

Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes 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. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 14, 3rd edition). A 4th edition of the Handbook is in preparation and will be available in 2009.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

04 Decemder 2012

3. Country:

Belarus

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Morochno (Морочно)

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- a) Designation of a new Ramsar site ; or
b) Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or
ii) the boundary has been extended ; or
iii) the boundary has been restricted**

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or
- ii) the area has been extended ; or
- iii) the area has been reduced**

** **Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site:

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

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a hard copy (required for inclusion of site in the Ramsar List): ;
- ii) an electronic format (e.g. a JPEG or ArcView image) ;
- iii) a GIS file providing geo-referenced site boundary vectors and attribute tables .

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geo-political boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The boundaries of the wetland coincide with its natural borders and those of the elaborating national reserve "Morochno".

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

WGS 84 (DMX): N51°51'36" E26°37'53"

9. General location:

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

Territory is located in southern part of Belarus, 250 km to SW from Minsk and 200 km east of Brest, in the border area with Ukraine. The territory is located within the Stolín administrative district, 8 km west of its center (Stolín, 12,500 inhabitants).

10. Elevation: (in metres: average and/or maximum & minimum)

137–143 m above s. l.

11. Area: (in hectares)

5845 ha

12. General overview of the site:

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

The wetland is complex mire system with predominance of rare for the Belarusian Polesie ridge-hollow sphagnum bogs. One of the few mires in the region remained after a large-scale reclamation. It is important for the phytocenotic and landscape diversity conservation at the national and international level.

The wetland is characterized by following features (Treasures..., 2005):

- One of the three largest bogs remained in Belarusian Polesie;
- Important Bird Areas of International Importance (2005);
- The wetland is listed as especially significant cross-border territory by National Strategy for Biodiversity Conservation of the Dnieper Basin;

- Is one of the most promising objects forming a network of cross-border and border Belarusian-Ukrainian environmental facilities;
- Due to the cross-border location with Ukraine, the wetland has a high water-protecting and water-regulating value on the both sides of the border;
- Located near a major floodplain of river Horyn, which is an important ecological corridor for many species of animals, including rare, threatened or endangered species (populations of 9 bird species, 2 amphibians, 10 plant species listed in the national Red Data Book of Belarus, IUCN Red List, Annex I of CITES);
- Integrated into the system of protected areas established to protect the natural complex of the river Pripyat.

13. Ramsar Criteria:

Tick the box under 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). All Criteria which apply should be ticked.

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

14. Justification for the application of each Criterion listed in 13 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 1: The wetland is an example of rare natural wetland type for given biogeographic region. The wetland is complex mire system with predominance of rare for the Belarusian Polesie ridge-hollow sphagnum bogs. One of the few mires in the region remained after a large-scale reclamation.

1b – bog of East European type, with some peculiar feature Taiga zone.

1d – plays an important hydrological role for adjacent areas:

- during dry season stores water, and provides with it other water bodies;
- maintains the groundwater level;
- plays an important role in maintaining of high water quality in the region.

Criterion 2: The wetland supports the existence of vulnerable, endangered or threatened species and ecological communities.

2a – supports conservation of the threatened species and ecosystems, there are 6 categories of specially protected communities of higher plants (Annex 1).

2b – is important for population of rare, threatened or endangered species (populations of 9 bird species, 2 amphibians, 10 plant species listed in the national Red Data Book of Belarus, IUCN Red List, Annex I of CITES) (Annexes 2, 3)

2d - contain ecosystems that are threatened at a global level, and are rare for the given biogeographic region: 7110 Active raised bogs, 7120 Degraded raised bogs still capable of natural regeneration, 7140 Transition mires and quaking bogs; 9080 Fennoscandian deciduous swamp woods; 91D0 Bog woodland (EEC Habitat Directive).

Criterion 3: The existence of populations of plants and animals that are important for maintaining biological diversity (Annexes 1, 2 and 3), a feasibility biogeographic region.

3a – the wetland supports populations of plant and animal species that are important for the conservation of biological diversity of fauna and flora of bogs disturbed by total drainage reclamation.

The wetland is a refugium for the boreal floristic the complex.

15. 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:

Continental

b) biogeographic regionalisation scheme (include reference citation):

The Pan European Map of Biogeographical Regions 2001 (Г-Р-В-С 2001/89 Appendix V)

16. 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.

Geomorphology. According to geomorphological zoning wetland is located on the Stolin fluvioglacial plain. This geomorphological zone is located in the southern part of Belarusian Polesie between the Pripyat River and right tributaries of Horyn and Styr rivers. In point of geological structure, the territory is confined to the south-eastern slope of the Polesie saddle and to the territory adjacent to Pripyat camber deflection.

Wetland is a large watershed peatland of Polesie outwash plains with peat deposits of bog type predominance. It includes four comparatively large areas, separated by the remained fragment of the partly eroded finite-moraine ridge. These areas are interconnected by system of depressions with the lowest absolute values (137-143 m) between the morainic hills and small fragments of fluvioglacial plain. Wetland has a convex shape with an asymmetric surface structure. Mire is slightly convex, the relative height is 0.5 - 2.0 m in average.

Origin. The wetland has a natural origin. Stratigraphy of peat and lake sediments, sediments demonstrates the existence of the shallow lake in a wetland territory before the beginning of postglacial period. As a result of subsequent global warming, and obstruction of outflow from Polesie outwash plain the swamping of some relief lowerings took place. The next stage of peatland formation is associated with the "encroachment" of mire to adjacent area, boundaries extension of some its parts, and integration them into the entire wetland Morochno.

Hydrology and hydrography. The wetland - a typical bog, located in the watershed of two rivers: Goryn and Styr (Pripyat tributaries). Any river flows in the wetland. Mire is predominantly fed by precipitation, and partly by groundwater from the surrounding catchment area. The territory is jagged by a numerous of inland uplands, formed by coarse-grained sands and sandy loams, and sandy clays. Peat deposits underlain by the sandy soils and sandy loam as well. Hence, the territory is mainly dominated by sandy soils with a large coefficient of filtration, resulting in small ditches and streams in the area are prone to drying out.

Hydrographic objects, first of all reclamation canals, appeared on this territory in the early 20th century. That time two main canals were dug through the mire from the north to south and from the east to west: Mogilniy canal (6.3 km; now almost not functioning) and Duboyskoy canal (4 km).

In Ukraine, beyond the Morochno mire, canal Mogilniy joins the river Syrets, left tributary of the Horyn river. In the southwestern part of the wetland canal maintains functional properties, although its edges are heavily overgrown by shrubs. Relative height is about 1 m for 1 km of canal, which determines the intensive rate of water flow in the spring (March-May). In May, the water level in the canal was more than 1.0 m, in July - about 20-30 cm, in August the canal was almost dry. At a distance of 1-2 km from the border of Belarus canal is covered by numerous beaver dams and the water level here raises to the banks. In the north-eastern part of the wetland canal operates as well. The canal width in this area is about 4.0 m, depth - 1.0-1.5 m. In the peripheral part of the wetland series of smaller canals flow into canal Mogilniy, their width is 2.5-3.0 m, and depth is about 1.0 m. At their mouths they generally function, on the beds located higher are overgrown by riverside and mire vegetation and have practically lost their functional properties.

The length of all canals on the wetland Morochno built from beginning of 20s of last century is about 25 km.

In 70s of the last century peat extraction was started in the northern part of wetland. This resulted in a significant change of the hydrological regime. To provide appropriate conditions for peat extraction, water level was lowered for 1.5-2.0 m by creation of drainage system. In addition, extraction site was surrounded by functioning bypass canal, which also drains the adjacent part of the undisturbed mire. The rate of water release from natural mire has increased significantly due to the connection of the old drainage system (canal Duboysky) in the northern part of wetland with a canals network of extraction site. The depth of the bypass canal is 3.0-3.5 m, its width - 4.0-6.0 m. Outflow in the canals is intensive during spring time (late April-May), water level in canal is 2.5 m below the surface of the wetland. As a result of the extraction site drainage system functioning, the groundwater level was significantly reduced in a radius of 1-2 km leading to degradation of the natural mire vegetation and to increasing the frequency of fires.

The groundwater level in undisturbed parts of wetland, beyond the zone of drainage influence, was near the soil surface during the years with moderate waterlogging conditions. Water level fluctuations were $-20 \div +20$ cm. On the marginal zone of wetlands, as well as on the periphery of the islands, water covers the soil surface during the whole vegetation period, and in some areas in western part of wetland large hollows are remained throughout the season.

Hydrochemical parameters of water. In general, are typical for all of Polesie bogs, and indicate close to natural conditions there. pH value is 4.5 ± 0.1 (with limits 3.70-6.50), electrical conductivity - 69 ± 4 (33-276) $\mu\text{S}/\text{cm}$.

Soils. The structure of the soil cover is dominated by peat soils. The bog peat deposits are the most abundant. Magellanicum peat prevails; in the central part of the bog the upper layer of deposits forms a complex peat. Layers of highly decomposed cotton grass-sphagnum and sphagnum-cotton grass peat are well defined. In the deepest points of peat deposits, at the mineral bottom, sapropel or sedge-hypnum peat can be found. The average thickness of peat deposition is 2.5 m and maximal - 5.7 m. Under the turf often occurs Thick layer of sapropel (0.1-1.0 m) is often occurs under the peat deposition. Presence of saproel is evidence of the mires formation on the place of overgrown ponds and adjacent waterlogged dry valleys.

Climat. The meam annual long-term (1966-2011) air temperature is $+6.9 \pm 0.1^\circ\text{C}$, varies in different years from $+4.5$ (1987) to $+8.7^\circ\text{C}$ (1989, 2008). The warmest month is July ($+18.8^\circ\text{C}$), coldest is January (-5.4°C). The duration of the period with average daily temperatures above 0°C is 256 days, the growing season is 207 days, frost-free period is 148 days. The latest frost in the air is recorded on 2d of May, the first - on 28th of September. The mean monthly temperature in January ranges from 0.5°C (1989) to -15.6°C (1987), in July - from $+14.2^\circ\text{C}$ (1979) to $+22.9^\circ\text{C}$ (2010). The mean monthly temperature of the soil surface is to -7°C in winter and up to 22°C in July.

The mean annual precipitation in the study area is 658 mm. Number of days with precipitation - 160-165. Precipitation for the cold period ranges from 175 to 200 mm, in a warm period - from 400 to 450 mm. The average thickness of snow cover in winter is 20 cm. Number of days with snow cover doesn't exceed 85-90.

17. Physical features of the catchment area:

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

Due to the fact that any river falls into the wetland, its borders coincide with the boundary of the catchment area. Therefore physical and geographical characteristics of the catchment area are the same as for wetland and explained above in paragraph 16.

18. Hydrological values:

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

The wetland, as part of the natural hydrographical network of Belorussian Polesie, is very important for hydrology of adjacent territory:

- during dry season stores water, and provides with it other water bodies;
- maintains the groundwater level;
- participates in formation of underground hydrological systems, which supplies with water surface wetland complexes;
- plays an important role in maintaining of high water quality in the region.

19. 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.

$U^{39.9\%}$, $Xp^{35.4\%}$, $Ts^{1.7\%}$, $Xf^{1.2\%}$, $W^{0.4\%}$, $Tp^{0.1\%}$, $9^{0.1\%}$

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

General characteristics of the taxonomic and typological diversity of biota. 549 species of higher plants is recorded on the territory of a wetland, (30% of the total flora of Belarus). Approximately 25 species of vascular plants and mosses per 100 m² can be found within investigated area. The highly packed habitats (28-34 species/100 m²) are concentrated along the periphery of the wetland borders. Such habitats are confined to forest ecotopes with fertile soils (black alder-nemoral grasses forests) or to the rich fens and transitional mires. These areas form ecological corridors and are important for conservation of biological diversity of the wetland. Phytocoenoses of oligotrophic bog, located in the centre, are characterized by minimal set of species (9-12 species/100 m²).

The distinctive and relatively undisturbed flora of the wetland is characterized by number of unique species, 10 of them listed in the national Red Data Book (2005), 1 - the application of the Berne Convention (1979), 5 - in the application of the Convention CITES (1973), 18 species of plants that require protection and rational use.

The vertebrate fauna has diverse composition and community structure, and reflects the full range of ecosystems ecological features. In total 159 species of terrestrial vertebrates (30 species of mammals), 112 bird species, 7 reptiles and 10 amphibians are recorded within the area (Treasures..., 2005).

The structure of wetland vegetation: forests - 57%, mires - 42%, meadows - 0.02%, waters - 0.1%, other land - 0.8%. Totally 71 natural ecosystems are identified in the wetland "Morochno": forests - 28, mires - 32, anthropogenic ecosystems - 11; the average number of ecosystems per 1 km²- 18. According to the Directive on the conservation of natural habitats, wild flora and fauna 20 rare and unique ecosystems (78% of the total area) are identified on the territory of the wetland.

The core of the wetland is the complex of transitional mires and bogs. This complex is rare for the Belorussian Polesie and has the particular value for the wetland. Economic activities carried out here (deforestation, peat extraction), and the fact that wetland is surrounded by rural areas are a real threat for the preservation of valuable wetland. It is reasonable to give the wetland "Morochno" a higher status of protection - status of the Ramsar site.

Vegetation of the wetland is a complex combination of forest and mire phytocenosis of bogs, transitional mires and fens. They are characterized by alternation of open ridge-hollow complexes with areas forested by bog pine and mineral sandy ridges-islands. About 60 types of plant communities are recorded in the overall structure of vegetation. After intensive reclamation of Polesie such large bog complexes are extremely rare in this region. Investigation area is covered by open (non-forest) wetlands: 42% of the total area, including bogs - 19.6%, transitional mires- 17.1%, fens - 5.3%. According to ecophytocentric (dominant) classification mire vegetation of the wetland is represented by 5 types, 18 formations and 35 associations.

The core of the wetland is sphagnum bog with the features of typical East European sphagnum mires. Dominants and codominants there are *Sphagnum magellanicum*, *S. rubellum*, and *Sphagnum cuspidatum* in hollows. The most abundant shrubs and grasses are *Ledum palustre*, *Calluna vulgaris*, *Eriophorum vaginatum*, *Rhynchospora alba*, rich in *Scheuchzeria palustris* hollows can be also found here. At the same time this wetland system has a number of specific local features: some species can be found near (or beyond) of the southern border of their distribution areas (*Chamaedaphne calyculata*, *Empetrum nigrum*, *Carex pauciflora*, *Carex limosa*, *Scheuchzeria palustris*); *Sphagnum fuscum* is the dominant and the indicator of the north-western boreal bogs, and still abundant here.

The ridge-hollow complexes, located in the central part of the slopes, occupy significant area of mire. Hollows can be also found on the top of the bog, they form a complex with a pine-dwarf shrub-sphagnum and pine-dwarf shrub-cotton grass-sphagnum communities, which cover the ridges and spaces between hollows. Cotton grass-, beak rush-, scheuchzeria- and mud sedge-sphagnum communities (with *Sphagnum cuspidatum*) are typical for hollows. Plant communities of ridges and top of the bog are represented by *Pinus sylvestris* f. *litvinowii*. Pine-dwarf shrub-sphagnum communities with *Pinus sylvestris* f. *uliginosa* are widely distributed, and occur on the periphery of the central part, as well as on well-drained areas of the wetland. Shrubs are dominated by *Calluna vulgaris*, and *Ledum palustre*. The broad and strongly waterlogged band of eutrophic communities edges the bog. This band is covered by mire forests and grass communities formed by *Alnus glutinosa*, *Betula pubescens*, different *Salix* and *Carex* species, and mire herbs: *Comarum palustre*, *Calla palustris*, *Phragmites australis*, *Carex lasiocarpa*, *C. rostrata*, *C. cespitosa*, *C. vesicaria* and many others. Area between oligotrophic bog part and lagg covered by mesotrophic (often heavily flooded) sphagnum communities with *Sphagnum centrale*, *Sphag-*

num obtusum, *Sphagnum fallax*, *Carex lasiocarpa*, *Carex rostrata*, sometimes with a sparse stand of *Betula pubescens* and *Pinus sylvestris*.

Mire-, swamp- and upland forests are located on the periphery and in the islands of the wetland. Forests act as a buffer for the wetland core (sphagnum bog). Formational-typological structure of the territory is determined by a complex of natural and anthropogenic factors. Limited accessibility of the territory and, therefore, limited forestry activities, in spite of the reclamation activity, conducted to preserve the forest ecosystems with their particular structure, floristic composition, age, and scientific significance.

In general, forests cover 57% of the investigated site; the typological scheme of forest vegetation consists of 3 groups of formations, 7 formations, 12 series, and 28 types of forest. The Pineta sylvestriae formation (84.7%) dominates in the forests composition. Another forest formations are not so abundant on the wetland: Betuleta (10.4%), Querceta (3.0%). Only fragments of Alneta glutinosae (0.7%), Piceeta abietiae (0.7%), Carpineta betulusiae (0.5%), Tremuleta populusiae (2.7%) can be found here. According to the typological diversity the most widespread forest types are carioso-sphagnosum (44.2%), ledosum (15.3%) and myrtillosum (14.4%).

As a result of peat extraction on adjacent territories and fires of recent years communities with rather simple structure are spread within the wetland. In a sparse (with top density 0.1-0.2) upper forest layer is composed of *Betula pubescens*, *B.pendula*, *Populus tremula*, *Pinus sylvestris* of 0.5-2.5 m height. Understory layer is abundant with forest tree species. Grass-dwarf shrubs cover is 50-90%, dominated by *Calluna vulgaris*, *Polytrichum strictum*. Secondary communities are unstable and exist only temporally. Currently, due to the influence of the secondary waterlogging the active regenerative processes occur in these phytocenosis, but their full rehabilitation can lasts 25-30 years.

Flora of higher vascular plants is quite diverse and species rich. This determined by the habitats and plant communities diversity (forest, mire, aquatic and semi-aquatic). According to the floristic studies data, 549 species of vascular plants belonging to 299 genera and 83 families are recorded within the wetland area. In general, total specie amount of flora of Belarus is 1700 species, 128 families and 600 genera.

5 lycopodium species, 6 - horsetails, 8 - ferns, 3 - gymnosperms, and 527 species of angiosperms (130 monocotyledons and 397 dicotyledons) are identified in the wetland flora. The most rich in species families are: *Asteraceae* – 60, *Gramineae* – 55, *Cyperaceae* – 38, *Caryophyllaceae* – 34, *Fabaceae* – 27, *Scrophulariaceae* - 24, *Rosaceae* - 23, *Cruciferae* - 22, *Lamiaceae* – 18, *Polygonaceae* – 16, *Ranunculaceae* - 15, *Salicaceae* – 14, *Umbelliferae* - 14, *Juncaceae* - 12, and *Violaceae* - 10. Other families include 9 or less species. The richest in species diversity are the following genera: *Carex* - 33 species, *Salix* – 13, *Viola* - 10, *Veronica* - 9, *Potentilla* – 8, *Rumex* – 8, *Trifolium* – 8, *Galium* – 8, *Juncus* – 8, *Ranunculus* – 7, *Polygonum* – 7, *Festuca* – 7, *Geranium* – 6, *Poa* – 6, *Stellaria* – 5, *Rubus* – 5, *Verbascum* – 5, *Campanula* – 5, *Artemisia* – 5, *Agrostis* – 5. All another genera consist of at least 5 species.

Flora of the investigated area also contains a lot of economically useful plant species - officinal, food, pabular, melliferous, ornamental and technical.

Fauna of the wetland representatively reflects the fauna of southern Belarus (Treasures, 2005).

The list of amphibians and reptiles is represented by 17 species; the most abundant species are *Rana arvalis*, *Rana ridibunda* and *Zootoca vivipara*. *Bombina bombina* and *Natrix natrix* can be found on the banks of canals. Along the margins of the wetland *Vipera berus* was recorded.

Within the wetland and on its periphery almost all native animals were recorded: *Alces alces*, *Sus scrofa*, *Capreolus capreolus*. *Castor fiber* can be observed on the canals of the wetland; such game species as *Sciurus vulgaris*, *Lepus europaeus* are common here. Rare for the Polesie region *Lepus timidus* was recorded on the margins of the mire. Common predators of the wetland forests are: *Martes martes*, *Mustela putorius*, *Mustela erminea*, *Mustela nivalis*. Mire ridges and edge dunes are inhabited by *Vulpes vulpes*, *Nyctereutes procyonoides*, *Meles meles*. On mineral islands *Canis lupus* sometimes can be met. *Mustela vison* inhabits the banks of drainage canals.

In the avifauna of the wetland counts 112 species of birds: 100 species of nesting birds and 12 migrant species.

The most important habitats. Six categories of ecosystems protected in accordance with EEC Habitat Directive are allocated within the wetland (58 ha; 78.4% of the total area).

Natura 2000 code	EUNIS habitat type name
7110 Active raised bogs	D1.1 Raised bogs
—<—	D1.11 Active, relatively undamaged raised bogs
—<—	G5.6 Early-stage natural and semi-natural woodlands and regrowth
—<—	G5.64 Raised bog pre-woods
7120 Degraded raised bogs still capable of natural regeneration	
7140 Transition mires and quaking bogs	D2.3 Transition mires and quaking bogs
—<—	D2.31 [<i>Carex lasiocarpa</i>] swards
—<—	D2.33 [<i>Carex rostrata</i>] quaking mires
—<—	D2.34 [<i>Carex limosa</i>] swards
—<—	D2.35 [<i>Carex chordorrhiza</i>] swards
—<—	D2.37 [<i>Rhynchospora alba</i>] quaking bogs
—<—	D2.38 [<i>Sphagnum</i>] and [<i>Eriophorum</i>] rafts
—<—	D2.39 [<i>Menyanthes trifoliata</i>] and [<i>Potentilla palustris</i>] rafts
—<—	D2.3A [<i>Calla palustris</i>] mires
—<—	D2.3B Brown moss carpets
—<—	D2.3C [<i>Eriophorum vaginatum</i>] quaking bogs
—<—	D2.3D [<i>Molinia caerulea</i>] quaking bogs
7230 Alkaline fens	D4.1C [<i>Carex rostrata</i>] alkaline fens
9080 Fennoscandian deciduous swamp woods	G1.51 Sphagnum [<i>Betula</i>] woods
—<—	G1.52 [<i>Alnus</i>] swamp woods on acid peat
91D0 Bog woodland	G1.51 Sphagnum [<i>Betula</i>] woods
—<—	G3.D1 Boreal [<i>Pinus sylvestris</i>] bog woods
—<—	G3.D2 Boreal sphagnum [<i>Pinus sylvestris</i>] fen woods

The wetland ecosystem functions. Ecosystems of the wetland have a number of important socio-economic and environmental functions:

- regulation of outflow
- gases exchange control (release of oxygen and carbon sequestration)
- raw materials (supplies of berries, medicinal and technical raw materials, hunting species)
- climate
- filtration (for groundwater)
- peat formation (wetland is the part of the largest in southern Belarus peatland)
- accumulation of water
- pioneer(in areas destroyed by peat extraction)

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, 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.*

In the flora of the wetland (Treasures..., 2005) 10 populations of species listed in the last edition of the national Red Data Book (2005) are recorded: *Oxycoccus microcarpus*, *Mellitis sarmatica*, *Polypodium vulgare*, *Lycopodiella inundata*, *Genista germanica*, *Drosera intermedia*, *Carex pauciflora*, *Salix myrtilloides*, *Hammarbya paludosa*. In addition, 18 plant species are included in the list of species that need preventive conservation in Belarus.

A very important feature of the wetland "Morochno" - it is a refugium for boreal floristic complex (*Carex pauciflora*, *Carex limosa*, *Rhynchospora alba*, *Scheuchzeria palustris*), which is common for the northern part of Belarus, but here is represented by insular habitats. They adjoin a common in Western Europe moderately thermophilic mire species (*Drosera*

intermedia, *Lycopodiella inundata*). Such a complex combination of geographical elements makes the wetland unique for the region and Belarus in general. Large areas of the wetland support specific moisture regime, and that's why insular areas of spruce forests were remained there.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. 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.*

Bird species (Treasures, 2005):

a) listed in the Red Data Book of Belarus - 8 species:

Grus grus, *Ciconia nigra*, *Circaetus gallicus*, *Falco tinnunculus*, *Falco subbuteo*, *Numenius arquata*, *Picoides tridactylus* and *Lanius excubitor*.

b) with a conservation status of the International Union for Conservation of Nature (IUCN) - 12 species:

Vulnerable (V): *Falco columbarius*

Rare (R): *Ciconia nigra*, *Anser anser*, *Circaetus gallicus*, *Circus cyaneus*, *Circus pygargus*, *Falco tinnunculus*, *Falco subbuteo*, *Grus grus*, *Numenius arquata*, *Tringa glareola*, *Lanius excubitor*.

c) with the European Threat Status - 9 species:

Rare (R): *Ciconia nigra*, *Circaetus gallicus*, *Circus cyaneus*

Vulnerable (V): *Tetrao tetrix*, *Grus grus*, *Limosa limosa*, *Lullula arborea*, *Alauda arvensis*, *Phoenicurus phoenicurus*.

d) the wetland is a key ornithological territory, in accordance with: the criterion B2: *Circaetus gallicus*, *Lyrurus tetrix*.

Within the wetland and on its periphery animals with the international protection status (LC) are recorded: *Alces alces*, *Sus scrofa*, *Capreolus capreolus*.

Habitats of the species included in the Red Data Book of Belarus can be found on the territory of the wetland:

Mammals: *Lynx lynx* and *Meles meles*.

Amphibians and Reptiles: *Emys orbicularis* and *Coronella austriaca*.

23. Social and cultural values:

a) Describe if the site has any general social and/or 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:

Historical and cultural importance.

A wetland is swampy, difficult of access area. Within the wetland settlements are absent. Any archaeological, cultural, historical monuments are not allocated within the territory.

Socio-economic potential.

Population. On the territory of the wetland settlements are absent. Surrounding areas historically were densely populated. From the west at a distance of 2.4 km from the wetland border villages Gordnaya and Derevnaya are located. Directly at the borders of the wetland villages Rovchak and Luchitsa can be found. In the north, at a distance of 2-4 km villages Luka and Glinka are located. The eastern borders of the wetland adjacent to the village Verhniy Terebezhov. The wetland area is heavily swampy and difficult of access for the population. There is only one way - v. Verhniy Terebezhov - v. Derevnaya, runs along the southern boundary of the wetland.

Industrial production and mineral resources. The investigated area is one of the largest peatland in southern part of Belarus. According to the "Resolution...", 1991" actual peat resources in 1988 were: 11,657 ha, industrial resources – 33,861 thousand tons (40% peat humidity). From the north, right at the boundaries of wetland, peat extraction site "Zubkovo" of the peat enterprise "Glinka" is located. There are three exploitable peat extraction sites here.

Agricultural production. There are no any agricultural lands directly on the territory of the wetland. One hectare of hay-fields is located here for the purposes of forest protection. Grazing is not performed within the wetland.

Forestry. The wetland includes productive lands, which are used for forestry. Total resource (according to forest regulation, 2008) is 285.4 thousand m³. Large area (85.6%) covered by forest belongs to the category of commercial forests. Biological resources. Berries (cranberries) collection is an important source of income for more than 5000 families of local population from adjacent areas (Treasures, 2005). According to expert estimates the annual harvest of cranberry is about 0.15-0.4 million USD. Generally this type of activity is carried out by residents of settlements located around the wetland.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box and describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

a) within the Ramsar site:

State Forestry Institution "Stolin Forestry"

b) in the surrounding area:

State lands leased by agricultural enterprises, forestry, peat enterprise.

25. Current land (including water) use:

a) within the Ramsar site:

The wetland is state property (land of the Stolin district executive committees) and transferred for the long-term use by State Forestry Institution "Stolin Forestry".

Major land uses:

- forestry
- logging,
- reforestation
- secondary forest use (berries, mushrooms, officinal and technical raw collecting)
- recreation
- hunting

b) in the surroundings/catchment:

Major land uses:

forestry

- logging,
- reforestation
- secondary forest use (berries, mushrooms, officinal and technical raw collecting)

agriculture

- perennial grasses growing
- tilled crops and grain-crops
- grazing

peat extraction

26. 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:

Drainage reclamation. The oldest canals draining the western and central part of the wetland were dug in the 20s of last century. At the present time, their drainage function is reduced due to overgrowing by vegetation. The most important hydrological network is those of peat enterprise "Glinka". Gross canals 3-3.5 m deep, and 4.0-5.0 m wide. Spring out-flow (late April - May) is intense, the water level is 2.5 m below the soil surface. The total extension of the canals within the wetland area is about 25 km. Currently, 10.8% of the area show a significant degradation processes related to the drainage reclamation.

Fires. Lowering of the water level substantially increased frequency of fires. Implemented researches (scientific justification, 2003) showed that over the last decade the wetland was affected by fires quite regularly. Fire covered several hundred hectares in the northern and southern part of the wetland. The fires led to drying up of pine, in some places to soil destruction, and consequently to biological diversity decreasing.

Peat extraction. The northern part of the wetland is substantially violated by the peat extraction. In addition to the complete destruction of vegetation within the extraction site, this area has a significant negative impact on the surrounding area ecosystems.

Special studies show that the zone of influence on the vegetation of the peat extraction enterprise is 1,000 m. This zone is divided into two sub-zones: 1) near (of severe exposure) - 0-250 m from the peat extraction sites; 2) distant (of moderate and low impact) - 250-1000 m. The total area damaged by peat extraction is about 1000 ha, including 62 ha of the area with highly damaged ecosystems. Worked-out peat extraction sites pose a significant hazard to environment. The secondary waste vegetation was formed within these areas. Such vegetation has a low fire resistance.

By the decision of the Council of Ministers of Belarus (№ 794 from 17.06.2011) it is planned to transfer part of the wetland under the peat extraction in 2012-2015.

Logging. The negative factor is local. Forests destined for cutting are located on the periphery or on the mineral islands of the wetland.

Poaching. As a result of poaching, the number of major economically valuable animals is significantly lower than the biological capacity of the wetland. Populations of moose, wild boar, capercaillie and grouse are particularly endangered. Populations of protected species in Belarus (lynx and badger) are also threatened.

Survey results, the materials of the last forest inventory and analysis of research materials from previous years show that the total area of more or less damaged natural ecosystems within the wetland is 25.6%.

b) in the surrounding area:

All negative factors listed for the wetland also occur on the adjacent territory.

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

- By the decision of the Council deputies of the Brest Region (№ 394 of 05.06.1978) the Biological Reserve of Local Importance "Morochno" was established on the territory of wetland.
- The wetland has the status of Important Bird Area (2005): Criteria B2: *Circaetus gallicus*, *Tetrao tetrix*.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

c) Does an officially approved management plan exist; and is it being implemented?:

There is no officially approved management plan for the wetlands.

d) Describe any other current management practices:

Measures for hydrologic regime restoration were implemented on the wetland (2007-2009).

28. Conservation measures proposed but not yet implemented:

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

According to the national "Schemes of rational allocation of specially protected areas until 2015." (2006) it is planned to establish the national wetland reserve "Morochno" within the investigated area (2012-2013). Establishment of the reserve will allow to update the conservation regime, to preserve the most valuable habitats for animals, plants and ecosystems. As part of these activities, it is planned to review some issues related to the forestry, hunting, peat extraction within the protected area and its buffer zone.

29. Current scientific research and facilities:

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

Case studies of landscape and biological diversity in the reserve were carried out to prepare the scientific justification for the specially protected territory establishment. Flora and fauna of the wetland were studied in details, the systematic list of major groups of vertebrates was also prepared; rare and endangered species were identified, and the current condition of the wetland was assessed in 2003. These works were carried out by various specialists of the Scientific and Practical Center for Bioresources of the National Academy of Sciences, and of the Institute of Experimental Botany of the National Academy of Sciences.

In 2007-2009 within the framework of the UNDP-GEF project "Renaturalization and Sustainable Management of Peatlands to Combat Land Degradation, Climate Change and the conservation of globally significant biological diversity", the scientific justification for peatland rewetting located within the wetland was prepared. A system of the complex monitoring of wetland ecosystems and their dynamics after rewetting is created. The first series of observations have already conducted (Scientific and Practical Center for Bioresources of the National Academy of Sciences, Institute of Experimental Botany of the National Academy of Sciences).

The influence of peat extraction sites on adjacent territories was investigated in the framework of the state programme "Peat" in 2009-2011. A system of stationary observation points (17 in total) for vegetation and hydrology monitoring was placed here (Institute of Experimental Botany of the National Academy of Sciences).

The large-scaled map of vegetation of the wetland was created in the framework of the state programme "Space exploration" in 2008-2010 (Institute of Experimental Botany of the National Academy of Sciences).

Forestry management, grading of hunting areas, counts of hunting and rare species are periodically carried out on this territory. The obtained data have the great scientific importance (Scientific and Practical Center for Bioresources of the National Academy of Sciences, RUE "Belgosohota", RUE "Belgosles").

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

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

There are no observational points and ecological paths within the wetland. Special environmental, scientific and popular publications, describing the flora, fauna, sights and uniqueness of the wetland, were not published.

31. Current recreation and tourism:

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

The wetland is located quite far from the large settlements. It is afforested and highly waterlogged. That's why there is no necessary infrastructure for recreational activities. There are no rivers and lakes here, which usually attract vacationists. Recreation potential of the wetland is low, and the main recreational uses are hunting and picking mushrooms and berries by people from adjacent settlements. The wetland is located in the border area with Ukraine, therefore, it is accessible only for local population.

Open areas and woodlands of the wetland are the most intensely affected by recreational pressure (used for picking berries and mushrooms). In general, levels of recreational pressure are significant, but don't exceed the critical values.

Thus, during the cranberry-picking period (September-October) about 150-250 people visit the wetland per day (maximum permissible - 40 people/day). The main reasons for visiting the wetland are gathering of berries, mushrooms, fishing and hunting. In this regard, the long-term path network, permanent entrances to the wetland, and parking places were formed there. However, this form of activities is seasonal and do not have a significant impact on the functioning of natural complexes.

32. Jurisdiction:

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

- Ministry of Forestry (Myasnikovich st., 39, Minsk, 220048, Belarus).
- Ministry of Natural Resources and Environment (Kollektornaya st., 10, Minsk, 220048, Belarus).

33. 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.

The wetland is located within the lands of state forestry Institution "Stolin Forestry".

- Stolin forest area

Address: 225510, Stolin, Tereshkova st., 60

Fax: +375 (1655) 24134

e-mail: stolles@yandex.ru, stolin@lesnoi.by

Director: Kukharev Gennady

Tel.: +375 (1655) 24920

Head Forester: Leonovets Nikolai

Tel.: +375 (1655) 020284

The wetland is managed by departments of the Stolin Forestry. Their contact details are given below:

- Kolodno forest area

Address: Stolin district, Kolodnoe

Tel: +375 (1655) 70554

Forester: Sozanovich Vladimir

Forester Assistant: Repetuha Anatoly

- Terebezhov forest area

Address: Stolin district, Terebezhov

Tel: +375 (1655) 46245

Forester: Tarasiuk Vyacheslav

Forester Assistant: Yazubets Nikolai

State control of the protection and rational use of the wetland is carried out by the Stolin Regional Inspectorate of Natural Resources and Environment.

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

1. The Red Book of Belarus: Rare and endangered species of wild plants / Ch. Editorial Board.: L.I. Khoruzhik (preds.), L.M. Sushchenya, V.I. Parfenov and others - 2nd ed. - Minsk: BelEn, 2006. - 456.
2. Treasures of Belarusian Nature: Areas of international importance for biodiversity conservation / A.V. Kozulin [and others]. - 2nd ed. - Mn.: Belarus, 2005. - 215.
3. Resolution of the Council of Ministers on November 25, 1991 № 440 "Schemes of rational use and protection of peat resources of the Republic of Belarus for the period up to 2010"
<http://laws.newsby.org/documents/sovetm/pos20/sovmin20264.htm>

Please return to: **Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • e-mail: ramsar@ramsar.org

ANNEX 1

THE MOST IMPORTANT HABITATS

Natura 2000 code	EUNIS habitat type name
7110 Active raised bogs	D1.1 Raised bogs
—<—	D1.11 Active, relatively undamaged raised bogs
—<—	G5.6 Early-stage natural and semi-natural woodlands and regrowth
—<—	G5.64 Raised bog pre-woods
7120 Degraded raised bogs still capable of natural regeneration	
7140 Transition mires and quaking bogs	D2.3 Transition mires and quaking bogs
—<—	D2.31 [<i>Carex lasiocarpa</i>] swards
—<—	D2.33 [<i>Carex rostrata</i>] quaking mires
—<—	D2.34 [<i>Carex limosa</i>] swards
—<—	D2.35 [<i>Carex chondrorrhiza</i>] swards
—<—	D2.37 [<i>Rhynchospora alba</i>] quaking bogs
—<—	D2.38 [<i>Sphagnum</i>] and [<i>Eriophorum</i>] rafts
—<—	D2.39 [<i>Menyanthes trifoliata</i>] and [<i>Potentilla palustris</i>] rafts
—<—	D2.3A [<i>Calla palustris</i>] mires
—<—	D2.3B Brown moss carpets
—<—	D2.3C [<i>Eriophorum vaginatum</i>] quaking bogs
—<—	D2.3D [<i>Molinia caerulea</i>] quaking bogs
7230 Alkaline fens	D4.1C [<i>Carex rostrata</i>] alkaline fens
9080 Fennoscandian deciduous swamp woods	G1.51 Sphagnum [<i>Betula</i>] woods
—<—	G1.52 [<i>Alnus</i>] swamp woods on acid peat
91D0 Bog woodland	G1.51 Sphagnum [<i>Betula</i>] woods
—<—	G3.D1 Boreal [<i>Pinus sylvestris</i>] bog woods
—<—	G3.D2 Boreal sphagnum [<i>Pinus sylvestris</i>] fen woods

ANNEX 2

FLORA

In the flora of the wetland 9 species listed in the last edition of the national Red Data Book (2005) are recorded:

Oxycoccus microcarpus,

Mellitis sarmatica,

Polypodium vulgare,

Lycopodiella inundata,

Genista germanica,

Drosera intermedia,

Carex pauciflora,

Salix myrtilloides,

Hammarbya paludosa.

ANNEX 2

FAUNA

Bird species:

a) listed in the Red Data Book of Belarus - 8 species:

Grus grus,
Ciconia nigra,
Circaetus gallicus,
Falco tinnunculus,
Falco subbuteo,
Numenius arquata,
Picoides tridactylus,
Lanius excubitor.

b) with a conservation status of the International Union for Conservation of Nature (IUCN) - 12 species:

Vulnerable (V): *Falco columbarius*

Rare (R): *Ciconia nigra*,
Anser anser,
Circaetus gallicus,
Circus cyaneus,
Circus pygargus,
Falco tinnunculus,
Falco subbuteo,
Grus grus,
Numenius arquata,
Tringa glareola,
Lanius excubitor.

c) with the European Threat Status - 9 species:

Rare (R): *Ciconia nigra*,
Circaetus gallicus,
Circus cyaneus

Vulnerable (V): *Tetrao tetrix*,
Grus grus,
Limosa limosa,
Lullula arborea,
Alauda arvensis,
Phoenicurus phoenicurus.

d) the wetland is a key ornithological territory, in accordance with: the criterion B2:

Circaetus gallicus,
Lyrurus tetrix.

Within the wetland and on its periphery animals with the international protection status (LC) are recorded:

Alces alces,
Sus scrofa,
Capreolus capreolus.

Habitats of the species included in the Red Data Book of Belarus can be found on the territory of the wetland:

Mammals:

Lynx lynx,
Meles meles.

Amphibians and Reptiles:

Emys orbicularis,
Coronella austriaca.