

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

1. Name and address of the compiler of this form:

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Gennadii Sirodoev**

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Designation date

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Site Reference Number

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2. Date this sheet was completed/updated:

September 01, 2005

3. Country:

Republic of Moldova (Moldova)

4. Name of the Ramsar site:

Unguri – Holosnita (Unguri – Holoșnița)

5. Map of site included:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): *yes* X -or- *no*

1. General Location map; 2. Map of proposed Ramsar site; 3. Map of important bird areas; 4. Map of indicated rare fauna sites; 5. Map of indicated rare flora sites; 6. Map with indicated cultural heritage sites.
7. Map of regional image.

b) digital (electronic) format (optional): *yes* X -or- *no, the same as in point a).*

6. Geographical coordinates (latitude/longitude):

48° 17' 11" North latitude / 28° 2' 45" East longitude

7. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

The area is situated in the north-eastern part of Moldova bordering with Vinnytsya Region of Ukraine, 63 km from Balti (Moldova) and 23 km from Mogiliv-Podilsky (Ukraine). It lies mainly in the administrative Soroca County (south eastern part of site) and, partly, in Ocnita County (north-western part).

8. Elevation: (average and/or max. & min.)

Average altitude is about 150 m asl. The lowest place of the site, 51 m asl is shore line near Holosnita Village, the highest elevation 245 m asl is on the watershed edge near Sobari Village.

9. Area: (in hectares) 15,553

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The area consists of high (up to 80 m) rocky and crumbling-sloughing slopes directed from main watershed towards the Dniester River, and mainly narrow flood-land of the Dniester left bank. On the way to the Dniester 9 small rivers, the largest of 7.6 km, and some short creeks flowing from springs cross the territory and form steep canyons. Therefore 9 ponds are constructed mainly in distant part from the Dniester. Forest and forest plantings cover slopes over the great length of site (between Unguri and Tatarauca Noua, Tatarauca Noua and Balinti, Cremenciug and Holochnita Villages) including mouth parts of tributaries. Largest forest on watershed is near Decebal Village is margin of the extended and more flat part of the site (between Iarova, Oclanda and Cremenciug Villages) that is under arable lands mainly and the most large orchard; however this area includes a system of creeks, ponds and steep ravines. Dniester includes wide rather shallow segments here with 4 small islands.

11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1 • 2# • 3# • 4# • 5# • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 2nd. The site supports many endangered and vulnerable species. Birds of the **World Red List-2003: migratory** - Lesser White-fronted Goose *Anser erythropus* (VU), Greater Spotted Eagle *Aquila clanga* (VU), Red-breasted Goose *Branta ruficollis* (VU), Great Bustard *Otis tarda* (VU). Other animals of the World Red List: mammals – Pond Bat *Myotis dasycneme* (VU), fish – Zingel *Zingel zingel* (VU), insects - Cerambyx Longicorn *Cerambyx cerdo* (VU). Species related of other categories of IUCN List are noted in section 20.

Besides above mentioned 12 other bird species that inhabit and use the site should be cited considering transboundary context of this area being endangered at national level and included into both Moldovan (RBM) and Ukrainian (RBU) Red Data Books: Golden Eagle *Aquila chrysaetos* (RBM - CR, RBU - VU), Lesser Spotted Eagle *Aquila pomarina* (RBM - CR, RBU - VU), Ferruginous Duck *Aythya nyroca* (RBM - CR, RBU - EN), Black Stork *Ciconia nigra* (RBM - CR, RBU - II), Short-toed Eagle *Circaetus gallicus* (RBM - CR, RBU - III), Hen Harrier *Circus cyaneus* (RBM - CR, RBU - CR), Pale Harrier *Circus macrourus* (RBM - CR, RBU - CR), Peregrine *Falco peregrinus* (RBM - CR, RBU - VU), Booted Eagle *Hieraaetus pennatus* (RBM - CR, RBU - CR), Great Bustard *Otis tarda* (RBM - CR, RBU - EN), Osprey *Pandion haliaetus* (RBM - CR, RBU - VU), Pygmy Cormorant *Phalacrocorax pygmaeus* (RBM - CR, RBU - EN). Status of being is indicated in section 20.

Among these bird species *Anser erythropus*, *Branta ruficollis*, *Aythya nyroca*, *Haliaeetus albicilla*, *Aquila clanga*, *Otis tarda* are listed in the Appendix I of Convention on Conservation of Migratory Species of Wild Animals. Local fauna includes 4 nationally endangered mammal species, 2 – reptiles, 2 – amphibians, 4 – insects (section 20).

Criterion 3rd. The site of transboundary location supports high diversity of communities/ecosystems related to Podillya-Moldova Wooded-Steppe. Combination of big canyon relief, increased precipitation connected with close high watershed, and large river provides conditions for populations of 11 plant species of the Red Data Book of Moldova (including a concentration of 5 fern species endangered in the country), 7 of the Red Data Book of Ukraine and 5 of the both red lists.

Criterion 4th Important area of hibernation that accumulates 19 species of waterfowl (*Anas platyrhynchos* first of all, *Aythya fuligula*, *Anas strepera*, *Bucephala clangula*, *Cygnus cygnus* etc.), including *Aythya nyroca* and also some nationally protected species from different groups (*Cygnus olor*, *Egretta alba* *Falco columbarius*, *Mergus merganser*, *Picus viridis*). Nesting water birds are not so abundant; the most numerous are *Anas platyrhynchos*, *A. strepera*, *Ardea cinerea*; protected (nationally and by the Bern Convention) species include *Hieraaetus pennatus* and *Pernis apivorus* besides listed for criterion 2nd.

Criterion 5th More than 20,000 specimens of waterfowl are noted in the site for the time of hibernation (e.g. in December 2004 *Anas platyrhynchos* – 19500, *Aythya fuligula* – 750, *Anas strepera* – 700, *Bucephala clangula* – 220, *Tadorna tadorna* – 130, *Mergus merganser* – 80, *Cygnus cygnus* – 110, *Mergus serrator* – 65, *Ardea cinerea* – 45, *Cygnus olor* – 50, *Podiceps cristatus* – 45) while total number reaches more values during post-nesting period.

13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region: Podillya-Moldova Wooded-Steppe; the geobotanical district of northern cherry-tree-based and birch-based oak forests of the Right-bank Transdnistria related to Podillya-Bessarabian sub-province of the European Deciduous Forest Region.

b) biogeographic regionalisation scheme (include reference citation): Sobolev N.A. & Russo B.Iu. Start positions of the ecological network of Northern Eurasia: work hypothesis // Premises and perspectives for the ecological network of Northern Eurasia formation. Okhrana zhivoi prirody. Issue 1(9), Nizhniy Novgorod, 1998. P. 22-31. [In Russian]

14. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Geology and geomorphology. The eldest Archaean crystalline rocks (gneisses, gabbros and gabbro-norites) relates to fundament of south-western margin of the East-European Platform. Deposits of Moghilev-Podolsk Series of Vendian System (terrigenous sandstones, aleurites, argillites with strata of gravelites and pelites) outcrop in riverbed and lower part of slopes to the Dniester for the all this space practically. There are also deposits of Audarminian Series of the Medium Vend near Cremenciug and Holosnita Villages (argillites, siltstones and sandstones with strata of pelite tuffs). Limestones and rottenstones of Senoman Layer of Cretaceous System lie on Vendian System with stratigraphic discrepancy and outcrop in lower and medium parts of the Dniester right bank. The territory was moved out to surface before Middle Miocene and exposed to intensive wash-out. Limestones, sands, loams and reef limestones of Baden Layer were formed during this period as the transgression result in conditions of shallow warm sea. They form mainly medium and lower parts of slopes to the Dniester and lower parts of slopes of Dniester's tributaries while upper parts of slopes and significant part of watersheds is presented by Sarmatian limestones, sands and loams. In the beginning of Middle Miocene sea receded to south anew that caused formation of continental deposits. Pliocene alluvial deposits of XII-X terraces of Akchagyl Layer are met on highest watersheds mainly. Quaternary alluvial, coluvial and diluvial deposits are everywhere and begin to dominate in southern part of the site.

Steep (20-40 °) and high (up to 80 m) crumbling-sloughing slopes that lean on well developed asymmetric flood land is the main feature of area where surface is relatively flat near watershed and in lowland only. Upper parts of slopes are destructed by landslides here and there; ravine erosion is widely spread. Meandering of riverbed promotes development of lateral and hypogene erosion. Maximal width of flood land is 3-4 km while on the bank of Moldova not more than 500 m. Accumulative relief is forming in large prominent meanders. Watershed surfaces take important territory being created by complex denudation during development of Pleistocene river network.

Dominated soils are: stratified meadow, sod carbonate ruby-talus, dark grey and grey heavy-loamy wood, heavy-loamy leached and ashen-grey chernozems of middle or low humus.

Hydrology. There are three types of years: with dominant spring floods and sparse floods later; with an absence of spring floods and prevalence of summer floods; with a constant flood of equal height during spring, summer and autumn. Depending on the character of the recharge flood, the low-water period is unclear most years in the main stream – the Dniester River. The maximum spring water level in an average low flow period is 4.0-5.0 m. Normally 3-5 floods occur each summer and autumn, (sometimes as many as 12-15), with an average length of 10-15 and maximum of 55 days, the number of floods

decreases to 1-2 in dry years. The pattern of water discharge in the Dniester depends on the management of the Novodnestrovsk Reservoir in Ukraine. It is especially visible in the site situated just downstream of power dam while large tributaries are absent here. Average velocity of the Dniester River is 0.7-1.2 km/hour; velocities in creeks are high.

Underground waters form three water-bearing complexes with fractured sheet accumulations mainly in sandstones, aleurites, argillites, marls, loamy sandstones and conglomerates, limestones.

Water quality. The waters of the Middle Dniester are attributed to hydrocarbonate class of calcium group with mineralisation 350-750 mg/l and dissolved oxygen content 10-12 mg/l, pH 7-8; quality is classified as relative good. Average content of suspended substances is 40-100 mg/l, sulfates – 90, chlorides – 30-40, calcium – 30-60 mg/l. Content of phenols and phosphorus is high – 0.002-0.006 and 0.05-0.10 mg/l, oil products 0.02-0.04, copper – 2-8 mcg/l, zinc – 10-13 mcg/l. Content of mineral and organic nitrogen is in permissible limits.

Underground waters are hydrocarbonate-sodium and hydrocarbonate-calcium of mineralization 0.5-1 g/l, hydrocarbonate-calcium-sodium 1-3 g/l, and contamination is low. Water discharge in boreholes is 1-3 l/sec.

Hydrological background. The Dniester River bed has a width of 150-246, in segments with islands up to 700 m; depths vary in main limits of 1.5-5.0 m, 0.6-1.50 m in reaches and 4.0-12.0 m in vortexes; there are many rifts, 4-5 km per 10 km of river length. Riverbed is mainly stony, bottom and banks are constituted of boulders and gravel, sometimes with shoal. There are 9 ponds of 0.25-1.3 ha within the site and near 19 ponds else, up to 6.5 ha. River network is not dense – less than 0.1 km/km², riverbeds are mainly of limestone, sometimes with sand, Ruggedness of adjacent territory (while slopes of the Dniester are intensively partitioned by large ravines) is modest; therefore surface run-off is not intensive and transformed into underground run-off significantly. Well-permeable fractured rocks are favorable for intensive water circulation with surface and ground waters.

15. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Catchment (local) area is 17,800 ha and mainly covered by the site. Adjacent to the site territory is partitioned by shallow hollows with gentle (3-6°) slopes complicated by ravines and rarely landslides. There are three general kinds of the land use: arable agriculture including orchards, forestry, and grazing. Main soil types in catchment area: leached, then ashen-grey chernozems and after dark grey wood soil.

Downstream (catchment) area is about 28871 km².

Climate. Climate is moderate-continental with soft winter and warm summer. Average data: annual temperature 8-8.5°C (minimum -35°C, maximum 38°C); annual rainfall is 500-600 mm (longstanding average is 560 mm) in the site that is up to 23% more than in adjacent areas to the west of watershed, 70-75% falling between April and October. Summer rains are mainly torrential. Due to many valleys high irregularity of relief forms the variation in heights that reaches 50-200 m per 10-14 km; that phenomenon together with landscape diversity determines essential variations of climatic elements (uneven warming-up, formation of convection and nebulosity, and therefore patchy distribution of summary radiation). The prevailing winds (50%) are from the northwest and southeast, with average velocity of 3-4 m/s. Average annual snow thickness is 20-25 cm, with mean cover duration of 70 days (end of December – beginning of March). Ice cover on the river averaged 2.5-3 months with thickness 15-25 cm and each 6 years was absent. The last decade river is free of ice and paradox temperature regime takes place because hydro power station upstream discharges waters with thermocline parameters from the bottom of canyon reservoir. Being of above-zero temperature during winter the waters cannot be frost in the given fragment of Dniester while they are warmed up too later in summer that prevents normal spawning of fish besides cold-water species.

16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Dniester River creates hydrological and hydrogeological background for the territory, and promotes intensive interchange of surface and ground waters, increases discharge of the latter. That intensifies also purification from human-made pollution. Alternating of shoals and lateral erosion of banks is characteristic for the river.

17. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1• 2#• 3 • 4#• 5 • 6 • 7#• 8 • 9#• Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

1	2	3	4	5	6	7	8	9	10	11	12
M	N	2	Ts	Tp	Xf	W	Y	Zk(b)	7	4	9

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

The site supports high ecosystem diversity.

Water biotopes amounts 6 main types.

1. River – bed lithophile ecosystem of the Dniester segment has limited richness of plankton, abundant filamentous algae and riverside highest water vegetation promotes development of diverse epiphytic organisms, benthos is represented mainly by amphipoda and larvae of insects. Namely this biotope provides numerous waterfowl of 13 species and 3 periaquatic species with feed (e.g. numerous little fish) during nesting period and 7 species with areas of nesting but Common Otter with main life space. During migration 43 bird species use the river and 19 hibernate here. Ichtyofauna numbers 46 species.

2. Creeks and small rivers of the area are poorly known from the viewpoint of biota inhabiting these fresh waters of high velocity; *Bombina bombina* and *Triturus cristatus* are met here among 6 amphibians, and also *Natrix natrix* and *N. tessellata*. Spawning of 11 fish species takes place in lower parts of these streams.

3. Ponds created on creeks and small **freshwater marshes** are partly overgrown by reeds (*Phragmiteta australis*, *Typheta angustifoliae*, *Scirpeta tabernaemontanii*). These are important amphibian habitats within the terrestrial part of site. Herons, ducks and storks intensively use these biotopes for foraging. Rare in Moldova dragonfly *Anax imperator* (Red Data Book of Ukraine) was noted here.

4. Permanent and intermittent pools are used for nesting by 12 species of waterfowl and 8 periaquatic bird species while 30 and 6 species of corresponding groups are here during migration. There are also Common Otter and the same 6 amphibian species.

5. Shrub- and tree-dominated freshwater seasonally flooded forests and swamps. These alternating habitats are in a canyon that approaches to river scroll and is covered mainly by willow formation *Saliceta alboris*; herons are nesting here and different ducks crowd here, many other animals use that place. Such biotopes are also on islands.

6. Karst hydrological systems are not studied from the viewpoint of biodiversity absolutely.

Terrestrial natural and subnatural biotopes amounts 11 main types.

Lowland woods are represented sometimes along the river bank and on islands. There are 2 typical biotopes of lowland woods.

1. Fluvial forest, formed by poplar associations of *Populeta alboris* with an admixture of *Salix alba*, *Fraxinus excelsior* and *Ulmus glabra*. One of associations is *Populetum (alboris) rubosum (caesii)*. That biotope takes mainly stripe in narrow uncultivated fragments of valley.

2. Riparian willow formations – young poor biotope on drifts along stretches of river. Shrubs of *Salix alba*, mainly *Salicetum (alboris) inundatum*, include often *S. triandra* and *S. purpurea*.

Upland forests. Native communities of light forest are conserved on steep limestone slopes of the Dniester River canyon and sufficient afforestation was done in the second half of 20th century. It is impossible often to distinguish between transformed native forests and old composite plantings. Mostly there are oak formations, which are substituting by hornbeam ones after logging. In general they are subdivided into fresh and dry forests independently on main tree species. Nearer to watershed there is also an area of artificial plantations based on locust tree while pine plantations were created substituting the natural petrophyte vegetation in stony places. Upland forest makes 5 biotope types supporting 22 associations.

1. Dry light oak forest of *Querceta roboris* and *Querceta petraea* formations with 8 associations, correspondingly *Querceto (roboris) cornoso (maris) aegonychosum*, *Querceto (roboris)-Carpinetum*, *Querceto (roboris) - Carpinetum euonymosum (verrucosae)*, *Tilieto (cordatae) – Carpineto – Quercetum (roboris) cornoso (maris) convallariosum*, *Quercetum (petraeae) caricosum (pilosae)* and *Quercetum (petraeae) cornosum*, *Quercetum (petraeae) cornoso poosum (nemoralis)*, *Carpineto – Quercetum (petraeae) hederosum*. Second by area terrestrial biotope with many rare plant species and more diverse fauna of invertebrates.

2. Fresh oak forest (10 associations). Formation *Querceta roboris* is represented by associations *Carpineto – Quercetum (roboris) aegopodiosum*, *Carpineto – Quercetum (roboris) caricosum (pilosae)*, *Carpineto – Quercetum (roboris) vincosum*, *Querceto (roboris) – Carpinetum caricosum (pilosae)*, *Querceto (roboris) – Acero (platanoides) Carpinetum galiosum (odorati)* and *Querceto (roboris) – Fraxinetum aceroso (campestris) staphyleoso (pinnatae) aegopodiosum*. Formation *Querceta petraea* is represented by associations *Quercetum (petraeae) cornosum*, *Carpineto – Quercetum (petraeae) aegopodiosum*, *Carpineto – Quercetum (petraeae) hederosum* and *Carpineto – Quercetum (petraeae) caricosum (pilosae+brevicollis)*. That is main terrestrial natural biotope supporting most of rare plants with more abundance.

3. Damp oak forest in lower parts of slopes: *Fraxineto - Quercetum (roboris) aceroso (campestris) sambucoso aegopodiosum* and *Acero (campestris) – Quercetum (roboris) sambucoso urtico – chaerophyllosum (temulis)*. Smallest forest biotope with significantly weeded herbage.

4. Robinian (locust-tree) plantings of anti-erosion and production purpose – biodiversity scanty habitats.

5. Plantings of *Pinus pallasiana* of production purpose – biodiversity scanty habitats that conserve petrophyte vegetation in some places.

Native meadows and steppes are mainly transformed into arable and also grazing lands and remainders of primarily ecosystems are impoverished. There are 4 biotopes and about 20 grassy associations.

1. Dry native grasslands (meadow and savanna steppe) are conserved by very small fragments in inaccessible steep places. They include meadow steppe of 6 associations: *Festuceto (valesiacaе) – Stipetum (pulcherrimi) herbosum*, *Festuceto (valesiacaе) – Stipetum (pennati) herbosum*, *Stipeto (capillati) – Botriochloetum cleistogenosum (bulgarici)*, *Festuceto (valesiaci) – Stipetum (capillati) herbosum*, *Bothriochloeta, Botriochloeto – Stipetum (capillati) herbosum*, *Botriochloeto – Festucetum (valesiacaе) herbosum*. There are also communities of endemic *Poa versicolor*.

2. Petrophyte calcicolous vegetation is also damaged especially during afforestation of stony slopes with *Pinus* plantings. However its remainders are especially valuable and form dependently on kind of

weathered rock 3 subtypes of biotopes that are rich by insects; *Coronelle austriaca* is characteristic snake here:

- petrophyte steppes with association *Botriochloetum cephalariosum (uralensis)* on rocks.
- formation of thyme with associations *Thymetum cephalariosum (uralensis)* u *Thymeto – Teucrietum (chamaedrysi) herbosum* on stony-rubbly places of slopes.
- thyme steppes with associations *Festucetum (valesiaca) thymosum (moldovica)*, *Stipetum (capillati) teucriosum (Teucrium chamaedrys + T. polium)*, *Bothriochloetum thymosum (Th. moldavicus + Th. marschallianus)*, *Stipeto (capillati) – Botriochloetum thymosum*, *Bothriochloetum teucriosum (Teucrium chamaedrys + T. polium)* on rubbly places.

3. Upland dry pastures (usually *Festuceto-Bothriochloetum* and *Bothriochloetum*) are the most spread upland open semi-natural sites.

4. Lowland fresh pastures are covered mainly by formation *Lolieta perenisi* on middle levels and *Festuceta* on upper levels of lowland while primarily meadows are absent practically.

Agricultural arable lands include mainly fields of annual crops and apple orchards in upland.

Wetland and upland natural habitats together with agricultural lands create integrity for main part of wildlife. At the same time some clear **core areas** may be designated.

1. Calarasovca-Stynca forest tract comprises 3 associations of fresh and dry oak forests *Querceto (roboris) – Carpinetum caricosum (pilosae)*, *Querceto (roboris) – Acero (platanoides) Carpinetum galiosum (odorati)* and *Querceto (roboris) – Carpinetum*, and also fragment of primarily steppe on steep limestone slope *Festuceto (valesiaca) - Stipetum (pulcherrimi) herbosum*. There are 32 rare plant species together with 7 ones of the Red Data Book of Moldova, 7 other species of the Red Data Book of Ukraine and 3 species else *Cephalanthera damasonium* (Mill.) Druce, *Doronicum hungaricum* Reichenb.fil., *Galanthus nivalis* L. included in the both red lists. Some of them and other, altogether 7 species, are recognized as relicts for Podillya-Bessarabian botanical sub-province. Butterflies *Callimorpha quadripunctaria*, *Iphiclides podalirius* и *Zerinthia polyxena*, wild bee *Xylocopa valga* are noted here; all 4 species relates to the both national red lists. Fauna of vertebrates includes species of the World Red List-2004: mammals - *Dryomys nitedula (LT/ nr)* and *Myotis dasycneme (VU)*, *Hyla arborea (NT)* as well as of national red lists and list of the Bern Convention: snakes *Coronilla austriaca* and *Elaphe longissima*, amphibians – *Bombina bombina* and *Triturus cristatus*.

2. Rudi-Arionesti series of connected forest tracts between Unguri, Arionesti and Rudi Villages and a sector of primarily meadow steppe *Festuceto (valesiaca) - Stipetum (pennati) herbosum*. There are 16 associations of fresh, dry and damp oak forests: *Quercetum (roboris) cornoso (maris) aegonychosum*, *Tilieto (cordatae) – Carpineto – Quercetum (roboris) cornoso (maris) convallariosum*, *Querceto (roboris)-Carpinetum euonymosum (verrucosae)*, *Carpineto – Quercetum (roboris) aegopodiosum*, *Querceto (roboris) – Carpinetum*, *Querceto (roboris) – Fraxinetum aceroso (campestris) staphyleoso (pinnatae) aegopodiosum*, *Querceto (roboris) – Carpinetum caricosum (pilosae)*, *Fraxineto - Quercetum (roboris) aceroso (campestris) sambucoso aegopodiosum*, *Acero (campestris) – Quercetum (roboris) sambucoso urtico – chaerophyllosum (temulis)*, *Quercetum (petraeae) cornoso poosum (nemoralis)*, *Quercetum (petraeae) cornosum*, *Quercetum (petraeae) caricosum*, *Quercetum (petraeae) aegopodiosum*, *Carpineto – Quercetum (petraeae) caricosum (pilosae+brevicollis)*, *Carpineto – Quercetum (petraeae) aegopodiosum* and *Carpineto – Quercetum (petraeae) hederosum*. There are 42 rare plant species together with 9 ones of the Red Data Book of Moldova, 8 other species of the Red Data Book of Ukraine and 3 species else *Cephalanthera damasonium* (Mill.) Druce, *Galanthus nivalis* L., *Pulsatilla grandis* Wend. included in the both red lists. Some species represents also relicts for Podillya-Bessarabian botanical sub-province. Insect species *Cerambyx cerdo (VU)* of the IUCN World Red Data List-2004 was noted in this area, and also species of Ukrainian and Moldovan Red Data Books *Callimorpha quadripunctaria*, *Iphiclides podalirius*, very numerous *Lucanus cervus*, *Xylocopa valga*, *Scolia maculata*. Fauna of vertebrates includes species of the World Red List-2004: mammals - *Dryomys nitedula (LT/nr)*, *Lutra lutra (NT)* and *Myotis dasycneme (VU)*, amphibians - *Hyla arborea (NT)* as well as of national red lists and list of the Bern Convention: mammals – *Myotis daubentonii* and *Felis silvestris*, snakes – *Coronilla austriaca*, *Elaphe longissima* and *Vipera berus*, amphibians – *Rana dalmatina* (only Bern List), *Bombina bombina* and *Pelobates fuscus*.

3. Holoshnita Forest Tract with a fragment upstream where parcels of steppe and petrophyte vegetation conserve among pine plantings on stony slopes and rocks. There are 5 main forest associations

only: *Querceto (roboris) - Carpinetum caricosum(pilosae)*, *Quercetum (roboris) hederosum*, *Querceto (roboris) – Acero (platanoides) Carpinetum galiosum (odorati)* and *Quercetum (petraeae) cornosum*. There are 3 rare plant species together with 1 ones of the Red Data Book of Moldova, 1 other species of the Red Data Book of Ukraine and 1 species else *Staphylea pinnata* L. included in the both red lists. Insect rare species: *Iphiclydes podalirius* и *Xylocopa valga*. Fauna of vertebrates includes species of the World Red List-2004: nesting birds - *Crex crex* (NT), mammals - *Lutra lutra* (NT) and *Myotis dasycneme* (VU), amphibians - *Hyla arborea* (NT) as well as of national red lists and list of the Bern Convention: mammals – *Myotis daubentonii*, snakes – *Coronilla austriaca* and *Elaphe longissima*, amphibians - *Bombina bombina*.

Forests provide milieu for 34 mammal, 72 nesting bird, 9 reptile and 8 amphibian species. The usual animals in all parts of the site are *Lepus europaeus*, *Vulpes vulpes*, *Martes foina*, *Meles meles*, *Capreolus capreolus* among hoofed, *Apodemus flavicollis* and *Clethrionomys glareolus*.

In wetlands the most numerous waterfowl and waders during forage and seasonal migrations are ducks *Anas platyrhynchos*, *A. querquedula*, *A. strepera*, *Aythya ferina* and herons *Egretta garzetta*, *E. alba*, *Ardea cinerea*. *Phalacrocorax carbo*, *Larus argentatus*, *Hirundo rustica*, *Riparia riparia*, *Sturnus vulgaris*, *Emberiza schoeniclus* and some other are usual. Gatherings of water birds are in many shallow sectors of the river. Many birds spend the night along bank. Many species as geese (*Anser erythropus*, *A. albifrons*) raptors, etc. pass here en route.

Different ducks dominate among hibernating birds – *Anas platyrhynchos* (first of all), *A. strepera*, *Aythya ferina*, *A. fuligula*, *Bucephala clangula*, and also *Larus argentatus*; other species overwintering species include *Tadorna tadorna*, *Ardea cinerea*, *Cygnus cygnus*, *C. olor*, *Mergus merganser*, *M. serrator*, *M. albellus*, *Aythya nyroca*, *A. marila*, *Tachybaptus ruficollis*.

While patchy spreading is recently typical for rare, other herpetofauna is usual: *Rana ridibunda*, *R. lessonae*, *Lacerta viridis* as well as *L. agilis*, *Bombina bombina* and *Hyla arborea*.

Alburnus alburnus, *Rutilus rutilus rutilus*, *Perca fluviatilis* and *Leuciscus cephalus* were the most common fish previous years. Currently *Leuciscus leuciscus* (prior rare) and *Gymnocephalus cernuus* comprise main part in catches of fishers now; *Gasterosteus aculeatus* is very numerous and probably take important part in foraging of water birds.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.

On the whole 49 rare plant species are revealed in this transboundary area within Moldova limits, including 11 ones of the Red Data Book of Moldova, 7 of the Red Data Book of Ukraine and 5 of these both red lists (*Cephalanthera damasonium* (Mill.) Druce, *Doronicum hungaricum* Reichenb.fil., *Fritillaria meleagroides* Patrin ex Schult. et Sch., *Galanthus nivalis* L. and *Pulsatilla grandis* Wend.) *P. grandis* Wend. is the only plant species of the Bern List here. The area is noteworthy for Moldovan flora by endangered in the country ferns as *Athyrium filix-femina* (L.) Roth., *Dryopteris carthusiana* (Vill.) H.P.Fuchs, *Gymnocarpium dryopteris* (L.) Newm., *Gymnocarpium robertianum* (Hoff.) Newm. and *Phyllitis scolopendrium* (L.) Newm.

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.

High vertebrate faunal richness includes: (i) 205 bird species, 113 of these nest and 198 are migrants and seasonal visitors – see Annex also; (ii) about 37 mammals; (iii) 10 reptiles and 11 amphibians; (iv) 46 species of fish. Globally and nationally endangered species are listed below. Species of IUCN Red List are included into the national Red Data Books as a rule and national status is not indicated here in that case.

Rare insects. **World Red List-2004:** Cerambyx Longicorn *Cerambyx cerdo* (VU) and *Formica rufa* (LR). **Species mainly of the both Moldovan (RBM) and Ukrainian (RBU) Red Data Books:** Emperor *Anax imperator* (RBU – VU), Stag-beetle *Lucanus cervus* (RBM - EN, RBU - EN), Wasp-giant *Scolia maculata* (RBM - EN, RBU - EN), Polyxena *Zerinthia polyxena* (RBM - CR, RBU - EN), *Callimorpha quadripunctaria* (RBM - VU, RBU - EN), *Ipblicides podalirius* (RBM - VU, RBU - EN).

Rare birds. **World Red List-2004:** nesting - Corncrake *Crex crex* (NT), Ferruginous duck *Aythya nyroca* (NT); hibernating – *Aythya nyroca*; aestivating - Pygmy Cormorant *Phalacrocorax pygmaeus* (NT); migratory - Lesser White-fronted Goose *Anser erythropus* (VU), Greater Spotted Eagle *Aquila clanga* (VU), Red-breasted Goose *Branta ruficollis* (VU), Great Bustard *Otis tarda* (VU). Ferruginous Duck *Aythya nyroca*, Pale Harrier *Circus macrourus* (NT), White-tailed Eagle *Haliaeetus albicilla* (NT). **European-concern species of Moldovan and Ukrainian Red Data Books:** nesting – Mute Swan *Cygnus olor* (RBM – VU), European Honey-buzzard *Pernis apivorus* (RBM - EN), Booted Eagle *Hieraetus pennatus* (RBM - CR, RBU - CR), Stock Pigeon *Columba oenas* (RBM - EN), Eurasian Green Woodpecker *Picus viridis* (RBM – EN); regularly hibernating – Whooper Swan *Cygnus cygnus* (RBM – VU, RBU – EN), Golden-eye *Bucephala clangula* (RBU – VU), Short-eared Owl *Asio flammeus* (RBM - EN); aestivating Great White Egret *Egretta alba* (RBM - CR); migratory - Golden Eagle *Aquila chrysaetos* (RBM - CR, RBU – VU), Lesser Spotted Eagle *Aquila pomarina* (RBM - CR, RBU - VU), Black Stork *Ciconia nigra* (RBM - CR, RBU - EN), Hen Harrier *Circus cyaneus* (RBM - CR), Montagu's Harrier *C. pygargus* (RBM – CR), Short-toed Eagle *Circus gallicus* (RBM - CR, RBU - VU), Osprey *Pandion haliaetus* (RBM - CR, RBU - VU), Saker Falcon *Falco cherrug* (RBM - CR, RBU - III), Peregrine Falcon *F. peregrinus* (RBM - CR, RBU - VU). Eurasian Oystercatcher *Haematopus ostralegus* (RBU – VU), Black-winged Stilt *Himantopus himantopus* (RBU – EN), Eurasian Curlew *Numenius arquata* (RBU – EN)

Some rare species hibernate here irregularly or migrate only: Great Bittern *Botaurus stellaris* (RBM – LR), Ruddy Shelduck *Tadorna ferruginea* (RBM – LR, RBU – EN), Goosander *Mergus merganser* (RBM – DD), Red-breasted Merganser *Mergus serrator* (RBU – EN) Merlin *Falco columbarius* (RBM – DD), Common Crane *Grus grus* (RBM – DD, RBU - EN), Marsh Sandpiper *Tringa stagnatilis* (RBU - EN), Caspian Tern *Sterna caspia* (RBU - VU).

Mammals. **World Red List-2004:** Pond Bat *Myotis dasycneme* (VU), *Dryomys nitedula* (LR) and European Otter *Lutra lutra* (NT). **European-concern species mainly of both Moldovan and Ukrainian Red Data Books:** Eurasian Badger *Meles meles* (RBM – VU, RBU – EN), European Pine Marten *Martes martes*, Ermine *Mustela erminea*, (RBM – VU, RBU – LR) Wild European Cat *Felis silvestris* (RBM – EN, RBU – CR), Daubenton's Bat *Myotis daubentonii* (RBM – VU, RBU – VU).

Reptiles and amphibians. **World Red List-2004:** European Tree Frog *Hyla arborea* (NT), European Pond Turtle *Emys orbicularis* (LR). **European-concern species mainly of Moldovan and Ukrainian Red Data Books:** Common Spadefoot Toad *Pelobates fuscus* (RBM – CR), Spring Frog *Rana dalmatina* (RBU – VU), Smooth snake *Coronella austriaca* (RBM - EN, RBU – EN), Aesculapian Snake *Elaphe longissima* (RBM - EN, RBU – VU), Adder *Vipera berus* (RBM – EN).

Fish. **World Red List-2004:** Zingel *Zingel zingel* (VU). **Species of Moldovan Red Data Book:** *Barbus barbus borysthenicus* (RBM - EN, RBU – EN), *Barbus meridionalis petenyi* (RBM – VU), *Leuciscus idus* (RBM – VU), *Lota lota* (RBM – VU).

21. Social and cultural values:

e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Agriculture provides main sources for economical life of population. The site contains important agricultural arable areas; main crops are corn, sunflower, wheat, sugar-beet; apple dominates in orchards but there are also pear, plum and raspberry plantations; vegetables are cultivated also. Stock-rising (cattle, sheep) became extensive and based on grazing; in spite livestock is not numerous here, over-pasturing on gentle slopes is evident. Forestry is developed; it uses more artificial plantations on steep often stony

slopes and native tree stands on relatively flat areas. Fishing is the traditional trade, but lost economical value due to the trade fish resources became scarce.

There are two convents: quite popular one near Calarasovca Village and quite old one of high cultural importance near Rudi Village. Pocrovca represents settlement of Old Believers with peculiar stile of life.

Location includes many attractive picturesque places, and more than 60 geological, paleontological and archeological (from paleolith to early-medieval epoch) sites especially between Arionesti, Pocrovca, Rudi, Tolocanesti, Tatarauca Veche and Decebal Villages and downstream near Cremenciug Village.

Tourist business is undeveloped; however traditional water and pass tourist routes cross the site along the Dniester.

22. Land tenure/ownership:

(a) within the Ramsar site:

the key ownership is private, the state owns first of all forest areas while not numerous pastures are in public property of the local communities. Surface of usual private domain is about 1.5-2 ha owing to dense rural population (decreasing last years due to labour forces migration).

(b) in the surrounding area:

mainly private lands are on the right river bank of Moldova.

23. Current land (including water) use:

(a) within the Ramsar site:

Dominating lands of private property are arable and cultivating. State forest lands are mainly under State Forest Service, disposition of forest on steep slopes limits logging. Lands under local authorities includes first of all not extended pastures and settlements. Fishponds occupy small areas. Fishery and agriculture are no longer intensive besides horticulture. Illegal pasturing takes place on lowland grassy and partly-wooded areas; such usage predominates in riverside protective band out of compact forests. Legal and illegal hunting occur. The river water is limitedly used for irrigation.

At present, recreational use is limited mostly to the local population.

(c) in the surroundings/catchment:

agricultural lands in the limits of Moldova; mainly agricultural lands in Ukraine, turning into forestry lands along the Cuciurgan River before emptying into Turunciuc branch of the Dniester River.

24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

(a) within the Ramsar site:

The main problems are connected with functioning of the Novodnistrovsk hydropower station. Paradoxical thermal regime of discharged waters and strong variation of discharge levels forms unstable regime of water levels in short-term and medium-term contexts cause: (1) degradation of resources of the trade fish and diminished productivity of plankton; (2) increased production of economically not valuable fish species that provide waterfowl with feed resources as well as overgrown of highest water vegetation; (3) long period of non-freezing river and accumulation of hibernating water birds; (4) deterioration of riverside rocks. Thus, that influence is two-sided.

Creation and maturation of pine plantations in rocky locations sufficiently decreased areas of natural steppe and petrophyte communities in areas unaffected by agriculture.

Disturbance is caused by grazing, which degrades grassland. Various poaching activities take place, however, in national terms, the pressure on the fauna is relatively low excluding hoofed game animals.

There are also factors that are common for the whole country territory:

- insufficient integration of biodiversity considerations into local land use on the background of agricultural land involvement turned out for the long period;

- lack of capacity to implement existent land plans while during transition period economic and administration capacities has dramatically decreased.
- knowledge deficit about natural and historical heritage within local limits and on tourist potential as economic visible argument for protection;
- lack of baseline tools for management by the Natural Areas, Protected by the State and by natural resources;
- done privatization was not accompanied by appropriate land use planning to consider environment conditions and needs, or by cooperation of small private owners; current land consolidation is not accompanied by rehabilitation of crop rotation systems and relevant household links within local community that has created obstacles for transition to sustainable agriculture

Further changes should be determined by zoning of protected areas with creation of strict protected zones, creation of local ecological network and development of a sector of the international importance ecological corridor, implementation of grazing systems, development of tourism and local services.

(b) in the surrounding area:

The surrounding zone is characterized by extensive land use for arable agriculture and pasturing. The same factors influence upon the left bank in Ukraine borders. Formation of the international biological corridor in this transboundary area touches upon Ukrainian territory which is also under agriculture and forestry use.

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Upland forest is protected in relatively large Rudi - Arionesti Landscape Reserve covering 916 ha; within this area a Rudi – Gavan Nature Monument (botanical) of 49 ha is marked out. The second Calarasauca Landscape Reserve of 252 ha is also forest with rocky outcrops including one with steppe vegetation. Casca Hill of 37,6 ha to the west of Cremenciug Village is the geological Nature Monument. All these areas are under Moldsilva State Forestry Agency mainly. The above-mentioned reserves are under state protection. Unfortunately individual by-laws are not developed for them while Model by-laws of the Natural Areas Protected by State are absent, and special forest management has to be applied.

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

Concept of the National Ecological Network of Moldova presupposes creation of the Dniester Ecological Corridor of international importance (as relevant documents of Ukraine stipulate do also). The corridor crosses the site over all its length and includes recognized core areas: Rudi-Arionesti of local importance (that status was recognized as the result of lack of biodiversity data) and Cremenciug-Holosnita (1100 ha) of national importance. Calarasovca was recognized as geosystemic buffer of local importance due to lack of biodiversity data. Status of elements of the National Ecological Network requires a level of state defense and necessity of wise management; relevant legal provisions are under development.

27. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

There are no permanent research facilities. Earlier relevant institutes of the Academy Sciences of Moldova, Fishery Research Station, specialists of the State University of Moldova did some fragmentary studies. The most recent studies (1998) were conducted by the BIOTICA Ecological Society, funded by a grant from the John & Catherine MacArthur Foundation, and then in 2003 at the expenses of Ramsar Support Grant Program of the Society of Wetland Scientists.

28. Current conservation education:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

There are no existing special programs and facilities for conservation education and training within the site. Such education is conducted voluntarily in school of the Unguri Village

29. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

There is no organized recreation/tourism; expeditions of boating and passing sportive tourists and excursions are held by tourist agencies for Rudi Cloister.

30. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Ocnita District Authority – District State Administration

Donduseni District Authority – District State Administration

Soroca District Authority – District State Administration

Local Authorities

Ministry of Ecology and Natural Resources

31. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Addresses of regional; and local authorities are: Moldova, the name of region, the name of village.

Ocnita District.

Ocnita District Authority – District head Mr. Rusu Iurie, tel. (+373 271) 22 058.

Village Calarasovca – mayor Mr. Marinciuc Serghei Alexei (+373 271) 79 924

Village Unguri – mayor Mr. Ianciu Mihail Ivan (+373 271) 62 000

Donduseni District.

Donduseni District Authority – District head Pavlov Anastasii (+373 251) 22 650

Village Arionestu – mayor, Mr. Cantir Vasile Ion, tel. (+373 251) 46 236

Village Pocrovca – mayor Mr. Rilschi Cuprian, (+373 251) 53 236

Soroca District.

Soroca District Authority – District head Mr. Prisacari Anatolii, (+373 230) 22 650, 22 840

Village Rudi – mayor Ms. Raneta Zinaida Vasile, (+373 230) 47 236

Village Tatarauca Veche – mayor Mr. Popa Valentin, (+373 230) 48 236

Village Oclanda – mayor Mr. Bram Vladimir (+373 230) 44 544

Village Cremenciug – mayor Mr. Pinzari Anatol (+373 230) 31 236

Village Holosnita – mayor Mr. Groapa Veaceslav (+373 230) 70 236

Iarova – Mr. Orlov M. (+373 230) 76 236

Central and regional profile authorities:

Ministry of Ecology and Natural Resources of the Republic of Moldova (postal address: MD 2005 Chisinau, Cosmonautilor str. 9, tel. +373 22 20-45-21, 22-16-67, tel/fax 22-07-48, E-mail:

egreta@mediu.moldova.md)

Contact data of focal point: tel. +373 22 20-45-37, E-mail: josu@mediu.moldova.md

Soroca State Forestry Enterprise. City of Soroca. – director Mr. Vasile Scripnic, (373 230) 26 260

32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

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