

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

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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.

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

May 16, 2011

3. Country:

Republic of Kazakhstan

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.

Ili River Delta and South Lake Balkhash

Name in Russian language: [Дельта реки Или и южная часть озера Балхаш]

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 geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The wetland is situated within the borders of three special state nature reserve areas (zakaznik) of republican status, i.e. Balkhash, Karroy and Kukan, with the total area of 1,061,100 ha. The borders of the reserves are marked on the territory by name plates, border signs, and defined on the maps of land users.

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.

The western area (site № 1) has the following coordinates of the end points (largest site):

№	Latitude	Longitude	№	Latitude	Longitude
1	46° 30' 38.129" N	75° 41' 03.486" E	7	45° 24' 32.963" N	74° 04' 10.466" E
2	46° 11' 00.121" N	75° 03' 25.362" E	8	45° 44' 59.445" N	74° 13' 49.292" E
3	45° 38' 36.398" N	74° 55' 18.504" E	9	46° 01' 42.412" N	74° 32' 41.531" E
4	45° 06' 55.189" N	75° 24' 49.253" E	10	46° 23' 48.778" N	74° 57' 25.620" E
5	45° 03' 00.382" N	75° 01' 31.977" E	11	46° 31' 56.458" N	75° 18' 57.792" E
6	45° 02' 43.531" N	74° 31' 28.235" E	12	46° 38' 07.365" N	75° 30' 30.990" E

Central point: 45° 35' 52.322" N. 74° 44' 17.262" E.

The eastern area (site № 2) has the following coordinates of the end points (smaller site):

№	Latitude	Longitude	№	Latitude	Longitude
1	46° 20' 13.045" N	78° 04' 02.083" E	4	46° 14' 44.400" N	78° 19' 18.590" E
2	46° 22' 09.507" N	78° 20' 21.477" E	5	46° 22' 05.924" N	77° 40' 17.624" E
3	46° 17' 05.923" N	78° 25' 57.710" E	6	46° 26' 21.417" N	77° 50' 25.440" E

Central Point: 46° 20' 09.419" N, 78° 03' 14.456" E.

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.

The wetland is situated in Southern Kazakhstan. Administratively the territory is situated in the north of three districts: Balkhash, Karataly and Aksu Districts of Almaty Oblast, 250 km north-west from Almaty and 250 km westward from the center of Taldy-Korgan Oblast.

Geographically the wetland is referred to South Balkhash Basin and includes the modern delta of Ili River, ancient delta of Ili River and the southern part of Balkhash Lake within the borders of Karroy, Balkhash and Kukan nature reserves (zakaznik). According to physiographic demarcation this territory is a part of South Balkhash physiographic province of the desert zone, subzone of middle deserts (Gvozdetskiy, Nikolayev, 1971).

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

Minimal height of the territory at the average perennial level of Balkhash Lake is 341 m above the sea level, maximum height in the upper part of the Ili River is 372-374 m above the sea level.

11. Area: (in hectares)

The total area of the Ramsar Site is 976,630.3 ha.

The western part including the modern and ancient deltas of Ili River and adjacent coastline of Balkhash Lake within the borders of Balkhash and Karroy Reserve occupies 927,564.7 ha. The eastern part includes waterlogged mouths of Aksu and Lepsa rivers and coastline of Balkhash Lake within the borders of Kukan Zoological Reserve at the area of 49,065.6 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.

Delta of Ili River is the last preserved largest delta on inland reservoirs of Central Asia. Despite a decrease of water flow along Ili River and worsening of hydrologic regime, Ili River includes a wide range of wetlands. Under conditions of arid climate, unstable hydrologic regime causes high dynamics of ecologic factors encouraging formation of diversified habitats. Delta of Ili River forms a broad triangle territory with the area of 8,000 sq. km. Its total length from the top where the watercourse of the river is divided into three main arms till Balkhash Lake makes up around 125 km, the width of delta along Balkhash shore as a straight line is about 100 km.

Main waterways are accompanied by systems of channels of the second and third level, forming a complicated hydrographic network consisting of numerous “live and dying” channels, near-channel and inter-channel former riverbeds and lakes. In the north-east, the delta borders on the sand desert Sary-Isik-Otrau, in the south and south-west - on Taukum sands. Balkhash coastline adjacent with delta in the east is indented by numerous lagoons, bays and islands overgrown with thick reed massifs.

The area in the eastern part of Balkhash Lake within the borders of Kukan Reserve includes estuarial parts of river valleys Aksu and Lepsi with Tugai forests, floodplain temporary lakes and swamps, indented coastline of the lake with numerous small lakes as well as small-hill sands and solonchak complexes adjacent in the south. Sand massifs are covered with scattered Saxaul-dzuzgun/Common Salt tree (*Halimodendron halodendron*) tangle, and poplar-osier Tugai forests grow in the river valleys. Average depth of 15 m in the eastern part of Balkhash, with a maximum depth of 26.5 m. The water is salty water. In western part of Balkhash Lake salinity is 0.74 gram/litre, in eastern part – 3.5-6.0 g/l, in average for the lake – 2.94 gram/litre.

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.

Delta of Ili River is the last preserved largest delta on a lake in Central Asia. Despite a decrease in the flow along Ili River and worsening of hydrologic regime, it includes a wide range of wetlands. Under conditions of arid climate, unstable hydrologic regime causes high dynamics of ecologic factors encouraging formation of diversified habitats. Coastal ecosystems of Balkhash Lake with the delta of Ili River and deltas of other rivers flowing into the lake make up one of the largest and relatively well preserved wetlands in Central Asia.

Criterion 2.

The territory of the wetland supports 25 threatened bird species (see table below), including 8 that are nesting, and are included in the IUCN Red Lists. 24 species of them are included in the Red Book of Kazakhstan, 19 species of which are nesting, 14 are migratory. Threatened species of fishes, mammals and plants inhabit this area too.

English Name	Scientific Name	IUCN Status	CITES Status	CMS	National Status
FISH					
Ship Sturgeon	<i>Acipenser nudiiventris</i>	CR	-	II	I
BIRDS					
White Pelican	<i>Pelecanus onocrotalus</i>	LC	-	I/II	I
Dalmatian Pelican	<i>Pelecanus crispus</i>	VU	I	I/II	II

Eurasian Spoonbill	<i>Platalea leucorodia</i>	LC	II	II	II
Red-breasted Goose	<i>Branta ruficollis</i>	EN	II	I	II
Whooper Swan	<i>Cygnus cygnus</i>	LC	-	-	II
Ferruginous Duck	<i>Aythya nyroca</i>	NT	-	I/II	III
White-headed Duck	<i>Oxyura leucocephala</i>	EN	II	I	I
Osprey	<i>Pandion haliaetus</i>	LC	-	II	I
Little Tern	<i>Sterna albifrons</i>	LC	-	II	-
Stone-curlew	<i>Burhinus oedicnemus</i>	LC	-	II	-
Collared Pratincole	<i>Glareola pratincola</i>	LC	-	II	-
Glossy Ibis	<i>Plegadis falcinellus</i> ,	LC	-	II	II
Short-toed Eagle	<i>Circaetus gallicus</i>	LC	-	-	II
Booted Eagles	<i>Hieraaetus pennatus</i>	LC	-	-	III
Pallas's Fish Eagle	<i>Haliaeetus leucoryphus</i>	VU	-	I/II	I
White-tailed Eagle	<i>Haliaeetus albicilla</i>	LC	I	I/II	II
Imperial Eagle	<i>Aquila heliaca</i>	VU	I	I/II	III
Golden Eagle	<i>Aquila chrysaetos</i>	LC	-	-	III
Lesser Kestrel	<i>Falco naumanni</i>	VU	-	I/II	-
Common Crane	<i>Grus grus</i>	LC	II	II	III
Houbara bustard	<i>Chlamydotis undulata</i>	VU	I	-	I
Black-billied Sandgrouse	<i>Pterocles orientalis</i>	LC	-	-	III
Eastern Stock Dove	<i>Columba eversmanni</i>	VU	-	-	III
Roller	<i>Coracias garrulus</i>	NT	-	II	-
MAMMALS					
Marbled Polecat	<i>Vormela peregusna</i>	VU	-	-	III
Gray Wolf	<i>Canis lupus</i>	LC	I	-	-
Goitered Gazelle	<i>Gazella subgutturosa</i>	VU	-	II	III

Criterion 3.

Delta of Ili River and ecosystems of the south coastline of Balkhash Lake provide a rich variety of flora and fauna in the desert region. Floristic list includes 427 species. Fauna of terrestrial vertebrate species includes 345 species, including 3 species of amphibia, 19 species of reptiles, 282 species of birds and 39 species of mammals. The fauna of fish species makes up 25 species.

Criterion 4.

Large area of the wetlands of the delta of Ili River and Balkhash Lake provide habitat for wetland birds every year despite the conditions, even during drought periods. The territory of the wetland has great importance as a place of mass nesting, molting and feeding of waterfowl and wetland birds. This territory is especially important as a place of nesting for the Dalmatian Pelican (*Pelecanus crispus*), White Pelican (*Pelecanus onocrotalus*), Eurasian Spoonbill (*Platalea leucorodia*), White-headed Duck (*Oxyura leucocephala*), Ferruginous Duck (*Aythya nyroca*), White-tailed Eagle (*Haliaeetus albicilla*) and Pale-backed Pigeon (*Columba eversmanni*).

English name	Scientific name	Year / Period	No. breeding pairs
Dalmatian Pelican	<i>Pelecanus crispus</i>	1980-1990	850-1000
		2000	600-670
		2005-2006	up to 500
		2010	100
White Pelican	<i>Pelecanus onocrotalus</i>	1980-1990	up to 2300-2500
		2000	1500-1600
		2010	up to 100
Eurasian Spoonbill	<i>Platalea leucorodia</i>	1980	80-100
		1993	up to 80
Ferruginous Duck	<i>Aythya nyroca</i>	2007	200 in the delta of Ili River

		2007	100-300 in the lower reaches of Karatal River
Whooper Swans	<i>Cygnus cygnus</i>	1954-1964	up to 30
		2010	no less than 5 nests at the lakes of Zhideli system
White-tailed Eagle	<i>Haliaeetus albicilla</i>	2006	15-20 pairs
Pale-backed Pigeon	<i>Columba eversmanni</i>	2010	50-100

Spring and fall are times of mass stopover of migratory birds: ducks, geese, rail & crakes, waders and others. The wetland also supports the all year around existence of many species of mammals, including wild bores and roes.

The lower reach and delta of Ili, Lepsa and Aksu River are important places of spawning of species such as Balkhash Perch (*Perca schrenkii*) and Ili-Balkhash Marinka (*Schizothorax argentatus*), and also for introduced Barbel Sturgeon (*Acipenser nudiiventris*) and Aral barbel (*Barbus brachycephalus*) which disappeared in places of former habitation in Aral basin but survived here (Isbekov, 2010).

Criterion 5.

Delta of Ili River supports nesting of the group of waterfowl the total population of which exceeds 20,000 (Buzutil, Sklyarenko, 2006, 2008). In October 2007 more than 70,000 birds were once counted, while, in total, in that year 95-148000 specimens stopped in the area at lower reach of Karatal River partially coinciding with Kukan reserve (Solokha, 2008).

Criterion 6.

Species	Population / Subspecies	Provide maximum and minimum counts over the past years	1% Threshold
White Pelicans	<i>Pelecanus onocrotalus</i>	1984-1989: 1,500-2,500 pairs 2000: 1,500-1,600 pairs (Zhatkanbavev 1991, 2002)	230 individuals
Dalmatian Pelican	<i>Pelecanus crispus</i>	1984-1989 580-1,000 pairs, average 790-870 pairs	75
Great Cormorant	<i>Phalacrocorax carbo</i>	1998: 1619 individuals including 672 nesting specimens	1000
Mallard	<i>Anas platyrhynchos</i>	10,000-12,000 individuals (Solokha, 2008).	8,750
Red-crested Pochard	<i>Netta rufina</i>	30,000-50,000 individuals (Solokha, 2008).	2,500
Common Pochard	<i>Aythya ferina</i>	20,000-30,000 individuals (Solokha, 2008).	8,500
Goldeneye	<i>Bucephala clangula</i>	5,000-6,000 individuals (Solokha, 2008).	270
Coot	<i>Fulica atra</i>	30,000-50,000 (Solokha, 2008).	20,000

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:

Province of Turan deserts of Palearctic region

b) biogeographic regionalisation scheme (include reference citation):

Scheme of M. Udvardy (M.D. Udvardy, 1975)

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.

Geology and geomorphology. Neogene and Quarternary sediments of the continental genesis are widely spread on the territory of the delta. There are Triassic, Cretaceous and Paleogenous sediments only in some small-sized areas. Paleozoic deposits are blocked by massive cover of Mesozoic and Cainozoic sediments and are revealed at the depth of from 135 up to 400 m. Mesozoic deposits are boundedly spread occupying the most depressed parts of the Paleozoic fundament. Triassic, Jurassic and Cretaceous layers with thickness of from 46 up to 158 m are referred to Mesozoic.

Cainozoic includes Paleogenous, Neogene and Quarternary systems. Paleogenous system has insular development and consists of sediments of speckled clays with pebble stones the thickness of which is from 3 up to 47 m. Beats of rocks of the Neogene system represented by clays and sand bands, are found at the edge of southern and south-eastern parts of South Balkhash Basin, while the rest of the territory is covered by Quarternary deposits.

Deposits of Quarternary system are divided into lower, middle, upper Quarternary and modern ones. They are made up of anisomeric sands, clay sands with clay and loam bands. Based on genetic features Quarternary sediments can be divided into alluvial, lacustrine and eolian ones. Lower Quarternary sediments went through significant eolian processing and remained in Zhamanzhal sands. Middle Quarternary sediments are typical for hilly and cavernous plain situated between delta channels Zhinishke and Kuraksu. Upper Quarternary sediments are represented by alluvial sediments of terraces above the flood plain, while in deltas they are made up of flat-topped logging stones. Modern sediments are related to river plains, coastal beaches and lake beach ridges.

Within the borders of the wetland there is a modern delta-accretion plain of Ili River, ancient Bakanas deltaic-accretion plain, abrasion-accretion undulated plain of the southern shore of Balkhash Lake and delta of Aksu and Lepsa rivers. The following geomorphologic elements of the relief (Pogrebinskiy, 1963) are represented in the modern delta of Ili River and its shore: channel sand bar, levees, cavernous inter-channel depressions and flat plains inclined from the channel, hilly and hilly-ridged sands, i.e. logging stones of the sand desert.

Channel sand bars occur as small parts in meanders of delta channels and have the length of from a few meters in young channels up to tens of meters in the old ones. Channel sand bars are made up of fine-grained sandy pulverescent stratified soil.

Levees set off the beds of the delta channels and are the highest parts of the delta surface. The height of levees in the upper part of the delta makes up to 2.5-3.5 m above the water level at the period of low water.

Inter-channel depressions and inclined undulated plains are contained in levees of main delta channels and are often bounded by hilly-ridged sands. They take the major part of the area of the modern delta.

Hilly-ridged, hilly and cumulose sands take around 30 % of the area of the modern delta. Hilly-ridged sands (logging stones of the sand desert) are stretched north-westward up to several kilometers long, 150-300 m wide and with relative height of 6-20 m. The width of inter-ridged depressions is from 200 m up to 1 km. Small-hill and cumulose sands up to 3 m high are formed as a result of eolian processes and therefore are less widespread.

Ancient Bakanas deltaic-accretion plain has structure similar to the modern delta.

Abrasion-accretion plain formed as a result of encroachment and reliction of Balkhash Lake occupies a strip area of 20-30 km wide. Landscape elements are represented by flat saucer-shaped depressions with the diameter of several kilometers, flat undulated elevations, numerous channel beds crossing the plain

and chains of dunes and barkhans.

Soil. The territory of the wetland is situated in the zone of real deserts; however gray-brown soil typical for the desert zone is absent here. Among automorphous soils the desert sand soil, takyr-like soil and takyr (claypans) are the most widespread, under conditions of periodical submergence meadow-desert sands (churotnie sands) are formed. The significant part of the soil cover consists of soils of hydromorphic and half hydromorphic regime, formation of which is connected with additional watering. This row of soils is represented from meadow, meadow-desert up to meadow and swamp ones. Soil-forming materials are alluvial, lacustrine sediments from sands up to loams and clays, and also eolian sediments forming ridged-hilly and hilly forms.

Within the borders of floodplain terraces alluvial meadow soils prevail, but also floodplain boggy-meadow and well as tugai soils usually associated with the most high floodplain terraces, are also met here. The most typical for levees are forest-meadow tugai soils (floodplain tugai) developing under tree and shrubby vegetation.

Inter-channel surfaces are occupied with soils of meadow row, which are often combined with meadow saline soils. Takyr-like soils are formed on relatively plane and elevated logging stone/remnant areas. Depressions are occupied by swamps and lakes and naturally determined row of hydromorphic soils from boggy-meadow and bog soils are developed in parts bordering them.

Concerning the abrasion-accretion undulated plain in the western coastal part of the delta 10-20 km wide and lake-side areas that are under direct impact of periodical submergence and drying in the way transgression-regression phenomena, tracts of alluvial meadow and meadow-boggy soils are widespread here; saline soils are often found, while meadow saline soils are found only in some parts of it. In the southern part of this territory, regular saline soils (solonchaks) and takyr-like saline soils prevail. In the delta as well as on the lake-side plains, sand tracts (represented by chains of slightly arrested dunes), hilly-ridges and hilly sands are widespread. Cumulose sands are rarely found here.

Soil cover of the lower reaches of Lepsi and Aksu rivers are represented by hydromorphic soils, saline soils (solonchaks), takyr-like and desert sand soils. Several sub-types of hydromorphic soils can be recognized: alluvial-meadow, tugai alluvial-meadow, desertifying alluvial-meadow, boggy-meadow, desertifying boggy-meadow, muddy-boggy, peaty-boggy, meadow-boggy, dried meadow-boggy, desertifying meadow-boggy ones.

Hydrology. Hydrographic network of Ili Delta is represented by flabellum of deltaic channels that form intricately arranged territory. At the top of delta eastward from Araltobe village (N 75°24'49.253" E 45°6'55.189") the watercourse of Ili River is divided into three main arms: eastern – Zhideli, central – Ili, western - Topar, each of them dividing into a row of more shallow channels and dozens of shallow lakes. Based on the features of development of riverbed processes and dynamics of redistribution of flow upper and lower deltas can be recognized.

Upper delta is a hydrographic network in which river heads are situated from the top of delta till bifurcation of Kugaly-Zhideli. Ili branch is a part of the system of upper delta. Hydrographic network of the upper delta is of low capacity – the total flow in this part makes up no more than 20%. Almost all of it is situated to the left from the main Ili channel. Upper left branch Topar 1 (Suminka) feeds a wide system of Topars with the flow rate from 8 to 40 m³/s. The only watercourse reaching Balkhash Lake is Ili branch (10-50 m³/s). The general characteristic of this part of delta is crypticity of waterways and invariability of channel forms.

Lower delta where 80 % of the flow goes is formed by actively functioning Zhideli system of large and medium-sized channels, and a great number of lakes in the inter-channel areas as well as channel areas. Currently this part of delta is the most supplied with water. The riverbed of the channels along the entire lower delta have a lot of branches, entries to lakes and exists back to channels. All channels often don't have continuous, uninterrupted watercourse, their waters flow into open and overgrown with reeds lakes

from where they go out through the other channels. Inter-channel areas are usually submerged during flooding. All system of the lower delta is very dynamic and unstable. This is especially referred to its left wing – channels Kugaly-Iir.

Naryn channel is a relict watercourse of Bakanas. It is supplied with water from the system of channels Novaya-Arystan and then flows into Balkhash Lake with several arms of Krypsaldy channels. Ancient Bakanas Delta is represented by dry, buried at some places, waterways and channels. Functioning channels (former channels of the ancient delta) are watered by means of Balkhash rise or as a result of wind-driven phenomena.

Climate. Climate is arid continental with cold winters and hot summers, relatively low humidity of the air and large fluctuations of seasonal and diurnal temperatures. Average annual amount of precipitation makes up 137.6 to 141.6 mm. Average perennial temperature in July is 24 to 26° C, in January – 8 to 14° C, average annual temperature changes within the limits of 6to9°C. Absolute maximum temperature of the air in the studied territory is observed to be 44° C (in June-July), and the lowest temperature is - 44° C (in February). The largest monthly sum of precipitations occurs during spring months (April, May), the least occurs - at the end of winter, i.e. February, and in summer-fall months (August, September). Snow cover is usually stabilized in the middle of November – beginning of December, but in some years it might not be observed at all. In winter there are often intrushes of south cyclones brining warm air.

17. Physical features of the catchment area:

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

Geology and Geomorphology. Balkhash-Alakol Depression is bound by Kazakh Melkosopochnik and Tarbagatay Ridge in the north, Jungar Alatau Mountain in the east and south-east, the ridge of the Northern Tien Shan and Chu-Ili mountains in the south. Height of the surface range from 341 m at the level of Balkhash Lake up to 756 m in the eastern part of the basin. Folded structures and Paleozoic rocks emerge to the surface in the mountains bordering with the depression. In the depression they are covered by massive Mesozoic-Cainozoic sediments. On the surface there is a layer of friable alluvial, proluvial, lacustrine and eolian deposits of Quarternary age.

Modern appearance of Balkhash area was formed during Neogene and Quarternary period as a result of tectonic movements and restructuring of deposits of South Balkhash Depression. Major part of Balkhash Alakol Depression is represented by sand deserts. There are sand massifs Taukum, Sary-Taukum on the left bank of Ili River. On the right bank there are wide massifs of sand Sariyesik-Atyrau that turn into Bestas sands in the north and Moiynkum sands in the south-east. Sand massifs are situated also in the interflaves of rivers in the eastern part of the depression. Relief of sands is characterized by hilly-ridged forms.

Soils. The territory of the wetland is situated in the zone of real deserts, however gray-brown soils typical for the desert zone are spread only in the northern part of the depression on the right bank of Lepsa River. Major part (about 40%) of the territory is occupied with sands of eolian genesis forming plains with different types of relief. Takyr-like soils and takyrs (claypans) are also significantly spread here. The following hydromorphic soils are widely spread in the valleys of rivers and deltas: from meadow and meadow-desert till meadow and boggy ones. There are also solonchaks.

Hydrography. Balkhash Lake is one of the largest inland basins of the world. Its area is 19,300 km², the length is 605 km and the width changes from 4 to 74 km. The average depth of the entire lake is 5.8 m, and the inmost depth of a deeper eastern part is 27 m. The total volume of water is around 112 km³.

The area of the drainage basin of Balkhash Lake makes up around 413,000 km², 15% of which is in China. The total volume of surface waters formed in Balkhash Basin makes up 28.85 km³, 22.87 km³ of which is formed in the basin of Ili River, and 5.36 km³ is formed in the basin of eastern inflows: Karatal, Aksu, Lepsi; 0.57 km³ is formed in the basin of Ayagoz River and 0.08 km³ –in basins of rivers of the

Northern Balkhash area. 17.4 km³ of the total flow of rivers of the basin of Balkhash Lake is formed on the territory of China in upper reaches of Ili River. Ili River flows from Tien Shan Mountain and is supplied mainly by glaciers, which causes daily and seasonal water level fluctuations as period of mountain glaciers melting occurs in June-July. Karatal, Aksu and Lepsi rivers flow from glaciers of Jungar Alatau, have snow-melt and glacier-derived nourishment and spring floods. Water retention upstream (Tien Shan Mountain) for agriculture and filling of dams for irrigation and electricity has lead to dramatic fluctuations of water supply to the Ili River system and the lake. The basin is mostly affected by a project to overdirect some part of water to Ebinoor Lake basin and Tarim river basin.

Delta of Ili River is formed by three main systems (Ili, Zhideli and Topar) including main watercourses accompanied by systems of channels of second and third level, dead channels, running-water lakes and swamps. All mentioned systems have a complicated hydrographic network consisting of numerous “live and dying” channels, near-channel and inter-channel former riverbeds and lakes that unequally implement erosion and accumulative processes in different parts. These processes especially occur in flooding period for entire delta and transgression-regression phenomena in its lower Balkhash part.

Climate. The Climate is sharp continental, dry with moderately cold winter with little snow and hot, dry summer. Average annual precipitation in the northern, lakeside part of the depression makes up 100-150 mm, in southern and south-eastern part goes up to 150-200 mm, and closer to the mountains – up to 200-250 mm. Around 73% of precipitation falls on the warm time of the year (April – October). Average temperatures in January are – 12 to 15°C, average temperatures in July are 22 to 25° C. In spring the average daily temperature crosses 5°C in south of the depression between 20 March and 31 March and in the north between 31 March and 10 April. Duration of frost-free period makes up 140-160 days. Steady snow cover is usually settled between 30 November and 10 December, breaks down between 28 February and 10 March. In summer air drought is often observed, its average duration makes up in average from 50 up to 60 days, with winds of north-eastern, northern and eastern directions prevailing.

18. Hydrological values:

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

Ili Delta plays a role of a natural regulator, giving part of accumulated water to the lake and sustaining the level of ground waters in droughtly years. Tugai forests implement important water protecting and erosion-preventive functions, and coastal vegetation functions as a biological filter (*Typha angustifolia*, *Scirpus lacustris*, *Lemna minor*, *Myriophyllum spicatum*, *Potamogeton spp.*). Coastal vegetation provide cleaning of water from different organic and mineral pollutions (there entrapped and destructed some pollutants such as phosphate, nitrate, sulphate, organic acids), it participate in detoxication of phenol, pesticide, etc.

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.

L, O, M, P, Ts, Tp, Ss, N, R

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.

The wetland is situated in the zone of moderately cold deserts, in the subzone of real middle deserts. 3 ecosystem groups are recognized within its borders in close connection with the origin of relief and dynamic of water regime: 1) ecosystems of abrasion-accretion plain on the southern shore of Balkhash Lake, 2) ecosystems of modern delta of Ili River, 3) ecosystems of the ancient delta. Ecosystems of lower section of flood plains and delta of Aksu and Lepsa rivers and adjacent sand massifs make up a separate group. In total hydromorphic and, to a lesser extent, half hydromorphic ecosystems predominate on the territory.

On abrasion-accretion plains of the southern shore of Balkhash Lake rows consisting of a belt of reed, cattail and cattail-reed bogs and reed waterlogged meadows with dominance of reeds and cattails (*Phragmites australis*, *Typha angustifolia*) are widespread. Further, reed and halophilic bushes (*Phragmites australis*, *Tamarix ramosissima*, *Nitraria sibirica*, *N.schoberii*, *Lycium ruthenicum*, *Climacoptera obtusifolia*, *Suaeda foliosa*, *Suaeda prostrata*) predominate at the parts of drained bottom of the lake, while halophytic vegetation (*Nitraria sibirica*, *Halostachys belangeriana*, *Tamarix hispida*, *Suaeda physophora*, *Kalidium foliatum*) and annual halophytic communities dominate on lake solonchaks and sors (salt lakes).

Modern delta of Ili River is represented by a complex of landscapes mainly consisting of wide network of channels, tugai bushes along them, lake systems, vigorous reed shores and typical desert areas between channels and on islands. Besides inter-barkhan, rather small and usually closed lakes delta basins include also numerous running and half running overflows of lakes of various configurations overgrown with solid vast reed bushes (Zhatkanbayev, 1991).

Flood plain or tugai forests consist of wood species including Asiatic Poplar (*Populus diversifolia*, *P.pruinosa*), Oleaster (*Eleagnus oxycarpa*), White Willow (*Salix alba*). Other species like (*Salix songorica*, *S.wilhelmiana*), Tamarisk (*Tamarix ramosissima*, *T. laxa*), Common Salt Tree/Chingil (*Halimodendron halodendron*) are common, Lianas (*Clematis orientalis*), *Cynanchum sibiricum*, Larger Bindweed (*Cahystegia sepium*) are also typical. Grass cover is formed by cereal-mesophytes including *Leymus multicaulis*, *Calamagrostis pseudophragmites*, Couch Grass (*Elytrigia repens*) and mesophyte herbs including Chinese liquorice (*Glycyrrhiza uralensis*), Yellow Sweat Clover (*Melilotus officinalis*), and *Lycopus exaltatus*.

In upper and middle delta, plants such as the Common Salt Tree/Chingil (*Halimodendron halodendron*), Tamarisk (*Tamarix ramosissima*), Wolfberry (*Lycium ruthenicum*), Eurotia/Pamirian winterfat (*Krascheninnikovia ceratoides*) and Oleaster (*Eleagnus oxycarpa*) are often found. Halophytic shrubbery is typical for lower part of delta, i.e. *Nitraria sibirica*, *N.schoberii*, Kashgar Tamarisk (*Tamarix hispida*), Karabarak (*Halostachys belangeriana*) etc.

Inter-channel plains depending on the character of watering include a number of ecosystems: grass marshes, waterlogged meadows, real meadows, meadows in combination with meadow-desert (churotnie) sands, eurotia communities on old tugai soils in combination with shrubbery and meadows.

Meadow type of vegetation is represented by several subtypes. Swamp meadows are usually mono-dominant: Reed family: Common Reed, (*Phragmites australis*), Cattail family: Narrowleaf Cattail, (*Typha angustifolia*), sometimes Tuberous bulrush family: Alkali Bulrush, (*Bolboschoenus maritimus*). These grow in alluvial-meadow soils. For flat elevations of inter-channel spaces of delta that experiences regular flooding, plants that exist include: CouchGrass (*Elytrigia repens*), Reedgrass (*Calamagrostis epigeios*), *Calamagrostis epigeios*, *Elytrigia repens*, Common Reed (*Phragmites australis*) meadows. Halophytic meadows formed on hydromorphic saline soils and meadow solonchaks during short-term floods are mostly widespread in the lower parts of deltas. They include the following cenosis species: *Aeluropus littoralis*, *Leymus multicaulis*, *Hordeum bogdanii*, *Puccinellia distans*, *P.tenuiflora*, with participation of halophytic herbs:

Saltmarsh Sealavender (*Limonium otolepis*), *L.gmelinii*, *Saussurea salsa*, *Plantago salsa* and annual glassworts: *Suaeda acuminata*, *S.prostrata*, *Climacoptera brachiata*, *C.lanata*. Desert meadows dominantly consist of *Albagi pseudalbagi*, Tamarisk (*Tamarix ramosissima*), Marsh-beet (*Limonium otolepis*) and sometimes licorice (*Glycyrrhiza uralensis*), salt-resistant grasses: *Aeluropus littoralis*, Weeping Alkaligrass (*Puccinellia distans*), *P. dolicholepis*, *P. tenuissima*, Comon Salt Tree (*Halimodendron halodendron*), Pamirian Winterfat (*Krascheninnikovia ceratoides*).

Swamp type of vegetation is typical of part of the southern shore of Balkhash Lake and young avandeltaic and central parts of the modern delta of Ili with lakes along Zhideli-Iir system of channels. Higher aquatic and coastal aquatic vegetation includes communities of Flowering Rush (*Butomus umbellatus*), Needle Spikerush (*Eleocharis acicularis*), Spiny Naiad (*Najas marina*), Spiked Water Milfoil (*Myriophyllum spicatum*), *Phragmites australis*, Common Reed (*Polygonum amphibium*), Marsh Fern (*Thelypteris palustris*), and other species of the following genera: *Potamogeton*, *Sagittaria*, *Scirpus*, *Sparganium*, *Typha*. Free-floating vegetation includes the following species: Common Duckweed (*Lemna minor*), Common Bladderwort (*Utricularia vulgaris*), and Coontail (*Ceratophyllum demersum*).

Desert type vegetation is found on takyrl-like soils of dead deltaic channels, on inter-channel plains which are not affected by flooding and have lost its connection with underground water. Communities with dominance of Pamirian Winterfat (*Krascheninnikovia ceratoides*), Black Saxaul (*Haloxylon aphyllum*), Biyurgun (*Anabasis salsa*), *Salsola orientalis*, and White Sagebrush (*Artemisia terrae-albae*) cenosises are typical.

Ephemeral bushland including *Salsola arbuscula*, *Calligonum aphyllum*, *Krascheninnikovia ceratoides*, *Carex physodes*, Bulbous Bluegrass *Poa bulbosa*, *Anisantha tectorum*, White Saxaul *Haloxylon persicum* communities are found on peaks of ridges and grow in sandy soils. Depressions are occupied by psammophilous ephemeral sagebrush including *Artemisia terrae-albae*, *Carex physodes*, Oriental False Wheatgrass (*Eremopyrum orientale*) or mesophyte herb-grass including: *Calamagrostis epigeios*, *Vexibia alopecuroides*, Camelthorn *Albagi pseudalbagi* communities.

Vegetation cover of cumulose and hilly sands are represented by the following species: Common Salt Tree *Halimodendron halodendron*, Salt Cedar *Tamarix ramosissima*, *Vexibia alopecuroides*, *Zygophyllum fabagoideis*, Camelthorn *Albagi pseudalbagi*, with reeds (*Phragmites australis*).

Meadow-desert (churotnie) sands are notable for their unique vegetation. Their peaks and slopes are covered with psammophyte vegetation including species of genera *Calligonum*, White Saxaul (*Haloxylon persicum*), *Artemisia songorica*, *Anmodendron bifolium*, etc., while in lower parts of the slopes and depression reeds such as *Phragmites australis*, *Karelinia caspia*, *Albagi pseudalbagi*, Tamarisk (*Tamarix ramosissima*) and Common Salt Tree (*Halimodendron halodendron*) are widespread.

The vegetation cover of the ancient delta of Bakanas deltaic-accretion plain is made-up of psammophyte shrubs including *Haloxylon aphyllum*, *Calligonum leucocladum*, *Artemisia soongarica*, and sometimes tugai bushes including *Halimodendron halodendron*, *Tamarix ramosissima* and reeds (*Phragmites australis*). There is also vegetation of flat hollows and flat elevations of inter-channel plains with dominance of *Haloxylon aphyllum*, *Salsola orientalis*, *Artemisia terrae-albae*, *Anabasis salsa*, sometimes *Arthrophytum balchashense* on takyrl-like soils. *Salsola orientalis*, *Artemisia terrae-albae* are found in areas of eolian sediments. Communities of *Krascheninnikovia ceratoides*, *Calligonum leucocladum*, *Carex physodes*, *Ephedra lomatolepis*, *Artemisia soongarica*, *A.albicerata* are typical of low ridgy-hilly sands.

Ecosystems of the lower reaches of Aksu and Lepsı rivers are also notable for their originality. Here oleaster-osier (*Elaeagnus oxycarpa*), White Willow (*Salix alba*), Almond Willow (*S.triandra*), *S.wilhelmsiana*, tugai bushes with cereal-herbs including Chinese liquorice (*Glycyrrhiza uralensis*), *Apocynum eancifolium*, *Calamagrostis epigeios*, Couch Grass (*Elytrigia repens*) are formed on levees. Brier-osier (*Salix triandra*), *S.turanica*, *Rosa alberti*, tugai bushes with cereal-herbs including *Glycyrrhiza uralensis*, *Apocynum lancifolium*, *Euphorbia songarica*, *Leymus multicaulis*, *Phragmites australis* and grass cover are found in inter-ridged depressions of levees. Herb-cereal (*Phragmites australis*), *Aeluropus littoralis*, Weeping Alkaligrass (*Puccinellia distans*), Saw-wort (*Saussurea salsa*), Sea Plantain (*Plantago maritime*) meadows including Asiatic poplar (*Populus diversifolia*), Salt Tree and Tamarisk

(*Halimodendron halodendron*, and *Tamarix ramosissima*) are widespread in the flood plain. Herb-osier (*Salix triandra*, *S.turanica*, *Glycerhiza uralensis*, *Sonchus arvensis*, Creeping Thistle (*Cirsium arvense*), tugai bushes are stretched in a way of a narrow strip along parched channels. Asiatic Poplar (*Populus diversifolia*) is also found scattered and in groups in the central flood plain and terrace near the flood plain.

Under conditions of short-term flood, oleaster tugai bushes with herb *Vexibia alopecuroides*, *Gipsophila perfoliata*, *Artemisia dracunculus*, *Leymus multicaulis*, *Hordeum brevisubulatum* grass cover, and shrubs including *Halimodendron halodendron*, *Tamarix ramosissima* are formed.

Unique lake systems are made up in high hilly-ridged sands where sand ridges are divided by narrow deep lakes. A strip of oleaster-osier including *Salix triandra*, *S.turanica*, *S. wilhelmsiana*, *Elaeagnus oxycarpa* and tugai bush is formed at the outskirts. There are small Asiatic Poplar (*Populus diversifolia*) in some areas along the slopes and on peaks of sand ridges, while Common Salt Tree (*Halimodendron halodendron*), Tamarisk (*Tamarix ramosissima*), Reed (*Phragmites australis*), herb-cereal (*Leymus multicaulis*, *Potentilla virgata*) communities are found in deep depressions in case of high bedding of ground waters. Many small lakes in inter-hilly and inter-ridged depressions are typical for inter-channel space limited by deltaic channels Kurosek and Tenteksu.

Aquatic ecosystems consist of lakes including flowing lakes, with Narrowleaf Cattail (*Typha angustifolia*) and Reed (*Phragmites australis*) along shores, aquatic vegetation such as species of genera *Potamogeton*, Spiny Naiad (*Najas marina*), Spikedwater Milfoil (*Myriophyllum spicatum*), Coontail (*Ceratophyllum demersum*), Dwarf Waterlily (*Nymphaea candida*) are also present. Open shallow ecosystems of Balkhash Lake with rare bushes of Reeds (*Phragmites australis*) and immersed aquatic macrophytes such as species of genera *Potamogeton*, Spiny Naiad (*Najas marina*), Spikedwater Milfoil (*Myriophyllum spicatum*), Coontail (*Ceratophyllum demersum*) also occupy large areas.

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.

The flora of higher plants of the investigated territory includes 427 species out of 241 genera and 68 families. According to phytogeographical demarcation (Rachkovskaya, 2003), the territory is a part of Sahara-Goby desert region, Iran-Turan subregion, North Turan province, Central North-Turan sub-province. The territory is located in the sub-zone of middle real deserts.

Composition of species reflects in total common features of taxonomic composition of flora typical for the wetlands of the south of Kazakhstan, sand deserts (Kurochkina, 1978). Out of 9 species of trees the most significant role in the vegetation cover is given to oleaster (*Elaeagnus oxycarpa*), two species of saxaul (*Haloxyton aphyllum*, *H. persicum*), and Asiatic poplar (*Populus diversifolia*, *P. pruinosa*), and also one of the osier species (*Salix songorica*).

Among bushes the most typical are *Halimodendron halodendron* (on sand massifs), *Calligonum aphyllum*, *C. leucocladium* and *C. rubicundum* in particular, Tamarisks (*Tamarix ramosissima*, *T. laxa*, *T. hispida*), *Nitraria schoberi*, *N. sibirica*, *Halimodendron halodendron*. Among perennial grasses cereals are most commonly dominants and subdominants of vegetation communities, i.e. reed, reed grass (*Calamagrotis epigeios*, *C. pseudophragmites*), Wild Rye (*Leymus multicaulis*), and also cattails and sedge family (beaked sedge, tuberous bulrush, bulrushes – great bulrush and *Tabernemontana*), among herbs there is camel's-thorn, licorice, etc.

Among annual grasses the most notable are common species of the family Chenopodiaceae (*Salsola nitrata*, *Suaeda linifolia*, *S. acuminata*, *Climacoptera obtusifolia*, *C. brachiata*, *Ceratocarpus utriculosus*) and ephemeral cereals (*Anisantha tectorum*, *Eremopyrum orientale*, *E. triticeum*).

37 species of various categories of rarity that make up around 9 % of the total number of flora are recorded on the investigated territory. *Scirpus kasachstanicus*, *Populus pruinosa*, *Nymphoides peltatum*, *Aldrovanda vesiculosa*, *Nelumbo nucifera*, *Berberis iliensis*, *Lonicera iliensis* are included in the list of rare and endangered species of Kazakhstan. Seven species are referred to relicts (*Peganum harmala*, *Nymphaea candida*, *Arthrophytum balchaschense*, *Nitraria sibirica*, *Nitraria schoberi*, *Populus diversifolia*, *Achnatherum splendens*); 18 species are referred to precinctive ones (*Astragalus balchaschensis*, *Dendrostellera ammodendron*, *Megacarpaea iliensis*, *Linaria pedicellata*, *L. ramose*, *Microcephala subglobosa*, *Euphorbia sororia*, *Echinops albicaulis*, *Jurinea adenocarpa*, *Zygophyllum fabagoides*, *Artemisia albicerata*, *Kalidium schrenkianum*, *Eremosstachys rotatum*, *Saussurea robusta*, *Tulipa behmiana*, *Chondrilla bosseana*, *Rosa iliensis*, *Ephedra lomatolepis*).

More than 80% of the registered species have useful qualities, for instance forage, officinal, melliferous and technical. A separate group is made up by ecologically important species stabilizing environment, particularly soil-and sand-consolidating and also aquatic and coastal-aquatic that can function as biological filters (*Typha angustifolia*, *Scirpus lacustris*, *Lemna minor*, *Myriophyllum spicatum*, *Potamogeton spp.*).

Unique communities of the modern delta of Ili are poplar groves including two species of Poplar (*Populus pruinosa*) and Asiatic poplar (*Populus diversifolia*), growing at slopes and bottoms of inter-ridged depressions on inter-channel plains. There are peculiar shrubby and saxaul communities on ridged and hilly-ridged sands with numerous lakes between ridges on the left shore of Topar river. Unique osier-oleaster (*Elaeagnus oxycarpa*, *Salix songorica*, *S.wilhelmiana*, *S.alba*) tugai forests have been well preserved along some channels. Swamp and submerged aquatic vegetation is most fully represented here. Great massifs of cattail (*Typha angustifolia*, *T.laxmanii*), reed (*Phragmites australis*), bulrush (*Scirpus lacustris*, *S. tabernemontani*), *Bolboschoenus maritimus* census is surrounded by numerous channels and delta lakes. Submerged aquatic vegetation is very diversified: *Ceratophyllum demersum*, *Myriophyllum spicatum*, *M. verticillatum*, *Najas marina*, *Potamogeton crispus*, *P. gramineum*, *P. lucens*, *P. natans*, *P. nodosus*, *P. pectinatus*, *P. perfoliatum*, *Utricularia minor*, *U. vulgaris*. The following Red-List species can be observed here: aldrovanda *Aldrovanda vesiculosa* and *Nymphoides peltatum* and relict species - *Nymphaea candida*.

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.*

In respect of fish the lower reach and delta of Ili River as well as rivers Lepsi and Aksu are of great importance as places of spawning for endemic species, i.e. Balkhash perch (*Perca schrenkzi*) and Ili Marinka (*Schizothorax argentatus*), and also for Barbel Sturgeon (*Acipenser nudiiventris*) and Aral barbel (*Barbus brachycephalus*), disappeared in places of former habitation in Aral basin (Isbekov, 2010) and included in the Red Book of Kazakhstan (see Section 14).

The Red Book of Kazakhstan includes in total 56 species of birds, 33 species of which, i.e. rare and vanishing bird species, inhabit in delta of Ili River and Balkhash area. 19 species of these birds are nesting, 11 are migratory and 3 are birds of passage. Nesting species include: White Pelican (*Pelecanus onocrotalus*), Dalmatian Pelican (*Pelecanus crispus*), Eurasian Spoonbill (*Platalea leucorodia*), Whooper Swan (*Cygnus cygnus*), Ferruginous Duck (*Aythya nyroca*), White-headed Duck (*Oxyura leucocephala*), White-tailed Eagle (*Haliaeetus albicilla*), Common Crane (*Grus grus*), Black-bellied Sandgrouse (*Pterocles orientalis*), Pale-backed Pigeon (*Columba eversmanni*), Eagle Owl (*Bubo bubo*), White-winged Woodpecker (*Dendrocopos leucopterus*), Pander's Ground Jay (*Podoces panderi iliensis*), Turkestan Tit (*Parus bokharensis*), Saxaul Sparrow (*Passer ammodendri*). This territory is especially important as a place of nesting of Dalmatian and White pelicans, Eurasian Spoonbill, White-headed Duck, Ferruginous Duck, White-tailed Eagle, and adjacent deserts are the place of nesting for Pander's Ground Jay, Pallas Sandgrouse, Black-bellied Sandgrouse. The wetland is also of great importance as a place of molt and stops of migratory birds.

Till the middle of 2000-s Ili delta in the Central Asia was the largest core area of pelicans' nesting. In 1980-1990 up to 5 colonies of Dalmatian Pelican existed here with 850-1,000 pairs nesting; in 2000 there were 600-670 pairs, in 2005-2006 – up to 500 pair. The number of White Pelican *Pelecanus erythrorhynchos*

in 1980-1990 made up upto 2,300-2,500 nesting pairs, in 2000 – 1,500-1,600 pairs, in 2006 colonies of the White Pelican *Pelecanus erythrorhynchos* were not found. One colony of White Pelican *Pelecanus erythrorhynchos* with the population of upto 100 pairs was found (Zhatkanbayev, 1991, 2002, 2006).

In 1950-1960 its population was the second largest yielding only to the Gadwall's *Anas strepera* one in Ili delta. (Dolgushin, 1960; Grachev, 1973).

Out of species of the Red Book of Kazakhstan 80-100 pairs of Eurasian Spoonbills nested in Ili delta in 1980-s (Zhatkanbaev, Gavrillov, 1990), in 1993 up to 80 pairs nested in the natural boundary Balakashkan and 10 pairs were observed on Kugaly channel. In June 2010 spoonbills failed to be registered in the former places of their nesting in Ili delta. (Berezovikov, Zhatkanbaev, 2002). In 1954-1964 up to 30 pairs of whooper swans nested at the delta lakes, in 2010 no less than 5 nests were recorded at the lakes of Zhideli system (Dolgushin, 1960; Grachev, 1973).

Population of White-tailed eagle includes 20-25 pairs nesting mainly at Topar and Zhideli lake systems and in floodplain forests of the lower reach of Ili River (Berezovikov, 2006). The total population of Pale-backed Pigeon in delta was assessed at 50-100 couples, the largest density in poplar groves with old hollow trees made up 2-3 couples/1 km² in 2010.

Within the borders of the wetland there are several areas of special importance due to its unique ecosystems and rich fauna. Zhideli channel with lake system is currently the core area of nesting of colonial birds in delta (pelicans, cormorants, spoonbills, herons, gulls) as well as of geese, ducks and Black-throated Loon. Floodplain tugai forests along Zhideli river are the core area of habitation of the Common Pheasant (*Phasianus colchicus*).

The territory of Ancient Delta of Ili River is of exceptional value as a place of preservation of endemic sub-species of Saxaul Desert Jay remaining only in the desert interfluvium of Ili and Karatal rivers. It is of great importance also for protection of Pallas Sandgrouse and Black-bellied Sandgrouse,

There are three species from the order of Entomophages: Long-eared Hedgehog (*Hemiechinus auritus*, *Erinaceus auritus*), Lesser White-toothed Shrew (*Crocidura suaveolens*), and Piebald Shrew (*Diplomesodon pulchellum*). From the order of Chiroptera, Whiskered Bat (*Myotis mystacinus*) Long-eared Bat (*Plekotus austriacus*) and common Serotine Bat (*Eptesicus serotinus*) are mostly found near water reservoirs. Predatory order is represented by 10 species, examples include the Golden Jackal (*Canis aureus*), Gray Wolf (*Canis lupus*), Corsac Fox (*Vulpes corsac*), Red Fox (*Vulpes vulpes*). There are 5 species in the family of Mustelids including Least Weasel (*Mustela nivalis*), Siberian Ferret (*Mustela eversmanni*), Marbled Polecat (*Vormela peregusna*), European Badger (*Meles meles*), Mountain Weasel (*Mustela altaica*) and African Wild Cat (*Felis libica*) belong to family of Felidae.

Among cloven-hoofed mammals, most wide spread species include the Wild Boar (*Sus scrofa*), Siberian Roe Deer (*Capreolus pygargus*) and Goitered Gazelle (*Gazella subgutturosa*). Rodent order includes 6 families, i.e. typical squirrels, pseudojerboa, jerboa, hamster, sand eel and mice. From the family of typical squirrels Long-clawed Ground Squirrel (*Spermophilopsis leptodactylus*) inhabits sand massifs, Red Cheeked Ground Squirrel (*Spermophilus erythrognus*) are found in the plains and Large-toothed Squirrel (*Spermophilus fulvus*) inhabits the left shore of Ili River. In shrubby sands and floodplains of rivers and lakes, and also in sand and clayey deserts, 3 species of jirds are found: Tamarisk Gerbil (*Meriones tamariscinus*), Libyan Jird (*Meriones libycus*), and Midday Gerbil (*Meriones meridianus*). There are 6 species in jerboa fauna inhabiting sand masifs and clayey deserts: Small Five-toed Jerboa (*Allactaga elater*), Thick-tailed Three-toed Jerboa (*Stylodipus telum*), Northern Three-toed Jerboa (*Dipus sagitta*), Lichtenstein's Jerboa (*Eremodipus lichtensteini*), Pale Pygmy Jerboa (*Salpingotus pallidus*), similarly the Migratory Hamster (*Cricetulus migratorius*) is widespread. Out of aquatic rodents and species inhabiting tugai bushes along the shores of water reservoirs Water Vole (*Arvicola terrestris*), Muskrat (*Ondatra zibethicus*), House Mouse (*Mus musculus*) and Common Field Mice (*Apodemus sylvaticus*) are widely spread. One species of lagomorphs order is widely spread, i.e. Tolai Hare (*Lepus tolai*).

Main species of nesting waders are: Lapwing (*Vanellus vanellus*), Stone-curlew (*Burbinus oedicephalus*), Little Ringed Plover (*Charadrius dubius*), Kentish Plover (*Charadrius alexandrinus*), Black-winged Stint (*Himantopus himantopus*), Avocet (*Recurvirostra avosetta*), Oystercatcher (*Haematopus ostralegus*), Redshank (*Tringa totanus*), Common Sandpiper (*Actitis hypoleucos*), Snipe (*Gallinago gallinago*), Collared Pratincole (*Glareola pratincola*).

In total 51 species of the wetland birds nest within the borders of the wetland. Besides, a number of species of birds of prey, such as White-tailed Eagle (*Haliaeetus albicilla*), Marsh and Montagu's harriers (*Circus aeruginosus*, *Circus pygargus*), Shikra (*Accipiter badius*), as well as Common Pheasant (*Phasianus colchicus*), Pale-baked Pigeon (*Columba evesmanni*), Kingfisher (*Alcedo atthis*) and species of Passeriformes, such as warblers (*Acrocephalus sp.*) and grasshopper warblers (*Locustella sp.*) are more or less connected with ecosystems of water reservoirs.

A peculiar complex of birds inhabit Asiatic poplar forests. 43 species nest here; the most typical among them are the following: Shikra (*Accipiter badius*), Pale-baked Pigeon (*Columba evesmanni*), Striated Scops Owl (*Otus brucei*), White-winged Woodpecker (*Dendrocopos leucopterus*), Great Tit (*Parus bokharensis*), Saxaul Sparrow (*Passer ammodendri*).

Fauna of reptiles is represented by 19 species: Steppe Tortoise (*Agrionemys horsfieldi*), 12 species of lizards and 6 species of snakes. But only 6 species of them are comparatively typical and found in coastal habitats: Racerunner and Caspian Desert Lacerta (*Eremias velox*, *E. scripta*), Diced Snake and Grass Snake (*Natrix tessellate*, *Natrix natrix*) and Pallas' Coluber (*Elaphe diene*). In desert areas there is a great number of agamas (*Agama sanguinolenta*), typical species include Gecko (*Tenuidactylus russowi*, *Alsophylax pipiens*, *Teratoscincus scincus*), Lacertas (*Eremias velox*, *E. arguta*, *E. scripta*, *E. intermedia*, *E. grammica*), Steppe Tortoise (*Agrionemys horsfieldi*), and among snakes – *Eryx tataricus*, *Psammophis lineolatus*, and toad agamas (*Phrynocephalus guttatus*, *Ph.mystaceus*) and *Gloudius balys* in some areas.

Fauna of amphibian includes 3 species: Pevtsov's toad (*Bufo penvzovi*) and two species of frogs (*Rana ridibunda*, *Rana asiatica*).

Modern fauna of fish of Balkhash Lake basin includes no less than 25 species, only 12 of which are aboriginal. Two species, i.e Balkhash perch (*Perca schrenkii*) and Ili marinka (*Schizothorax argentatus*), are endemics of the basin. Only here acclimatized Barbel Sturgeon (*Acipenser nudiiventris*) and Aral barbel (*Barbus brachycephalus*) remain, these two species completely disappeared in the basin of Aral Sea (Isbekov, 2010).

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:

Balkhash Lake and delta of Ili River are important fishery water bodies. Flood meadows in river flood plains and on inter-channel areas in the delta are referred to the most productive haying lands and good pastures. Recent years the infrastructure to serve tourists, fishermen and hunters has been intensively developed. Wood collected from the saxaul and Asiatic poplar forests have been traditionally used for fuel by the population.

Within the borders of the Ancient Delta three medieval ancient settlements are located: Karamergen, Agashayak, Aktam, which were constructed in 16th century on the ancient caravan track at a distance from main trade routes crossing a foothill plain.

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:

Territories of reserves are state-owned. In Ili delta there are 14 fishery plots assigned to users on a long-term leasehold basis. There are 16 fishery plots in the southern part of Balkhash Lake.

b) In the surrounding area:

State-owned. Part of land is leased by farmers and other agricultural producers for a long term. The rest of the land is referred to the category of state land reserve

25. Current land (including water) use:

a) Within the Ramsar site:

The wetland is located on the territory of the reserve where limited economic activity not leading to violation of stability of ecosystems and their components, is permitted. Mostly, these are traditional types of land utilization, i.e. pasturing and haymaking. There is an amateur and commercial fishing in some areas.

b) In the surroundings/catchment:

In the middle course of Ili River, some irrigated cropping is developed. In 2005 water collection for these purposes made up 2.9 km³. To regulate the flow of Ili River, create water supplies for land irrigation and generation of electric energy Kapchagai hydroelectric complex was constructed in its middle course. Deserts of South Pribalkhashje are utilized as pastures; however, workloads in this part are insignificant. Intensive construction of hydroregulators and irrigating systems is building in the basin of Ili River on the territory of China (Tien Shan Mountains) that provides 70 % of the water flow to the lake.

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:

The status of ecosystems of Ili delta and Balkhash Lake is dependent on the volume of water coming during flood periods. Construction of the Kapchagai hydroelectric station and creation of Akdaly irrigation unit reduced inflow of water into the delta by 30% in the early 1990's. The level of groundwater also decreased by 1-2 m. In 1986, the water level in Balkhash Lake dropped by 2.32 m from the average level of 342 m to a minimum of 340.68 m. In the processes, the soil dried-up and became salinized. In addition, the summer floods which used to create a developed landscapes of running and semi running

lakes with reeds in the central and lower parts of the delta, was almost fully stopped. Therefore, drying of water bodies, reduction of reed water-meadows, desertification of lake and channel shores occurred faster here (Zhatkanbayev, 1991). In 1990's the situation stabilized and the water level in the Balkhash began to rise again. In 2005, the water level returned to 342.5 m because the level of Kapchagai reservoir was reduced and more water coming depending from climatic cycle. In 2005-2010 the process of rapid rise of water level in Balkhash Lake resulted in intense watering of the delta and a change in the system of main waterways. In June 2010, the entire system of Topar lakes was filled up including channels and inter-barkhan water bodies which had previously dried up a long time ago.

A strong anthropogenic pressure on birds was from reed cutting, increase of the area of haymaking and excessive pasturing that promotes degradation of ecosystems and reduction of habitats of animals.

Enormous damage was caused by fires. Large-scale fires were observed in the lower reaches of the delta where the reed stands were thickest. The area of fire centers reaches 100-150 km². People burn reeds for renovation of pastures and haymaking, for better visual range of the land and in order to make passageways in the reed stands.

There was drainage of lakes, damming of channels, and irrigation of new areas for haymaking by means of selection of water coming to the lakes, which caused their shallowing (Zhatkanbayev, 1991).

The site is influenced by an increase in development for agricultural, fishing and tourism infrastructure. There is also a growing intensity of using motor boats on water reservoirs, cutting of old saxaul forests, poaching, hardly controlled fishing. Also, the decrease in the number of bird colonies is often a result of disturbance by fishermen and tourists.

b) In the surrounding area:

In future, the main factor identifying the state of ecosystems of Ili delta and Balkhash Lake will be the volume of flow of Ili River coming mainly from the territory of China.

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.

The wetland is situated within the borders of three State Nature Sanctuaries of republican importance, i.e. "Balkhash", "Karroy" and "Kukan", with the total area of 1,061,100 ha. There are three Important Bird Areas along the southern coastline of Balkhash Lake (IBA): Ili River Delta – 574,300 ha, Topar Lake System – 32,530 ha and Lower reaches of the Karatal River – 102,195 ha, almost fully overlapping with the nominated territory.

In order to improve a general ecological situation the Parliament of the Republic of Kazakhstan adopted a concept of sustainable development of Ili-Balkhash basin in 2001 (30 November, 2001 No.9-9-605, in 2002 it was approved by the Ministry of the Environment of the Republic of Kazakhstan) where the following main objectives were identified: to ensure the optimal level of the lake of 341-342 m (i); to preserve and restore ecosystems of Ili delta (ii); to strengthen interaction with neighboring countries (iii).

The Basin of Ili River is selected as a project (model) territory of the component "Management of river basins" under the project of European Commission and Ministry of the Environment of the Republic of Kazakhstan "Introduction of Ecological Policy Tools in the Republic of Kazakhstan".

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?:

Parliament of Kazakhstan adopted a convention of sustainable development of Ili-Balkhash basin in 2001 (30 November, 2001 No.9-9-605, in 2002 it was approved by the Ministry of the Environment of the Republic of Kazakhstan) where the following main objectives were identified: to ensure the optimal level of the lake of 341-342 m (i); to preserve and restore ecosystems of Ili delta (ii); to strengthen interaction with neighboring countries (iii).

d) Describe any other current management practices:

Recently all three State Nature Sanctuaries overlapping with the site were passed under management of Altyn-Emel State National Nature Park. As result, they were included in management plan of the National Park, special means and rangers were allocated for protection of these areas. The management by the Park includes wildlife protection and general monitoring of condition of ecosystems.

28. Conservation measures proposed but not yet implemented:

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

In 2010 a scientific rationale was prepared to organize Ili-Balkhash nature reserve on the area of 4,271,673 ha, including a conservation zone of 1,094,773 ha and buffer zone of 3,176,900 ha. Also it was planned to create a protective zone with the total area of 765,440 ha and ecological corridor with the total area of 773,690 ha, around the state nature reserve.

29. Current scientific research and facilities:

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

In 1960-s ornithological fauna of the delta of Ili River was studied by V.A.Grachev. At the end of 1960-s – beginning of 1970s B.D.Zlotin conducted studies all over the entire southern coastline of Balkhash Lake including Ili delta. In 1980-1990-s A.Zh.Zhatkanbayev conducted research of pelican ecology in the delta. He continued to monitor the colonies in the following years afterwards. In 1990-s N.N. Berezovikov, V.A.Mossolov, B.M. Gubin and others worked in the delta. In 1998 an international expedition “Wings over Kazakhstan 1998” (an international expedition: lider – Simon Busutil; under RSPB for survey of Ili delta as a potential IBA) was conducted to investigate the delta. In 2000 works on IBA appropriation were done and in 2010 the territory of the delta and the adjacent eastern area of the coastline of Balkhash Lake were studied by a complex expedition to prepare a scientific rationale to create a nature reserve “Ili-Balkhash”.

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 is a great number of articles and statement in republican mass media on protection of the nature of Balkhash Lake and Ili delta. Documentary films about Ili delta and its wildlife were created (Zhatkanbayev A.Zh.). In 1998 an international expedition “Wings over Kazakhstan 1998” was conducted to investigate the delta. Non-governmental organizations arranged broad discussion of problems of Balkhash Lake and also conducted a few events and international forums “Balkhash - 2000”, “Balkhash - 2005” with participation of representatives from the government of the Republic of Kazakhstan.

Information about the significance of the area for waterbirds was placed in the book “Important bird areas in Kazakhstan: priority sites for conservation” published in 2008 (in English and in Russian). Printed advertising materials and Internet pages were prepared by travel companies.

31. Current recreation and tourism:

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

Fishing, hunting tourism and birdwatching with the organization of relative infrastructure are intensively developed.

32. Jurisdiction:

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

Territorial Jurisdiction: Kazakhstan, Almaty oblast, Balkhash, Karatal and Aksu districts.

Functional Jurisdiction (of the area as Ramsar site and of the existing State Nature Sanctuaries): Forestry and Hunting Committee of the Ministry of Agriculture, Republic of Kazakhstan

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.

Managing body for State Nature Sanctuaries at Ramsar Site: Altyn-Emel State National Nature Park

Director: Mr. Kalyk Bayadylov

Address: Askarbek str. 73, Basshy village, Kerbulsak district, Almaty region, Kazakhstan

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Email: altynemel@rambler.ru

www.altyn-emel.kz

State local control agency: Territorial Inspection for Forestry and Hunting for Almaty region

Head: Mr. Temirlan Mamiyev

Address: Lesnaya Polyana str. 1, Taldykorgan city, Almaty region, Kazakhstan

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34. Bibliographical references:

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

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