

# TENTATIVE LIST

**STATE PARTY:** Russian Federation

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**Submission prepared by:** Ministry of Natural Recourses of the RF

**Name:**

**E-mail:**

**Address:**

**Fax:**

**Institution:** Ministry of Natural Recourses of the RF

**Telephone:**

<b>NAME OF PROPERTY:</b>	The Great Vasyugan mire
<b>State, Province or Region:</b>	Tomsk oblast, Bakcharskiy district
<b>Latitude and Longitude, or UTM coordinates:</b>	Coordinates of the nominated territory: <ul style="list-style-type: none"><li>• The farthest northern point: N56°58'51"; E79°41'24"</li><li>• The farthest southern point: N56°14'41"; E81°34'34"</li><li>• The farthest western point: N56°55'12"; E79°35'30"</li><li>• The farthest eastern point: N56°23'11"; E82°25'17".</li></ul>

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## DESCRIPTION:

The Great Vasyugan Mire, the largest swamp system in the northern hemisphere of the planet, is located in the central sector of the West Siberian plain, a geographical phenomenon due to extremely wide spreading of swamps. The mire occupies a large area of the Ob and Irtysh watershed and stretches between latitudes 55°35' and 58°40' North, and longitudes 74°30' and 83°30' East. Mire extension from west to east is about 550 km, from north to south in the axial part - in average 50-80 km; with spurs, or "tongues" taken into account, spread of the mire from north to south reaches 270 km.

The area of the Great Vasyugan Mire is over 55 000 m<sup>2</sup>, which is about 2% of the whole area of peat bogs of the world. The landscape structure of the Great Vasyugan Mire includes bogs (32%), fens (35%) and forested mires (33%).

The Great Vasyugan Mire is located within boundary of four regions of Russian Federation: Tyumen, Omsk, Tomsk and Novosibirsk regions (mainly Tomsk and Novosibirsk regions). The system of registration of land resources categorizes the mires as the land belonging to forest fund. The western part of the mire till about 78° E meridian is involved into the area of exploration and exploitation of oil and gas fields.

The eastern part of the Great Vasyugan mire with adjoining forested mires and forest landscapes (5090.45 km<sup>2</sup>) is suggested to be nominated for inscription on the World Heritage List. The largest extent of the nominated territory in the direction from the north-west to the south-east is 180 km, from the north to the south - 55 km.

Nature conditions of the region of the Great Vasyugan mire (climate, relief and geological structure) are determined by its position in temperate latitudes in the central part of Eurasian continent and within the West Siberian plain, and are typical for swamp regions of Western Siberia. However, the structure

of local landscapes, their lithogenic foundation and biological components have their own specificity, which is caused by location of the swamp in the southern part of West Siberian plain as well as processes of its development and functioning.

### **Geological structure and relief**

The nominated property is located in the central part of the rivers Ob and Irtysh watershed within the Vasyugan plain, that was formed in last-Pleistocene mid-Quarterly period and accumulated lake and swamp sediment during last-Quarterly and Holocene epochs. The nominated property includes the most elevated parts of the Vasyugan plain where the watershed line between the rivers Ob and Irtysh goes. Absolute marks of the surface of watershed area occupied by mires reach 130-150 meters. Slopes of the watershed plain with absolute marks 125- 140 m are also occupied by swamps and become complicated because of valleys of small rivers, springs and temporary water canals, running from vast waterlogged interfluves.

Modern meso- and micro relief of the surface is formed with a determining role of swamp process, leveling unevenness of the relief of mineral sediment due to large bedding of peat and creating complicated specific relief of the surface of swamp landscapes of different types. Basing on the morphology of micro relief and the character of present relief-creating processes one can point out sections of developing upper, transitional and low-lying swamps, plots with progressive swamping, the surface of which is often covered with mounds on the border of waterless valleys and peat-beds, in sections of large rivers and river-heads of small ones. The rise of central parts of protuberant upper swamps relative to periphery parts and "ryam" islands (moss high bog with pine) relative to transitional and low-lying swamps surrounding them reaches 6-10 m. Slope surfaces with good drainage which are subjected to erosion processes take rather small area and are located in river valleys and lower parts of watershed slopes.

In tectonic respect the nominated territory belongs to Shegarskiy arch-like rising of Vasyugan ridge with the total amplitude of latest rises 100-125 m. pre-jurassic formations of the basis of West Siberian plate according to the data obtained through drilling and geophysical examinations are at a depth of 2400 to 3500 m. The platform cover overlapping them is built of Mesozoic and Kajnozoic deposits. The lower part of the cover is a massive (more than 2000 meters) thickness of alternating sea and continental Jurassic sediments (sandstone, limestone) and chalk (clay, sand, sandstone).

Palaeogene system in the location of the nominated territory with total thickness of the sediment 145-500 m begins with sea clays and finishes with continental lake, lake-and-swamp and alluvial sediments presented by sands, clays and alevrolits. Neocene's system with the thickness of 17-55 m is built by alevrolits, clays and sands with interlayer of brown coal. Quaternary sediment is widely spread, it consists of mainly loam and clay and sometimes sandy loam and sand.

The present link is represented by lake-and-swamp interfluve sediment (IbIV) and alluvial sediment of flood-lands and river-beds (aIV). The present lake-and-swamp sediment is mainly peat and sometimes clay and loam. The thickness of lake-and-swamp sediment reaches 8 meters, age - 8-11 thousand years. The average thickness of peat at some plots within the nominated territory is from 2 m to 4 m.

### **Climate**

The climate of the territory is continental-cyclonic with a long cold winter and a short hot summer. The average temperature for many years according to the data of meteorological service in Bakchar is -1.1°C. The coldest month of the year is January. The average temperature in January is -20.5°C. The absolute minimal temperature is stated in December and is -56°C. Maximum temperatures are observed in June and July. The average temperature in July is +17.6°C. The absolute maximum temperature is +37°C.

A period without light frosts starts in the third decade of May and lasts up to the second decade of September. The average duration of a period without frosts is 112 days, of a period with average daily temperatures more than 10°C - 102-107 days. The sum of air temperatures more than 10°C is 1450-1650, the sum of positive air temperatures during a year is about 2000°C.

The average annual amount of precipitation is 440-480 mm. Up to 70% of annual amount of precipitation falls during a warm period of a year. The average maximum height of snow cover on protected plots reaches 70 sm. The average annual wind speed is 3.6 m/sec.

### **Hydrography**

The nominated territory includes regions of forming drainage of large tributaries of the Ob and Irtysh flowing in opposite directions. There lie upper reaches of the rivers of the Parabel (the rivers Emelich, Kenga) and Chaia (the rivers Parbig, Andarma, Galka, Teterinka, Bakchar, Ixa) basins of the river system of the Ob. There are three large mainland lakes (Targatch, Bolshoe Beloe and Srednee Beloe).

The inner hydrographic system of the swamp includes rivers, streams, lakes and marshes. Rivers and streams start in inner lakes and marshes of the swamp and feed the drainage of bigger rivers with swamp water. In upper reaches small inner rivers of the swamp run in peat river-beds and sometimes disappear inside peat deposit. Down the stream with the increase of their draining role along the banks of the rivers appearing within open swamps develop forested mires, then come zones on mineral soils with forest vegetation, attached to the rivers.

### **Soil**

The soil cover of the nominated territory reflects characteristic features of the structure of soil in the southern part of the Vasyugan plain, formed on surface with weak drainage, built with clay carbonate soil-forming rocks under the hydrologic influence of the Great Vasyugan mire.

At the adjacent area prevail hydro-morph semi-hydro-morph soils which are at different stages of swamp-forming process. Auto-morph soils are found near the most drained locations as small islands among vast stretches of over wet ground. Soil cover of auto-morph locations to the north and south of the swamp differs greatly and is represented by various zone types of soils. The structure of hydro-morph and semi-hydro-morph soils being formed in the belt around the swamp is also different.

To the north of the swamp in the landscapes of southern taiga prevails the taiga type of soil-forming. Drained locations in the northern part of the nominated territory under moss-herb dark-coniferous forests and secondary small-leaves forests are taken by soddy podzols soils. On less drained plain locations on the periphery of the swamp soddy gley soils are formed.

Drainage weakened and the level of subsoil swamp waters in auto-morph plots risen, indications of a gley process appear, and a peat horizon is formed on the soil surface. In case of hydro-morph transformation soddy podzols soils are replaced by soddy podzols gley, turf podzols gley, turf gley and, at last, peat oligotroph soils.

Main area within the swamp in the southern part of the nominated' territory is taken by peat swamp intermediate and low soils. Turf bog soils of upper type are developed in the northern part of the territory, between tributaries of the river Ob.

On the southern periphery of the Great Vasyugan mire, caused by increased drainage of sub-taiga landscapes with small-leaves forests on washed from carbonate soil forming rocks grey forest soils are formed. The level of subsoil waters risen, grey forest soils change into grey gley soils, and with surface accumulation of organic horizon transform into humus gley and turf humus gley ones.

### **Vegetation**

The nominated territory is situated on the joint of 2 botanical-geographical sub-zones (southern taiga and sub taiga or sub-zone of birch and aspen wood) of the forest zone and 2 swamp zones - the zone of protuberant hummock-ridge bogs and the zone of different swamps.

The vegetation on the territory is mainly presented by different complexes of swamp associations. Forest ecosystems take a relatively small area and are found on plots near rivers.

Small tracts of native south taiga spruce-fir-cedar forests developing on drained plots with soddy podzols soils, are found in north-western part of the nominated territory along the rivers Kenga, Parbig, Andarma. The secondary aspen-birch forests mixed with the dark coniferous ones are more widely spread.

Total over wetting results in wide spread of forest associations of hydro-morph series. Pine-spruce-cedar forests develop on areas with weak drainage and soddy podzols gley soils. Large periphery swamp areas with soddy gley and turf gley soils are taken by cedar- pine -birch and pine forests with a number of transitional hydro morph forest associations between them.

Vegetation associations of open swamps take about 60% of the nominated territory.

In the southern part of the territory, on the surface of the watershed between the rivers Ob and Irtys one can find Carex-Hypnum water bogs with bush-hypnum-sphagnum row ("veretja") Veretja 1-3 m wide and tens of meters long are located across the inclination of the swamp surface. Width of marshes between different "veretjas" reaches 200 m.

On plain tops of the watershed with practically total absence of a surface drainage "veretjas" go in different directions and, joining with each other, form a net pattern of surface microrelief with diameter of grounds from 50 to 100 m. On "veretjas" meso-trophic bushhypnum- sphagnum associations with

sparse wood layer of birches and single pines are developed. The mosses *Sphagnum warnstorjii*, *S. magellanicum*, *S. fuscum*, *Tomentypnum nitens*, *Aulacomnium palustre* dominate here.

Marshes inside grounds are taken by intensively irrigated eutrophic hypnum-carex associations. Dominants of moss layer are *Hamatocaulis vernicosus*, *Drepanocladus sendtneri*, *Scorpidium scorpioides*, *Meesia triquetra*. Prevailing carexes are *Carex lasiocarpa*, *C. diandra*, *C. limosa*, *C. chordorrhiza*, *C. omskiana*. The necessary element is thicket of birch: *Menyanthes trifoliata*, *Comarum palustre*, *Equisetum fluviatile*.

Because of stagnant wetting and oligotrophication of swamp waters in the axial part of the Great Vasyugan mire among oligotrophic peat bogs develop marshes with *Carex rostrata* and *C. omskiana* with *Comarum palustre*, *Menyanthes trifoliata*, *Naumburgia thyrsoiflora*, *Cicuta virosa*, *Warnstorfia exannulata*, *Sphagnum teres*, *Calliergon stramineum*, intensively irrigated with secondary lakes.

On the background of open irrigated carex-hypnum swamps one can encounter rather numerous moss high bog with pine ("ryams"), with domination of *Sphagnum fuscum*, *S. angustifolium*, *S. magellanicum*, *Carex globularis*.

"Ryams" associations, which occupy larger areas, are a part of oligotrophic swamps on the northern macro-slope of the Great Vasyugan mire. They occupy the most drained areas of upper watershed swamps. On slopes of such swamps are formed, and on the periphery develop mesotrophic complexes. In depressions except for *Eriophorum vaginatum* grow *Carex*, *Sphagnum balticum*, *S. majus*. In periphery associations of the meso-trophic belt prevail *Sphagnum obtusum*, *S. falax*, *S. magellanicum*, *S. angustifolium*, different species of *Carex*, *Oxycoccus palustris*, *O. microcarpus*. On the main area and in island "ryams" *Sphagnum fuscum*, *S. magellanicum*, *S. angustifolium*, an *Pinus silvestris* dominate. Typical elements of "ryam" associations are complexes of lichens (*Cladonia*).

Large areas on the northern macroslope of the country between the rivers Ob and Irtysh are occupied by complex hummock ridge bogs, which develop in central parts of oligotrophic upper swamps with stagnant wetting. Their slopes are formed by fragments of low "ryams" associations. Vegetation cover of irrigated marshes and depression form different variants of plant associations. Dominating species in depressions are *Sphagnum balticum*, *S. papillosum*, *S. jensenii*, *S. majus*, *Sphagnum fuscum*, *Scheuchzeria palustris*, *Rhynchospora alba*, *Eriophorum vaginatum*, *Carex limosa*, *Cladopodiellajluitans*, *Calypogeia sphagnicola*.

Vegetation associations of transitional swamps are characterized by great diversity. In contact zones between carex-hypnum depressions and masses of protuberant upper swamps develop forested low birch and pine. Carex-sphagnum associations are included into complex of hummock ridge bogs and develop on the periphery of upper swamps. The important element of upper swamps of the nominated territory is meso-oligotrophic depressions. On the periphery of the massif of the Great Vasyugan mire and in valleys of rivers running from it forest swamps develop.

### **Animal world**

In all the types of ecosystems different species of invertebrates are widely spread. In grass and bush layer of forested swamps and forests *Ixodes* ticks (*Ixodidae*) are usual, sometimes numerous. In these types of vegetation associations one can find nocturnal butterflies (*Geometridae*, *Noctuidae* ect.), beetles (*Cerambycidae*, *Chrysomelidae*, *Ipididae*, *Carabidae*, *Staphylinidae* ect.), different Hymenoptera. Along the banks of slowly running rivers a lot of Ephemeroptera, Plecoptera and Diptera happen to fly in great amounts. A lot of small flying insects leads to appearance here different representatives of Odonata. In bogs Odonata served as insect-eating birds. Because of presence some big animals there are a lot of blood-sucker flies (*Hipoderma bovis*, *Oestris ovis* and *Hippoboscidae*) in bogs.

The main biomass of invertebrates in small lakes of bog territory consist of larva of different flies (*Culicidae*, *Tipulidae*, *Tendipendidae*) and others, and water Oligochaeta as well. These larva serve as the main food for birds living in bogs. The fauna of blood-sucker insects included 121 species: 28 species of *Simuliidae*, 31 species of *Ceratopogonidae*, 27 species of *Culiseta* and 35 species of *Tabanidae*.

There are three species of amphibian (Siberian salamander, true frog and common toad) and two reptile species (common lizard and viper) met at the nominated property.

The avifauna consists of 195 bird species belonging to 15 orders. As a whole, local fauna of birds consists of Siberian and European species but trans-pale arctic species includes in fauna as essential element too. On the territories of open low bogs and high bogs the trans-palaeartic species dominate.

The mammal fauna is rather typical for south part of taiga zone. More than half of mammals' bio-diversity consists of insectivores and rodents. Among small mammals Siberian and European species are

the most common. Nevertheless, on this territory there are some transpale arctic species, tundra-forests relicts and Mediterranean-China species as well.

The presence of suitable ecological conditions and a rather good food base leads to appearance some big mammals here. The mammals as follows: elk, brown bear, lynx, sable, squirrels are very common here. Most part of animals is concentrated in the border between bogs and forests near the lakes and rivers. Most part of elks wintering in the upper parts and valleys of all big rivers (Kenga, Parbig, Andarna, Bakchar and others). The most valuable fur mammal - sable - is concentrated within these places, too.

The bogs landscapes and forest-bogs landscapes of nominated territory play the important role for protection of rare animals' species. From the other hand, these landscapes served for development of the common ungulate species of taiga fauna.

The nominated territory is situated in the zone of migration flow of birds. Most part of birds use this territory for rest while migrating. The combination of large open space with the closed ones accompanying with the different lakes, rivers and streams create very favorable conditions for birds' temporary living during season migrations. Some species of water birds and carnivorous birds (including Falco peregrinus Tunstall, Strix nebulosa Forster) are nesting here. The density of Falco peregrinus population on the lake bogs is 0.12 specimen per km<sup>2</sup>. Over this area have been reported reliable encounters of aquatic warbler and slender-billed curlew (Numenius tenuirostris) - almost disappeared specie of the world fauna.

On the high bogs of nominated territory there are some populations of forest form of wild northern elk (Rangifer tarandus). The density of this animal is not stable because of illegal hunting and predator pressure (firstly of wolf). Here pass the main routes of elks seasonal migrations through the Great Vasyugan mire from winter pastures to calving places. Elks density at winter pastures is approximately 10 specimen per km<sup>2</sup>.

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## JUSTIFICATION FOR OUTSTANDING UNIVERSAL VALUE

### Criteria met:

(i)	(ii)	(iii)	(iv)	(v)	(vi)	<b>(vii)</b>	<b>(viii)</b>	<b>(ix)</b>	<b>(x)</b>
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The Great Vasyugan mire (the Vasyugan state complex (landscape) reserve of oblast subordination) is nominated to be included into the List of World Heritage basing on the following criteria:

### Criterion viii

The Great Vasyugan mire is a universal keeper of the chronicle of last-quadernary history of the Earth development, changing climate conditions and forming borders of modern geographical zones in the south of West Siberia reflected in its peat deposit.

Repeated putting taiga soil forming over humus-accumulated one with change of forest and meadow landscapes in Holocene formed on short plain slopes in the northern part of the Large Great Vasyugan mire soddy podzols soils with complicated structure of humus profile and soddy gley humus soils which keep the relics of high humus concentration of meadow soils Holocene optimum. Originality of these soils with complicated humus profile, reflecting the history of their formation and having no place in the existing now classifications of soils of Russia, is so great that these soils should be regarded as a unique monument of nature, which makes the nominated territory more scientifically valuable.

### Criterion ix

The Great Vasyugan mire is an outstanding example of a swamp ecosystem development during all Holocene time and is of great scientific importance. Primary, at first isolated, swamp massifs forming during Holocene relief depressions, during turf accumulation gradually (2-1,5 thousand years ago) merged into one vast and complicated swamp system. Here one can find a great variety and unique combination of low, transition and high swamps at different stages of development, which differ in view, vegetation character, peculiarities of surface micro-relief and structure of peat deposit. In structure of peat deposit of different swamps the whole process of their development is reflected.

The northern macroslope of the Great Vasyugan mire is mainly occupied by high bogs of specific «Narym» type, the descriptions of which are regarded as classical in Russian science. On the Great Vasyugan mire

one can observe (and this is a unique case) all the stages of upper swamp development. The axial part of the swamp and its southern macro-slope are characterized by substantial diversity of low and transition swamps. Only here is a special landscape swamp type discovered and described – “veretja” low bogs, formed in the axial part of the swamp, connected with the surface of the country between the rivers Ob and Irtysh, in the atmosphere feeding conditions.

### **Criterion x**

The nominated territory includes diversity and specific combination of swamp and forest-bogs landscapes in their natural state, unique associations and complexes of swamp vegetation, various and extremely important habitats of wild animals, great amount of rare species of plants and animals.

Flora of the swamps of the nominated territory is rather varied and specific. It includes approximately 242 plant species, which is 42% of the total flora of swamps in Tomsk oblast. There are 123 species of vascular plants here (36 % species of vascular plants of regional swamp flora). These species belongs to 74 genera and 39 families. The moss flora consist of 119 species belongs to 57 genera and 28 families. This is approximately 50% of regional species list for bogs.

Within the nominated territory 26 species of rare plants are found. Among these two species – *Liparis loeselii* and *Cypripedium macranthon* – included in Red Book of Russia. Another 6 species – *Scorpidium scorpioides*, *Baeothryon cespitosum*, *Juniperus communis*, *Hammarbya paludosa*, *Epipactis helleborine*, *Listera cordata* – included in Red Book of Tomsk Region. Other species belong to the category everywhere rare or rare in the south of the forest zone in West Siberia.

There are some rare species of plants combined of *Riccardia chamaedryfolia*, *Bryum neodamense*, *Pseudocalliergon trifarium*, *Juncus stygius*, *Carex heleonastes*, *Sphagnum compactum*. In the large territories of “ryams” there are some rare species of carex (*Carex pauciflora*) and mosses (*Ptilidium ciliare*, *Cephalozia loitlesbergeri*). On the complex high bogs some rare communities with *Baeothryon cespitosum* are developed. The “sogras” are especially rich from floristic point of view; there are some orchids (*Corallorhiza trifida*, *Dactylorhiza hebridensis* and others) here, plus *Juniperus communis*, *Rubus arcticus*, *Sphagnum wulfianum*. The large territory occupied by valuable beers plant: *Oxycoccus palustris*, *Vaccinium vitis-idaea*, *Vaccinium uliginosum*, *Rubus chamaemorus*.

Wildlife of nominated territory consist of approximately 1500 different groups of invertebrates animals, 3 species of amphibians, 2 species of reptilians, 195 species of birds and 41 species of mammals. The nominated territory is situated in the zone of migration flow of birds. Most part of birds used this territory for rest while migrate. The combination of large open space with the closed ones accompanying with the different lakes, rivers and streams create very favorable conditions for birds’ temporary living during season migrations.

Fauna of birds of the nominated territory includes 50 % of bio-diversity of birds in West Siberia. There are some representatives of fauna complex of tundra, northern forest, the steppe and forest-steppe species as well. The huge bogs served as very important zoo-geographical border in distribution of northern species. There is rather unique situation among birds communities, when species with north and south origin combined in the same complexes.

In the Red Books of different levels included 22 species of birds, living here. Among these 13 species (*Pandion haliaetus* Linnaeus, *Pernis apivorus* Linnaeus, *Circus macrourus* Gmelin, *Aquila clanga* Pallas, *Aquila chrysaetos* Linnaeus, *Haliaeetus albicilla* Linnaeus, *Falco peregrinus* Tunstall, *Grus leucogeranus* Pallas, *Grus grus* Linnaeus, *Numenius tenuirostris* Vieillot, *Nuctea scadiaca* Linnaeus, *Bubo bubo* Linnaeus, *Strix nebulosa* Forster) include in Supplement I and II SITES convention and in Supplement «A» and «B» EU rules.

### **Criterion vii**

The Great Vasyugan mire is an outstanding example of the beauty of wild nature. Contrasting varied landscapes of the Great Vasyugan mire including different types of marshes, mineral

islands, forest-bogs complexes, rivers and lakes are characterized by exceptional beauty and greatness. Swamp landscapes are beautiful in all seasons of the year: in the period of winter silence with blue sky, sparkling snow and green pines; and in spring, when birds twitter and different plants blossom. It is very beautiful in autumn after the leaf-fall, when you can see all the details of the relief.

### **Statements of authenticity and/or integrity:**

Proposed for inclusion into the List of World Heritage, a natural object “the Great Vasyugan mire” within the borders of the Vasyugan state landscape reserve is an integral, genetically and environmentally interconnected system of sufficient dimensions, which:

- reflects the processes of development and evolution of swamp ecosystems from the beginning of Holocene period till nowadays;
- includes habitats of typical flora and fauna of the region, rare plant and animal species, as well as key habitats of migrating animal species;
- is a keeper of valuable paleogeographic and paleoecological information;
- is a natural landscape complex of unique beauty.

The absence of settlements at this difficult of access territory provides a high level of safety of the ecosystems and their biodiversity. Economic activity is not carried in the area. There is no state timber purchasing, neither proven oil and gas fields.

Traditional ways of development on the territory are connected with wild herb gathering and licensed hunting which are coordinated by Vasyugan reserve administration. The territory of the reserve is protected by reserve administration according to the law of specially protected natural territories of Russian Federation and the regulations of the reserve confirmed by the resolution of Tomsk oblast authorities.

Gaining the status of the object of UNESCO World Heritage will allow enhancing guarantees of safety of the nominated territory and protecting it from possible threats to its integrity because of economic activity.

### **Comparison with other similar properties:**

The Great Vasyugan mire is a natural phenomenon having no analogues in the world. It has a unique system of natural complexes, extreme complexity of the landscape structure, development of special types of swamp massifs. Location of the swamp in a transitional belt between a sub zone of small-leaves forests and a southern taiga zone, different rate of salinity and alkalinity of soil of the mineral swamp bed and various time of the beginning of swamp formation resulted in vegetation diversity and peat deposits of different types, as well as considerable distinction in the structure of forest and swamp complexes on its southern and northern periphery. The swamp is a model of marsh landscapes of the southern part of a forest zone in West Siberia.

Being a natural reserve for a large range of forest and swamp landscapes and the concerned associations, population and species of plants and animals, including rare ones, the Great Vasyugan mire simultaneously fulfills important biosphere functions connected with depositing carbon into peat deposit and producing oxygen with the help of swamp vegetation. Being a region of forming water collectors of big tributaries of the Ob and the Irtysh the Great Vasyugan mire is a zone of extreme environmental importance on the territory of West Siberian plain. Its biosphere role and regional functions taken into consideration the territory “the Great Vasyugan mire” suggested for nomination does not yield to the world-known complex of reserves in the Central Amazon area in this respect.

Both Russian and the World Heritage Lists do not contain similar objects. Most mineral-trophy swamps boreal landscapes of the northern hemisphere still found in their natural state within the Great Vasyugan mire, are transformed due to human economic activity. Many nominations include peat bogs, but they do not have principal significance in determining outstanding universal value of these objects.