the site, located on the slopes, but also on the Danube dams. Corroborating the data collected for habitats with those collected for mammal species, it can be said that the poplar was found predominantly in the priority habitat 62C0\* Ponto-Sarmatic steppe meadows.

The species *Mustela eversmannii* also identified in the field, at the same type of habitat, but according to the data we have at present, the potential distribution of this species is much narrower than that of the species *Spermophilus citellus*. In frame of the Traian Lake Nature Reserve, it was identified European ground squirrel *Spermophilus citellus*. As in ROSCI0012 Brațul Măcin, the species is present on the slopes covered by ponto-sarmatic steppe meadows. Eurasian otter *Lutra lutra*, was identified along the banks of the Brațul Măcin by plantar traces and by food debris.

The conservation status of the mammal species was evaluated as follows: unfavorable-inadequate for the glass species, unfavorable – bad for the European ground squirrel and favorable for the European badger *Meles meles*. Intensive grazing with sheep and stray dogs are the main threats to these species.

**2. Amphibians and reptiles.** Within the ROSCI0012 Brațul Măcin the red-bellied toad *Bombina bombina*, Danube crested newt *Triturus dobrogicus* were identified; the European pond turtle *Emys orbicularis* mainly, in the temporary aquatic habitats along the Brațul Măcin.

The spur-thighed tortoise *Testudo graeca* was identified in the dry habitats within the site. The status of conservation of the species was assessed as follows: favorable - good for *Testudo graeca*, favorable for the pond turtle and the red-bellied toad and unfavorable-unsuitable for the Danube crested newt.

**3. Fish. Within the ROSCI0012 Brațul Măcin, all the species of ichthiofauna, indicated in the standard SCI formular were identified:** grig *Cobitis taenia*, European weather loach *Misgurnus fossilis*, sabrefish *Pelecus cultratus*, European bitterling *Rhodeus sericeus amarus*, asp *Aspius aspius*, Kessler's gudgeon *Gobio kessleri*, Black Sea shad *Alosa tanaica*, striped ruffe *Gymnocephalus schraetzer*, golden loach *Sabanejewia aurata*, streber *Zingel streber*, and zingel *Zingel zingel*.

Due to the prohibition period, which lasted until June, the field activities were very difficult to achieve, but 17 data sampling stations were established, in which the diversity of ichthiofauna was evaluated under the conditions allowed by law. The conservation status of the fish species was assessed as follows: favorable for asp, bitterling and grig, and for the other eight species unfavorable.

**4. Plants.** Within the ROSCI0012 the Brațul Măcin has not been identified so far the species *Marsillea quadrifolia*, the last reports date from 1975. During the field stage, the potential habitats of the species were investigated, especially in the area where it was indicated in the standard form, respectively the area of Iglița Lake, but also the areas with shallow waters and slow flow regime along the Brațul Măcin. Considering the situation in the field, at the present moment we estimate the presence of species at the site level as being uncertain, but this is not the final decision, because the potential habitats of the species are to be investigated.

In the Traian Lake Nature Reserve was inventoried a well represented population of *Echinops ritro* subsp. *ruthenicus* in the steppe meadows, on the south side of the lake. However, we can say that the situation of the species is much better in the meadows outside the reserve, especially in the areas adjacent to the southern meadows in the reserve, in which the species are less affected by grazing but also by landslides. In the meadows of the reserve, the



species has a random distribution, but most individuals are located near the meadows outside the site, which probably also support the population of *Echinops ritro* subsp. *ruthenicus* from the reserve. The conservation status of the species was evaluated as unfavorable-inadequate.

## 5. Habitats

### The habitats identified in ROSCI 0012 Brațul Măcin site:

- ✓ 3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* sp.;
- ✓ 3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* type vegetation;
- ✓ 3160 Natural dystrophic lakes and ponds;
- ✓ 3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation;
- ✓ 3270 Rivers with muddy banks with *Chenopodium rubri* p.p. and *Bidention* p.p. vegetation;
- ✓ 62C0\* Ponto-Sarmatic steppe meadows;
- ✓ 92A0 *Salix alba* and *Populus alba* galleries (Figure 3).



Figure 3. 92A0 *Salix alba* and *Populus alba* galleries (source: EPA Tulcea Archive)  
Fig. 3. 92A0 Galerii de *Salix alba* și *Populus alba* (sursa: arhiva APM Tulcea)



**The habitats identified within the Traian Lake Nature Reserve:**

- 3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* type vegetation;
- 3160 Natural dystrophic lakes and ponds;
- 62C0\* Ponto-Sarmatic steppe meadows;
- R5305 Danubian vegetation with *Typha angustifolia* and *Typha latifolia*;
- R5309 Danubian vegetation with *Phragmites australis* and *Schoenoplectus lacustris*.

It had to note that there are differences between the habitats identified in the field and those found in the standard booking form. Thus, three of the habitats mentioned in the file were not found in the field (6430, 6510 and 6440), instead two new habitats (3150 and 3160) were identified. The Ponto-Sarmatic steppe meadows (62C0\*) extend on the slopes of loess, on the plateaux used as permanent pastures and on the rocky promontories of the Brațul Măcin. The best-preserved portions were identified in the area of Piatra, on the cliff of the Brațul Măcin, but also in some grassland enclaves remaining among the arable crops between Turcoaia and Carcaliu. The state of conservation of habitats was evaluated as follows: unfavorable-inadequate for 3140 and 3130, unfavorable-bad for 62C0\* and 92A0\*, favorable conservation status for 3270, 3150 and 3160.

**6. Birds.** The bird species that were identified within the ROSPA0040 Dunărea Veche-Brațul Măcin, as well as on the territory of the Traian Lake Nature Reserve, revealed some differences from the standard formular of the nature reserve.

Species not identified in the Natura 2000 site ROSPA0040 Dunărea Veche-Brațul Măcin were: *Acrocephalus melanopogon*, *Branta ruficollis*, *Bubo bubo*, *Circus pygargus*, *Ficedula albicollis*, *Ficedula parva*, *Milvus migrans*, *Oenanthe pleschanka* and *Sterna albifrons*. Reasons for which they were not identified: fluctuations in the population densities of the source habitats (Măcin Mountains and the Danube Delta), irregular periods of passage, changing places of autumn wheat culture (for *Branta ruficollis* species).

Species of the birds not identified in the Traian Lake Nature Reserve were: *Troglodytes troglodytes*, *Alauda arvensis*, *Miliaria calandra*, *Oriolus oriolus*, *Calidris minutia*, *Charadrius dubius*, *Cygnus cygnus* and *Falco columbarius*. Reasons why they were not identified: lack of typical habitat and irregular periods of passage. The conservation status is favorable for all identified bird species, the habitats of these species being well represented as surface and in good conservation status point of view.

Based on the results of the biodiversity studies and following the assessment of the conservation status, appropriate conservation measures will be proposed which will be subject to public consultation and then included in the integrated management plan.

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