THE MINISTRY OF ENVIRONMENT AND FORESTS
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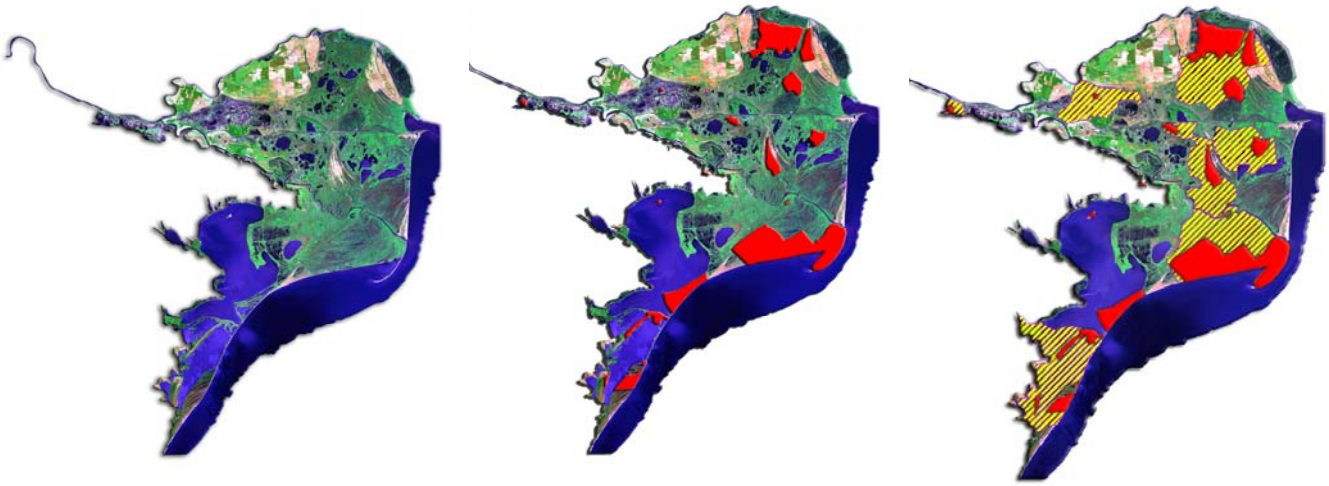
TULCEA



"Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve"

Contract of services no. 2489 of 05.02.2010 (I.N.C.D.D.D. no. 413 / 2010)

Acquirer: Danube Delta Biosphere Reserve Authority

November 2010

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The name of the phase I:

Evaluation of the current ecological status of the wild species and natural habitats of conservative interest from DDBR and the analysis of trends for 1990-2008.

The objectives of the phase I:

1. Analyse the trend of the wild species and natural habitats of conservative interest from DDBR in 1990-2008 period.
2. Evaluation of the current ecological status of the wild species and natural habitats of conservative interest from DDBR.
3. Assessment of criteria selection for conservative interest key-elemments (wild species and natural habitats) from DDBR

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PROJECT MANAGER: Doroşencu Alexandru_____

SUMMARY

The works within the Contract of services no. 2489 of 05.02.2010 (413 of 2010), entitled: **Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve,** financed by: **Danube Delta Biosphere Reserve Authority,** carry on under the auspices of the **SEE Programme 2007-2013 Danube River Network of Protected Areas – Development and Implementation of Transnational Strategies for the Conservation of the Natural Heritage at the Danube River.**

Phase I:

Evaluation of the current ecological status of the wild species and natural habitats of conservative interest from DDBR and the analysis of trends for 1990-2008.

The objectives of the phase I, which carrys on between 05.02.2010–15.11.2010, are as follows:

1. Analyse the trend of the wild species and natural habitats of conservative interest from DDBR in 1990-2008 period.
2. Evaluation of the current ecological status of the wild species and natural habitats of conservative interest from DDBR.
3. Assessment of criteria selection for conservative interest key-elemments (wild species and natural habitats) from DDBR

<u>The expected results</u> of the phase I are as follows:

1. The list of wild species and natural habitats of conservative interest from DDBR and their trend for 1990-2008.
2. The current ecological status of the wild species and natural habitats of conservative interest from DDBR.
3. Suite of criteria for the selection of conservative interest key-elemments (wild species and natural habitats) from DDBR and the list of the key-elemments.

In order to achive the goals of the contract, a project team with experience in different fields was nominated, as follows:

From DDNI the project team is :

Nr.	Name	Competence
1	DOROFTEI Mihai	Expert – vegetation
2	LUPU N. Gabriel	Expert – invertebrates
3	NĂSTASE Aurel	Expert – ihtiology
4	TÖRÖK Zsolt	Expert – herpetology&invertebrates
5	DOROŞENCU Alexandru	Expert - ornithology
6	BOZAGHIEVICI Raluca	translator
7	NICHIFOR Cristina	translator
8	MARINOV Mihai	Expert –ornithology& mamals

1. ITRODUCTION

The Danube, the second-largest river of Europe, discharges into the Black Sea on the border of Romania and Ukraine in a characteristic delta area, which up until the present day has maintained much of its original natural features. In order to preserve these unique ecological values, most of its territory has been assigned the status of an international Biosphere Reserve stretching out over the two countries and covering some 580,000 ha.

The delta is formed by three main branches. The highest discharges (over 10000 m3/s) generally occur in spring, the lowest (2200-3000 m3/s) in autumn (Oosterberg *et al.* 2000, Hanganu *et al.* 2002). The mean annual discharge (c. 7000 m3/s) throughout the years is remarkably constant. The sediment load of Danube water has decreased dramatically during the 20th century, down from approximately 67.5 million tonnes per year in 1920-1960 to a mere 29.2 million tonnes per year in 1980-1990. This decrease is largely due to the sharp increase in reservoirs and dams upstream. The delta area itself consists of a virtually perfect triangle, enclosed by the outer two branches (Chilia in the north and Sfîntu Gheorghe in the south). This triangle is composed almost entirely of a virtually untouched wetland area with lots of smaller and larger freshwater bodies interspersed with vast reed beds, woodland and shrubs (Hanganu *et al.* 2002). In the northwest, a large part (Sireasa&Pardina) has been reclaimed for agricultural use as late as the 1970s and other human influences include the digging of canals for shipping and the existence of artificial fishponds. Many of those fishponds are not in use any longer.

The highest density and diversity in smaller and larger water bodies is found in the central and northern parts of the delta, particularly between the central branch (Sulina) and the northern Chilia branch and just south of the Sulina branch . Some sandy outcrops of marine origin occur in the easternmost part of the delta. Further south two large former lagoons are situated, lakes Razim and Sinoe, which have been separated from the Black Sea and have since become mainly fresh.

Since the Danube Delta Biosphere Reserve (from now on DDBR) was found, a continuous succession of research, survey and monitoring programs directed at hydrology, geomorphology, biology and ecology of the large and relatively unspoiled European wetland area of the Danube Delta were developed.

Owing to all those studies, a lot of information has become available about various important features that can be used to characterise terrestrial and aquatic habitat

types of the entire DDBR and better understanding of the status of the wild species in this area.

This will prove particularly important, when it is realized that for many of the species involved (*e.g.* Meadow Viper, Dalmatian Pelican, Pygmy Cormorant, Glossy Ibis, Red-breasted Goose, European Mink) the Danube Delta holds the most important population on a European or even a worldwide scale.

Even so, ecological restoration measures are considered in order to recall some areas to their natural wetland habitats, flora and fauna.

Nowadays we have enough information and experience that in the first phase of this project to try to shed more light on the current ecological status of the wild species and natural habitats of conservative interest from DDBR and the assessment of their trends for 1990-2008 period.

2. MATERIAL AND METHODS

Data regarding flora, fauna and habitats of conservative interest from the DDBR perimeter, resulted in previous research, survey and monitoring programs developed by Danube Delta National Institute for Research and Development (from now on DDNI), Danube Delta Biosphere Reserve Authority (from now on DDBRA), etc. were used in this assessment work. Also scientific publications related to these topics were consulted in the attempt of having a complete image of the trend and Current ecological status of flora, fauna and habitats of conservative interest from the DDBR perimeter.

Beside this, extensive field work has been carried out during this spring and summer to complete the information about the current ecological status of the species and habitats of conservative interest.

Due to the large surface to be surveyed, the remote sensing was used for mapping the habitats of conservative interest from DDBR. As a base for this, we have used the Vegetation map of Danube Delta Biosphere Reserve published by Hanganu *et al.* (1994 resp.2002).

The floristic associations and the vegetation types found in the perimeter of the DDBR were put into correspondence to Natura 2000 habitat classification.

During the field visits, vegetation data were gathered in releves. The data concerned the floristic composition and the vegetation structure, applying Braun-Blanquet estimates.

Fieldwork mainly consisted in trying to localize and assess the population size for: birds(briding sites and colonies for colonial birds),distribution of plant, invertebrate, fish, reptile, amphibian and mammal species in DDBR.

Most of the surveys were done from small and slim motorboats with a draught of about 20 cm or even by canoe. With this type of boats it proved to be possible to access many of the areas of interest, in order to make assessments on species and habitats of conservative interest (Photo 1).

Photo 1 Type of boats used during fieldwork in the Delta wetlands

For sampling most of the insect species, the entomological net have been used. For the nocturnal sampling, light traps have been used in different habitats from DDBR. The aquatic invertebrates were sampled with bodengreifer from sediments and by carrying the hydrobiological net across the channel bank vegetation.

The assessment of fish population was usually done using two complementary sampling methods: electric fishing (DEKA 7000 W electrofisher) and guillnet fishing. In Razim-Sinoe Complex the sampling was done also with seine nets. Larvae of Pontic Shad were sampled using a single conical shaped net (Bongo net), of 0.5 m in diameter, 1.35 m length, 0.4 m for cod end length with 0.5 mm bar mesh size.

The survey and monitoring of reptile and amphibian populations have been carried on by direct observation of individuals along transects or squares in different habitat types.

Direct observation of individuals along transects or squares in different habitat types have been used also for the numerical evaluations of the most bird species.

Kryptic species of birds like Bittern and Crakes were evaluated using recorded calls that were played in the evening and at dawn in favourable habitats for those species.

The accessable bird colony sites were visited by boat or by land and the number of individuals per breeding species was evaluated.

As a reference for a better assessment of bird colony sites, we benefit of the data acquired through aerial surveys that were carried out on 3 days during the two breeding seasons of 2001 (8 June) and 2002(13 May, 6 June) (Platteeuw M. *et al*.2004)

The survey and monitoring of mammal populations have been carried on by direct observation of individuals along transects in different habitat types. Indirect evidence, like excrements, footprints and different territorial marks helped us to have better assessment of the conservative interest mammal species in DDBR.
Important information for the assessment of the population trend and ecological status (threat status) of the elusive mammal species like the European Mink, were produced using selective traps(Photo 2).

Photo 2 Selective trap for European Mink (photo by Marinov Mihai)

3. ANALYSE THE TREND OF THE WILD SPECIES AND NATURAL HABITATS OF CONSERVATIVE INTEREST FROM DDBR IN 1990-2008 PERIOD.

In DDBR, 167 wild species and 26 natural habitats of conservative interest have been recorded until now.

The selection of species and habitats of conservative interest was based upon present Romanian(OUG 57/2007 Annex 2&3) and European(Council Directives 92/43/CEE Annex 1&2 and 2009/147/CE Annex 1) legislation.

According to Council Directives 92/43/CEE Annex 1&2 and 2009/147/CE Annex 1 a number of 164 wild species and 26 natural habitats of conservative interest have been recorded in DDBR until now.

According to Romanian legislation (OUG 57/2007 Annex 2&3), 150 wild species and 26 natural habitats of conservative interest have been recorded in DDBR until now.

This difference is especially due to some accidental species of birds for Romania and DDBR and were rightly not included in the Romanian legislation(e.g. Great Flamingo-*Phoenicopterus roseus*, etc.)(Table1). Also are some misinterpretation of the European legislation like the presence in OUG 57/2007 Annex 3 of *Pelobates fuscus*. According to Council Directive 92/43/CEE, only the subspecies *Pelobates fuscus insubricus* is in the Annex 2. This subspecies is not present in Romania, we have only the nominate one, *Pelobates fuscus fuscus* which don't have a conservative interest.

From all 167 species of conservative interest we will present in this study the assessment for 147 species. In this way we excluded 20 species that are not relevant in this analysis:

-19 accidental bird species for DDBR(Table 1)

Table 1 List of wild bird species of conservation interest that accidentally occurs in DDBR and their European and Global threat status.

Nr crt	Species	OUG 57/2007	Birds Directive	BiE2 European Threat Status	Bern Convention	Bonn Convention	AEWA	CITES	2004 Global IUCN Red List Category	2010 Global IUCN Red List Category
1	*Gavia immer*	*3*	I	(S)	II	II	Yes			LC
2	*Phalacrocorax aristotelis*		I	(S)	II					LC
3	*Phoenicopterus roseus*		I	L	II	II	Yes	II		LC
4	*Branta leucopsis*		I	S	II	II	Yes		EN	LC
5	*Oxyura leucocephala*	*3*	I	VU	II	I; II	Yes	II		EN
6	*Milvus milvus*	*3*	I	D	II	II		II		NT
7	*Neophron percnopterus*	*3*	I	EN	II	II		II		EN
8	*Gyps fulvus*	*3*	I	S	II	II		II	NT	LC
9	*Aegypius monachus*	*3*	I	R	II	II		II		NT
10	*Aquila chrysaetos*	*3*	I	R	II	II		II		LC
11	*Falco eleonorae*		I	D	II	II		II	NT	LC
12	*Tetrax tetrax*		I	VU	II			II	VU	NT
13	*Otis tarda*	*3*		VU	II	II		II		VU
14	*Vanellus spinosus*		I	VU	II	II	Yes			LC
15	*Limosa lapponica*		I; II/2	(S)	III	II	Yes			LC
16	*Xenus cinereus*		I	(S)	II	II	Yes			LC
17	*Sterna paradisaea*		I	(S)	II	II	Yes			LC
18	*Sylvia rueppelli*		I	(S)	II	II				LC
19	*Lanius isabellinus*		I	(D)	II				LC	

- 1 invertebrate species that was erroneous recorded for this area.

Catopta thrips –was erroneous included in the DDBR enthomofauna in the past, because the recorded specimen was in Babadag Forest (Visterna area - outside DDBR perimeter).

3.1.Habitats

In DDBR 26 habitats of conservative interest have been recorded. The trend for those habitats in DDBR for 1990-2008 period is illustrated in Figure 1 and detailed in Annex 1.7

Two habiat types, registered a **Fluctuating** trend in DDBR for 1990-2008 period:

- 2110 - Embryonic shifting dunes;
- 1110 - Sandbanks which are slightly covered by sea water all the time

The surface or quality of these habitats registered fluctuations(-/+) in some years due to natural factors(sea currents, storms, drought, floods, etc.).

One habitat type, registered a **Decreasing** trend in DDBR for 1990-2008 period:

- 1150 - * Coastal lagoons

The quality and surface of this habitat registered an important decrease due to natural sedimentation of the Musura Bay. Because of intense sedimentation processes which led to almost complete barring of the bay, the salinity decrease very much due to reduced exchange to the sea. The characteristic vegetal associations for this habitat type suffered a continuous regression and now it can be found, only on the south-eastern part of the bay.

One habitat type, registered an **Increasing** trend in DDBR for 1990-2008 period:

- 3160 - Natural dystrophic lakes and ponds

The surface of this habitat registered an important increase due to the ecological reconstruction program that is still developing in DDBR.

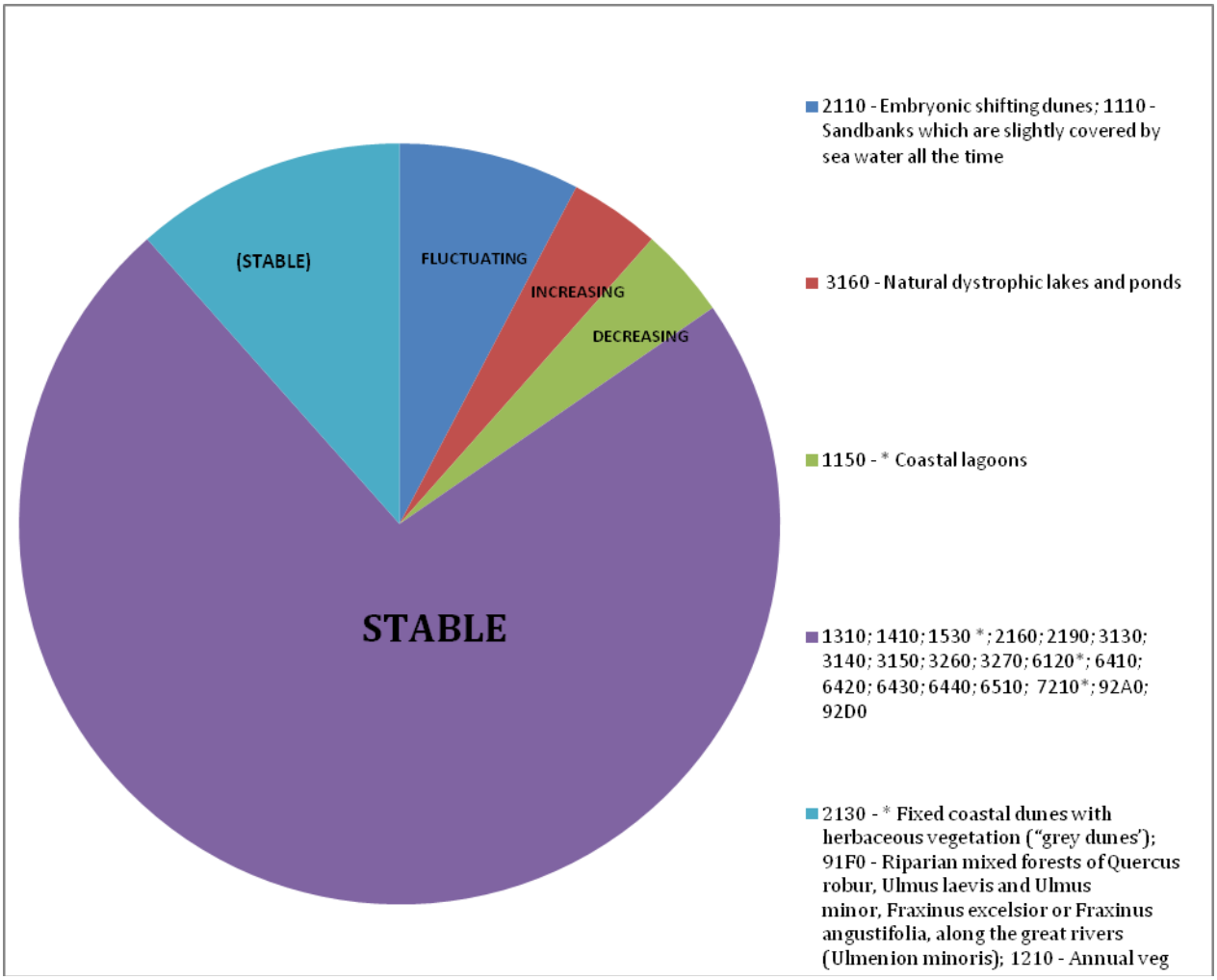

Figure 1: Trend of the conservative interest habitats in DDBR for 1990-2008 period

Fluctuating – Habitats register fluctuations(-/+) of surface/quality in some years.

Decreasing – Habiat registered a surface and/or quality decline during 1990-2008.

Increasing – Habitat registered a surface and/or quality increase during 1990-2008.

Stable – Habitat surface and quality is considered stable

(Stable) – Habitat surface and/or quality is still Stable but face the risk of a potential decline, or habitat surface and/or quality is recovering but is not already Stable.

For 19 habiat types, the trend in DDBR for 1990-2008 period was **Stable**. The surface and quality(vegetal associations composition) of those habitats was relative constant during this period.

Three habiat types, registered a **(Stable)** trend in DDBR for 1990-2008 period. The surface or quality(age ratio and vegetal association composition) of those habitats registered fluctuations and is possible if the pressure factors persist, the trend will change to Decrease.

The trend for the habitat type 1210 - Annual vegetation of drift lines is assess as (Stable) because the erosion vs deposit areas along the DDBR Black Sea shore is the main factor that influence the distribution and surface of this habitat. In some areas, due sea shore erosion, the habitat was lost and is still shrinking but in some other areas, this type of habitat continuously colonize new emerging deposits (Figure 2).

The habitat type 2130 - * Fixed coastal dunes with herbaceous vegetation ("grey dunes") is highly connected to the previous habitat type. On the seashore areas the "grey dunes" appear as a natural next-stage, in the vegetal profile of natural plant succession.

Because of the erosion process of the Black Sea shore, in some areas this habitat is shrinking(Figure 2). Even so, the trend for this type of habitat is still (Stable) because along the DDBR - Black Sea shore, are also sedimentation areas (Musura Island, Sulina beach, southern part of Sacalin Island) where due to natural succession of vegetation the "grey dunes" continuously appear.

Also the erosion determined by large herbivorous mammals (cattles and horses), especially in Letea and Caraorman areas is one of the threats.

Another risk for this type of habitat, is the antropic pressure where some development projects overlap this habitats.

For the Habitat type 91F0 - Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*) due to large herbivorous mammals (cattles and horses) especially in Letea Forest, the natural regeneration of this habitat type is threaten. On short and medium term, the decrease of the surface is not visible(is a forest type habitat), but the constant decrease of the number of young trees is an important quality indicator. On long term this habitat type will decrease, if the preasure induced by the large herbivorous mammals (cattles and horses) will not be controlled.

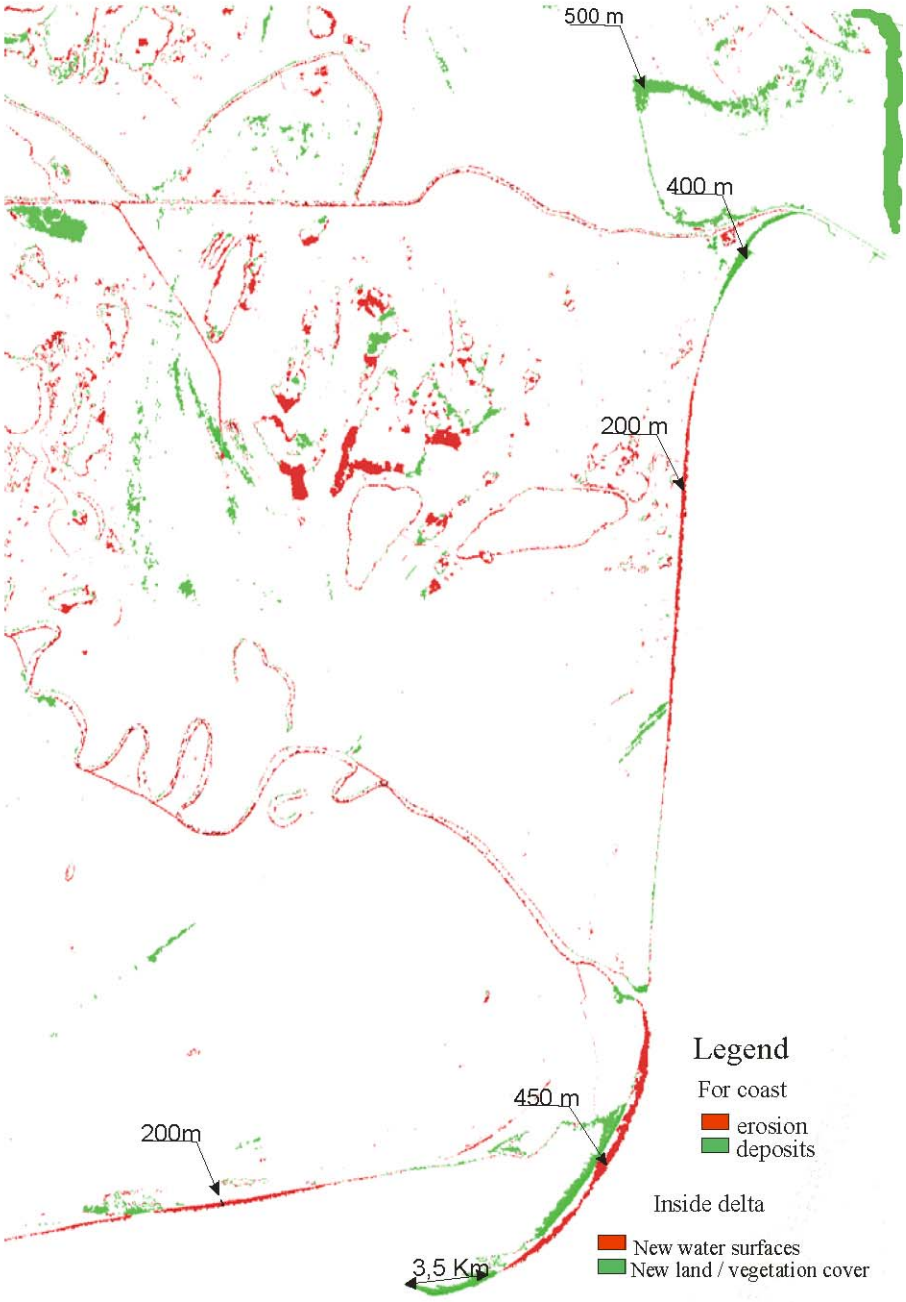

Figure 2 Depozit and erosion areas in DDBR (Dr. ing. I. Grigoras)

3.2.Plant Species

Seven conservative interest species of plant have been recorded in DDBR. The trend of those species in 1990-2008 period for DDBR is illustrated in **Figure 3 and Annex 1.1.**

A special case is represented by two species: *Liparis loeselii* and *Caldesia parnassifolia.*

Liparis loeselii have two records for DDBR:
-Kanitz, 1881 – Danube Delta, with no other details about a precise location.
-Rudescu, 1965 – near by loc. Sf. Gheorghe.
No other recent record for this species in DDBR is available.

Caldesia parnassifolia have one record for DDBR:
-Țopa, 1966 – Danube Delta, with no other details about a precise location.
No other recent record for this species in DDBR is available.
We can not assessed the trend for those two species, for 1990-2008 period because is No Record.Those three species might be already Extinct for DDBR.
The trend for 4 of the conservative interest species of plants was assessed as Stable.
Their populations registered only small fluctuations which are natural.
For *Marsilea quadrifolia* we considered the trend for 1990-2008 as Small Increase. The surface inhabited by this species in DDBR, have increased.

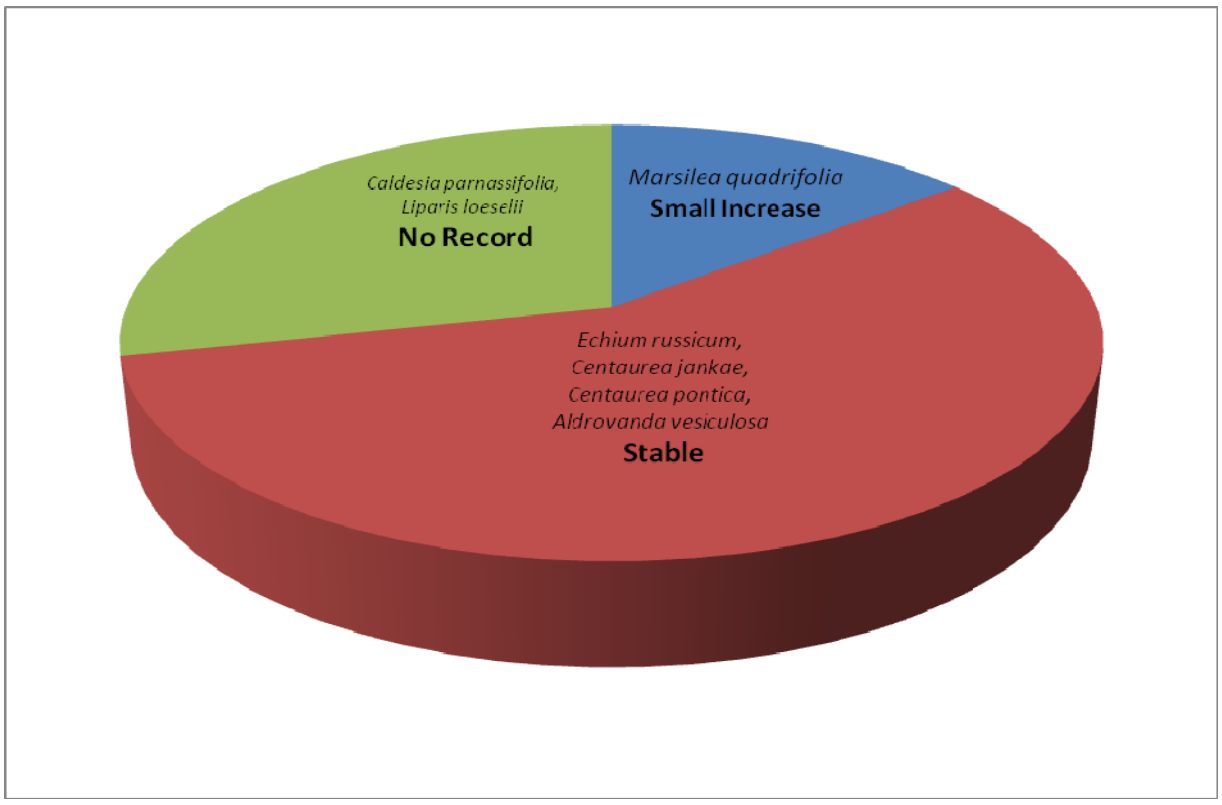

Figure 3: Trend of the conservative interest plant species in DDBR for 1990-2008 period

3.3. Invertebrate Species

In DDBR 12 conservative interest species of invertebrates have been recorded. The trend of those species in 1990-2008 period for DDBR is illustrated in **Figure 4 and Annex 1.2** Before 1990 , nine species of conservative interest invertebrate species, were recorded in DDBR. During all the recent surveys those species were not recorded anymore. In this situation we can't give a trend for 1990-2008, so those species are in the No Record category.
The trend for 3 of the conservative interest species of invertebrates in 1990-2008 period was assessed as Stable.

Anisus vorticulus – The most recent records of this species in DDBR ware on Sulina Chanel, Rosca and Belciug Lakes.

Lycaena dispar – This species is present in all DDBR in favourable habitats, but everywhere in small number of individuals.

Unio crassus - Recent records of this species in DDBR were on Chilia Chanel (close to Periprava) and Babina Lake.

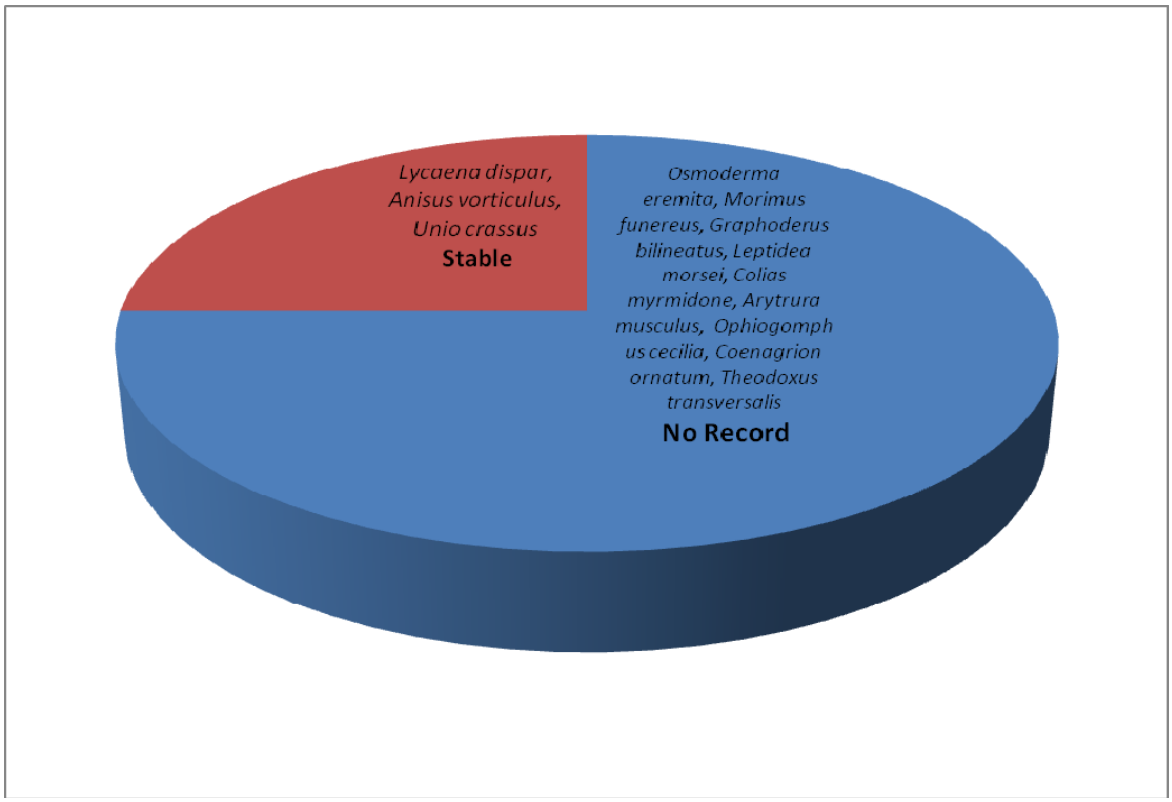

Figure 4: Trend of the conservative interest invertebrate species in DDBR for 1990-2008 period

3.4. Fish Species

In DDBR 17 conservative interest species of fish have been recorded.
The trend of those species in 1990-2008 period for DDBR is illustrated in **Figure 5 and Annex 1.3**

Three of those species have only one record from 1990-2008 period in DDBR.

Eudontomyzon marie – the only record of this species in DDBR is based on the capture of two juvenile individuals in 1998 close to Tulcea (DDBR).

Chalcalburnus chalcoides – the only relative recent record of this species in DDBR is based on the capture of two individuals in 1997 at the western DDBR border (Cotul Pisicii). All the other records are before 1964.

Gobio kessleri kessleri/antipai - the only record of this species in DDBR between 1990 and 2008 is based on the capture of one individual on Sulina Channel. In the past the subspecies *antipai* was recorded on all three branches of the Danube.

Alosa tanaica – In DDBR this species is relatively frequent in marine area. In some years, during migration, the species appear in large number in Razim-Sinoie Complex, Danube branches and some lakes. Large populational fluctuations are recorded during some years and seoasons. This is a commercial species. Even if are many records of the species in the area, we don't have real quantitative assessments for the DDBR distribution range.

For all these species we can't assess the evolution of the population trend for 1990-2008, because of Insuficient Data.

The trend for 1990-2008 for 1 species was assessed as Fluctuating:
Alosa immaculata – In DDBR this species is prezent in all marine area and during the reproduction stage, the adults migrate upstream along the main arms of the Danube and sometime isolated individuals in Razim-Sinoie area.This is an important commercial species. The population of this species have large natural fluctuations.

Populational trend for 1990-2008 for 1 species was assessed as Declining.

Umbra krameri –Because of the high incidence of algal blooming in the second half of the 80's, the favorable habitats for this species have been deteriorated. As a consequence of this phenomenon, the DDBR population of this fish species declined. The declining for this species was registered also in 90's.

DDBR population of *Plecus cultratus* registered an Increasing trend during 1990-2008 (Figure 5, Annex 1.3).

The trend for the population of 10 species of conservative interest from DDBR was assessed as Stable (Figure 5)

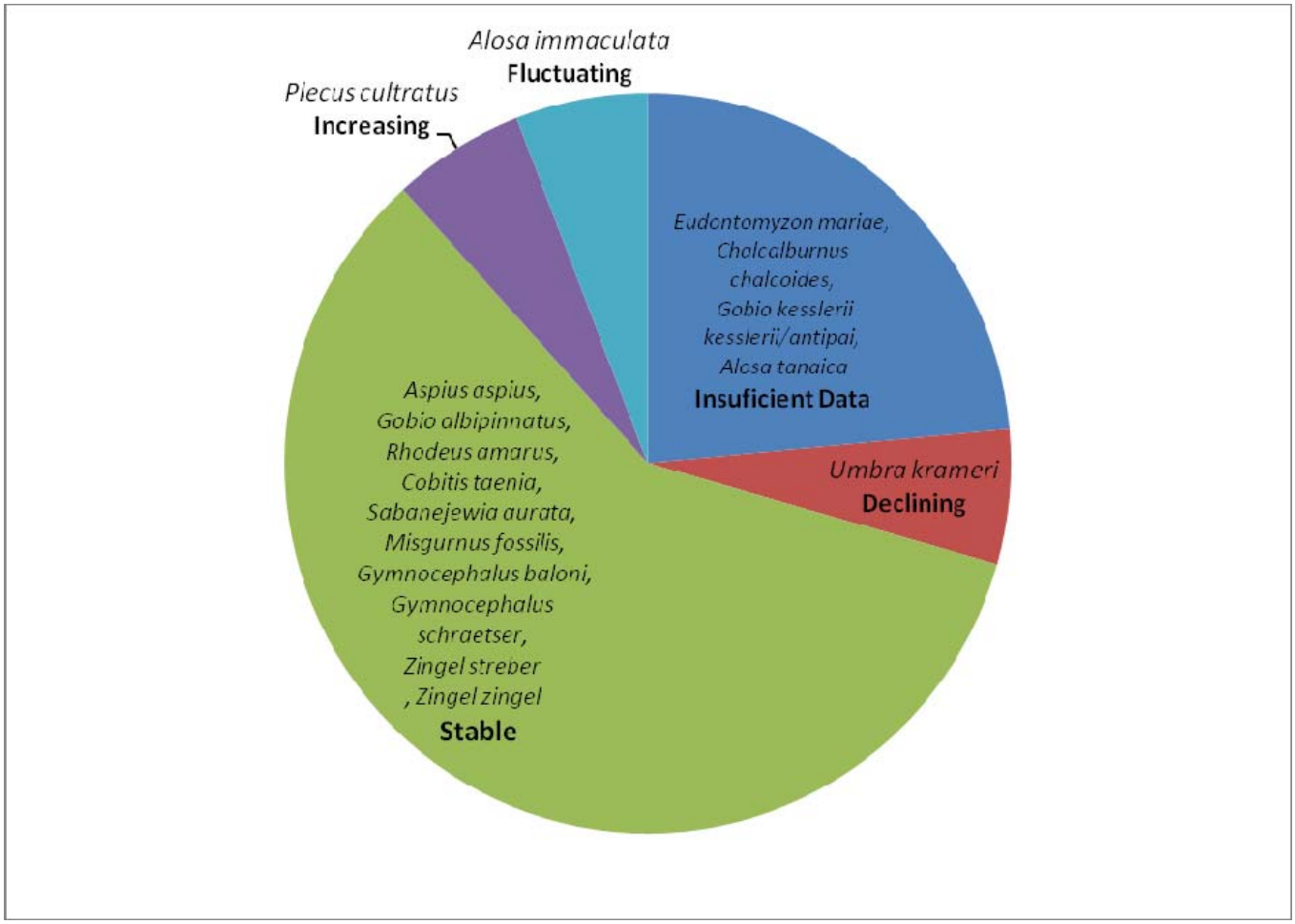

Figure 5: Trend of the conservative interest fish species in DDBR for 1990-2008 period

3.5. Reptile&Amphibian Species

In DDBR 6 conservative interest species of reptile&amphibians have been recorded.

All three conservative interest amphibian species(according to Romanian and European legislation), have a wide distribution in DDBR, and are frequent in their characteristic habitats. The trend for the conservative interest amphibian species during 1990-2008 period is assessed as Stable.

Even if according to Council Directive 92/43/CEE, only the subspecies *Pelobates fuscus insubricus* is in the Annex 2, in the current Romanian legislation (OUG 57/2007)the *Pelobates fuscus (Pelobates fuscus fuscus* for Romania and DDBR) is in the Annex 3.This is a misinterpretation of the European legislation but until the legislative correction will appear, this species have a special conservative status. In DDBR the species is frequent in the favourable habitats.

Bombina bombina is a frequent species in all the DDBR, stagnant, shallow, well vegetated, fresh water wetland areas.

Triturus dobrogicus is a frequent species in all the DDBR well vegetated, fresh water wetland areas.

Emys orbicularis have a wide distribution in DDBR, and is frequent in characteristic habitats. The trend for this reptile species during 1990-2008 period is assessed as Stable.

Testudo graeca is a characteristic continental species and is usually recorded at the edge of the DDBR. A relatively small population inhabit the dunes from Istria, Saele and Vadu area. The trend for this reptile species during 1990-2008 period is assessed as Stable.

Vipera ursinii can be found in three sites from DDBR:

- Grindul Letea – a very small population with sporadic individuals in Cardon dunes area.
- Sf. Gheorghe area – relatively small population, concentrated around the plantation from the northern part of the village.
- Grindul Periteasca-Perisor – this is the stronghold of the DDBR *V.ursinii* population.

The trend for the entire population of *V.ursinii* from DDBR during 1990-2008 period is assessed as Stable.

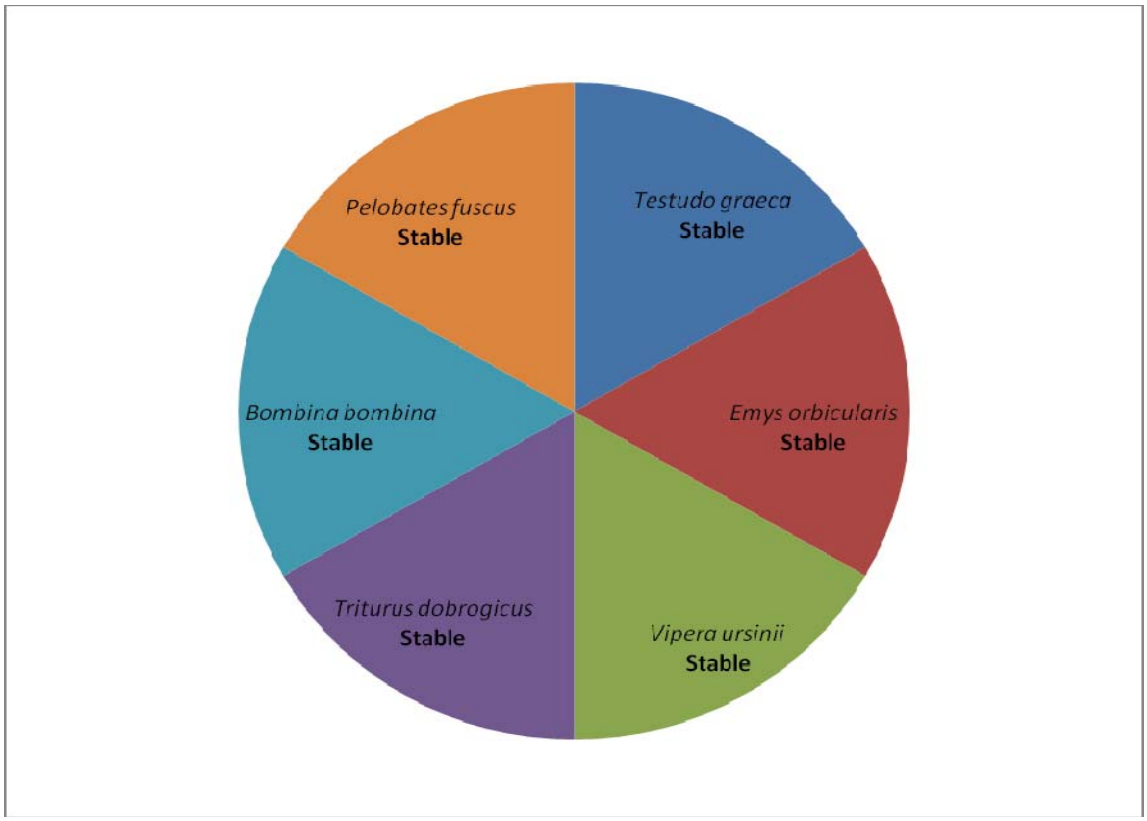

Figure 6: Trend of the conservative interest reptile&amphibian species in DDBR for 1990-2008 period

3.6 Bird Species

Breeding and Migrating Bird population trend in DDBR during 1990-2008

The assessment for breeding and migratory population trends were realized for 84 bird species(Figura 5 şi Anexa 1.3).
A Stable trend was assessed for the breeding and migratory population of 34 species in DDBR. Those are the species for which we regularly recorded a relative constant number of breeding pairs or individuals during migration in DDBR.

The trend for the breeding and migratory population of 15 species was assessed as Fluctuating. The fluctuations of the breeding or migratory populations for those species are due to natural factors (water level fluctuations, weather conditions, species biology, etc).

The breeding and migratory population trend for 3 species was assessed as Small Decline in DDBR.

Despite the frequently recorded specimens all over the DDBR during breeding season, are only few breeding areas confirmed for *Ardea purpurea* in this area. In the last 10 years, we registered a small decline of the breeding population in those sites.
In the last years, due to natural expansion of *Charadrius dubius,* we observed a Small Decline of *Charadrius alexandrinus* breeding population in DDBR.
Smaller numbers of *Circaetus gallicus* were observed in migration over the DDBR.

The breeding and migratory population trend for 4 species was assessed as Moderate Decline.
The breeding population of *Ciconia ciconia* registered a constant decline in DDBR for 1990-2008.
The breeding population of *Glareola pratincola* in DDBR,decline in 1990-2008 especially due to desalination and "invasion" of tall vegetation in some of the important breeding sites.
Sterna albifrons is a rare breeding species in DDBR, that could be found along the Black Sea shore, breeding together with other Tern species. In 1990-2008 a slow but continuous decline of the breeding population was registered.
Beside the normal population fluctuations registered by all Marsh Tern species, *Chlidonias niger* registered a continuous decline in 1990-2008.
A Large decline trend was assessed for one species.
The last known breeding pair of *Falco cherrug* in DDBR was in 1989. Since then, no breeding was confirmed for this species in the area. In the last years we have several records of adult birds from breeding season, observed in or close to DDBR. Even if we already consider that now in DDBR, are more favorable breeding conditions for *Falco cherrug*, until the breeding is not confirmed, the trend remain as Large decline.

The breeding population trend for 7 species was assessed as Small Increase.
Six of those species breed in colonies*: Phalacrocorax pygmeus, Nycticorax nycticorax, Ardeola ralloides, Egretta garzetta, Plegadis falcinellus, Sterna sandvicensis* and due to interdiction of human persecution of ichthyophagous birds and their colonies in the Delta(a real decrease of the phenomenon was registered), for 1990-2008 their breeding population registered a Small Increase.
Dryocopus martius registered also a Small Increase in 1990-2008, being observed in more areas than before.
The breeding and migratory population trend for 7 species was assessed as Moderate Increase.
For *Mergus albellus* the breeding in DDBR was reconfirmed and the population registered a moderate increase.

For *Accipiter brevipes* and *Buteo rufinus* the breeding in DDBR and at the border of the reserve was confirmed in 2005-2008. During migration more individuals were observed too.
For *Lanius collurio* and *Lanius minor* the interdiction of pesticides in DDBR since 1990 determine a recovery of their populations from agricultural areas.
For *Larus minutus,* during migration, more individuals were observed in DDBR, this is due to a general increase of the European breeding population and also because the favourable (especially feeding and resting) conditions that Delta offers.
Falco peregrinus is a regular visitor of the Delta, in migration and winter. In the last years the number of recorded birds increased all over the DDBR. More than that, solitary individuals are observed even in breeding season.

The breeding population trend for 2 species was assessed as Large Increase.

Since 1990 the *Haliaeetus albicilla* breeding population registered a constant increase. From 7-10 breeding pairs in 1990 (Marinov M., 1990) to 20-25 breeding pairs in 2008, and the trend is increasing.
In the XIX century and the first half of XX century *Larus melanocephalus* used to breed in and around the Sinoie and Razim Lagoons(Dombrowski, R., 1912; Impe, J. Van, 1977). In the 80's the species disappeared as a breeding species from DDBR and the country(Zubakin, V.A., 1988; Munteanu, D., 2005). In 1991 the species reappeared as a breeding species to Sărături Lake close to Murighiol(Brehme, S., Muller, T., Redlich, J., 1992). Breeding was reconfirmed in the next two years (Ceico, T., Tănase, C., 1994). In 1994 the number of breeding pairs already jumped to 100 (Ceico, T., Tănase, C., 1994). And since that time the breeding population slowly increased but with some fluctuations.

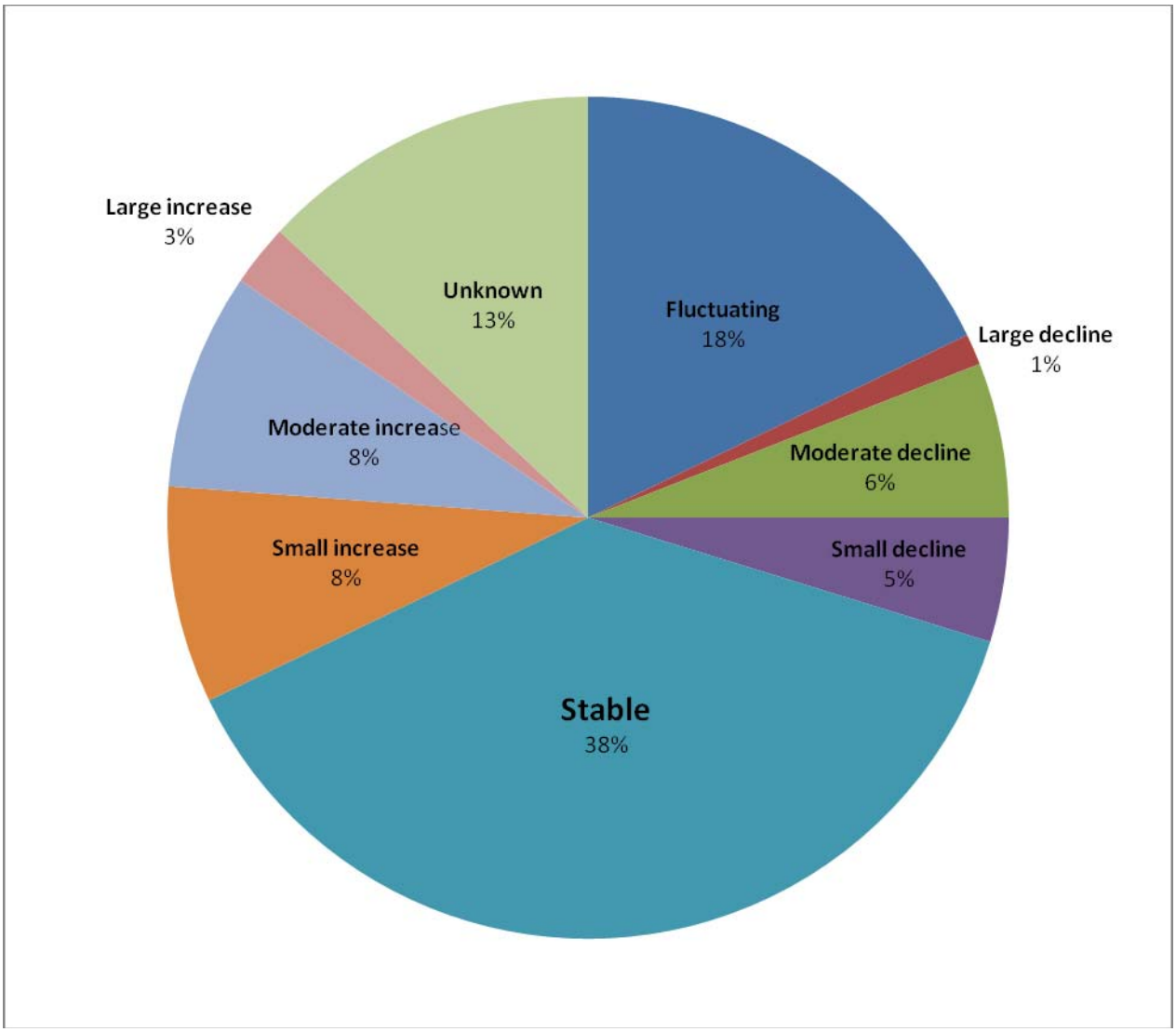

Figure 7: Trend of the conservative interest breeding and migrating bird species in DDBR for 1990-2008 period

Wintering Bird population trend in DDBR during 1990-2008

The assessment for wintering bird populations was realized for 25 species.

The wintering population trend for 6 species was assessed as Stable during 1990-2008. Those are the species for which we regularly recorded a relative constant number of individuals wintering in DDBR.((Figure 8 and Annex 1.5).

The trend for wintering population of five species was assessed as Fluctuating. The fluctuations of the wintering populations for those species are strongly related to weather conditions and to natural breeding success from each specific year. Usually in warm autumns larger numbers of *Pelecanus crispus, Botaurus stellaris, Nycticorax nycticorax* and *Aythya nyroca* remain for wintering in the area. On the other hand in cold autumns less numbers are recorded in winter time. For *Pluvialis apricaria*, the main factor is the breeding success in the breeding territories from the north.

Wintering population for two species have a 1990-2008 trend assessed as Small decline.

Mergus albellus, is a characteristic wintering species for DDBR, but in the last 10 years, average smaller numbers were recorded in winter time.

A small decline was registered by *Calidris alpina* wintering population in DDBR. This is a species that regularly appear during migration, but is also wintering in small number along the Black Sea shore and Lagoons. In the last years, a small decrease of the overall wintering population was registered for DDBR.

A Moderate decline trend for 1990-2008 was assessed for the wintering population of one species.

Melanocorypha calandra is a characteristic wintering species for Dobrogea, but congregate on the arable areas close to the Black Sea and Lagoons. Rarely can be observed inside the Delta.

In Chilia, Pardina and Sireasa arable areas the species was recorded in winter time, but in the last 10 years the number of individuals was smaller and the species was recorded only in Chilia area.

A Large decline trend for 1990-2008 was assessed for the wintering population of one species.

Since 1998, the population of *Branta ruficollis,* that used to wintering in DDBR, switched the grazing areas more to the west, along the Danube Valley and Bărăgan Plain. In the northern and central part of the DDBR this species is still present in winter time(smaller numbers), but the stronghold from the south registered a severe decline.

An Unknown trend for 1990-2008 was assessed for two wintering species.

Podiceps auritus and *Anser erythropus,* have small wintering populations in DDBR.

Those two species have only several records in DDBR. The records are rare and most of them uncertain. Special survey programs dedicated to those species may produce better quality data in the future.

A Moderate increase trend for 1990-2008 was assessed for the wintering population of three species.

Tadorna ferruginea registered a constant increase of wintering population in 1990-2005 and between 2006-2008 a relative stable number of individuals.

Aquila clanga and *Falco peregrinus* are regular visitors of DDBR in winter. Those species are rare but the number of individuals recorded in 1990-2008 was constantly increasing.

A Large increase trend for 1990-2008 was assessed for the wintering population of five species.

Three species (*Casmerodius albus, Cygnus cygnus* and *Haliaeetus albicilla*) registered an increasing wintering population in DDBR and all over Europe.

The wintering population of *Phalacrocorax pygmeus* registered a Large increase between 1990-2008. If in the past this speacies was a rarity in winter time, since the beginning of the 90s, more and more individuals remain in the Delta for wintering.

Despite the decline of the wintering populations in the Western Europe, since 2005 *Cygnus columbianus bewickii* is recorded in larger numbers then before, especially in the southern part of DDBR (5 individuals in 90s - up to 25 in 2008).

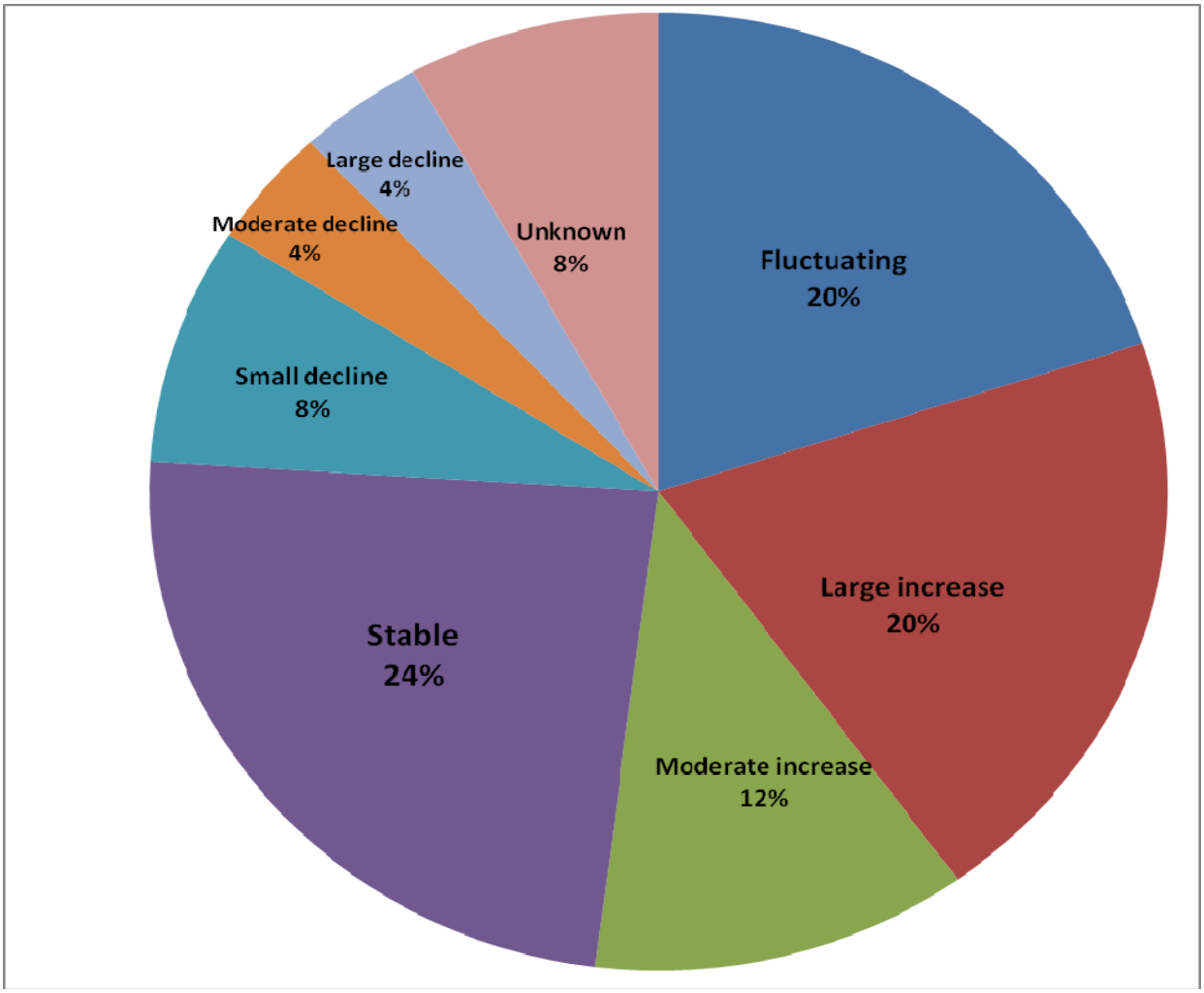

Figure 8: Trend of the conservative interest wintering bird species in DDBR for 1990-2008 period

3.7. Mammal Species

In DDBR, 9 conservative interest mammal species have been recorded.
Three species of mammals are characteristic for steppe areas and have about the same distribution range in, or along DDBR.
In the past *Vormela peregusna* and *Mustela eversmanni* have been recorded inside the Delta (Vasiliu, 1961-1969; Murariu, 1981- 1987; Otel, 2000). Recent data about the presence of those species in the Delta, are missing. Along the continental border of the DDBR, we have recent records that indicates a Stable population trend during 1990-2008 in this area.
Spermophilus citellus was not recorded inside the Delta, but is frequent along the continental limit of the Biosphere Reserve. The trend for this species during 1990-2008 along DDBR continental border was Stable.

The survey and research programs developed in the last decade in DDBR demonstrated a significant recovery of *Lutra lutra* and *Mustela lutreola* populations comparing to situation from the 80's and the begebing of 90's. The trend for the populations of these species during 1990-2008 in DDBR was assessed as Increasing.
Four species are in the Insuficient Data category.
Two are bat species and two are cetaceans.
The bat species were recorded in 2006 in Letea Forest (Ifrim I.&Pocora V., 2007).
For *Myotis bechsteinii* the reconfirmation is needed. The authors of this first recorded species for DDBR, present this new record as *Myotis bechsteinii*?, because the animal was recorded and identified by phonogram. The phonogram for this species is not 100% accurate, sometimes overlapping with some other bat species.
The other bat species, new recorded for DDBR was certainly *Barbastella barbastellus*. Even so the 2006 record is singular so we can't assess the trend for this species too.
For the cetacean species, even if we have data from different seasons about dead and alive individuals recorded along the DDBR eastern border, we don't have reliable information to assess a certain trend.

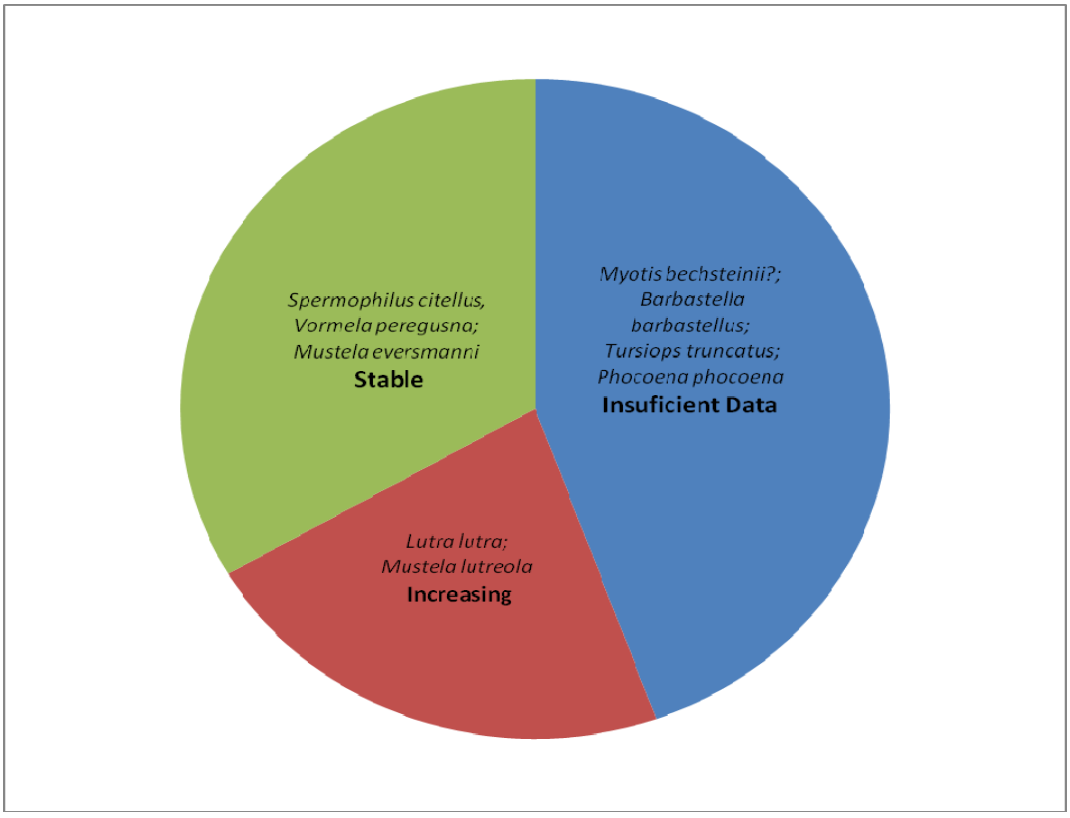

Figure 9: Trend of the conservative interest mammal species in DDBR for 1990-2008 period

4. EVALUATION OF THE CURRENT ECOLOGICAL STATUS OF THE WILD SPECIES AND NATURAL HABITATS OF CONSERVATIVE INTEREST FROM DDBR.

The evaluation of the current ecological status of the wild species and natural habitats of conservative interest in DDBR was assessed for 147 species and 26 habitats of conservative interest in DDBR. (Figure 10)

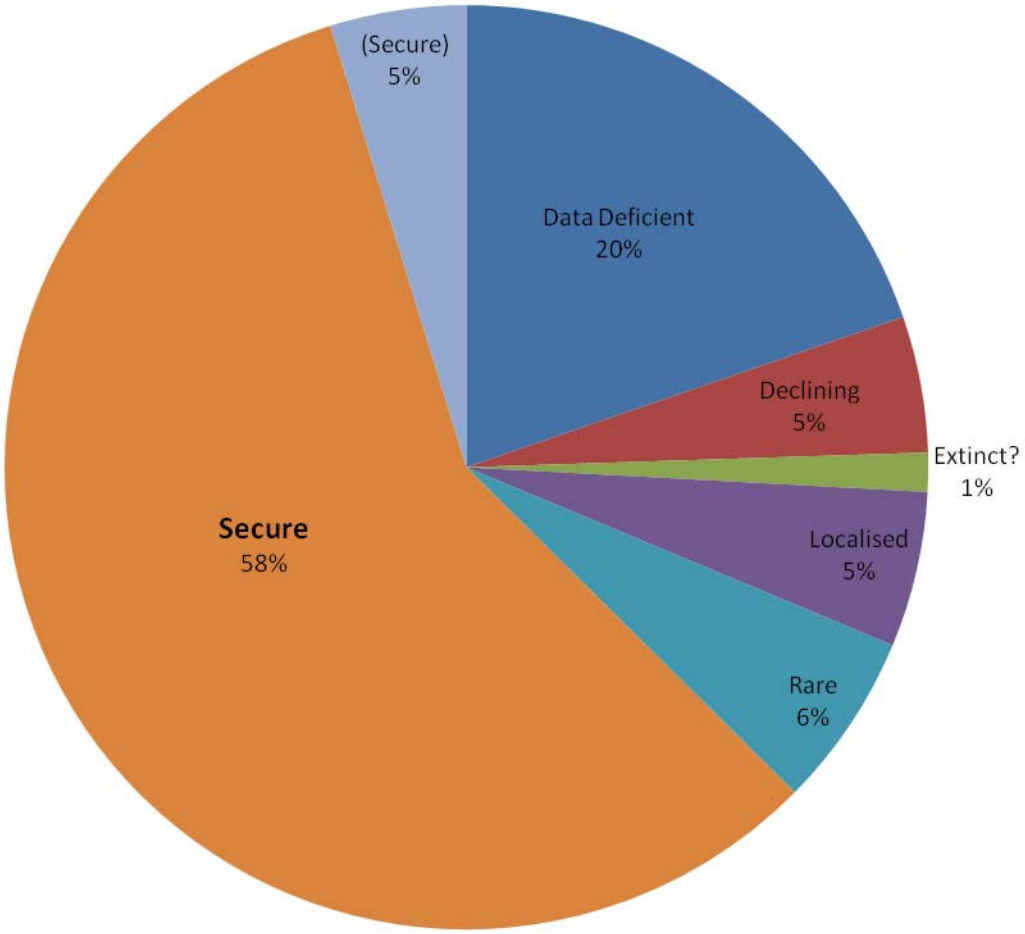

Figure 10: Current ecological status of conservative interest species in DDBR

Data Deficient – species for which there is inadequate information to make a direct or indirect assessment of its current ecological status; reliable data to

confirm the current Presence or Breeding (depending of taxonomic group) of the species in DDBR are not available.

Declining - species that are not yet Vulnerable or Endangered, but their population declined by more than 10% over 10 years.

Extinct? – species might be already extinct for DDBR

Localised – species that are heavily concentrated, with more than 90% of the DDBR populalion occurring in 5 or fewer relative small sites. Because their dependence on small number of sites renders them more susceptible to accelerated declines as a result of:

- large-scale population fluctuations and catastrophic chance events;
- existing or potential exploitation, persecution or disturbance by humans.

Rare – if the DDBR population is not Declining, but have a small size. Such species are more susceptible to accelerated declines as a result of:

- break-up of social structure;
- loss of genetic diversity
- large-scale population fluctuations and catastrophic chance events;
- existing or potential exploitation, persecution or disturbance by humans.

Secure – such species have a Favourable conservation status in DDBR

(Secure) - such species gain a Favourable conservation status in DDBR due to an increase or recovery of their population or they still have a Favourable conservation status but face the risk of a potential decline.

4.1.Plant Species

In DDBR 7 conservative interest species of plant have been recorded. The Current ecological status for those species in DDBR is illustrated in (Figure 11 and detailed in Annex 1.1)

Two of those species have no records in the last 50 years in DDBR. Because those species might be already extinct for DDBR the Current ecological status is assessed as Extinct?

Echium russicum is not a characteristic species for DDBR, but has been found at the edge of the Biosphere Reserve in small number of individuals above Dolosman and Iancina Cape. Because the size of the population (in DDBR) is small, the Current ecological status is assessed as Rare.
Four species are heavily concentrated in one or several areas in DDBR. The Current ecological status for those species is assessed as Localised

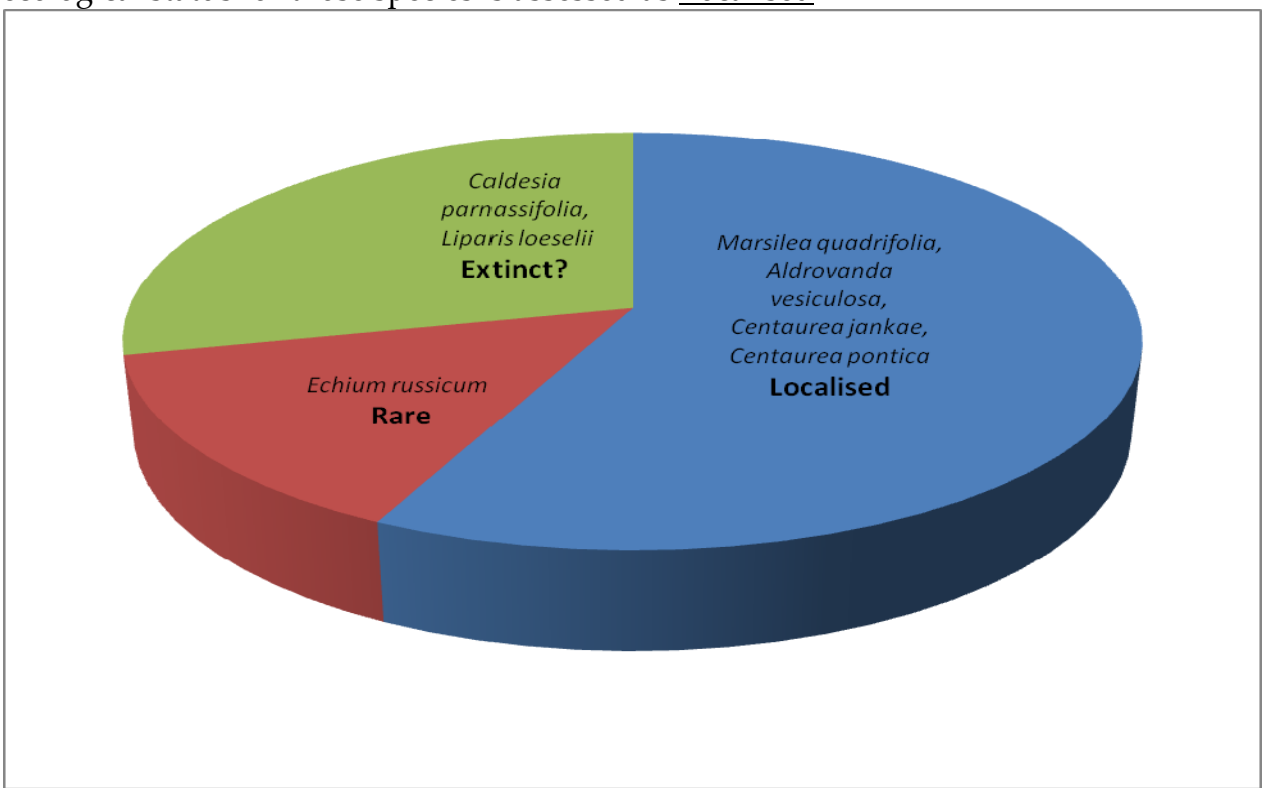

Figure 11: Current ecological status of conservative interest species of plants in DDBR

4.2. Invertebrate Species

In DDBR 12 conservative interest species of invertebrates have been recorded. The 13th species -*Catopta thrips* –was erroneous included in the DDBR enthomofauna in the Natura 2000 data form, because the recorded specimen was in Babadag Forest (outside DDBR perimeter).

For nine species all the records are before 1990 and all the recent surveys had no positive result for those.In this situation the Current ecological status for all those species is assessed as Data Deficient.

Three species have recent records in DDBR that allowed us to assess the Current ecological status as Secure (Figure 12 and detailed in Annex1.2)

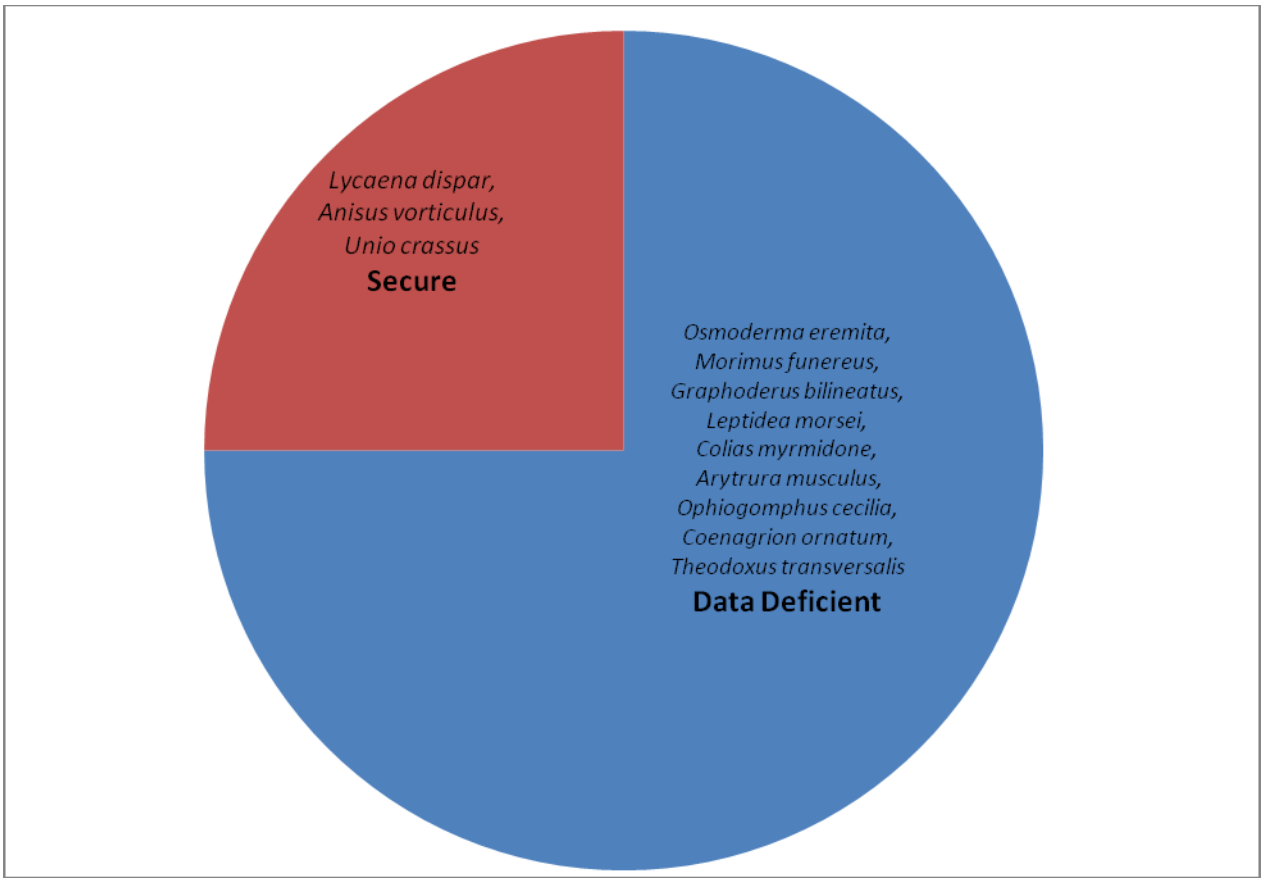

Figure 12: Current ecological status of conservative interest species of invertebrates in DDBR

4.3. Fish Species

In DDBR 17 conservative interest species of fish have been recorded.
Three of those species have only one record in DDBR since 1990. Recent surveys had no positive result for these three species. In this situation, we can't conclude if the species is extinct or just very rare, so they were included in Data Deficient category.
Also the *Alosa tanaica,* was included in Data Deficient category because the current ecological status can't be assessed.
The current ecological status for 13 species that registered an Increasing or Stable trend of their population was assessed as Secure in DDBR.(Figure 13 and detailed in Annex1.3)

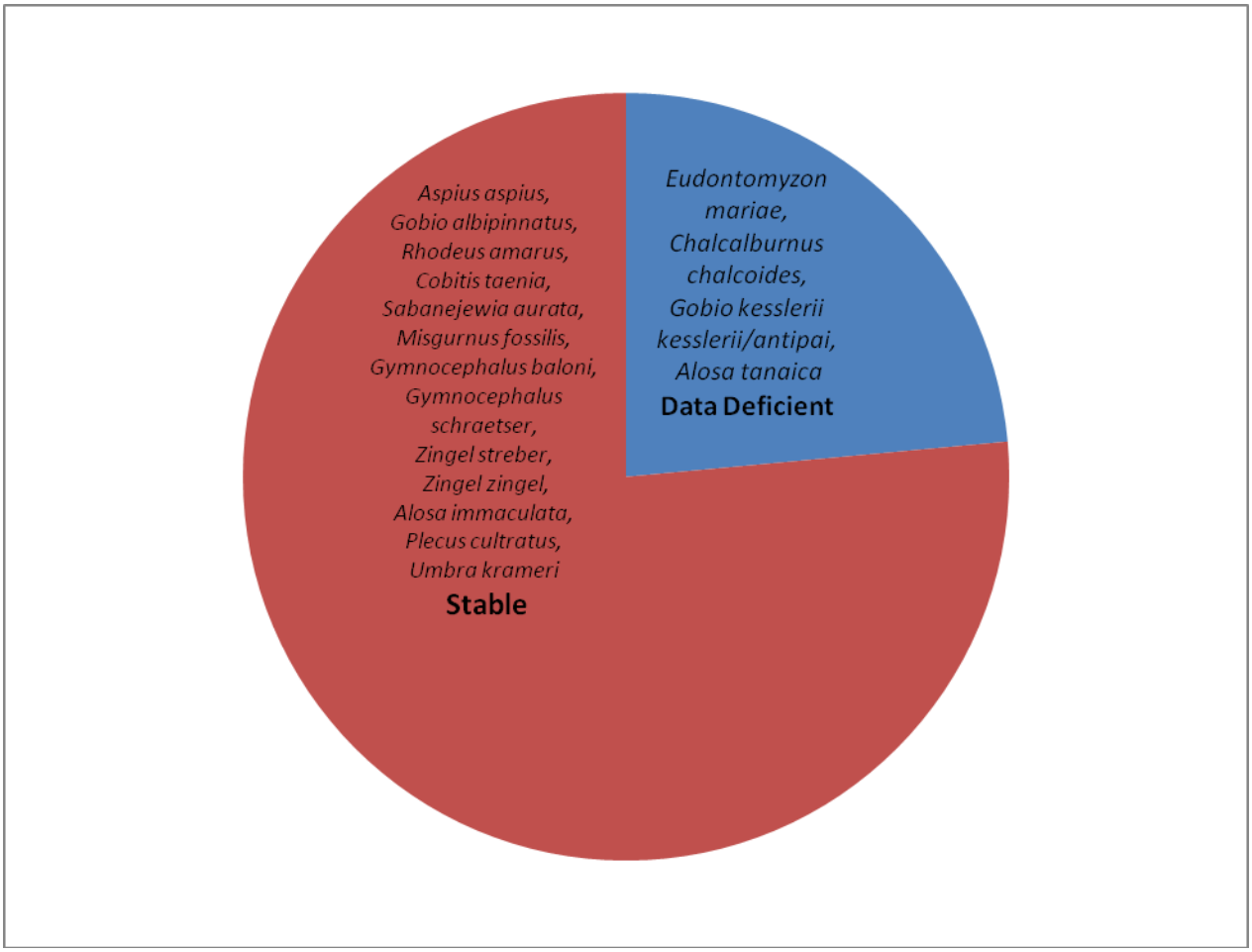

Figure13 : Current ecological status of conservative interest species of fish in DDBR

4.4. Reptile&amphibian Species

In DDBR 6 conservative interest species of reptile&amphibians have been recorded. The threat status for 5 species that registered a Stable trend of their population was assessed as Secure in DDBR(Figure 14 and detailed in Annex1.4)
The populations of *Vipera ursinii* are heavily concentrated in three areas in DDBR. The current ecological status for this species is assessed as Localised.

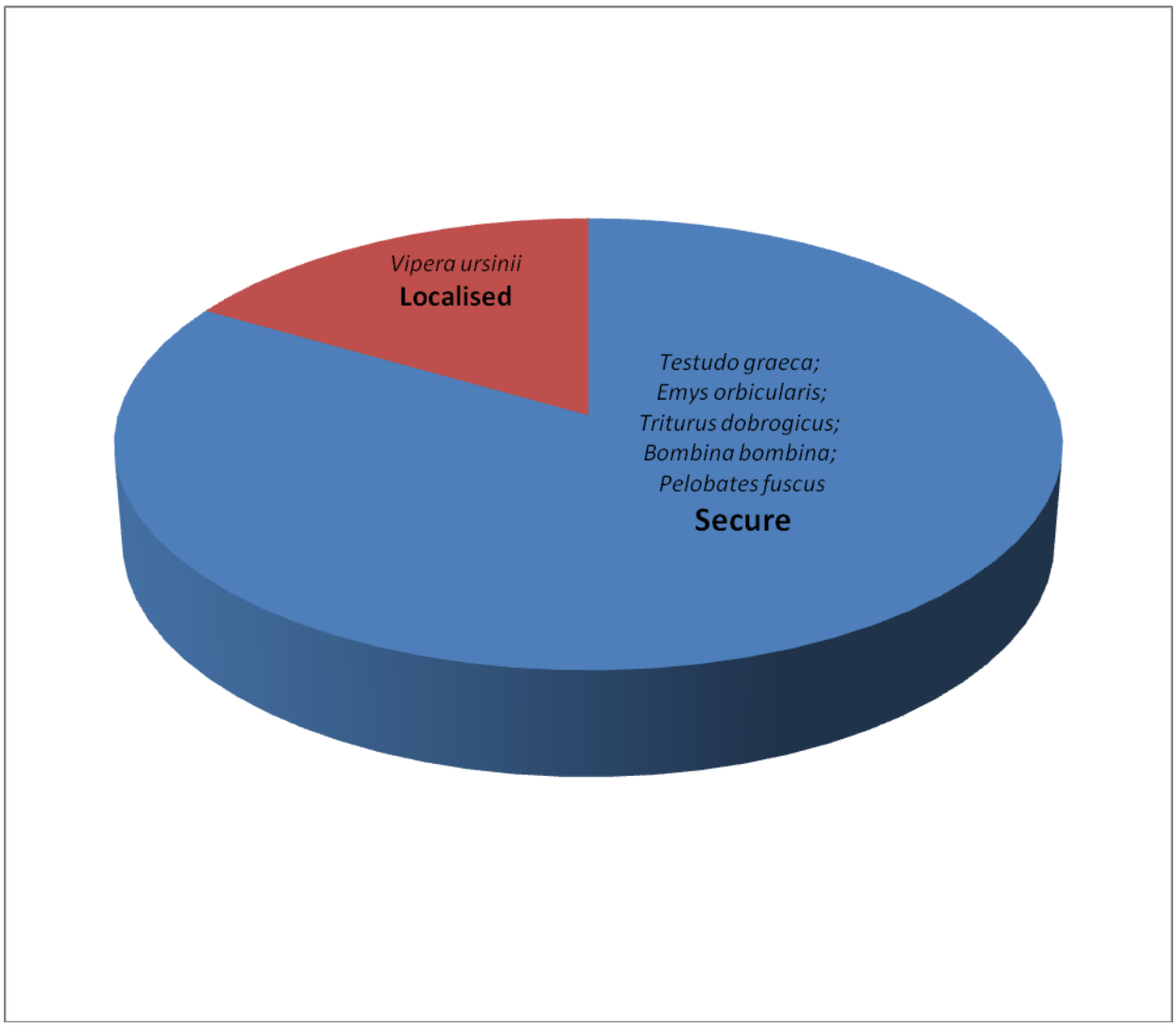

Figure14 : Current ecological status of conservative interest species of Reptiles&Amphibians in DDBR

4.5. Bird Species

In DDBR 96 conservative interest species of birds have been assessed.
To have a better view of the current ecological status of DDBR bird species, we realized two assessments, one for breeding and migratory populations and another for wintering populations.
The assessment for breeding and migratory bird populations was realized for 84 species.

The current ecological status for 57 species that registered a Stable or Increasing populational level in DDBR, was assessed as Secure.(Figure 15 and detailed in Annex1.5)
The Current ecological status for 5 species that registered a Small Decline in the past and now is recovering but is not Stable yet, was assessed as (Secure) in DDBR.
Three species have a present threat statut assessed as Declining.
The current ecological status for 5 species that have a small and fluctuating populational levels in DDBR, was assessed as Rare.

The current ecological status for 3 species of colonial breeding birds which are not Declining but are heavily concentrated in only several areas in DDBR is assessed as Localised.

The current ecological status for 11 species of breeding and migratory birds was assessed as Data Deficient. In this category are the species with a cryptic behavior and very difficult to evaluate and very rare ones.

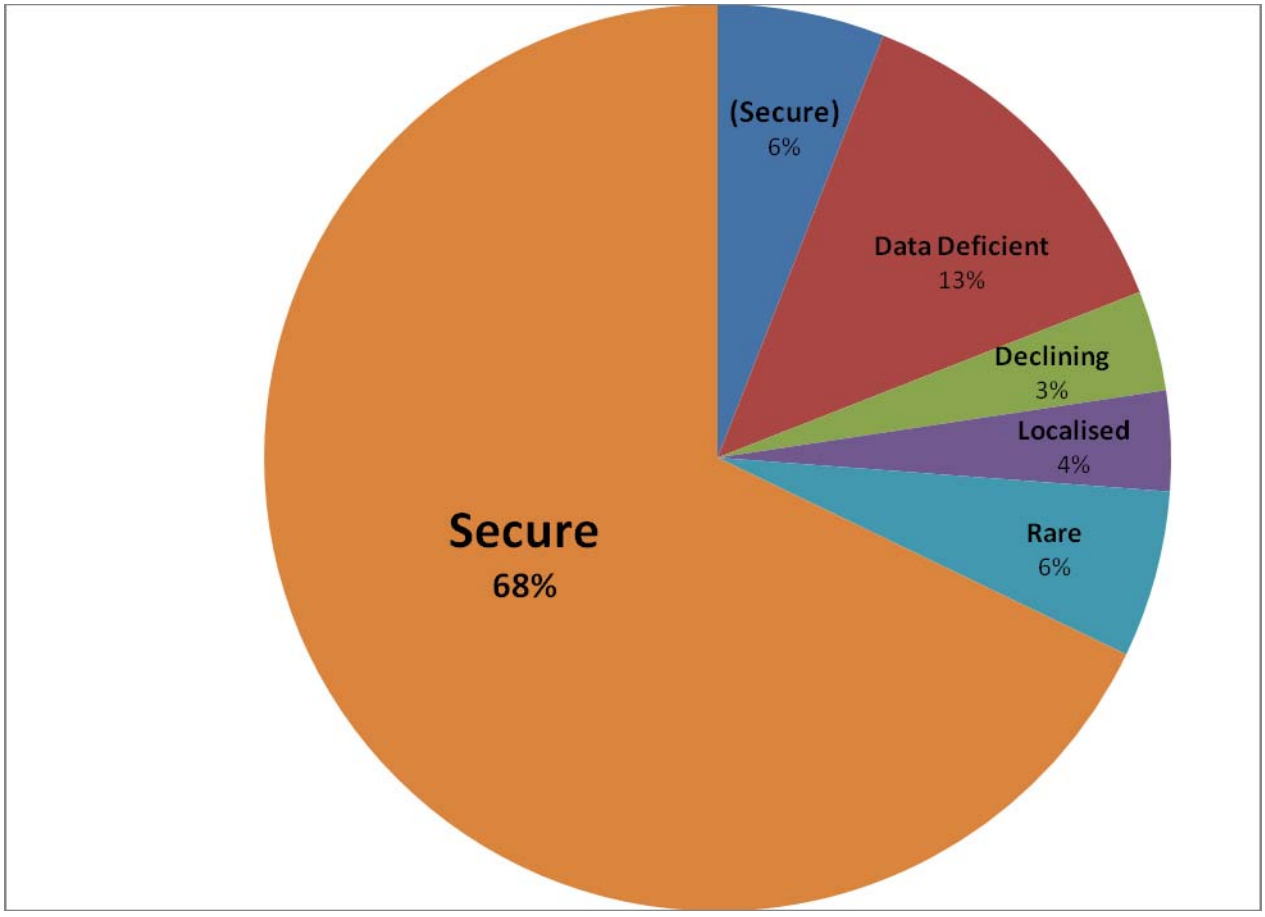

Figure 15: Current ecological status of breeding and migrating conservative interest species Birds in DDBR

The assessment for wintering bird populations was realized for 25 species.

The current ecological status for 18 species that registered a Stable, Increasing or Fluctuating(small fluctuations) populational level in DDBR, was assessed as Secure.(Figure 16 and detailed in Annex1.5)

The Current ecological status for *Mergellus albellus*, that registered a Small Decline in the past and now is recovering but is not Stable yet, was assessed as (Secure) in DDBR.

Two species have a Current ecological status assessed as Declining. The wintering population of *Branta ruficollis* that use to roost in the DDBR, had changed the grazing areas more to the west, along the Danube Valley, in the last 12 years. In the northern and central part of the DDBR this species still present in winter time, but the stronghold from the south registered a severe decline.

A small decline was registered by *Calidris alpina* wintering population in DDBR. This is a species that regularly appear during migration, but is also wintering in small number along the Black Sea shore and Lagoons. In the last years, a small decrease of the overall wintering population was registered for DDBR.

The Current ecological status for *Aquila clanga* and *Falco cherrug* which are regular visitors of DDBR in winter, but only in small number of individuals, was assessed as Rare.

The Current ecological status for *Podiceps auritus* and *Anser erythropus,* species with small wintering populations in DDBR,was assessed as Data Deficient. Those two species have only several records in DDBR, the records are rare and most of it uncertain. Special survey programs dedicated to those species may produce better quality data in the future.

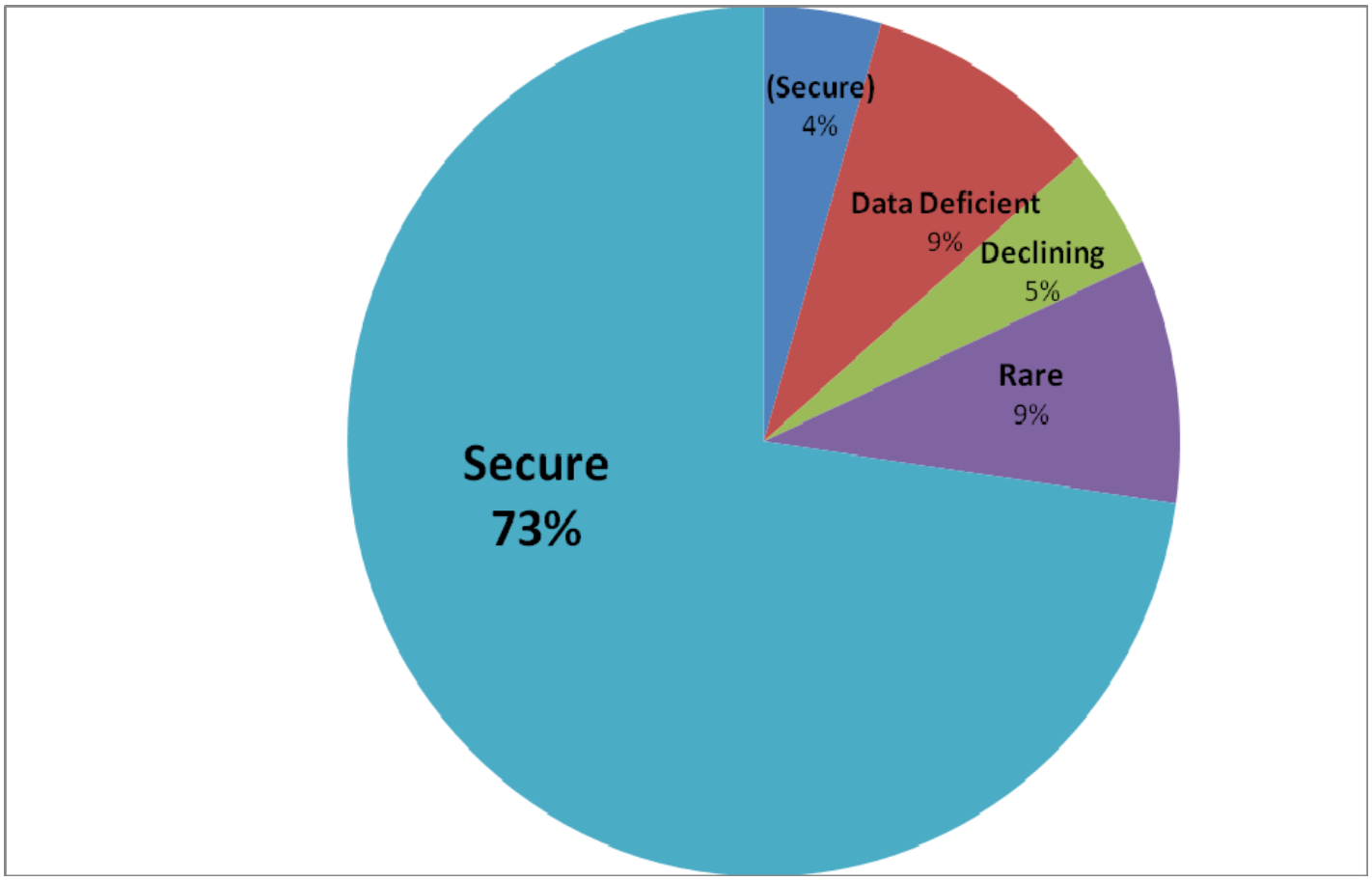

Figure16 : Current ecological status of wintering conservative interest species of birds in DDBR

4.6. Mammal Species

In DDBR 9 conservative interest species of mammals have been assessed.
The current ecological status for 1 species that registered a Stable populational level in DDBR, was assessed as Secure.(Figure 17 and detailed in Annex1.6)
The current ecological status for 2 species that now is recovering but they still face a potential risk due to natural population fluctuations and catastrophic chance events, persecution or disturbance by humans, is (Stable) in DDBR.
The current ecological status for 2 species that have a small population size in or just at the limit of DDBR, was assessed as Rare.
Four species have Data Deficient. In this category are two species of bats and two of cetaceans. One of the bat species is need a reconfirmation to be fully approved as a new conservative interest species for DDBR. The assessment for the other 3 species require more data to be able to give an objective ecological status

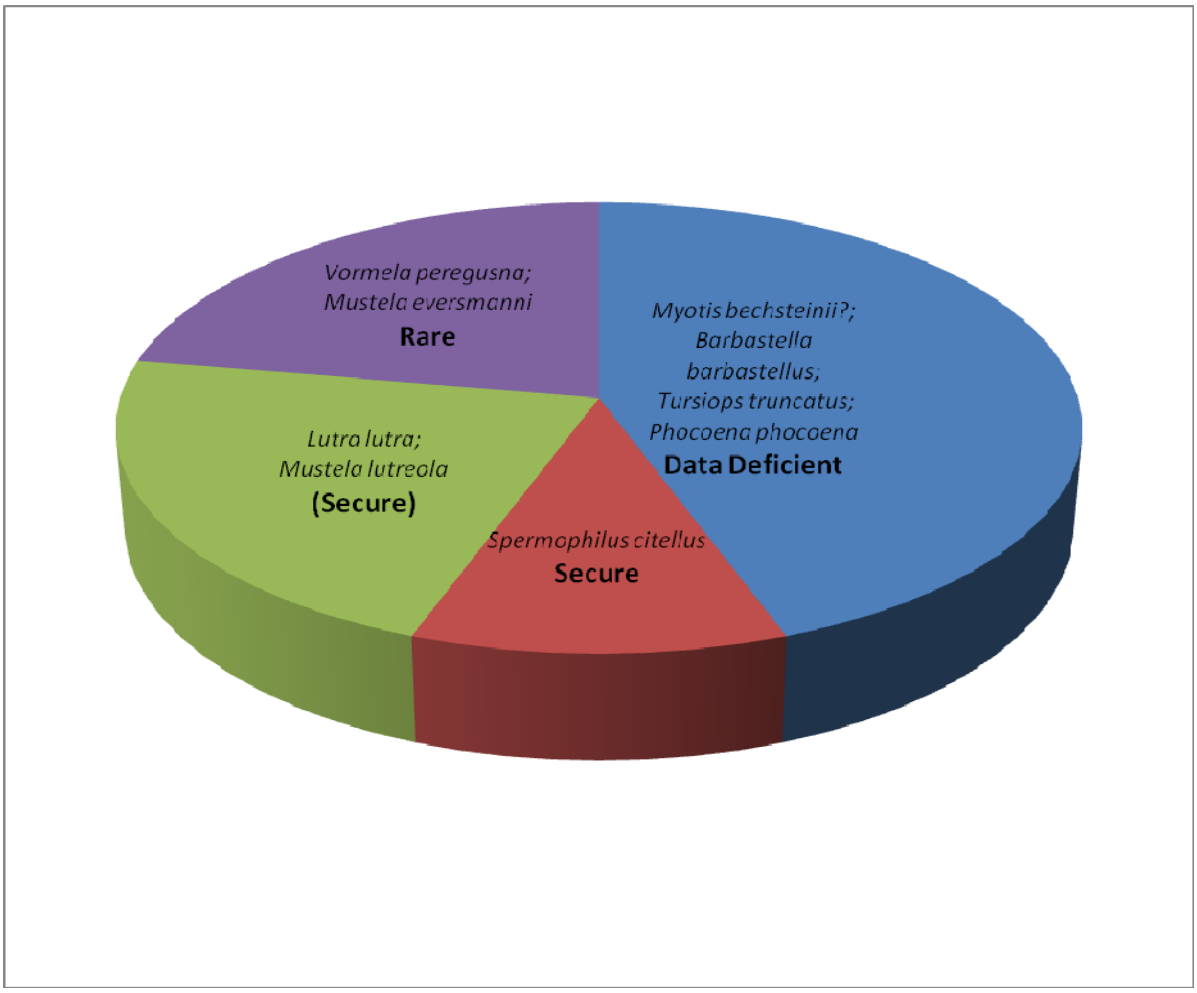

Figure 17 : Current ecological status of conservative interest species of mammals in DDBR

4.7. Natural Habitats

The current ecological status was assessed for 26 natural habitats of conservative interest from DDBR.

For 21 habitats the current ecological status was assessed as Secure. Those are the habitats with a stable or increasing surface and quality.

The current ecological status for 4 habitats was assessed as (Secure).

Pentru 4 habitate, starea ecologică curentă a fost evaluată ca (Sigură). Those are habitats with significant surface and/or quality fluctuations or they face the deterioration risk in near future if the negative factors are not well managed.

The current ecological status for 1 habitat was assessed as Declining.

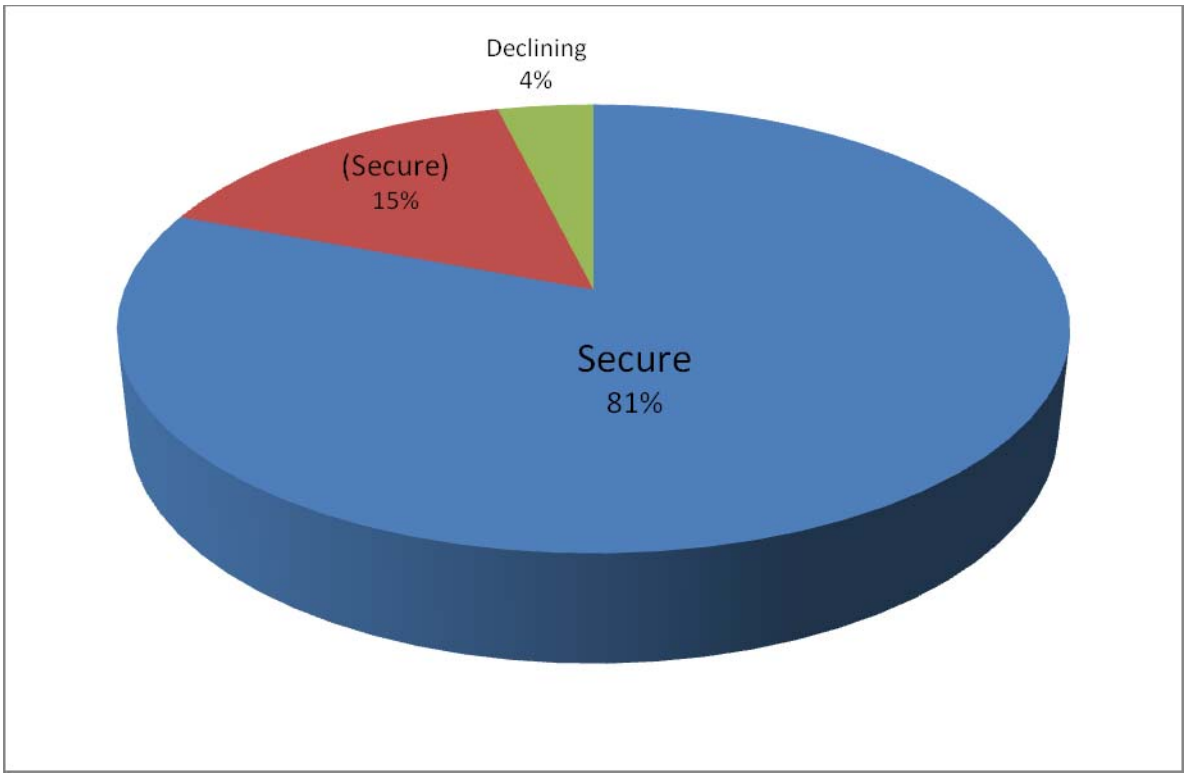

Figure 18: Current ecological status of conservative interest habitats in DDBR

5. ASSESSMENT OF CRITERIA SELECTION FOR CONSERVATIVE INTEREST KEY-ELEMMENTS (WILD SPECIES AND NATURAL HABITATS) FROM DDBR

The selection of conservative interest key-elements (wild species and natural habitats) from DDBR must have as a reference the criteria for 1990 – 2008 DDBR overall population trend and the current ecological status.

For the selection of conservative interest key-elements (wild species and natural habitats) from DDBR should consider both their ecological importance and aesthetic value.

For the natural habitats of conservative interest, we recommend the selection of at least one habitat type for each DDBR ecosystems.

For the plant and animal species of conservative interest(exclusive birds) from DDBR, is important that key-elements selection do not include species that have an uncertain presence status (possible Extinct species, or species that need reconfirmation). Also the species that were included in Data Defiecient and Rare category, should be selected only if they are highly representative for certain ecosystems or habitats characteristic for DDBR.

Will be selected as key-elements all the species that were evaluated as having a Localised distribution in DDBR.

Species that have a current ecological status, evaluated as: Secure, (Secure) and Declining, only representative species (quantitatively and qualitatively – ecological value) for certain characteristic ecosystems or habitats of DDBR will be selected.

For the bird species of conservative interest from DDBR, is important that key-elements selection do not include the accidental species for this area (Table 1). Also the species that were included în Data Defiecient and Rare category, should be selected only if they are highly representative for certain ecosystems or habitats characteristic for DDBR.

Species that have a current ecological status, evaluated as: Secure, (Secure) and Declining, only representative species (quantitatively and qualitatively – ecological value) for certain characteristic ecosystems or habitats of DDBR will be selected.

Will be selected as key-elements all the colonial bird species and that ones that were evaluated as having a Localised distribution in DDBR.

Conclusions

The selection of species and habitats of conservative interest was based upon present Romanian(OUG 57/2007 Annex 2&3) and European(Council Directives 92/43/CEE Annex 1&2 and 2009/147/CE Annex 1) legislation.

In DDBR, 167 wild species and 26 natural habitats of conservative interest have been recorded until now.

From all 167 species of conservative interest we will present in this study the assessment for 147 species. In this way we excluded 20 species that are not relevant in this analysis: 19 accidental bird species for DDBR and one invertebrate species that was erroneous recorded for this area in the Natura 2000 standard form.

The population trend in 1990-2008 period for plant and animal species of conservative interest (exclusive birds) from DDBR, was assessed as:
-**Stable** for 26 species
-**Insuficient Data** or **No Record** for19 species
-**Decreasing** for 1 species
- **Fluctuating** for1 species
-**Increasing** for 4 species

The population trend in 1990-2008 period for breeding and migratory bird species of conservative interest from DDBR, was assessed as:
- **Stable** for 34 species
- **Unknown** for 11 species
- **Fluctuating** for15 species
--**Decreasing** for 8 species
- **Increasing** for 16 species

The population trend in 1990-2008 period for wintering bird species of conservative interest from DDBR, was assessed as:
- **Stable** for 6 species
- **Unknown** for 2 species
- **Fluctuating** for5 species

--**Decreasing** for 4 species
- **Increasing** for 8 species

The trend in 1990-2008 period for natural habitats of conservative interest from DDBR, was assessed as:
- **Stable** for 20 habitats
- **(Stable)** for 3 habitats
- **Fluctuating** for2 habitats
--**Decreasing** for 1 habitats
- **Increasing** for 1 habitats

The evaluation of the current ecological status of the wild species and natural habitats of conservative interest in DDBR was assessed for 147 species and 26 habitats of conservative interest in DDBR.

The current ecological status for natural habitats of conservative interest from DDBR, was assessed as:
- **Secure** for 21 habitats
- **(Secure)** for 4 habitats
--**Declining** for 1 habitats

The current ecological status for plant and animal species of conservative interest (exclusive birds) from DDBR, was assessed as:
- **Secure** for 23 species
- **(Secure)** for 2 species
- **Data Deficient** for17 species
- **Extinct?** for 2 species
-**Rare** for 3 species
-**Localised** for 5 species

The current ecological status for breeding and migratory bird species of conservative interest from DDBR, was assessed as:
- **Secure** for 57 species
- **(Secure)** for 5 species
- **Data Deficient** for 11 species
-**Declining** for 3 species
-**Rare** for 3 species
-**Localised** for 3 species

The current ecological status for wintering bird species of conservative interest from DDBR, was assessed as:
- **Secure** for 18 species
- **(Secure)** for 1 species
- **Data Deficient** for 2 species
-**Declining** for 2 species
-**Rare** for 2 species

For each species included in **Insuficient Data** category, as a result of this assessment, more studies are absolutely necessary, to generate information that will facilitate the development of appropriate management measures to conserve these species in DDBR.

The selection of conservative interest key-elements (wild species and natural habitats) from DDBR must have as a reference, the criteria for 1990 – 2008 DDBR overall population trend and the current ecological status.

The selection of conservative interest key-elements for DDBR must consider the ecological importance(role), and esthetic value of the wild species and natural habitats.

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DDNI research programs since 1995 untill present which provided information to achieve this phase

Nr. crt.	**An**	**Responsabil**	**Titlul temei**
1.	**1995**	Otel Vasile	Evaluarea si protectia genofondului salbatic din perimetrul RBDD
2.	**1995**	David Cristina	Caracteristicile factorilor ecologici care definesc diversitatea ecosistemelor acvatice si terestre din RBDD
3.	**1995**	Navodaru Ion	Studiul populatiilor de pesti din RBDD si stabilirea conditiilor de valorificare durabila prin pescuit
4.	**1995**	Hanganu J.	Evaluarea resurselor stuficole din RBDD si stabilirea conditiilor de valorificare durabila
5.	**1995**	Cristea Marin	Evaluarea resurselor vegetale. Valorificabile prin pasunat traditional si stabilirea conditiilor de practicare durabila a acestuia in perimetrul RBDD

6.	**1995**	Marinov Mihai	Studii privind ornitofauna RBDD
7.	**1995**	Marin Georgeta	Ameliorarea starii ecologice a ecosistemelor naturale si renaturarea unor zone indiguite din DD
8.	**1995**	Grigoras Ion	Definirea si constituirea sistemului informatic al ARBDD
9.	**1995-1999**	Nichersu Iulian	Atlasul RBDD
10.	**1996-2001**	Otel Vasile	Monitorizarea si evaluarea starii biodiversitatii din RBDD pentru fundamentarea masurilor de protectie si conservare
11.	**1996-2001**	Marinov Mihai, Hulea Dan, Kiss Janos Botond	Cercetari asupra biologiei si evolutiei avifaunei din RBDD pentru elaborarea masurilor de protectie si conservare
12.	**1996-2001**	David Cristina Constantinescu A. Ibram O. Hulea O. Tudor M. Dumitru R. Torok L.	Identificarea, selectarea si evaluarea factorilor ecologici care influenteaza starea habitatelor din RBDD
13.	**1996-2001**	Navodaru Ion Cernisencu Irina Torok Zsolt	Cercetari pentru gestionarea durabila a resursei piscicole in RBDD
14.	**1996-2001**	Hanganu J.	Cercetari pentru gestionarea durabila a

		Grigoras Ion Cristea Marin Dmytro Dubya Zhmud Olena Drost Hans & Mente Ute	resurselor vegetale (pasuni, stuf, paduri, plante medicinale) in RBDD
15.	**1996-2001**	Marin Georgeta, Tudor Marian	Renaturarea zonelor indiguite din RBDD
16.	**1997-2000**	Torok Zsolt	Identificarea si caracterizarea zonelor umede din Romania care necesita includerea in reteaua nationala de arii protejate sau care indeplinesc criteriile desemnarii ca zone umede importanta internationala.
17.	**1998-1999**	Gabrielescu Petruta	Renaturarea unor zone indiguite din RBDD (AP Popina II-EC 21 si EC 22
18.	**2000-2002**	Tudor Marian Cioaca Eugenia Mitache Virgil David Dan David Cristina	Reintegrarea sistemelor antropizate neitilizare eficient din Rezervatia Delta Dunarii in sistemele naturale
19.	**2000-2002**	David Cristina Hulea Orieta Dumitru Rodica Tudor Mihaela	Identificarea, validarea si evaluarea factorilor care definesc tendintele de evolutie ale ecosistemelor fluviale, deltaice si marine

		Ibram Orhan Torok Liliana Cojocaru Liliana	
20.	**2000-2002**	Staras Mircea Navodaru Ion Cernisencu Irina Hanganu J. Bota Diana Suciu Marieta Marinov Mihai	Fundamentarea gestionarii durabile **a** resurselor naturale din RBDD
21.	**2000-2002**	Otel Vasile Kiss J.B.	Evaluarea starii si evolutiei genofondului salbatic din RBDD, elaborarea masurilor de protectie si conservare
22.	**2000-2002**	Grigoras Ion Torok Zsolt	Proiectarea si dezvoltarea sistemului informational al zonelor umede din Romania
23.	**2000-2002**	David Cristina Ibram Orhan Tomes Alina	Evaluarea efectelor poluarii asupra componentelor ecosistelor deltaice
24.	**2002**	Hanganu J.	Studiu pentru fundamentarea masurilor de reconstructie ecologica a incintelor piscicole abandonate din Rezervatia

			Biosferei Delta Dunarii.
25.	**2003**	Cioaca Eugenia	Studiul regimului apelor freatice in zonele Letea si Caraorman din Delta Dunarii si elaborarea masurilor de management ecologic in conformitate cu DC 2000/60/CE, Anexa 5 si elaborarea masurilor de redresare a echilibrului ecologic.
26.	**2003**	Torok Zsolt	Studii pentru implementarea in Romania a Retelei de Arii protejate europene NATURA 2000
27.	**2003**	Torok Zsolt	Inventarierea si realizarea hartii in sistem GIS a habitatelor naturale din Romania a caror conservare necesita declararea ariilor speciale de conservare in conformitate cu prevederile legii 462/2001.
28.	**2003**	Otel Vasile	Elaborarea planurilor de management ale zonelor cu regim de protectie integrala din RBDD in vederea conservarii biodiversitatii in accord cu directive Habitate UE
29.	**2003-2005**	Kiss J. B.	Elaborarea metodelor de conservare a unor specii de plante si de animale cu populatii izolate si periclitate critic la nivel european si global
30.	**2003-2005**	Otel V.	Evaluarea starii actuale a diversitatii ihtiofaunei si elaborarea atlasului pestilor din RBDD
31.	**2003-2005**	Tudor Marian	Evaluarea functiilor ecologice si a valorilor economice restaurate in zonele renaturate din RBDD

32.	**2003-2005**	Grigoras Ion	Dezvoltarea Sistemului Informational al Zonelor Umede de Interes Conservativ din Romania
33.	**2003-2005**	Navodaru Ion, Nastase Aurel	Cercetari asupra biologiei si pescariei principalelor specii de pesti de importanta economica din RBDD, in vederea fundamentarii gestionarii durabile a stocurilor
34.	**2004-2005**	Dorosencu Alexandru	Inventarierea speciilor de flora si fauna de pe teritoriul Romaniei in conformitate cu prevederile Legii nr. 462/2001 – Anexa 2 si 3.
35.	**2004**	Torok Zsolt	Studii pentru implementarea in Romania a retelei de arii protejate europene **Natura 2000** si a hartilor GIS aferente pentru ariile de importanta comunitara (SCI) in regiunile biogeografiece stepica, marea Neagra si Panonoca, iar pentru ariile de protectie speciala avifaunistica (SPA) pe intreg teritoriul tarii.
36.	**2004**	Torok Zsolt	Finalizarea hartii in sistem GIS a habitatelor naturale din Romania a caror conservare necesita declararea ariilor speciale de conservare, in conformitate cu prevederile Legii nr. 461/2001 – Anexa 2 pentru intreg teritoriul tarii.
37.	**2005**	Torok Zsolt	Sistemul informatic pentru inventarierea siturilor naturale de interes comunitar – Natura 2000 in conformitate cu prevederile directivelor Uniunii Europene “Habitate” si “Pasari”.
38.	**2005**	Torok Zsolt	Inventarierea si realizarea hartii in sistem GIS a habitatelor naturale din Romania a

			caror conservare necesita declararea Ariilor Speciale de Conservare in conformitate cu prevederile Legii 462/2001.
39.	**2005**	Torok Zsolt	Studii pentru implementarea in Romania a retelei de arii protejate europene Natura 2000 cu completarea formularelor Natura 2000 pentru ariile de importanta comunitara (SCI) si ariile de protectie speciala avifaunistica (SPA)
40.	**2005**	Grigoras Ion	Realizarea unei retele nationale si a unui sistem informational unificat pentru managementul informatiilor despre acoperirea si utilizarea terenului in spijinul dezvoltarii aplicatiilor GIS – subcontract INCDDD
41.	**2006**	Grigoras Ion	Realizarea retelei NATURA 2000 si a sistemului de monitorizare a starii de conservare a habitatelor si speciilor de flora si fauna salbatica.
42.	**2006**	Otel Vasile	Stabilirea masurilor specifice pentru conservarea si utilizarea durabila a speciilor de plante si animale inventariate, in conformitate cu anexa a A a ord. 1198/2005.
43.	**2006**	Dorosencu Alexandru	Studiu pentru identificarea rutelor de migrare, a zonelor de odihna si cuibarit si stabilirea habitatelor necesare conservarii speciilor de pasari listate in anexa 2 si 3 ale Ordinului nr. 1198/2005.
44.	**2006**	Torok Liliana	Studiu pentru realizarea planului de management al Deltei Dunarii

45.	**2006-2008**	Otel Vasile	Cercetari privind redelimitarea zonelor functionale ale Rezervatiei Biosferei Delta Dunarii
46.	**2006-2008**	Ibram Orhan	Elaborarea unei metodologii de caracterizare a starii biologice a lacurilor din Delta Dunarii utilizand macronevertebrate acvatice
47.	**2006-2008**	Kiss J. B.	Cercetari asupra biologiei unor specii de pasari de interes conservativ din Delta Dunarii, in acord cu prevederile conventiilor internationale la care Romania a aderat
48.	**2006-2008**	Kiss J. B.	Cercetari in vederea stabilirii masurilor europene de conservare (*Mustela lutreola*) si vidrei (*Lutra lutra*) din Delta Dunarii, specii amenintate critic la nivel mondial
49.	**2006-2008**	Navodaru Ion	Evaluarea starii unor specii de pesti exploatati comercial in RBDD cu populatii in declin si elaborarea masurilor de conservare si exploatare durabila
50.	**2006-2008**	Tudor Marian	Cercetari pentru evaluarea starii actuale si elaborarea planului de management al zonelor renaturate din RBDD
51.	**2006-2008**	Tudor Marian	Cercetari privind evolutia procesului de renaturare in zona Holbina-Dunavat
52.	**2006-2008**	Hanganu J.	Cercetari pentru fundamentarea masurilor de reconstructie ecologica a incintelor agricole din RBDD
53.	**2006-2008**	Hanganu J.	Studii privind succdesiunea depozitelor de suprafata din Delta Dunarii

54.	**2008**	Grigoras Ion	Realizarea de analize in vederea negocierii siturilor de importanta comunitara cu comisia europeana, participarea la seminariile biogeografice si realizarea cercetarilor necesare in vederea completarii listei siturilor de importanta comunitara si a bazei de date cu cerintele comisiei europene.
55.	**2009**	Grigoras Ion	Proiect de cercetare in vederea indeplinirii obligatiilor ce revin tarii noastre in ceea ce priveste aplicarea reglementarilor comunitare privind reteaua ecologica NATURA 2000.
56.	**2009-2010**	Kiss JB	Servicii de monitorizare prin inelare a distributiei vulturului codalb (Haliaeetus albicilla) pe teritoriul RBDD
57.	**2009-2010**	Kiss JB	Servicii de monitorizare prin telemetrie a distributiei vulturului codalb (Haliaeetus albicilla) pe teritoriul RBDD
58.	**2009-2010**	Marinov Mihai, Alexe Vasile	Servicii de realizare, montare si intretinere cuiburi artificiale pentru vulturul codalb, pe teritoriul rezervatiei Biosferei Delta Dunarii
59.	**2009-2010**	Tudor Marian	Evaluarea functiilor si serviciilor asigurate de ecosistemele deltaice dulcicole rezultate prin implementarea lucrarilor de reconstructie ecologica in RBDD
60.	**2009-2010**	Doroftei Mihai	Cercetari asupra florei si faunei vegetatiei cordonului litoral din RBDD
61.	**2009-2010**	Kiss JB	Cercetari biologice si ecologice asupra unor specii de pasari de interes comunitar

			din RBDD-SPA natura 2000
62.	**2009-2010**	Nastase Aurel	Cercetari asupra diversitatii ihtiofaunei din RBDD pentru conservarea speciilor
63.	**2009-2010**	Ibram Orham	Identificarea si testarea parametrilor si indicatoprilor pentru evaluarea starii ecologice si a potentialului ecologic al ecosistemelor acvatice din RBDD
64.	**2009-2010**	Otel Vasile, Marinov Mihai jr.	Monitorizarea speciilor de interes comunitar din Rezervatia Biosferei Delta Dunarii SCI-urile natura 2000.
65.	**2009-2010**	Lupu Gabriel	Elaborarea atlasului ortopterelor din Delta Dunarii
66.	**2009-2010**	Torok Zsolt	Evaluarea herpetofaunei din RBDD si elaborarea Atlasului amfibienilor si reptilelor din RBDD
67.	**2009-2010**	Covaliov Silviu	Elaborarea atlasului plantelor terestre din RBDD

Annex

Annex 1.1 List of wild plant species of conservation interest that occurs in DDBR and the populational trends displayed from 1990 to 2008 and from 2008 to 2010.

Nr. crt.	Species	Romanian legislation OUG 57/2007	Habitat Directive	Red List DDBR	Trend 1990-2008	Current ecological status in DDBR
1	*Marsilea quadrifolia*	3	2	Vulnerable	Small Increase	Localised
2	*Echium russicum*	3	2		Stable	Rare
3	*Centaurea jankae*	3	2	Endangered	Stable	Localised
4	*Centaurea pontica*	3	2	Endangered	Stable	Localised
5	*Aldrovanda vesiculosa*	3	2	Vulnerable	Stable	Localised
6	*Caldesia parnassifolia*	3	2	Insuficient Data Extinct?	No Record	Extinct?
7	*Liparis loeselii*	3	2	Extinct?	No Record	Extinct?

Annex1.2 List of wild invertebrate species of conservation interest that occurs in DDBR and the populational trends displayed from 1990 to 2008 and from 2008 to 2010.

Nr. crt.	Species	Romanian legislation OUG 57/2007	Habitat Directive	N2000 animal species from România	Trend 1990-2008 DDBR	Current ecological status in DDBR
1	*Osmoderma eremita*	3	2	Vulnerable	No Record	Data Deficient
2	*Morimus funereus*	3	2	Vulnerable	No Record	Data Deficient
3	*Graphoderus bilineatus*	3	2	Vulnerable	No Record	Data Deficient
4	*Lycaena dispar*	3	2	Vulnerable	Stable	Secure
5	*Leptidea morsei*	3	2	Endangered	No Record	Data Deficient
6	*Colias myrmidone*	3	2	Criticaly Endangered	No Record	Data Deficient

7	*Catopta thrips*	3	2	Near Threatened	Eror	
8	*Arytrura musculus*	3	2	Vulnerable	No Record	Data Deficient
9	*Ophiogomphus cecilia*	3	2	Low Risk	No Record	Data Deficient
10	*Coenagrion ornatum*	3	2	Endangered	No Record	Data Deficient
11	*Anisus vorticulus*	3	2	Endangered	Stable	Secure
12	*Theodoxus transversalis*	3	2	Criticaly Endangered	No Record	Data Deficient
13	*Unio crassus*	3	2	Vulnerable	Stable	Secure

Annex 1.3 List of wild fish species of conservation interest that occurs in DDBR and the populational trends displayed from 1990 to 2008 and from 2008 to 2010.

Nr. crt.	Species	Romanian legislation OUG 57/2007	Habitat Directive	N2000 animal species from România	Trend 1990-2008 DDBR	Current ecological status in DDBR
1	*Eudontomyzon mariae*	3	2	Criticaly Endangered	Insuficient Data	Data Deficient
2	*Alosa immaculata*	3,5A	2,5	Least Concern	Fluctuating	Secure
3	*Alosa tanaica*	3,5A	2,5	Least Concern	Insuficient Data	Insuficient Data
4	*Umbra krameri*	3	2	Vulnerable	Decreasing	Secure
5	*Chalcalburnus chalcoides*	3	2	Criticaly Endangered	Insuficient Data	Data Deficient
6	*Aspius aspius*	3	2	Not Rated	Stable	Secure
7	*Gobio albipinnatus*	3	2	Not Rated	Stable	Secure
8	*Gobio kesslerii kesslerii/antipai*	3	2	Vulnerable/ Criticaly Endangered	Insuficient Data	Data Deficient
9	*Plecus cultratus*	3	2	Not Rated	Increasing	Secure
10	*Rhodeus amarus*	3	2	Not Rated	Stable	Secure
11	*Cobitis taenia*	3	2	Not Rated	Stable	Secure
12	*Sabanejewia aurata*	3	2	Not Rated	Stable	Secure
13	*Misgurnus fossilis*	3	2	Not Rated	Stable	Secure

14	*Gymnocephalus baloni*	3	2	Vulnerable	Stable	Secure
15	*Gymnocephalus schraetser*	3	2	Not Rated	Stable	Secure
16	*Zingel streber*	3	2	Endangered	Stable	Secure
17	*Zingel zingel*	3,5A	2,5	Vulnerable	Stable	Secure

Annex 1.4 List of wild reptile and amphibian species of conservation interest that occurs in DDBR and the populational trends displayed from 1990 to 2008 and from 2008 to 2010.

Nr. crt.	Species	Romanian legislation OUG 57/2007	Habitat Directive	N2000 animal species from România	Trend 1990-2008 DDBR	Current ecological status in DDBR
1	*Testudo graeca*	3	2	Endangered	Stable	Secure
2	*Emys orbicularis*	3	2	Vulnerable	Stable	Secure
3	*Vipera ursinii*	3	2	Criticaly Endangered	Stable	Localised
4	*Triturus dobrogicus*	3	2	Endangered	Stable	Secure
5	*Bombina bombina*	3	2	Near Threatened	Stable	Secure
6	*Pelobates fuscus*	3	4	Not Rated	Stable	Secure

Annex 1.5 List of wild bird species of conservation interest that occurs in DDBR and the populational trends displayed from 1990 to 2008 and from 2008 to 2010.

Nr crt	Species	OUG 57/2007	Birds Directive	European Threat Status 2004	Bern Convention	Bonn Convention	AEWA	CITES	2004 Global IUCN Red List Category	2010 Global IUCN Red List Category	1990-2008 DDBR population trend	1990-2008 DDBR wintering population trend	Current ecological status in DDBR of breeding population	Current ecological status in DDBR of wintering population
1	*Gavia stellata*	*3*	I	(H)	II	II	Yes		LC	LC		Stable		Secure
2	*Gavia arctica*	*3*	I	(VU)	II	II	Yes		LC	LC		Stable		Secure
3	*Podiceps auritus*		I	D	II	II	Yes		LC	LC		Unknown		Data Deficient
4	*Puffinus yelkouan*		I	S	II				LC	NT	Stable (migration)		Secure	
5	*Phalacrocorax pygmeus*	*3*	I	S	II	II	Yes		NT	LC	Small increase (breed)	Large Increase	Secure	Secure
6	*Pelecanus onocrotalus*	*3*	I	R	II	I; II	Yes		LC	LC	Stable (breed)		Localised	
7	*Pelecanus crispus*	*3*	I	R	II	I; II	Yes	I	VU	VU	Stable (breed)	Fluctuating	Localised	Secure

8	*Botaurus stellaris*	*3*	I	H	II	II	Yes		LC	LC	Stable (breed)	Fluctuating	Secure	Secure
9	*Ixobrychus minutus*	*3*	I	(H)	II	II	Yes		LC	LC	Stable (breed)		Secure	
10	*Nycticorax nycticorax*	*3*	I	H	II				LC	LC	Small increase (breed)	Fluctuating	Secure	Secure
11	*Ardeola ralloides*	*3*	I	(D)	II				LC	LC	Small increase (breed)		Secure	
12	*Egretta garzetta*	*3*	I	S	II				LC	LC	Small increase (breed)		Secure	
13	*Casmerodius albus*	*3*	I	S	II	II	Yes		LC	LC	Stable (breed)	Large Increase	Secure	Secure
14	*Ardea purpurea*	*3*	I	(D)	II	II	Yes		LC	LC	Small decline (breed)		(Secure)	
15	*Ciconia nigra*	*3*	I	R	II	II	Yes	II	LC	LC	Stable (migration)		Secure	
16	*Ciconia ciconia*	*3*	I	H	II	II	Yes		LC	LC	Moderate decline (breed)		Declining	
17	*Plegadis falcinellus*	*3*	I	(D)	II	II	Yes		LC	LC	Small increase (breed)		Secure	
18	*Platalea leucorodia*	*3*	I	R	II	II	Yes	II	LC	LC	Fluctuating (breed)		Declining	
19	*Cygnus columbianus bewickii*		I	VU	II	II	Yes		LC	LC		Large Increase		Secure
20	*Cygnus cygnus*	*3*	I	S	II	II	Yes		LC	LC		Large increase		Secure
21	*Anser erythropus*	*3*	I	EN	II	I; II	Yes		VU	VU		Unknown		Data Deficient

22	*Branta ruficollis*	*3*	I	VU	II	I; II	Yes	II	VU	EN		Large decline		Declining
23	*Tadorna ferruginea*	*3*	I	(VU)	II	II	Yes		LC	LC	Stable (breed)	Moderate increase	Secure	Secure
24	*Aythya nyroca*	*3*	I	(VU)	III	I; II	Yes		NT	NT	Fluctuating (breed)	Fluctuating	Secure	Secure
25	*Mergus albellus*		I	(D)	II	II	Yes		LC	LC	Moderate increase (breed)	Small decline	Secure	(Secure)
26	*Pernis apivorus*	*3*	I	(S)	II	II		II	LC	LC	Stable (breed & migration)		Secure	
27	*Milvus migrans*	*3*	I	(VU)	II	II		II	LC	LC	Unknown (breed)		Data Deficient	
28	*Haliaeetus albicilla*	*3*	I	R	II	I; II		I	NT	LC	Large increase (breed)	Large increase	Secure	Secure
29	*Circaetus gallicus*	*3*	I	(R)	II	II		II	LC	LC	Small decline (migration)		(Secure)	
30	*Circus aeruginosus*	*3*	I	S	II	II		II	LC	LC	Stable (breed)		Secure	
31	*Circus cyaneus*	*3*	I	H	II	II		II	LC	LC		Stable		Secure
32	*Circus macrourus*	*3*	I	(EN)	II	II		II	NT	NT	Stable (migration)		Secure	
33	*Circus pygargus*	*3*	I	S	II	II		II	LC	LC	Stable (migration)		Secure	
34	*Accipiter brevipes*	*3*	I	(VU)	II	II		II	LC	LC	Moderate increase (breed)		Secure	
35	*Buteo rufinus*	*3*	I	(VU)	II	II		II	LC	LC	Moderate increase (breeding & migration)		Secure	

36	*Aquila pomarina*	*3*	I	(D)	II	II		II	LC	LC	Stable (migration)		Secure	
37	*Aquila clanga*	*3*	I	EN	II	I; II		II	VU	VU		Moderate increase		Rare
38	*Aquila heliaca*	*3*	I	R	II	I; II		I	VU	VU	Stable (migration)		Rare	
39	*Hieraaetus pennatus*	*3*	I	(R)	II	II		II	LC	LC	Stable (migration)		Secure	
40	*Pandion haliaetus*	*3*	I	R	II	II		II	LC	LC	Fluctuating (migration)		Secure	
41	*Falco naumanni*	*3*	I	H	II	I; II		II	VU	VU	Fluctuating (breed & migration)		Rare	
42	*Falco vespertinus*	*3*	I	(VU)	II	II		II	LC	NT	Stable (breeding & migration)		Secure	
43	*Falco columbarius*		I	(S)	II	II		II	LC	LC		Stable		Secure
44	*Falco cherrug*	*3*	I	EN	II	II		II	EN	VU	Large decline (breed)	Stable	Data Deficient	Rare
45	*Falco peregrinus*	*3*	I	S	II	II		I	LC	LC	Moderate increase (presence in breeding season and migration)	Moderate increase	Secure	Secure
46	*Porzana porzana*	*3*	I	(S)	II	II	Yes		LC	LC	Unknown		Data Deficient	
47	*Porzana parva*	*3*	I	(S)	II	II	Yes		LC	LC	Fluctuating (breed)		Secure	
48	*Porzana pusilla*	*3*	I	(R)	II	II	Yes		LC	LC	Unknown		Data Deficient	

49	*Crex crex*	*3*	I	H	II	II			NT	LC	Unknown		Data Deficient	
50	*Grus grus*	*3*	I	(H)	II	II	Yes	II	LC	LC	Fluctuating (migration)		Secure	
51	*Himantopus himantopus*	*3*	I	S	II	II	Yes		LC	LC	Fluctuating (breed)		Secure	
52	*Recurvirostra avosetta*	*3*	I	S	II	II	Yes		LC	LC	Fluctuating (breed)		Secure	
53	*Burhinus oedicnemus*	*3*	I	(VU)	II	II			LC	LC	Stable (breed)		Secure	
54	*Glareola pratincola*	*3*	I	D	II	II	Yes		LC	LC	Moderate decline (breed)		Rare	
55	*Charadrius alexandrinus*	*3*	I	(D)	II	II	Yes		LC	LC	Small decline (breed)		(Secure)	
56	*Eudromias morinellus*	*3*	I	(S)	II	II	Yes		LC	LC	Unknown		Data Deficient	
57	*Pluvialis apricaria*	*3*	I; II/2; III/2	(S)	III	II	Yes		LC	LC	Fluctuating (migration)	Fluctuating	Secure	Secure
58	*Calidris alpina*	*3*		(H)	II	II	Yes		LC	LC	Unknown	Small decline	Secure	Declining
59	*Philomachus pugnax*		I; II/2	(D)	III	II	Yes		LC	LC	Stable (migration)		Secure	
60	*Gallinago media*	*3*	I	D	II	II	Da		NT	NT	Unknown		Data Deficient	
61	*Numenius tenuirostris*	*3*	I	NE	II	I,II	Da	I	CR	CR	Unknown		Data Deficient	
62	*Tringa glareola*	*3*	I	H	II	II	Yes		LC	LC	Stable (migration)		Secure	
63	*Phalaropus lobatus*	*3*	I	(S)	II	II	Yes		LC	LC	Fluctuating (migration)		Secure	

64	*Larus melanocephalus*	*3*	I	S	II	II	Yes		LC	LC	Large increase (breed)		Localised	
65	*Larus minutus*	*3*	I	(H)	II				LC	LC	Moderate increase (migration)		Secure	
66	*Larus genei*	*3*	I	L	II	II	Yes		LC	LC	Stable (migration)		Rare	
67	*Sterna nilotica*	*3*	I	(VU)	II	II	Yes		LC	LC	Fluctuating (present in breeding and migration season)		Secure	
68	*Sterna caspia*	*3*	I	R	II	II	Yes		LC	LC	Fluctuating (migration)		Secure	
69	*Sterna sandvicensis*	*3*	I	H	II	II	Yes		LC	LC	Small increase (breed)		Secure	
70	*Sterna hirundo*	*3*	I	S	II	II	Yes		LC	LC	Stable (breed)		Secure	
71	*Sterna albifrons*	*3*	I	D	II	II	Yes		LC	LC	Moderate decline (breed)		(Secure)	
72	*Chlidonias hybrida*	*3*	I	H	II				LC	LC	Stable (breed)		Secure	
73	*Chlidonias niger*	*3*	I	(H)	II	II	Yes		LC	LC	Moderate decline (breed)		Declining	
74	*Bubo bubo*	*3*	I	(H)	II			II	LC	LC	Unknown		Data Deficient	
75	*Asio flammeus*	*3*	I	(H)	II			II	LC	LC	Stable (breed)		Rare	

76	*Caprimulgus europaeus*	*3*	I	(H)	II				LC	LC	Stable (breed)		(Secure)	
77	*Alcedo atthis*	*3*	I	H	II				LC	LC	Fluctuating (breed)		Secure	
78	*Coracias garrulus*	*3*	I	VU	II	II			LC	LC	Stable (breed)		Secure	
79	*Picus canus*	*3*	I	(H)	II				LC	LC	Stable (breed)		Secure	
80	*Dryocopus martius*	*3*	I	S	II				LC	LC	Small increase (breed)		Secure	
81	*Dendrocopos syriacus*	*3*	I	(S)	II				LC	LC	Stable (breed)		Secure	
82	*Dendrocopos medius*	*3*	I	(S)	II				LC	LC		Stable		Secure
83	*Melanocorypha calandra*	*3*	I	(D)	II				LC	LC		Moderate decline		Secure
84	*Calandrella brachydactyla*	*3*	I	D	II				LC	LC	Fluctuating (migration)		Secure	
85	*Lullula arborea*	*3*	I	H	III				LC	LC	Stable (migration)		Secure	
86	*Anthus campestris*	*3*	I	(D)	II				LC	LC	Stable (breed)		Secure	
87	*Luscinia svecica*	*3*	I	S	II	II			LC	LC	Stable (breed)		Secure	
88	*Oenanthe pleschanka*	*3*	I	(S)	II	II			LC	LC	Fluctuating (breed)		Secure	
89	*Acrocephalus melanopogon*	*3*	I	(S)	II	II			LC	LC	Unknown		Data Deficient	
90	*Acrocephalus paludicola*	*3*	I	VU	II	I,II			VU	VU	Unknown		Data Deficient	
91	*Sylvia nisoria*	*3*	I	S	II	II			LC	LC	Stable (breed)		Secure	
92	*Ficedula parva*	*3*	I	(S)	II	II			LC	LC	Stable (migration)		Secure	

93	*Ficedula albicollis*	*3*	I	S	II	II			LC	LC	Stable (migration)		Secure	
94	*Lanius collurio*	*3*	I	(H)	II				LC	LC	Moderate increase (breed)		Secure	
95	*Lanius minor*	*3*	I	(D)	II				LC	LC	Moderate increase (breed)		Secure	
96	*Emberiza hortulana*	*3*	I	(H)	III				LC	LC	Stable (breed & migration)		Secure	

Annex 1.6 List of wild mammal species of conservation interest that occurs in DDBR and the populational trends displayed from 1990 to 2008 and from 2008 to 2010.

Nr. crt.	Species	Romanian legislation OUG 57/2007	Habitat Directive	N2000 animal species from România	Trend 1990-2008 DDBR	Current ecological status in DDBR
1	*Myotis bechsteinii?*	3	2	Endangered	Insuficient Data	Data Deficient
2	*Barbastella barbastellus*	3	2	Vulnerable	Insuficient Data	Data Deficient
3	*Spermophilus citellus*	3	2	Vulnerable	Stable	Secure
4	*Lutra lutra*	3	2	Vulnerable	Increasing	(Secure)
5	*Mustela lutreola*	3	2	Endangered	Increasing	(Secure)
6	*Vormela peregusna*	3	2	Endangered	Stable	Rare
7	*Mustela eversmanni*	3	2	Vulnerable	Stable	Rare
8	*Tursiops truncatus*	3	2	Endangered	Insuficient Data	Data Deficient
9	*Phocoena phocoena*	3	2	Endangered	Insuficient Data	Data Deficient

Annex 1.7 Trend of natural habitat types of community interest whose conservation requires the designation of special areas of conservation(SCI/SAC); that occurs in DDBRs perimeter.

Nr. crt.	N2000 Code	Habitats	Romanian legislation OUG 57/2007	Habitat Directive	Trend 1990-2008 DDBR	Current ecological status in DDBR
1	1110	Sandbanks which are slightly covered by sea water all the time	1	1	Fluctuating	Secure
2	1150	* Coastal lagoons	1	1	Decreasing	Declining
3	1210	Annual vegetation of drift lines	1	1	(Secure)	(Secure)
4	1310	Salicornia and other annuals colonizing mud and sand	1	1	Stable	Secure
5	1410	Mediterranean salt meadows (*Juncetalia maritimi*)	1	1	Stable	Secure
6	1530	* Pannonic salt steppes and salt marshes	1	1	Stable	Secure
7	2110	Embryonic shifting dunes	1	1	Fluctuating	(Secure)

8	2130	* Fixed coastal dunes with herbaceous vegetation (“grey dunes’)	1	1	(Stable)	(Secure)
9	2160	Dunes with *Hippophaë rhamnoides*	1	1	Stable	Secure
10	2190	Humid dune slacks	1	1	Stable	Secure
11	3130	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*	1	1	Stable	Secure
12	3140	Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp.*	1	1	Stable	Secure
13	3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation	1	1	Stable	Secure
14	3160	Natural dystrophic lakes and ponds	1	1	Increasing	Secure
15	3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	1	1	Stable	Secure
16	3270	Rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation	1	1	Stable	Secure
17	6120	* Xeric sand calcareous grasslands	1	1	Stable	Secure
18	6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	1	1	Stable	Secure
19	6420	Mediterranean tall humid grasslands of the *Molinio-Holoschoenion*	1	1	Stable	Secure
20	6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	1	1	Stable	Secure
21	6440	Alluvial meadows of river valleys of the *Cnidion dubii*	1	1	Stable	Secure
22	6510	Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*)	1	1	Stable	Secure
23	7210	* Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	1	1	Stable	Secure
24	91F0	Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great	1	1	(Stable)	(Secure)

		rivers (*Ulmenion minoris*)				
25	92A0	*Salix alba* and *Populus alba* galleries	1	1	Stable	Secure
26	92D0	Southern riparian galleries and thickets (*Nerio-Tamaricetea* and *Securinegion tinctoriae*)	1	1	Stable	Secure

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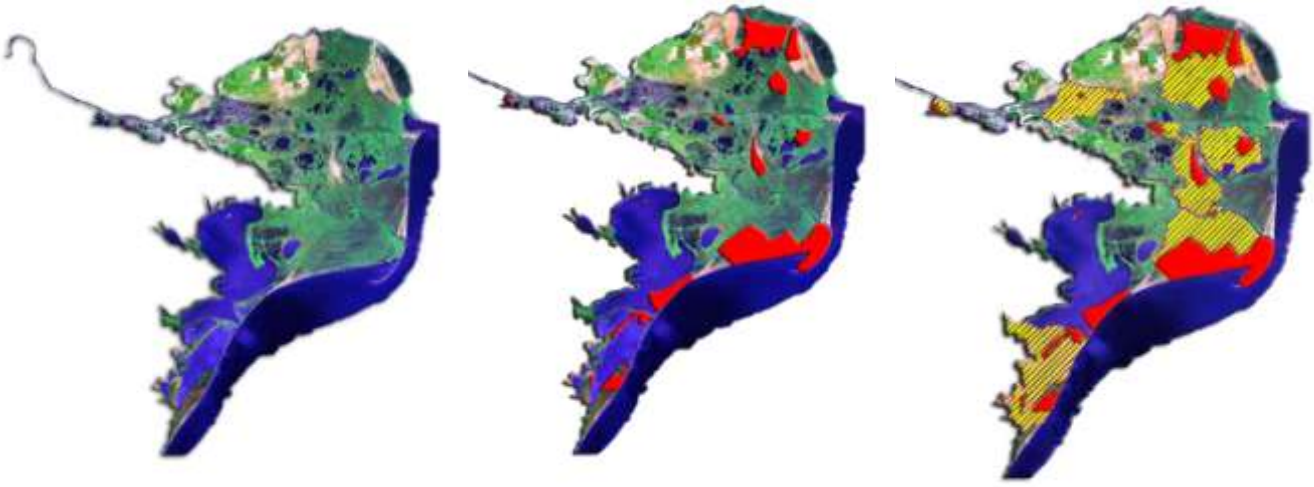

"Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve"

Contract of services no. 2489 of 05.02.2010 (I.N.C.D.D.D. no. 413 / 2010)

Acquirer: Danube Delta Biosphere Reserve Authority

March 2011

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TULCEA

The name of the phase II:

Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

The objectives of the phase II:

1. Reassessment of current functional zones of Danube Delta Biosphere Reserve and compilation of the technical and scientific documentation for the core areas limit changes, proposed for DDBR.
2. Scientific underlie of the potential new core areas or other special conservation type of zones in DDBR – part of Natura 2000 network
3. Conceive the management plan proposal correlated with the other Danube Parks target areas management plans.
4. Proposals about collecting data institutional attributions from DDBR and processing information through compatible methods used by DanubeParks partners
5. Proposals about long term monitoring protocols (correlated with potential similar protocols from the DanubeParks target areas) of the wild species and natural habitats of conservative interest from DDBR

Acquirer:

Danube Delta Biosphere Reserve Authority
Tulcea, 34, Portului, Phone: 0240 518 924, Fax: 0240 518 975

Provider:

Danube Delta National Institute for Research and Development
Tulcea, 165, Babadag, Phone: 0240 531520, Fax: 0240 533547

GENERAL DIRECTOR: eng. Ştiucă Romulus _____

SCIENTIFIC DIRECTOR: dr. eng. Staraş Mircea_____

PROJECT MANAGER: Doroşencu Alexandru_____

General frame of the contract

The works within the Contract of services no. 2489 of 05.02.2010 (413 of 2010), entitled: **Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve,** financed by: **Danube Delta Biosphere Reserve Authority,** carry on under the auspices of the **SEE Programme 2007-2013 Danube River Network of Protected Areas – Development and Implementation of Transnational Strategies for the Conservation of the Natural Heritage at the Danube River.**

"Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve"

Phase II: Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

SUMMARY

Contract of services no. 2489 of 05.02.2010 - Phase II (2011)

Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve

Name of the Phase II: Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

In order to achive the goals of the contract, a project team with experience in different fields was nominated, as follows:

From DDNI the project team is :

Nr.	Name	Competence
1	DOROFTEI Mihai	Expert – vegetation
2	LUPU N. Gabriel	Expert – invertebrates
3	NĂSTASE Aurel	Expert – ihtiology
4	TÖRÖK Zsolt	Expert – herpetology&invertebrates
5	DOROŞENCU Alexandru	Expert - ornithology
6	BOZAGHIEVICI Raluca	translator
7	NICHIFOR Cristina	translator
8	MARINOV Mihai	Expert –ornithology& mamals

Contract of services no. 2489 of 05.02.2010 - Phase II (2011)

1. Name of the contract of services:

” Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve”

Phase II: Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

Objective 1

Reassessment of current functional zones of Danube Delta Biosphere Reserve and compilation of the technical and scientific documentation for the core areas limit changes, proposed for DDBR.

RESULTS

The proposals for delimitation of some surfaces included in the category of core areas and the proposal of new areas within the buffer or economic zones, are based on current, real and relevant results from the investigations undertaken by the DDNI specialists in the field, both during this contract as in previous years, along with the collaborators in the country and abroad. Also it was consulted the literature that refers to recent studies (1995-2010) undertaken within the DDBR.

In this study we have conducted assessments of biodiversity in the whole area of the Danube Delta Biosphere Reserve, insisting on the 18 core areas declared by the Government Decision no. 248/1994 and on the two scientific reserves declared by Government Decision no. 1066/2010.

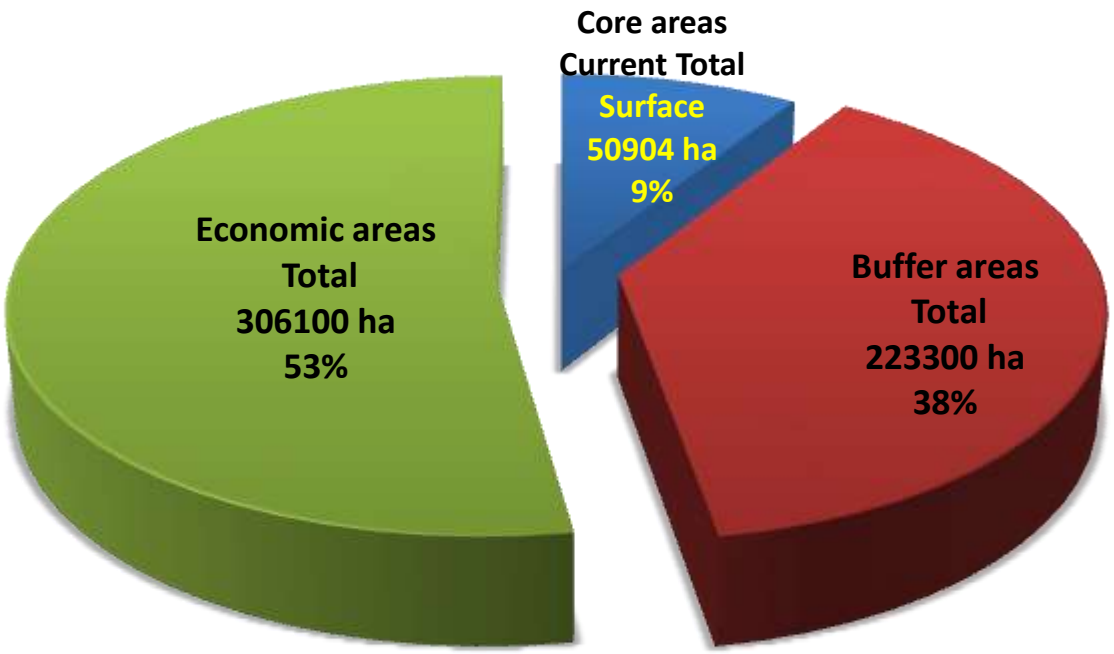

Figure 1. Current zoning of the DDBR

The field investigations in this contract and the results of several studies previously conducted before this within the DDBR perimeter, revealed several aspects, namely:
- there are surfaces from full protection regime areas that no longer meet the objectives for which they were nominated in that category, primarily due to natural dynamics of the ecosystems or the poverty of the species and habitats of community interest.
- there are areas within the perimeter of the buffer zones and even outside those, holding habitats and species of community interest, well preserved, which are scientifically justified to be included (*whose inclusion in the category of areas with full protection regime within the DDBR is scientifically justified*) in the category of areas with full protection regime within the DDBR.

Table 1.1. The areas with full protection regime and the scientific reserves whose perimeter is recommended to be maintained within the current limits:

Current no.	***The name of the area***	***Characteristics of biological diversity***
1.	**Roşca-Buhaiova**	This area hosts the largest colony of White Pelicans (*Pelecanus onocrotalus*) in Europe and the Western Palearctic (3500-4000 pairs). Also, together with the Common Pelicans, there are nesting about 50 pairs of Dalmatian Pelican (*Pelecanus crispus*). The water bodies comprised within the perimeter of this area are of mesotrophic type. High number of species and aquatic phytocenosis characteristic for mesotrophic fresh water. Aquatic herpetofauna and rich ichtyofauna.
2.	**Letea**	The richest area in the DDBR in number of species of vascular plants, with many Southeastern Europe elements, including *Periploca graeca*, and also the largest number of orchids (7 species), rare and very rare for this area, and missing or endangered in the most parts of their geographical areas (*Anacamptis pyramidalis, Epipactis atrorubens, Epipactis palustris, Neottia nidus-avis, Orchis coriophora fragrans, Orchis elegans, Platanthera bifolia*). Many new species or with single point reference for the DDBR. Large number of insect species, many of which are found, within the DDBR, only in this area. The avifaunistic importance of the area is remarkable, being identified between 3 to 5 breeding pairs of White-tailed Eagle (*Haliaeetus albicilla*).
3.	**Răducu Lake**	Returning to the mezotrophic state of the lakes. High number of species and aquatic phytocenosis characteristic for mesotrophic fresh water. Aquatic herpetofauna and rich ichtyofauna.
4.	**Vătafu-Lunguleţ**	Habitats specific for the oligotrophic-mesotrophic aquatory with low water exchange. Great variety of species and aquatic and marsh phytocenosis characteristic for those habitats. The species of community interest *Aldrovanda vesiculosa* is present. The area with the largest populations of carp and other **stagnofil** fish species.
5.	**Caraorman Forest**	The existence of Mediterranean - Turenian forest type and mobile and semi mobile dunes. A high number of species of vascular flora were recorded, being also recorded some very rare species for the DDBR like the two orchid species *Cephalantera longifolia* şi *Dactylorhiza incarnata*. High diversity among insects, with a large number of new species for the DDBR and Mediterranean and Balkan elements. Rich in **passeriformes** and birds of prey avifauna. It is noticed the White-tailed Eagles nesting activity within the perimeter of this area, in number of 10-02 pairs.
6.	**Sărături-Murighiol**	Brackish lake of chloride-sulphate type, with islands on its surface, where colonies of Common Tern *Sterna hirundo*, Mediterranean Gull *Larus melanocephalus*, Black-headed Gull *Larus ridibundus* and Caspian Gull *Larus cachinnans* have installed. It should be noted that in case of the species *Larus melanocephalus*, this place is the only nesting site within the country.
7.	**Popina Island**	Typical habitat for lagoon island on erosion markers. High number of species of vascular plant and steppe phytocenosis. Also in this area, the Natura 2000 habitat type of priority conservation interest ***62C0 * Ponto-Sarmatian steppes*** is reported. A large number of insect species of which it is noticed the endemic orthoptera species *Isophia dobrogensis*. The giant myriapod *Scolopendra cingulata* is abundant on the island. The rocky shores of the island favor the presence of large populations of water snake *Natrix tesellata*. The Common Shelduck *Tadorna Tadorna* is regularly nesting on the island. Important staging area during the migration periods for many species of birds.
8.	**Grindul**	Because of its position between the Zmeica, Golovita and Sinoe lakes, with low

	Lupilor	relief rates (0.5 to 1.5 m height) and sandy soils specific vegetation of marine origin, is an important refuge area for nesting and feeding of the birds. Particularly important area for wader birds nesting species. Especially during autumn migration in the area focuses a great number of birds. The area is also important during wintering period for Anatidae species (especially for Red-breasted Goose *Branta ruficollis* and Whooper Swan *Cygnus Cygnus*). In this area it is found on large surfaces the Natura 200 European nature conservation interest habitat type - ***1310 Salicornia and other annuals colonising mud and sand.*** Because of low rates and favorable conditions, this area has a great importance for the natural reproduction of the fish species: Common Carp (*Ciprinus carpio*), Pike Perch (*Stizostedion lucioperca*), Bream (*Abramis brama*), etc.
9.	**Grindul Chituc**	Great variety of aquatic and terrestrial habitats from the coastal area with mobile and semi-mobile sand dunes, pastures on low maritime ridge, swamps and brackish marshes. High number of vascular plant species characteristictic of sandy and steppic areas, including those first recorded in the DDBR. Very important resting and feeding area during migration for a large number of bird species.
10.	**Rotundu Lake**	It is a representative lake of the Danube Meadow, between Isaccea and Tulcea. It is a typical floodplain lake. The main scientific arguments that support the maintaining of the lake in the list of the core areas of the DDBR are of geographical type.
11.	**Belciug Lake**	Typical mesotrophic lake habitat with an active exchange of waters. The deepest lake within the DDBR, because of its genesis from a dead arm of the Danube. High number of mollusk species, including *Oxyloma pinter*, relatively common in the area, but which is a national endemite and it is the only place where the species still remain. Stagnofil and stagnofil-reofil ichtyofauna tank, particularly for Pike, Perch, Common Carp and Catfish and also relatively rich in Crucian Carp and Tench.
12.	**Prundu cu Păsări Islands**	This reserve is home to the largest compact colony of Spoonbill (*Platalea leucorodia*) in the DDBR. Also, the area is an important resting place for the White Pelican (*Pelecanus onocrotalus*) and Dalmatian Pelican (*Pelecanus crispus*), in the case of the last one being recorded also nesting attempts.
13.	**Ceaplace Island**	This reserve is an important nesting site for the Dalmatian Pelican (*Pelecanus crispus*), here being identified up to 120-140 of breeding pairs. It is also an important roosting area for the White Pelican (*Pelecanus onocrotalus*).

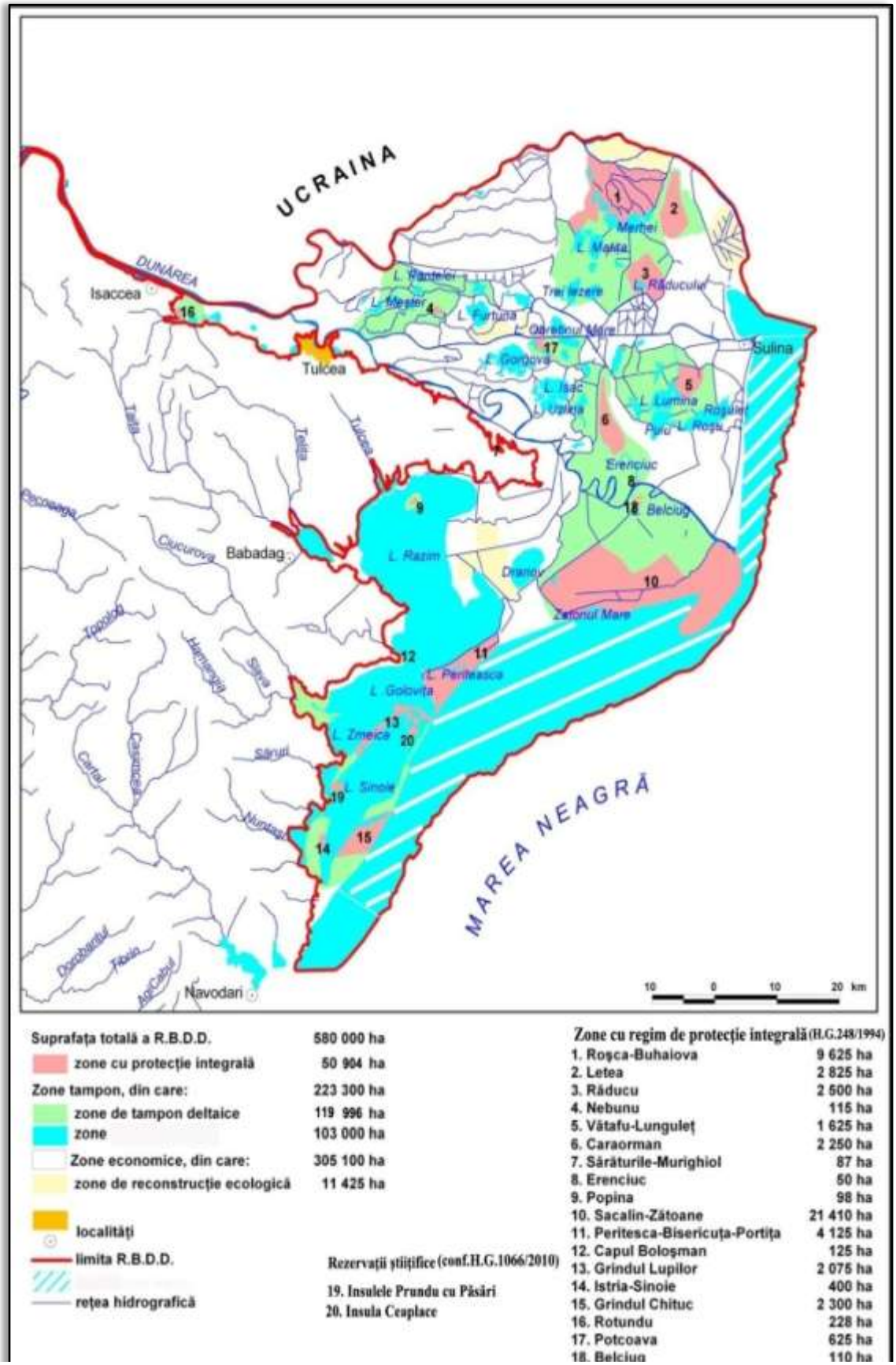

Figure 1.2. The current configuration of the functional areas of the Danube Delta Biosphere Reserve in accordance with Government Decision No. 248/1994 and Government Decision No. 1066/2010

Areas with full protection regime
whose perimeter is recommended to change

1. **Doloşman Cape**

Surface according to Government Decision no.248/1994 – 125 hectares

Proposed surface – 70 hectares

It should be noted that the proposed area was calculated using the ArcView 3.1 program and represents the flat surface of the area. Given that the energy relief is higher within this area, we recommend the establishment of the real surface (larger) of the new surface proposed for the Doloşman Cape core area, through a cadastral survey.

a) Delimitation

According to Government Decision no.248/1994

It is represented by the eastern extremity of the Doloşman headland**,** nearby the Jurilovca Village, including the location of the Greco-Roman fortress ruins Argamum (V century BC) and the steep cliffs of this headland, up to the plug of Sălcioara irrigation pumping station.

Proposed changes:

- **Exclusion** of the emplacement of the Greco-Roman fortress ruins Argamum (V century BC) from the full protection regime perimeter. Within the perimeter of the fortress, habitats or species of plants and animals of community conservation interest were not identified.
- **Extension** of the full protection regime zone within a radius of 100 m inside the Razim Lake throughout the cost length. This surface is an important feeding area for the Otter population *Lutra lutra*, but also a gathering and feeding area for many species of seabirds and of a significant population of Water Snake *Natrix tessellata*.

The new limits proposed for the Dolosman Cape core area are the eastern extremity of the Doloşman headland**,** nearby the Jurilovca Village including all of the steep cliffs of Doloşman promontory in the east, up to the plug of Sălcioara irrigation pumping station in west. The north-eastern limit is represented by a conventional line of 100 meters inside the Razim Lake, parallel to the promenade along the Razim Lake shore. The south-eastern limit is represented by the north side of Greco-Roman fortress ruins Argamum (sec. V BC), while the southern and south - west limit follows the service road on the Doloşman hill.

b) Ecological description

The highest rocky steep habitat on erosion markers of the DDBR, which owns a number of plant species – pontic endemites *Centaurea jankae, Astragalus versicarius pseudoglaucus and Astragalus dolicophyllus*. In this area also, the Natura 2000 habitat type of priority conservation interest ***62C0 * Ponto-Sarmatian steppes*** is reported which in the DDBR can be found only on Popina Island. The area has a high herpetological value through the presence of a large population of Water Snake *Natrix tessellata*, but also through the existence of a population of Balkan Green Lizard *Lacerta trilineata* and Caspian Whipsnake *Coluber caspius*. It is an important breeding and feeding area for the Otter *Lutra lutra*. From the ornithological point of view, in this area Peregrine Falcon *Falco peregrinus* and the nesting of the Black Swift *Apus Apus* are frequently reported.

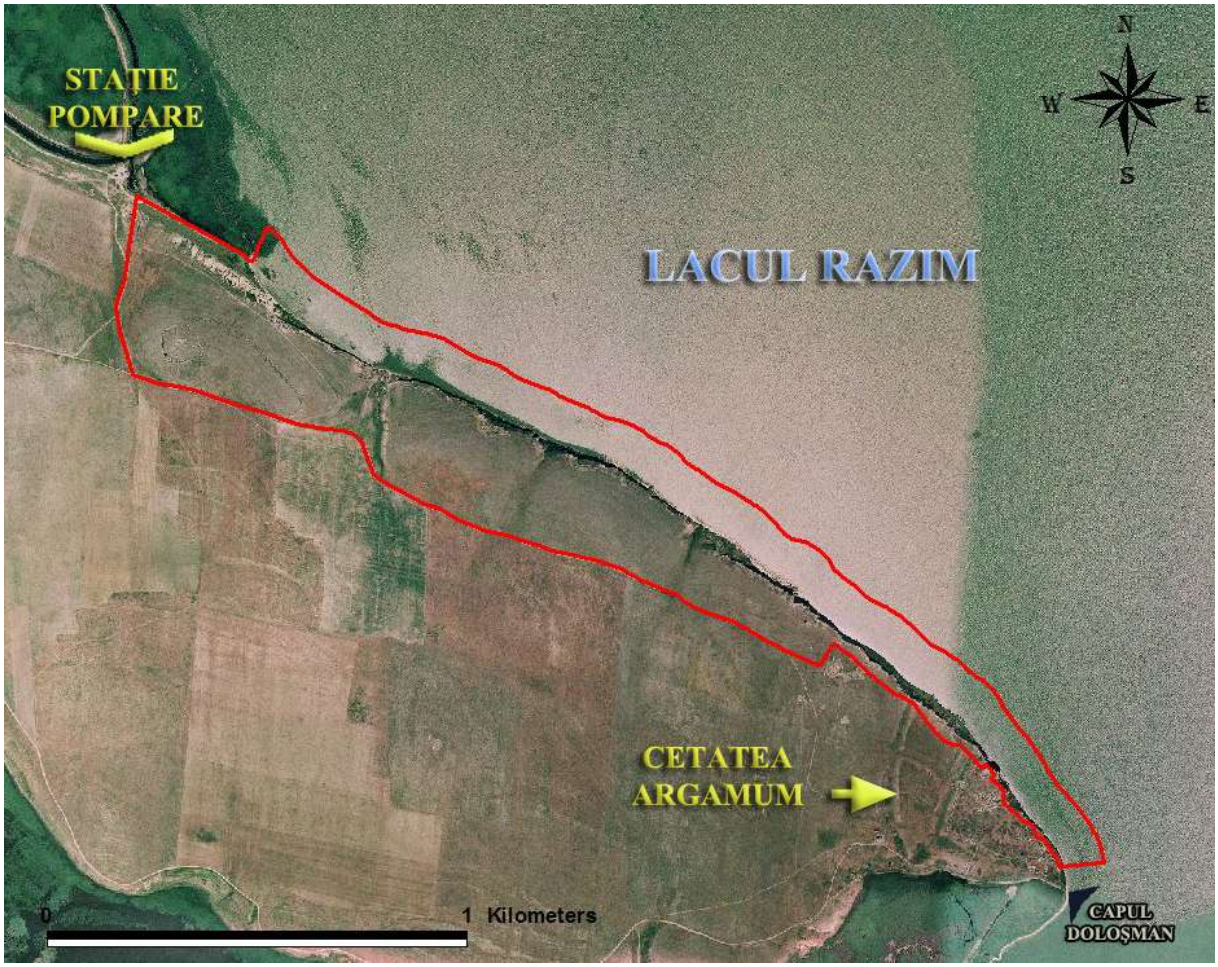

Figure 1.3. The new limits proposed (red line) for the Doloşman Cape full protection regime area („Romania2007" support image provided by the Ministry of the Environment and Forests).

2. Istria-Sinoie

Surface according to the Government Decision no. 248/1994 – 400 hectares

Proposed surface – 1095 hectares

a) Delimitation

According to the Government Decision no. 248/1994

Istria-Sinoe area is located in the south-western part of the reserve, in the north-eastern part of the Saele hill and includes the promontory formed from the green schist on which is emplaced the Histria archeological ensemble and a portion of Saele hill, located between the Histria Fortress – Nuntaşi Village road and the eastern part of the Saele hill, with a length of 6 km towards south and an width comprised between 1.300 m towards north and 300 m towards south.

Proposed changes:

- Exclusion - to exclude the emplacement of the Histria Fortress but the eastern limit of the promontory formed from green schist who is located outside the fortress should be maintained within the perimeter of the core area, because it hosts a significant population of Water Snake *Natrix tessellata*.

- Extension – to include the south part of the Sinoe Lake and the southeast part of the Saele Sandbank. To expand in south and south and south-eastern delimitation to be represented by the

limit of Sinoe Lake which is one of the most important resting and feeding areas for migratory aquatic birds that are wintering in southern part of the lagoon complex.

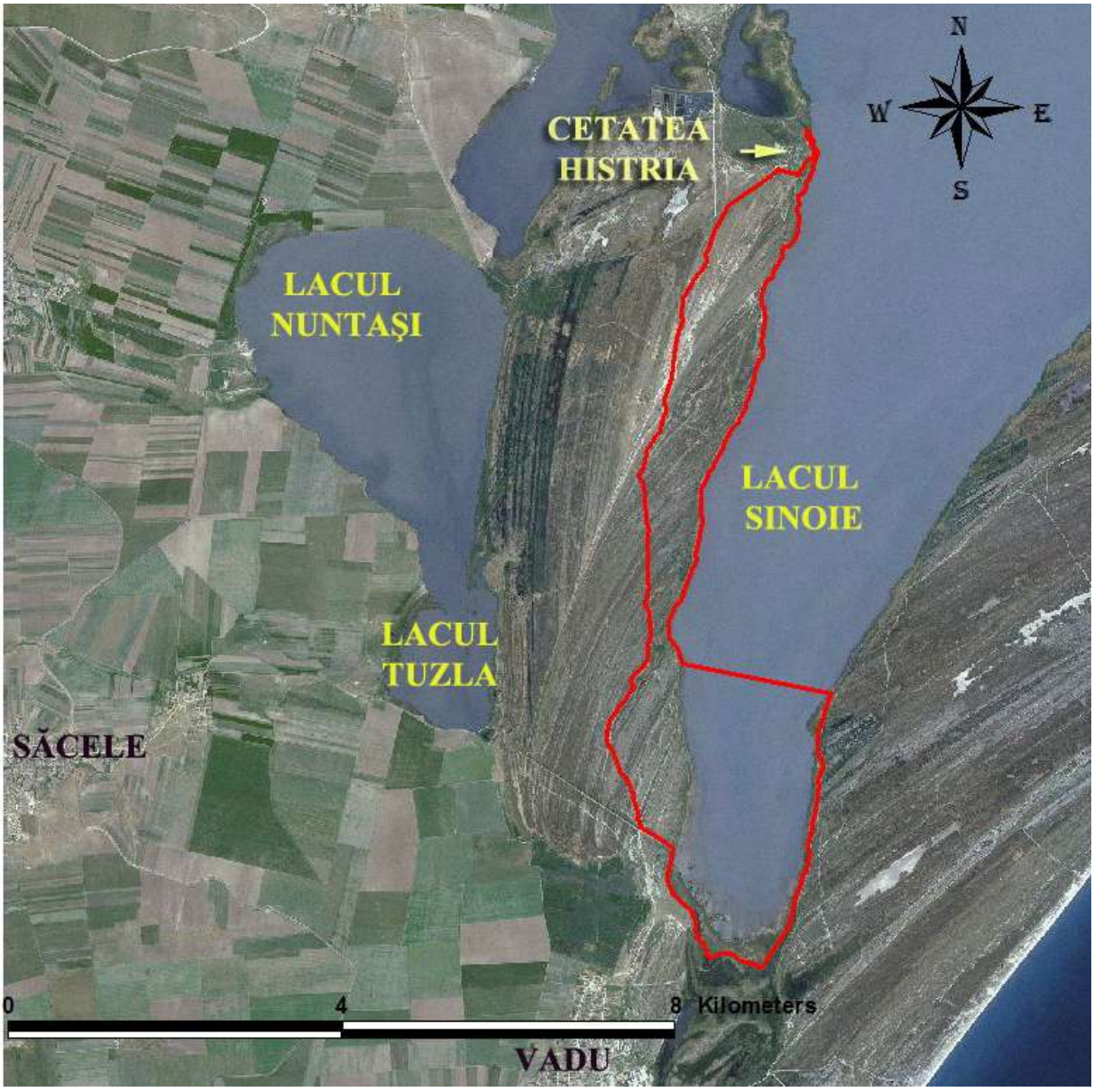

Figure 1.4. The new limits proposed (red line) for the Istria - Sinoe full protection regime area („Romania2007" support image provided by the Ministry of the Environment and Forests).

<u>The new limits proposed for the Istria-Sinoie core area are</u>:
Istria-Sinoe area is located in the southwestern part of the reserve, in eastern part of the Saele Sandbank and includes the eastern end of the promontory formed of green schist, excluding the Histria archaeological ensemble and the eastern part of the Saele Sandbank. The north-western limit is represented by the Histria Fortress and by the Histria Fortress – Nuntaşi Village road. The western limit is represented by the service road which is passing through Saele Sandbank from north-west to south-east up to the channel that connects the southern extremities of the Tuzla and Sinoe Lakes. The southern boundary is represented by the southern extremity of Sinoe Lake, until the first green schist outcrops. The western limit is the nearest service road that follows the eastern boundary of Sinoe Lake on a length of about 3.5 km. (Figure 3).

b) Ecological description

The area is characterized by the presence of typical grassland habitats of salty pastures, with swamps and coastal vegetation, including reeds. It has a great wealth of steppic and arenicola vascular plants species with a high conservation value within the Natura 2000 Network. The area poses a high herpetological value through the presence of a relatively numerous population of Spur-thighed tortoise *Testudo graeca ibera*, and of a large number of *Natrix tessellata*. Also, the Eastern Spadefoot Toad *Pelobates syriacus balcanicus* is abundant in the area. The south part of the Sinoe Lake is a key gathering area for feeding and resting of the aquatic birds during migration and winter.

2. Nebunu Lake

Surface according to the Government Decision no. 248/1994 – 115 hectares

Proposed surface – 300 hectares

a) Delimitation

According to the Government Decision no. 248/1994

The area is located within the Șontea-Furtuna Lake Complex, including the Nebunu Lake and the adjacent area, bounded by Șontea pond at south and by the limits of the Nebunu Lake at west, north and east.

Proposed changes:

- **Exclusion** – the southern limit will be represented by the lake's limit, eliminating in this way the area comprised between the Șontea pond and the southern limit of the lake.
- **Extension** of the core area in north and north – west up to Candura channel, and in the east, along the pond that unites Nebunu Lake with Candura channel. The current perimeter of the core area includes only Nebunu Lake. On the north, north-east part of the lake, area now located within the buffer zone, one of the biggest and the most important polispecific nesting colony at national and European level is established from many decades, being evaluated during this year with a number of 9 aquatic species (Table 1.2). For this reason, we propose that the new core perimeter to expand according to the extensions proposed and illustrated in figure 4, so it should include also that colony.

The new limits proposed for the Nebunu Lake core area are:

The area is located within the Șontea-Furtuna Lake Complex, including the Nebunu Lake and the adjacent area, bounded by the Nebunu Lake's limit at south, by Candura channel at west and north and at east by the pond that unites Nebunu Lake with Candura channel.

b) Ecological description

Nebunu Lake and its surroundings are a shallow lacustrine area, characteristic to the river delta which hosts specific biocoenosis, adapted to large amplitudes of the flood wave. It hosts one of the biggest and most important polispecific colonies of the DDBR, particularly important for the populations of the species: *Phalacrocorax pygmeus*, *Egretta garzetta*, *Ardeola ralloides*, *Nycticorax nycticorax*, *Platalea leucorodia* and *Plegadis falcinellus*. In passage periods (spring and autumn) here are regularly recorded major congestions of aquatic birds. Also, it represents a major feeding area for the Dalmatian pelican (*Pelecanus crispus*) and the White-tailed Eagle (*Haliaeetus albicilla*). Because of its isolation, the lake provides optimal conditions for spawning and growing of the ichthyofauna specific to the shallow and low extension lakes.

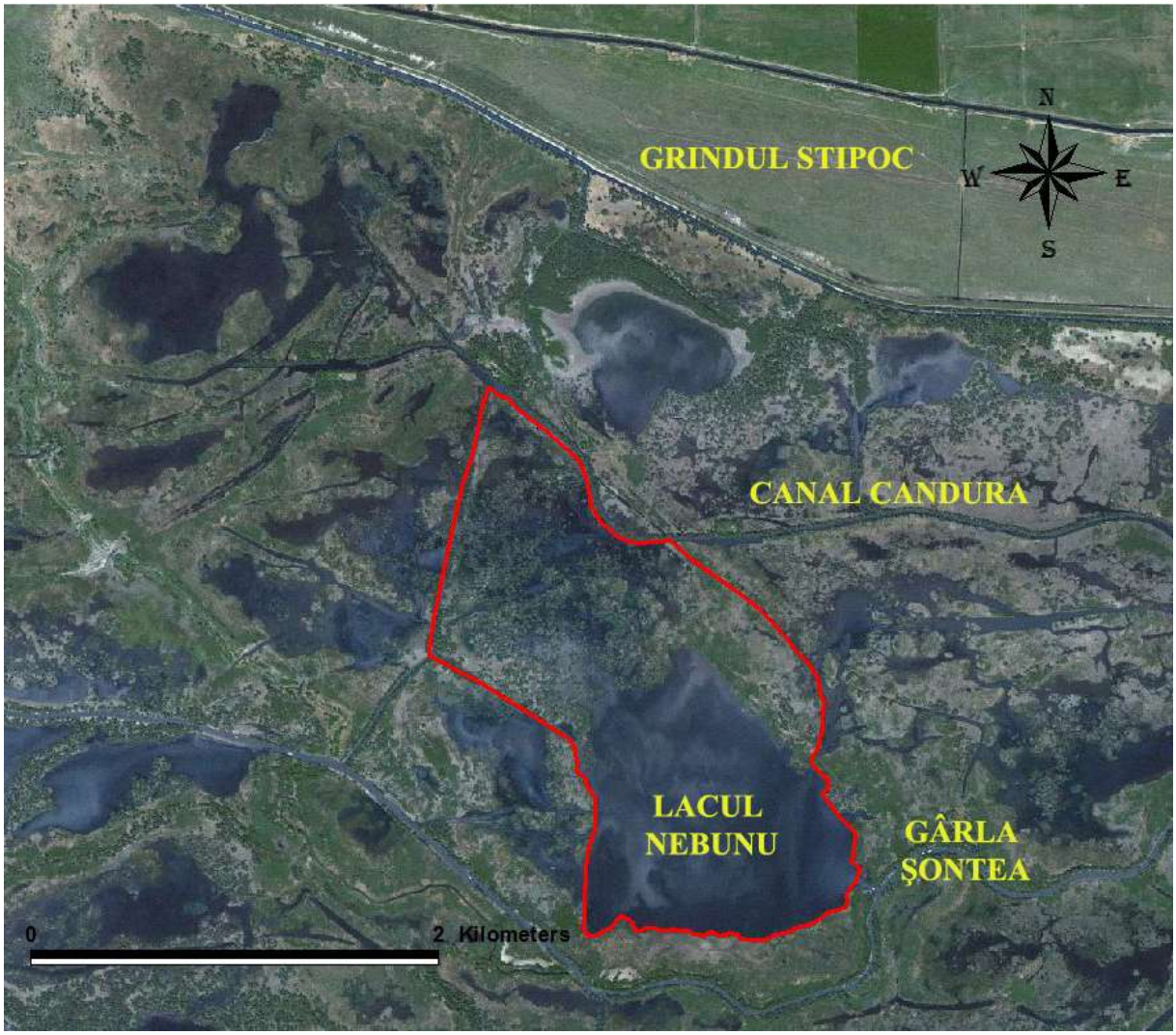

Figure 1.5. The new limits proposed (red line) for the Nebunu Lake full protection regime area („Romania2007" support image provided by the Ministry of the Environment and Forests).

Table 1.2. The nesting birds recorded in 2010 in the Nebunu mixed colony

Colony name	Species	Recorded birds (pairs)
Nebunu	*Phalacrocorax carbo*	200
	Phalacrocorax pygmeus	700
	Ardea cinerea	10
	Egretta garzetta	500
	Ardeola ralloides	500
	Bubulcus ibis	2
	Nycticorax nycticorax	400
	Platalea leucorodia	40
	Plegadis falcinellus	450

3. Arinişul Erenciuc

Surface according to the Government Decision no. 248/1994 –50 hectares

Proposed surface – 185 hectares

a) Delimitation

According to the Government Decision no. 248/1994

The Erenciuc area includes the alder bushes located on both sides of the access channel to the Erenciuc Lake, being bounded at south by Sfântu Gheorghe Arm, at north by Erenciuc Lake, the eastern and western limits being the limits of the forestry area.

Proposed changes:

- For the new limits, we propose the renaming of this area into Arinişul Erenciuc and Erenciuc Lake.
- **Extension** of the core area to north and north – west, including the entire Erenciuc Lake

The core area is currently limited to a surface of 50 ha, located in the south part of the lake, to its mouth in the Sfântu Gheorghe Arm, which contains a typical forest habitat of shrubs of the riparian and wetland areas frequently flooded, characteristic being the glacial relict tree, the Black Alder (*Alnus glutinosa*). The extension is proposed because Erenciuc Lake is a representative example for the Natura 2000 habitat type of European conservation interest - ***3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition vegetation type.*** Just like Belciug Lake, Erenciuc Lake genesis derives from a former meander of the Danube, with a flora and fauna richer than most intra deltaic lakes. Here is meet a number of important species of invertebrates and vertebrates (33 fish species, 5 amphibian species, two reptile species, 96 bird species, 11 mammal species). We propose that the new boundaries of the core zone should include also the Erenciuc Lake area (Figure 5).

The new limits proposed for the Arinişul Erenciuc core area are:

The area includes the Erenciuc Lake and the alder bushes located on both sides of the access channel in the southern part of the lake. The southern limit is represented by the Sfântu Gheorghe Arm. It includes the forestry area and the lake itself, within the banks, at Danube's highest levels

b) Ecological description

The genesis of the Erenciuc Lake derives from a former meander of the Danube, being a representative example for the Natura 2000 habitat type of European conservation interest - ***3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition vegetation type.*** The area contains in the southern extremity a typical forest habitat of shrubs of the riparian and wetland areas frequently flooded, characteristic being (for the Danube Delta) the glacial relict tree, the Black Alder (*Alnus glutinosa*). It is also an important area for the White-tailed Eagle (*Haliaeetus albicilla*) nesting.

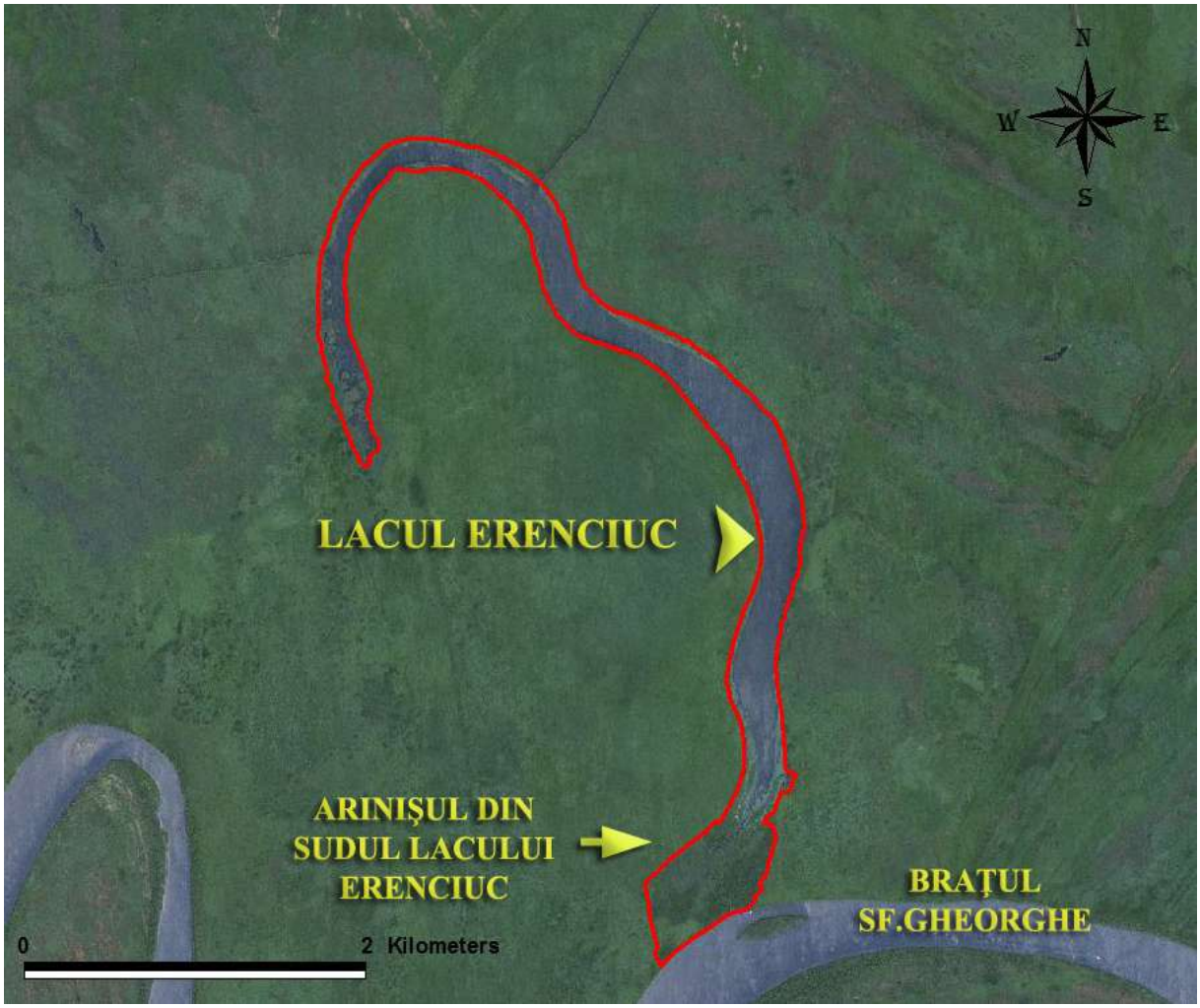

Figure 1.6. The new limits proposed (red line) for the full protection regime area - Arinişul Erenciuc & Erenciuc Lake („Romania2007" support image provided by the Ministry of the Environment and Forests).

5. Periteaşca-Leahova

Surface according to the Government Decision no. 248/1994 – <u>4125 hectares</u>

Proposed surface – 5220 hectares

a) Delimitation

According to the Government Decision no. 248/1994

Periteaşca - Leahova area is located in the south part of the reserve, being bounded on the north-east by the Periteaşca channel, between the Black Sea and the Razim Lake, at north by the Razim Lake, from the Periteaşca channel to the Bisericuţa Island inclusive, at west by the Goloviţa Lake, from the Bisericuţa island to Gura Portiţei, at south and south-east by the Portiţa pond and the Black Sea shore, between the Portiţa and Periteaşca fisheries, exclusively the two fisheries and the Portiţa camping.

<u>Proposed changes</u>:

- For the new limits, we propose the renaming of this area into **<u>Periteaşca-Leahova – Perişor</u>**

- **Extension** of the core area to north-east, including the entire Perişor Sandbank up to Perişor channel. To the northeast, near the Periteaşca channel, the Steppe Viper (*Vipera ursinii*), makes its appearance, endangered species in its geographical area primarily due to disappearing of its favorable habitats, reason for what a great importance is given to it in terms of conservation. It becomes manifold on the Periteaşca-Perişor Sandbank, between the Periteaşca and Perişor (area currently located in the economic zone). Currently, this area has a population of approx. 2000 copies, probably the largest in its geographical distribution area. Here, there still are rare species of plants (*Trachomitum venetum*), as well as numerous specimens of lizards from the *Lacerta agilis* and *Eremias arguta* species, and recently, a significant population of the beetle *Scarabaeus affinis*, endangered in Romania and Europe, has been identified. So far the area has not suffered significant human disturbances. For these reasons, we propose that the new perimeter of the core zone should include this area also (Figure 6).

The new limits proposed for the Periteaşca-Leahova core area are:
Periteaşca -Leahova area is located in the southern part of the reserve, being bounded at north-east by the Perişor Sandbank and the homonymous channel; at north by the Razim Lake, from the Bisericuţa Island inclusively up to the Periteaşca channel and the northern limit of the Perişor Sandbank up to the homonymous channel; at west by the Goloviţa Lake, from the Bisericuţa Island to Gura Portiţei; at south and south-east by the Portiţa pond and the Black Sea shore, between the Portiţa and Periteaşca fisheries and up to the Perişor channel, exclusively the two fisheries and the Portiţa camping.

b) Ecological description

Located in the Razim-Sinoe Lagoon Complex, the area is a patchwork of slightly halophyle sandbanks and shallow lakes (Periteaşca, Coşna (Coşnei), Pahome, Rânec, Leahova), undergoing into a process of continuous sweetening after the closing of the Gura Portiţei and the strengthening of the beach, on the sands bathed by the sea or Razim Lake, as well as the biocoenosis adapted to high salinity variations. It is a favorite area for the nesting of the wader species, of the shelducks (Bisericuţa Island) as well as for laridae and sternidae (halophyle sandbanks). Bisericuţa Island is an important resting place for a significant number of Dalmatian pelican (*Pelecanus crispus*), but also for nesting in some years. This area is an important resting and feeding refuge for waterfowl species, particularly in migration, but also for wintering. Also significant effects of *Branta ruficolis* species (Red-breasted goose) are recorded in this area during their resting period in the DDBR. On levees Periteaşca and Perişor Sandbanks is the largest population of *Vipera ursinii* (Steppe Viper) in the country.

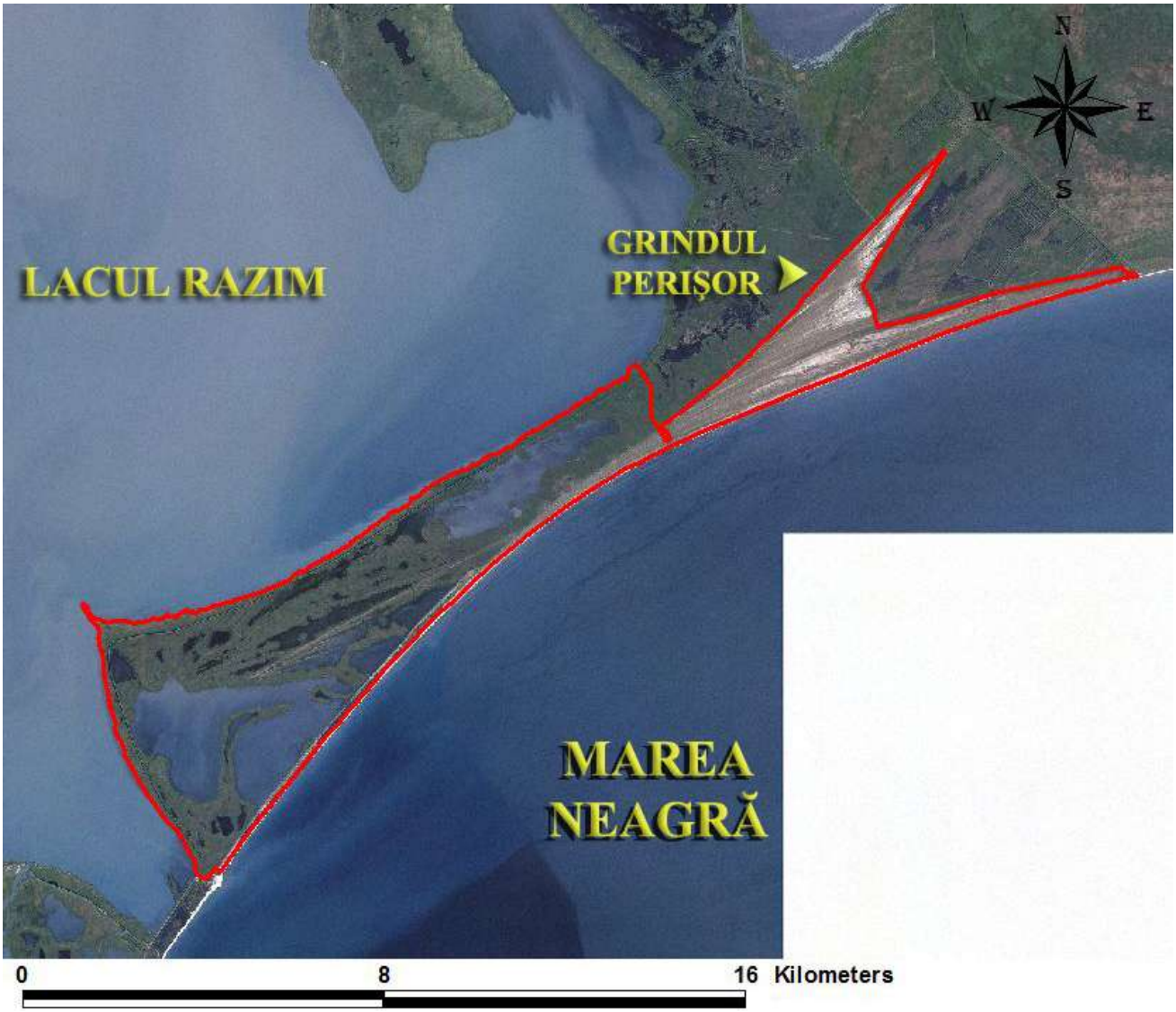

Figure 1.7. The new limits proposed (red line) for the full protection regime area - Periteaşca-Leahova and Perişor Sandbank („Romania2007" support image provided by the Ministry of the Environment and Forests).

6. Potcoava Lake

Surface according to the Government Decision no. 248/1994 –<u>652 hectares</u>

Proposed surface – 1840 hectares

a) Delimitation
According to the Government Decision no. 248/1994

It includes the area between the Babinţii Mari, Babinţii Mici and Potcoava lakes, including the Potcoava Lake, being situated between Gorgova and Obretinul Mic lakes, the northern boundary being parallel to the Sulina branch. To the east, the limit is represented by the area of the water meadows and swamps situated on the eastern boundary of the Potcoava Lake, to the south of the northern limit (boundary) of the Potcoava Lake, and at west it is bounded by the Babinţii Mari and Babinţii Mici lakes.

<u>Proposed changes</u>:

- For the new limits, we propose the renaming of this area into **Babinţii-Potcoava**
- **Extension** of the core area in east and north-east up to the limit of the Obretinul Mic and Obretenciuc lakes. In south, it extends up to the Litcov channel, and in west up to the Babinţii pond. The northern limit extends along the belt channel (parallel with the Sulina Arm) up to the right of the mile 16.5 (at east) and up the right of mile 19 (the intersection with Babinţii pond, in west). Through the proposed extensions within this area, the polispecific colony, located between Obretinul Mic and Obretenciuc lakes, is included (Table 1.3). Also, important nesting areas for bird species of European conservation interest are included, like: Red Duck (*Aythya nyroca*), Great Bittern (*Botaurus stellaris*), Little Bittern (*Ixobrychus minutus*) and Purple Heron (*Ardea purpurea*). The area proposed for extension in the southern part is important through the presence of a large population of European Mink (*Mustela lutreola*).

The new limits proposed for the Potcoava Lake core area are:
It includes the Babinţii Mari, Babinţii Mici and Potcoava lakes, being situated between Gorgova, Obretinul Mic and Obretenciuc lakes. The northern boundary is represented by the belt channel (parallel with the Sulina Arm) between Mile 16.5 (at east) and Mile 19 (the intersection with Babinţii pond). To the east, the area is bounded by the limit of the Obretinul Mic and Obretenciuc lakes, to the south by the Litcov channel and to the west by the Babinţii pond.

b) Ecological description

The area is characterized by the existence of an important polispecific colony with significant populations at national and European level for the species: *Phalacrocorax pygmeus*, *Egretta garzetta*, *Ardeola ralloides*, *Nycticorax nycticorax*, *Platalea leucorodia* and *Plegadis falcinellus.* It also includes important breeding populations of some bird species of European conservation interest such as Red Duck (*Aythya nyroca*), Great Bittern (*Botaurus stellaris*), Little Bittern (*Ixobrychus minutus*) and Purple Heron (*Ardea purpurea*). Fish fauna is represented by a number of endangered species – Crucian Carp and Tench. The area hosts a significant population of European mink (*Mustela lutreola*).

Table 1.3. The nesting birds recorded in 2010 in the Obretinul Mic mixed colony

Colony Name	Species	Recorded birds (pairs)
Obretinul Mic	*Phalacrocorax carbo*	20
	Phalacrocorax pygmeus	1300
	Ardea cinerea	10
	Egretta garzetta	100
	Ardeola ralloides	200
	Nycticorax nycticorax	400
	Platalea leucorodia	40
	Plegadis falcinellus	500

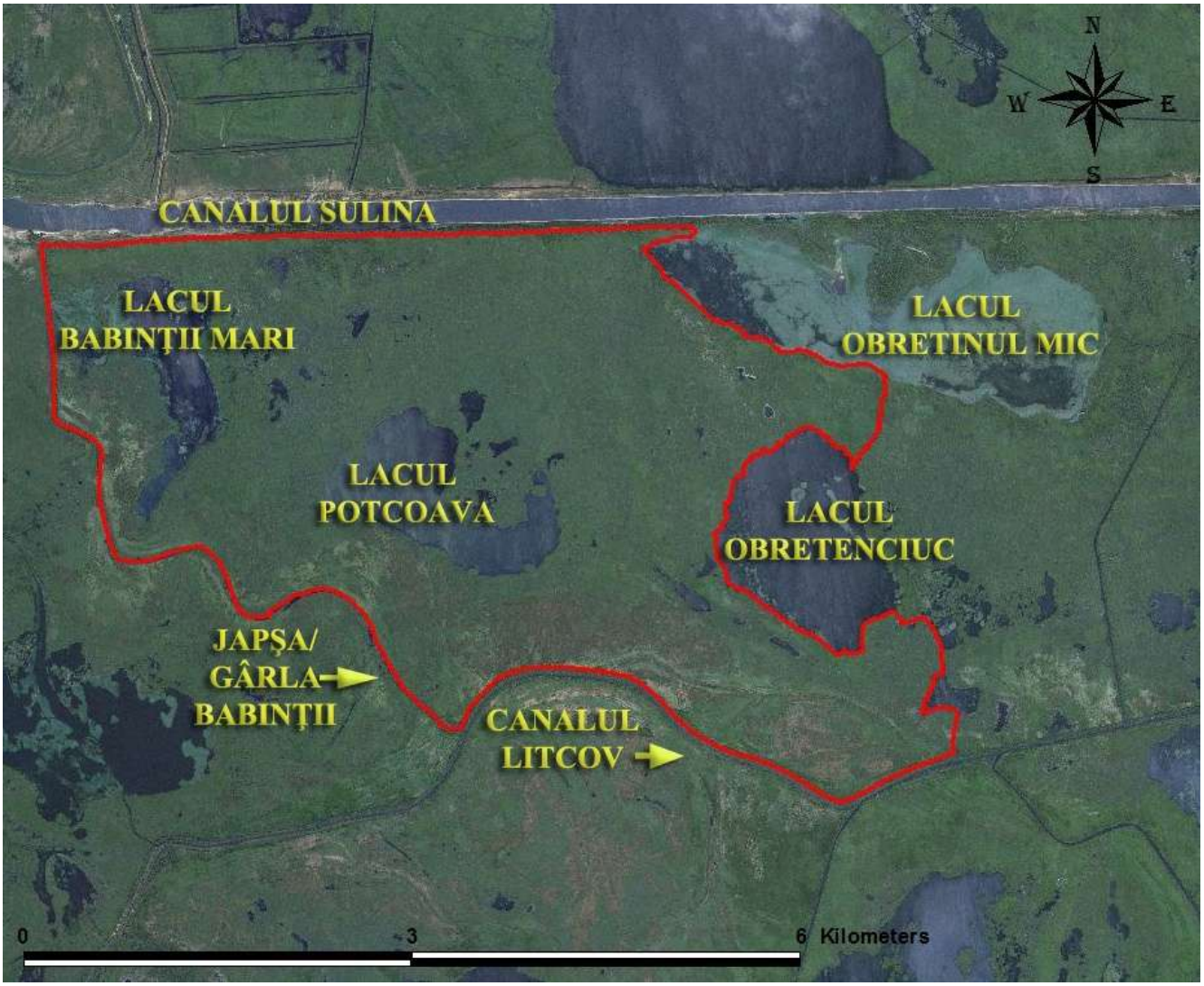

Figure 1.8. The new limits proposed (red line) for the full protection regime area – Babinţii - Potcoava („Romania2007" support image provided by the Ministry of the Environment and Forests).

7. Sacalin – Zătoane

Surface according to the Government Decision no. 248/1994 –<u>21410 hectares</u>

Proposed surface – 21600 hectares

a) Delimitation

According to the Government Decision no. 248/1994

Sacalin-Zătoane area includes the lakes, streams and banks complex located in the southern part of the Dranov Island, with a total area of about 19.340 ha, and the shallow water area located between Sacalinul Mare Island, Sacalinul Mic and the continental limit of the Danube Delta, with a total surface of 2.070 ha. The area is bounded on the north-east by the Sfântu Gheorghe Arm - from km 5 to Sacalin Islands, bypassing through east and south the Sacalin Islands, till their south-west extremity, on the south-west by a conventional line between the south-west extremity of the Sacalin Islands up to the Mocirla area and further to the sea shore, up to Perişor fishery, on the west by the Perişor channel, from Perişor fishery up to the confluence with Tărâţa channel. The north-western limit is represented by the Tărâţa channel, up to the confluence with Crasnicol

channel, from the Crasnicol channel to the confluence with Palade channel, from the Palade channel to the confluence with Buhaz channel, from the Buhaz channel to the confluence with Buhaz-Zaton channel and from Buhaz-Zaton channel to the confluence with the Sfântu Gheorghe Arm, bypassing through the east the fishery's platform.

Proposed changes:

- **Exclusion** of the north-east extremity of the core area, represented by Sacalinul Mic Island and the wetland area comprised between this one and the Flămânda and Buhaz Sandbanks. Is kept within the perimeter of the core area, the forest from the north-east extremity of the Buhaz Sandbank and all the northern part of the Meleua Sacalin up to the mouth of the Gârla Turcească, following then the vegetation limit. Thus, it is proposed the exclusion of a surface of about 1.500 ha of the core area and the inclusion of this zone within the buffer area (Figure 8).
- **Extension** of the core area to the east, thus including the entire surface of the shallow water, having as southern limit a perpendicular conventional line from the south-west extremity of the Sacalinul Mare Island on the continental limit of the Danube Delta. It must be mentions the fact that because of the natural dynamics of the area from the Sfântu Gheorghe Arm's mouth, Sacalinul Mare Island extended constantly towards south and south-west, observing the closing trend of the southern part of the shallow water. Thus, the current limits of the core area do not correspond as surface with the reality on the ground.

The scientific value of the surface proposed for the core statute is offered by the fact that it represents an essential feeding and resting area for the waterfowl that is nesting in this area or just halting during the long migration periods or in winter. There is also a very important area for the Common Carp reproduction in this part of the delta and is a key feeding area for juvenile specimens of migratory sturgeon species but also for Rapacious Carp and Pike.

The new limits proposed for the Sacalin – Zătoane core area are:

Sacalin-Zătoane area includes the lakes, streams and banks complex located in the southern part of the Dranov Island, with a total area of about 17.177 ha, and the shallow water area located between Sacalinul Mare Island, Sacalinul Mic and the continental limit of the Danube Delta, with a total surface of 4.433 ha. The area is bounded on the north-east by the limit of the shallow water, bypassing through east and south the Sacalinul Mare Island, till its south-west extremity; on the south-west, by a perpendicular conventional line between the south-west extremity of the Sacalinul Mare Island on the continental limit of the Danube Delta and further to the sea shore, up to Perişor fishery; on the west by the Perişor channel, from Perişor fishery up to the confluence with Tărâţa channel. The north-western limit is represented by the Tărâţa channel, up to the confluence with Crasnicol channel, from the Crasnicol channel to the confluence with Palade channel, from the Palade channel to the confluence with Buhaz channel, from the Buhaz channel to the confluence with Ciotica-Zaton channel and from Ciotica-Zaton channel up to the fishery's platform, bypassing it through the east and includes the forest from the north-eastern extremity of the Buhaz Sandbank. The north-eastern limit is represented by the eastern extremity of the Buhaz and Flămânda Sandbanks up to the northern limit of the shallow water.

b) Ecological description

Located in the eastern part of the Dranov basin, the Sacalin – Zătoane area is one of the oldest parts of the fluvial-marine delta, characterized through a succession of young marine sandbanks, almost parallel to the coast line, alternating with shallow or isolated lakes and by an intermingling of the marine waters (streams opening directly into sea) with the fluvial waters (through canals and streams). The Lejai Lake hosts the largest colony of Dalmatian Pelican (*Pelecanus crispus*) in the DDBR, making it a key area in the conservation of this species globally. Along with the Dalmatian Pelicans, in recent years approximately 100 pairs of White Pelican (*Pelecanus onocrotalus*) have begun to nest on this lake.

Meleaua Sacalin, due to its special hydrological and biotic characteristics, is an essential resting and feeding area for waterfowl species that nest in the area or just halt during the migration and winter periods.

In ichthyological terms, Meleaua Sacalin is a particularly important area for the Common Carp reproduction. There is also a key feeding area for juvenile specimens of migratory sturgeon species. It is the only core area that contains the Natura 2000 habitat type of conservation interest - ***Coastal lagoons (1150)***. Also, the Natura 2000 habitat types of community conservation interest: ***1110 Sandbanks, which are slightly covered by seawater all the time, 1210 Annual vegetation of drift lines, 1310 Salicornia and other annuals colonizing mud and sand, 2110 Embryonic shifting dunes*** are well represented in this full protection regime area.

Figure 1.9. The new limits proposed (red line) for the full protection regime area – Sacalin Zătoane („Romania2007" support image provided by the Ministry of the Environment and Forests).

The changes proposed for the DDBR core areas will determine the extent of their surface with 3433 ha. The total surface proposed for the 7 areas that require a resizing of their limits is of 30,310 ha. The 13 areas that did not require changes of their current limits summarize an area of 24,027 ha. Thus the total surface of the extended areas with full protection regime is of 54,337 ha.

Table 1.4. Summary table of the core areas and scientific reserves in the DDBR and of the areas that have suffered changes (in red are the areas whose boundaries were changed).

Current no.	Names of the core areas and the scientific reserves in the DDBR	Current surface (ha)	Proposed surface (ha)
1	Roşca - Buhaiova	9625	9625
2	Letea Forest	2825	2825
3	Răducu Lake	2500	2500
4	**Nebunu Lake**	**115**	**300**
5	Vătafu-Lunguleţ	1625	1625
6	Caraorman Forest	2250	2250
7	Sărături Murighiol	87	87
8	**Arinişul Erenciuc**	**50**	**185**
9	Popina Island	98	98
10	**Sacalin - Zătoane**	**21410**	**21600**
11	**Periteaşca-Leahova**	**4125**	**5220**
12	**Doloşman Cape**	**125**	**70**
13	Grindul Lupilor	2075	2075
14	**Istria - Sinoe**	**400**	**1095**
15	Chituc Sandbank	2300	2300
16	Rotundu Lake	228	228
17	**Potcoava Lake**	**652**	**1840**
18	Belciug Lake	110	110
19	Prundu cu Păsări Islands	187	187
20	Ceaplace Island	117	117
	Total Surface	**50904**	**54337**

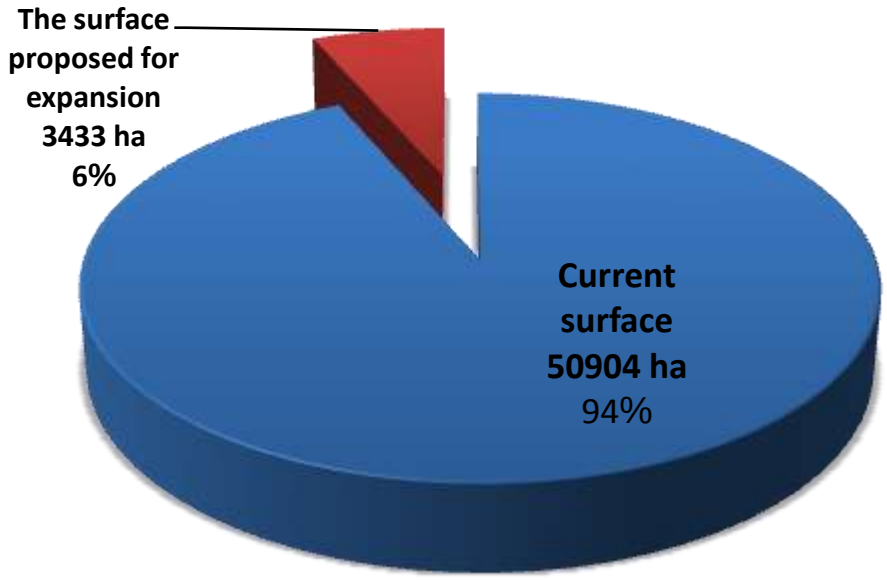

Figure 1.10. Total surface proposed to be expanded of the core areas and the scientific reserves in the DDBR

All proposed extensions were made within the buffer zones, except Perişor sand bank that is in the economic area. For this surface, we propose the extension of the Leahova Periteaşca buffer zone with about 6 ha towards north-northeast along the perimeter of the Perişor sand bank between the Periteaşca and Perişor channels shaped as a 10 m wide strip.

Total surface of the DDBR: 580 000

of which:

Total surface of:

Core areas – total: 54337 ha

Buffer areas: 22663 ha

Economic areas: 30500 ha

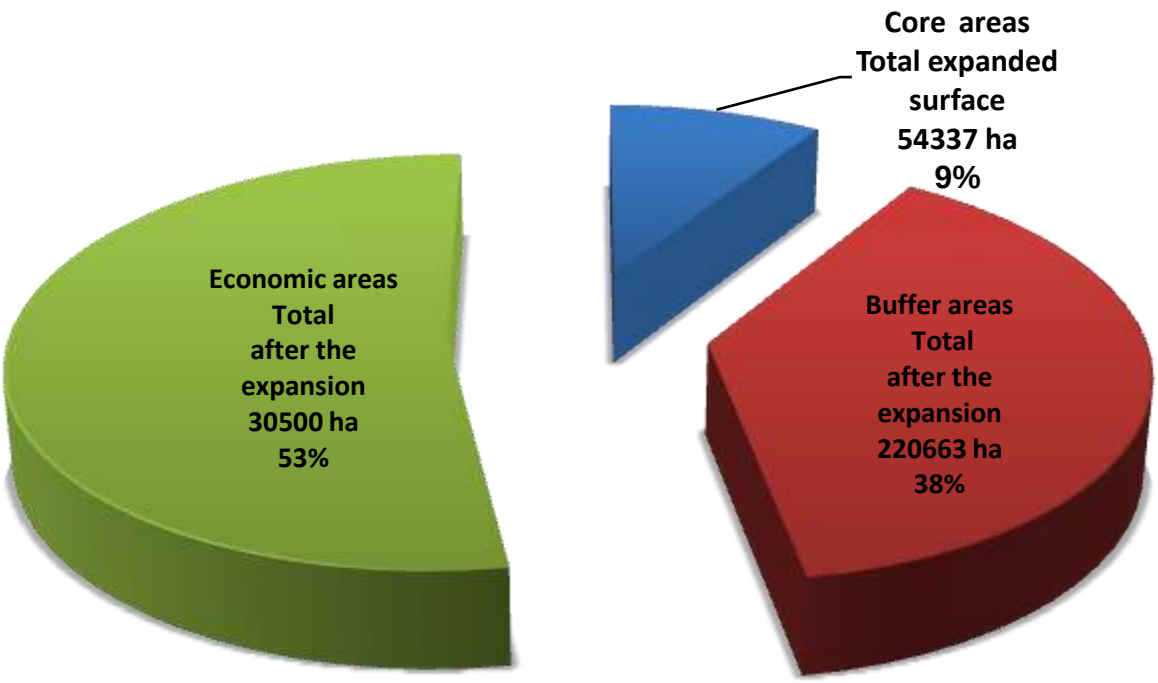

Figure 1.11. The DDBR zoning after changing the limits of the core areas

CONTRACT no. 2489 of 05.02.2010 – Phase II (2011)

1. The name of the service contract:

” Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve”

Phase II: Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

Objective 2

Scientific underlie of the potential new core areas or other special conservation type of zones in DDBR – part of Natura 2000 network

RESULTS

Proposal of new core areas

The proposals for delimitation of some surfaces included in the category of the core areas and the proposal of new areas within the buffer or economic zones, are based on current, real and relevant undertaken results.

On the base of the investigations undertaken by the DDNI specialists in the field, both during this contract as in previous years, along with the collaborators in the country and abroad, were identified 7 areas with high scientific value whose conservation on long-term within the DDBR requires the exchange of their current status with that of a core area.

The 7 areas new proposed host species and habitats of community conservation interest and polispecific waterfowl colonies, particularly important for their long-term conservation both at the DDBR's level as well as the entire Natura 2000 ecological network's level. The total surface of the new proposals of core areas is of 3.678 ha.

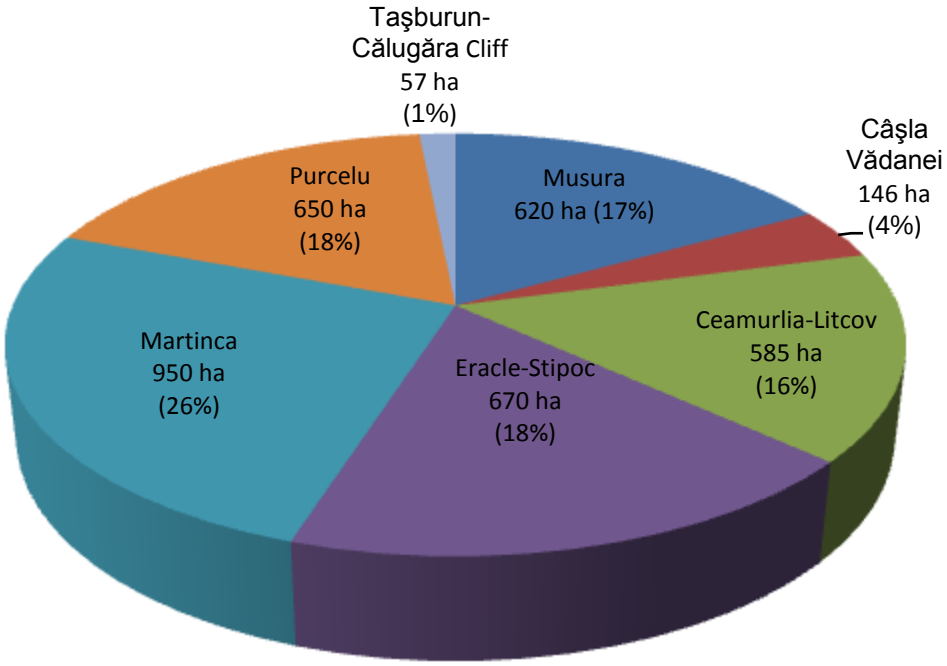

Figure 2.1. The ratio of the new proposals for the full protection regime areas within the DDBR

1. Musura

Surface – 620 hectares

a) Delimitation

It includes the national territory of the new island formed to the north of the Sulina dyke and the marine and Musura golf waters on a radius of 1.000 feet towards the shore limit recorded in 2010. The northern boundary is represented by the Romanian-Ukrainian state border (Figure 2.1).

a) Ecological description

This new area of the delta is of a major ornithological importance as a nesting, resting and feeding place. It is the only nesting area of the Sandwich Terns (*Sterna sandvicensis*) in the DDBR and the biggest of the country. The perimeter of this area is an important location for nesting for other species of European conservation interest such as Common Tern (*Sterna hirundo*), Little Tern (*Sterna albifrons*), Pied Avocet (*Recurvirostra avosetta*) and Black-winged Stilt (*Himantopus himantopus*). Also, the proposed perimeter contains important Natura 2000 coastal habitats of community conservation interest: ***2110 Embryonic shifting dunes, 1110 Sandbanks, which are***

slightly covered by seawater all the time, 1210 Annual vegetation of drift lines, 1310 Salicornia and other annuals colonizing mud and sand.

The northern part of the island till the Ukraine border limit includes phytocenosis characteristic to the Danube mouths: *Potamion, Miriophylleto-Potametum, Glycerio-Sparganion, Myriophilleto-Nupharetum* and island of *Phragmition.* Halophyle vegetation covers completely the island with the main communities of *Salicornietum europaceae, Juncetum maritimi.* Also, on the island the bushes of *Salix fragilis, Eleaegnus angustifolia, Hippophae rhamnoides and Tamarix ramossima* made their presence, yet in a piecemeal manner.

Figure 2.1. The proposed limits (pink line) for the Musura area, in order to propose it as a full protection regime area within the DDBR („Romania2007" support image provided by the Ministry of the Environment and Forests)

2. Câşla Vădanei

Surface – 146 hectares

a) Delimitation

It includes the Câşla Vădanei Sandbank from the northern part of the Sfântu Gheorghe village, the northern limit being at 2.250 m north towards the north-east extremity of the Sfântu Gheorghe forestry yard and the southern limit at the 1.850 m south towards the same landmark. To the west, the proposed area is bounded by the limits of the Sfântu Gheorghe forestry yard, and the western extremity up to 200 m of the Tătaru channel. The eastern boundary is represented by the sea shore for a distance of about 4 km. The north-western limit is represented by a conventional line connecting the point from the western extremity with that of the northern extremity (figure 2.2.).

b) Ecological description

Situated in the area of the Sulina-Sfântu Gheorghe coastal belt, the area contains the highest part of the Câşla Vădanei Sandbank which hosts a wide range of Natura 2000 coastal habitats of community conservation interest: ***2130* Fixed coastal dunes with herbaceous vegetation ('grey dunes'), 2110 Embryonic shifting dunes*** **and** ***2190 Humid dune slacks.***

The proposed area includes the second largest population of *Vipera ursinii* (Steppe Viper) in the DDBR and one of the most important in Romania and Europe for this species of community conservation interest, presenting a vulnerable status throughout its distribution area.

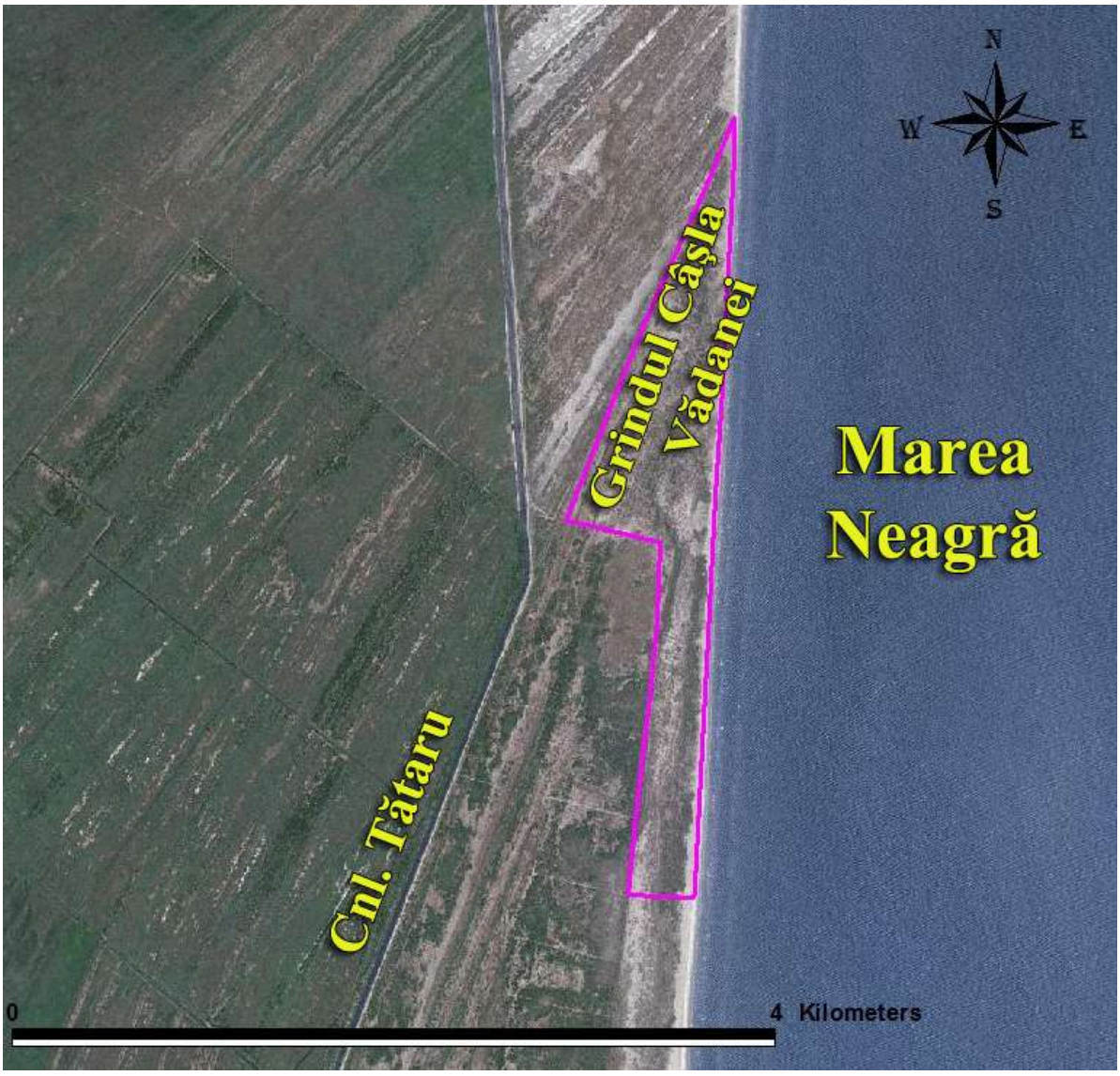

Figure 2.2. The proposed limits (pink line) for the **Câşla Vădanei** area, in order to propose it as a full protection regime area within the DDBR („Romania2007" support image provided by the Ministry of the Environment and Forests)

3. Litcov-Ceamurlia

Surface – 585 hectares

a) Delimitation

Situated between the Sulina channel and the northern part of the Caraorman Sandbank, the area consists of two surfaces separated by the Ceamurlia channel. The southern boundary is

represented by the Litcov channel, from its intersection with the Lung channel up to the high voltage line crossing the Litcov canal in the eastern part. In the north-east, the limit is represented by the Crisan-Caraorman channel. To the north, a conventional line almost parallel to the Litcov channel, that begins at the intersection of the Ceamurlia channel with Crisan-Caraorman channel up to the Lung canal, which represents the western limit of the area.

b) Ecological description

The area, located east of the Ceamurlia channel, is characterized by the existence of a polispecific colony with significant populations both at the level of the DDBR and at the level of the country for the species: *Phalacrocorax pygmeus*, *Egretta garzetta*, *Ardeola ralloides*, *Nycticorax nycticorax* and *Plegadis falcinellus.* Both the area from the eastern part of the Ceamurlia channel as the one from the western part, shelter an important population of European Mink (*Mustela lutreola*) and Otter (*Lutra lutra*).

Table 2.1. The nesting birds recorded in 2010 in the Ceamurlia mixed colony

Colony Name	Species	Recorded birds (pairs)
Ceamurlia	*Phalacrocorax carbo*	30
	Phalacrocorax pygmeus	150
	Ardea cinerea	15
	Egretta garzetta	50
	Casmerodius albus	8
	Ardeola ralloides	80
	Nycticorax nycticorax	100
	Platalea leucorodia	3
	Plegadis falcinellus	120

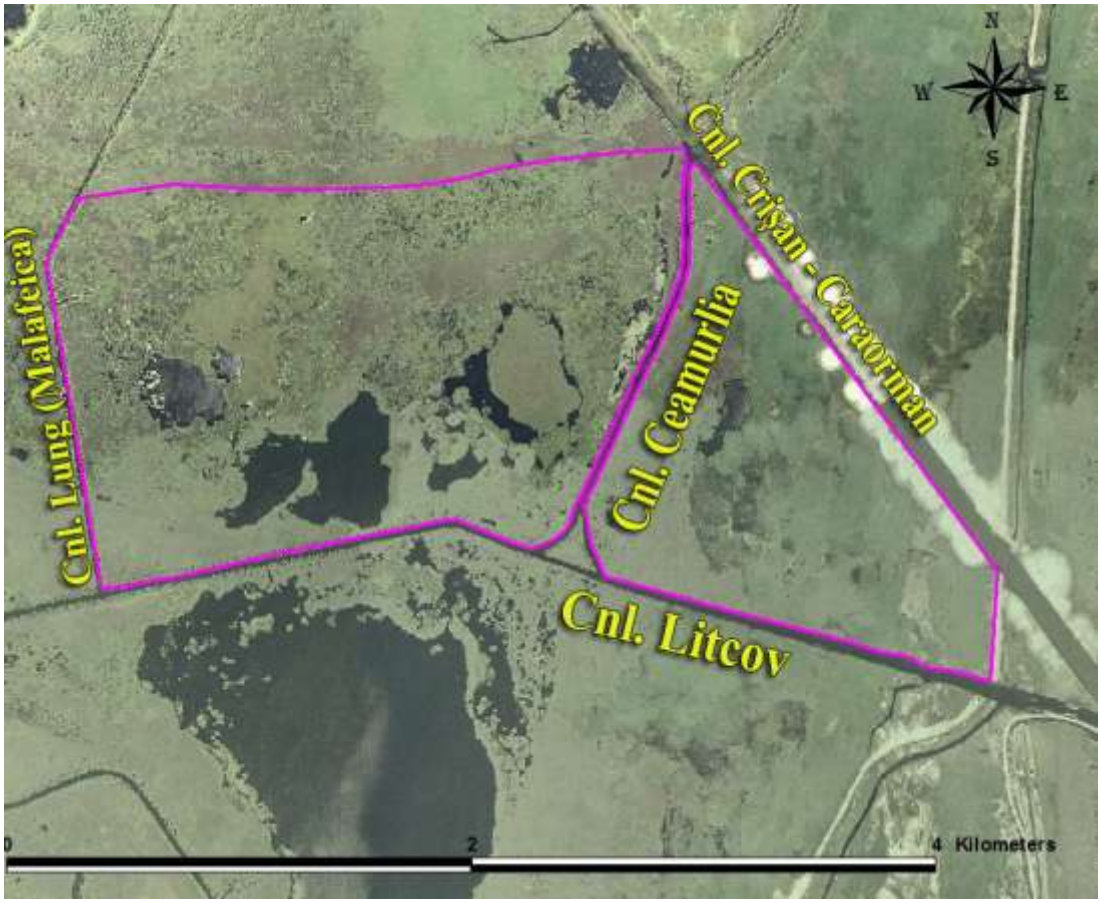

Figure 2.3. The proposed limits (pink line) for the **Litcov-Ceamurlia** area, in order to propose it as a full protection regime area within the DDBR („Romania2007" support image provided by the Ministry of the Environment and Forests)

4. Eracle-Stipoc

Surface – 670 hectares

a) Delimitation

Located between the Stipoc Sandbank and the Eracle canal, the area is bounded at the north by the Stipoc Channel, at east by the Bahrova Channel, at south by the meanders of the Iacob Stream which continues on the western side with a canal delineating this area up to north, where it meats the Stipoc Channel.

b) Ecological description

The area is characterized by the existence of two polispecific colonies, with close locations, that have significant populations both at national and at European level for the species: *Phalacrocorax pygmeus*, *Ardeola ralloides*, *Nycticorax nycticorax* and *Plegadis falcinellus.* It also includes important breeding populations of some bird species of European conservation interest, such as: the Ferruginous Duck (*Aythya nyroca*) and the Little Bittern (*Ixobrychus minutus*).

Table 2.2. The nesting birds recorded in 2010 in the Eracle-Stipoc mixed colony

Colony Name	Species	Recorded birds (pairs)
Eracle-Stipoc	*Phalacrocorax pygmeus*	800
	Ardea cinerea	10
	Egretta garzetta	50
	Ardeola ralloides	80
	Nycticorax nycticorax	200
	Plegadis falcinellus	40

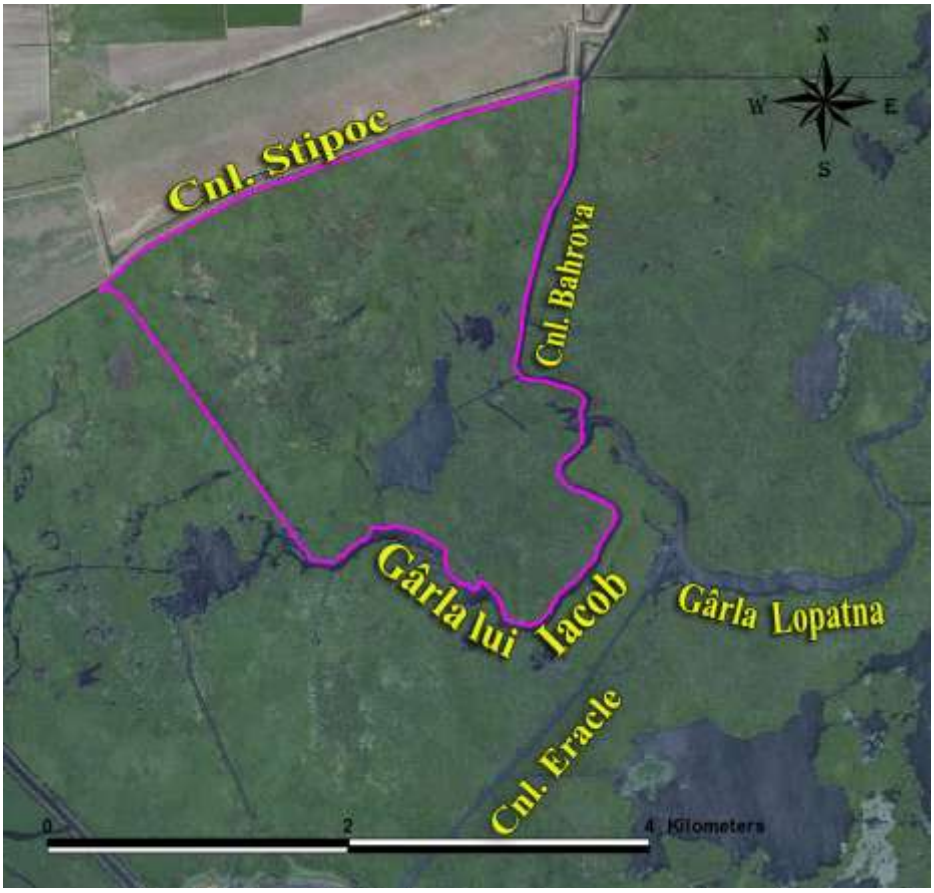

Figure 2.4. The proposed limits (pink line) for the **Eracle - Stipoc** area, in order to propose it as a full protection regime area within the DDBR („Romania2007" support image provided by the Ministry of the Environment and Forests)

5. Martinca

Surface – 950 hectares

a) Delimitation

The Martinca area includes the Martin Lake and the adjacent backwaters, being bounded in west by the Păpădia Veche channel, in south-east by the Păpădia Nouă channel and at south the Martin Channel unites the previous channels. The northern and the north-eastern limit are represented by a conventional line connecting the Păpădia Veche and Păpădia Nouă channels (see figure 2.5.).

b) Ecological description

The Martin Lake and its surroundings constitute a eutrophic lacustrine area, specific to the river delta, with characteristic biocoenosis, adapted to large amplitudes of the food wave. Within this area are nesting two pairs of White-tailed Eagle (*Haliaeetus albicilla*). It hosts one of the biggest polispecific colony of the DDBR, important for the populations of the species: *Phalacrocorax pygmeus*, *Egretta garzetta*, *Ardeola ralloides*, *Nycticorax nycticorax* and *Plegadis falcinellus.* The area shelters an important population of European Mink (*Mustela lutreola*), Otter (*Lutra lutra*) and Wild Cat (*Felis silvestris*).

Table 2.3. The nesting birds recorded in 2010 in the Martinca mixed colony

Colony Name	Species	Recorded birds (pairs)

Martinca	*Phalacrocorax carbo*	700
	Phalacrocorax pygmeus	200
	Ardea cinerea	10
	Egretta garzetta	100
	Ardeola ralloides	200
	Nycticorax nycticorax	200
	Platalea leucorodia	2
	Plegadis falcinellus	100

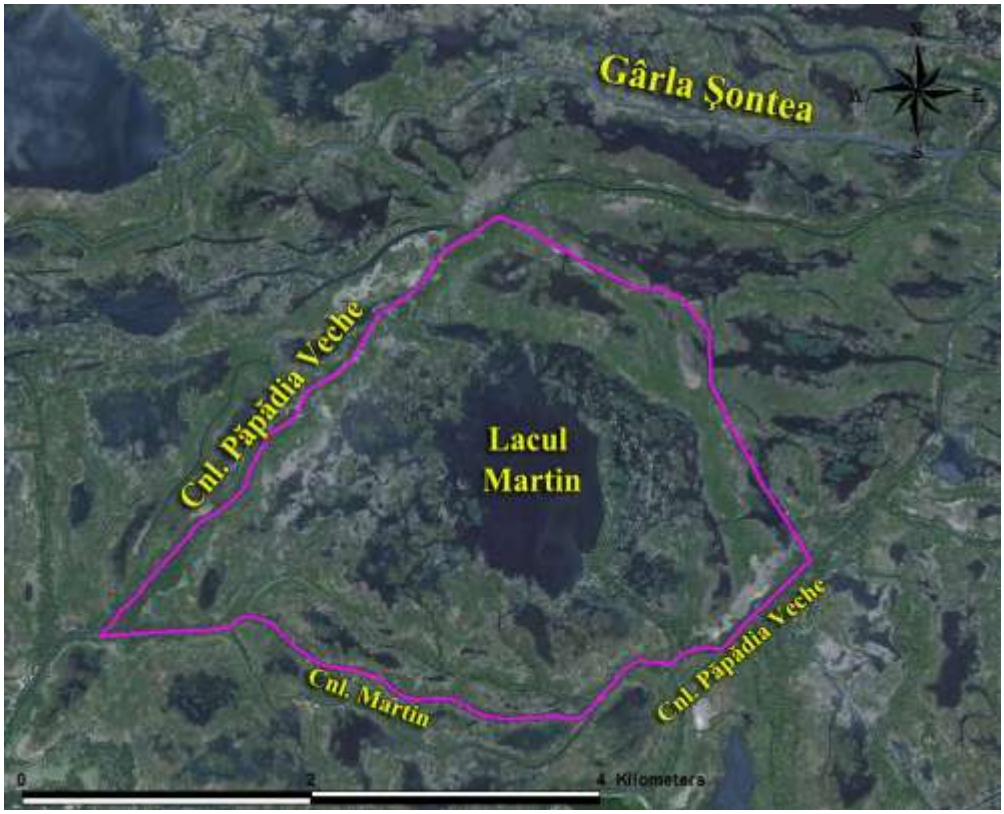

Figure 2.5. The proposed limits (pink line) for the **Martinca** area, in order to propose it as a full protection regime area within the DDBR („Romania2007" support image provided by the Ministry of the Environment and Forests)

6. Purcelu

Surface – 650 hectares

a) Delimitation

Purcelu area includes the chain of Coteţe, Carasu and Purcelu shallow eutrophic lakes. The northern limit of the area is represented by the Sireasa Channel up to the entering into Coteţe Lake. At north-east, the limit is represented by the area of groves and swamps located in the north of the Purcelu Lake, and to the east and south-east the limit continues following the shore of this lake. In south, the limit is represented by the south shore of the Carasu Lake and the area of groves and swamps from the western part of this lake. The western limit is represented by the canal that connects Trofilca Stream with the Sireasa Channel, which meets it at north.

b) Ecological description

The area of Purcelu, Carasu and Coteţe lakes, as well as their surroundings constitutes an area specific to the river delta, adapted to large amplitudes of the food wave. Within this area are nesting two pairs of White-tailed Eagle (*Haliaeetus albicilla*). Also, here it is regularly nesting the Smew (*Mergellus albellus*) and the Goldeneye (*Bucephala clangula*), particularly rare species as nesting ones for our country. It is also an important nesting area for the biggest species of European woodpecker – The Black Woodpecker (*Dryocopus martius*). It hosts one of the biggest

polispecific colony of the DDBR, important for the populations of the species: *Phalacrocorax pygmeus*, *Egretta garzetta*, *Ardeola ralloides*, *Nycticorax nycticorax*, *Platalea leucorodia* and *Plegadis falcinellus.* The area shelters an important population of European Mink (*Mustela lutreola*), Otter (*Lutra lutra*) and Wild Cat (*Felis silvestris*).

Table 2.4. The nesting birds recorded in 2010 in the Purcelu mixed colony

Colony Name	Species	Recorded birds (pairs)
Purcelu	*Phalacrocorax carbo*	800
	Phalacrocorax pygmeus	200
	Ardea cinerea	30
	Egretta garzetta	200
	Casmerodius albus	4
	Ardeola ralloides	150
	Nycticorax nycticorax	170
	Platalea leucorodia	30
	Plegadis falcinellus	40

Figure 2.6. The proposed limits (pink line) for the **Purcelu** area, in order to propose it as a full protection regime area within the DDBR („Romania2007" support image provided by the Ministry of the Environment and Forests)

7. Taşburun-Călugăra Cliff

Surface – 57 hectares

It should be noted that the proposed area was calculated using the ArcView 3.1 program and represents the flat surface of the area. Given that the energy relief is higher within this area, we recommend the establishment of the real surface (larger) of the new area proposed as a core area, through a cadastral survey.

a) Delimitation

The proposed surface is at the DDBR's limit being situated in the west of the Razim Lake and comprises both the north-western extremity of the Taşburun Hill, as well as the rocky slopes and the ravines continuing to the east and south-east, including the Călugăra promontory. The north-eastern limit is represented by the shore of the Razim Lake and the western one by the service roads that border the rocky and steppic areas of the cliff (figure 2.7.).

b) Ecological description

The area is characterized through the presence of the rocky slopes on erosion marks and of the steppic areas favoring the presence of some species specific to such habitats but rare for the DDBR. Thus, in this area it is noticed the existence of some populations of Balkan Green Lizard *Lacerta trilineata,* Caspian Whipsnake *Coluber caspius* and Spur-thighed tortoise *Testudo graeca ibera.* Also in this area is reported the Natura 2000 habitat type of priority conservation interest ***62C0 * Ponto-Sarmatian steppes*** which in the DDBR can be found only on Popina Island and Doloşman Cape. The area has significant landscape value being together with the Doloşman Cape the only locations with high rocky cliffs within the lagoon area.

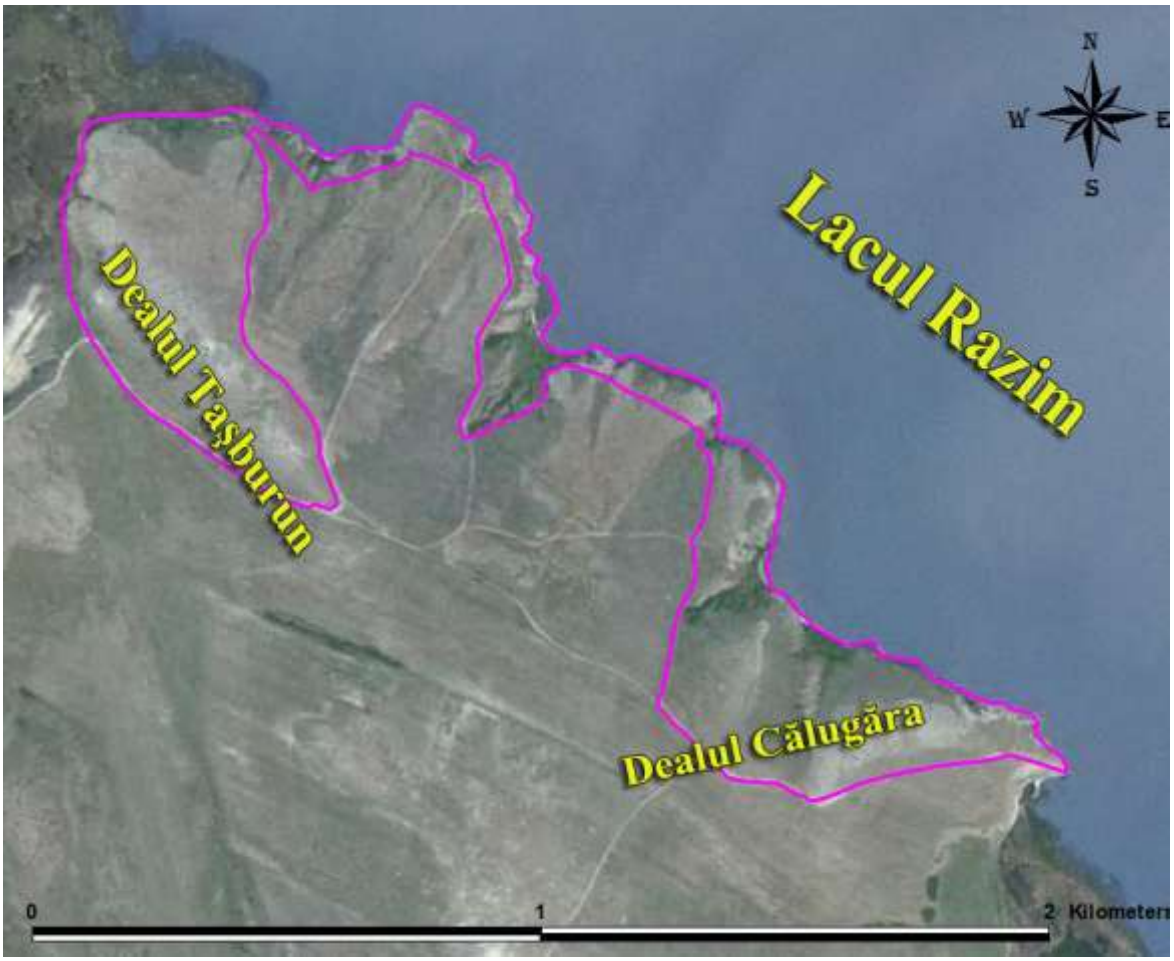

Figure 2.7. The proposed limits (pink line) for the **Taşburun-Călugăra Cliff** area, in order to propose it as a full protection regime area within the DDBR („Romania2007" support image provided by the Ministry of the Environment and Forests)

Of the 7 new proposals of areas with full protection regime, 5 are located within the economic zones, one within the buffer zone and one is at the limit of the DDBR, outside its perimeter.

By accepting these new surfaces as core areas is necessary to change the operational status for an area of **2.728 hectares within the economic area** and of the **950 hectares within the buffer zone**. It is also proposed the inclusion within the DDBR's limits of an area of 60 hectares of which 57 ha represent the surface of the **Taşburun-Călugăra Cliff core area** and 3 ha represent the buffer area related to it because 6 of the 7 proposals do not have a buffer zone, they proposing as follows:

1. **Musura buffer area – 3250 ha**

It protects the core area proposal with the same name and includes the entire Musura Golf, being bounded on the north and north-east by the state border and on the south by the Sulina dyke.

2. **Câşla Vădanei buffer area – 5 ha**

It protects the core area proposal with the same name and includes a 10 m strip between the forestry yard extremity and the protected area. This 10 m strip continues along the conventional line connecting the western extremity with the north extremity. Along the sea shore is not necessary to establish the buffer zone surrounding the island to the sea and the Musura Bay, having a width of about 10 m distance from the shore of the island.

3. **Litcov-Ceamurlia buffer area – 2 ha**

The area is bordered at west by the Potcoava Lake buffer area and at south by **Caraorman**; at east the proposed buffer area includes **a 10 m strip along the limits of the protected area.**

4. **Eracle-Stipoc buffer area – 7 ha**

It protects the core area proposal with the same name and it includes the surface of the channels that border the protected area.

5. **Martinca buffer area**

This core area proposal is already included into the Şontea buffer area.

6. **Purcelu buffer area – 460 ha**

It protects the core area proposal with the same name and it has at the eastern limit the Mila 36 channel, at north the Sireasa Channel, at south and west Trofilca Stream up to its intersection with the Sireasa Channel.

7. **Taşburun-Călugăra Cliff buffer area – 3 ha**

It protects the core area proposal with the same name and includes a strip surrounding the land area on a width of about 10 m. The eastern limit is the Razim Lake.

To provide a unified picture of the results of the proposed changes in the functional areas of the Danube Delta Biosphere Reserve, hereinafter, we make a review of these and of the related areas.

Table 2.5. Summary table of the core areas and scientific reserves in the DDBR, of the areas that have suffered changes (in red are the areas whose boundaries were changed) and of the new proposed ones (with green).

Current no.	Names of the core areas and the scientific reserves in the DDBR	Current surface (ha)	Proposed surface (ha)
1	Roşca - Buhaiova	9625	9625
2	Letea Forest	2825	2825
3	Răducu Lake	2500	2500
4	**Nebunu Lake**	**115**	**300**
5	Vătafu-Lunguleţ	1625	1625
6	Caraorman Forest	2250	2250
7	Sărături Murighiol	87	87
8	**Arinişul Erenciuc**	**50**	**185**
9	Popina Island	98	98
10	**Sacalin - Zătoane**	**21410**	**21600**
11	**Periteaşca-Leahova**	**4125**	**5220**
12	**Doloşman Cape**	**125**	**70**
13	Grindul Lupilor	2075	2075
14	**Istria - Sinoe**	**400**	**1095**
15	Chituc Sandbank	2300	2300
16	Rotundu Lake	228	228
17	**Potcoava Lake**	**652**	**1840**
18	Belciug Lake	110	110
19	Prundu cu Păsări Islands	187	187
20	Ceaplace Island	117	117
21	**Musura**	**0**	**620**
22	**Câşla Vădanei**	**0**	**146**
23	**Ceamurlia-Litcov**	**0**	**585**
24	**Eracle-Stipoc**	**0**	**670**
25	**Martinca**	**0**	**950**
26	**Purcelu**	**0**	**650**
27	**Faleza Taşburun-Călugăra**	**0**	**57**
	Total Surface	**50904**	**58015**

The total surface of the core areas and the scientific reserves within the DDBR resulting from the reevaluation of their limits is of 58.015 ha.

Table 2.6. Summary table of the buffer areas in the DDBR, of the areas that have suffered changes (in red are the areas whose boundaries were changed) and of the new proposed ones (with green).

Current no.	Names of the buffer areas within THE DDBR according to the G. D. no. 248/1994 (with red) and of the new proposed ones (with green)	Current surface (ha)	Proposed surface (ha)
1	Matiţa-Merhei-Letea	22560	22560
2	**Şontea**	**12500**	**11365**
3	Caraorman	**13830**	**13685**
4	Lumina-Vătafu	13460	13460

5	**Dranov**	**21760**	**23260**
6	Sărături Murighiol	5	5
7	Rotundu	1240	1240
8	Popina	260	260
9	Doloşman	28	28
10	**Zmeica-Sinoe**	31510	30511
11	**Potcoava**	**2937**	**1749**
12	**Periteaşca-Leahova-Perişor**	**210**	**216**
13	**Marine buffer area**	**103000**	**101400**
14	**Musura**	**0**	**3250**
15	**Câşla Vădanei**	**0**	**5**
16	**Ceamurlia-Litcov**	**0**	**2**
17	**Eracle-Stipoc**	**0**	**7**
18	**Purcelu**	**0**	**460**
19	**Faleza Taşburun-Călugăra**	**0**	**3**
	Total Surface	**223300**	**223466**

The total surface of the buffer areas within the DDBR resulting from the reevaluation of the core areas' limits is of 223466 ha

The total surface of the economic areas within the DDBR resulting from the reevaluation of the core and the buffer areas' limits is of 281481 ha.

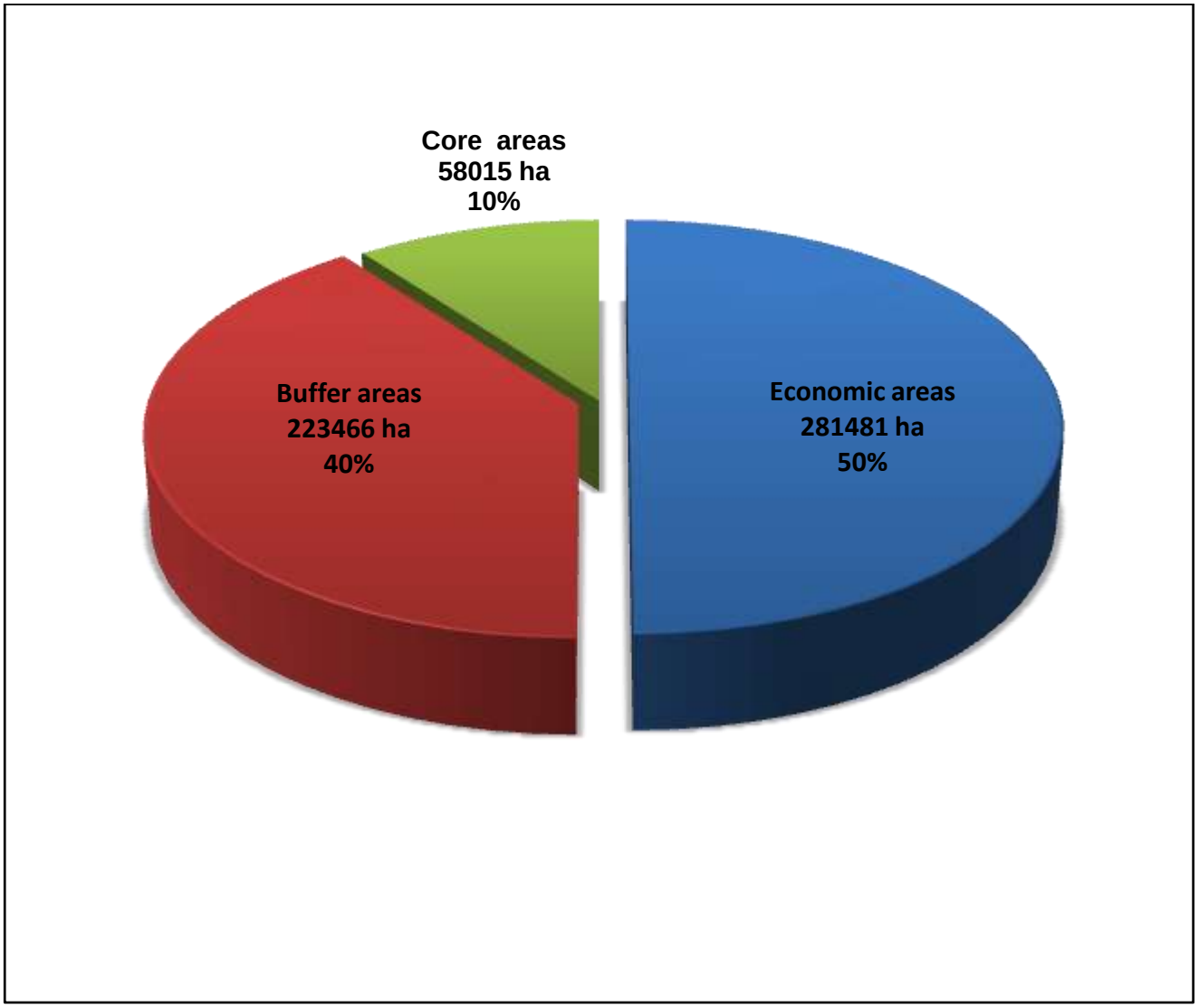

Figure 2.8. The total surface of the functional areas within the DDBR as a result of reconsidering of the core and buffer areas' limits

1. The name of the service contract:

” Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve”

Phase II: Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

Objective 3

Conceive the management plan proposal correlated with the other Danube Parks target areas management plans.

RESULTS

According to the Law no. 82/1993, the Danube Delta Biosphere Reserve Authority (DDBRA) has as main objectives in the environmental management of the reserve's territory *conservation and protection of the natural heritage with special scientific value and promoting the sustainable use of natural ecosystems productivity resources as well as the ecological restoration of the damaged habitats* through the improvements made before 1989.

To achieve the above objectives (which are provided in programs and conventions to which Romania adhered to and signed), DDBRA prepared, developed and implemented a series of measures comprised into a management plan of the DDBR. Under the auspices of the International Union for Conservation of Nature (IUCN), World Bank and European Bank for Reconstruction and Development, in the first post-revolution years, a legal framework was drafted for the administration, planning, conservation, research, monitoring, social and economic issues, public awareness and education conducted within the Danube Delta Biosphere Reserve.

Through the Law no. 82/1993 and the Government Decision no. 248/1994 the legal framework of the DDBRA and the demarcation of the main areas of the DDBR were established, namely: *core areas, coastal and marine buffer areas, fluvial and terrestrial buffer areas* and *areas of sustainable economic use*. It should be mentioned here also the *ecological restoration areas* that have emerged as a necessity to rebuild certain areas affected by the anthropogenic factor in the past decades.

To establish the initial management objectives of the DDBR, a series of sectorial studies were developed by the DDBR Authority together with specialists from local and national research institutes, NGOs and international experts, regarding on:

- Coastal marine area (morphology, water quality, biodiversity, fish resources);

- Water circulation system in the DDBR;

- Reed zones management;

- Fish resources management

- Biodiversity within the delta;

- Agriculture and forestry stock;

- Tourism activity.

Thus, a list of goals and projects necessary to be conducted in the region was established, staged for the period of 1995-1999 and carried out with the financial support from the World Bank, European Bank for Reconstruction and Development and the Romanian Government. After this period, they were continued according to the priorities and funding sources.

Thus, the first management plan, discussed and approved by the Scientific Council of the DDBRA for the period of 1995 -2000, contains 35 goals and 87 projects, grouped into 4 broad categories, namely:

I. General objectives regarding the recovery of the environmental status of the DDBR, the legislative framework of some forms of cooperation and promotion of the reserve;

II. Targets for the sustainable economic use of the DDBR's territory and the use of the natural resources (agriculture without chemical fertilizers and pesticides, the use of natural resources - reed, rush, timber, fish fauna, ornithological fauna and mammals, ecotourism);

III. Objectives and activities within the buffer area which should contribute to the diminishing of the anthropic pressure to the core areas and to the rehabilitation of the previously damaged habitats.

IV. Objectives regarding the core areas, which include the research and monitoring of the biodiversity in order to protect and conserve it.

This first management plan was implemented and developed by DDBRA with the participation of DDNI Tulcea, of other national research institutes, universities, companies specialized in the field (Romanian Waters, Romsilva), businesses and of the Tulcea County Council, with immeasurable support of the local population.

The second management plan, established for the period of 2002 - 2006, included 18 goals and 128 projects, some of them permanent, as a continuation of those in the period of 1995-2000. Among the permanent objectives within this management plan can be mentioned:

- Modeling and improving the hydrological regime in the DDBR;

- Knowledge of the functioning of ecosystems and biodiversity and the reconstruction of the damaged ecosystems;

- Surveillance of the coastal morphological processes

- Sustainable use of the renewable natural resources and regulation of the economic activities, especially the traditional ones;

- The evaluation and the limitation of pollution and natural and anthropogenic hazards;

- Developing the integrated monitoring and information system;

- Environmental information and education of the local population and the public;

- Turning into a good account and the conservation of the ethno-cultural specific of the DDBR's population.

Starting with 2006, over a period of at least 10 years, the complex problems of the Danube Delta Biosphere Reserve will be the objectives of the Master Plan for the Danube Delta Biosphere Reserve Project, which involves an integrated management plan with concrete measures, and conducted in cooperation with domestic and international organizations. The six chapters of this project are:

1. Plan Features
2. The institutional context
3. Danube Delta's status
4. Integrated planning approach

5. Analysis of strategies and interventions
6. Conclusions and recommendations

Each chapter of the DDBRA's management plan has a number of specific objectives, but overall, they aim: to promote economic growth and social development by improving water supply and sanitation in the rural Delta, development of the transport between the villages and their protection against flood, ecotourism development, enhancement of fisheries resources, improve the education, culture and health conditions, all in relation to protection and biodiversity conservation, ecological restoration, site monitoring and integrated management.

In terms of the Danube Delta Biosphere Reserve's biodiversity protection and conservation, the general objectives of the current management plan should cover:

1. Long-term monitoring of the species and habitats of European conservation interest (for which Natura 2000 sites have been designated), linked to the protected areas within the Danube Parks program and inclusion in the future of all Natura 2000 sites along the Danube in this joint monitoring program. Identification and monitoring of the invasive species within the Danube Delta Biosphere Reserve.

2. Permanent correlation of the results of the studies on invasive species with those of the partners within the Danube Parks Project, the Danube River being one of the main "corridor" for those species.

3. Identification of optimal control methods of plants and animals invasive species within the Danube Delta Biosphere Reserve and their correlation with those of the partners within the Danube Parks Project.

4. Protection of the elements with significant landscape value within the DDBR:

   - Elements with significant landscape value, common to the protected areas within the Danube Parks Project;

   - Elements of significant landscape value specific only for the DDBR.

5. Protecting and promoting the natural values within the DDBR by building wildlife and landscape observatories, suitable in size and located in areas with high visibility on the species and landscape.

6. To maintain the key populations of the colonial waterfowl species it is necessary to appoint the representative polispecific colonies of Herons and Pigmy Cormorants (criterion species in the designation of the Natura 2000 site - ROSPA0031 Danube Delta and the Razim-Sinoe Complex) within the DDBR, as core areas.

7. For the White-tailed Eagle (*Haliaeetus albicilla*), on the base of the annual monitoring of this species' breeding population it is necessary the establishment of a temporary protection area (January 1st - July 30th) on a 200 m radius around each active nest. Within these areas it is recommended the banning of all human activities that could jeopardize the success of the nesting season.

8. It is also imperative to refuse all forest exploitations within a radius of 200 m around all White-tailed Eagles' nests (both active and inactive) identified within the perimeter of DDBR in any season.

9. It is necessary to identify the power lines for low, medium and high voltage within the perimeter of the DDBR who are producing mortalities in birds as a result of electrocution or collision with them. The sectors of power lines and poles near which there have been recorded mortalities require appropriate isolation and marking in order to exclude or at least minimize the risk.

10. Certain types of important habitats for many species of conservation interest are maintained as a result of human activities (e.g. pastures, due to grazing). These types of habitats should be preserved by maintaining and controlling of these activities.

The proposals set out under Objectives 1, 2 and 3 must be the subject to public consultation of the local communities across the Danube Delta Biosphere Reserve.

In accordance with the provisions of the Government Ordinance no. 57/2007 Article 5 (4) the limits of the core areas "may be amended and supplemented by a Government decision on the proposal of the central public authority for environmental protection, with the approval of the "Romanian Academy" so that we recommend the submission of the proposals to amend the boundaries of the 7 core areas and of the 7 new sites for their legalization.

CONTRACT no. 2489 of 05.02.2010 – Phase II (2011)

1. The name of the service contract:

” Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve”

Phase II: Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

Objective 4

Proposals about collecting data institutional attributions from DDBR and processing information through compatible methods used by DanubeParks partners

RESULTS

The registration of the information resulting from the monitoring programs must be made in the context of the need to effectively manage and coordinate both the Danube Delta Biosphere Reserve as well as all the protected areas, partners within the Danube Parks Project, namely, to develop and strengthen their institutional capacity to integrate documents and maps, to follow the evolution of protected areas in order to improve and maintain the conservation status of their species and habitats.

Since April 2010, DDBRA launched the project funded by the European Regional Development Fund: "Integrated Information System – DDBRA management support in order to improve the conservation status of ecosystems" **SMIS-CNRS 7088.**

The project is developed in accordance with the Management Plan objectives to conserve biological diversity and sustainable development within the Danube Delta Biosphere Reserve, in the context of Romania's obligations to have a record on the status of species and habitats listed in the EU Directives, including of the protective measures for them as a result of the Natura 2000 network.

Within the DDBRA, implementing the integrated information system provides the best and efficient way of collecting and processing information of all systems used by the partners of the Danube Parks Project. Thus, we propose the use of compatible methods of collecting and processing information by the partners of the Danube Parks Project.

Maintaining the ecological balance of natural heritage and biodiversity, as well as the implementation of the measures to improve the conservation status of ecosystems and protected areas within the Danube Delta Biosphere Reserve included in the Danube Parks project is done by increasing the institutional capacity to manage the protected areas network, in accordance with the European Directives - European Council Directive 92/43 EEC, Birds Directive - Council Directive 79/409 EEC and the INSPIRE Directive - Directive 2007/2/EC of the European Parliament.

By implementing an integrated information system, institutional capacity building of the government to initiate and implement measures in order to preserve the ecological balance is achieved. This can be done through the adoption of simplified integration, analysis, evaluation and reporting procedures that will provide efficient administrative flows and optimize the collaboration with other institutions.

Proposals regarding on the institutional responsibilities for the data collection and information processing is primarily focused on the involvement and awareness of the individuals and partner institutions, regarding the importance of monitoring and conservation of the territories within the protected areas included in the Danube Parks Project and the development of an integrated information support, through which are taken into account:

- Easy integration with other existing systems;
- Reducing the negative impact by minimizing the analysis and response time;
- Efficient monitoring of the species and habitats of conservation interest within the protected areas included in the Danube Parks Project, according to the requirements enforced by the European Commission or other institutions, by providing the means necessary to integrate both of the data collected by the our institution as well as of the data obtained from collaborators and partners (institutions, individuals, etc.);
- Increasing the number of the monitored species;

- Improving the biodiversity through the development of a clear evidence of the qualitative, quantitative evolution and of spatial distribution of the species and habitats;
- Conservation of habitats and species by identifying the areas favorable for the sustainable development or the rapid action if immediate ecological restoration action is needed;
- Increased capacity of reporting due to modern techniques of analysis, data processing and statistical analysis;
- Maintenance - Maintenance costs are reduced because of its simplicity and the use of web technologies; maintenance costs are also low due to the limited number of servers;
- Ease of administration and management of a centralized system;
- Increasing the environmental awareness through ecological education;
- The involvement of the citizens, the public and the tourists which will have access to a wealth of information through the new means of communication available.

Recording the data regarding on the location of the species and habitats of conservation interest is achieved through the BIMS interface (Biodiversity Information Management System). This interface was developed within the Biodiversity Information Management System Project (BIMS - Biodiversity Information Management System). It can be used online within a portal, like that of the DDBRA or it can be used individually if the user has the ArcView 3.1 Program.

With the help of the BIMS interface, the following data can be recorded on:
- The scientific name of the filum;
- The scientific name of the class;
- The scientific name of the order;
- The scientific name of the family;
- The scientific name of the genre;
- The scientific name of species;
- The scientific name of the subspecies;
- The scientific name of the eventual infraspecific taxon (subspecies, variety, etc.);
- The name of the village around which the signal point is located near;
- The observation point location accuracy;
- The area investigated by the data provider;
- The local abundance (relative) of the species;
- Quantitative (numerical) data provided by the source for that species within the site concerned;
- The methods used (there is a list of which the type of method used can be selected - observations, inventories, etc.);
- The habitat (there are lists of habitat types and their related standard codes);
- The microhabitat (there are lists of habitat and microhabitat types and their related standard and codes);
- The habitat condition in which the species was observed (being used the types mentioned in the list attached of that particular square - excellent, good, average etc.);
- The disturbance factors (there is a list nominating the potential factors that are sources of pollution, etc.);
- The origin of information (literature, field etc.);
- The time of the observations;
- The source of the alert that includes the name of the observer or the origin source of the information;
- The degree of confidence granted to that information;
- The name of the person who introduced the data;
- The X - coordinate / Latitude
- The Y - coordinate / Longitude
- The annexes relating to input information (precision of the location - e.g. a toponym nomination that does not appear in the toponymes list, etc.).

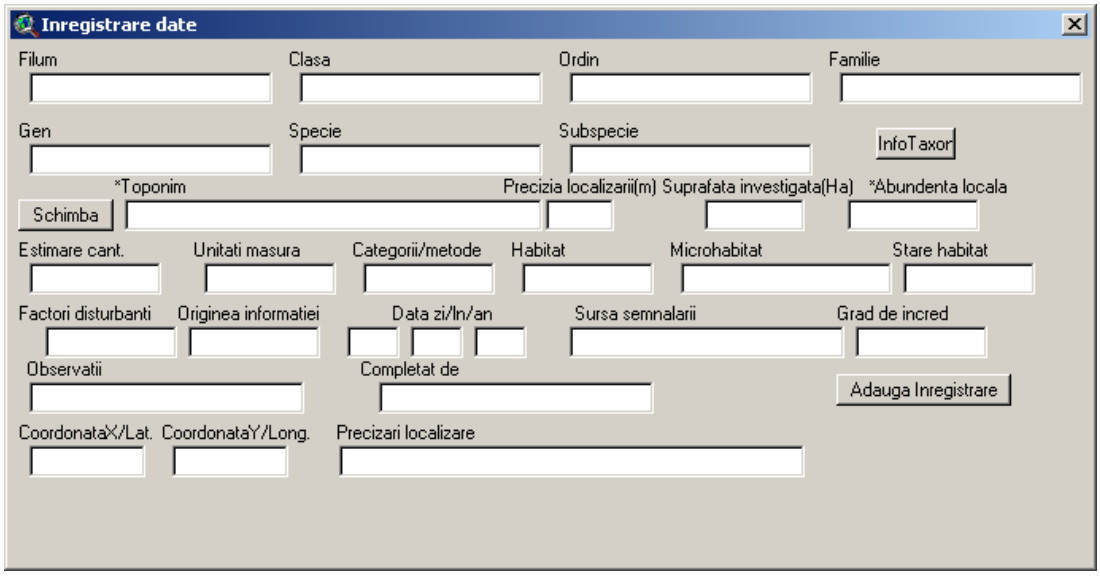

Figure 4.1. The interface used for introducing the data with ArcView 3.1 Program

If GPS coordinates are not available, the point of alert referred to the information entered in the form can be located using geo-referenced support images that are available for that particular area: topographic maps, imagery, orthophotoplans, etc.

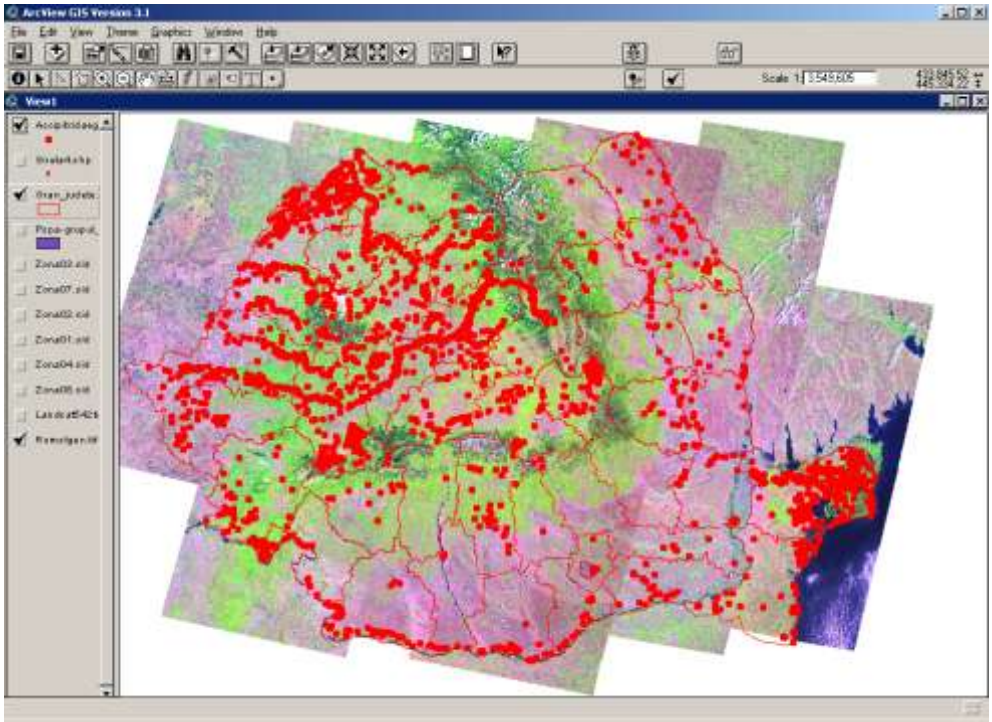

Figure 4.2. Example of graphical representation of species distribution points performed using the BIMS interface on ArcView 3.1 support

We propose to correlate the results of monitoring programs for species and habitats of European conservation interest at the level of the institutions partners within the Danube Parks Program. In this regard we recommend the use of the BIMS interface (*Biodiversity Information Management System*) as a tool for introducing and management of the data resulted from the biodiversity monitoring programs in all the institutions partners within

the Danube Parks Program. It would be useful that in the future all custodians of Natura 2000 sites along the Danube should use the same interface.

CONTRACT no. 2489 of 05.02.2010 – Phase II (2011)

1. The name of the service contract:

” Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve”

Phase II: Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

Objective 5

Proposals about long term monitoring protocols (correlated with potential similar protocols from the DanubeParks target areas) of the wild species and natural habitats of conservative interest from DDBR

RESULTS

Given that we refer to the monitoring of the species of conservative interest within DDBR and from other protected areas in Europe, we recommend noninvasive methods that do not involve the collection of specimens found during the field investigations (many methods of studying and monitoring enthomofauna and flora involves the specimens collection during the field investigations).

Therefore we recommend that, in the case of the methods described below, the specimens observed or captured to be photographed (possibly filmed) and then released. The location where the species is observed has to be marked using GPS and/or ArcPad, thus acquiring a complete data set regarding the place and the date of the record. There are also required additional information regarding the habitat and the weather's conditions.

Among the most important information that can be noted within a study, we include:

- the time of the investigation - the date and time

- geographical position of the sampling station or the observation point - are obtained using a GPS, or for lack of the signal from the satellites or if we haven't this device we can fixed the station's position in relation to a toponym, disposition on map in accordance with different marks

- name of region, area, or the nearest location, the direction and the distance to this

- station's description – it is noted the form of relief, the micro relief, the slope, the exposition, geological substrate, the rocks' type, possibly soil data

- weather's conditions and climate data – air's temperature, relative humidity, atmospheric pressure, rainfall, wind's direction and speed, degree of cloudiness etc.

5.1. INVERTEBRATES

Proposals regarding the long term protocols of monitoring for the invertebrate species of European conservation interest whose presence was reconfirmed from 1990 up to the present within DDBR.

1. Anisus vorticulus (4056)

The latest records of the species within DDBR were on Sulina branch, Belciug and Roşca lakes.

Monitoring of the *Anisus vorticulus* sedentary populations must be done unitary in the next 5 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- ***Delta Dunării*** (ROSCI0065),

- ***Devinske alúvium Moravy*** (SKUEV0312),

- ***Gajarské alúvium Moravy*** (SKUEV0125),

- ***Rieka Morava*** (SKUEV0314),

- ***Srebarna*** (BG0000241).

To monitor the *Anisus vorticulus* species it is applied the method of semi-quantitative collections (with Surber-Sampler type dredging machines) on the surface of various submarine supports (substrate, submerged vegetation, submerged parts of the surface vegetation). In order to obtain quantitative data to be used for comparative analysis of the results of monitoring activities developed in different years, the sampling must be done on surfaces of standard size (1 m^2).

The sampling can be done at any time of year, but is more effective during March to July.

2. Lycaena dispar (1060)

Species that prefers wet meadows, with a wide Eurasian distribution, but interrupted and with reduced population. Imago is attracted by the plants of *Ranunculus* genus in spring time, *Pulicaria* and *Buphthalmum* in summer time. The caterpillars feed with leaves of plants of *Rumex* genus.

It is also met within DDBR in all the areas with favorable habitats, but in a relatively small number of specimens.

Monitoring of the *Lycaena dispar* populations must be done unitary in the next 11 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- ***Bratislavske luhy*** (SKUEV0064),

- ***Delta Dunării*** (ROSCI0065),

- ***Delta Dunării – marine area*** (ROSCI0066),

- ***Devinske alúvium Moravy*** (SKUEV0312),

- ***Devinske jazero*** (SKUEV0313),

- ***Donau-Auen östlich von Wien*** (AT1204000),

-***Gajarské alúvium Moravy*** (SKUEV0125),

- ***Gemenc*** (HUDD20032),

- ***Kalimok – Brashlen*** (BG0000377),

- ***Persina*** - BG0000396),

- ***Srebarna*** (BG0000241).

The *Lycaena dispar* species' monitoring is achieved by two methods:

- determining the presence or absence of species in the period from May to September

- an estimate of the population size by capture-marking-recapture method.

***3. Unio crassus* (1032)**

Recent records of the species within DDBR were on Chilia branch (near Periprava) and Babina Lake.

Monitoring of the *Unio crassus* populations must be done unitary in the next 10 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- ***Bratislavske luhy*** (SKUEV0064),

- ***Delta Dunării*** (ROSCI0065),

- ***Devinske alúvium Moravy*** (SKUEV0312),

- ***Devinske jazero*** (SKUEV0313),

- ***Donau-Auen östlich von Wien*** (AT1204000),

- ***Duna és ártere*** (HUDI20034),

- ***Gajarské alúvium Moravy*** (SKUEV0125),

- ***Gemenc*** (HUDD20032),

- ***Kačenky*** (SKUEV0311),

- ***Persina*** (BG0000396),

- ***Rieka Morava*** (SKUEV0314).

The *Unio Crassus* species' monitoring is done by the sampling method (with dredging machine) or by observation using a batiscop. Within the field activities are recorded data regarding the density (no of specimens/ m^2), size and age structure of the monitored population, information on environmental conditions, etc.

The sampling can be done at any time of year, but is more effective during late spring - early summer.

Proposals regarding the long term protocols of monitoring for the invertebrate species of European conservation interest in case their presence would be reconfirmed within DDBR.

1. Arytrura musculus (4027) ?

The species has been recorded by Popescu-Gorj in the years 1967, 1968 and 1985 in the Letea Forest area and in 1968 at west of Sulina, in the area of Litcov-Împuţita channel.

After 1991, the species was not found in any of these areas. Within the evaluations performed in this study, the species was not identified in the area of the DDBR. In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population. Monitoring of the *Arytrura musculus* populations must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065).

The *Arytrura musculus* species' monitoring is achieved by the following methods:

- determining the presence or absence of species (using light traps)

- an estimate of the population size by capture-marking-recapture method.

Optimum period for implementing the proceedings is from June to July.

2. Coenagrion ornatum (4045) ?

In the current perimeter of the DDBR, the species was reported by Izvoreanu & Boghean in 1980 in the north part of the Roşu Lake.

After 1991 the species was not found. Within the evaluations performed in this study, the species was not identified in the area of the DDBR.

In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population.

Thus in case the species is found within DDBR the monitoring of the *Coenagrion ornatum* populations must be done unitary in the next 2 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Srebarna** (BG0000241).

The monitoring of the *Coenagrion ornatum* species includes both the valuation of the subpopulation consisting of adults and larvae.

The number of adults is estimated by direct observations (made over a transect parallel to the edge of different aquatic bodies) or captures, the optimal time for application of these methods is at the end of May until middle of July.

Estimating the number of larvae based on limnology sampling during the vernal and autumn time.

3. Colias myrmidone (4030) ?

Within DDBR the species was recorded by Olaru & Nemeş in 1968, in the Letea Forest area, and since then it has never been found.

Within the evaluations performed in this study, the species was not identified in the area of the DDBR.

At the area level, populations of this species are characterized by a sporadic presence and an interrupted distribution. The caterpillars are monofage, feeding on plants of *Cytysus* genus.

In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population.

Thus in case the species is found within DDBR the monitoring of the *Colias myrmidone* populations must be done only in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065).

The *Colias myrmidone* species' monitoring is achieved by the following methods:

- determining the presence or absence of species in the monitored area

- an estimate of the population size by capture-marking-recapture method.

4. Graphoderus bilineatus (1082) ?

The only record within DDBR belong to Ieniştea (1968), in the area of Periprava and the East part of the Meşter Lake. After 1991 the species was not found.

Within the evaluations performed in this study, the species was not identified in the area of the DDBR.

In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population.

Thus in case the species is found within DDBR the monitoring of the *Graphoderus bilineatus* populations must be done unitary in the next 3 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Bratislavske luhy** (SKUEV0064)

- **Donau-Auen östlich von Wien** (AT1204000).

The *Graphoderus bilineatus* species' monitoring is achieved using the capturing method with the aquatic net of the specimens from surfaces of standard size in the area of the banks with submerged vegetation and the data's extrapolation to the surface of the habitat type suitable for the species.

A complementary method (applied during summer) is based on the use of the light traps near the edges of various water bodies.

5. Leptidea morsei (4036) ?

Species with wide geographical area, spread from the East part of Europe to Japan, but with interrupted and sporadic distribution. The caterpillars feed on plants of *Lathyrus* genus. Within DDBR it was recorded by Marcu in 1981 in the Letea forest and the North of the Erenciuc Lake. Since then the species has not been found.

In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population.

Thus in case the species is found within DDBR the monitoring of the *Leptidea morsei* populations must be done unitary in the next 2 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Bratislavske luhy** (SKUEV0064).

The *Leptidea morsei* species' monitoring is achieved by the following 2 methods:

- determining the presence or absence of species during May-August

- an estimate of the population size by capture-marking-recapture method.

6. Morimus funereus (1089) ?

In the current perimeter of the DDBR, the species was identified in 1974 by Ieniştea in the Caraorman Forest. Larvae are xilo-polifage, feeding with the wood of trees of *Fagus, Populus, Tilia, Acer, Salix, Carpinus, Quercus* genus.

Since then the species has not been mentioned in this territory.

In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population.

Thus in case the species is found within DDBR the monitoring of the *Morimus funereus* populations must be done unitary in the next 5 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Burda** (SKUEV0184)

- **Delta Dunării** (ROSCI0065)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Persina** (BG0000396)

- **Srebarna** (BG0000241).

The *Morimus funereus* species' monitoring is achieved by direct observation of the specimens and the capture-marking-recapture method during spawning (May-July).

7. Ophiogomphus Cecilia (1037) ?

Larval stages of species prefer slow flowing rivers and springs on gravel and sand substrate.

In the current perimeter of the DDBR, the species was identified in the steppe bioregion by Isvoranu & Boghean in 1980. Since then the species has not been registered.

In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population.

Thus in case the species is found within DDBR the monitoring of the *Ophiogomphus Cecilia* populations must be done unitary in the next 10 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Devinske alúvium Moravy** (SKUEV0312)

- **Devinske jazero** (SKUEV0313)

- **Gajarské alúvium Moravy** (SKUEV0125)

- **Horny les** (SKUEV0168)

- **Kačenky** (SKUEV0311)

- **Kútsky les** (SKUEV0165)

- **Rieka Morava** (SKUEV0314)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Duna és arteres** (HUDI20034)

- **Delta Dunării** (ROSCI0065).

The monitoring of the *Ophiogomphus Cecilia* species includes both the valuation of the subpopulation consisting of adults and larvae. The number of adults is estimated by direct observations (made over a transect parallel to the edge of different aquatic bodies) or captures (in order to determine the species). Estimating the number of larvae based on limnology sampling during the vernal and autumn time.

8. Osmoderma eremita (1084 *) ?

It prefers old deciduous forests, with predilection for the oak ones. The larva feeds on rotten wood. It is a Community priority interest.

In the perimeter of the DDBR the species was reported by Negru in 1968, in the Letea Forest. Since then the species has not been mentioned in this territory.

In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population.

Thus in case the species is found within DDBR the monitoring of the *Osmoderma eremita* populations must be done unitary in the next 4 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Donauauen mit Gerolfinger Eichenwald** (DE7233372)

- **Duna és arteres** (HUDI20034)

- **Horny les** (SKUEV0168).

The *Osmoderma eremita* species' monitoring is achieved by the following methods:

- direct observation of the specimens

- radio-telemetry method

- checking of the trees with hollows where there are detected species' excrements.

Optimum period for implementing the methods is the end of June – middle of July.

9. Theodoxus transversalis (4064) ?

Freshwater species prefers large rivers in central and south-eastern Europe (Danube, Tisa, Nistru). Species almost disappeared in its geographical area, mentioning the existence of small populations in Germany, Slovakia, Hungary and possibly Lower Danube (Fischer *et al.* 2009). In the perimeter of the DDBR, the species was reported by Grossu in 1968, without precise localization. The species' presence within DDBR has not been reconfirmed. In case of this species it is initial necessary to reconfirm it presence within DDBR and in case of its discovery it is necessary to start monitoring that population.

Thus in case the species is found within DDBR the monitoring of the *Theodoxus transversalis* populations must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The monitoring of the *Theodoxus transversalis* is achieved by quantitative and qualitative sampling methods (for samples being used the dredging machine or the bodengreifer).

The sampling can be done at any time of year, but is more effective during May-June.

Invertebrate species of conservation European interest that have never been reported in the area of the DDBR but erroneously are listed in the Nature 2000 record of the ROSCI0065 Danube Delta.

Catopta thrips (4028)

In the perimeter of the DDBR the species existence is questionable for the following reason: in Nature 2000 record of the Danube Delta Site the species is mentioned as existing in the Steppe bioregion based on a single reference, namely: Ruşti D.M., Stănescu M., 1992 - Macro Lepidoptera collected in the DDBR in the campaign since 1991.

Report to the research contract "Valuation and Protection of the Genetic Resources within Danube Delta Biosphere Reserve.

Analyzing the original reference mentioned above and reports we observe that the species is not reported by authors within DDBR at records previous to 1991 or after. Recently, the authors have told us that the species was identified near the Visterna outside the limits of the DDBR.

In this case, we do not consider necessary the proposal of a monitoring program for a species that is outside the limits of the DDBR and ROSCI0065 Danube Delta.

5.2. FISHES

To monitor fish species of conservation interest along the Danube, the fishing is done as follows:

- electric fishing equipment (DEKA 7000 brand is successfully used or SAMUS 725MP brand electric fishing equipment for the electric fishing method), from boat, used near the banks, where the depth does not exceed 2 m to the first rapid of the Danube.

- metal frame with mesh bag for depth trawling, with a diameter of 2 m and a mesh size = 7 mm, towed by launch or boat for a distance of 200 m in a time of 15 minutes .

- benthic grids with 2 mm meshes set in fairway for depth species, working time from 4 to 14 hours.

- gillnets and stationary commercial gillnets for passive night fishing with a set consisting of a northern gillnet (12 panels of 2.5 m each with a total length of 30 m, with meshes ranging from 6-55 mm) to which a carp commercial gillnet can be added (roach, little sturgeon, herring) with a length of 30 m, for stationary fishing with gillnets and commercial gillnets near the banks and in the offing areas where the currents are very small.

- drifting commercial gillnet (a net of roach and herring) and towed from the boat for the drift fishing of the species from the water mass or from the benthic area, in the depth area only if the waterhole is cleaned and allows fishing.

Also there are observed and recorded the fish species caught and at other fishing tools with which the fishermen are endowed, the fishermen's catch from the commercial fishing, and the specimens captured by the anglers' rods. Based on these data there is no standardization, only it is recorded the presence or the absence of the various species on certain sectors of study.

In each point of fishing the capture is sorted and it is counted by species, ages (juvenile, youth and adults) there are also performed measurements of total length and weight of each juvenile, youth and adult specimen and to the juveniles (specimens from current year) from small and medium-sized species, the group average is performed.

The ihtiometre is used for the biometric measurements with an accuracy of 1 mm for the lengths and the electronic balance is used for the weight with an accuracy of 1 g.

The relative abundance and biomass are expressed by the Capture Per Unit fishing Effort (CPUE) or Number Per Unit Effort (NPUE). CPUE' s standardization is performed by a calculus system so that the captures can be compared in different periods of time. Thus captures from fishing with seines and nets (drifting or stationary) are expressed standard for an effort of $100m^2$ of gillnet/ commercial gillnet per night or waterhole.

For the electric fishing for 10 minutes per station, CPUE is standardized to a 1-hour effort, assuming the assumption that sampled the same length of basin in the banks' area or there are performed the same number of electric points per unit of time (multipoint sampling on an aquatic route).

The points chosen to be sampled should be set so that the main types of habitats to be covered. Generally for each lake / sector, the fishing is tested in four opposite points of the bank with electro fishing and to the nets fishing or with northern seines, areas with body of water, ones near the banks, others in the offing are chosen.

For the trawling on the Danube's depth and on channels, CPUE is standardized to an effort of a trawling / sector, with the average trawling length of 200 m.

To standardize the captures on benthic grids, the fluometre is used which measures the volume of the filtered water for a calculus system within the working hours (operating time) of the used grid (how much water has been filtered during the working period of the grid).

Proposals regarding the long term monitoring protocols of fish species of European conservation interest whose presence was reconfirmed from 1990 up to the present within DDBR.

1. *Alosa immaculata* (4125) (synonym *Alosa pontica*)

In DDBR the species is found along the whole Black Sea coast and throughout the breeding period along the Danube (and its branches) and only isolated specimens in Razim-Sinoe. It covers a part of both Steppe bioregion (Danube) and Marine (Danube, Black Sea).

The industrial fishing is done on the Danube, particularly on the St. George branch and to a less extent on the other, at herring nets.

Sporadic specimens are captured in the Black Sea at sea free fyke net traps installed for sprat, anchovy, horse mackerel.

The monitoring of the *Alosa immaculata* migratory populations must be done unitary in the next 3 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Delta Dunării - the marine area** (ROSCI0066)

- **Kalimok - Brashlen** (BG0000377).

The *Alosa immaculata* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (with seine or net)

- data obtained from the supervision of local and commercial fishing

- Telemetry (being used submerged transmitters / transponders).

Spring is the optimum period for implementing the proceedings.

2. Alosa tanaica (4120)

In DDBR species can be considered currently still relatively common throughout the Black Sea coastal area, Razim-Sinoe, Danube and some lakes inside the delta. There are numerical, seasonal and annual fluctuations of species. Industrial fishing in the Danube is practiced by the same methods as herring and in many cases mixed with it, but in much smaller quantities that most often it is not emphasized as a distinct species in the capture. Most captures are done at the mouths of the Danube and in the Black Sea at the free fyke net traps installed for sprat and anchovy.

The monitoring of the *Alosa tanaica* populations must be done unitary in the next 2 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Delta Dunării - the marine area** (ROSCI0066)

The *Alosa tanaica* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (with gillnet or commercial gillnet, respectively free fyke net trap)

- data obtained from the supervision of local and commercial fishing

- Telemetry (being used submerged transmitters / transponders).

Spring is the optimum period for implementing the proceedings.

3. Aspius aspius (1130)

In DDBR is one of the most common fish, meeting in all freshwater, shallow waters and even in front of the Danube's mouths and in Razim-Sinoe. Most of the species abundance and frequency is recorded in the Danube.

The monitoring of the *Aspius aspius* populations must be done unitary in the next 14 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Čičovské luhy** (SKUEV0182)

- **Delta Dunării** (ROSCI0065)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Duna és ártere** (HUDI20034)

- **Dunajské luhy** (SKUEV0090),

- **Gemenc** (HUDD20032),

- **Horny les** (SKUEV0168),

- **Hrušovská zdrž** (SKUEV0270),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kútsky les** (SKUEV0165),

- **Persina** (BG0000396),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241).

The *Aspius aspius* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (with dredging machine, possibly with nets, fish landing)

- "electro fishing" (sampling done with an electric fishing equipment)

- Telemetry (being used submerged transmitters / transponders).

- complementary information obtained from the supervision of local and commercial fishing

Spring and summer are the optimum periods for implementing the proceedings.

4. Cobitis taenia (1149)

In the DDBR is a relatively abundant species in most freshwater stagnant aquatic habitats, but in Razim-Sinoe complex, too. Being a small species, it has no interest for the industry and recreational fishing.

The monitoring of the *Cobitis taenia* populations must be done unitary in the next 15 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Čičovské luhy** (SKUEV0182),

- **Delta Dunării** (ROSCI0065),

- **Devinske alúvium Moravy** (SKUEV0312),

- **Devinske jazero** (SKUEV0313),

- **Donau-Auen östlich von Wien** (AT1204000),

- **Duna és ártere** (HUDI20034),

- **Dunajské luhy** (SKUEV0090),

- **Gajarské alúvium Moravy** (SKUEV0125),

- **Gemenc** (HUDD20032),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kútsky les** (SKUEV0165),

- **Persina** (BG0000396),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241).

The *Cobitis taenia* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (with dredging machine, possibly with nets, fish landing)

- "electro fishing" (sampling done with an electric fishing equipment)

Spring and summer are the optimum periods for implementing the proceedings.

5. Eudontomyzon mariae (2484)

The monitoring of the *Eudontomyzon mariae* populations must be done unitary in the next 4 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Kalimok - Brashlen** (BG0000377)

- **Persina** (BG0000396)

- **Srebarna** (BG0000241).

Monitoring is realized through the qualitative fishing method (with nets or electro fishing) done during spring time (during which adults can be found). The valuation method of larvae's density involves dredging of the sediment (where they are buried).

6.Gobio albipinnatus (1124)

The monitoring of the *Gobio albipinnatus* populations must be done unitary in the next 25 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Čičovské luhy** (SKUEV0182),

- **Bratislavske luhy** (SKUEV0064),

- **Delta Dunării** (ROSCI0065),

- **Devinske alúvium Moravy** (SKUEV0312),

- **Devinske jazero** (SKUEV0313),

- **Devinske lúky** (SKUEV0396),

- **Donau-Auen östlich von Wien** (AT1204000),

- **Duna és ártere** (HUDI20034),

- **Dunaj** (SKUEV0393),

- **Dunajské luhy** (SKUEV0090),

- **Gajarské alúvium Moravy** (SKUEV0125),

- **Gemenc** (HUDD20032),

- **Horny les** (SKUEV0168),

- **Hrušovská zdrž** (SKUEV0270),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kl'účovské rameno** (SKUEV0293),

- **Kútsky les** (SKUEV0165),

- **Ostrovné lucky** (SKUEV0269),

- **Persina** (BG0000396),

- **Pri Jakubovskych rybnikoch** (SKUEV0116),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241),

- **V studienkach** (SKUEV0178),

- **Vel'kolélsky ostrov** (SKUEV0183).

The *Gobio albipinnatus* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (with dredging machine, possibly with nets, fish landing)

- "electro fishing" (sampling done with an electric fishing equipment)

- complementary information obtained from the supervision of local fishing

Spring and summer are the optimum periods for implementing the proceedings.

7.Gobio kessleri (2511)

The monitoring of the *Gobio kessleri* populations must be done unitary in the next 11 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Bratislavske luhy** (SKUEV0064),

- **Delta Dunării** (ROSCI0065),

- **Devinske alúvium Moravy** (SKUEV0312),

- **Devinske jazero** (SKUEV0313),

- **Dunaj** (SKUEV0393),

- **Dunajské luhy** (SKUEV0090),

- **Hrušovská zdrž** (SKUEV0270),

- **Kľúčovské rameno** (SKUEV0293),

- **Ostrovné lucky** (SKUEV0269),

- **Rieka Morava** (SKUEV0314),

- **Veľkolélsky ostrov** (SKUEV0183)

Monitoring methods and periods of the Gobio kessleri species are similar to those mentioned in case of Gobio albipinnatus species.

8.Gymnocephalus baloni (2555)

In DDBR it has been reported only in the Danube, including the two loops of the Old Danube, where currently there is a frequent and abundant species. Being a small species, it has no interest for the industry and recreational fishing.

The monitoring of the *Gymnocephalus baloni* populations must be done unitary in the next 24 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Biskupicke luhy** (SKUEV0295),

- **Bratislavske luhy** (SKUEV0064),

- **Čičovské luhy** (SKUEV0182),

- **Delta Dunării** (ROSCI0065),

- **Devinske alúvium Moravy** (SKUEV0312),

- **Devinske jazero** (SKUEV0313),

- **Devinske lúky** (SKUEV0396),

- **Duna és ártere** (HUDI20034),

- **Dunaj** (SKUEV0393),

- **Dunajské luhy** (SKUEV0090),

- **Gajarské alúvium Moravy** (SKUEV0125),

- **Gemenc** (HUDD20032),

- **Horny les** (SKUEV0168),

- **Hrušovská zdrž** (SKUEV0270),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kl'účovské rameno** (SKUEV0293),

- **Kútsky les** (SKUEV0165),

- **Ostrovné lucky** (SKUEV0269),

- **Persina** (BG0000396),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241),

- **V studienkach** (SKUEV0178),

- **Vel'kolélsky ostrov** (SKUEV0183).

The *Gymnocephalus baloni* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (with dredging machine, possibly with nets, fish landing)

- "electro fishing" (sampling done with an electric fishing equipment)

- Telemetry (being used submerged transmitters / transponders).

- rarely, complementary information can be obtained from the supervision of local fishing

Spring is the optimum periods for implementing the proceedings.

9.Gymnocephalus schraetzer (1157)

In DDBR is relatively common throughout the Danube's fairway and its arms and rarely in Razim-Sinoe. It is missing the rest of stagnant fresh water. Being a small species, it has no interest for the industry and recreational fishing.

The monitoring of the *Gymnocephalus schraetzer* populations must be done unitary in the next 14 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065),

- Donau-Auen östlich von Wien (AT1204000),

- Duna és ártere (HUDI20034),

- Dunaj (SKUEV0393),

- Dunajské luhy (SKUEV0090),

- Gemenc (HUDD20032),

- Hrušovská zdrž (SKUEV0270),

- Kačenky (SKUEV0311),

- Kalimok – Brashlen (BG0000377),

- Kl'účovské rameno (SKUEV0293),

- Kútsky les (SKUEV0165),

- Persina (BG0000396),

- Rieka Morava (SKUEV0314),

- Srebarna (BG0000241).

Monitoring methods and periods of the *Gymnocephalus schraetzer* species are similar to those mentioned in case of *Gymnocephalus baloni* species.

10.Misgurnus fossilis (1145)

In DDBR species is relatively common in most stagnant mesotrophic and meso-oligotrophic freshwater, with abundant macrophytes and oozy ground. Sometimes in the spring there are signaled in the Danube, near the mouth of canals, when they got together for spawning.

The monitoring of the *Misgurnus fossilis* populations must be done unitary in the next 16 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Čičovské luhy** (SKUEV0182),

- **Delta Dunării** (ROSCI0065),

- **Devinske lúky** (SKUEV0396),

- **Dlhé lúky** (SKUEV0113),

- **Donau-Auen östlich von Wien** (AT1204000),

- **Duna és ártere** (HUDI20034),

- **Dunajské luhy** (SKUEV0090),

- **Gajarské alúvium Moravy** (SKUEV0125),

- **Gemenc** (HUDD20032),

- **Horny les** (SKUEV0168),

- **Kalimok – Brashlen** (BG0000377),

- **Kl'účovské rameno** (SKUEV0293),

- **Persina** (BG0000396),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241),

- **V studienkach** (SKUEV0178).

The *Misgurnus fossilis* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (with small- meshes fykes, possibly with nets and fish landing)

- "electro fishing" (sampling done with an electric fishing equipment)

- complementary information obtained from the supervision of local fishing

Spring and summer are the optimum periods for implementing the proceedings.

11.Pelecus cultratus (2522)

In DDBR species is a quite erratic on the three branches of the Danube, where sub adult specimens are predominate. It is more common upstream of Isaccea. It is also rare in the shallow waters. In the last two decades the species has become abundant in Razim-Sinoe. The fishing is industrial, the captures are sporadic in the Danube, where fishing especially in the spring on occasion of herring fishing at gillnets. Large quantities are fishing in Razim-Sinoe, in the autumn at trawl.

The monitoring of the *Pelecus cultratus* populations must be done unitary in the next 14 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Čičovské luhy** (SKUEV0182),

- **Delta Dunării** (ROSCI0065),

- **Duna és ártere** (HUDI20034),

- **Dunaj** (SKUEV0393),

- **Dunajské luhy** (SKUEV0090),

- **Gemenc** (HUDD20032),

- **Hrušovská zdrž** (SKUEV0270),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kľúčovské rameno** (SKUEV0293),

- **Kútsky les** (SKUEV0165),

- **Persina** (BG0000396),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241).

The *Pelecus cultratus* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (trawl, possibly with fixed nets)

- "electro fishing" (sampling done with an electric fishing equipment)

- complementary information obtained from the supervision of local and commercial fishing

Spring and summer are the optimum periods for implementing the proceedings.

12. *Rhodeus sericeus amarus* (1134) (synonym *Rhodeus amarus*)

In DDBR species is very common and abundant in most stagnant freshwater and in shallow waters (Sacalin shallow water and Musura gulf). Being a small species, it has no interest for the industry and recreational fishing.

The monitoring of the *Rhodeus sericeus amarus* (synonym *Rhodeus amarus*) populations must be done unitary in the next 26 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Bratislavske luhy** (SKUEV0064),

- **Čičovské luhy** (SKUEV0182),

- **Delta Dunării** (ROSCI0065),

- **Devinske alúvium Moravy** (SKUEV0312),

- **Devinske jazero** (SKUEV0313),

- **Devinske lúky** (SKUEV0396),

- **Dlhé lúky** (SKUEV0113),

- **Donauauen mit Gerolfinger Eichenwald** (DE7233372),

- **Donau-Auen östlich von Wien** (AT1204000),

- **Duna és ártere** (HUDI20034),

- **Dunaj** (SKUEV0393),

- **Dunajské luhy** (SKUEV0090),

- **Gajarské alúvium Moravy** (SKUEV0125),

- **Horny les** (SKUEV0168),

- **Hrušovská zdrž** (SKUEV0270),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kl'účovské rameno** (SKUEV0293),

- **Kútsky les** (SKUEV0165),

- **Ostrovné lucky** (SKUEV0269),

- **Persina** (BG0000396),

- **Pri Jakubovskych rybnikoch** (SKUEV0116),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241).

- **V studienkach** (SKUEV0178),

- **Vel'kolélsky ostrov** (SKUEV0183).

The *Rhodeus sericeus amarus* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures using nets and fish landing

- "electro fishing" (sampling done with an electric fishing equipment)

Spring and summer are the optimum periods for implementing the proceedings.

13. Sabanejewia aurata (1146)

In DDBR it is found only in the Danube's fairway, with all three branches, where the species is relatively common. Being a small species, it has no interest for the industry and recreational fishing.

The monitoring of the *Sabanejewia aurata* populations must be done unitary in the next 10 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Bratislavske luhy** (SKUEV0064),

- **Čičovské luhy** (SKUEV0182),

- **Delta Dunării** (ROSCI0065),

- **Donau-Auen östlich von Wien** (AT1204000),

- **Dunaj** (SKUEV0393),

- **Dunajské luhy** (SKUEV0090),

- **Hrušovská zdrž** (SKUEV0270),

- **Kl'účovské rameno** (SKUEV0293),

- **Rieka Morava** (SKUEV0314),

- **Vel'kolélsky ostrov** (SKUEV0183).

The *Sabanejewia aurata* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures using nets fixed on ground special adjust to the Danube's fairway

- "electro fishing" (sampling done with an electric fishing equipment adjust to the Danube's fairway)

Spring and summer are the optimum periods for implementing the proceedings.

<u>14. Umbra krameri (2011)</u>

It is a relatively rare species, but with a wide distribution in DDBR, so they can meet in the marshes and channels rich in macrophytes. Taking into account the small size of the species and its rarity, it has no interest for the industry and recreational fishing.

The monitoring of the *Umbra krameri* populations must be done unitary in the next 6 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Čičovské luhy** (SKUEV0182),

- **Delta Dunării** (ROSCI0065),

- **Gajarské alúvium Moravy**(SKUEV0125),

- **Gemenc** (HUDD20032),

- **Horny les** (SKUEV0168),

- **Srebarna** (BG0000241).

The *Umbra krameri* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures using nets and fish landing

- "electro fishing" (sampling done with an electric fishing equipment)

Late spring is the optimum periods for implementing the proceedings.

15. Zingel (Aspro) zingel (1159)

The species was reported in DDBR only on the Danube's fairway, where is rare but more common than *Zingel streber*. Its frequency and abundance increases upstream Isaccea. It has no interest for industrial and recreational fishing.

The monitoring of the *Zingel zingel* populations must be done unitary in the next 12 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065),

- **Donau-Auen östlich von Wien** (AT1204000),

- **Duna és ártere** (HUDI20034),

- **Dunaj** (SKUEV0393),

- **Dunajské luhy** (SKUEV0090),

- **Gemenc** (HUDD20032),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kľúčovské rameno** (SKUEV0293),

- **Kútsky les** (SKUEV0165),

- **Persina** (BG0000396),

- **Srebarna** (BG0000241).

The *Zingel (Aspro) zingel* species' monitoring is achieved by the following methods:

- qualitative and quantitative captures (with dredging machine, possibly with nets, bags, fish landing)

- "electro fishing" (sampling done with an electric fishing equipment)

- Telemetry (being used submerged transmitters / transponders).

- complementary information obtained from the supervision of local fishing

Spring is the optimum periods for implementing the proceedings.

16. Zingel streber (1160)

In a number much lower than *Zingel zingel* in DDBR; it is rare and exists only in the Danube's fairway downstream Isaccea and relatively frequent upstream Isaccea. It has no interest for industrial and recreational fishing.

The monitoring of the *Zingel streber* populations must be done unitary in the next 21 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Bratislavske luhy** (SKUEV0064),

- **Delta Dunării** (ROSCI0065),

- **Devinske alúvium Moravy** (SKUEV0312),

- **Devinske jazero** (SKUEV0313),

- **Devinske lúky** (SKUEV0396),

- **Donau-Auen östlich von Wien** (AT1204000),

- **Duna és ártere** (HUDI20034),

- **Dunaj** (SKUEV0393),

- **Dunajské luhy** (SKUEV0090),

- **Gajarské alúvium Moravy** (SKUEV0125),

- **Gemenc** (HUDD20032),

- **Horny les** (SKUEV0168),

- **Hrušovská zdrž** (SKUEV0270),

- **Kalimok – Brashlen** (BG0000377),

- **Kl'účovské rameno** (SKUEV0293),

- **Kútsky les** (SKUEV0165),

- **Ostrovné lucky** (SKUEV0269),

- **Persina** (BG0000396),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241),

- **Vel'kolélsky ostrov** (SKUEV0183).

Monitoring methods and periods of the *Zingel streber* species are similar to those mentioned in case of *Zingel (Aspro) zingel* species.

5.3. AMPHIBIANS

Proposals regarding the long term monitoring protocols of amphibian species of European conservation interest whose presence was reconfirmed from 1990 up to the present within DDBR.

1. Triturus dobrogicus (1993)

The monitoring of the Triturus dobrogicus populations must be done unitary in the next 17 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Bratislavske luhy** (SKUEV0064),

- **Delta Dunării** (ROSCI0065),

- **Devinske alúvium Moravy** (SKUEV0312),

- **Devinske jazero** (SKUEV0313),

- **Dlhé lúky** (SKUEV0113),

- **Donau-Auen östlich von Wien** (AT1204000)

- **Dunajské luhy** (SKUEV0090),

- **Gajarské alúvium Moravy** (SKUEV0125),

- **Gemenc** (HUDD20032),

- **Horny les** (SKUEV0168),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kútsky les** (SKUEV0165),

- **Ostrovné lucky** (SKUEV0269),

- **Persina** (BG0000396),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241).

Regarding the *Triturus dobrogicus* species, the monitoring during spring time is accomplished through **direct observations** method or the method of **marking and recapture**. Adults that migrate to the spawning place can be evaluated using the method that involves the use of **ground traps** ("pitfall"). In early summer the swamps are inventoried in which the spawning is successfully. In late summer period, a monitoring method is one that involves the use of ground traps (to evaluate juvenile metamorphosis flock). A complementary method for monitoring the dispersion of adults in terrestrial habitats is that of active transects (search for specimens in different shelters) and the valuation of their density (number of specimens found / observer or related to the duration of the field investigations or to distance covered during the monitoring).

A complementary method of monitoring is to track the specimens using microchips implanted or using small transponders attached to the body.

5. Bombina bombina (1188)

The monitoring of the *Bombina bombina* populations must be done unitary in the next 27 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Čičovské luhy** (SKUEV0182),

- **Biskupicke luhy** (SKUEV0295),

- **Bratislavske luhy** (SKUEV0064),

- **Burda** (SKUEV0184),

- **Delta Dunării** (ROSCI0065),

- **Devinske alúvium oravy**(SKUEV0312),

- **Devinske jazero** (SKUEV0313),

- **Dlhé lúky** (SKUEV0113),

- **Donau-Auen östlich von Wien** (AT1204000),

- **Duna és ártere** (HUDI20034),

- **Dunajské luhy** (SKUEV0090),

- **Dunajské trstiny** (SKUEV0077),

- **Gajarské alúvium oravy**(SKUEV0125),

- **Gemenc** (HUDD20032),

- **Horny les** (SKUEV0168),

- **Hrušovská zdrž** (SKUEV0270),

- **Kačenky** (SKUEV0311),

- **Kalimok – Brashlen** (BG0000377),

- **Kl'účovské rameno** (SKUEV0293),

- **Kútsky les** (SKUEV0165),

- **Ostrovné lucky** (SKUEV0269),

- **Persina** (BG0000396),

- **Pri Jakubovskych rybnikoch**(SKUEV0116),

- **Rieka Morava** (SKUEV0314),

- **Srebarna** (BG0000241),

- **V studienkach** (SKUEV0178),

- **Vel'kolélsky ostrov** (SKUEV0183)

Regarding the *Bombina bombina* species, the monitoring during spring time is accomplished through **direct observations** method (for recording the number of specimens present in the small swamps). The complementary method is that of **auditory transects** (valuation of the singing males) and the method of **marking and recapture**.

In early summer the swamps are inventoried in which the spawning is successfully (not dry before the metamorphosis' finalizing). In late summer period, a monitoring method is one that involves the use of ground traps (to evaluate juvenile metamorphosis flock). A complementary method for monitoring the dispersion of adults in terrestrial habitats is that of active transects (search for specimens in different shelters) and the valuation of their density (number of specimens found / observer or related to the duration of the field investigations or to distance covered during the monitoring).

5.4. REPTILES

Proposals regarding the long term monitoring protocols of reptile species of European conservation interest whose presence was reconfirmed from 1990 up to the present within DDBR.

1. Testudo graeca (1219)

The monitoring of the *Testudo graeca* populations must be done unitary in the next 4 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Kalimok - Brashlen** (BG0000377)

- **Persina** (BG0000396)

- **Srebarna** (BG0000241).

The monitoring of the *Testudo graeca* species is accomplished through **active transects** method (registration of the number of specimens found by observer per unit time or per unit of covered distance / transect).

Complementary, the **method of marking and recapture** may be used or the use of implanted microchips or transponders attached to the specimens' body. For the valuation of the population's status, their age structure is also analyzed (the age of adult specimens is determined by the number of growth rings on dorsal shields of the carapace). Optimum period for implementing the proceedings is from May to June.

2. Emys orbicularis (1220)

The monitoring of the *Emys orbicularis* populations must be done unitary in the next 7 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Duna és arteries** (HUDI20034)

- **Gemenc** (HUDD20032)

- **Kalimok - Brashlen** (BG0000377)

- **Persina** (BG0000396)

- **Srebarna** (BG0000241).

The monitoring of the *Emys orbicularis* species is accomplished through **active transects** method (registration of the number of specimens found by observer per unit time or per unit of covered distance / transect). The data regarding the number of detected spawns during the summer investigations are taken into account to the analyses of the current status of populations.

Complementary, the **method of marking and recapture** may be used or the use of implanted microchips or transponders attached to the specimens' body.

3. Vipera ursinii (1298)

The monitoring of the *Vipera ursinii* populations must be done unitary in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The monitoring of the *Vipera ursinii* species is accomplished through **active transects** method (registration of the number of specimens found by observer per unit time or per unit of covered distance / transect).

Complementary, the **method of marking and recapture** may be used or the use of implanted microchips or transponders attached to the specimens' body. Supplementary information about the detection of sloughs may be taken into account to the data's interpretation.

Optimum period for implementing the proceedings is from May to June.

5.4. BIRDS

Proposals regarding the long term monitoring protocols of bird species of European conservation interest whose presence was reconfirmed from 1990 up to the present within DDBR.

For an efficient implementation of the monitoring methods for bird species must be taken into account several elements required for field investigations:

Equipment

Binoculars

Telescope
Map – it is preferable to be on a scale of 1: 5000, but can be used successfully maps on a scale of 1:10000 and 1:25000 (depending on species), that illustrate the monitored area and its delimitation.

GPS (recommended)

Standardized forms for the introduction of data about the species mentioned in Annex I of the Birds Directive present in the investigated area.

Weather conditions

It is recommended to avoid the days with rain and strong wind.

Monitoring should be done to the settled date, but if weather conditions do not allow accurate observations, the monitoring will be rescheduled or repeated to a date as close to the original date.

Monitored areas

It should be taken into account all known or potential areas in which could be found or be present the species mentioned in Annex I of the Birds Directive within DDBR and / or Special Protected Bird Areas that overlap with it.

Methods of monitoring for bird species mentioned in the Birds Directive that are nesting on the territory of the DDBR and / or Special Protection Bird Areas that overlap with it.

In the case of colonial birds such as: *Phalacrocorax pygmeus, Pelecanus onocrotalus, Pelecanus crispus, Nycticorax nycticorax, Ardeola ralloides, Egretta garzetta, Egretta alba, Ardea purpurea, Plegadis falcinellus, Platalea leucorodia, Falco naumanni, Falco vespertinus, Himantopus himantopus, Recurvirostra avosetta, Glareola pratincola , Larus melanocephalus, Gelochelidon nilotica (Sterna nilotica), Sterna sandvicensis, Sterna hirundo, Sterna albifrons, Chlidonias hybridus and Chlidonias niger* or that are nesting grouped like *Charadrius alexandrinus*, the valuation of the nesting population's size is done either by direct counting of nests in the colony, either using air photos or by counting the adult birds that are flying from the colony.

Teams of at least 2 persons are recommended for monitoring.

A special focus on maintaining the disturbance to a minimum level, especially regarding these types of birds is required. Thus, making necessary observations in a short time is recommended.

For colonies located in inaccessible areas, where disturbance during nesting due to monitoring activities would be high and the air visibility upon the colony is good we recommend using the air photos.

For *Pelecanus crispus* the observation will be made starting with February, and for the remaining colonial species from May.

In the case of *Botaurus stellaris*, the valuation of the nesting population in each area is based on the characteristic sounds emitted by males in spring. The areas with reeds will be checked up. At least three field trips, starting with the mid-March and continuing with the first days of April and until the end of this last month will be done. Areas where males were heard should be rechecked up to reconfirm their presence in the same places.

Observations will be done two hours before sunrise or in the evening, two hours after sunset, when the species is most active.

For *Ixobrychus minutus*, the valuation of the nesting population in each area is based on identifying birds that fly during the nesting period between the feeding areas and the reed places where they are nesting. The areas with reeds and eutrophic wetlands will be checked up.

Observations will be done in the first 4 hours after sunrise or in the evening at 2 hours before sunset, when the species is most active. Areas will be checked at least two times, in May and early June.

For *Tadorna ferruginea* and *Aythya nyroca*, the valuation of the nesting population in each area is done counting the pairs during bridal period in the favorable habitats in the second half of April and the first half of May, or pairs with chicks in June. Observations will be done, preferably in the first four hours after sunrise.

For *Ciconia nigra, Ciconia ciconia, Pernis apivorus, Milvus migrans, Haliaaetus albicilla, Circaetus gallicus, Circus aeroginosus, Circus pygargus, Accipiter brevipes, Buteo rufinus, Falco cherrug* and *Falco peregrinus*, the valuation of the nesting populations will be done by direct counting of the occupied nests. Initially the nests (active) used for nesting of the species in the studied areas will be identified. Most diurnal raptor species build many nests that are used for an alternative nesting.

Nests' identifying in forest areas will be done during winter-spring period, preferably after the snow melted. These will be marked with the GPS and will be checked up during the species' nesting period. A special care must be shown for do not disturb the species during nesting. Thus, the species do not tolerate the disturbance during the breeding period to the nest should be observed from a safe distance away from the nest. Territorial birds with bridal volation or the pairs that train the chicks for volation and hunting can be assessed in the corresponding periods.

For monitoring of species*: Porzana porzana, Porzana parva* and *Porzana pusilla* the maximum number of birds that were heard singing in all the exits (for the area) will be reported. Three exits will be done: the first one in early May, the second one in the second half of May and the third in the first half of June. The observations will be done during the period: the first half hour after sunset and until 00:00. This method will enable the valuation of population's size, but not precisely establish the number of nesting pairs in the studied area.

For monitoring *Bubo bubo* and *Asio flammeus* the number of confirmed, probable and possible nesting pairs will be identified. Initially, the potential areas for nesting in suitable habitats should be identified, and then the possible areas by observing or hearing the species. Nesting confirmation will be done by finding the nest or by observing the chicks.

For *Caprimulgus europaeus* the number of singing males will be identified. At least two visits will be organized, from June until mid-July. Observations will be done in the evening two hours before the sunset and one hour after sunset. Valuations could be done also in the morning, one hour before sunrise, especially when the nights from the previous days have unfavorable weather and the observations could not be done.

For *Alcedo atthis* the occupied nests will be identified. Observations will be done from May to August. For many areas, investigations should be done using boats.

For *Coracias garrulus* the nesting pairs will be counted from in the second half of May until mid July. Observations will be done in the species' favorable habitats, preferably in the morning.

For *Picus canus, Dryocopus martius* and *Dendrocopos syriacus* the number of the nesting pairs in the species' favorable habitats will be estimated. Observations can be done starting with mid March to early July. The data will be more accurate in proportion as the observations will be more.

For *Melanocorypha calandra, Calandrella brachydactyla, Lullula arborea* and *Anthus campestris* the number of occupied territories will be identified. For *Lullula arborea* three visits will be done between mid February and early June; for *Melanocorypha calandra* and *Calandrella brachydactyla* four visits will be done, from early April until the first half of May. Observations will be done in the first hours after sunrise.

For *Lanius collurio, Lanius minor* and *Emberiza hortulana* the number of nesting pairs in each area will be identified. Three visits to the investigated areas will be done, from late April to late June for *Emberiza hortulana* and for *Lanius collurio* and *Lanius minor* from mid-May to mid July.

For *Sylvia nisoria* the number of occupied territories will be identified. Three visits will be done in the investigated areas, from early May to mid June. Observations will be done in the first hours after sunrise.

For *Luscinia svecica* and *Acrocephalus melanopogon* the number of singing males and the number of occupied territories will be identified. Several visits will be done to identify species' favorable habitat, and counting will be done in one visit in the second half of May.

For *Oenanthe pleschanka* the number of singing males and the number of occupied territories will be identified. Several visits will be done to identify species' favorable habitat, and counting will be done in one visit in the second half of May.

Methods of monitoring for bird species mentioned in the Birds Directive that are migrating or wintering on the territory of the DDBR and / or Special Protected Bird Areas that overlap with it.

In the autumn season, hiemal or prevernal many bird species gather in places plenty of food or where find safe areas used for rest. The main objectives of monitoring bird species except the nesting period are as follows:

- determining the size of migrating or wintering populations
- identification of numerical trends and distribution

- to identify important areas for resting, feeding as well as the volation routes used during the regular migrations of these populations between feeding places and that used for rest.

Monitoring during migration

Monitoring for *Pelecanus onocrotalus, Pelecanus crispus, Ciconia nigra, Ciconia ciconia, Plegadis falcinellus, Platalea leucorodia, Pernis apivorus, Milvus migrans, Haliaaetus albicilla, Circaetus gallicus, Circus aeroginosus, Circus cyaneus, Circus macrourus, Circus pygargus, Accipiter brevipes , Buteo rufinus, Aquila pomarina, Aquila clanga, Aquila heliaca, Hieraaetus pennatus, Pandion haliaetus, Falco naumanni, Falco vespertinus, Falco columbarius, Falco cherrug, Falco peregrinus* and *Grus grus* is done in areas where during migration large flocks of these species are massed together (so-called botleneck sites).

Identifying and fixing of the points (areas) for monitoring are recommended along the migration corridors and using of the same points in the next years too. Populations of each species mentioned above will be assessed by direct counting in the monitoring points. It is recommended that counts be done by teams of at least three persons for each monitoring point. To avoid double counting of the migratory birds, the monitoring points should be arranged in a line perpendicular to the direction of the migration corridor, and data about the migration direction of the specimens and species should be correlated between the monitoring teams. It is recommended that the monitoring in the "botleneck" areas to be done daily between 9 and 18 o'clock, from August 15 to October 31and in the spring from 15th March until 15th May.

Model of standard record card for monitoring the migration of raptors birds, storks, pelicans, spoon bills and eastern flossy ibis.

Data: / / Oră start: Conditii meteo start:

Denumire specie	Nr.ex.	ad	♀	♂	imm	Înălțime (m.)	Trecere	Direcție	Stat	Hrănire	Obs.- semne distincte individ

Monitorizarea condițiilor meteo(temperatură aer, acoperire nori, vizibilitate, intensitatea vântului, precipitații) pe toată perioada observațiilor(din oră în oră).

Ora	C°	vânt	nor

Monitoring of the migratory populations of *Phalacrocorax pygmeus, Tadorna ferruginea, Aythya nyroca, Oxyura leucocephala, Himantopus himantopus, Recurvirostra avosetta, Glareola pratincola, Charadrius morinellus (Eudromias morinellus), Pluvialis apricaria, Philomachus pugnax, Gallinago media, Numenius tenuirostris, Tringa glareola, Phalaropus lobatus, Larus melanocephalus, Larus gene, Larus minutus, Gelochelidon nilotica (Sterna nilotica), Sterna caspia, Sterna sandvicensis, Sterna hirundo, Sterna albifrons, Chlidonias hybridus* and *Chlidonias*

niger will be done in the feeding and resting areas, where large flocks of these species are massed together.

Also, we recommend this method for populations of *Pelecanus onocrotalus, Pelecanus crispus, Ciconia nigra, Ciconia ciconia, Plegadis falcinellus* and *Platalea leucorodia* as a completion of the previous method that records the total number of individuals that cross in volation a particular area.

They will be particularly the inside delta's wetlands, lagoons and coastal area. Identifying and fixing of the points (areas) for monitoring are recommended along the migration corridors and using of the same points in the next years too. The counting should be done in the first four hours after sunrise, when the birds are generally massed together in areas of rest and feeding. Populations of each species mentioned above will be assessed by direct counting in the monitoring points or by estimation based on percentages of the total number of individuals present in the area. It will gather information about the report juveniles/ adults and habitat preferences. Monitoring in the feeding and rest areas will be done at least once a month in July, August, September and October in the autumn and during spring in March, April and May.

The ringing method is a complementary method for the valuation of the migratory bird populations. This is useful especially in case of the Passeriformes species populations, but can provide valuable information for the species of other orders, too.

Thus, **achieving regular campaigns to ring birds during migration, especially in the fluvial-marine sandbanks within DDBR, in the lagoon area and the Black Sea coast is very important in order to collect data about birds' migration in this area and the possible population trends of these**.

In this respect, we propose the establishment of a permanent ringing center within DDBR that would be a European reference point for the monitoring of bird migration in the western Black Sea.

We also propose to link the results of monitoring programs for species and habitats of European conservation interest in the institutions partners in Danube Park project.

The calendar for optimal periods to do field investigations in order to monitor populations of bird species of European conservation interest within DDBR and from the protected areas partners in Danube Park project is presented as following in a table:

No.	Species	Period		
		nesting	**migration**	**wintering**
1	*Gavia stellata*		**X, III-V**	**XI-II**
2	*Gavia arctica*		**X, III-V**	**XI-II**
3	*Puffinus yelkouan*		**IV-VI, VIII-IX**	
4	*Phalacrocorax pygmeus*	**IV-VII**	**VIII-X, III**	**XI-II**
5	*Pelecanus onocrotalus*	**IV-VII**	**VIII-X, III**	
6	*Pelecanus crispus*	**III-VIII**	**IX-X, II**	**XI-I**
7	*Botaurus stellaris*	**III-VII**		**XI-II**
8	*Ixobrychus minutus*	**III-VII**		
9	*Nycticorax nycticorax*	**III-VII**		**XI-II**
10	*Ardeola ralloides*	**IV-VII**	**VIII-X, III**	
11	*Egretta garzetta*	**IV-VII**	**VIII-X, III**	
12	*Casmerodius albus*	**III-VII**		**XI-II**
13	*Ardea purpurea*	**IV-VII**	**VIII-X, III**	
14	*Ciconia nigra*	**IV-VI**	**VII-X, III**	
15	*Ciconia ciconia*	**III-VII**	**VIII-IX, III**	
16	*Plegadis falcinellus*	**IV-VII**	**VIII-IX, III**	
17	*Platalea leucorodia*	**IV-VII**	**VIII-IX, III**	
18	*Cygnus columbianus*			**XI-II**
19	*Cygnus cygnus*			**XI-II**
20	*Anser erythropus*			**XI-II**
21	*Branta ruficollis*			**XI-II**
22	*Tadorna ferruginea*	**IV-VII**		**XI-II**
23	*Aythya nyroca*	**IV-VII**	**VIII-X, III**	**XI-II**
24	*Mergellus albellus*	**III-VII**		**XI-II**
25	*Oxyura leucocephala*		**X-XI, III**	**XI-II**
26	*Pernis apivorus*	**V-VII**	**VIII-IX, IV-V**	
27	*Milvus migrans*	**IV-VII**	**IX-X, III-IV**	
28	*Haliaeetus albicilla*	**I-V**	**X-XI**	**XII-II**
29	*Circaetus gallicus*	**V-VII**	**VIII-IX, IV-V**	
30	*Circus aeruginosus*	**IV-VII**	**IX-X, III**	**XII-II**
31	*Circus cyaneus*		**X-XI, III**	**XII-II**
32	*Circus macrourus*		**VIII-IX, III-IV**	
33	*Circus pygargus*	**IV-VII**	**VIII-IX, III-IV**	

34	*Accipiter brevipes*	**V-VII**	**VIII-IX, IV**	
35	*Buteo rufinus*	**III-VI**	**IX-XI, II-IV**	**XII-II**
36	*Aquila pomarina*		**IX, IV**	
37	*Aquila clanga*		**IX-XI, III-IV**	**XII-II**
38	*Aquila heliaca*		**IX-XI, III-IV**	**XII-II**
39	*Aquila chrysaetos*		**IX-XI, III-IV**	**XII-II**
40	*Hieraaetus pennatus*		**VIII-IX, IV**	
41	*Pandion haliaetus*		**VII-X, III-V**	
42	*Falco naumanni*	**V-VI**	**VIII-IX, IV-V**	
43	*Falco vespertinus*	**V-VI**	**VIII-IX, IV-V**	
44	*Falco columbarius*		**X-XI, II-IV**	**XII-II**
45	*Falco cherrug*	**III-VI**	**VIII-XI, II-IV**	**XII-II**
46	*Falco peregrinus*	**III-VI**	**VIII-XI, II-IV**	**XII-II**
47	*Porzana porzana*	**IV-VI**		
48	*Porzana parva*	**IV-VI**		
49	*Porzana pusilla*	**IV-VII**		
50	*Crex crex*		**VIII-X, IV-V**	
51	*Grus grus*		**IX-XI, II-IV**	
52	*Himantopus himantopus*	**IV-VI**		
53	*Recurvirostra avosetta*	**IV-VI**		**XI-II**
54	*Burhinus oedicnemus*	**IV-VII**	**IX-X, III-IV**	
55	*Glareola pratincola*	**IV-VI**		
56	*Charadrius alexandrinus*	**IV-VI**		
57	*Eudromias morinellus*		**IX-X, III-IV**	
58	*Pluvialis apricaria*		**IX-X, III**	**XI-II**
59	*Philomachus pugnax*		**IX-X, III-V**	**XI-II**
60	*Gallinago media*		**IX-X, III-IV**	
61	*Tringa glareola*		**VIII-X, III-IV**	
62	*Phalaropus lobatus*		**VIII-IX, IV-V**	
63	*Larus melanocephalus*	**IV-VII**	**VIII-X, III**	**XI-II**
64	*Larus minutus*		**VIII-X, III-V**	
65	*Larus genei*		**VIII-X, III-V**	
66	*Sterna nilotica*	**IV-VII**	**VIII-X, III-IV**	
67	*Sterna caspia*		**VII-X, III-V**	
68	*Sterna sandvicensis*	**IV-VII**		
69	*Sterna hirundo*	**IV-VII**		
70	*Sterna albifrons*	**IV-VII**		
71	*Chlidonias hybrida*	**IV-VII**		
72	*Chlidonias niger*	**IV-VII**		
73	*Bubo bubo*	**I-V**		
74	*Asio flammeus*	**IV-VI**		
75	*Caprimulgus europaeus*	**IV-VI**		
76	*Alcedo atthis*	**IV-VIII**		

77	*Coracias garrulus*	**V-VII**	**VIII-X, V**	
78	*Picus canus*	**III-V**		
79	*Dryocopus martius*	**III-V**		
80	*Dendrocopos syriacus*	**III-VI**		
81	*Melanocorypha calandra*	**III-V**		**XI-II**
82	*Calandrella brachydactyla*	**IV-V**		**XI-II**
83	*Lullula arborea*	**III-V**	**VIII-X, IV-V**	
84	*Anthus campestris*	**IV-VI**	**VIII-X, IV-V**	
85	*Luscinia svecica*	**IV-VI**	**VIII-X, IV-V**	
86	*Oenanthe pleschanka*	**IV-VI**	**VIII-X, IV-V**	
87	*Acrocephalus melanopogon*	**IV-VI**	**VIII-X, IV-V**	
88	*Sylvia nisoria*	**IV-VI**	**VIII-X, IV-V**	
89	*Ficedula parva*		**VIII-X, IV-V**	
90	*Ficedula albicollis*		**VIII-X, IV-V**	
91	*Lanius collurio*	**IV-VII**	**VIII-X, V**	
92	*Lanius minor*	**IV-VII**	**VIII-X, V**	
93	*Emberiza hortulana*	**IV-VII**	**VIII-X, IV**	

5.5. MAMMALS

Proposals regarding the long term monitoring protocols of mammal species of European conservation interest whose presence was reconfirmed from 1990 up to the present within DDBR.

1. Myotis bechsteinii (1323)?

In the DDBR, this species requires reconfirmation. It was signaled once in the Letea forest area based on sonogram. The monitoring of *Myotis bechsteinii* populations must be done unitary in the next 5 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Burda** (SKUEV0184)

- **Delta Dunării** (ROSCI0065)?

- **Donau-Auen östlich von Wien** (AT1204000)

- **Gemenc** (HUDD20032)

- **Persina** (BG0000396).

The monitoring of *Myotis bechsteinii* species is done through regular registration of individuals in underground shelters or out of it. The valuation of the population size can be done applying the radio telemetry method near the breeding sites in late summer.

2. Barbastella barbastellus (1308)

The monitoring of *Barbastella barbastellus* populations must be done unitary in the next 13 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Bratislavská luhy** (SKUEV0064)

- **Burda** (SKUEV0184)

- **Delta Dunării** (ROSCI0065)

- **Devinska alúvium Moravy** (SKUEV0312)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Dunaj** (SKUEV0393)

- **Gajarské alúvium Moravy** (SKUEV0125)

- **Gemenc** (HUDD20032)

- **Horny les** (SKUEV0168)

- **Kačenky** (SKUEV0311)

- **Persina** (BG0000396)

- **Riek Morava** (SKUEV0314)

- **Srebarna** (BG0000241)

If monitoring *Barbastella barbastellus* species first it is necessary to identify the presence of species (using an ultrasonic detector) and of shelters (in this sense the most efficient method is to use the radio telemetry's techniques). The establishing of the population size is done by:

- direct counting of the specimens that are out of the shelter;

- direct counting of the specimens that are present in the hibernation shelters.

3. Spermophilus citellus (1335)

The monitoring of *Spermophilus citellus* populations must be done unitary in the next 7 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Duna és arteries** (HUDI20034)

- **Kalimok - Brashlen** (BG0000377)

- **Persina** (BG0000396)

- **Srebarna** (BG0000241)

- **Vel'kolélsky islet** (SKUEV0183).

The monitoring of *Spermophilus citellus* species is done through periodic estimation of specimens' density per surface unit, in the field being recorded the number of active galleries' openings or individuals observed along the transects. A complementary method is the capture-marking-recapture method. Optimum period for implementing the proceedings is from April to June.

4. Lutra lutra (1355)

The monitoring of *Lutra lutra* populations must be done unitary in the next 16 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Burda** (SKUEV0184)

- **Čičovské luhy** (SKUEV0182)

- **Delta Dunării** (ROSCI0065)

- **Devinska alúvium Moravy** (SKUEV0312)

- **Devinska jazero** (SKUEV0313)

- **Devinska Luky** (SKUEV0396)

- **Dunaj** (SKUEV0393)

- **Dunajska luhy** (SKUEV0090)

- **Dunajska trstiny** (SKUEV0077)

- **Gemenc** (HUDD20032)

- **Kalimok - Brashlen** (BG0000377)

- **Kl'účovské rameno** (SKUEV0293)

- **Persina** (BG0000396)

- **Riek Morava** (SKUEV0314)

- **Srebarna** (BG0000241).

- **Vel'kolélsky islet** (SKUEV0183)

The monitoring of *Lutra lutra* species is done through method of registration (in winter time) of species' presence signs (footprints on the snow, fish waste, excrements, etc.); complementary, it is necessary to do the counting of the specimens (the latter method being more accurate).

5. Mustela lutreola (1356 *)

The monitoring of *Mustela lutreola* populations must be done unitary in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065).

The monitoring of *Mustela lutreola* species is done using some selective traps and extrapolating the results obtained to the types of habitats potentially favorable for the species.

Additional monitoring methods are those that require tracking of some specimens that were marked with microchips implanted or with transponders attached to the body, respectively the analysis of the results obtained using the capture-marking-recapture technique.

6. Vormela peregusna (2635)

The monitoring of *Vormela peregusna* populations must be done unitary in the next 3 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Kalimok - Brashlen** (BG0000377)

- **Srebarna** (BG0000241).

The monitoring of *Vormela peregusna* species is done by direct observations throughout the year, to the data analysis is taken into account the investigations' period of time and the tracks' length (or transects) covered in the areas favorable to the species' presence.

7. Mustela eversmanni (2633)

The monitoring of *Mustela eversmanni* populations must be done unitary in the next 4 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Gemenc** (HUDD20032)

- **Kalimok - Brashlen** (BG0000377)

- **Persina** (BG0000396).

The monitoring of *Mustela eversmanni* species is done by direct observations throughout the year, to the data analysis is taken into account the investigations' period of time and the tracks' length (or transects) covered in the areas favorable to the species' presence.

8. Tursiops truncatus (1349)

The monitoring of *Tursiops truncatus* populations must be done unitary in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** - the marine area (ROSCI0066).

The monitoring of *Tursiops truncates* species is done using the direct observations method, in different seasons, the records being made simultaneously on transects perpendicular to the line of the bank, placed at intervals of 5 km along the entire marine sector of the DDBR.

9. Phocoena phocoena (1351)

The monitoring of *Phocoena phocoena* populations must be done unitary in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** - the marine area (ROSCI0066).

The monitoring of *Phocoena phocoena* species is done using the direct observations method, in different seasons
(for recording the number of specimens that are present on standard study surfaces of about 1- 1.5 km^2).

5.6. VEGETATION

Visual mapping method on itinerary

a) Visual mapping on transversal itineraries

The surface covered with vegetation is divided into a network of itineraries parallel, perpendicular to the relief items. Distance between itineraries remains to the observer's judgment, so that to allow a perfect view of the vegetation between two itineraries, in order to achieve an accurate mapping of the plant associations.

The settled itineraries are plotted as a set of parallel lines dotted on the ecosystem's map, taking into account in field of certain natural marks (trees, rocks etc.) or artificial (landmarks).

The monitoring activity starts by the observer's moving on the first fixed itinerary, noting on the fly the limits of the outline of each plant associations that was found. For precision, distances between the limits of the associations are set by measurements using the roulette or the compass. If an association's outline occurs between the parallel lines of the itineraries, then the distance from the itinerary's line to the edge of the association is measured and the outline and the distance are marked on the map. Then pass on the second itinerary and so on, until the entire surface of the ecosystem is covered.

Observations that are done on the following itineraries are a continuation of the previous ones; these are drawn on the map with a continuous line that finally defines the real contour of the plant associations within the ecosystem.

b) Visual mapping on full contour

This monitoring method applies only when the entire vegetation of the habitat may be included in the observer's visual field.

Field orientation is done by some natural or artificial marks.

Mapping activity is to establish the full outline of the plant associations within the ecosystem, by surrounding and measuring the each other's limits using roulette.

The tool mapping method using marking out

This method is applied to the mapping of the plant associations of an ecosystem with a small area to draw up large scale maps (1: 5000).

The surface of vegetation within the ecosystem is divided into square areas of 25 X 25 m^2, 50 X 50 m^2, 100 X 100 m^2, etc. marked by stakes. Field's areas are drawn to scale on the habitat map.

After this operation the associations are defined using **visual mapping on full contour** by surrounding the plant associations.

The mapping method using remote sensing

Regarding this monitoring method of the natural habitat types, TM Mapper satellite images will be selected for the area that will be studied. To calibrate the pixels from the satellite image that correspond to vegetation will be done field investigations in different types of vegetation. The analysis of the satellite images should be done based on the following principles:

• pixels' structure (value, chromatics) from the satellite image to be uniform and representative for type of vegetation in the area;

• number of pixels with the same structure (value, chromatics) to be bigger than 8 for not suffering interferences of the surrounding areas;

• vegetation types to be uniform in terms of density and height.

After calibration in the field of the pixels from the satellite images and the characterization of the vegetation types in the area, satellite images will be processed using ArcView software and an appropriate computer that allow its running to determine the areas covered by vegetation, to locate the testing samples in the field and to structure the obtained information.

Preliminary study of vegetation using this method is done by a recognition sufficiently detailed of the whole territory or parts representative of it (key areas) in the areas with a difficult access. The purpose of this method is to obtain first information on vegetation, on the repeatability in space of certain plant species and their relationship with the relief and the conditions created by it. Recognition of the vegetation units existing in the area contributes to the realization of a matrix on possible types of distribution of the studied species and serves in the collection of the descriptions required for the proper mapping operation.

Basic materials required for mapping are: GPS, topographic maps, satellite images from different seasons and the vegetation maps.

The proper manner of work within the monitoring action consists in the choice of transects which then will be verified in the field using GPS for taking a picture of the vegetation profile. Thus, each GPS point from the field corresponds to an information - the survey and species presence. The most favorable periods for descriptions are those in which the vegetation type records the biggest number of fully developed species.

Proposals regarding the long term monitoring protocols of vegetation species of European conservation interest whose presence was reconfirmed from 1990 up to the present within DDBR.

1. Aldrovanda vesiculosa (1516)

Species was recorded during 1991-2000 in the area of Vătafu- Împuţita channel and Obretinul Mic lake where it still exist, but in isolated bunches of low density of specimens. In 2002, the species was recorded in high densities and on relatively large surfaces in the area of the ex fishpond- Ciamurlia and in 2006 in the strictly protected area Vătafu-Lunguleţ, on a portion of the entrance channel in Porcului lake.

Currently, the species is maintained in the three areas, but in the ex fishpond- Ciamurlia is recorded the highest density.

The monitoring of *Aldrovanda vesiculosa* populations must be done unitary in the next 2 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065),

- **Srebarna** (BG0000241).

The *Aldrovanda vesiculosa* species' monitoring is achieved by 3 methods: "visual mapping on itineraries", "visual mapping on full contour" and "tool mapping using marking out", the optimal period for implementing the proceedings being July-August, when are targeting within the monitoring activities, firstly the areas with the following types of habitat of conservation interest:

- natural eutrophic lakes with vegetation of *Magnopotamion* and *Hydrocharition* (Nature 2000 code of the natural habitat type: 3150);

- dystrophic lakes and ponds (Natura 2000 code of the natural habitat type: 3160).

2. Centaurea jankae (2253)

Capul Doloşman is the only place in DDBR where the species was signaled, where was for the first time found by Brândză, in 1884. Today, it is still present in Capul Doloşman in a relatively small population (about 300 plants), both on plateau and on the superior part of the rocky steep (on a straight line with the observer).

The monitoring of *Centaurea jankae* populations must be done unitary in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The *Centaurea jankae* species' monitoring is achieved by 3 methods: "visual mapping on itineraries", "visual mapping on full contour" and "tool mapping using marking out".

The optimal period for implementing the proceedings is July-October, when are targeting within the monitoring activities, firstly the areas with the following types of habitat of conservation interest:

- Ponto-Sarmatian steppes (Natura 2000 code of the natural habitat type: 62C0*).

3. Centaurea pontica (2255)

It was firstly reported in Sulina by Prodan and Nyarady in 1930 and in 1976 Dihoru and Negrean found the species in the Ciotica area.

During 1991-2008, the species is recorded as abundant between the buildings on the North bank of the Sulina branch (on the part opposite to the port and the city's cliff) and on the southern shore to the eastern exit of the city, near the cemetery and also in the basin area. The alert from Ciotica has not been confirmed.

Currently, the population from the Sulina's area is maintained with a high density of specimens.

The monitoring of *Centaurea pontica* populations must be done unitary in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The *Centaurea pontica* species' monitoring is achieved by 3 methods: "visual mapping on itineraries", "visual mapping on full contour" and "tool mapping using marking out". Besides the already known areas where the species is reported, it should be also considered the types of natural habitats that are covered within the periodic mapping actions and that represent potential distribution areas for these:

- annual vegetation along the shoreline (Natura 2000 code of the natural habitat type:1210);

- dunes fixed with perennial herbaceous vegetation (gray dunes) (Natura 2000 code of the natural habitat type: 2130 *).

4. Echium russicum (4067)

Regarding the DDBR, the species is reported in the Sinoe- Razim plateau area in Capul Doloşman (Sârbu & Oprea, 2005). Currently there is a small population in Capul Doloşman strictly protected area.

The monitoring of *Echium russicum* populations must be done unitary in the next 2 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Burda** (SKUEV0184)

- **Delta Dunării** (ROSCI0065)

The *Echium russicum* species' monitoring is achieved by 3 methods: "visual mapping on itineraries", "visual mapping on full contour" and "tool mapping using marking out".

The optimal period for implementing the proceedings is June- August, when are targeting within the monitoring activities, firstly the areas with the following types of habitat of conservation interest:

- dry natural grasslands and facies with shrubs on calcareous substrates (*Festuco- Brometalia*) (Natura 2000 code of the natural habitat type: 6210 *);

- sub panonnian grasslands specific for steppe (Natura 2000 code of the natural habitat type: 6240 *);

- steppe grasslands.

5. Marsilea quadrifolia L. (1428)

In R.B.D.D. species was recorded in 1935 (Pantu *et al*.) near Sulina. The species was found in that area during 1991-2000, in a very small population.

The most recent investigations realized in the area do not confirm the presence of the species, but within the future monitoring should be take into consideration this location, too.

Currently, we record a population with a big density of specimens, but in an interrupted distribution, on the edge of a canal located near and parallel to the Sulina branch, between Mila 28- 29 (near the ex fishpond Rusca).

Also, on a portion of approx. 50 m along a channel at Mila 26 the species is found in a remarkable density.

The monitoring of *Marsilea quadrifolia* populations must be done unitary in the next 2 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Persina** (BG0000396).

The *Marsilea quadrifolia* species' monitoring is achieved by 3 methods: "visual mapping on itineraries", "visual mapping on full contour" and "tool mapping using marking out".

The optimal period for implementing the proceedings is August- October, when are targeting within the monitoring activities, firstly the areas with the following types of habitat of conservation interest:

- stagnant waters, oligotrophic to mesotrophic with vegetation from *Littorelletea uniflorae* and / or *Isoeto-Nanojuncetea* (Natura 2000 code of the natural habitat type: 3130);

- dystrophic lakes and ponds (Natura 2000 code of the natural habitat type: 3160);

- rivers with muddy banks with *Chenopodion rubri* and *Bidention* (3270).

5.7. HABITATS

Proposals regarding the long term monitoring protocols of habitats of European conservation interest whose presence was reconfirmed from 1990 up to the present within DDBR.

1. Sandbanks permanently covered with a small layer of seawater (1110)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 2 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Delta Dunării- marine area** (ROSCI0066).

The monitoring method is the "visual mapping on itineraries" one.

The optimal period for implementing the 2 proceedings of this method ("visual mapping on transversal itineraries", "visual mapping on full contour") is July –August, to the periodic valuation of the habitat type is recommended (and relevant) to surprise the characteristics of the summer period.

2. Sands and swampy areas not covered by seawater at ebb tide (1140)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The method and monitoring period are mentioned to the previous type of habitat.

3. Coastal lagoons (1150 *)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The monitoring method is similar to that applied for the types of habitats coded in Natura 2000 with 1110 and with 1140, but the periodic valuations take place between June and September, and regarding this type of habitat being important to surprise the features during the summer time (completed with details on aspects from serotonin period - between late summer and early

autumn).

4. Shallow waters and gulfs (1160)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării- marine area (ROSCI0066)

The monitoring method is the "visual mapping on itineraries" one.

The optimal period for implementing the 2 proceedings of this method ("visual mapping on transversal itineraries", "visual mapping on full contour") is June –August, the periodic valuation of the habitat type is done based on the characteristics of the summer period.

5. Annual vegetation along the shoreline (1210)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065)

The monitoring methods are the "visual mapping on itineraries" and "tool mapping on itineraries".

The optimal period for implementing the 2 methods is July –August, the characteristics of the summer period are important to the periodic valuation of the habitat type.

6. Communities with *Salicornia* and other annual species that colonized wetlands and sandy lands (1310)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065)

The monitoring methods are the "visual mapping on itineraries", "tool mapping on itineraries" and "the mapping method using remote sensing".

The optimal period for implementing the 3 methods is July –August, the characteristics of the mid-summer period are important to the periodic valuation of the habitat type.

7. Mediterranean salt meadows (*Juncetalia maritimi*) (1410)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065)

The methods and monitoring periods are mentioned to the previous type of habitat (1310).

8. Grasslands and Panonic and ponto- Sarmatian salt marshes (1530 *)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 3 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065)

- **Kalimok - Brashlen** (BG0000377)

- **Persina** (BG0000396).

The methods and monitoring periods are mentioned to the previous types of habitat (1310 and 1410).

9. Embryonic mobile dunes (in developing) (2110)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065)

The monitoring method is the "visual mapping on itinerary".

The optimal period for implementing the 2 proceedings of this method ("visual mapping on transversal itineraries", "visual mapping on full contour") is July –August, the periodic valuation of the habitat type is done based on the characteristics of the summer period.

10. Dunes fixed with perennial herbaceous vegetation (grey dunes) (2130 *)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065)

The monitoring methods are the "visual mapping on itineraries" and "tool mapping on itineraries".

The optimal period for implementing the 2 methods is July –August, the periodic valuation of the habitat type is done based on the characteristics of the mid-summer period.

11. Dunes with *Hippophae rhamnoides* (2160)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065)

The monitoring methods are the "visual mapping on itineraries", "tool mapping on itineraries" and "the mapping method using remote sensing".

The optimal period for implementing the 3 methods is July –August, the periodic valuation of the habitat type is done based on the characteristics of the mid-summer period.

12. Wet depressions inside the dunes (2190)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- Delta Dunării (ROSCI0065)

The methods and monitoring periods are mentioned to the previous type of habitat (2160).

13. Stagnant waters, oligotrophic to mesotrophic with vegetation of *Littorelletea uniflorae* and / or *Isoeto-Nanojuncetea* (3130)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 7 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Čičovské luhy** (SKUEV0182)

- **Delta Dunării** (ROSCI0065)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Gemenc** (HUDD20032)

- **Kalimok - Brashlen** (BG0000377)

- **Persina** (BG0000396)

- **Srebarna** (BG0000241).

The monitoring method is the "visual mapping on itineraries" one.

The optimal period for implementing the 2 proceedings of this method ("visual mapping on transversal itineraries", "visual mapping on full contour") is June –September, the periodic valuation of the habitat type is done based on the characteristics of the summer and serotonin period.

14. Heavy oligo-mesotrophic waters with benthic vegetation of *Chara spp.* (3140)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 4 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Kalimok - Brashlen** (BG0000377)

- **Kl'účovské rameno** (SKUEV0293)

- **Persina** (BG0000396).

The methods and monitoring periods are mentioned to the previous type of habitat (3130).

15. Natural eutrophic lakes with vegetation of *Magnopotamion* or *Hydrocharition* type (3150)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 26 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Biskupicke luhy** (SKUEV0295)

- **Bratislavská luhy** (SKUEV0064)

- **Čičovské luhy** (SKUEV0182)

- **Delta Dunării** (ROSCI0065)

- **Devinske alúvium Moravy** (SKUEV0312)

- **Devinske jazero** (SKUEV0313)

- **Donauauen mit Gerolfinger Eichenwald** (DE7233372)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Dunaj** (SKUEV0393)

- **Dunajské Luhy** (SKUEV0090)

- **Dunajské trstiny** (SKUEV0077)

- **Gajarské alúvium Moravy** (SKUEV0125)

- **Gemenc** (HUDD20032)

- **Horny les** (SKUEV0168)

- **Hrušovská zdrž** (SKUEV0270)

- **Kačenky** (SKUEV0311)

- **Kalimok - Brashlen** (BG0000377)

- **Kl'účovské rameno** (SKUEV0293)

- **Kútsky les** (SKUEV0165)

- **Ostrovné lucky** (SKUEV0269)

- **Persina** (BG0000396)

- **Pri Jakubovskych rybnikoch** (SKUEV0116)

- **Rieka Morava** (SKUEV0314)

- **Srebarna** (BG0000241)

- **V studienkach** (SKUEV0178)

- **Vel'kolélsky islet** (SKUEV0183).

The methods and monitoring periods are mentioned to the previous types of habitat (3130 and 3140).

16. Dystrophic lakes and ponds (3160)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The methods and monitoring periods are mentioned to the previous types of habitat (3130, 3140 and 3150).

17. Flows from the plains, to the mountain with vegetation of *Ranunculion fluitantis* and *Callitricho-Batrachion* (3260)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 4 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- Bratislavske luhy (SKUEV0064)

- **Delta Dunării** (ROSCI0065)

- Donauauen mit Gerolfinger Eichenwald (DE7233372)

- Donau-Auen östlich von Wien (AT1204000).

The methods and monitoring periods are mentioned to the previous types of habitat (3130, 3140, 3150 and 3160).

18. Rivers with muddy banks with *Chenopodion rubrum* and *Bidention* (3270)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 17 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- Devinske alúvium Moravy (SKUEV0312)

- **Donauauen mit Gerolfinger Eichenwald** (DE7233372)

- Donau-Auen östlich von Wien (AT1204000)

- **Duna és arteres** (HUDI20034)

- Dunaj (SKUEV0393)

- **Dunajské Luhy** (SKUEV0090)

- **Gajarské alúvium Moravy** (SKUEV0125)

- **Gemenc** (HUDD20032)

- **Horny les** (SKUEV0168)

- **Kačenky** (SKUEV0311)

- **Kalimok - Brashlen** (BG0000377)

- **Kl'účovské rameno** (SKUEV0293)

- **Kútsky les** (SKUEV0165)

- **Persina** (BG0000396)

- **Rieka Morava** (SKUEV0314)

- **Srebarna** (BG0000241).

The methods and monitoring periods are mentioned to the previous types of habitat (3130, 3140, 3150, 3160 and 3260).

19. Ponto-Sarmatian deciduous shrubs (40C0 *)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

During the spring time the monitoring is done using the methods: "visual mapping on itineraries" and "tool mapping on itineraries" applied between March and April for capturing the necessary aspects to characterize the current state of this type of habitat.

During the summer, the monitoring is done both by the two methods applied during the spring and "the mapping method using remote sensing", June and July are the months in which relevant data for the proper valuation of this type of habitat are obtained.

20. Pannonian grasslands and West pontic meadows on sands (6260 *)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The methods and monitoring periods during the spring are mentioned to the previous types of habitat (6110*, 6120*, 6210*, 6240* and 6250*).

During late vernal (May) and early summer period (June) applies both "visual mapping on itineraries", "tool mapping on itineraries" and "the mapping method using remote sensing".

21. Ponto-Sarmatian steppes (62C0 *)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The methods and monitoring periods are mentioned to the previous type of habitat (6260*).

22. Meadows with *Molinia* on calcareous soils, peaty or clayey (*Molinia caerulea*) (6410)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 3 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Dlhé lúky** (SKUEV0113)

- **Gajarské alúvium Moravy** (SKUEV0125).

During late spring, monitoring is done using ”visual mapping on itineraries” and "tool mapping on itineraries" methods which are applied in May to capture the necessary aspects to characterize the current state (during vernal) of this type of habitat.

During summer the monitoring is done using both the 2 methods applied during the spring and "the mapping method using remote sensing", July is the month in which are obtained the relevant data for the proper valuation of the current state (in summer time) of this type of habitat.

23. Mediterranean wet grasslands with tall grasses of *Molinio- Holoschoenion* (6420)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

During the spring, monitoring is done using ”visual mapping on itineraries” and "tool mapping on itineraries" methods which are applied in March- April to capture the necessary aspects to characterize the current state (during vernal) of this type of habitat.

During the summer, the monitoring is done using both the 2 methods applied during the spring and "the mapping method using remote sensing", June and July are the months in which are obtained the relevant data for the proper valuation of the current state (in summer time) of this type of habitat.

24. Skirt communities with tall hydrophilic grasses from the plains level up to mountain and the alpine one (6430)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 12 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Devinske alúvium Moravy** (SKUEV0312)

- **Devinske jazero** (SKUEV0313)

- **Donauauen mit Gerolfinger Eichenwald** (DE7233372)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Dunajské Luhy** (SKUEV0090)

- **Dunajské trstiny** (SKUEV0077)

- **Gajarské alúvium Moravy** (SKUEV0125)

- **Kalimok - Brashlen** (BG0000377)

- **Kl'účovské rameno** (SKUEV0293)

- **Persina** (BG0000396)

- **Srebarna** (BG0000241).

During late vernal (May) and early summer period (June) the monitoring is done both ”visual mapping on itineraries” and "tool mapping on itineraries".

During summer (July and early August) and early serotonin (the second half of August), monitoring is done both by the two methods applied in the spring and "the mapping method using remote sensing".

25. Alluvial grasslands of *Cnidion dubii* (6440)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 15 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

- **Devinske alúvium Moravy** (SKUEV0312)

- **Devinske jazero** (SKUEV0313)

- **Devinske luky** (SKUEV0396)

- **Dlhé luky** (SKUEV0113)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Duna és arteres** (HUDI20034)

- **Gajarské alúvium Moravy** (SKUEV0125)

- **Gemenc** (HUDD20032)

- **Horny les** (SKUEV0168)

- **Kačenky** (SKUEV0311)

- Kalimok - Brashlen (BG0000377)

- Kútsky les (SKUEV0165)

- Persina (BG0000396)

- Rieka Morava (SKUEV0314).

During late vernal (May) the monitoring is done both ”visual mapping on itineraries” and "tool mapping on itineraries".

During the first part of summer (June- July), monitoring is done both by the two methods applied in the spring and "the mapping method using remote sensing".

26. Low-altitude grasslands (*Alopecurus pratensis, Sanguisorba officinalis*) (6510)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 13 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- Burda (SKUEV0184)

- **Delta Dunării** (ROSCI0065)

- **Devinske alúvium Moravy** (SKUEV0312)

- **Devinske luky** (SKUEV0396)

- **Dlhé luky** (SKUEV0113)

- **Donauauen mit Gerolfinger Eichenwald** (DE7233372)

- Donau-Auen östlich von Wien (AT1204000)

- Duna és arteres (HUDI20034)

- Dunajské trstiny (SKUEV0077)

- Gajarské alúvium Moravy (SKUEV0125)

- Gemenc (HUDD20032)

- **Horny les** (SKUEV0168)

- **Vel'kolélsky islet** (SKUEV0183).

During the spring, monitoring is done using ”visual mapping on itineraries” and "tool mapping on itineraries" methods which are applied in March- April to capture the necessary aspects to characterize the current state (during vernal) of this type of habitat.

During late vernal (May) and the first part of summer (June- July), monitoring is done both by the two methods applied in the spring and "the mapping method using remote sensing".

27. Calcareous swamps with *Cladium mariscus* (7210 *)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The methods and monitoring periods are mentioned to the previous type of habitat (6510).

28. Ponto-Sarmatian forest vegetation with pubescent oak (91AA)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The methods and monitoring periods are mentioned to the previous types of habitat (9170 and 9180*).

29. Riparian mixed forests with *Quercus robur*, *Ulmus laevis*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the major rivers (*Ulmenion minoris*) (91F0)

The monitoring of the natural habitat of European conservation interest must be done unitary in the next 21 Sites of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Biskupicke luhy** (SKUEV0295)

- **Bratislavske luhy** (SKUEV0064)

- **Čičovské luhy** (SKUEV0182)

- **Delta Dunării** (ROSCI0065)

- **Devinske jazero** (SKUEV0313)

- **Donauauen mit Gerolfinger Eichenwald** (DE7233372)

- **Donau-Auen östlich von Wien** (AT1204000)

- **Duna és arteres** (HUDI20034)

- **Dunajské Luhy** (SKUEV0090)

- **Dunajské trstiny** (SKUEV0077)

- **Gajarské alúvium Moravy** (SKUEV0125)

- **Gemenc** (HUDD20032)

- **Horny les** (SKUEV0168)

- **Kačenky** (SKUEV0311)

- **Kalimok - Brashlen** (BG0000377)

- **Kl'účovské rameno** (SKUEV0293)

- **Kútsky les** (SKUEV0165)

- **Ostrovni lucky** (SKUEV0269)

- **Persina** (BG0000396)

- **Srebarna** (BG0000241)

- **Vel'kolélsky islet** (SKUEV0183).

The methods and monitoring periods are mentioned to the previous type of habitat (91E0*).

30. Riverside coppices with *Salix alba* and *Populus alba* (92A0)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The monitoring methods are the "visual mapping on itineraries", "tool mapping on itineraries" and/or "mapping method using remote sensing".

Optimum period for implementing the three methods is from June to July, for the periodic valuation of the habitat type is recommended (and relevant) to be captured the characteristic aspects from the first half of the summer period.

31. Riparian galleries and shrubs (*Nerio-Tamaricetea* and *Securinegion tinctoriae*) (92D0)

The monitoring of the natural habitat of European conservation interest must be done in the next Site of Community Importance (SCI) covered by the project ***Danube Parks***:

- **Delta Dunării** (ROSCI0065)

The methods and monitoring periods are mentioned to the previous type of habitat (92A0*).

CONTRACT no. 2489 of 05.02.2010 – Phase II (2011)

1. The name of the service contract:

” Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposals of the core areas in Danube Delta Biosphere Reserve”

Phase II: Reassessment of current functional zones of Danube Delta Biosphere Reserve and management proposal of core areas in Danube Delta Biosphere Reserve to conform with requirements of Natura 2000 sites and the network of protected areas, partners in Danube Parks project.

CONCLUSIONS

There are surfaces from the strictly protected areas that no longer meet the objectives for which

they were nominated in that category, primarily due to the natural dynamics of the ecosystems or species poverty and habitats of community interest.

There are areas from the buffer areas' perimeter and even outside them, that are holding habitats and species of community interest, well preserved, which are scientifically justified to be included in the category of the strictly protected areas within DDBR.

Of the 20 strictly protected areas and scientific reserves within DDBR, the limits of following 13 areas are recommended not to change: Roşca-Buhaiova, Letea, Răducu, Vătafu-Lunguleţ, Caraorman Forest, Sărături-Murighiol, Popina Island, Lupilor Sandbank, Chituc Sandbank, Rotundu Lake, Belciug, Prundu cu Păsări Island and Ceaplace Island.

Regarding seven strictly protected areas we recommend the reconsideration of the current limits: Nebunu Lake, Arinişul Erenciuc, Sacalin – Zătoane, Periteaşca-Leahova, Doloşman Cape, Istria - Sinoe, Potcoava Lake. For three of them we consider that is necessary to rename them as a result of the limits' change:

- Arinişul Erenciuc - Proposal of renaming "Lake and Arinişul Erenciuc"

- Periteaşca-Leahova - Proposal of renaming "Periteaşca-Leahova-Perişor"

- Potcoava Lake – Proposal of renaming "Babinţii-Potcoava area".

Changes proposed for strictly protected areas within DDBR determine their extent with 3433 ha. The total area proposed for the 7 areas that require a resizing of the limits is about 30310 ha. The 13 areas that did not require changes of the current limits totalize an area of 24027 ha. Thus, after reconsidering the strictly protected areas within DDBR their total area is 54337 ha.

We also suggest 7 new strictly protected areas within DDBR: Musura (620 ha), Câşla Vădanei (146 ha), Ceamurlia-Litcov (585 ha), Eracle-Stipoc (670 ha), Martinca (950 ha), Purcelu (650 ha), Cliff of Taşburun-Călugăra (57 ha).

By accepting these new areas as strictly protected areas it is necessary to change the functional status for an area of 2728 ha from the economic area and 950 ha from the DDBR's buffer area.

The total flat surface of these new proposals calculated using the program ArcView 3.1 is about 3678 ha.

Because six of the seven proposals have no buffer zones we propose as follows:

- Musura buffer area - 3250 ha

Protect the proposed strictly protected area with the same name and includes the whole Musura gulf, bordered to the north and northeast of the state border and to the south of the Sulina bar.

- Câşla Vădanei buffer area - 5 ha

Protect the proposed strictly protected area with the same name and includes a 10 m band between the limit of the forest pond and the protected area. This 10 m band continues along the conventional line that connects the western and the northern. Along the sea shore the buffer area is not required.

- Litcov -Ceamurlia buffer area- 2 ha

The area is bounded to the west of the Potcoava Lake buffer area and to the south of the Caraorman buffer area. To the east, the proposed buffer area covers a 10 m strip along the protected area's boundaries.

- Eracle-Stipoc buffer area- 7 ha

Protect the proposed strictly protected area with the same name and includes the surface of channels that border the protected area.

- Martinca buffer area

This proposal of strictly protected area is already in the Şontea buffer area.

- Purcelu buffer area - 460 ha

Protect the proposed strictly protected area with the same name and the channel Mila 36 is the eastern limit, channel Sireasa to the north, to the south and to the west Trofilca backwater until its intersection with Sireasa channel.

- Taşburun-Călugăra buffer area- 3 ha.

Protect the proposed strictly protected area with the same name and includes a strip that surround the land area on a width of about 10 m. The Razim Lake is the eastern boundary.

It is proposed the integration of an area of 60 ha within DDBR, of which 57 ha is the surface proposed as strictly protected area Taşburun-Călugăra cliff, and 3 ha the buffer area.

The total area of the strictly protected areas and scientific reserves within DDBR arised as a result of their boundaries is about 58015 ha, representing 10% of the DDBR's surface.

The total surface of the buffer areas within DDBR arised as a result of the reconsideration of the limits of the strictly protected areas is about 223466 ha, representing 40% of the DDBR's surface.

The total surface of the economic areas within DDBR arised as a result of the reconsideration of the limits of the strictly protected areas and the buffer areas is about 281481 ha, representing 50% of the DDBR's surface.

All the proposals of reconsideration of the DDBR's functional zoning must be the public consultation of the local communities within DDBR.

In accordance with the provisions of the Ordinance 57/2007 Article 5 (4), the limits of the strictly protected areas "may be changed and supplemented by the Government's decision on the proposal

of the central public authority for the environment's protection, the point of view of the Romanian Academy ...". Thus, we recommend the advance of the proposals to change the boundaries of the seven strictly protected areas and of the 7 new sites in order to certity them.

In terms of the biodiversity's protection and conservation within DDBR, the general objectives of the current management plan should cover:

- Long-term monitoring of species and habitats of European conservation interest (for which have been designated Natura 2000 sites), linked to the protected areas within the Danube Parks program and inclusion in the future of all the Natura 2000 sites along the Danube in this common monitoring program.

- Long-term monitoring of migratory bird populations, especially passeriformes in order to correlate the data along the whole Danube, with the proposal to found a permanent center for ringing in the DDBR, which would be a European reference point for bird migration monitoring in western Black Sea.

- Identification and monitoring of invasive allochthonous species in the DDBR.

- Permanent linking of the studies' results on invasive allochthonous species with those of the partners within the Danube Parks project.

- Identification of the optimal control methods of invasive species of plants and animals within DDBR and their correlation with those of partners within the Danube Parks project.

- Protection of the elements with significant landscape value of the DDBR; elements with significant landscape value common to the protected areas within the Danube Parks project and elements with significant landscape value, characteristic only for the DDBR (for example the rocky slopes from the Razim Lake's area).

- Protection and promotion of the natural values within DDBR by building some wildlife and landscape observatories, suitable in size and location, in areas with high visibility on the species and landscape.

- The appointment of representative polispecific colonies of herons and small cormorants (species criterion in the designation of Natura 2000 site - ROSPA0031 Danube Delta and the Razim-Sinoe complex) from the DDBR as strictly protected areas is required for the conservation of the key populations of colonial seabird species.

- For the White-tailed eagle (*Haliaeetus albicilla*), based on the results of the annual monitoring of the nesting population of this species, the foundation of a temporary protection areas (1st of January 1st – 30th of July) on a 200 m radius around each active nest is required. On these surfaces we reccomand the prohibition of the anthropic activities that could endanger the success of the nesting in that season.
- It also requires the unauthorization of the forest exploitation within a radius of 200 m around all the White-tailed eagle nests (both active and inactive) identified in the DDBR's perimeter in any season.

- Identification of the power lines for low, medium and high voltage within DDBR that produce mortality in birds as a result of electrocution or collision with them. The sectors of power lines and poles in front of which have been registered mortality require the insulation and appropriate marking in order to exclude or at least minimize the risks.
- Certain habitats types important for many species of conservation interest are maintained as a result of human activities (for example meadows due to grazing). These habitat types should be preserved by maintaining and controlling these activities.

For species and habitats of conservation interest, according to the European Habitats and Birds Directives have been proposed methods and optimal common monitoring periods in the DDBR and in the parteners' protected areas within Danube Parks project.

We propose to correlate the results of the monitoring programs for species and habitats of European conservation interest in the partener institutions within Danube Parks project. In this regard we recommend the use of BIMS interface (Biodiversity Information Management System) as a tool for introduction and management of the data as a result of the biodiversity monitoring programs in all partner institutions within Danube Parks project. It would be useful in the future to use the same interface and by all custodians of Natura 2000 sites along the Danube.

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