Research on the Flora, Habitats and Avifauna of the Running Waters from the Hydrographic Basin of the Black Sea

Cercetări privind flora, habitatele și avifauna râurilor din bazinul hidrografic al Mării Negre

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Abstract

The watercourses which belong to the Black Sea River Basin, in the northern half of Dobrogea, have an important conservation value, as they contain habitats of community importance and even a reduced number of threatened plant species, also habitat types important for nesting and feeding during the migration periods for many protected bird species. Within the studied rivers there were identified so far: six habitats of community importance (1530, 3130, 3270, 62C0, 91AA*, 91Y0), among which two are priority ones; seven habitat subtypes with no community importance (37.24, 44.121, 53.1111, 53.131, 53.132, 53.143 and 53.4); one phytocoenosis not framed within the Palaearctic Habitats Classification. The highest habitats/ plant communities diversity was observed within the Taiţa and Slava rivers (six plant communities), followed by Casimcea River (five plant communities), the lowest number of habitats/ coenotaxa being recorded in the Hamangia (four plant communities) and Teliţa (three plant communities) rivers. The bird species that have been identified are characteristic of the following habitat types: forest, steppe, wooded steppe, wetlands and anthropogenic areas (agroecosystems). The largest records of birds species appear in the rivers discharges areas, the highest number (147 species), being recorded at the mouth of Hamangia River. The fewest species were recorded in the intermediate stations, of the rivers: Casimcea and Telița – 74 species, Taița and Slava – 75 species. The conservation of these aquatic ecosystems is also required as they are natural ecological corridors that link different Natura 2000 sites from Northern and Central Dobrogean Plateau, with the Danube Delta Biosphere Reserve and corresponding Natura 2000 sites (SCI, SPA).*

Keywords: *flora, habitats, avifauna, running waters, Hydrographic Basin of the Black Sea*

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Introduction

On the administrative territory of Tulcea County there are 32 protected areas of national interest (nature reserves). Most of these nature reserves have been documented and are currently monitored from the point of view of habitats, vegetation and avifauna, as well as their conservation status, by the specialists of "*Gavrilă Simion*" Eco-Museum Research Institute of Tulcea (ICEM Tulcea). Completing/ updating the related database is an activity currently carried out by this institute. Nearby, or even within these nature reserves, there are also hydrographic areas whose research, in terms of biological diversity, was not addressed at the time of the preparation of scientific documentation on the declaration of protected natural areas. These hydrographic areas/ aquatic ecosystems are of interest for supplementing the data summarized in the previous topics on habitats and species of Community/ national interest in Natura 2000 sites, located near or including these aquatic ecosystems.

From the biological point of view, these aquatic ecosystems have been less studied, more data and information being provided for water quality, through periodic assessments of the ecological status and chemical status of watercourses.

The studied running waters are included partially within protected areas SCI – SPA – Natura 2000 sites:

- Danube Delta Biosphere Reserve (DDBR) Natura 2000 sites, wholly or partially overlapping with DDBR (SCI, SPA): ROSCI0065 Danube Delta, ROSPA0031 Danube Delta and Razim-Sinoie Complex ;
- Dobrogea Plateau Natura 2000 sites are represented by: ROSCI012 Munţii Măcinului; ROSCI0201 Podişul Nord Dobrogean; ROSPA0100 Stepa Casimcea; ROSPA0073 Măcin-Niculiţel; ROSPA0091 Pădurea Babadag; ROSCI0215 Recifii Jurasici Cheia; ROSPA0019 Cheile Dobrogei.

The specific objective of this study is the assessment of the species and habitats and their conservation value. In order to elaborate the lists of species and habitats for the five studied watercourses, that belong to the hydrographic basin of the Black Sea and situated mainly in Northern Dobrogea, it is necessary to assess the specific biodiversity (specific richness) of the respective hydrographic areas/ aquatic ecosystems, providing concrete elements that will be the basis of studies directed later on groups of organisms.

The research whose results are presented in this paper was carried out within a broader theme, respectively *Research on the biodiversity of lotic ecosystems from North Dobrogea*.

Short hydrological characterization of the rivers belonging to the Black Sea Basin (Coastal)

The watercourses considered by the present paper, which belong to the Black Sea River Basin (Coastal) in the northern half of Dobrogea (*Small River System in northeastern Dobrogea*), are: Teliţa, Taița, Slava-Ciucurova, Hamangia and Casimcea (Figure 1). Casimcea River was included in this group, given the geographical boundary between North Dobrogea and South Dobrogea, proposed by V. Mihăilescu (1966), quoted by UJVÁRI (1972), as being between Topalu, on the Danube, and Sibioara, on the shores of Lake Tașaul, where the peneplenized green shales disappear under the Jurassic limestone cover. The river systems in this river basin drain the Măcin Mountains, Niculițel Plateau, Tulcea Hills, Babadag Plateau, Casimcei Plateau and have adapted their valleys to the old forms of the platform and have a general orientation from northwest to southeast, determined by the fall, conditioned by the polycyclic relief steps.

Regarding the supply sources of watercourses, they are represented by atmospheric precipitation, snow melting and groundwater, the dominant being the type of surface rain-snow supply (40-50%), the underground supply (10-35%) being moderate, permanent and semi-permanent (UJVÁRI, 1972).

The surface runoff and the hydrological regime of these rivers are influenced by the uneven distribution of precipitation, both during the year and from one year to another. The peculiarities of the river flow allow the classification of the waters of the Pontic regime type, a disordered regime, in which a period of “high waters” is individualized, at the end of winter and beginning of spring, with a maximum average flow registered, usually in February. For most of the year, “low waters” are specific, on the background of which, especially during summer and spring, occasional floods occur, with high intensity.

The average multiannual flows do not exceed 1 m^3/ s, the values recorded for the studied rivers being the following: Casimcea (0.643 m^3/ s), Taița (0.443 m^3/ s), Hamangia (0.230 m^3/ s), Slava (0.171 m^3/ s) and Telița (0.063 m^3/ s).

The minimum leakage generally occurs in the summer-autumn period, due to low precipitations, high temperatures and intense evapotranspiration, being characterized by small, very low flows, of the order of liters per second. The drying phenomenon is rare and usually has a random and local character. It occurs only in extremely dry years and on certain sectors of rivers (e.g. spring area) or in their tributaries.

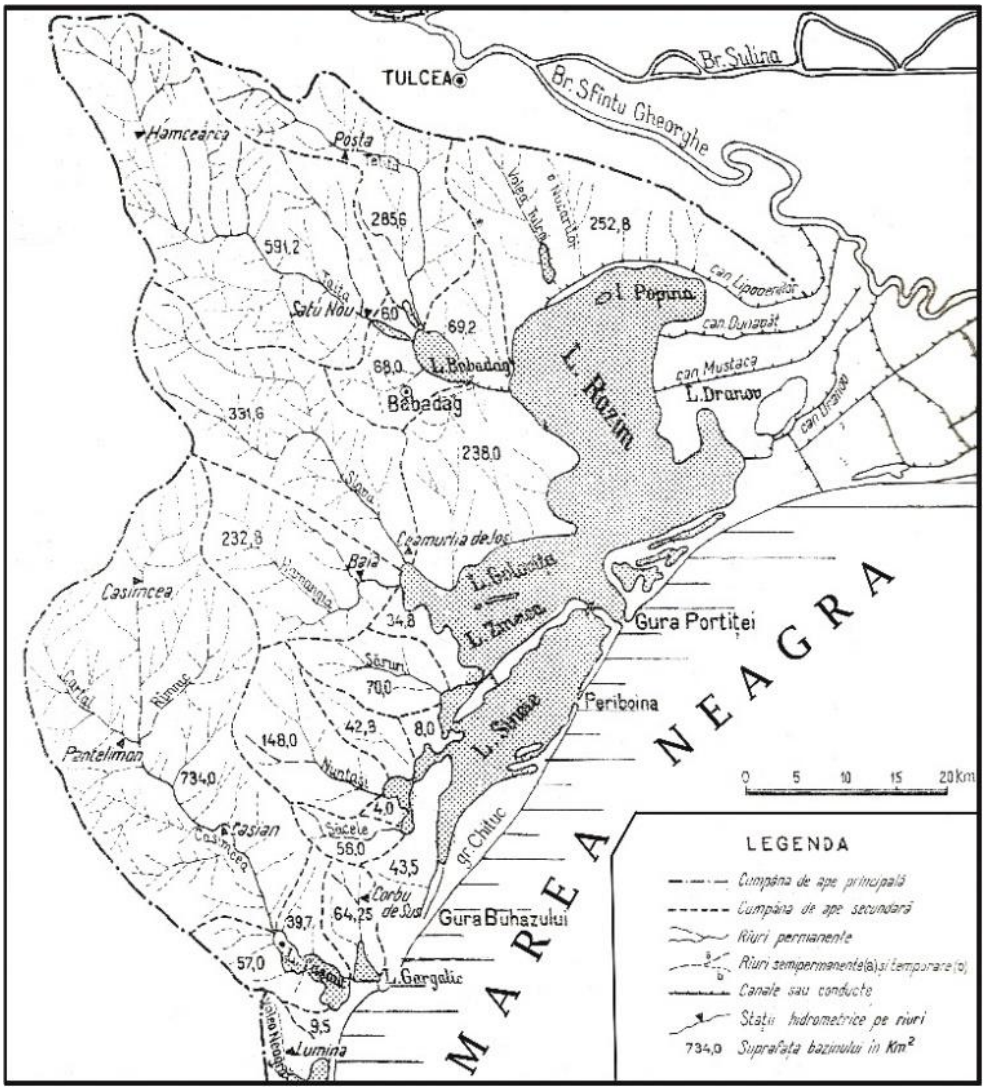

Figure. 1. Map of the running waters that belong to the Coastal hidrographic Basin (source: Adriana Breier, 1976)

Fig. 1. Harta cursurilor de apă ce aparțin Bazinului hidrografic Litoral (sursa: Adriana Breier, 1976)

The alluvial runoff is reduced, the average annual flows of suspended alluvium not exceeding 1 kg/ s, the richest average alluvial transport in annual suspension being made by Casimcea River (3.93 kg/ s). The largest quantities

of alluvial material are transported during floods (ZAHARIA, PIȘOTA, 2003). From a hydrochemical point of view, river waters are characterized by a high mineralization and hardness (500-1000 mg/ l; 15-45 German degrees) being included, in terms of ionic content, in the class of calcium bicarbonate waters (UJVÁRI, 1972).

Casimcea River (Photo 1). The river system of Casimcea is the best developed in Northern Dobrogea (and the second in Dobrogea, after the river Urluia) draining an area of 740 sq.km. It springs in the central part of the Casimcea Plateau (near Beipunar Hill, about 300 m above sea level) and covers a route of 69 km until it flows into the Tașaul estuary. Its valley is dug in green shale formations, its largest sector – corresponding to the Pantelimon Depression – being an area of hydrographic convergence where the river receives its tributaries: Dereaua Mare, Pantelimon, Gârla Seacă (on the right side), Valea cu Piatră (L = 9 km), Râmnic (L = 6 km with its tributary Zadan, L = 7 km), Grucina Mucova (on the left side). In the lower sector, the Casimcea River receives, on the right side, the waters of two tributaries, Gura Dobrogei and Sitorman. The underground supply supplies 56% of the water volume, which ensures the permanent character of the flow of this river (UJVÁRI, 1972; ZAHARIA, PIȘOTA, 2003; SGA Tulcea). Casimcea River crosses or is close to several nature reserves like: Războieni, Casimcea, Colțanii Mari, as well as Natura 2000 sites: Podișul Nord Dobrogean (ROSCIO201), Stepa Casimcea (ROSPA0100), Recifii Jurasici Cheia (ROSCI0215), Cheile Dobrogei (ROSPA0019), Delta Dunării (ROSCI0065), Delta Dunării and Complexul Razim-Sinoie (ROSPA0031) which also include .

Hamangia River (Photo 2) springs from the central area of Casimcea Plateau (at about 303 m altitude), near the commune of Vasile Alecsandri, and flows, after a route of 33 km, into the Ceamurlia maritim liman. Its river basin drains an area of 224 sq.km. Of its tributaries on the right side (Valea Dulghea, Valea Adâncă, Hagiu, Valea Poturu) and those on the left side (Valea Stolejenu and Ceamurlia), the latter is the most important and flows into the lower course of the river with a *surface of the river basin* (S_{rb}) = 31 sq.km and L = 9 km (UJVÁRI, 1972; ZAHARIA, PIȘOTA, 2003; SGA Tulcea).

Hamangia River crosses or is close to the Beidaud Nature Reserve and several Natura 2000 sites: Podișul Nord Dobrogean (ROSCIO201), Stepa Casimcea (ROSPA0100), Delta Dunării (ROSCI0065), Delta Dunării and Complexul Razim-Sinoie (ROSPA0031).

Photo 1. Casimcea River, between Războieni and Casimcea villages (photo C. Dinu)
Foto 1. Râul Casimcea, între satele Războieni și Casimcea

Photo 2. Hamangia River, downstream of Beidaud village (photo M. Cuzic)
Foto 2. Râul Hamangia, aval de satul Beidaud

Slava River (Photo 3), known locally as the Gaugagia, has its springs in the Bașpunar Depression (at about 300 m altitude) which it crosses in length. Its river basin drains an area of 356 sq.km. It measures 38 km and flows into Ceamurlia maritim liman, connected to Golovița Lake through Ceamurlia channel. Its lower course and its most important tributary, Ciucurova, received in its upper course on the left side, follows the corridor that separates Babadag Plateau (in the north) from Casimcea Plateau (in the south). Ciucurova or Slava Cercheză (S_{rb} = 119 sq.km, L = 24 km) springs from Atmagea Depression, near the village of Atmagea. They unite near Slava Rusă village. In depressions, the two systems receive a relatively rich underground supply, which is why they do not dry up in the confluence area. Downstream from the village of Caugagia, the river Slava receives from the right side the Camena rivulet (UJVÁRI, 1972; ZAHARIA, PIȘOTA, 2003; SGA Tulcea). Slava River, and Ciucurova, its tributary, crosses or are close to several Natura 2000 sites: Podișul Nord Dobrogean (ROSCIO201), Pădurea Babadag (ROSPA0091), nature reserves Vârful Secaru, Fântâna Mare and Uspenia, Delta Dunării (ROSCI0065), Delta Dunării and Complexul Razim-Sinoie (ROSPA0031).

Photo 3. Slava River at the discharge area in Ceamurlia liman (photo V. Cuzic)
Foto 2. Râul Slava la vărsarea în limanul Ceamurlia

Taița River (Photo 4) springs at the contact between Măcinului Ridge and Niculițel Plateau, at an altitude of about 240 m.The river basin, with an area of 591 sq.km, has an asymmetrical character, with a greater development on the left side, from where it receives the waters of the most important tributaries, namely the rivulets: Pârlita (S_{rb} = 32 sq.km, L = 10 km), Islam (L = 7 km),

Lodzova (L = 15 km; which also collects the waters of the Tichilic tributary with L = 6 km), Alba (S_{rb} = 32 sq.km, L = 11 km; which also collects the waters of the Valea Teilor tributary with L = 5 km), Tăița, also called Techea or Muchei Verzi brook (S_{rb} = 84 km2, L = 17 km). On the right side, the main tributaries of the river are: Valea Curăturii/ Curături (S_{rb} = 34 sq.km, L = 7 km) and Valea Carierei (L = 11 km), to which are added two smaller tributaries, Valea Vinului and Valea Crapcei. After passing the village of Balabancea, the waters of Taița are captured in the Horia accumulation, which has fishing functionality (cultures of sturgeons and carp). The river flows, after a route of 57 km, into the Babadag Lake, first draining the Topraichioi pond (arranged and exploited for fishing purposes). The bottom of the valley, heavily clogged, gradually widens towards the Ortachioi Depression. The average flow of the Taiţa is the highest of all the rivers of North Dobrogea (1.39 m/ s), its waters being also used for irrigation, and works of regularization and consolidation of the banks of the watercourse for this purpose are carried out (UJVÁRI, 1972; ZAHARIA, PIȘOTA, 2003; SGA Tulcea). Taița River crosses or is close to several national parks (Munții Măcinului National Park, nature reserves (Muntele Consul) and Natura 2000 sites: Munții Măcinului (ROSCI012), Podișul Nord Dobrogean (ROSCI0201), Măcin-Niculiţel (ROSPA0073); Delta Dunării (ROSCI0065), Delta Dunării and Complexul Razim-Sinoie (ROSPA0031).

Photo 4. Taița River, near the Consul Hill (photo V. Cuzic)
Foto 4. Râul Taița, lângă Dealul Consul

Telița River (Photo 5) springs from the Niculițel Plateau, from an altitude of about 270 m. Its valley in the spring area has a torrential aspect, but downstream from the village of Telița it enters and drains the high depression of the Nalbant (Tulcea Plateau), strongly clogged by the alluvium brought by the fast courses from the direction of the coasts. It flows, after a 48 km route, into the Babadag Lake and gathers its waters from an area of 278 sq.km. According to A. BREIER (1976), in the past, the river flowed into Tăuc Lake (or *Coada Bălții* as it appears in older maps). By transforming it into a fish pond (the current Zebil pond), the course of Telița remained outside the developed area, flowing directly into the Babadag Lake, which in turn communicates with Razim Lake through the Enisala canal. Its narrow riverbed, especially in the lower course, is invaded by certain sectors of aquatic vegetation.

The groundwaters at the bottom of the valley are close (1-5 m), which provides Teliţa River with a permanent underground supply, but very low in quantity. On the right side, it collects the waters of two more important tributaries, each with a 7 km long route, Cilic or Celic-Dere and Hagilar (UJVÁRI,1972;ZAHARIA, PIȘOTA, 2003; SGA Tulcea). Telița River crosses or is close to several nature reserves like Edirlen or Deniz Tepe, as well as Natura 2000 sites: Podișul Nord-Dobrogean (ROSCI0201), Măcin-Niculiţel (ROSPA0073), Delta Dunării (ROSCI0065), Delta Dunării and Complexul Razim-Sinoie (ROSPA0031).

Photo 5. Telița River at spring area (photo V. Cuzic)
Foto 5. Râul Telița, zona izvor

Materials and Methods

The research from 2018-2019 was carried out within three annual campaigns, covering the spring, summer, autumn-winter seasons, in the periods of maximum phenological development of the studied groups.

Study methods included: observations, collecting biological materials and soil samples, determining species, processing and interpreting data. The collection of the species that did not raise identification problems was avoided, only using their photos made in the field.

On each river course, 3-4 stations were established in its most representative sectors, respectively the spring area, the alluvial sector and intermediate points between these extremes, which should reflect the conditions of the entire river. For the delimitation of the hydrogeomorphological units there were take account the follow criteria: morphological, pedological and hydrological, as well as the anthropic impact.

Depending on the field conditions, the sampling was carried out on river sections of 10-50 m. Where the watercourses crossed the localities, the sampling stations were chosen downstream.

The indications of the stations for carrying out observations, the GPS coordinates of their positioning, as well as a brief identification of the stations, are presented in Table 1:

Table 1. The stations for carrying out observations
Tabel 1. Stațiile de efectuare a observațiilor

River	Station indicative/ GPS coordonates			
	Station 1	**Station 2**	**Station 3**	**Station 4**
Casimcea	**Cs1**	**Cs2**	**Cs2**	**Cs2**
	Spring area (*near Beipunar Lake*) 44^0.79623 N 28^0.45589 E 278 m altit.	**”La Colțani”** (*between Războieni și Casimcea villages*) 44^0.74746 N 28^0.39895 E 171 m altit.	**Casian Monastery** (*the bridge at the base of the hill on which the monastery is located*) 44^0.49629 N 28^0.45187 E 28 m altit.	**River discharge area** (*at the stone quarry near of the Tașaul Lake*) 44^0.40411 N 28^0.54792 E 4 m alt.
Hamangia	**H1**	**H2**	**H3**	**H4**
	Spring area (*Vasile Alecsandri Forest, upstream the village with the same name*) 44^0.80507 N 28^0.48882 E 303 m altit.	**Down stream of Stejaru village** (*confluence of the Altîn Tepe and Stejaru trib.*) 44^0.75655 N 28^0.52996 E 136 m altit.	**Down stream of Beidaud village** (*to Panduru village*) 44^0.70919 N 28^0.59193 E 53 m altit.	**River discharge area** (*about 200 m until Golovița Lake*) 44^0.71208 N 28^0.72006 E 3 m altit.

Slava	**Sl1**	**Sl2**	**Sl3**	**Sl4**
	Spring area (Slava tributary) *(at 1,5 km from DJ22A)* 44^0.89706 N 28^0.41263 E	**Downstream Slava Rusă village** (*after the confluence with Ciucurova tributary*) 44^0.5032 N 28^0.3649 E	**a. Downstream Caugagia village** (*after the confluence with Camena tributary*) 44^0.4716 N 28^0.4002 E **b. Drinking water treatment plant** (*Slava Rusă*) 44^0.84233 N 28^0.61378 E 36 m altit.	**River discharge area** *(Ceamurlia liman)* 44^0.73386 N 28^0.72262 E 2 m altit.
Ciucurova (tributary of Slava River)	**Ci1**	**Ci2**	-	-
	Spring area *(upstream Atmagea village, in spinney)* 44^0.96689 N 28^0.42367 E 190 m altit.	**Montegreco Oil Station** (*downstream of Slava Cercheză village*) 44^0.89343 N 28^0.58250 E 70 m altit.	**-**	**-**
Taița	**Ta1**	**Ta2**	**Ta3**	**Ta4**
	Spring area (*confluence of the first tributaries coming from Luncavița TAU*) 45^0.11724 N 28^0.20637 E	**Downstream Nifon village** (*confluence with Pârlita tributary*) 45^0.08149 N 28^0.23250 E	**Consul Hill** (*about 100 m downstream of bridge*) 44^0.01636 N 28^0.31512 E	**River discharge area** (*Satu Nou village, about 2 km untilTopraichioi Lake*) 44^0.57429 N 28^0.40241 E
Teliță	**Te1**	**Te2**	**Te3**	**Te4**
	Spring area (Hill with streams/ *Dealul cu Izvoare*) 45^0.14952 N 28^0.48186 E	**Celic Dere** (*about 1 km downstream of the confluence with Celic rivulet*) 45^0.15865 N 28^0.50890 E	**Water mill** (*about 1 km downstream from the entrance of Tulcea Airport*) 45^0.07385 N 28^0.74002 E	**River discharge area** (*at the stone quarry bridge, about 800-1000 m of discharge into the Zebil pond*) 44^0.97485 N 28^0.72128 E

The data related to the substrate types were obtained by the “doll” method, which consists in taking a sample from the substrate and modeling a “doll”. If the result is positive, then the substrate contains a lot of clay, and if it is not possible to model, then the sand is in excess. Depending on how your hands and feet can be shaped or not, we can find out if the dust is excessive. Also, the

presence of small foliage was a good indicator for sand. Mica is a mineral in the silicate group with a monoclinic crystallization system. To determine the types of soils, the Pedological Map of the Socialist Republic of Romania was used (FLOREA *et alii*, 1970-1971). It was georeferenced in Stereo 70 system, 1995 version, with EPSG code 31700. Update of soil types in the Soil Classification System was based on the Romanian Soil Taxonomy System (FLOREA *et alii*, 2012).

Flora, vegetation and habitats. The on-site research consisted in observations on itineraries and inventories generally in 100 square meters plots, according to the Braun-Blanquet method. The identification and framing of the plant species, coenotaxa and habitats are based on PHYSIS database, the EUR 27 version of the *Interpretation Manual of the European Union Habitats* and other papers or field guides (CIOCÂRLAN, 2009; DEVILLIERS, DEVILLIERS-TERSCHUREN, LINDEN, 1996; DIHORU, DONIŢĂ, 1970; DONIŢĂ *et alii*, 2005, HOREANU, 1976A, 1976B; IVAN, 1979; OLTEAN *et alii*, 1994; PRODAN, 1934; SANDA, 1998, 2002; SANDA, ARCUŞ, 1999; SANDA, VICOL, ŞTEFĂNUŢ, 2008; SĂVULESCU *et alii*, 1976; SÂRBU *et alii*, 2013).

The preliminary assessment of the importance and conservation status of threatened species or habitats/ coenotaxa was made by using a scale, as follows. A correspondence was also set between these categories and the Braun-Blanquet scale for the assessment of the dominance within the plots. For the preliminary evaluation of the habitat threat categories an adapted form of the previous scale was used, based on the estimation of the percentage limits in the research route within which the habitat/ coenotaxon was noticed.

The correspondence between the dominance, habitat frequency and the threat categories for species and habitats/ coenotaxa

Dominance indices (specii)	Threat category	Habitat frequency in the studied area (% of the route)
– <5 individuals /plot, with negligible dominance	critically endangered	**-**
+ – ≤ 1 % dominance	endangered	**+** – ≤ 1 %
1 – 1-10 % dominance	vulnerable	**I** – 1-10 %
2 – 10-25 % dominance	rare	**II** – 10-25 %
3 – 25-50 % dominance	sporadic	**III** – 25-50 %
4 – 50-75 % dominance	frequent	**IV** – 50-75 %
5 – 75-100 % dominance	very frequent	**V** – 75-100 %

The conservation status was preliminarily assessed by threat categories. Thus, the higher threat categories correspond to a lower conservation status, closer to an unfavourable level. Also the higher the number of threatened species, the better the conservation status can be considered. Taking into account if the habitat is a priority or not, combined with its threat category/ estimated area the habitat urgency for the intervention with adequate management measures was ranked, in decreasing order in three categories: high priority, priority, secondary priority.

Wherever data allowed also the conservation status of the plant communities/habitats induced by the intensity of human activities was assessed. A simple scale which estimates a high, medium, low or null level of disturbance was used, taking into account the dominance indices and the number of ruderal and/or non-native species identified in the plots located in plant communities, in the studied habitats. Within the species list, for each plant community the ruderal species are underlined, while the non-native ones are mentioned in the description of the respective coenotaxon.

There were taken into account only the plant communities strictly adjacent to the rivers that are influenced by the groundwater or by the overflowing of these running waters.

Avifauna. Ornithological observations and the inventory of bird species associated with both these rivers and the habitats in their vicinity were usually performed in all four seasons, in the same stations initially recorded with GPS points. The monitoring period began early in the morning and ended before noon, when the birds were down. For each chosen point, the size and type of the main habitats present near it were indicated. The aim was to identify the species of birds around the pre-established station, those in lonely trees, bushes, buildings, fences. The method of identification of the bird species consisted in: making observations in each of the stations established for the respective course, the observation time being 30 minutes; recording in the observation sheet the species and the number of specimens identified by direct viewing or singing. The specimens of birds sitting, moving and flying above the station were recorded. The specialized determinant developed by SVENSSON Lars (2010) was used to identify the observed species.

Results and Discussions

I. Pedological conditions

Following the analyzes and observations performed, the following soil types and textures of the bed substrate of the studied running waters were

identified, their presentation being made on each sampling station in the respective river.

Casimcea River:

Cs1 – spring area: The lithological structure is clayey due to the presence of regosols and loess deposits.

Cs2 – ”La Colțani”: The substrate is clayey, stony, due to the degradation of chloritic clay shales (green shales) present in the area.

Cs3 – Casian Monastery: The lithological structure consists of boulders, from the disintegration of Cretaceous limestones, from the sedimentation of the sand along the river and from the construction of the bridge, as well as from the mud (loam substrate). Rendzic Leptosols and Eutri-lithic Leptosols predominate in the area.

Cs4 – river discharge area: The substrate is loam-sandy due to the passage of the Casimcea River, upstream, through a limestone area of Middle Cretaceous age, with siliceous rocks. The texture tends towards loam-clayey, due to the deposition of dust on the course of the watercourse.

Hamangia River:

H1 – spring area: Stony substrate that comes from the disaggregation of clayey, proterozoic, sericito-chlorite schists that emerge among the Haplic Chernozems.

H2 – downstream of Stejaru village: Clay to loam-clay substrate, containing gravel both from the bridge built near the sampling point and from the area of Eutric Lithosols, through which the Hamangia River passes. Cambol-Endoleptic Chernozems and Haplic Chernozems predominate in the sampling point area.

H3 – downstream of Beidaud village: The stony substrate with brown algae and fine sand clay texture was identified in an area with Skeletal Fluvisols and Eutric Regosols. Around this area the Eutric Leptosols (Eutric Leptosols) dominate, in the west, and the Calcaric Chernozem (Calcaro-Calcic Chernozem) in the east.

H4 – river discharge area: The substrate has a clay texture. Gleic Fluvisols and Eutric Fluvisols predominate in the area. The presence of Gleyic Fluvisols justifies the high clay content in the substrate.

Slava River – Ciucurova Tributary:

Ci1 – spring area: The clayey to sandy loam substrate is related to the presence in the area of the Ciucurova tributary`s spring of a soil cover represented by Luvic Phaeozem. In this area dominant are the Gray-luvic Phaeozems.

Ci2 – Oil station: The substrate is loam, in the area predominating the Calcic Chernozems on loess deposits and Haplic Luvisols on Turonian limestones.

Slava River – Slava Tributary:

Sl1 – spring: The substrate has a loam-sandy texture, with gravel. Gray-Luvic Phaeozems, Haplic Chernozems and Leptic Chernozems developed on Cretaceous limestones predominate in the area.

Sl2 – downstream of Slava Rusă village: The substrate with a loam to loam-clay texture. In the area from which samples were taken, Gleyic Chernozems predominate, and near the watercourse the Gleyc Clexols soils (Mollic Gleysols).

Sl3 – downstream of Caugagia village:The substrate has a loam-clay texture. The area is dominated by Gleic Chernozems and Mollic Gleysols near the watercourse.

Sl4 – river discharge area: The texture of the substrate is clayey loam. Near the watercourse occur the soils Mollic Gleysols and Gleyic Fluvisols. In the area, where alluvial and gleic soils are included, Calcaro-calcic Kastanozems predominate.

Taița River:

Ta1 – spring area: The substrate has a clayey-loam texture. The dominant soils in the area are the typical Haplic Luvisols.

Ta2 – confluence with Pârlita tributary: The loam-clay substrate to loam-sand (appears mica) is found in an area dominated by Calcaro-calcic Chernozem and Calci-greyic Chernozem.

Ta3 – Consul Mount foot: The substrate is loam to loamy-silt and occurs in the area where Calcaro-calcic chernozems have developed.

Ta4 – river discharge area: In the area of this sampling point, Calcaric Fluvisols and Calcaro-calcic Kastanozems predominate, and the river bed (substrate) is loamy-silt.

Telița River:

Te1 – spring area: The substrate is stony, with isolated deposits of fine clay. The desol types identified are Lepti-eutric Cambisol and Haplic Luvisol.

Te2 – confluence with Celic Dere rivulet: The substrate is loamy-sand, with coarse sand, and the type of soil in this area is Haplic Luvisols.

Te3 – water mill: The substrate is loamy, and predominant in the area are the Calcaro-calcic Chernozems.

Te4 – river discharge area: The loamy clay substrate occurs in the area where the Eutric Fluvisols and the Calcaro-calcic Chernozems have developed.

II. Habitats and Plant communities

II.A. Habitats of community importance

1530* Pannonic salt-steppes and salt-marshes (PAL. CLASS.: 15.A1, 15.A2)

15. A21275 Western Pontic *Cynodon* saline beds

***Trifolio fragifero-Cynodontetum* Br.-Bl. et Bolos 1958** plant community counts a total number of 31 species, being identified mainly along the Casimcea River where it has the highest species richness (31 species) and less within the Taiţa River (17 species). Three non-native species, *Amaranthus retroflexus, Datura stramonium* and *Xanthium spinosum,* with a low dominance, indicate a reduced invasive tendency of alien species. Still, the numerous (10) ruderal taxa, underlined below, indicate a medium degree of human activities influence, also due to their dominance indices (+-1).

Casimcea River

***Trifolio fragifero-Cynodontetum* Br.-Bl. et Bolos 1958** plant community, with a number of 31 species, was recorded as vulnerable at the spring of the Casimcea River (Cs1), being sporadic close to Colţanii Mari (Cs2), near Casian (Cs3), and at the inflow of the river in the Taşaul Lake (Cs4). Three non-native species, *Amaranthus retroflexus, Datura stramonium* and *Xanthium spinosum,* with a low dominance, indicate a reduced invasive tendency of alien species. Still, the numerous (10) ruderal taxa, underlined below, indicate a medium disturbance.

Key species: *Cynodon dactylon* (1-2 -3; Cs1, Cs4), *Trifolium fragiferum* (1-2; Cs1, Cs2, Cs3, Cs4).

Other species: *Agrostis stolonifera* (+; Cs1, Cs2), *Amaranthus retroflexus* (+; Cs1), *Calystegia sepium* (+; Cs4), *Centaurea iberica* (+; Cs4), *Cichorium intybus* (1; Cs4), *Convolvulus arvensis* (+; Cs1), *Datura stramonium* (+; Cs1), *Daucus carota* (+; Cs4), *Echinochloa crus-galli* (+; Cs1, Cs3), *Eupatorium cannabinum* (+;Cs2), *Galega officinalis* (+;Cs2), *Lolium perenne* (+-1; Cs2, Cs3, Cs4), *Lotus tenuis* (+; Cs4), *Lycopus europaeus* (+; Cs1), *Mentha aquatica* (+; Cs1), *Mentha longifolia* (+; Cs2), *Ononis spinosa* (1; Cs2) *Plantago lanceolata* (+; Cs1), *Plantago major* (+; Cs3) *Polygonum aviculare* (+; Cs1, Cs2, Cs3), *Polygonum persicaria* (+; Cs1), *Potentilla reptans* (+; Cs1), *Ranunculus sceleratus* (+; Cs2, Cs3), *Rumex palustris* (+; Cs1), *Setaria viridis (+; Cs2), Trifolium repens (+; Cs4), Verbena officinalis (+;* Cs1), *Xanthium italicum* (1; Cs1, Cs3), *Xanthium spinosum* (+; Cs1).

Photo 6. Casimcea River. 1530* Pannonic salt-steppes and salt-marshes (photo M. Petrescu)
Foto 6. Râul Casimcea. 1530 Pajişti şi mlaştini sărăturate panonice*

Taiţa River

***Trifolio fragifero-Cynodontetum* Br.-Bl. et Bolos 1958** plant community, counting 17 species, can be considered rare at the foothill of Consul Mount (Ta3), respectively at the inflow near Satu Nou village (Ta4). Three non-native species, *Amaranthus retroflexus, Datura stramonium* and *Xanthium spinosum,* with a low dominance, indicate a reduced invasive tendency of alien species. The four ruderal species, with a reduced dominance indicate a low disturbance.

Key species: *Cynodon dactylon* (2-3; Ta3), *Trifolium fragiferum* (1; Ta3).

Other species: *Agrostis stolonifera* (+; Ta3), *Amaranthus retroflexus* (+; Ta3), *Convolvulus arvensis* (+; Ta4), *Datura stramonium* (+; Ta4), *Echinochloa crus-galli* (+; Ta3), *Lycopus europaeus* (+; Ta3), *Mentha aquatica* (+; Ta3), *Plantago major* (+; Ta3, Ta4), *Polygonum aviculare* (+; Ta4), *Polygonum persicaria* (+; Ta4), *Potentilla reptans* (+; Ta3), *Rumex palustris* (+; Ta4), *Verbena officinalis* (+; Ta3), *Xanthium italicum* (1; Ta3, Ta4), *Xanthium spinosum* (+; Ta3).

3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoëto-Nanojuncetea* (PAL. CLASS.: 22.12 x (22.31 and 22.32))

22.32 Euro-Siberian dwarf annual amphibious swards

***Cypero-Juncetum* Soó et Csüros 1974**, with 19 species were recorded in the plots, is an endangered plant community in the area where it was studied, at the inflow of the Slava River within the Ceamurlia Lake (Sl4). The phytocoenoses, dominated by *Cyperus fuscus,* were framed, at least provisionally, within the above mentioned plant community, which was the only one described from Romania (SANDA, VICOL, ŞTEFĂNUŢ, 2008) that has as key (codominant) species *Cyperus fuscus,* as a constant species. There a low degree of ruderal and alien species invasion can be observed, by the presence of *Xanthium spinosum* and four ruderal species.

Key species: *Cyperus fuscus* (2; Sl4).

Other species: *Alisma plantago-aquatica* (+; Sl4), *Atriplex prostrata* (+; Sl4), *Berula erecta* (+; Sl4), *Bidens tripartita* (+; Sl4), *Calystegia sepium* (+; Sl4), *Chenopodium album* (+; Sl4), *Cynodon dactylon* (+; Sl4), *Echinochloa crus-galli* (+; Sl4), *Lythrum salicaria* (+; Sl4), *Plantago major* (+; Sl4), *Polygonum aviculare* (+; Sl4), *Rorripa sylvestris* (+; Sl4), *Rumex palustris* (+; Sl4), *Sparganium erectum* (1; Sl4), *Trifolium fragiferum* (+; Sl4), *Veronica anagallis-aquatica* (+; Sl4), *Xanthium italicum* (+; Sl4), *Xanthium spinosum* (+; Sl4).

3270 Rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation (PAL. CLASS.: 24.52)

24.52 Euro-Siberian annual river mud communities

Taiţa River

24.52 Euro-Siberian annual river mud communities

Xanthietum italicii Timár 1950 was observed so far only adjacent to the Taiţa River, being a species-poor coenotaxa, with just four species. It was identified as endangered at the inflow of the Taiţa River (Ta4). It can be considered as highly disturbed, due to the dominant ruderal *Xanthium italicum,* along with other ruderal taxa, and the alien *Xanthium spinosum.*

Key species: *Xanthium italicum* (3; Ta4).

Other species: *Chenopodium album* (+; Ta4), *Cynodon dactylon* (1; Ta4), *Xanthium spinosum* (+; Ta4).

62C0* Ponto-Sarmatic steppes (PAL.CLASS.: 34.92)

34.92 Ponto-Sarmatic steppes

34.9211 Western Pontic thyme steppes

***Festucetum callierii* Şerbănescu 1965** plant community was identified next to the Hamangia River, where 18 species were observed, of which five taxa

are threatened at the national level, which enhances the conservation value of this habitat. All these five taxa are endangered within this coenotaxa, except the dominant *Festuca callieri.* The plant community was studied between Stejaru and Neatârnarea villages (H2), where it can be estimated as vulnerable. It can be considered as in its natural status, as no alien/ruderal taxa were observed.

Key species: *Festuca callieri* (2; H2).

Threatened species: *Achillea leptophylla* (+; H2), *Festuca callieri* (2; H2), *Sempervivum zeleborii* (+; H2), *Stachys angustifolia* (+; H2), *Thymus zygioides* (+; H2).

Other species: *Asperulla tenella* (+; H2), *Cephalaria uralensis* (+; H2), *Chrysopogon gryllus* (+; H2), *Dichanthium ischaemum* (+; H2), *Herniaria glabra* (+; H2), *Iris pumila* (+; H2), *Kohlrauschia prolifera* (+; H2), *Orlaya grandiflora* (+; H2), *Potentilla argentea* (+; H2), *Sanguisorba minor* (+; H2), *Scleranthus perennis* (+; H2), *Sedum urvillei* subsp. *hillebrandtii* (1; H2), *Trifolium arvense* (+; H2).

91AA* Eastern white oak woods (PAL. CLASS.: 41.7371, 41.7372)

41.7372 Moesian white oak woods

41.73723 Moesian *Paeonia peregrina*-white oak woods

***Paeonio peregrinae-Carpinetum orientalis* Doniţă 1970** plant community, with a number of 17 species, can be considered as very frequent in the upper course of the Hamangia River near the Vasile Alecsandri village (H1). One rare threatened species, *Erysimum cuspidatum,* is endangered within this phytocoenosis. Even though no ruderal/ alien species were identified, the absence of the oak species indicates a high disturbance.

Key taxa: *Carpinus orientalis* (3; H1).

Threatened species: *Erysimum cuspidatum* (+; H1).

Other species:

- trees: *Acer tataricum* (+; H1), *Fraxinus ornus* (1; H1);
- shrubs/ lianas: *Cornus sanguinea* (+; H1), *Hedera helix* (1; H1);
- grasses/ undershrubs: *Arum orientale* (+; H1), *Asplenium thrichomanes* (+; H1), *Brachypodium sylvaticum* (+; H1), *Cystopteris fragilis* (+; H1), *Dactylis glomerata* (+; H1), *Geranium robertianum* (+; H1), *Glechoma hirsuta* (+; H1), *Poa nemoralis* (+; H1), *Polypodium vulgare* (+; H1), *Scutellaria altissima* (+; H1), *Tanacetum corymbosum* (+; H1).

Photo 7. Hamangia River. 91AA* Eastern white oak woods (photo M. Petrescu)
Foto 7. Râul Hamangia. 91AA Vegetaţie forestieră ponto-sarmatică cu stejar pufos*

91Y0 Dacian oak-hornbeam forests

41.2C South-eastern European oak-hornbeam forests

41.2C2 Moldo-Muntenian oak-lime-hornbeam forests

***Carpino betuli – Quercetum robori-pedunculiflorae* Doniţă & Popescu ass. nova prov. h.l.,** can be considered a vulnerable plant community within the upper (Ci1) and the medium (Ci2) course of the Ciucurova River (the upper course of Slava River being known as Ciucurova). In upper course it can be considered undisturbed, respectively low disturbed in the medium course, where this plant community is represented by an old-growth stand.

Key species: *Carpinus betulus* (1-2; Ci1, Ci2), *Quercus pedunculiflora* (2-3; Ci1, Ci2).

Other species:

- trees: *Acer campestre* (1; Ci1, Ci2);
- shrubs/ lianas: *Cornus mas* (1; Ci2), *Fraxinus excelsior* (1; Ci1, Ci2), *Sambucus nigra* (+; Ci1);

- grasses/ undershrubs: *Anthriscus sylvestris* (+; Ci2), *Galium aparine* (+; Ci2), *Hedera helix* (+; Ci2), *Stellaria media* (+; Ci1), *Veronica hederifolia* (+; Ci1), *Viola suavis* (+; Ci2).

Photo 8. Slava River. 91Y0 Dacian oak-hornbeam forests (photo M. Petrescu)
Foto 8. Râul Slava. 91Y0 Păduri dacice de stejar şi carpen

41.2C22 Moldo-Muntenian sessile oak-hornbeam forests

***Tilio tomentosae-Carpinetum betuli* Doniţă 1968** plant community, with 24 species identified so far, was recorded along the Teliţa River (21 species) and Taiţa River (eight species), One threatened species, *Smyrnium perfoliatum*, was identified along the Teliţa watercourse. In both situations presented below, the absence of oak species indicates a high disturbance.

Taiţa River

***Tilio tomentosae-Carpinetum betuli* Doniţă 1968** is a very frequent plant community in the upper course of the Taiţa River (Ta1) where eight species were registered. Even though no ruderal/ alien species were identified, the absence of oak species indicates a high disturbance.

Key species: *Carpinus betulus* (3; Ta1), *Tilia tomentosa* (2, Ta1).

Other species:

- trees: *Acer campestre* (+; Ta1).
- shrubs/ lianas: *Corylus avellana* (+; Ta1), *Evonymus europaeus* (+; Ta1);
- grasses/ undershrubs: *Asarum europaeum* (+; Ta1), *Brachypodium sylvaticum* (+; Ta1), *Carex pilosa* (+; Ta1**)**.

Teliţa River

Tilio tomentosae-Carpinetum betuli **Doniţă 1968**, with 21 species observed in the plots, is a very frequent plant community in the upper course of the Teliţa River (Te1), and in the medium course (Te2). The absence of oak species indicates a high disturbance, despite the reduced dominance of the two ruderal taxa. One threatened species, critically endangered in the plots, enhance the conservation value of this coenotaxa.

Key species: *Carpinus betulus* (3; Te1, Te2), *Tilia tomentosa* (1; Te1).

Threatened species: *Smyrnium perfoliatum* (r; Te1).

Other species:

- trees: *Acer campestre* (1; Te1, Ta2), *Salix triandra* (1; Te1),
- shrubs/ lianas: *Corylus avellana* (+; Te1, Te2), *Humulus lupulus* (+; Te2), *Sambucus nigra* (1; Te1).
- grasses/ undershrubs: *Aegopodium podagraria* (+; Te1, Te2), *Adoxa moschatellina* (+; Te1), *Anthriscus sylvestris* (1; Te1), *Arctium lappa* (+; Te2), *Bidens tripartita* (+; Te2), *Brachypodium sylvaticum* (+; Te1), *Circaea lutetiana* (+; Te1), *Echinochloa crus-galli* (+; Te2), *Equisetum telmateia* (1; Te2), *Geum urbanum* (+; Te1), *Polygonum mite* (1; Te2), *Rubus caesius* (+; Te2), *Urtica dioica* (+; Te1,Te2).

IV.B. Habitats with no Community Importance

37.24 Flood swards and related communities

Lythro salicariae - Juncetum effusi-inflexi **Todor et al 1971** is an endangered plant community in the studied area, at the inflow of the Slava River in the Ceamurlia liman (Sl4). The phytocoenoses dominated by *Lythrum salicaria* were framed, at least provisionally, within the above mentioned plant community, which was the only one described from Romania (SANDA, VICOL, ŞTEFĂNUŢ, 2008) that has as codominant and constant species *Lythrum salicaria,* even if no species of *Juncus* was observed. The coenotaxa can be considered in its natural status, as no ruderal/ alien species were recorded.

Key species: *Lythrum salicaria* (3; Sl4).

Other species: *Bidens tripartita* (+; Sl4), *Ranunculus sceleratus* (+; Sl4), *Rumex palustris* (+; Sl4), *Salix alba* (+; Sl4), *Typha angustifolia* (+; Sl4), *Veronica anagallis-aquatica* (+; Sl4).

44.121 Almond willow-osier scrub

Salicetum triandrae **Malcuit 1929** is considered an endangered plant community along the Slava River, downstream of Slava Rusă (Sl2), where nine species were recorded.There can be estimated a medium level of non-native plant invasive tendencies (*Juglans regia*), but also of the ruderal plants occurrence in this

coenotaxa, where they are as numerous as the native species, taking also into account their dominance variation limits (+-1).

Key species: *Salix triandra* (3; SL2).

Other species:

- trees: *Juglans regia* (1; SL2);
- shrubs/ lianas: *Humulus lupulus* (1; SL2);
- grasses/ undershrubs: *Artemisia vulgaris* (+; SL2), *Convolvulus arvensis* (+; SL2), *Lycopus europaeus* (+; SL2), *Scabiosa ochroleuca* (+; SL2), *Setaria viridis* (+; SL2), *Urtica dioica* (+; SL2).

53.1111 Freshwater *Phragmites* beds

***Scirpo-Phragmitetum* W. Koch 1926** plant community has the highest number of species along the Teliţa River (15 species), followed by Taiţa and Slava rivers (11 species), respectively Casimcea River (seven species). It can be considered globally as a low disturbed coenotaxa (Slava, Taiţa), and less in its natural status (Casimcea), respectivelly medium disturbed (Teliţa).

Casimcea River

***Scirpo-Phragmitetum* W. Koch 1926** contains seven species, being a vulnerable and undisturbed plant community at the spring of Casimcea River, Beipunar area (Cs1), but also at the inflow of the Casimcea River near the Taşaul Lake (Cs4). Near Casian Monastery (Cs3) it can be considered as vey frequent.

Key species: *Phragmites australis* (4-5; Cs1, Cs3, Cs4).

Other species: *Polygonum mite* (1; Cs3), *Ranunculus sceleratus* (+; Cs3), *Sparganium erectum* (+; Cs1, Cs4), *Typha angustifolia* (1; Cs1), *Typha latifolia* (+; Cs1).

Slava River (and its tributary Ciucurova River)

***Scirpo-Phragmitetum* W. Koch 1926**, with its 11 species, can be considered frequent and low disturbed by two ruderal taxa in the studied area, at the inflow of the Slava River within the Ceamurlia liman (Sl4). Along the Slava River, downstream of Slava Rusă village (Cs1), it was observed as a vulnerable plant community.

Key species: *Phragmites australis* (4-5; Sl2, Sl4).

Other species: *Artemisia vulgaris* (+; Sl2), *Calystegia sepium* (+; Sl2), *Humulus lupulus* (+; Sl2), *Lemna minor* (+; Sl4), *Ranunculus sceleratus* (+; Sl4), *Sparganium erectum* (+; Sl4), *Tanacetum vulgare* (+; Sl2), *Typha latifolia* (+; Sl4), *Urtica dioica* (+; Sl2), *Veronica anagallis-aquatica* (+; Sl4).

Taiţa River

***Scirpo-Phragmitetum* W. Koch 1926**, counting 11 species, was observed as a vulnerable and low disturbed (two ruderal taxa) plant community in the medium course, along the Pârlita tributary (Ta2), as well as at the inflow close to Satu Nou village (Ta4).

Key species: *Phragmites australis* (3-4; Ta2, Ta4).

Other species: *Alliaria petiolata* (+; Ta2), *Mentha aquatica* (+; Ta4), *Polygonum mite* (+; Ta4), *Rosa canina* (+; Ta2), *Rubus caesius* (+; Ta2), *Salix alba* (+; Ta4), *Sparganium erectum* (+; Ta4), *Stellaria media* (+; Ta2), *Urtica dioica* (+; Ta2, Ta4), *Xanthium italicum* (+; Ta4).

Teliţa River

***Scirpo-Phragmitetum* W. Koch 1926**, was recorded as a vulnerable association in the studied area, about 1km downstream from the interflow with the Celic tributary (Te2), being rare at the bridge crossed by the road between Cataloi and Mihail Kogălniceanu villages (Te3), close to the inflow of the river (Te4). A medium disturbance can be observed as there were identified three ruderal species, with a significant occurrence (+-1).

Key species: *Phragmites australis* (4-5; Te2, Te3).

Other species: *Agrostis stolonifera* (+; Te4), *Althaea officinalis* (+; Te3), *Ballota nigra* (+; Te3), *Calystegia sepium* (+; Te2, Te3), *Convolvulus arvensis* (1; Te3), *Eupatorium cannabinum* (+; Te2), *Humulus lupulus* (+; Te2), *Lythrum salicaria* (+; Te2, Te3), *Polygonum mite* (+; Te4), Te2), *Salix alba* (1; Te2), *Sparganium erectum* (1; Te4), *Symphytum officinale* (+; Te3), *Typha latifolia* (+; Te2, Te4), *Urtica dioica* (+; Te3).

53.131 Great reed mace beds

***Typhetum latifoliae* Lang 1973,** an endangered and undisturbed coenotaxa, with seven recorded species, was observed at the inflow of the Slava River, within the Ceamurlia Lake (Sl4).

Key species: *Typha latifolia* (4; Sl4).

Other species: *Berula erecta* (+; Sl4), *Bidens tripartita* (+; Sl4), *Phragmites australis* (1; Sl4), *Potamogeton crispus* (+; Sl4), *Ranunculus sceleratus* (+; Sl4), *Sparganium erectum* (+; Sl4).

53.132 Lesser reedmace beds

***Typhetum angustifoliae* Pignatti 1953** counts 14 species in total, being noticed along the Casimcea (nine species) and Hamangia (six species) rivers, it is considered globally as low disturbed.

Photo 9. Telița River. 53.1111 Freshwater *Phragmites* beds (photo M. Petrescu)
Foto 9. Râul Telița. 53.1111 Stufărişuri de Phragmites sp. de apă dulce

Casimcea River

***Typhetum angustifoliae* Pignatti 1953**, with nine species, was observed as vulnerable near Casian Monastery (Cs3), where it is low disturbed (two ruderal species).

Key species: *Typha angustifolia* (5; Cs3).

Other species: *Echinochloa crus-galli* (+; Cs3), *Phragmites australis* (+; Cs3), *Plantago major* (+; Cs3), *Polygonum mite* (1; Cs3), *Ranunculus sceleratus* (+; Cs3), *Rumex palustris* (+; Cs3), *Salix alba* (+; Cs3), *Xanthium italicum* (+; Cs3).

Hamangia River

***Typhetum angustifoliae* Pignatti 1953**, counting six species, can be considered as vulnerable and undisturbed, at the inflow of the Hamangia River in the Goloviţa Lake (H4).

Key species: *Typha angustifolia* (3; H4).

Other species: *Berula erecta* (+; H4), *Butomus umbellatus* (+; H4), *Lemna minor* (+; H4), *Lycopus europaeus* (1; H4), *Sparganium erectum* (1; H4).

53.143 Erect bur-reed communities

Sparganietum erecti Roll. 1938, with a total number of 20 species, has a higher richness within the Taiţa (12 species) and Hamangia (10 species) rivers, followed by Teliţa (six species) and Casimcea (two species) watercourses.

Photo 10. Taița River. 53.143 Erect bur-reed communities (photo M. Petrescu)
Foto 10. Râul Taița. 53.143 Comunităţi de Sparganium erectum

Casimcea River

Sparganietum erecti Roll. 1938 was noticed as frequent and undisturbed plant community in the area of the inflow of the Casimcea River in the Taşaul Lake (Cs4).

Key species: *Sparganium erectum* (2; Cs4).

Other species: *Phragmites australis* (1; Cs4).

Hamangia River

Sparganietum erecti Roll. 1938 was recorded as endangered in the area of the Beidaud TAU (H3), respectively as vulnerable at the inflow of the river in the Goloviţa Lake (H4). Three ruderal species indicate a low level of disturbance.

Key species: *Sparganium erectum* (3-4; H4).

Other species: *Berula erecta* (+; H4), *Bidens tripartita* (+; H3), *Butomus umbellatus* (+; H4), *Calystegia sepium* (+; H3), *Cannabis ruderalis* (+; H3), *Polygonum persicaria* (+; H3), *Urtica dioica* (+; H3), *Veronica anagallis-aquatica* (+; H3), *Xanthium italicum* (+; H3).

Taiţa River

Sparganietum erecti Roll. 1938, was observed at the foothill of Consul Mount (Ta3), and at the inflow, close to Satu Nou village (Ta4), as a rare and undisturbed plant community.

Key species: *Sparganium erectum* (2-3; Ta3, Ta4).

Other species: *Berula erecta* (+; Ta3), *Bidens tripartita* (+; Ta4), *Echinochloa crus-galli* (+; Ta4), *Iris pseudacorus* (+; Ta4), *Lythrum salicaria* (+; Ta3, Ta4), *Lycopus europaeus* (+; Ta4), *Mentha aquatica* (1; Ta3, Ta4), *Mentha longifolia* (+; Ta4), *Phragmites australis* (+; Ta4), *Rumex palustris* (+; Ta4), *Symphytum officinale* (+; Ta4).

Teliţa River

Sparganietum erecti Roll. 1938, was observed as a vulnerable and undisturbed plant community, that occur near the Teliţa River inflow (Te4).

Key species: *Sparganium erectum* (4; Te4).

Other species: *Berula erecta* (+; Te4), *Butomus umbellatus* (+; Te4), *Lythrum salicaria* (+; Te4), *Schoenoplectus lacustris* (+; Te4), *Polygonum persicaria* (1; Te4).

53.4 Small reed beds of fast-flowing waters

***Mentho aquaticae-Beruletum (Sietum) erectae* Nedelcu 1971, *corr.* Sanda & Popescu 2001**, with six species, is a rare and undisturbed plant community in the studied area, near the spring of Casimcea River, at Beipunar (Cs1).

Key species: *Berula erecta* (3; Cs1).

Other species: *Lythrum salicaria* (+; Cs1), *Mentha longifolia* (+; Cs1), *Salix triandra* (+; Cs1), *Sparganium erectum* (+; Cs1), *Schoenoplectus tabernaemontani* (+; Cs1).

IV.C. Plant Communities not framed into the Palaearctic Classification

***Equisetum arvense* phytocoenosis** cannot be framed so far in a certain plant community dominated by this species, as there was not described so far this kind of coenotaxa, at least in the synthesis works on the vegetation of Romania, neither on the web references. It was recorded as endangered along the Pârlita tributary of the Taiţa River (Ta2).

Key species: *Equisetum arvense* (2; Ta2).

Other species: *Althaea officinalis* (+; Ta2), *Artemisia vulgaris* (+; Ta2), *Ballota nigra* (+; Ta2), *Chenopodium album* (+; Ta2), *Echinochloa crus-galli* (+; Ta2), *Lythrum salicaria* (+; Ta2), *Myosoton aquaticum* (+; Ta2), *Polygonum persicaria* (+; Ta2), *Setaria pumila* (+; Ta2), *Solanum nigrum* (+; Ta2).

Within the studied rivers there were identified so far: six habitats of community importance (1530, 3130, 3270, 62C0*, 91AA*, 91Y0), among which two are priority ones; seven habitat subtypes with no community importance (37.24, 44.121, 53.1111, 53.131, 53.132, 53.143, 53.4); one phytocoenosis not framed within the Palaearctic Habitats Classification.

The highest habitats/ plant communities diversity was observed within the Taiţa and Slava rivers (six plant communities), followed by Casimcea River (five plant communities), the lowest number of habitats/ coenotaxa being recorded in the Hamangia (four plant communities) and Teliţa (three plant communities) rivers.

The highest species richness was recorded within the 1530 habitat (*Trifolio fragifero-Cynodontetum*) with 31 species within the Casimcea River, followed, in decreasing order by 91Y0 (24 species, of which 21 within the Teiţa River), 53.143 (20 species in total, maximum/ river: 12 taxa – Taiţa), 3130 (19 species – Slava), 62C0* (18 species – Hamangia), 91AA* (17 species – Hamangia), 53.132 (14 species in total, maximum species/ river: nine – Casimcea), the *Equisetum arvense* phytocoenosis (11 species – Taiţa), while other have a lower species richness, like 44.121 (nine species – Slava), 37.24 and 53.131 (seven species – Slava), 53.4 (six species – Casimcea), 3270 (four species – Taiţa).

The highest number of threatened species was recorded within the Hamangia River, respectively within the 62C0* habitat (five species), and less on the same river in the 91AA*habitat (one species), like also on the Taiţa River (one species).

Globally, Casimcea River could be considered the most diverse of the rivers, taking into account the number of habitats/ plant communities (five), combined with the number of species per habitat/ plant community (31), while Teliţa River would be the less diverse, with only three habitats/ plant

communities, slightly compensated by a maximum of 21 species per habitat/ plant community.

Most of the habitats/ plant communities are in their natural status (62 C0* – Hamangia; 37.24 – Slava; 53.131 – Slava; 53.143 – Casimcea, Taiţa, Teliţa, 53.4 – Casimcea), followed by low disturbed coenotaxa (3130 – Slava; 91Y0/ 41.2C2 – Slava; 53.1111 – Slava, Taiţa; 53.132 – Casimcea; *Equisetum arvense* phytocoenosis – Taiţa). Next follow the highly disturbed habitats/ plant communities (3270 – Taiţa; 91AA* – Hamangia; 91Y0 – Taiţa, Teliţa) and medium disturbed (1530 – Casimcea; 44.121 – Slava). Overall Casimcea River can be considered as being mostly in its natural status (three coenotaxa from five), as well as Hamangia (two coenotaxa from four). The low disturbed watercourses could be considered Taiţa (three coenotaxa from six) and Slava (three coenotaxa from six), while within Teliţa River the three coenotaxa are in the high, medium and undisturbed categories.

Taking into account the data presented so far, these five rivers that flow into the Black Sea Basin, have an important conservation value, as they contain habitats of community importance and even a reduced number of threatened plant species Their conservation is also required as they are natural ecological corridors that link different Natura 2000 sites from Northern and Central Dobrogean Plateau, with the Danube Delta Biosphere Reserve and corresponding Natura 2000 sites (SCI, SPA).

III. Avifauna

Casimcea River. In the spring area of the river, the observed avifauna is specific to agricultural and forest habitats. In the permanently or not permanently flooded areas, near by the river monitoring stations, where reed is growing, there are nesting places for some species of waterfowl and of swamps. These are hard-to-reach areas for humans and predators which provide good feeding conditions for most of the species that populate them. Among the main species of birds found here we mention: *Podiceps cristatus*, *Podiceps griseigena*, *Podiceps nigricollis*, *Anas strepera*, *Anas querquedulla*, *Crococephalus ridibundus*, *Sterna hirundo*, *Fulica atra*. Among the species specific to compact reeds surfaces we list: *Ardea cinerea*, *Ardea purpurea*, *Ardeola ralloides*, *Egreta garzetta, Nycticorax nycticorax*, *Botaurus stellaris, Ixobrychus minutus, Gallinula chloropus*, *Circus aeruginosus*, *Acrocephalus palustris*, *Emberiza schoeniclus*, etc.

The species characteristic to the steppe area and the landpastures crossed by the Casimcea River are birds that present, generally, a dull, uniform color, with poorly pronounced or even non-existent sexual dimorphism, that nest directly on the ground. Among them we mention: *Coturnix coturnix*, *Perdix perdix*, storks (Fam. Alaudidae), and in shrubs: *Lanius collurio*, *Lanius minor*.

The landpastures situated near of the Casimcea River have a small number of nesting bird species, one of the causes that lead to the decrease of nesting populations being excessive grazing, practiced throughout the year.

Species such as: *Riparia riparia*, *Merops apiaster*, *Coracias garrulus*, *Athene noctua, Falco tinnunculus* nest in the area of loess banks. In the bush habitat along the river, the species that appear more frequently are: *Phasianus colchicus*, *Accipiter nisus*, *Falco tinnunculus*, *Upupa epops*, *Sylvia communis*, *Sylvia curruca*, *Turdus merula*, *Turdus philomelos*, *Luscinia megarhynchos*, *Erithacus rubecula*, *Phoenicurus phoenicurus*, *Muscicapa striata*, *Parus major*, *Cyanistes caeruleus*, *Lanius collurio*, *Carduelis carduelis*, *Carduelis chloris*, *Oriolus oriolus*, *Pica pica.*

Another identified category is formed by species that, in a certain period of the biological cycle use several biotopes, from different habitats, for example some species of day predators that nest in the forest area but their feeding territory overlaps, at least partially, over the area of the Casimcea River. The species, characteristic of the aquatic habitat, are mostly migratory, but also the few sedentary species (which have provided food from aquatic resources) leave this habitat in the cold winters, when the water freezes completely. The river basin is preferred for feeding by a number of charadriiformes, such as: *Himantopus himantopus*, *Recurvirostra avocetta*, *Charadrius dubius*. Anthropogenic ecosystems, represented mostly by agricultural ecosystems that occupy most of the vicinity of Casimcea River, are home to a diverse avifauna, consisting of characteristic species, represented mainly by: *Alauda arvensis*, *Gallerida cristata*, *Melanocorypha calandra*. Among the

Photo 11. Casimcea River. *Buteo buteo* (photo V. Cuzic)
Foto 11. Râul Casimcea. Buteo buteo

synanthropic species, specific to human settlements, there are more common: *Ciconia ciconia*, *Streptopelia decaocto*, *Athene noctua*, *Dendrocopos syriacus*, *Hirundo rustica*, *Passer domesticus*, *Passer montanus*, *Corvus monedula*, etc.

During migration and winter, the following species were observed: *Clanga pomarina*, *Pelecanus crispus*, *Pelecanus onocrotalus*, Buteo buteo (Photo 11), *Accipiter brevipes*, *Branta ruficollis*, *Phalacrocorax pygmaeus*, *Anser albifrons*, *Tadorna ferruginea*. The list of bird species observed and identified in the observation stations along Casimcea River is presented in table no. 2.

Hamangia River it has its source in a typical forest habitat, the avifauna identified in this sector being specific to this type of habitat. The areas near the sampling stations, established along Hamangia River, where reeds grow, permanently or not permanently flooded with shallow water, are nesting and feeding places for several species of waterfowl and marshes, especially for species of *Acrocephalus*. Among the species characteristic to the steppe habitat and the pastures near the sampling stations were observed: *Oenanthe oenanthe*, *Oenanthe isabellina*, *Coturnix coturnix*, *Perdix perdix*, storks (Fam. Alaudidae) etc., and in shrub habitats: *Lanius collurio* și *Lanius minor.* Species of birds such as: *Riparia riparia*, *Merops apiaster*, *Coracias garrulus*, *Athene noctua, Falco tinnunculus*, nest in the banks of loess.

In the bush habitat along the river, the species that appear more frequently are: *Phasianus colchicus, Accipiter nisus, Falco tinnunculus*, *Upupa epops*, *Sylvia communis*, *Sylvia curruca*, *Turdus merula*, *Turdus philomelos*, *Luscinia megarhynchos*, *Erithacus rubecula*, *Phoenicurus phoenicurus*, *Muscicapa striata*, *Parus major*, *Cyanistes caeruleus*, *Lanius collurio*, *Carduelis carduelis*, *Carduelis chloris*, *Oriolus oriolus.* Anthropogenic ecosystems, represented here also largely by agroecosystems, occupy a large part of the vicinity of Hamangia course. Here is an avifauna made up of characteristic species such as: *Alauda arvensis*, *Gallerida cristata*, *Melanocorypha calandra*. In the area where the river flows into the Golovița Lake, rich in food resources, wading birds were observed (e.g. *Charadrius dubius, Himantopus himantopus*, *Vanellus vanellus* (Photo 12), *Recurvirostra avocetta*), most species of ducks, herons. During the migration and winter periods, the following species were observed: *Clanga pomarina*, *Pelecanus crispus*, *Pelecanus onocrotalus*, *Branta ruficollis*, *Phalacrocorax pygmaeus*, *Anser albifrons*, *Tadorna ferruginea,* etc. The list of bird species observed and identified in the observation stations along Hamangia River is presented in table no. 3.

Photo 12. Hamangia River. *Vanellus vanellus* (photo V. Cuzic)
Foto 12. Râul Hamangia. Vanellus vanellus

Slava River has, as a starting point, at its springs, the typical forest habitat, that of the forest from Vasile Alexandri, which makes the identified avifauna one specific to this type of habitat. Areas in the vicinity of river monitoring points, where reeds grow, whether or not permanently flooded with shallow water, are nesting and feeding places for several species of waterfowl and marshes, especially for species of *Acrocephalus*.

Among the species characteristic of the steppe habitat and pastures near the monitoring points along the Slava River were observed: *Oenanthe oenanthe*, *Oenanthe isabellina*, *Coturnix coturnix*, *Perdix perdix*, larks (Fam. Alaudidae), and those of shrub habitats in the area: *Lanius collurio*, *Lanius minor*. Species of birds such as: *Riparia riparia*, *Merops apiaster*, *Coracias garrulus*, *Athene noctua*, *Falco tinnunculus* nest in the banks of loess.

In the bush habitat along the river, the species that appear more frequently are: *Phasianus colchicus*, *Accipiter nisus*, *Falco tinnunculus*, *Upupa epops*, *Sylvia communis*, *Sylvia curruca*, *Turdus merula*, *Turdus philomelos*, *Luscinia megarhynchos*, *Erithacus rubecula*, *Phoenicurus phoenicurus*, *Muscicapa striata*, *Parus major*, *Cyanistes caeruleus*, *Lanius collurio*, *Carduelis carduelis*, *Carduelis chloris*, *Oriolus oriolus.*

Anthropogenic ecosystems, largely represented by agroecosystems, occupy a large part of the vicinity of Slava course. Here is an avifauna made up of characteristic species, represented, in particular, by: *Alauda arvensis, Gallerida cristata, Melanocorypha calandra*.

The area where Slava River flows into Ceamurlia liman has a richness of bird species (Photos 13,14), being a feeding place sought by many wading species, such as: *Himantopus himantopus*, *Recurvirostra avocetta*, *Charadrius dubius*, most duck and heron species. During the migration and winter period, other species were observed, respectively: *Clanga pomarina*, *Pelecanus crispus*, *Pelecanus onocrotalus*, *Branta ruficollis*, *Phalacrocorax pygmaeus*, *Anser albifrons*, *Tadorna ferruginea*, etc. The list of bird species observed and identified in the observation stations along Slava River, and its tributary, Ciucurova, is presented in tables no. 4-5.

Photo 13. Slava River. Wading bird species in the discharge area (photo V. Cuzic)
Foto 13. Râul Slava. Păsări limicole în zona de vărsare

Photo 14. Slava River. *Pelecanus onocrotalus* (photo V. Cuzic)
Foto 14. Râul Slava. Pelecanus onocrotalus

Taița River has its springs in the forest massif near Fagilor Valley and the avifauna in this sampling station is typical to North Dobrogea forest habitat .

In existing shrub habitats at monitoring points along the river, the species that occur more frequently are: *Sylvia communis, Sylvia curruca*, *Turdus merula*, *Turdus philomelos*, *Luscinia megarhynchos*, *Erithacus rubecula*, *Phoenicurus phoenicurus*, *Muscicapa striata, Parus major*, *Cyanistes caeruleus*, *Lanius collurio*, *Carduelis carduelis*, *Carduelis chloris*, *Oriolus oriolus*, *Phasianus colchicus*, *Accipiter nisus*, *Falco tinnunculus*, *Upupa epops*. The reed areas from the river monitoring points are occupied, for nesting, by swamp bird species.

In the area where the Taița River flows into Topraichioi Lake, the avifauna is specific to wetlands and lakes and there were observed species such as: *Plegadis falcinellus* (Photo 15), *Podiceps cristatus*, *Podiceps griseigena*, *Podiceps nigricollis*, *Aythya nyroca*, *Anas strepera*, *Anas querquedulla*, *Larus ridibundus*, *Sterna hirundo*, *Fulica atra*, *Ardea cinerea, Ardea purpurea*, *Casmerodius albus, Ardeea cinerea, Ciconia nigra* (Photo 16) *Ardeola ralloides, Egreta garzetta*, *Nycticorax nycticorax*, *Botaurus stellaris*, *Ixobrychus minutus, Gallinula chloropus*, *Circus aeruginosus*, *Acrocephalus palustris*, *Emberiza schoeniclus*, *Himantopus himantopus*, *Recurvirostra avocetta*, *Charadrius dubius*. During the migrations during the winter season, the presence of species was observed: *Clanga pomarina*, *Pelecanus crispus*, *Pelecanus onocrotalus*, *Branta ruficollis*, *Phalacrocorax pygmaeus*, *Anser albifrons*, *Tadorna ferruginea*, etc. The list of bird species observed and identified along the course of Taița River is presented in table no. 6.

Photo 15. Taița River. *Plegadis falcinellus* (photo V. Cuzic)
Foto 15. Râul Taița. Plegadis falcinellus

Photo 16. Taița River. *Ardeea alba, Ardea cinerea, Ciconia nigra* (photo V. Cuzic)
Foto 16. Râul Taița. Casmerodius albus, Ardea cinerea, Ciconia nigra

Telița River. The course of the river starting at springs from a forest habitat, respectively Niculițel Forest, at the base of Izvoare Hill, the avifauna from this sector is typical to the forest habitat.

In the habitat of bushes, along the river, the species that appear more frequently are: *Sylvia curruca*, *Sylvia atricapilla*, *Turdus merula, Turdus philomelos, Luscinia megarhynchos, Erithacus rubecula*, *Phoenicurus phoenicurus*, *Muscicapa striata*, *Parus major*, *Cyanistes caeruleus*, *Lanius collurio*, *Carduelis carduelis*, *Carduelis chloris*, *Oriolus oriolus*, *Phasianus colchicus*, *Falco tinnunculus*, *Upupa epops*.

The agroecosystems on the lower course of Telița River occupy a large part of its vicinity, hosting an avifauna represented in particular by: *Alauda arvensis*, *Gallerida cristata*, *Melanocorypha calandra*.

In the area where Telița River flows into Zebil pond, the avifauna is characteristic to the ponds, here being observed species such as: *Podiceps cristatus*, *Podiceps nigricollis*, *Aythya nyroca*, *Anas strepera*, *Anas querquedulla*, *Croicocephalus ridibundus*, *Sterna hirundo*, *Fulica atra*, *Ardea cinerea*, *Ardea purpurea*, *Ardeola ralloides*, *Egreta garzetta*, *Nycticorax nycticorax*, *Botaurus stellaris*, *Ixobrychus minutus*, *Gallinula chloropus*, *Circus aeruginosus*, *Acrocephalus palustris*, *Emberiza schoeniclus*, *Himantopus himantopus*, *Recurvirostra avocetta*, *Charadrius dubius, Galinago galinago* (Photo 17). During the migrations, species such as: *Clanga pomarina*, *Pelecanus crispus*, *Pelecanus onocrotalus*, *Branta ruficollis*, *Phalacrocorax*

pygmaeus, *Anser albifrons*, *Tadorna tadorna*, *Tadorna ferruginea* were observed. The list of bird species observed and identified along Telița River is presented in table no. 7.

Photo 17. Telița River. *Galinago galinago* (photo V. Cuzic)
Foto 17. Râul Telița. Galinago galinago

From the point of view of the total number of bird species recorded in the four monitoring stations, corresponding to each river (Tables 2-6), the following situation emerges: 143 species along the Casimcea River, 221 species along Hamangia River, 209 species per the course of Slava River and 98 species along its tributary, Ciucurova, 190 species along Taița River, and, respectively, 159 species along the Telița River. As can be seen, the largest number of bird species for the four monitoring stations, on each watercourse, was recorded on Hamangia River, the smallest being on Telița River.

Tabel 2. List of the bird species identified along the Casimcea River
Tabelul 2. Lista speciilor de păsări identificate pe cursul râului Casimcea

Cs1 (spring area)	**Cs2** (”La Colțani”)	**Cs3** (Casian Monastery)	**Cs4** (discharge area)
Accipiter gentilis	*Accipiter nisus*	*Accipiter gentilis*	*Accipiter nisus*
Accipiter nisus	*Acrocephalus arundinaceus*	*Accipiter nisus*	*Actitis hipoleucos*
Acrocephalus arundinaceus	*Actitis hipoleucos*	*Acrocephalus arundinaceus*	*Alauda arvensis*
Actitis hipoleucos	*Alauda arvensis*	*Acrocephalus palustris*	*Anas platyrhynchos*
Alauda arvensis	*Anas platyrhynchos*	*Acrocephalus scripaceus*	*Anser anser*
Anthus campestris	*Anser anser*	*Actitis hipoleucos*	*Anthus campestris*
Aquila pennata	*Anthus campestris*	*Alauda arvensis*	*Aquila pennata*
Ardea cinerea	*Aquila pennata*	*Anas platyrhynchos*	*Clanga pomarina*
Ardeola ralloides	*Ardea cinerea*	*Anas querquedula*	*Ardea cinerea*
Buteo buteo	*Athene noctua*	*Anser anser*	*Athene noctua*
Buteo lagopus	*Burhinus oedicnemus*	*Anthus campestris*	*Burhinus oedicnemus*
Buteo rufinus	*Buteo buteo*	*Aquila pennata*	*Buteo buteo*
Carduelis cannabina	*Buteo lagopus*	*Ardea cinerea*	*Buteo lagopus*
Carduelis carduelis	*Buteo rufinus*	*Ardeola ralloides*	*Buteo rufinus*
Carduelis chloris	*Calandrella brachydactyla*	*Athene noctua*	*Carduelis carduelis*
Carduelis spinus	*Carduelis carduelis*	*Aythya ferina*	*Carduelis chloris*
Charadrius alexandrinus	*Carduelis chloris*	*Botaurus stellaris*	*Carduelis spinus*
Ciconia ciconia	*Carduelis spinus*	*Buteo buteo*	*Ciconia ciconia*
Circaetus gallicus	*Ciconia ciconia*	*Buteo lagopus*	*Ciconia nigra*
Circus cyaneus	*Ciconia nigra*	*Buteo rufinus*	*Circaetus gallicus*
Circus macrourus	*Circaetus gallicus*	*Calandrella brachydactyla*	*Circus aeruginosus*
Clanga pomarina	*Circus aeruginosus*	*Caprimulgus europaeus*	*Circus cyaneus*
Columba palumbus	*Circus cyaneus*	*Carduelis cannabina*	*Circus macrourus*
Coracias garrulus	*Circus macrourus*	*Carduelis carduelis*	*Coracias garrulus*
Corvus corone	*Clanga pomarina*	*Carduelis chloris*	*Corvus corone*
Corvus frugilegus	*Coracias garrulus*	*Carduelis spinus*	*Corvus frugilegus*
Corvus monedula	*Corvus corone*	*Charadrius alexandrinus*	*Corvus monedula*
Coturnix coturnix	*Corvus frugilegus*	*Chlidonias hybrida*	*Coturnix coturnix*
Cuculus canorus	*Corvus monedula*	*Chlidonias leucopterus*	*Cuculus canorus*
Dendrocopos syriacus	*Coturnix coturnix*	*Ciconia ciconia*	*Delichon urbicum*
Egretta garzetta	*Cuculus canorus*	*Ciconia nigra*	*Egretta garzetta*
Emberiza calandra	*Delichon urbicum*	*Circaetus gallicus*	*Emberiza calandra*
Emberiza hortulana	*Egretta garzetta*	*Circus aeruginosus*	*Falco columbarius*
Erithacus rubecula	*Emberiza calandra*	*Circus cyaneus*	*Falco subbuteo*
Falco columbarius	*Emberiza hortulana*	*Circus macrourus*	*Falco tinnunculus*
Falco subbuteo	*Emberiza melanocephala*	*Clanga pomarina*	*Falco vespertinus*
Falco tinnunculus	*Erithacus rubecula*	*Coccothraustes coccothraustes*	*Fringilla coelebs*
Falco vespertinus	*Falco columbarius*	*Columba palumbus*	*Fringilla montifringilla*
Fringilla coelebs	*Falco subbuteo*	*Coracias garrulus*	*Galerida cristata*
Fringilla montifringilla	*Falco tinnunculus*	*Corvus corone*	*Haliaeetus albicilla*
Galerida cristata	*Falco vespertinus*	*Corvus frugilegus*	*Hirundo rustica*
Garrulus glandarius	*Fringilla montifringilla*	*Corvus monedula*	*Lanius collurio*
Hirundo rustica	*Galerida cristata*	*Coturnix coturnix*	*Lanius minor*
Lanius collurio	*Hirundo rustica*	*Cuculus canorus*	*Larus canus*
Lanius minor	*Lanius collurio*	*Dendrocopos medius*	*Larus ridibundus*
Larus ridibundus	*Lanius minor*	*Dendrocopos minor*	*Luscinia megarhynchos*
Luscinia megarhynchos	*Larus ridibundus*	*Dendrocopos syriacus*	*Melanocorypha calandra*
Melanocorypha		*Egretta alba*	
		Egretta garzetta	
		Emberiza calandra	

Cs1 (spring area)	**Cs2** (”La Colțani”)	**Cs3** (Casian Monastery)	**Cs4** (discharge area)
calandra	*Melanocorypha calandra*	*Emberiza hortulana*	*Merops apiaster*
Merops apiaster	*Merops apiaster*	*Emberiza melanocephala*	*Milvus migrans*
Milvus migrans	*Milvus migrans*	*Emberiza schoeniclus*	*Motacilla alba*
Motacilla alba	*Motacilla alba*	*Erithacus rubecula*	*Motacilla cinerea*
Motacilla cinerea	*Motacilla cinerea*	*Falco columbarius*	*Motacilla flava*
Motacilla flava	*Motacilla flava*	*Falco subbuteo*	*Oenanthe oenanthe*
Muscicapa striata	*Oenanthe isabellina*	*Falco tinnunculus*	*Oriolus oriolus*
Oenanthe oenanthe	*Oenanthe oenanthe*	*Falco vespertinus*	*Parus caeruleus*
Oriolus oriolus	*Oriolus oriolus*	*Ficedula albicollis*	*Parus major*
Parus caeruleus	*Parus caeruleus*	*Ficedula parva*	*Passer domesticus*
Parus major	*Parus major*	*Fringilla coelebs*	*Passer montanus*
Passer domesticus	*Passer domesticus*	*Fringilla montifringilla*	*Perdix perdix*
Passer montanus	*Passer montanus*	*Fulica atra*	*Phasianus colchius*
Perdix perdix	*Perdix perdix*	*Galerida cristata*	*Phoenicurus ochruros*
Pernis apivorus	*Phasianus colchius*	*Gallinago gallinago*	*Phoenicurus phoenicurus*
Phasianus colchius	*Phoenicurus ochruros*	*Gallinula chloropus*	*Phylloscopus collybita*
Phoenicurus ochruros	*Phoenicurus phoenicurus*	*Garrulus glandarius*	*Pica pica*
Phoenicurus phoenicurus	*Phylloscopus collybita*	*Haliaeetus albicilla*	*Riparia riparia*
Phylloscopus collybita	*Pica pica*	*Hippolais pallida*	*Saxicola rubetra*
Pica pica	*Riparia riparia*	*Hirundo rustica*	*Serinus serinus*
Riparia riparia	*Saxicola rubetra*	*Lanius collurio*	*Streptopelia decaocto*
Saxicola rubetra	*Serinus serinus*	*Lanius excubitor*	*Streptopelia turtur*
Serinus serinus	*Streptopelia decaocto*	*Lanius minor*	*Sturnus vulgaris*
Streptopelia decaocto	*Sturnus vulgaris*	*Lanius senator*	*Turdus merula*
Streptopelia turtur	*Troglodytes troglodytes*	*Larus minutus*	*Upupa epops*
Sturnus vulgaris	*Turdus merula*	*Larus ridibundus*	*Vanellus vanellus*
Sylvia curruca	*Upupa epops*	*Limosa limosa*	
Sylvia nisoria	*Vanellus vanellus*	*Lullula arborea*	
Troglodytes troglodytes		*Luscinia megarhynchos*	
Turdus iliacus		*Melanocorypha calandra*	
Turdus merula		*Merops apiaster*	
Turdus philomelos		*Milvus migrans*	
Turdus pilaris		*Motacilla alba*	
Upupa epops		*Motacilla cinerea*	
Vanellus vanellus		*Motacilla flava*	
		Muscicapa striata	
		Numenius arquata	
		Nycticorax nycticorax	
		Oenanthe isabellina	
		Oenanthe oenanthe	
		Oenanthe pleschanka	
		Oriolus oriolus	
		Otus scops	
		Parus caeruleus	
		Parus major	
		Passer domesticus	
		Passer hispaniolensis	
		Passer montanus	
		Perdix perdix	
		Pernis apivorus	
		Phalacrocorax carbo	
		Phalacrocorax pygmeus	
		Phasianus colchius	
		Phoenicurus ochruros	

Cs1 (spring area)	**Cs2** (”La Colțani”)	**Cs3** (Casian Monastery)	**Cs4** (discharge area)
		Phoenicurus phoenicurus *Phylloscopus collybita* *Phylloscopus sibilatrix* *Phylloscopus trochilus* *Pica pica* *Picus canus* *Podiceps cristatus* *Podiceps grisegena* *Prunella modularis* *Rallus aquaticus* *Regulus regulus* *Riparia riparia* *Saxicola rubicola* *Serinus serinus* *Sitta europaea* *Sterna hirundo* *Streptopelia decaocto* *Streptopelia turtur* *Strix aluco* *Sturnus vulgaris* *Sylvia atricapilla* *Sylvia communis* *Sylvia curruca* *Sylvia nisoria* *Tringa glareola* *Tringa ochropus* *Tringa totanus* *Troglodytes troglodytes* *Turdus iliacus* *Turdus merula* *Turdus philomelos* *Turdus pilaris* *Turdus viscivorus* *Upupa epops* *Vanellus vanellus*	
Total number of species per station			
82	**74**	**139**	**72**

Tabel 3. List of the bird species identified along the Hamangia River
Tabelul 3. Lista speciilor de păsări identificate pe cursul râului Hamangia

H1 (spring area)	**H2** (downstream Stejaru)	**H3** (Beidaud)	**H4** (discharge area)
Accipiter brevipes	*Accipiter gentilis*	*Accipiter brevipes*	*Accipiter nisus*
Accipiter gentilis	*Accipiter nisus*	*Accipiter gentilis*	*Acrocephalus arundinaceus*
Accipiter nisus	*Actitis hipoleucos*	*Accipiter nisus*	*Acrocephalus palustris*
Alauda arvensis	*Alauda arvensis*	*Actitis hipoleucos*	*Acrocephalus schoenobaenus*
Anthus campestris	*Anthus campestris*	*Anthus campestris*	*Acrocephalus scripaceus*
Anthus trivialis	*Clanga pomarina*	*Clanga pomarina*	*Actitis hipoleucos*
Clanga pomarina	*Asio otus*	*Athene noctua*	*Aegithalos caudatus*
Asio otus	*Athene noctua*	*Burhinus oedicnemus*	*Alauda arvensis*
Athene noctua	*Burhinus oedicnemus*	*Buteo buteo*	*Alcedo atthis*
Buteo buteo	*Buteo buteo*	*Buteo lagopus*	*Anas acuta*
Buteo lagopus	*Buteo lagopus*	*Buteo rufinus*	*Anas clypeata*
Caprimulgus europaeus	*Buteo rufinus*	*Calandrella brachydactyla*	*Anas crecca*
Carduelis cannabina	*Calandrella brachydactyla*	*Caprimulgus europaeus*	*Anas penelope*
Carduelis carduelis	*Caprimulgus europaeus*	*Carduelis carduelis*	*Anas platyrhynchos*
Carduelis chloris	*Carduelis cannabina*	*Carduelis chloris*	*Anas querquedula*
Carduelis spinus	*Carduelis carduelis*	*Carduelis spinus*	*Anas strepera*
Certhia familiaris	*Carduelis chloris*	*Charadrius alexandrinus*	*Anser albifrons*
Ciconia ciconia	*Carduelis spinus*	*Charadrius dubius*	*Anser anser*
Circaetus gallicus	*Certhia familiaris*	*Ciconia ciconia*	*Anthus campestris*
Circus cyaneus	*Ciconia ciconia*	*Circaetus gallicus*	*Ardea cinerea*
Circus macrourus	*Circaetus gallicus*	*Circus cyaneus*	*Ardea purpurea*
Coccothraustes coccothraustes	*Circus cyaneus*	*Circus macrourus*	*Ardeola ralloides*
Columba palumbus	*Circus macrourus*	*Columba palumbus*	*Athene noctua*
Coracias garrulus	*Coccothraustes coccothraustes*	*Coracias garrulus*	*Aythya ferina*
Corvus corax	*Columba palumbus*	*Corvus corone*	*Aythya fuligula*
Corvus corone	*Coracias garrulus*	*Corvus frugilegus*	*Aythya nyroca*
Corvus frugilegus	*Corvus corax*	*Corvus monedula*	*Botaurus stellaris*
Corvus monedula	*Corvus corone*	*Coturnix coturnix*	*Branta ruficollis*
Cuculus canorus	*Corvus frugilegus*	*Crex crex*	*Buteo lagopus*
Dendrocopos major	*Corvus monedula*	*Cuculus canorus*	*Calidris alba*
Dendrocopos medius	*Cuculus canorus*	*Delichon urbicum*	*Calidris alpina*
Dendrocopos minor	*Delichon urbicum*	*Dendrocopos syriacus*	*Calidris ferruginea*
Dendrocopos syriacus	*Dendrocopos major*	*Emberiza calandra*	*Calidris minuta*
Dryocopus martius	*Dendrocopos medius*	*Emberiza melanocephala*	*Carduelis cannabina*
Emberiza calandra	*Dendrocopos minor*	*Erithacus rubecula*	*Carduelis carduelis*
Emberiza cirlus	*Dendrocopos syriacus*	*Falco columbarius*	*Carduelis chloris*
Emberiza citrinella	*Emberiza calandra*	*Falco subbuteo*	*Carduelis spinus*
Emberiza hortulana	*Emberiza hortulana*	*Falco vespertinus*	*Charadrius alexandrinus*
Erithacus rubecula	*Emberiza melanocephala*	*Ficedula parva*	*Charadrius dubius*
Falco cherrug	*Erithacus rubecula*	*Fringilla coelebs*	*Chlidonias hybrida*
Falco columbarius	*Falco subbuteo*	*Fringilla montifringilla*	*Chlidonias leucopterus*
Falco subbuteo	*Falco tinnunculus*	*Galerida cristata*	*Chlidonias niger*
Falco tinnunculus	*Falco vespertinus*	*Garrulus glandarius*	*Ciconia ciconia*
Falco vespertinus	*Ficedula parva*	*Glareola pratincola*	*Ciconia nigra*
Ficedula parva	*Fringilla coelebs*	*Hippolais pallida*	*Circus aeruginosus*
Fringilla coelebs	*Fringilla montifringilla*	*Hiraaetus pennatus*	*Circus cyaneus*
Fringilla montifringilla	*Galerida cristata*	*Hirundo rustica*	*Circus macrourus*
Galerida cristata	*Garrulus glandarius*	*Lanius excubitor*	
Garrulus glandarius			

H1 (spring area)	**H2** (downstream Stejaru)	**H3** (Beidaud)	**H4** (discharge area)
Hippolais icterina	*Haliaeetus albicilla*	*Lanius minor*	*Clanga clanga*
Hippolais pallida	*Hippolais pallida*	*Lullula arborea*	*Clanga pomarina*
Hiraaetus pennatus	*Hiraaetus pennatus*	*Luscinia megarhynchos*	*Coracias garrulus*
Hirundo rustica	*Hirundo rustica*	*Melanocorypha calandra*	*Corvus corone*
Lanius collurio	*Lanius collurio*	*Merops apiaster*	*Corvus frugilegus*
Lanius minor	*Lanius excubitor*	*Milvus migrans*	*Corvus monedula*
Lullula arborea	*Lanius minor*	*Motacilla alba*	*Cuculus canorus*
Luscinia megarhynchos	*Lullula arborea*	*Motacilla cinerea*	*Cygnus cygnus*
Melanocorypha calandra	*Luscinia megarhynchos*	*Motacilla flava*	*Cygnus olor*
Merops apiaster	*Melanocorypha calandra*	*Muscicapa striata*	*Dendrocopos medius*
Motacilla alba	*Merops apiaster*	*Oenanthe isabellina*	*Dendrocopos syriacus*
Motacilla cinerea	*Milvus migrans*	*Oenanthe oenanthe*	*Egretta alba*
Motacilla flava	*Motacilla alba*	*Oriolus oriolus*	*Egretta garzetta*
Muscicapa striata	*Motacilla cinerea*	*Parus caeruleus*	*Emberiza calandra*
Oenanthe oenanthe	*Motacilla flava*	*Parus major*	*Emberiza schoeniclus*
Oriolus oriolus	*Muscicapa striata*	*Passer domesticus*	*Falco columbarius*
Otus scops	*Oenanthe isabellina*	*Passer montanus*	*Falco subbuteo*
Parus caeruleus	*Oenanthe oenanthe*	*Perdix perdix*	*Falco tinnunculus*
Parus lugubris	*Oriolus oriolus*	*Pernis apivorus*	*Falco vespertinus*
Parus major	*Otus scops*	*Phasianus colchius*	*Ficedula parva*
Parus montanus	*Parus caeruleus*	*Phylloscopus collybita*	*Fringilla coelebs*
Passer montanus	*Parus major*	*Phylloscopus sibilatrix*	*Fringilla montifringilla*
Phasianus colchius	*Passer domesticus*	*Pica pica*	*Fulica atra*
Phoenicurus ochruros	*Passer montanus*	*Riparia riparia*	*Galerida cristata*
Phoenicurus phoenicurus	*Perdix perdix*	*Saxicola rubetra*	*Gallinago gallinago*
Phylloscopus collybita	*Pernis apivorus*	*Serinus serinus*	*Gallinula chloropus*
Phylloscopus sibilatrix	*Phasianus colchius*	*Streptopelia decaocto*	*Gavia arctica*
Phylloscopus trochilus	*Phoenicurus ochruros*	*Streptopelia turtur*	*Glareola pratincola*
Pica pica	*Phoenicurus phoenicurus*	*Strix aluco*	*Haematopus ostralegus*
Picus canus	*Phylloscopus collybita*	*Sturnus roseus*	*Haliaeetus albicilla*
Picus viridis	*Phylloscopus sibilatrix*	*Sylvia atricapilla*	*Himantopus himantopus*
Prunella modularis	*Phylloscopus trochilus*	*Sylvia curruca*	*Hiraaetus pennata*
Pyrrhula pyrrhula	*Pica pica*	*Sylvia nisoria*	*Hirundo rustica*
Regulus regulus	*Picus viridis*	*Troglodytes troglodytes*	*Ixobrychus minutus*
Saxicola rubetra	*Pyrrhula pyrrhula*	*Turdus merula*	*Lanius collurio*
Serinus serinus	*Regulus regulus*	*Turdus philomelos*	*Larus canus*
Sitta europaea	*Riparia riparia*	*Turdus pilaris*	*Larus melanocephalus*
Streptopelia turtur	*Saxicola rubetra*	*Upupa epops*	*Larus michaelis*
Strix aluco	*Serinus serinus*		*Larus minutus*
Sturnus vulgaris	*Sitta europaea*		*Larus ridibundus*
Sylvia atricapilla	*Streptopelia decaocto*		*Limosa limosa*
Sylvia borin	*Streptopelia turtur*		*Locustella fluviatilis*
Sylvia communis	*Strix aluco*		*Locustella luscinioides*
Sylvia curruca	*Sturnus vulgaris*		*Luscinia megarhynchos*
Sylvia nisoria	*Sylvia atricapilla*		*Mergelus albellus*
Troglodytes troglodytes	*Sylvia communis*		*Merops apiaster*
Turdus iliacus	*Sylvia curruca*		*Milvus migrans*
Turdus merula	*Sylvia nisoria*		*Motacilla alba*
Turdus philomelos	*Troglodytes troglodytes*		*Motacilla cinerea*
Turdus pilaris	*Turdus iliacus*		*Motacilla flava*
	Turdus merula		*Muscicapa striata*
	Turdus philomelos		*Netta rufina*

H1 (spring area)	**H2** (downstream Stejaru)	**H3** (Beidaud)	**H4** (discharge area)
Turdus viscivorus *Upupa epops*	*Turdus pilaris* *Turdus viscivorus* *Upupa epops*		*Numenius arquata* *Nycticorax nycticorax* *Oriolus oriolus* *Parus caeruleus* *Parus cristatus* *Parus major* *Passer domesticus* *Passer montanus* *Pelecanus crispus* *Pelecanus onocrotalus* *Phalacrocorax carbo* *Phalacrocorax pygmeus* *Phalaropus lobatus* *Phasianus colchius* *Phoenicurus ochruros* *Phoenicurus phoenicurus* *Phylomachus pugnax* *Pica pica* *Platalea leucorodia* *Plegadis falcinelles* *Podiceps cristatus* *Podiceps grisegena* *Podiceps nigricollis* *Porzana parva* *Porzana porzana* *Rallus aquaticus* *Recurvirostra avosetta* *Regulus ignicapilus* *Remiz pendulinus* *Riparia riparia* *Saxicola rubetra* *Serinus serinus* *Sterna albifrons* *Sterna caspia* *Sterna hirundo* *Sterna nilotica* *Sturnus vulgaris* *Tachybaptus rufficolis* *Tadorna ferruginea* *Tadorna tadorna* *Tringa erythropus* *Tringa glareola* *Tringa nebularia* *Tringa ochropus* *Tringa stagnatilis* *Tringa totanus* *Upupa epops* *Vanellus vanellus*
Total number of species per station			
101	**103**	**86**	**147**

Tabel 4. List of the bird species observed along the Slava River
Tabelul 4. Lista speciilor de păsări observate de-a lungul râului Slava

Sl 1 (spring area)	**Sl 2** (downstream Sl. Rusă)	**Sl 3** (downstream Caugagia)	**Sl 4** (discharge area)
Accipiter gentilis	*Accipiter nisus*	*Accipiter gentilis*	*Accipiter nisus*
Accipiter nisus	*Alauda arvensis*	*Accipiter nisus*	*Acrocephalus arundinaceus*
Alauda arvensis	*Anthus campestris*	*Actitis hipoleucos*	*Acrocephalus palustris*
Anthus trivialis	*Aquila pennata*	*Anthus campestris*	*Acrocephalus schoenobaenus*
Aquila pennata	*Asio otus*	*Aquila pennata*	*Acrocephalus scripaceus*
Athene noctua	*Athene noctua*	*Athene noctua*	*Actitis hipoleucos*
Buteo buteo	*Buteo buteo*	*Burhinus oedicnemus*	*Aegithalos caudatus*
Buteo lagopus	*Buteo lagopus*	*Buteo buteo*	*Alauda arvensis*
Caprimulgus europaeus	*Caprimulgus europaeus*	*Buteo lagopus*	*Alcedo atthis*
Carduelis cannabina	*Carduelis cannabina*	*Buteo rufinus*	*Anas acuta*
Carduelis carduelis	*Carduelis carduelis*	*Calandrella brachydactyla*	*Anas clypeata*
Carduelis chloris	*Carduelis chloris*	*Caprimulgus europaeus*	*Anas crecca*
Carduelis spinus	*Carduelis spinus*	*Carduelis carduelis*	*Anas penelope*
Certhia familiaris	*Ciconia ciconia*	*Carduelis chloris*	*Anas platyrhynchos*
Ciconia ciconia	*Ciconia nigra*	*Carduelis spinus*	*Anas querquedula*
Circus macrourus	*Circaetus gallicus*	*Charadrius alexandrinus*	*Anas strepera*
Clanga pomarina	*Circus aeruginosus*	*Charadrius dubius*	*Anser albifrons*
Coccothraustes coccothraustes	*Circus cyaneus*	*Ciconia ciconia*	*Anser anser*
Columba oenas	*Clanga pomarina*	*Circaetus gallicus*	*Aquila pennata*
Columba palumbus	*Coccothraustes coccothraustes*	*Circus cyaneus*	*Ardea alba*
Coracias garrulus	*Columba palumbus*	*Circus macrourus*	*Ardea cinerea*
Corvus corone	*Coracias garrulus*	*Clanga pomarina*	*Ardea purpurea*
Corvus frugilegus	*Corvus corone*	*Columba palumbus*	*Ardeola ralloides*
Corvus monedula	*Corvus frugilegus*	*Coracias garrulus*	*Athene noctua*
Cuculus canorus	*Corvus monedula*	*Corvus corone*	*Aythya ferina*
Dendrocopos major	*Cuculus canorus*	*Corvus frugilegus*	*Aythya fuligula*
Dendrocopos medius	*Delichon urbicum*	*Corvus monedula*	*Aythya nyroca*
Dendrocopos minor	*Dendrocopos medius*	*Coturnix coturnix*	*Botaurus stellaris*
Dendrocopos syriacus	*Dendrocopos minor*	*Cuculus canorus*	*Branta ruficollis*
Dryocopus martius	*Emberiza calandra*	*Delichon urbicum*	*Buteo lagopus*
Emberiza calandra	*Erithacus rubecula*	*Dendrocopos syriacus*	*Calidris alba*
Erithacus rubecula	*Falco columbarius*	*Emberiza calandra*	*Calidris alpina*
Falco subbuteo	*Falco subbuteo*	*Emberiza melanocephala*	*Calidris ferruginea*
Falco tinnunculus	*Falco tinnunculus*	*Erithacus rubecula*	*Calidris minuta*
Ficedula albicollis	*Falco vespertinus*	*Falco columbarius*	*Carduelis cannabina*
Ficedula parva	*Ficedula parva*	*Falco subbuteo*	*Carduelis carduelis*
Fringilla coelebs	*Fringilla coelebs*	*Falco vespertinus*	*Carduelis chloris*
Fringilla montifringilla	*Fringilla montifringilla*	*Ficedula parva*	*Carduelis spinus*
Garrulus glandarius	*Galerida cristata*	*Fringilla coelebs*	*Charadrius alexandrinus*
Hippolais icterina	*Garrulus glandarius*	*Fringilla montifringilla*	*Charadrius dubius*
Hirundo rustica	*Hirundo rustica*	*Galerida cristata*	*Chlidonias hybrida*
Lanius collurio	*Lanius collurio*	*Garrulus glandarius*	*Chlidonias leucoptera*
Lanius minor	*Lanius minor*	*Glareola pratincola*	*Chlidonias niger*
Lullula arborea	*Luscinia megarhynchos*	*Hippolais pallida*	*Ciconia ciconia*
Luscinia megarhynchos	*Merops apiaster*	*Hirundo rustica*	*Ciconia nigra*
Merops apiaster	*Milvus migrans*	*Lanius excubitor*	
	Motacilla alba		
	Motacilla cinerea		

Sl 1 (spring area)	**Sl 2** (downstream Sl. Rusă)	**Sl 3** (downstream Caugagia)	**Sl 4** (discharge area)
Milvus migrans	*Motacilla flava*	*Lanius minor*	*Circus aeruginosus*
Motacilla alba	*Oenanthe oenanthe*	*Lullula arborea*	*Circus cyaneus*
Motacilla cinerea	*Oriolus oriolus*	*Luscinia megarhynchos*	*Circus macrourus*
Motacilla flava	*Otus scops*	*Melanocorypha calandra*	*Clanga pomarina*
Oriolus oriolus	*Parus caeruleus*	*Merops apiaster*	*Coracias garrulus*
Otus scops	*Parus major*	*Milvus migrans*	*Corvus corone*
Parus caeruleus	*Passer domesticus*	*Motacilla alba*	*Corvus frugilegus*
Parus major	*Passer montanus*	*Motacilla cinerea*	*Corvus monedula*
Passer montanus	*Perdix perdix*	*Motacilla flava*	*Croicocephalus ridibundus*
Pernis apivorus	*Pernis apivorus*	*Muscicapa striata*	*Cuculus canorus*
Phoenicurus ochruros	*Phasianus colchius*	*Oenanthe isabellina*	*Cygnus cygnus*
Phoenicurus phoenicurus	*Phylloscopus collybita*	*Oenanthe oenanthe*	*Cygnus olor*
Phylloscopus collybita	*Phylloscopus sibilatrix*	*Oriolus oriolus*	*Dendrocopos syriacus*
Phylloscopus sibilatrix	*Phylloscopus trochilus*	*Parus caeruleus*	*Egretta garzetta*
Phylloscopus trochilus	*Pica pica*	*Parus major*	*Emberiza calandra*
Pica pica	*Picus canus*	*Passer domesticus*	*Emberiza schoeniclus*
Picus canus	*Serinus serinus*	*Passer montanus*	*Falco columbarius*
Picus viridis	*Streptopelia decaocto*	*Pastor roseus*	*Falco subbuteo*
Prunella modularis	*Streptopelia turtur*	*Perdix perdix*	*Falco tinnunculus*
Saxicola rubetra	*Strix aluco*	*Pernis apivorus*	*Falco vespertinus*
Saxicola torquatus	*Sturnus roseus*	*Phasianus colchius*	*Ficedula parva*
Serinus serinus	*Sturnus vulgaris*	*Phylloscopus collybita*	*Fringilla coelebs*
Sitta europaea	*Sylvia atricapilla*	*Phylloscopus sibilatrix*	*Fringilla montifringilla*
Streptopelia decaocto	*Turdus merula*	*Pica pica*	*Fulica atra*
Streptopelia turtur	*Turdus philomelos*	*Riparia riparia*	*Galerida cristata*
Strix aluco	*Turdus pilaris*	*Saxicola rubetra*	*Gallinago gallinago*
Sturnus vulgaris	*Upupa epops*	*Serinus serinus*	*Gallinula chloropus*
Sylvia atricapilla		*Streptopelia decaocto*	*Gavia arctica*
Sylvia curruca		*Streptopelia turtur*	*Glareola pratincola*
Sylvia nisoria		*Strix aluco*	*Haematopus ostralegus*
Troglodytes troglodytes		*Sylvia atricapilla*	*Haliaeetus albicilla*
Turdus iliacus		*Sylvia curruca*	*Himantopus himantopus*
Turdus merula		*Sylvia nisoria*	*Hirundo rustica*
Turdus philomelos		*Troglodytes troglodytes*	*Hydrocoleus minutus*
Turdus pilaris		*Turdus merula*	*Ixobrychus minutus*
Turdus viscivorus		*Turdus philomelos*	*Lanius collurio*
Upupa epops		*Turdus pilaris*	*Larus canus*
		Upupa epops	*Larus melanocephalus*
			Larus michaelis
			Limosa limosa
			Locustella fluviatilis
			Locustella luscinioides
			Luscinia megarhynchos
			Mergus albellus
			Merops apiaster
			Milvus migrans
			Motacilla alba
			Motacilla cinerea
			Motacilla flava
			Muscicapa striata

Sl 1 (spring area)	**Sl 2** (downstream Sl. Rusă)	**Sl 3** (downstream Caugagia)	**Sl 4** (discharge area)
			Netta rufina *Numenius arquata* *Nycticorax nycticorax* *Oriolus oriolus* *Parus caeruleus* *Parus cristatus* *Parus major* *Passer domesticus* *Passer montanus* *Pelecanus crispus* *Pelecanus onocrotalus* *Phalacrocorax carbo* *Phalacrocorax pygmeus* *Phalaropus lobatus* *Phasianus colchius* *Phoenicurus ochruros* *Phoenicurus phoenicurus* *Phylomachus pugnax* *Pica pica* *Platalea leucorodia* *Plegadis falcinelles* *Podiceps cristatus* *Podiceps grisegena* *Podiceps nigricollis* *Porzana parva* *Porzana porzana* *Rallus aquaticus* *Recurvirostra avosetta* *Regulus ignicapilus* *Remiz pendulinus* *Riparia riparia* *Saxicola rubetra* *Sterna albifrons* *Sterna caspia* *Sterna hirundo* *Sterna nilotica* *Sturnus vulgaris* *Tachybaptus rufficolis* *Tadorna ferruginea* *Tadorna tadorna* *Tringa erythropus* *Tringa glareola* *Tringa nebularia* *Tringa ochropus* *Tringa stagnatilis* *Tringa totanus* *Upupa epops* *Vanellus vanellus*
Total number of species per station			
84	**75**	**84**	**143**

Tabel 5. List of the bird species identified along the Ciucurova Tributary
Tabelul 5. Lista speciilor de păsări identificate pe cursul afluentului Ciucurova

Ci1 (spring area)	**Ci2** (Monte Greco Oil Station)
Accipiter gentilis	*Accipiter gentilis*
Accipiter nisus	*Accipiter nisus*
Actitis hipoleucos	*Actitis hipoleucos*
Alauda arvensis	*Alauda arvensis*
Anthus campestris	*Anthus campestris*
Anthus trivialis	*Anthus trivialis*
Clanga pomarina	*Aquila pennata*
Asio otus	*Athene noctua*
Athene noctua	*Buteo buteo*
Buteo buteo	*Buteo lagopus*
Buteo lagopus	*Carduelis cannabina*
Caprimulgus europaeus	*Carduelis carduelis*
Carduelis cannabina	*Carduelis chloris*
Carduelis carduelis	*Carduelis spinus*
Carduelis chloris	*Certhia familiaris*
Carduelis spinus	*Ciconia ciconia*
Certhia familiaris	*Circaetus gallicus*
Ciconia ciconia	*Circus cyaneus*
Circaetus gallicus	*Circus macrourus*
Circus cyaneus	*Clanga pomarina*
Circus macrourus	*Coccothraustes coccothraustes*
Coccothraustes coccothraustes	*Columba oenas*
Columba oenas	*Columba palumbus*
Columba palumbus	*Coracias garrulus*
Coracias garrulus	*Corvus corone*
Corvus corone cornix	*Corvus frugilegus*
Corvus frugilegus	*Corvus monedula*
Corvus monedula	*Cuculus canorus*
Cuculus canorus	*Dendrocopos medius*
Dendrocopos major	*Dendrocopos minor*
Dendrocopos medius	*Dendrocopos syriacus*
Dendrocopos minor	*Emberiza calandra*
Dendrocopos syriacus	*Emberiza citrinella*
Dryocopus martius	*Emberiza hortulana*
Emberiza calandra	*Erithacus rubecula*
Emberiza citrinella	*Falco columbarius*
Emberiza hortulana	*Falco subbuteo*
Erithacus rubecula	*Falco tinnunculus*
Falco columbarius	*Falco vespertinus*
Falco subbuteo	*Ficedula albicollis*
Falco tinnunculus	*Ficedula parva*
Falco vespertinus	*Fringilla coelebs*
Ficedula albicollis	*Fringilla montifringilla*
Ficedula parva	*Galerida cristata*
Fringilla coelebs	*Garrulus glandarius*
Fringilla montifringilla	*Hippolais pallida*
Galerida cristata	*Hirundo rustica*
Garrulus glandarius	*Lanius collurio*
Hippolais pallida	*Lanius minor*
Hiraaetus pennatus	*Lullula arborea*
Hirundo rustica	*Luscinia megarhynchos*

Ci1 (spring area)	**Ci2** (Monte Greco Oil Station)
Lanius collurio	*Merops apiaster*
Lanius isabellinus	*Milvus migrans*
Lanius minor	*Motacilla alba*
Lullula arborea	*Motacilla cinerea*
Luscinia megarhynchos	*Motacilla flava*
Merops apiaster	*Muscicapa striata*
Milvus migrans	*Oenanthe oenanthe*
Motacilla alba	*Oriolus oriolus*
Motacilla cinerea	*Otus scops*
Motacilla flava	*Parus caeruleus*
Muscicapa striata	*Parus lugubris*
Oenanthe oenanthe	*Parus major*
Oriolus oriolus	*Passer domesticus*
Otus scops	*Pernis apivorus*
Parus caeruleus	*Phasianus colchius*
Parus lugubris	*Phoenicurus ochruros*
Parus major	*Phoenicurus phoenicurus*
Passer domesticus	*Phylloscopus collybita*
Pernis apivorus	*Phylloscopus sibilatrix*
Phasianus colchius	*Pica pica*
Phoenicurus ochruros	*Picus canus*
Phoenicurus phoenicurus	*Prunella modularis*
Phylloscopus collybita	*Pyrrhula pyrrhula*
Phylloscopus sibilatrix	*Serinus serinus*
Phylloscopus trochilus	*Sitta europaea*
Pica pica	*Streptopelia decaocto*
Picus canus	*Streptopelia turtur*
Prunella modularis	*Sturnus vulgaris*
Pyrrhula pyrrhula	*Sylvia atricapilla*
Serinus serinus	*Sylvia curruca*
Sitta europaea	*Troglodytes troglodytes*
Streptopelia decaocto	*Turdus iliacus*
Streptopelia turtur	*Turdus merula*
Strix aluco	*Turdus philomelos*
Sturnus vulgaris	*Turdus pilaris*
Sylvia atricapilla	*Turdus viscivorus*
Sylvia communis	*Upupa epops*
Sylvia curruca	
Sylvia nisoria	
Troglodytes troglodytes	
Turdus iliacus	
Turdus merula	
Turdus philomelos	
Turdus pilaris	
Turdus viscivorus	
Upupa epops	
Total number of species per station	
97	**88**

Tabel 6. List of the bird species observed along the Taița River
Tabelul 6. Lista speciilor de păsări observate pe cursul râului Taița

Ta1 (spring area)	**Ta2** (confluence with Pârlita tributary)	**Ta3** (Consul Hill)	**Ta4** (discharge area)
Ciconia ciconia	*Ciconia nigra*	*Egretta garzetta*	*Phalacrocorax carbo*
Pernis apivorus	*Ciconia ciconia*	*Ardea cinerea*	*Phalacrocorax pygmeus*
Milvus migrans	*Pernis apivorus*	*Ciconia nigra*	*Pelecanus onocrotalus*
Circaetus gallicus	*Milvus migrans*	*Ciconia ciconia*	*Pelecanus crispus*
Circus cyaneus	*Circaetus gallicus*	*Anser anser*	*Botaurus stellaris*
Circus macrourus	*Circus aeruginosus*	*Anas platyrhynchos*	*Ixobrychus minutus*
Accipiter gentilis	*Circus cyaneus*	*Pernis apivorus*	*Nycticorax nycticorax*
Accipiter nisus	*Accipiter nisus*	*Milvus migrans*	*Ardeola ralloides*
Buteo buteo	*Buteo buteo*	*Haliaeetus albicilla*	*Egretta garzetta*
Buteo lagopus	*Buteo lagopus*	*Circaetus gallicus*	*Egretta alba*
Clanga pomarina	*Clanga pomarina*	*Circus aeruginosus*	*Ardea cinerea*
Aquila pennata	*Hiraaetus pennatus*	*Circus cyaneus*	*Ardea purpurea*
Falco tinnunculus	*Falco tinnunculus*	*Circus macrourus*	*Ciconia nigra*
Falco vespertinus	*Falco vespertinus*	*Accipiter nisus*	*Ciconia ciconia*
Falco columbarius	*Falco columbarius*	*Buteo buteo*	*Plegadis falcinellus*
Falco subbuteo	*Falco subbuteo*	*Buteo rufinus*	*Platalea leucorodia*
Phasianus colchius	*Perdix perdix*	*Buteo lagopus*	*Cygnus olor*
Actitis hipoleucos	*Phasianus colchius*	*Clanga pomarina*	*Cygnus cygnus*
Columba oenas	*Columba palumbus*	*Aquila pennata*	*Anser albifrons*
Columba palumbus	*Streptopelia decaocto*	*Falco tinnunculus*	*Anser anser*
Streptopelia decaocto	*Streptopelia turtur*	*Falco vespertinus*	*Branta ruficollis*
Streptopelia turtur	*Cuculus canorus*	*Falco columbarius*	*Tadorna ferruginea*
Cuculus canorus	*Otus scops*	*Falco subbuteo*	*Tadorna tadorna*
Otus scops	*Athene noctua*	*Perdix perdix*	*Anas penelope*
Athene noctua	*Strix aluco*	*Coturnix coturnix*	*Anas strepera*
Strix aluco	*Asio otus*	*Phasianus colchius*	*Anas crecca*
Asio otus	*Caprimulgus europaeus*	*Burhinus oedicnemus*	*Anas platyrhynchos*
Caprimulgus europaeus	*Merops apiaster*	*Vanellus vanellus*	*Anas acuta*
Merops apiaster	*Coracias garrulus*	*Actitis hipoleucos*	*Anas querquedula*
Coracias garrulus	*Upupa epops*	*Larus ridibundus*	*Anas clypeata*
Upupa epops	*Picus canus*	*Streptopelia decaocto*	*Netta rufina*
Picus canus	*Dendrocopos medius*	*Streptopelia turtur*	*Aythya ferina*
Dryocopus martius	*Dendrocopos minor*	*Cuculus canorus*	*Aythya nyroca*
Dendrocopos major	*Galerida cristata*	*Athene noctua*	*Aythya fuligula*
Dendrocopos syriacus	*Alauda arvensis*	*Merops apiaster*	*Mergus albellus*
Dendrocopos medius	*Hirundo rustica*	*Coracias garrulus*	*Milvus migrans*
Dendrocopos minor	*Delichon urbicum*	*Upupa epops*	*Haliaeetus albicilla*
Galerida cristata	*Anthus campestris*	*Melanocorypha calandra*	*Circus aeruginosus*
Lullula arborea	*Motacilla flava*	*Galerida cristata*	*Circus cyaneus*
Alauda arvensis	*Motacilla cinerea*	*Alauda arvensis*	*Circus macrourus*
Hirundo rustica	*Motacilla alba*	*Riparia riparia*	*Accipiter nisus*
Anthus campestris	*Erithacus rubecula*	*Hirundo rustica*	*Buteo lagopus*
Anthus trivialis	*Luscinia megarhynchos*	*Delichon urbicum*	*Clanga pomarina*
Motacilla flava	*Oenanthe oenanthe*	*Anthus campestris*	*Clanga clanga*
Motacilla cinerea	*Turdus merula*	*Motacilla flava*	*Aquilapennata*
Motacilla alba	*Turdus pilaris*	*Motacilla cinerea*	*Falco tinnunculus*
Troglodytes troglodytes	*Turdus philomelos*	*Motacilla alba*	*Falco vespertinus*
	Sylvia atricapilla	*Troglodytes troglodytes*	*Falco columbarius*
	Phylloscopus sibilatrix		

Prunella modularis	*Phylloscopus collybita*	*Erithacus rubecula*	*Falco subbuteo*
Erithacus rubecula	*Phylloscopus trochilus*	*Luscinia megarhynchos*	*Phasianus colchius*
Luscinia megarhynchos	*Ficedula parva*	*Phoenicurus ochruros*	*Rallus aquaticus*
Phoenicurus ochruros	*Parus caeruleus*	*Phoenicurus phoenicurus*	*Porzana porzana*
Phoenicurus phoenicurus	*Parus major*	*Saxicola rubetra*	*Porzana parva*
Oenanthe oenanthe	*Oriolus oriolus*	*Oenanthe isabellina*	*Gallinula chloropus*
Turdus merula	*Lanius collurio*	*Oenanthe oenanthe*	*Fulica atra*
Turdus pilaris	*Lanius minor*	*Turdus merula*	*Haematopus ostralegus*
Turdus philomelos	*Garrulus glandarius*	*Acrocephalus arundinaceus*	*Himantopus himantopus*
Turdus iliacus	*Pica pica*	*Hippolais pallida*	*Recurvirostra avosetta*
Turdus viscivorus	*Corvus monedula*	*Phylloscopus collybita*	*Glareola pratincola*
Hippolais pallida	*Corvus frugilegus*	*Parus caeruleus*	*Charadrius dubius*
Sylvia nisoria	*Corvus corone*	*Parus major*	*Charadrius alexandrinus*
Sylvia curruca	*Sturnus vulgaris*	*Oriolus oriolus*	*Vanellus vanellus*
Sylvia communis	*Sturnus roseus*	*Lanius collurio*	*Calidris alba*
Sylvia atricapilla	*Passer domesticus*	*Lanius minor*	*Calidris minuta*
Phylloscopus sibilatrix	*Passer montanus*	*Pica pica*	*Calidris ferruginea*
Phylloscopus collybita	*Fringilla coelebs*	*Corvus monedula*	*Calidris alpina*
Phylloscopus trochilus	*Fringilla montifringilla*	*Corvus frugilegus*	*Phylomachus pugnax*
Muscicapa striata	*Serinus serinus*	*Corvus corone*	*Gallinago gallinago*
Ficedula parva	*Carduelis chloris*	*Sturnus vulgaris*	*Limosa limosa*
Ficedula albicollis	*Carduelis carduelis*	*Passer domesticus*	*Numenius arquata*
Parus lugubris	*Carduelis spinus*	*Passer montanus*	*Tringa erythropus*
Parus caeruleus	*Carduelis cannabina*	*Fringilla coelebs*	*Tringa totanus*
Parus major	*Coccothraustes coccothraustes*	*Fringilla montifringilla*	*Tringa stagnatilis*
Sitta europaea	*Emberiza calandra*	*Serinus serinus*	*Tringa nebularia*
Certhia familiaris		*Carduelis chloris*	*Tringa ochropus*
Oriolus oriolus		*Carduelis carduelis*	*Tringa glareola*
Lanius collurio		*Carduelis spinus*	*Actitis hipoleucos*
Lanius minor		*Emberiza hortulana*	*Phalaropus lobatus*
Garrulus glandarius		*Emberiza melanocephala*	*Larus melanocephalus*
Pica pica		*Emberiza calandra*	*Larus minutus*
Corvus monedula			*Larus ridibundus*
Corvus frugilegus			*Larus canus*
Corvus corone			*Larus michaelis*
Sturnus vulgaris			*Sterna nilotica*
Passer domesticus			*Sterna caspia*
Fringilla coelebs			*Sterna hirundo*
Fringilla montifringilla			*Sterna albifrons*
Serinus serinus			*Chlidonias hybrida*
Carduelis chloris			*Chlidonias niger*
Carduelis carduelis			*Chlidonias leucopterus*
Carduelis spinus			*Cuculus canorus*
Carduelis cannabina			*Athene noctua*
Pyrrhula pyrrhula			*Alcedo atthis*
Coccothraustes coccothraustes			*Merops apiaster*
Emberiza citrinella			*Coracias garrulus*
Emberiza hortulana			*Upupa epops*
Emberiza calandra			*Dendrocopos syriacus*
			Dendrocopos medius
			Galerida cristata
			Alauda arvensis
			Riparia riparia
			Hirundo rustica

			Anthus campestris *Motacilla flava* *Motacilla cinerea* *Motacilla alba* *Luscinia megarhynchos* *Phoenicurus ochruros* *Phoenicurus phoenicurus* *Saxicola rubetra* *Locustella fluviatilis* *Locustella luscinioides* *Acrocephalus schoenobaenus* *Acrocephalus palustris* *Acrocephalus scripaceus* *Acrocephalus arundinaceus* *Regulus ignicapilus* *Muscicapa striata* *Ficedula parva* *Aegithalos caudatus* *Parus cristatus* *Parus caeruleus* *Parus major* *Remiz pendulinus* *Oriolus oriolus* *Lanius collurio* *Pica pica* *Corvus monedula* *Corvus frugilegus* *Corvus corone* *Sturnus vulgaris* *Passer domesticus* *Passer montanus* *Fringilla coelebs* *Fringilla montifringilla* *Serinus serinus* *Carduelis chloris* *Carduelis carduelis* *Carduelis spinus* *Carduelis cannabina* *Emberiza schoeniclus* *Emberiza calandra*
Total number of species per station			
96	**75**	**81**	**142**

Tabel 7. List of the bird species observed along the Telița River
Tabelul 7. Lista speciilor de păsări observate pe cursul râului Telița

Te1 (spring area)	**Te2** (confluence with Celic Dere tributary)	**Te3** (Water Mill)	**Te4** (discharge area)
Circus cyaneus	*Ciconia ciconia*	*Ciconia nigra*	*Phalacrocorax carbo*
Circus macrourus	*Pernis apivorus*	*Ciconia ciconia*	*Phalacrocorax*
Accipiter gentilis	*Milvus migrans*	*Pernis apivorus*	*pygmeus*
Accipiter nisus	*Circaetus gallicus*	*Milvus migrans*	*Pelecanus onocrotalus*
Buteo buteo	*Circus cyaneus*	*Circaetus gallicus*	*Pelecanus crispus*
Buteo lagopus	*Circus macrourus*	*Circus aeruginosus*	*Botaurus stellaris*
Clanga pomarina	*Accipiter gentilis*	*Circus cyaneus*	*Ixobrychus minutus*
Aquila pennata	*Accipiter nisus*	*Accipiter nisus*	*Nycticorax nycticorax*
Falco tinnunculus	*Buteo buteo*	*Buteo buteo*	*Ardeola ralloides*
Falco vespertinus	*Buteo lagopus*	*Buteo lagopus*	*Egretta garzetta*
Falco columbarius	*Clanga pomarina*	*Clanga pomarina*	*Egretta alba*
Falco subbuteo	*Aquila pennata*	*Aquiula pennata*	*Ardea cinerea*
Phasianus colchius	*Falco tinnunculus*	*Falco tinnunculus*	*Ardea purpurea*
Actitis hipoleucos	*Falco vespertinus*	*Falco vespertinus*	*Ciconia nigra*
Columba oenas	*Falco columbarius*	*Falco columbarius*	*Ciconia ciconia*
Columba palumbus	*Falco subbuteo*	*Falco subbuteo*	*Plegadis falcinelles*
Streptopelia decaocto	*Phasianus colchius*	*Perdix perdix*	*Platalea leucorodia*
Streptopelia turtur	*Actitis hipoleucos*	*Phasianus colchius*	*Anser albifrons*
Cuculus canorus	*Columba oenas*	*Columba palumbus*	*Anser anser*
Athene noctua	*Columba palumbus*	*Streptopelia decaocto*	*Anas strepera*
Strix aluco	*Streptopelia decaocto*	*Streptopelia turtur*	*Anas crecca*
Merops apiaster	*Streptopelia turtur*	*Cuculus canorus*	*Anas platyrhynchos*
Coracias garrulus	*Cuculus canorus*	*Athene noctua*	*Anas querquedula*
Upupa epops	*Otus scops*	*Strix aluco*	*Aythya nyroca*
Picus canus	*Athene noctua*	*Asio otus*	*Milvus migrans*
Dryocopus martius	*Merops apiaster*	*Caprimulgus europaeus*	*Haliaeetus albicilla*
Dendrocopos major	*Coracias garrulus*	*Merops apiaster*	*Circus aeruginosus*
Dendrocopos syriacus	*Upupa epops*	*Coracias garrulus*	*Circus cyaneus*
Dendrocopos medius	*Picus canus*	*Upupa epops*	*Circus macrourus*
Dendrocopos minor	*Dendrocopos syriacus*	*Picus canus*	*Accipiter nisus*
Lullula arborea	*Dendrocopos medius*	*Dendrocopos medius*	*Buteo lagopus*
Troglodytes	*Dendrocopos minor*	*Dendrocopos minor*	*Clanga pomarina*
troglodytes	*Galerida cristata*	*Galerida cristata*	*Aquila clanga*
Prunella modularis	*Lullula arborea*	*Alauda arvensis*	*Hiraaetus pennatus*
Erithacus rubecula	*Alauda arvensis*	*Hirundo rustica*	*Falco tinnunculus*
Luscinia	*Hirundo rustica*	*Delichon urbicum*	*Falco vespertinus*
megarhynchos	*Anthus campestris*	*Anthus campestris*	*Falco columbarius*
Phoenicurus ochruros	*Anthus trivialis*	*Motacilla flava*	*Falco subbuteo*
Phoenicurus	*Motacilla flava*	*Motacilla cinerea*	*Phasianus colchius*
phoenicurus	*Motacilla cinerea*	*Motacilla alba*	*Rallus aquaticus*
Turdus merula	*Motacilla alba*	*Erithacus rubecula*	*Gallinula chloropus*
Turdus pilaris	*Troglodytes troglodytes*	*Luscinia megarhynchos*	*Fulica atra*
Turdus philomelos	*Prunella modularis*	*Oenanthe oenanthe*	*Charadrius*
Turdus iliacus	*Erithacus rubecula*	*Turdus merula*	*alexandrinus*
Turdus viscivorus	*Luscinia megarhynchos*	*Turdus pilaris*	*Vanellus vanellus*
Hippolais pallida	*Phoenicurus ochruros*	*Turdus philomelos*	*Calidris alba*
Sylvia nisoria	*Phoenicurus*	*Sylvia atricapilla*	*Calidris minuta*
Sylvia curruca	*phoenicurus*	*Phylloscopus sibilatrix*	*Calidris ferruginea*
Sylvia communis	*Oenanthe oenanthe*	*Phylloscopus collybita*	*Calidris alpina*
Sylvia atricapilla	*Turdus merula*	*Phylloscopus trochilus*	*Phylomachus pugnax*

Phylloscopus sibilatrix	*Turdus pilaris*	*Ficedula parva*	*Gallinago gallinago*
Phylloscopus collybita	*Turdus philomelos*	*Parus caeruleus*	*Limosa limosa*
Phylloscopus trochilus	*Turdus iliacus*	*Parus major*	*Numenius arquata*
Muscicapa striata	*Turdus viscivorus*	*Oriolus oriolus*	*Tringa erythropus*
Ficedula parva	*Hippolais pallida*	*Lanius collurio*	*Tringa totanus*
Ficedula albicollis	*Sylvia curruca*	*Lanius minor*	*Tringa nebularia*
Parus lugubris	*Sylvia atricapilla*	*Garrulus glandarius*	*Tringa ochropus*
Parus caeruleus	*Phylloscopus sibilatrix*	*Pica pica*	*Tringa glareola*
Parus major	*Phylloscopus collybita*	*Corvus monedula*	*Actitis hipoleucos*
Sitta europaea	*Muscicapa striata*	*Corvus frugilegus*	*Larus ridibundus*
Certhia familiaris	*Ficedula parva*	*Corvus corone*	*Larus michaelis*
Oriolus oriolus	*Ficedula albicollis*	*Sturnus vulgaris*	*Sterna nilotica*
Lanius collurio	*Parus lugubris*	*Sturnus roseus*	*Sterna hirundo*
Lanius minor	*Parus caeruleus*	*Passer domesticus*	*Sterna albifrons*
Garrulus glandarius	*Parus major*	*Passer montanus*	*Chlidonias hybrida*
Corvus frugilegus	*Sitta europaea*	*Fringilla coelebs*	*Chlidonias niger*
Corvus corone	*Certhia familiaris*	*Fringilla montifringilla*	*Chlidonias leucopterus*
Sturnus vulgaris	*Oriolus oriolus*	*Serinus serinus*	*Cuculus canorus*
Passer domesticus	*Lanius collurio*	*Carduelis chloris*	*Athene noctua*
Fringilla coelebs	*Lanius minor*	*Carduelis carduelis*	*Alcedo atthis*
Fringilla montifringilla	*Garrulus glandarius*	*Carduelis spinus*	*Merops apiaster*
Serinus serinus	*Pica pica*	*Carduelis cannabina*	*Coracias garrulus*
Carduelis chloris	*Corvus monedula*	*Coccothraustes*	*Upupa epops*
Carduelis carduelis	*Corvus frugilegus*	*coccothraustes*	*Dendrocopos syriacus*
Carduelis spinus	*Corvus corone*	*Emberiza calandra*	*Dendrocopos medius*
Carduelis cannabina	*Sturnus vulgaris*		*Galerida cristata*
Pyrrhula pyrrhula	*Passer domesticus*		*Alauda arvensis*
Coccothraustes	*Fringilla coelebs*		*Riparia riparia*
coccothraustes	*Fringilla montifringilla*		*Hirundo rustica*
Emberiza citrinella	*Serinus serinus*		*Anthus campestris*
Emberiza hortulana	*Carduelis chloris*		*Motacilla flava*
Emberiza calandra	*Carduelis carduelis*		*Motacilla cinerea*
	Carduelis spinus		*Motacilla alba*
	Carduelis cannabina		*Luscinia*
	Pyrrhula pyrrhula		*megarhynchos*
	Coccothraustes		*Phoenicurus ochruros*
	coccothraustes		*Phoenicurus*
	Emberiza citrinella		*phoenicurus*
	Emberiza hortulana		*Saxicola rubetra*
	Emberiza calandra		*Locustella fluviatilis*
			Locustella luscinioides
			Acrocephalus
			schoenobaenus
			Acrocephalus palustris
			Acrocephalus
			scripaceus
			Acrocephalus
			arundinaceus
			Muscicapa striata
			Ficedula parva
			Parus caeruleus
			Parus major
			Oriolus oriolus
			Lanius collurio
			Pica pica
			Corvus monedula
			Corvus frugilegus

			Corvus corone *Sturnus vulgaris* *Passer domesticus* *Passer montanus* *Fringilla coelebs* *Fringilla montifringilla* *Serinus serinus* *Carduelis chloris* *Carduelis carduelis* *Carduelis spinus* *Carduelis cannabina* *Emberiza schoeniclus* *Emberiza calandra*
Total number of species per station			
78	**88**	**74**	**114**

Regarding the number of bird species, identified in a monitoring station, it is found that the largest records appear in the river discharges areas (station no. 4), the highest number – 147 species –, being recorded at the mouth of Hamangia River (H4). The fewest species were recorded in the intermediate stations, respectively: Cs2, Te3 – 74 species, Ta2 and Sl2 – 75 species. In the stations with no.1, the avifauna is predominantly characteristic to forest habitats, given the fact that these rivers have their springs in the forest massifs of North Dobrogea.

In the intermediate stations on the five rivers (respectively no. 2 and 3 stations), the avifauna characteristic to the steppe, silvo-steppe and anthropogenic areas was observed. The exception is Casimcea River, where, at Ca3 station, an artificial lake formed along the river – Casian Lake. Thus, the avifauna is similar to that of no. 4 stations of the other rivers.

In the observation stations with no. 4, on all five rivers, which correspond to the area where the rivers flow into lakes/ estuaries, the avifauna consists, to a large extent, of species characteristic of wetlands. At these points, both the number of species and the size of the populations of these species is much higher, compared to the other stations on the rivers.

Conclusions

Within the studied rivers there were identified so far: six habitats of community importance (1530, 3130, 3270, 62C0*, 91AA*, 91Y0), among which two are priority ones; seven habitat subtypes with no community importance (37.24, 44.121, 53.1111, 53.131, 53.132, 53.143 and 53.4); one phytocoenosis not framed within the Palaearctic Habitats Classification.

The highest habitats/ plant communities diversity was observed within the Taiţa and Slava rivers (six plant communities), followed by Casimcea River (five plant communities), the lowest number of habitats/ coenotaxa being recorded in the Hamangia (four plant communities) and Teliţa (three plant communities) rivers.

Globally, Casimcea River could be considered the most diverse of the rivers, taking into account the number of habitats/ plant communities, combined with the number of species per habitat/ plant community, while Teliţa River would be the less diverse. Overall Casimcea River can be considered as being mostly in its natural status, as well as Hamangia. The low disturbed watercourses could be considered Taiţa and Slava, while within Teliţa River the three coenotaxa are in the high, medium and undisturbed categories. The highest number of threatened species was recorded within the Hamangia River.

The five rivers that belong to the Black Sea Basin have an important conservation value, as they contain habitats of community importance and even a reduced number of threatened plant species Their conservation is also required as they are natural ecological corridors that link different Natura 2000 sites from Northern and Central Dobrogean Plateau, with the Danube Delta Biosphere Reserve and corresponding Natura 2000 sites (SCI, SPA).

From the avifauna point of view, the bird species that have been identified are characteristic of the following habitat types: forest, steppe, wooded steppe, wetlands and anthropogenic areas (agroecosystems). The largest records of birds species appear in the rivers discharges areas, the highest number (147 species), being recorded at the mouth of Hamangia River (H4). The fewest species were recorded in the intermediate stations, of the rivers: Casimcea and Teliţa – 74 species, Taiţa and Slava – 75 species. With the exception of anthropogenic ecosystems (e.g. agroecosystems), all the above-mentioned habitat types constitute important nesting and feeding areas during migration periods.

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